URBAN | CROSSROADS

RICH HAVEN SPECIFIC PLAN

TRAFFIC ANALYSIS

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Reference Number	Agency	Date
14822-03 TA Report REV	City of Ontario	December 16, 2022

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CCI	Construction Cost Index
CMP	Congestion Management Program
DIF	Development Impact Fee
DU	Dwelling Units
E+P	Existing Plus Project
FHWA	Federal Highway Administration
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
PHF	Peak Hour Factor
Project	Rich Haven Specific Plan
SBCTA	San Bernardino County Transportation Authority
TA	Traffic Analysis
v/c	Volume to Capacity
vphgpl	Vehicles per Hour Green per Lane

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1 INTRODUCTION

This report presents the results of the Traffic Analysis (TA) for Rich Haven Specific Plan ("Project"), which is generally located north of Ontario Ranch Road, south of Riverside Drive, east of Haven Avenue, and on either side of Mill Creek Avenue in the City of Ontario, as shown on Exhibit 1-1. The purpose of this TA is to evaluate the potential circulation system deficiencies that may result from the development of the proposed Project, and where necessary recommend improvements to achieve acceptable operations consistent with General Plan level of service goals and policies. This traffic study has been prepared in accordance with the County of San Bernardino's Traffic Impact Study Guidelines and consultation with City staff during the traffic study scoping process. (1) The City approved Project Traffic Study Scoping agreement is provided in Appendix 1.1 of this TA.

1.5 SUMMARY OF FINDINGS

The Project is to construct the following improvements as design features in conjunction with development of the site:

- Project to construct Riverside Drive at its ultimate half-section width as a Minor Arterial (6-lanes, 108-foot right-of-way) from the Project's eastern boundary to Haven Avenue consistent with the City's standards.
- Project to construct Chino Avenue at its ultimate full-section width as a Minor Arterial (2-lanes, 88-foot right-of-way) from Haven Avenue to Mill Creek Avenue consistent with the City's standards. It should be noted, Chino Avenue will be constructed to its ultimate full-section width, however will only be striped with one lane of travel in each direction.
- Project to construct Ontario Ranch Road at its ultimate full-section width as a Principal Arterial (8-lanes, 124-foot right-of-way) from Haven Avenue to Hamner Avenue consistent with the City's standards.
- Project to construct Mill Creek Avenue at its ultimate full-section width as a Collector (4-lanes, 88-foot right-of-way) from the Project's southern boundary to the southern boundary of Planning Area 2C, and at its ultimate half-section width from the southern boundary of Planning Area 2C to the Project's northern boundary (northern boundary of Planning Area 1C) (with an additional 12-feet of pavement on the east side from the southern boundary of Planning Area 2C to Chino Avenue to facilitate site access) consistent with the City's standards.
- Project to construct Hamner Avenue at its ultimate half-section width as a Minor Arterial (6-lanes, 108-foot right-of-way) from the Project's northern boundary to the Project's southern boundary consistent with the City's standards.
- Project to construct Haven Avenue at its ultimate half-section width as a Principal Arterial (4-lanes, 124-foot right-of-way) from Riverside Drive to the Project's southern boundary consistent with the City's standards.
- Project to install a traffic signal at Haven Avenue & Chino Avenue.
- Project to construct a single-lane roundabout at Mill Creek Avenue & Chino Avenue and Twinkle Avenue & Chino Avenue.

Additional details and intersection lane geometrics are provided in Section 1.6 *Recommendations* of this report.

1.2 PROJECT OVERVIEW

Exhibit 1-1 illustrates the location map for the proposed Project and Exhibit 1-2 shows the proposed land use plan. The proposed Project is to consist of 7,194 single family and multifamily residential dwelling units, 27.0 acres of public park, 2,780,000 square feet of industrial uses, and 772,500 square feet of retail/office uses. Note that portions of Planning Areas 3A and 4A have already been developed (currently existing). Planning Areas 2, 3, 4A, 5C, 6, 10, and portions of 7, 8, and 9 are anticipated to be developed as part of the first phase with an anticipated Opening Year of 2024. Project Buildout is anticipated in Year 2027. Access to the proposed Project would be provided to the surrounding roadways of Riverside Drive to the north, Haven Avenue to the west, Ontario Ranch Road to the south, and Mill Creek Avenue to the east. Chino Avenue is also an east-west roadway that runs through the Project.

Regional access to the Project site is available from the SR-60 Freeway via Archibald Avenue, Haven Avenue, and Milliken Avenue interchanges and the I-15 Freeway via Cantu Galleano Road. Exhibit 1-3 depicts the location of the proposed Project in relation to the existing roadway network and the study area intersections.

In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) for the following land uses have been utilized (2):

- Industrial Park (ITE Land Use Code 130)
- High-Cube Transload Warehouse (ITE Land Use Code 154)
- High-Cube Fulfillment Center (Sort) (ITE Land Use Code 155)
- High-Cube Cold Storage Warehouse (ITE Land Use Code 157)
- Single Family Detached Residential (ITE Land Use Code 210)
- Multifamily (Low-Rise) Housing (ITE Land Use Code 220)
- Public Park (ITE Land Use Code 411)
- General Office (ITE Land Use Code 810)
- Shopping Center (>150,000 square feet) (ITE Land Use Code 820)
- Shopping Center (40,000-150,000 square feet) (ITE Land Use Code 821)
- Strip Retail (<40,000 square feet) (ITE Land Use Code 822)
- High turnover Restaurant (ITE Land Use Code 932)
- Fast-Food Restaurant with Drive-Thru Window (ITE Land Use Code 934)
- Gas Station (4,000-5,000 square feet Convenience Market) (ITE Land Use Code 945)

EXHIBIT 1-1: LOCATION MAP

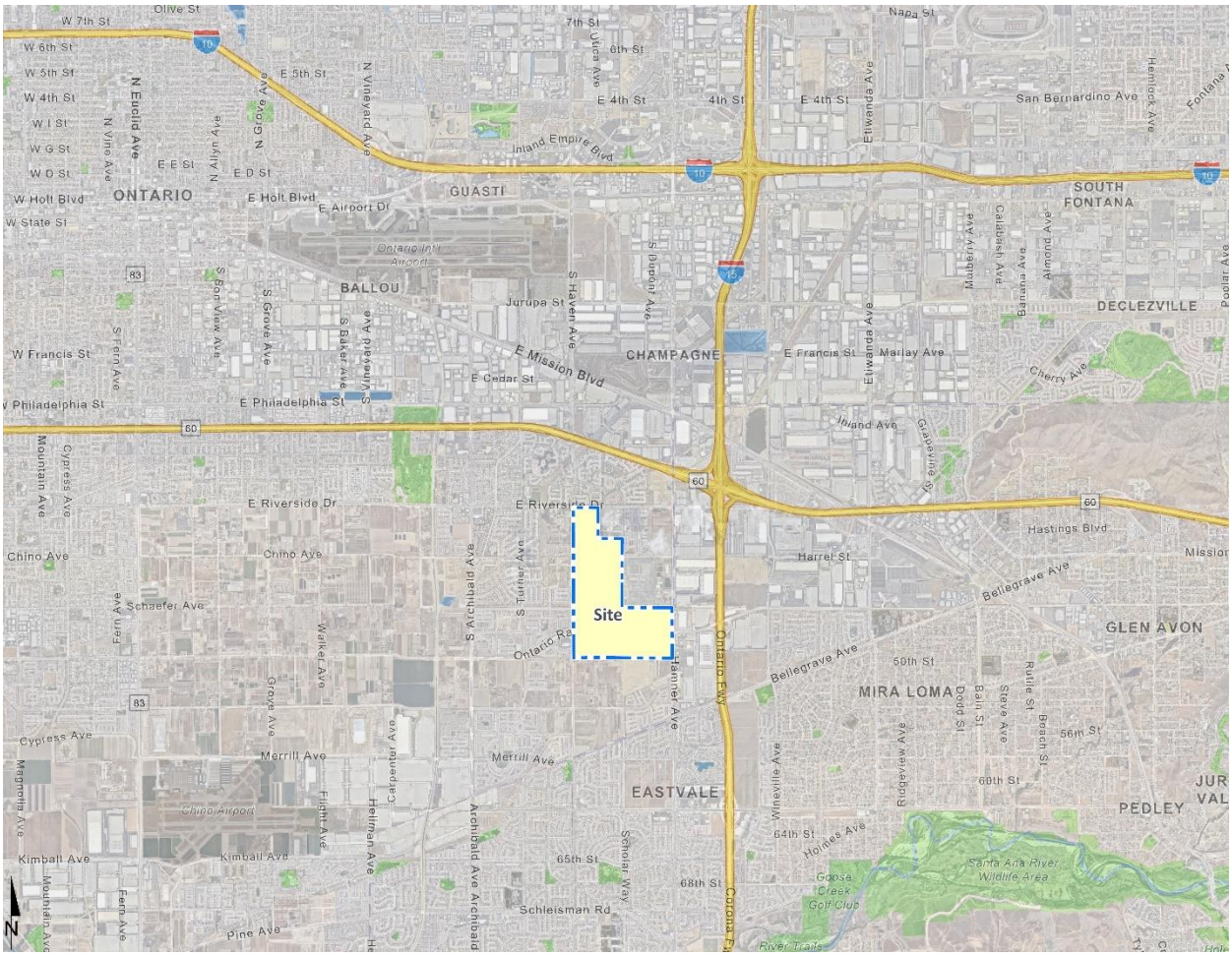


EXHIBIT 1-2: PRELIMINARY LAND USE PLAN

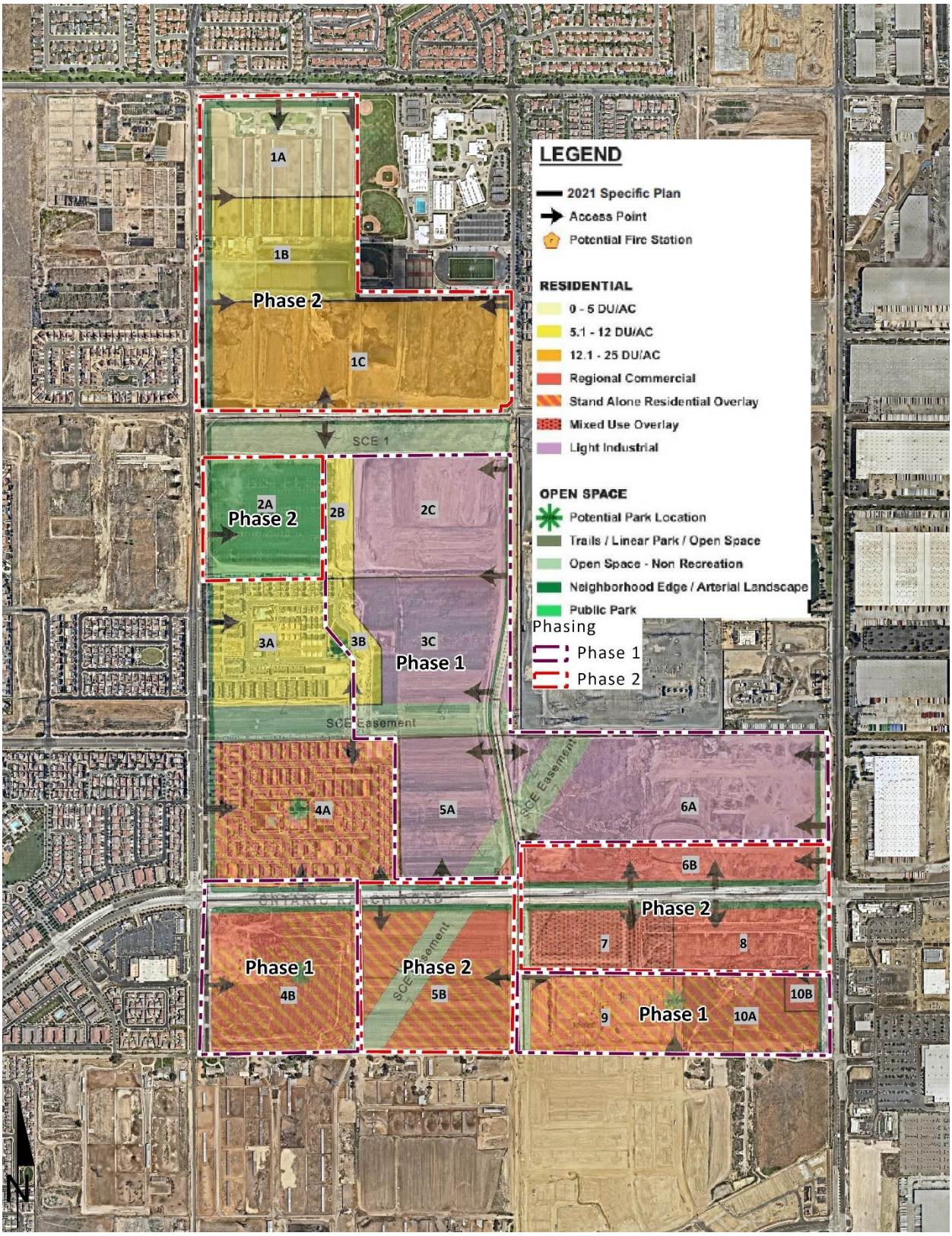
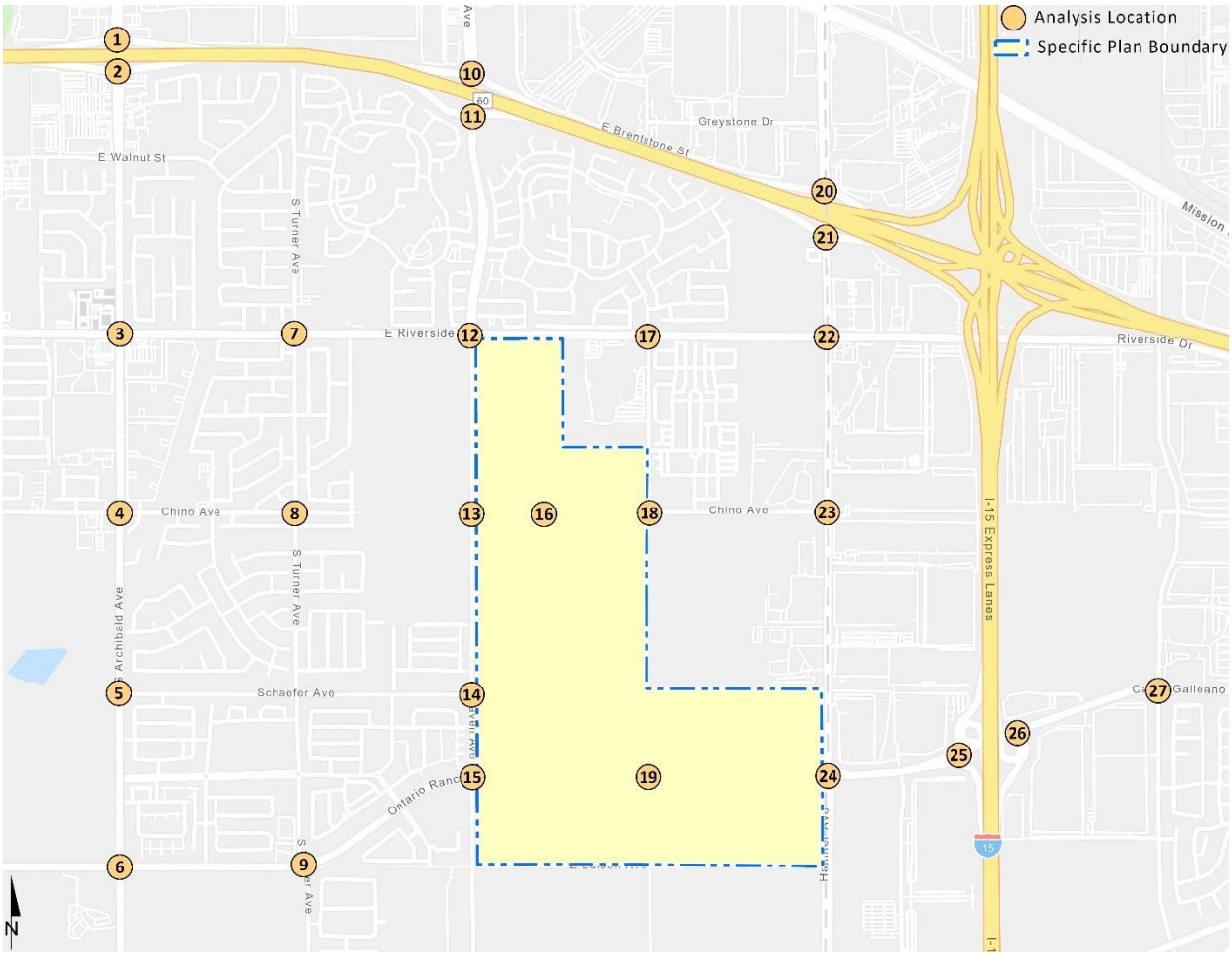


EXHIBIT 1-3: STUDY AREA



A portion of the High-Cube Fulfillment Center Warehouse use has been evaluated utilizing the High-Cube Warehouse Trip Generation Study, WSP, January 29, 2019. With the development of the proposed Project, the Project is anticipated to generate a total of 95,538 vehicle trip-ends per day with 8,078 AM peak hour trips and 8,036 PM peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2022)
- Existing plus Project – Phase 1
- Existing plus Project – Project Buildout
- Opening Year Cumulative (2027) Without Project
- Opening Year Cumulative (2027) With Project – Project Buildout only
- Horizon Year (2050) Without Project
- Horizon Year (2050) With Project – Project Buildout only

1.3.1 EXISTING (2022) CONDITIONS

Information for Existing (2022) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.3.2 EXISTING PLUS PROJECT (E+P) CONDITIONS

The Existing plus Project (E+P) analysis determines traffic deficiencies that would occur on the existing roadway system with the addition of Project (Phase 1 and Project Buildout) traffic. E+P traffic conditions have been evaluated in order to determine any potential off-site improvements.

1.3.3 OPENING YEAR CUMULATIVE (2027) CONDITIONS

The Opening Year Cumulative conditions analysis determines the potential near-term cumulative circulation system deficiencies. To account for background traffic growth, traffic associated with other known cumulative development projects in conjunction with an ambient growth factor from Existing conditions of 2% per year (compounded annually) are included for Opening Year Cumulative (2027) traffic conditions. The total growth factor for Opening Year Cumulative (2027) traffic conditions is 14.9% (or $1.02^{7\ years}$). Opening Year Cumulative traffic conditions have been evaluated for the proposed Project. This comprehensive list was compiled from information provided by the City of Ontario and other near-by agencies.

1.3.4 HORIZON YEAR (2050) CONDITIONS

Traffic projections for Horizon Year (2050) conditions were derived from the San Bernardino County Transportation Analysis Model (SBTAM) using accepted procedures for model forecast refinement and smoothing and is based on the currently adopted The Ontario Plan (TOP) 2050 General Plan Update, The Horizon Year conditions analysis will be utilized to determine if improvements funded through

regional transportation mitigation fee programs can accommodate the long-range cumulative traffic at the target Level of Service (LOS) identified in the City of Ontario (lead agency) General Plan. Each of the applicable transportation fee programs are discussed in more detail In Section 8 *Local and Regional Funding Mechanisms*.

1.4 STUDY AREA

To ensure that this TA satisfies the City of Ontario's traffic study requirements, Urban Crossroads, Inc. prepared a Project traffic study scoping package for review by City of Ontario staff prior to the preparation of this report. This agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The agreement approved by the City is included in Appendix 1.1 of this TA.

The following 27 study area intersections shown on Exhibit 1-3 and listed in Table 1-1 were selected for this TA based on consultation with City of Ontario staff. The "50 peak hour trip" criterion utilized by the City of Ontario is consistent with the methodology employed by the County of San Bernardino, and generally represents a minimum number of trips at which a typical intersection would have the potential to be affected by a given development proposal. Although each intersection may have unique operating characteristics, this traffic engineering rule of thumb is a widely utilized tool for estimating a potential area of influence (i.e., study area). Other analysis intersections, within the adjacent cities were not selected for evaluation as the Project is anticipated to contribute less than 50 peak hour trips.

The intent of a Congestion Management Program (CMP) is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related deficiencies, and improve air quality. Counties within California have developed CMPs with varying methods and strategies to meet the intent of the CMP legislation. Study area intersections that are identified as CMP facilities in the County of San Bernardino per the San Bernardino County Transportation Authority (SBCTA) CMP are indicated in Table 1-1. (3)

1.5 DEFICIENCIES

This section provides a summary of deficiencies by analysis scenario. Section 2 *Methodologies* provides information on the methodologies used in the analysis and Section 3 *Area Conditions*, Section 5 *E+P Traffic Conditions*, Section 6 *Opening Year Cumulative (2027) Conditions*, and Section 7 *Horizon Year (2050) Traffic Conditions* includes the detailed analysis. A summary of Level of Service (LOS) results for all analysis scenarios is presented in Table 1-2.

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

#	Intersection
1	Archibald Av. & SR-60 WB Ramps
2	Archibald Av. & SR-60 EB Ramps
3	Archibald Av. & Riverside Dr.
4	Archibald Av. & Chino Av.
5	Archibald Av. & Schaefer Av.
6	Archibald Av. & Ontario Ranch Rd.
7	Turner Av. & Riverside Dr.
8	Turner Av. & Chino Av.
9	Turner Av. & Ontario Ranch Rd.
10	Haven Av. & SR-60 WB Ramps
11	Haven Av. & SR-60 EB Ramps
12	Haven Av. & Riverside Dr.
13	Haven Av. & Chino Av.
14	Haven Av. & Schaefer Av.
15	Haven Av. & Ontario Ranch Rd.
16	Twinkle Av. & Chino Av.
17	Mill Creek Av. & Riverside Dr.
18	Mill Creek Av. & Chino Av.
19	Mill Creek Av. & Ontario Ranch Rd.
20	Milliken Av. & SR-60 WB Ramps
21	Milliken Av. & SR-60 EB Ramps
22	Milliken Av. & Riverside Dr.
23	Hamner Av. & Chino Av.
24	Hamner Av. & Ontario Ranch Rd.
25	I-15 SB Ramps & Cantu Galleano Ranch Rd.
26	I-15 NB Ramps & Cantu Galleano Ranch Rd.
27	Wineville Av. & Cantu Galleano Ranch Rd.

TABLE 1-2: SUMMARY OF LOS

#	Intersection	Existing AM	Existing PM	E+P Phase 1 AM	E+P Phase 1 PM	E+P Buildout AM	E+P Buildout PM	2027 Without Project AM	2027 Without Project PM	2027 With Project AM	2027 With Project PM	2045 Without Project AM	2045 Without Project PM	2045 With Project AM	2045 With Project PM
1	Archibald Av. & SR-60 WB Ramps	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
2	Archibald Av. & SR-60 EB Ramps	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
3	Archibald Av. & Riverside Dr.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	F	F	F	F	F	F
4	Archibald Av. & Chino Av.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	F	A - E	F
5	Archibald Av. & Schaefer Av.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
6	Archibald Av. & Ontario Ranch Rd.	A - E	A - E	A - E	A - E	F	F	A - E	A - E	F	F	F	F	F	F
7	Turner Av. & Riverside Dr.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
8	Turner Av. & Chino Av.	A - E	A - E	A - E	A - E	A - E	A - E	F	A - E	F	A - E	F	A - E	F	A - E
9	Turner Av. & Ontario Ranch Rd.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
10	Haven Av. & SR-60 WB Ramps	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
11	Haven Av. & SR-60 EB Ramps	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
12	Haven Av. & Riverside Dr.	F	F	F	F	F	F	F	F	F	F	F	F	F	F
13	Haven Av. & Chino Av.	A - E	A - E	A - E	F	F	F	A - E	A - E	F	F	F	F	A - E	A - E
14	Haven Av. & Schaefer Av.	A - E	A - E	A - E	A - E	F	A - E	A - E	A - E	F	A - E	A - E	A - E	A - E	A - E
15	Haven Av. & Ontario Ranch Rd.	A - E	A - E	A - E	F	F	F	A - E	A - E	F	F	A - E	F	F	F
16	Twinkle Av. & Chino Av.	N/A	N/A	A - E	A - E	A - E	A - E	N/A	N/A	A - E	A - E	N/A	N/A	A - E	A - E
17	Mill Creek Av. & Riverside Dr.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	F	F	F	F
18	Mill Creek Av. & Chino Av.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
19	Mill Creek Av. & Ontario Ranch Rd.	N/A	N/A	A - E	A - E	A - E	A - E	N/A	N/A	A - E	A - E	N/A	N/A	A - E	A - E
20	Milliken Av. & SR-60 WB Ramps	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
21	Milliken Av. & SR-60 EB Ramps	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
22	Milliken Av. & Riverside Dr.	A - E	A - E	A - E	A - E	F	A - E	F	A - E	F	F	F	F	F	F
23	Hamner Av. & Chino Av.	A - E	A - E	A - E	F	F	F	A - E	A - E	F	F	F	F	F	A - E
24	Hamner Av. & Ontario Ranch Rd.	A - E	A - E	A - E	A - E	F	F	A - E	A - E	F	F	F	F	F	F
25	I-15 SB Ramps & Cantu Galleano Ranch Rd.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
26	I-15 NB Ramps & Cantu Galleano Ranch Rd.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E
27	Wineville Av. & Cantu Galleano Ranch Rd.	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E	A - E

= A - E = F

1.5.1 EXISTING (2022) CONDITIONS

The following study area intersection is currently operating at an unacceptable LOS during the peak hours:

- Haven Avenue & Riverside Drive (#13) – LOS F AM peak hour only

1.5.2 E+P CONDITIONS

the following additional study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under E+P (Phase 1) traffic conditions, in addition to the intersections identified under Existing (2022) traffic conditions:

- Haven Avenue & Chino Avenue (#13) – LOS F PM peak hour only
- Haven Avenue & Ontario Ranch Road (#15) – LOS F PM peak hour only
- Milliken Avenue & Riverside Drive (#22) – LOS E AM peak hour only
- Hamner Avenue & Chino Avenue (#23) – LOS F PM peak hour only
- Hamner Avenue & Ontario Ranch Road (#24) – LOS E PM peak hour only

The following additional study area intersection is anticipated to operate at an unacceptable LOS during the peak hours under E+P (Project Buildout) traffic conditions, in addition to the intersections identified under Existing (2022) traffic conditions:

- Archibald Avenue & Ontario Ranch Road (#6) – LOS F AM and PM peak hours

1.5.3 OPENING YEAR CUMULATIVE (2027) CONDITIONS

The following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year Cumulative (2027) Without Project traffic conditions:

- Turner Avenue & Chino Avenue (#8) – LOS F AM peak hour only
- Haven Avenue & Riverside Drive (#12) – LOS F AM and PM peak hours
- Milliken Avenue & Riverside Drive (#22) – LOS F AM peak hour only

The following additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours with the addition of Project traffic under Opening Year Cumulative (2027) With Project traffic conditions:

- Archibald Avenue & Riverside Drive (#3) – LOS F AM and PM peak hours
- Archibald Avenue & Ontario Ranch Road (#6) – LOS F AM and PM peak hours
- Haven Avenue & Chino Avenue (#13) – LOS F PM peak hour only
- Haven Avenue & Schaefer Avenue (#14) – LOS F AM peak hour only
- Haven Avenue & Ontario Ranch Road (#15) – LOS F AM and PM peak hours
- Hamner Avenue & Chino Avenue (#23) – LOS F AM and PM peak hours
- Hamner Avenue & Ontario Ranch Road (#24) – LOS F AM and PM peak hours

1.5.4 HORIZON YEAR (2050) CONDITIONS

The following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours:

- Archibald Avenue & Riverside Drive (#3) – LOS F AM and PM peak hours
- Archibald Avenue & Chino Avenue (#4) – LOS F PM peak hour only
- Turner Avenue & Chino Avenue (#8) – LOS F PM peak hour only
- Haven Avenue & Riverside Drive (#12) – LOS F AM and PM peak hours
- Haven Avenue & Chino Avenue (#13) – LOS F AM and PM peak hours
- Haven Avenue & Ontario Ranch Road (#15) – LOS F PM peak hour only
- Mill Creek Road & Riverside Drive (#15) – LOS F AM and PM peak hours
- Milliken Avenue & Riverside Drive (#22) – LOS F AM peak hour only
- Archibald Avenue & Ontario Ranch Road (#6) – LOS F AM and PM peak hours
- Haven Avenue & Chino Avenue (#13) – LOS F PM peak hour only
- Haven Avenue & Schaefer Avenue (#14) – LOS F AM peak hour only
- Haven Avenue & Ontario Ranch Road (#15) – LOS F AM and PM peak hours

- Mill Creek Avenue & Riverside Drive (#17) – LOS F AM and PM peak hours
- Milliken Avenue & Riverside Drive (#22) – LOS F AM and PM peak hours
- Hamner Avenue & Chino Avenue (#23) – LOS F AM and PM peak hours
- Hamner Avenue & Ontario Ranch Road (#24) – LOS F AM and PM peak hours

1.6 RECOMMENDATIONS

1.6.1 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the minimum improvements needed to accommodate site access and maintain acceptable peak hour operations for the proposed Project. The site adjacent recommendations are shown on Exhibit 1-4. The site adjacent queuing analysis worksheets are provided in Appendix 1.2.

The existing lane geometrics and traffic control should remain at the intersection of Haven Avenue & Ontario Ranch Road (#15).

Recommendation 1 – ***Haven Avenue & Riverside Drive (#12)*** – The following improvement is necessary to accommodate site access:

- Project to construct a northbound left turn lane and right turn lane.

Recommendation 2 – ***Haven Avenue & Chino Avenue (#13)*** – The following improvements are necessary to accommodate site access:

- Project to install a traffic signal.
- Project to construct a northbound shared through-right turn lane.
- Project to construct a southbound left turn lane.
- Project to construct a westbound left turn lane and shared through-right turn lane.

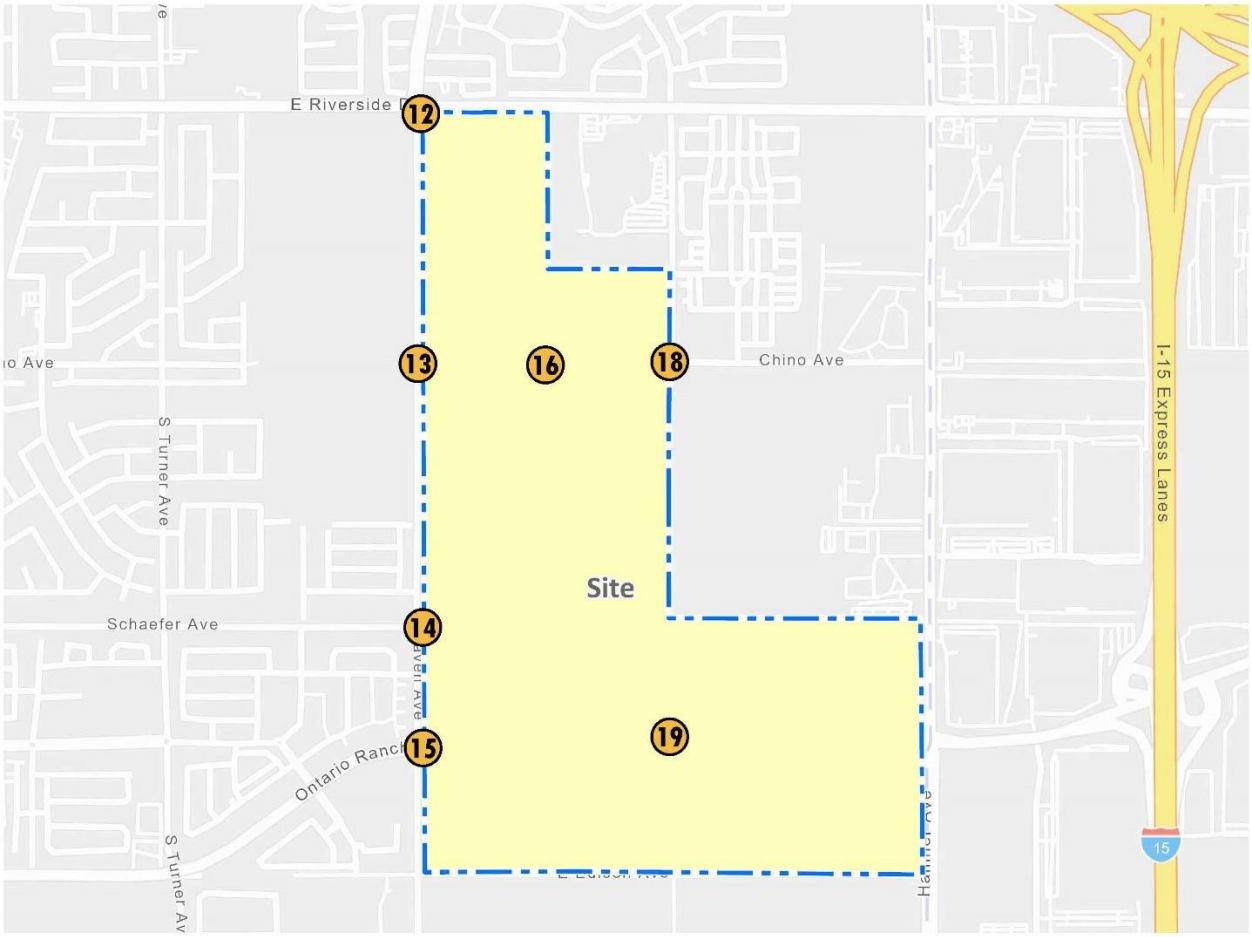
Recommendation 3 – ***Haven Avenue & Schaefer Avenue (#14)*** – The following improvement is necessary to accommodate site access:

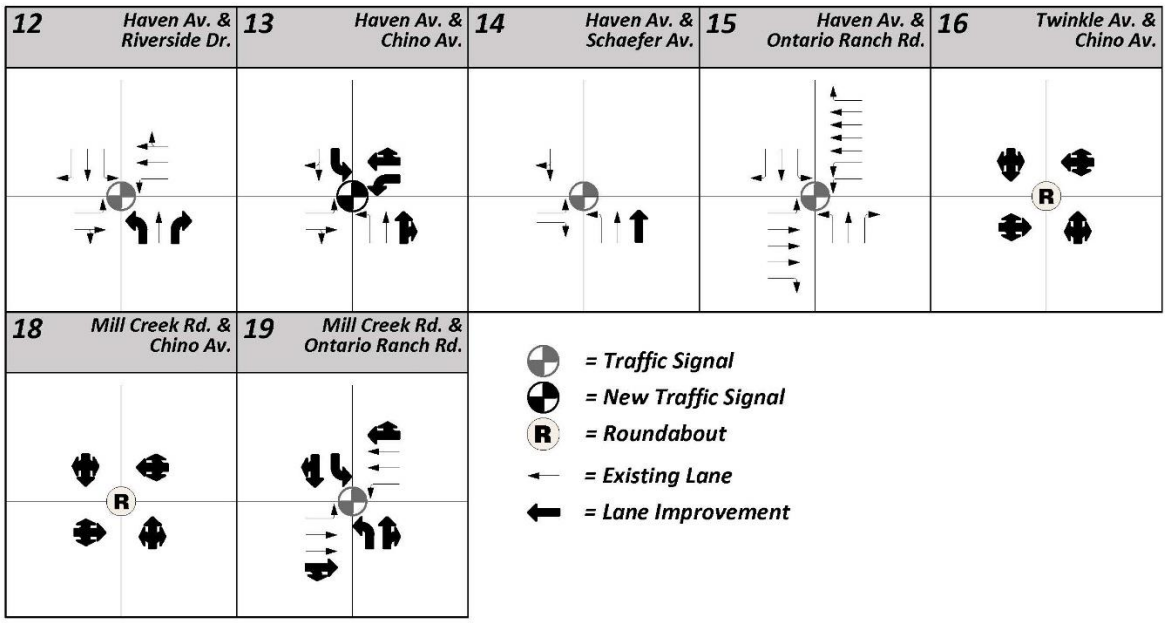
- Project to construct a northbound through lane.

Recommendation 4 – ***Twinkle Avenue & Chino Avenue (#16)*** – The following improvements are necessary to accommodate site access:

- Project to construct a single-lane roundabout.
- Project to construct a northbound shared left-through-right turn lane.
- Project to construct a southbound shared left-through-right turn lane.
- Project to construct an eastbound shared left-through-right turn lane.
- Project to construct a westbound shared left-through-right turn lane.

EXHIBIT 1-4: SITE ACCESS RECOMMENDATIONS





Recommendation 5 – ***Mill Creek Avenue & Chino Avenue (#18)*** – The following improvements are necessary to accommodate site access:

- Project to construct a single-lane roundabout.
- Project to construct a northbound shared left-through-right turn lane.
- Project to construct a southbound shared left-through-right turn lane.
- Project to construct an eastbound shared left-through-right turn lane.
- Project to construct a westbound shared left-through-right turn lane.

Recommendation 6 – ***Mill Creek Avenue & Ontario Ranch Road (#19)*** – The following improvements are necessary to accommodate site access:

- Project to construct a northbound left turn lane and shared through-right turn lane.
- Project to construct a southbound left turn lane and shared through-right turn lane.
- Project to construct an eastbound shared through-right turn lane.
- Project to construct a westbound shared through-right turn lane.

Recommendation 7 – Riverside Drive is an east-west oriented roadway located on the Project's northern boundary. Project to construct Riverside Drive at its ultimate half-section width as a Minor Arterial (6-lanes, 108-foot right-of-way) from the Project's eastern boundary to Haven Avenue consistent with the City's standards.

Recommendation 8 – Chino Avenue is an east-west oriented roadway located within the Project site. Project to construct Chino Avenue at its ultimate full-section width as a Minor Arterial (2-lanes, 88-foot right-of-way) from Haven Avenue to Mill Creek Avenue consistent with the City's standards. It should be noted, Chino Avenue will be constructed to its ultimate full-section width, however will only be striped with one lane of travel in each direction.

Recommendation 9 – Ontario Ranch Road is an east-west oriented roadway located on the Project's southern boundary. Project to construct Ontario Ranch Road at its ultimate full-section width as a Principal Arterial (8-lanes, 124-foot right-of-way) from Haven Avenue to Hamner Avenue consistent with the City's standards.

Recommendation 10 – Mill Creek Avenue is a north-south oriented roadway generally located on the Project's eastern boundary. Project to construct Mill Creek Avenue at its ultimate full-section width as a Collector (4-lanes, 88-foot right-of-way) from the Project's southern boundary to the southern boundary of Planning Area 2C, and at its ultimate half-section width from the southern boundary of Planning Area 2C to the Project's northern boundary (northern boundary of Planning Area 1C) (with an additional 12-feet of pavement on the east side from the southern boundary of Planning Area 2C to Chino Avenue to facilitate site access) consistent with the City's standards.

Recommendation 11 – Hamner Avenue is a north-south oriented roadway located on the Project's eastern boundary. Project to construct Hamner Avenue at its ultimate half-section width as a Minor Arterial (6-lanes, 108-foot right-of-way) from the Project's northern boundary to the Project's southern boundary consistent with the City's standards.

Recommendation 12 – Haven Avenue is a north-south oriented roadway located on the Project's western boundary. Project to construct Haven Avenue at its ultimate half-section width as a Principal Arterial (4-lanes, 124-foot right-of-way) from Riverside Drive to the Project's southern boundary consistent with the City's standards.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard California Department of Transportation (Caltrans) and City of Ontario sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

It should be noted, the Project will construct Chino Avenue at its ultimately full-section width, but striping one lane in each direction. Since the proposed roundabouts along Chino Avenue are single-lane roundabouts, one lane in each direction along Chino Avenue will facilities site access without requiring merging of traffic into the roundabout. Although the turning volumes (such as the northbound right turn) at the intersection of Haven Avenue & Chino Avenue may be relatively high during the peak hour, the intersection operations analysis at this location and the roadway segment analysis (see discussion below) are anticipated to operate at acceptable levels. As such, no additional roadway segment widening beyond the 2-lane roadway is recommended along Chino Avenue as the intersections are able to process the turning movement volumes at Haven Avenue & Chino Avenue.

According to the City of Ontario General Plan, a 2-lane roadway has a capacity of 12,500 vehicles per day. Based on a review of Horizon Year traffic volumes along Chino Avenue for the segment between Haven Avenue and Twinkle Avenue, it is estimated that 9,300 vehicles per day will utilize Chino Avenue, which is well within a 12,500 vehicle per day capacity of a 2-lane roadway.

The segment of Chino Avenue, between Twinkle Avenue and Mill Creek Avenue, is anticipated to exceed this capacity for Horizon Year (2050) With Project traffic conditions. This is due to the volumes developed from the City's new TOP model, which results in a daily volume of 12,800 vehicles per day for the segment of Chino Avenue, between Twinkle Avenue and Mill Creek Avenue. This exceeds the 2-lane capacity of 12,500 vehicles per day. However, it should be noted that in cases where anticipated daily volumes exceed the defined roadway segment capacity (based on the City's General Plan), a review of the more detailed peak hour intersection operations analysis is undertaken. The more detailed peak hour intersection operations analysis explicitly accounts for factors that affect roadway capacity and is utilized to determine if roadway segment widening is actually necessary. If the intersection operations for the intersections on either side of the roadway segment are anticipated to operate at an acceptable LOS during the peak hours, roadway segment widening is typically not recommended. The intersections are considered "choke points" along the roadways and if the intersection operations analysis is anticipated to operate at acceptable levels, then it is anticipated that the intersections can process the traffic volumes along the roadway segment without the need for additional roadway segment widening. Additionally, roadway segment analysis is considered a planning level analysis whereas the intersection operations analysis is considered more design level analysis. Based on a review of the anticipated intersection operations analysis under Horizon Year (2050) traffic conditions, the study area intersections along Chino Avenue (at Twinkle Avenue and Mill Creek Avenue) are anticipated to operate at an acceptable LOS during the peak hours.

As such, additional roadway segment widening along Chino Avenue is not recommended beyond the 2-lane roadway. It should also be noted, the City's TOP model classifies Chino Avenue as a 2-lane roadway. Therefore, the proposed 2-lane roadway for Chino Avenue is consistent with the City's General Plan.

Exhibit 1-5 shows the proposed roadway of Chino Avenue, from Haven Avenue to Mill Creek Avenue. As shown on Exhibit 1-5, single-lane roundabouts are proposed at the intersections of Twinkle Avenue & Chino Avenue and at Mill Creek Avenue & Chino Avenue. Based on the Federal Highway Administration's (FHWA) roundabout operational guidelines published in the Roundabouts: An Informational Guide, circulating traffic flows exceeding 1,800 vehicles per hour may indicate the need for a double-lane roundabout. (4) Based on a review of the peak hour traffic volumes under Horizon Year (2050) With Project traffic conditions, the anticipated peak hour traffic flow is 845 vehicles at Twinkle Avenue & Chino Avenue and 1,250 vehicles at Mill Creek Avenue & Chino Avenue. As such, a double-lane roundabout does not appear necessary to process peak hour traffic flows at both Twinkle Avenue & Chino Avenue and Mill Creek Avenue & Chino Avenue, as the single-lane roundabout is anticipated to process the peak hour traffic flows and operate at acceptable LOS during the peak hours under Horizon Year (2050) With Project traffic conditions.

1.6.2 OFF-SITE RECOMMENDATIONS

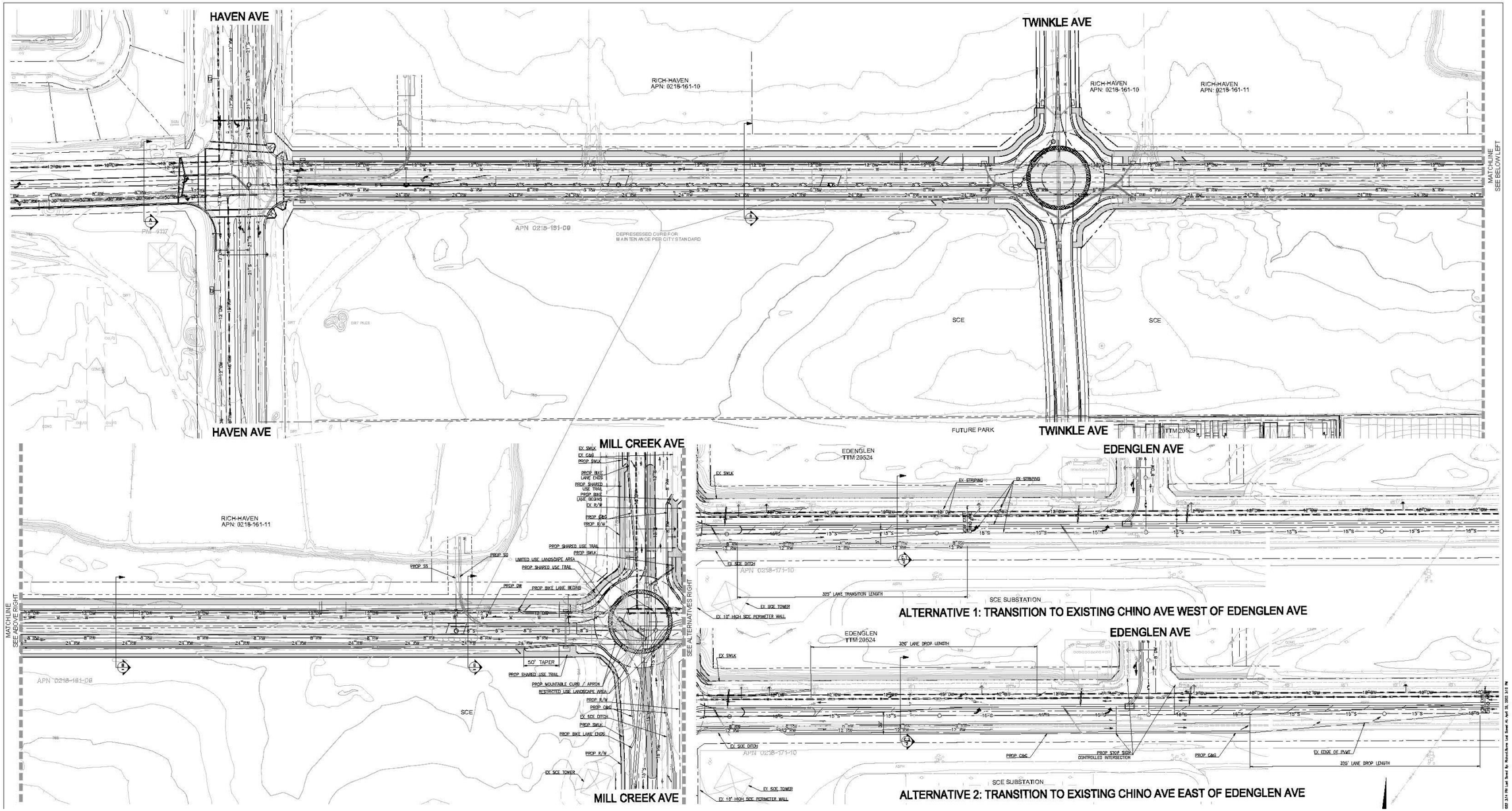
A summary of the off-site intersection improvements is provided in Table 1-3. For those improvements listed in Table 1-3 and not constructed as part of the Project, the Project Applicant's responsibility for the Project's contributions towards deficient intersections is fulfilled through payment of fees or fair share that would be assigned to construction of the identified recommended improvements.

TABLE 1-3: SUMMARY OF IMPROVEMENTS BY ANALYSIS SCENARIO

#	Intersection Location	Jurisdiction	E+P (Phase 1)	E+P (Project Buildout)	2032 Without Project	2032 With Project	2045 Without Project	2045 With Project	Project Responsibility	Improvements in DIF[1,2]	Estimated Cost[3,4]	Project Fair Share	Fair Share Cost[5]
3	Archibald Av. & Riverside Dr.	Ontario	None	None	Add 2nd NB left turn lane	Same	Same	Same	Fair Share	No	$88,500	33.1%	$29,260
					Add 2nd SB left turn lane	Same	Same	Same	Fair Share	No	$88,500		$29,260
										Total:	**$177,000**		**$58,520**
4	Archibald Av. & Chino Av.	Ontario	None	None	None	None	Add EB right turn lane	Same	Fair Share	No	$88,500	37.8%	$33,428
										Total:	**$88,500**		**$33,428**
6	Archibald Av. & Merrill Av.	Ontario	None	Add 2nd SB left turn lane	Same	Same	Same	Same	Construct	No	$0	17.9%	$0
				Add 2nd WB through lane	Same	Same	Same	Same	Construct	No	$0		$0
							Add 2nd NB left turn lane	Same	Fair Share	No	$88,500		$15,806
							Add 3rd NB through lane	Same	Fees	Yes (ST-002)	$0		$0
							Add 3rd SB through lane	Same	Fees	Yes (ST-002)	$0		$0
							Add 3rd EB through lane	Same	Fair Share	No	$318,600		$56,902
										Total:	**$407,100**		**$72,708**
8	Turner Av. & Chino Av.	Eastvale	None	None	Install a traffic signal	Same	Same	Same	Fair Share	No	$442,500	39.0%	$79,030
										Total:	**$442,500**		**$79,030**
12	Haven Av. & Riverside Dr.	Ontario	Add NB left turn lane	Same	Same	Same	Same	Same	Fair Share	No	$88,500	63.6%	$56,251
			Add 2nd NB through lane	Same	Same	Same	Same	Same	Fair Share	No	$318,600		$202,505
			Add 2nd EB through lane	Same	Same	Same	Same	Same	Fees	Yes (ST-019)	$0		$0
							Add NB right turn lane	Same	Fair Share	No	$88,500		$56,251
							Add 2nd SB through lane	Same	Fees	Yes (ST-014)	$0		$0
							Add 2nd EB left turn lane	Same	Fair Share	No	$88,500		$56,251
							Add 2nd WB left turn lane	Same	Fair Share	No	$88,500		$56,251
										Total:	**$672,600**		**$427,511**
13	Haven Av. & Chino Av.	Ontario	Add 2nd NB through lane	Same	Same	Same	Same	Same	Fees	Yes (ST-014)	$0	--	$0
			Add SB left turn lane	Same	Not Applicable	Same as E+P (Phase 1)	Not Applicable	Same as E+P (Phase 1)	Construct	No	$0		$0
			Add 2nd SB through lane	Same	Same	Same	Same	Same	Fees	Yes (ST-014)	$0		$0
			Add WB left turn lane	Same	Not Applicable	Same as E+P (Phase 1)	Not Applicable	Same as E+P (Phase 1)	Construct	No	$0		$0
			Add WB through lane	Same	Not Applicable	Same as E+P (Phase 1)	Not Applicable	Same as E+P (Phase 1)	Construct	No	$0		$0
										Total:	**$0**		**$0**
14	Haven Av. & Schaefer Av.	Ontario	None	Stripe the 2nd NB through lane	Same	Same	Same	Same	Construct	Yes (ST-014)	$0	--	$0
										Total:	**$0**		**$0**
15	Haven Av. & Ontario Ranch Rd.	Ontario	Add 2nd NB through lane	Same	Same	Same	Same	Same	Construct	No	$0	--	$0
			Add 2nd SB left turn lane	Same	Same	Same	Same	Same	Construct	No	$0		$0
			Add 2nd SB right turn lane	Same	Same	Same	Same	Same	Construct	No	$0		$0
			Stripe the 2nd EB left turn lane	Same	Same	Same	Same	Same	Construct	No	$0		$0
										Total:	**$0**		**$0**
17	Mill Creek Av. & Riverside Dr.	Ontario	None	None	None	None	Install a traffic signal	Same	Fair Share	No	$442,500	62.2%	$275,333
							Add 3rd EB through lane	Same	Fees	Yes (ST-006)	$0		$0
							Add 3rd WB through lane	Same	Fees	Yes (ST-006)	$0		$0
										Total:	**$442,500**		**$275,333**
22	Milliken Av. & Riverside Dr.	Ontario, Eastvale	Add 2nd NB left turn lane	Same	Same	Same	Same	Same	Construct	No	$0	44.3%	$0
					Add 2nd SB left turn lane lane	Same	Same	Same	Fair Share	No	$88,500		$39,200
							Add 2nd SB right turn lane	Same	Fair Share	No	$88,500		$39,200
										Total:	**$177,000**		**$78,400**
23	Hamner Av. & Chino Av.	Ontario, Eastvale	Install a traffic signal	Same	Same	Same	Same	Same	Construct	No	$0	--	$0
			Add 2nd SB through lane	Same	Same	Same	Same	Same	Construct	Yes (ST-017)	$0		$0
										Total:	**$0**		**$0**
24	Hamner Av. & Ontario Ranch Rd.	Ontario, Eastvale	Install a traffic signal	Same	Same	Same	Same	Same	Construct	No	$0	37.8%	$0
			Add 4th SB through lane	Same	Same	Same	Same	Same	Construct	Yes (ST-017)	$0		$0
			Add 2nd EB left turn lane	Same	Same	Same	Same	Same	Construct	No	$0		$0
			Add 4th WB through lane	Same	Same	Same	Same	Same	Construct	No	$0		$0
					Add 2nd SB right turn lane	Same	Same	Same	Fair Share	No	$88,500		$33,424
					Add EB right turn lane	Same	Same	Same	Fair Share	No	$88,500		$33,424
										Total:	**$177,000**		**$66,849**
										Total Cost for Improvements	$2,584,200		$1,091,779
										Total Project Fair Share Contribution to the City of Ontario (non-DIF/other)[6]		$1,012,749	
										Total Project Fair Share Contribution to the City of Eastvale[7]		$79,030	

[1] Improvements included in regional/City DIF programs have been identified as such.
[2] Program improvements constructed by project may be eligible for fee credit. In lieu fee payment is at the discretion of the City.
[3] Costs have been estimated using the data provided in Appendix "G" of the CMP (2003 Update) for preliminary construction costs with an application of 1.77 factor to adjust costs to 2022.
[4] Total project fair share contribution consists of the improvements which are not already included in a pre-existing fee program.
[5] Rough order of magnitude cost estimate.
[6] Total project fair share contribution consists of the improvements which are not already included in a fee program for those intersections wholly or partially within the City of Ontario.
[7] Total project fair share contribution consists of the improvements which are not already included in a fee program for those intersections wholly or partially within the City of Eastvale.

EXHIBIT 1-5: PROPOSED CHINO AVENUE IMPROVEMENTS



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2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with City of Ontario's Traffic Study Guidelines.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors, such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The 6th Edition Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (4) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Ontario requires signalized intersection operations analysis based on the methodology described in the HCM. (4) Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F

Source: HCM, 6th Edition

[1] If V/C is greater than 1.0 then LOS is F per HCM.

Consistent with Appendix B of the San Bernardino County CMP, the following saturation flow rates, in vehicles per hour green per lane (vphgpl), will be utilized in the traffic analysis for signalized intersections:

Existing, E+P, and Opening Year Cumulative Traffic Conditions:

- Exclusive through: 1800 vphgpl
- Exclusive left: 1700 vphgpl
- Exclusive right: 1800 vphgpl
- Exclusive dual left: 1600 vphgpl
- Exclusive triple left: 1500 vphgpl

Horizon Year Traffic Conditions:

- Exclusive through: 1900 vphgpl
- Exclusive left: 1800 vphgpl
- Exclusive right: 1900 vphgpl
- Exclusive dual left: 1700 vphgpl
- Exclusive triple left: 1600 vphgpl

The traffic modeling and signal timing optimization software package Synchro (Version 11) has been utilized to analyze signalized intersections. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (4)

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Ontario requires the operations of unsignalized intersections be evaluated using the methodology described in the HCM. (4) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection. For all-way stop controlled intersections, LOS is computed for the intersection as a whole (average delay).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Little or no delays.	0 to 10.00	A
Short traffic delays.	10.01 to 15.00	B
Average traffic delays.	15.01 to 25.00	C
Long traffic delays.	25.01 to 35.00	D
Very long traffic delays.	35.01 to 50.00	E
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F

Source: HCM, 6th Edition

[1] If V/C is greater than 1.0 then LOS is F per HCM.

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or determine the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the Caltrans California Manual on Uniform Traffic Control Devices (CA MUTCD). (5)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (5) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions and for all future analysis scenarios for existing unsignalized intersections. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics. For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection. Urban warrants have been used as posted speed limits on the major roadways with unsignalized intersections are 40 miles per hour or below and rural warrants have been used where speeds exceed 40 miles per hour.

Future intersections that do not currently exist have been assessed regarding the potential need for new traffic signals based on future average daily traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets. Similarly, the speed limit has been used as the basis for determining the use of Urban and Rural warrants.

Traffic signal warrant analyses were performed for the following study area intersection shown in Table 2-3:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

#	Intersection
1	Archibald Av. & SR-60 WB Ramps
13	Haven Av. & Chino Av.
19	Mill Creek Av. & Ontario Ranch Rd.
23	Hamner Av. & Chino Av.

Although unsignalized, the intersections of Twinkle Avenue & Chino Avenue (#16) and Mill Creek Avenue & Chino Avenue (#18) have not been evaluated for traffic signal warrants as these intersections are proposed for roundabouts.

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *E+P Traffic Conditions*, Section 6 *Opening Year Cumulative (2027) Conditions*, and Section 7 *Horizon Year (2050) Traffic Conditions* of this report. It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 QUEUING ANALYSIS

Consistent with Caltrans requirements, the 95th percentile queuing of vehicles has been assessed at the off-ramps to determine potential queuing deficiencies at the freeway ramp intersections at the SR-60 Freeway at the Archibald Avenue, Haven Avenue, and Milliken Avenue interchanges and at the I-15 Freeway at the Cantu Galleano Road interchange. Specifically, the off-ramp queuing analysis is utilized to identify any potential queuing and "spill back" onto the SR-60 and I-15 Freeway mainlines from the off-ramps.

The traffic progression analysis tool and HCM intersection analysis program, Synchro, has been used to assess the potential deficiencies/needs of the intersections with traffic added from the proposed Project. Storage (turn-pocket) length recommendations at the ramps have been based upon the 95th percentile queue resulting from the Synchro progression analysis. The footnote from the Synchro output sheets indicates if the 95th percentile cycle exceeds capacity. Traffic is simulated for two complete cycles of the 95th percentile traffic in Synchro in order to account for the effects of spillover between cycles. In practice, the 95th percentile queue shown will rarely be exceeded and the queues shown with the footnote are acceptable for the design of storage bays. The 95th percentile queue is derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed it is simply based on statistical calculations.

2.5 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

Minimum Acceptable LOS and associated definitions of intersection deficiencies has been obtained from each of the applicable surrounding jurisdictions.

2.5.1 CITY OF ONTARIO

Per the Ontario Plan's Policy M-1, the City of Ontario utilizes a minimum acceptable LOS of LOS E, where feasible. (6)

2.5.2 CITY OF EASTVALE

The City of Eastvale General Plan Policy C-10 sets a standard of LOS C with LOS D as acceptable in commercial and employment areas and at intersections of any combination of major highways, urban arterials, secondary highways, or freeway ramps. (7) Based on this criterion, where feasible, LOS D is the minimum acceptable LOS at each of the study intersections within the City of Eastvale.

2.5.3 CALTRANS

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway System facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. (8) If an existing State highway facility is operating at less than this target LOS, the existing LOS should be maintained. In general, the region-wide goal for an acceptable LOS on all freeways and intersections is LOS D. Consistent with the City of Ontario LOS threshold of LOS D and in excess of the City of Ontario stated LOS threshold of LOS E, LOS D will be used as the target LOS.

2.6 DEFICIENCY CRITERIA

To determine whether the addition of project traffic at a study intersection would result in a traffic deficiency, the following will be utilized:

- When the Without Project condition is at or better than LOS D (or LOS E for CMP intersections and intersections located in the City of Ontario) (i.e., acceptable LOS), and project-generated traffic causes deterioration below LOS D/LOS E (i.e., unacceptable LOS), a deficiency is deemed to occur.

When the Without Project condition is already below LOS D/LOS E (i.e., unacceptable LOS), the Project will be responsible for improving its deficiency to acceptable levels of service. Thus, for intersections operating at unacceptable LOS during either the AM and/or PM peak hour, improvements have been identified to improve the deficiencies of the Project to an intersection LOS that is equal to or better than Without Project conditions (see Table 2-4).

The Project's contribution to a deficiency can be reduced if the Project is required to implement or fund its fair share of improvements designed to alleviate its contribution to the deficient condition.

TABLE 2-4: DEFICIENCY CRITERIA

Without Project Level of Service	Level of Service	Deficient?	Improvement Required?
City of Ontario			
A	A-D	No	No
B	B-D	No	No
C	C-D	No	No
D	D-E	No	No
E	E	No	No
A-E	F	Yes	Yes, bring LOS to E or better
F	F	Yes	Yes, bring LOS to E or better
City of Eastvale			
A	A-D	No	No
B	B-D	No	No
C	C-D	No	No
D	D	No	No
A-D	E or F	Yes	Yes, bring LOS to D or better
E	E	Yes	Yes, bring LOS to D or better
E	F	Yes	Yes, bring LOS to D or better
F	F	Yes	Yes, bring LOS to D or better

In the event that an intersection is operating at or is forecast to operate at a deficient LOS, the CMP guidelines have defined a series of steps to be completed to determine the Project's contribution to the deficiency of intersections, which has been applied to both CMP and non-CMP study area intersections. The steps are as follows:

- Determine the improvements necessary to achieve an acceptable service level,
- Calculate the Project's share in the future traffic volume projections for the peak hours,
- Estimate the cost to implement recommended improvements, and
- Calculate the Project's fair-share contribution to improve the Project's traffic deficiencies

2.7 PROJECT FAIR SHARE CALCULATION METHODOLOGY

In cases where this TA identifies that the Project would contribute additional traffic volumes to traffic deficiencies, Project fair share costs of improvements necessary to address deficiencies have been identified. The Project's fair share cost of improvements is determined based on the following equation, which is the ratio of Project traffic to new traffic, and new traffic is total future (Opening Year) traffic less existing baseline traffic:

Project Fair Share % = Project (Project Buildout) AM/PM Traffic / (2050 With Project AM/PM Total Traffic – Existing AM/PM Traffic)

The project fair share percentage has been calculated for both the AM peak hour and PM peak hour and the highest of the two has been selected. The Project fair share contribution calculations are presented in Section 8 *Local and Regional Funding Mechanisms* of this TA. The cost of implementing the improvements shown in Table 1-3 have been estimated based on the preliminary construction cost estimates found in Appendix G of the San Bernardino County CMP in conjunction with a total cost escalation factor of 1.77 to more closely approximate current (2022) costs. These cost estimates have been utilized in conjunction with the Project fair share percentages to determine the Project's fair share cost of the recommended improvements (see Table 7-2). These estimates are a rough order of magnitude only as they are intended only for discussion purposes and do not imply any legal responsibility or formula for contributions or physical improvements. If any analyzed intersections and roadway improvements fall outside of the jurisdiction of the City, the City does not have the authority to construct or demand the construction of such improvements. For this reason, the payment of fair share fees for the improvements identified in Table 1-3 is considered infeasible and therefore results in a significant and unavoidable impact for those locations outside of the City.

3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Ontario General Plan Circulation Network, and a review of existing peak hour intersection operations, traffic signal warrant, and off-ramp queuing analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Ontario staff (Appendix 1.1), the study area includes a total of 27 existing and future intersections as shown previously on Exhibit 1-3. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF ONTARIO GENERAL PLAN CIRCULATION ELEMENT

The 2050 Ontario Plan circulation element is shown on Exhibit 3-2. The study area roadways that are classified as 8-lane Other Principal Arterials are identified as having four lanes of travel in each direction. The following study area roadways within the City of Ontario are classified as 8-lane Other Principal Arterials:

- Hamner Avenue from the SR-60 Freeway to Bellegrave Avenue
- Edison Avenue

The study area roadways that are classified as 6-lane Other Principal Arterials are identified as having three lanes of travel in each direction and a 14-foot curbed or painted median. The following study area roadways within the City of Ontario are classified as 6-lane Other Principal Arterials:

- Archibald Avenue
- Haven Avenue, between Riverside Drive and SR-60 Freeway
- Vineyard Avenue

The study area roadways that are classified as 4-lane Other Principal Arterials are identified as having two lanes of travel in each direction. The following study area roadways within the City of Ontario are classified as 4-lane Other Principal Arterials:

- Haven Avenue, south of Riverside Drive

The study area roadway that is classified as a 6-lane Minor Arterial is identified as having three lanes of travel in each direction. The following study area roadway within the City of Ontario is classified as a 6-lane Minor Arterial:

- Riverside Drive

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 1 OF 2)

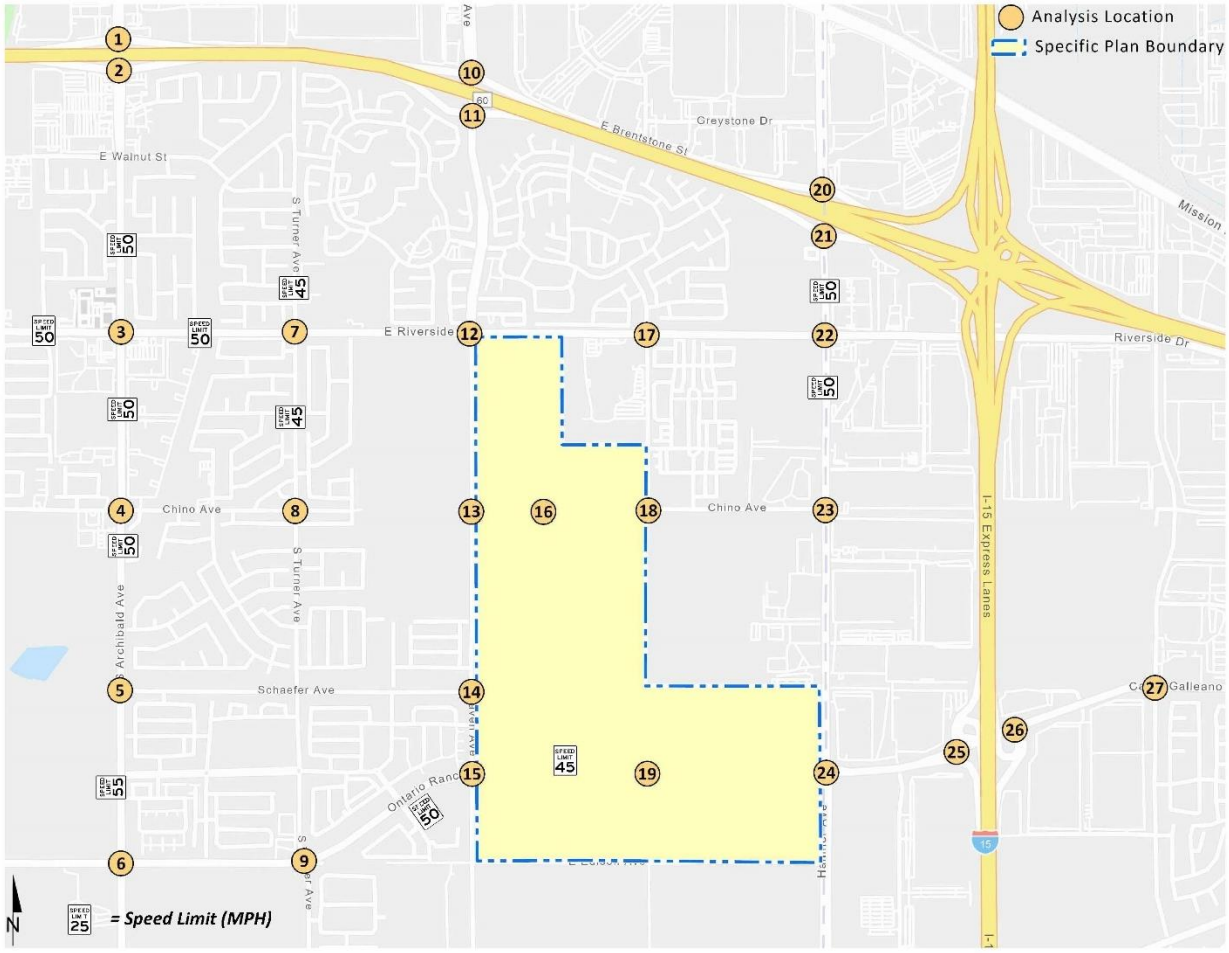


EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 2 OF 2

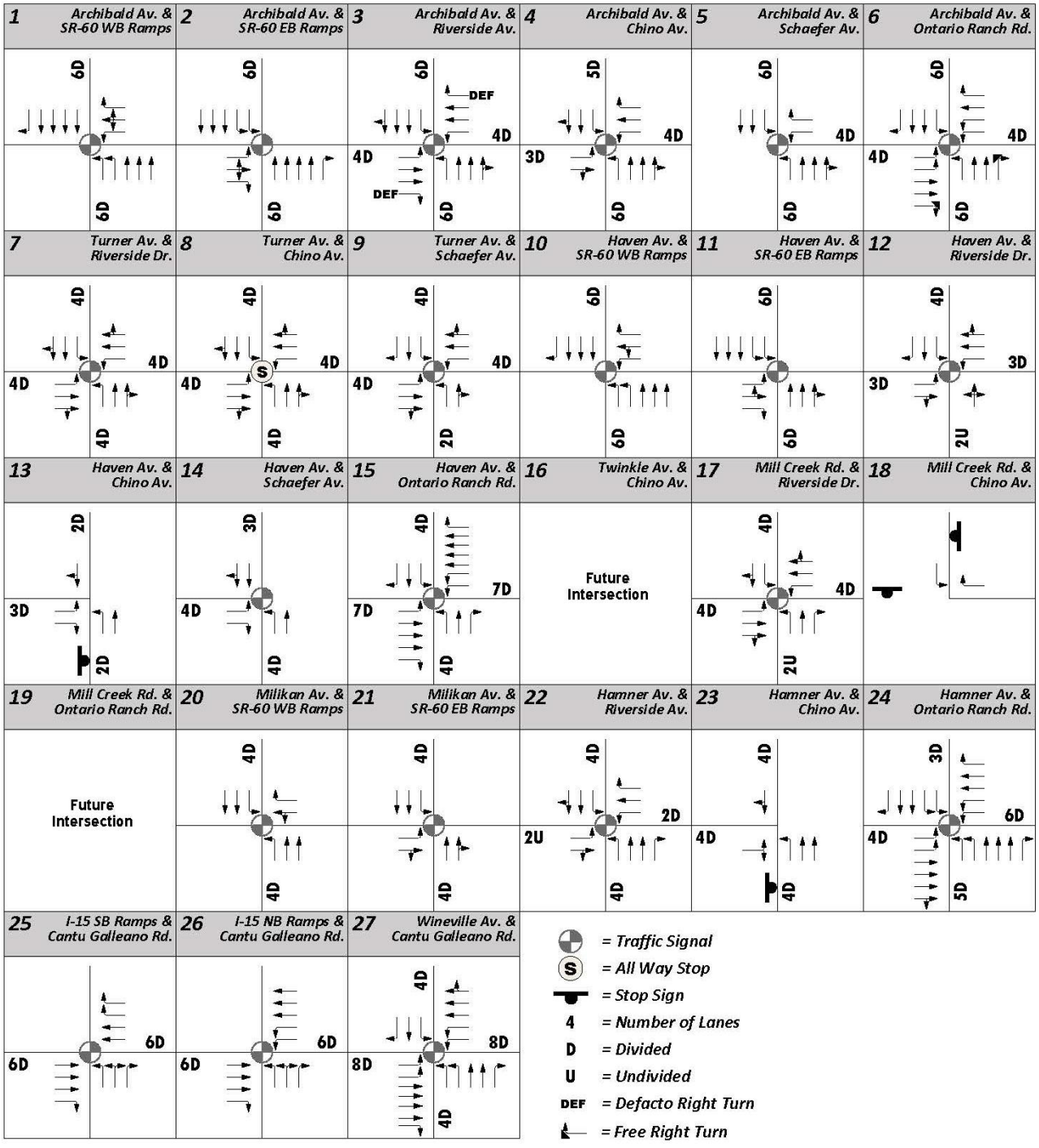
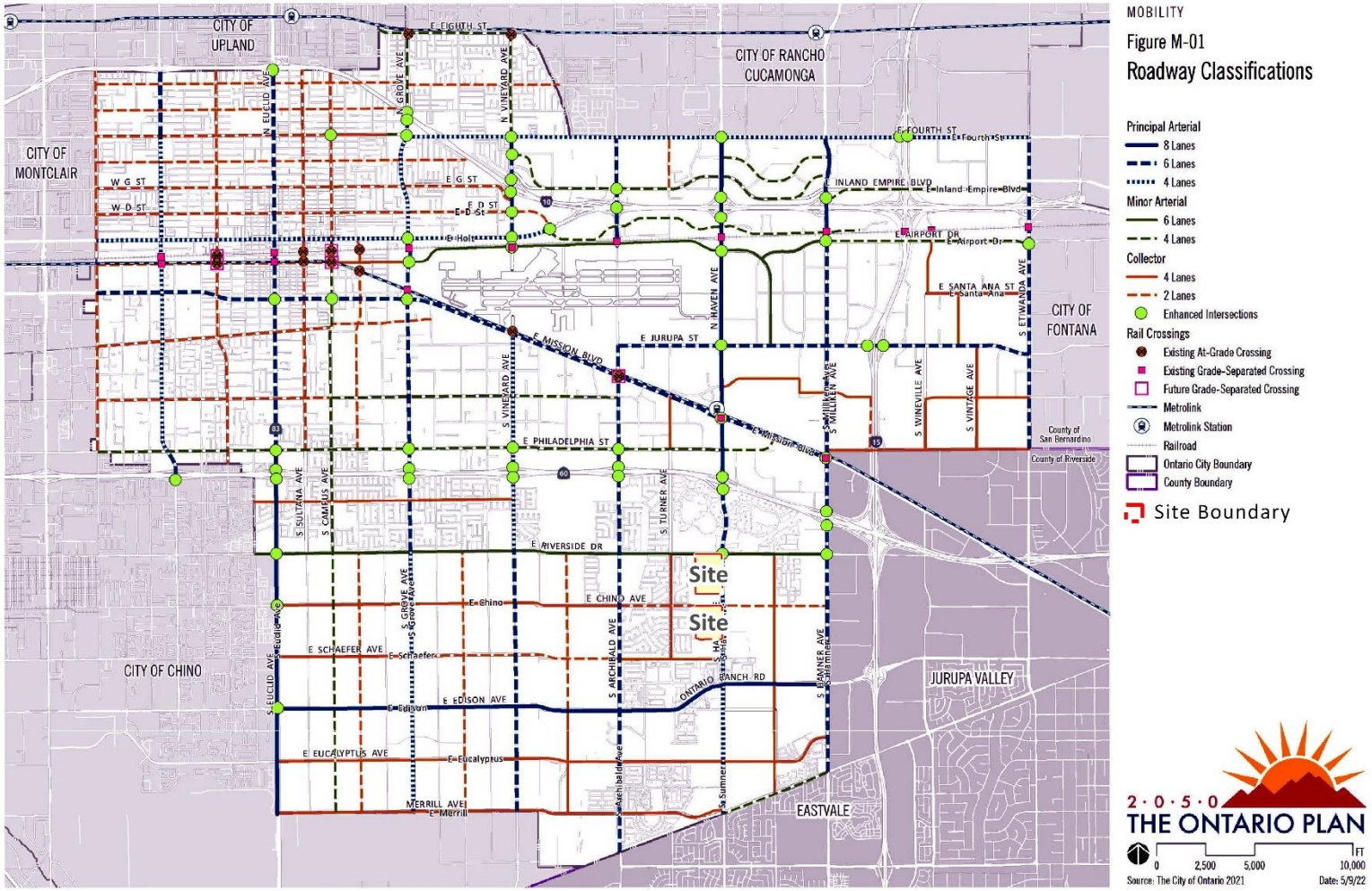


EXHIBIT 3-2: CITY OF ONTARIO 2050 GENERAL PLAN CIRCULATION ELEMENT



The study area roadways that are classified as Collector Streets are identified as having two to four lanes of travel in each direction. The following study area roadways within the City of Ontario are classified as Collector Streets:

- Chino Avenue
- Schaefer Avenue
- Eucalyptus Avenue
- Merrill Avenue
- Turner Avenue
- Mill Creek Avenue

3.3 CITY OF EASTVALE GENERAL PLAN CIRCULATION ELEMENT

Exhibit 3-3 shows the City of Eastvale General Plan Circulation Element and Exhibit 3-4 shows the City of Eastvale General Plan roadway cross-sections.

3.4 BICYCLE & PEDESTRIAN FACILITIES

Exhibit 3-5 illustrates the 2050 Ontario Plan bicycle facilities. Existing pedestrian facilities within the study area are shown on Exhibit 3-6. As shown on Exhibit 3-6, there are limited pedestrian facilities in the vicinity of the Project site. Field observations and traffic counts conducted in August 2022 indicate light pedestrian and bicycle activity within the study area.

3.5 TRANSIT SERVICE

Exhibit 3-7 shows the 2050 Ontario Plan transit facilities. The study area within the City of Ontario is currently served by Omnitrans, a public transit agency serving various jurisdictions within San Bernardino County. Exhibit 3-8 shows the existing transit facilities, which indicates that Omnitrans Route 87 could potentially serve the Project site. Transit service is reviewed and updated by Omnitrans periodically to address ridership, budget, and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. As such, it is recommended that the applicant work in conjunction with Omnitrans to potentially provide bus service to the site.

3.6 EXISTING (2022) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in May 2022. The following peak hours were selected for analysis:

- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

EXHIBIT 3-3: CITY OF EASTVALE CIRCULATION ELEMENT

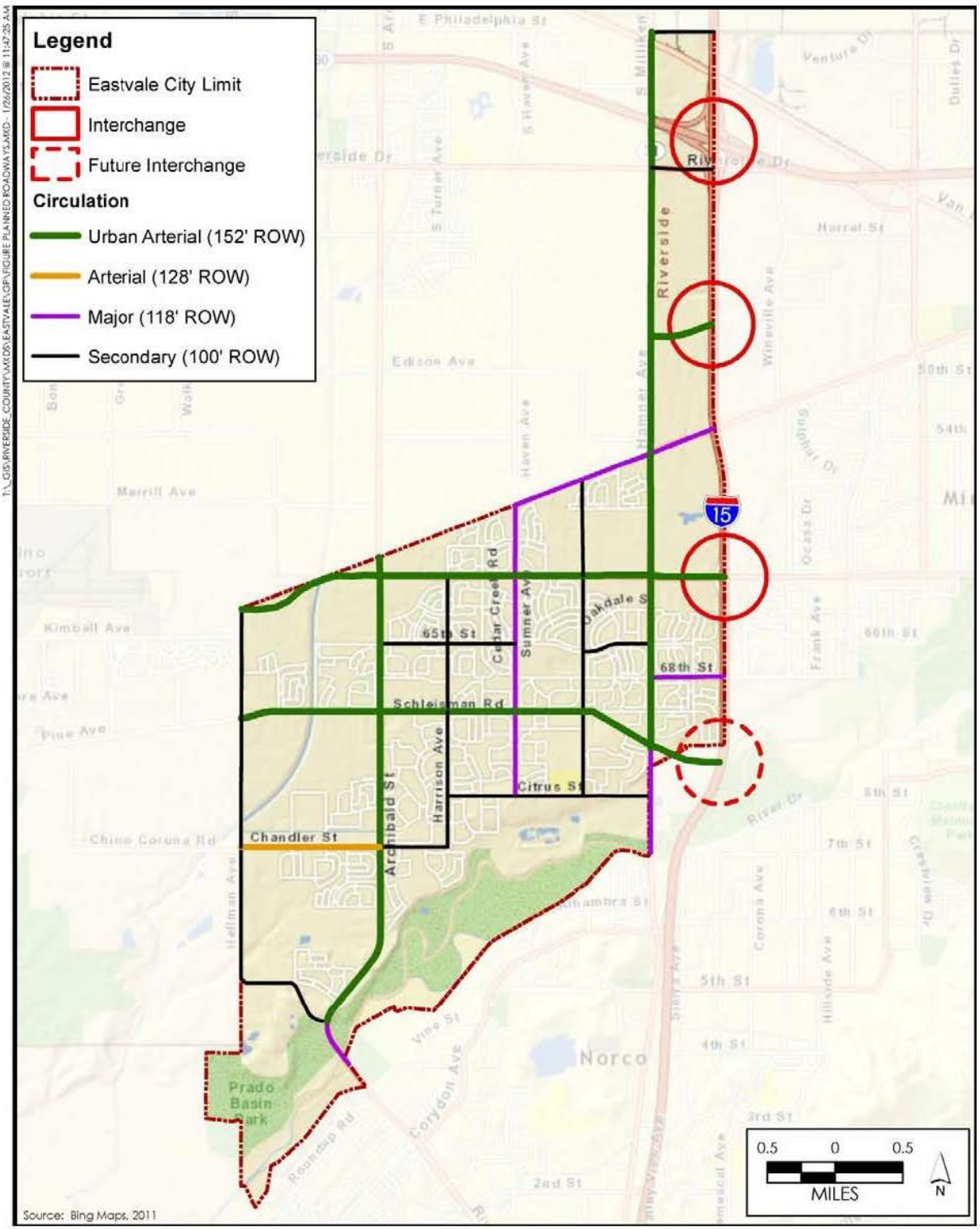
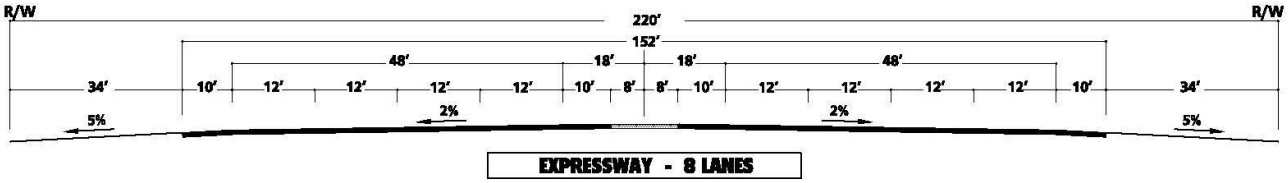
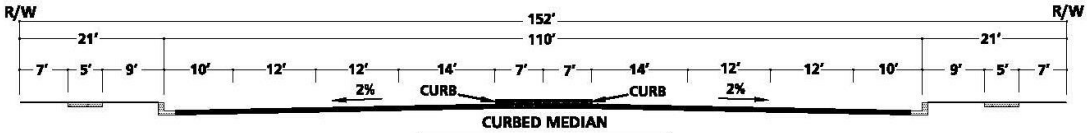


EXHIBIT 3-4: CITY OF EASTVALE GENERAL ROADWAY PLAN CROSS-SECTIONS

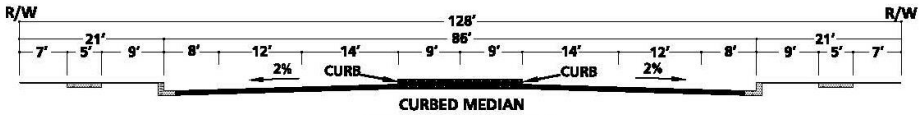


EXPRESSWAY - 8 LANES



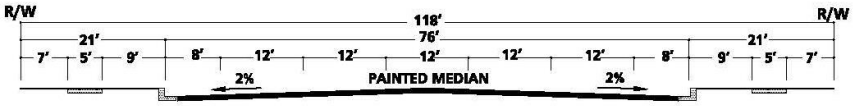
CURBED MEDIAN

URBAN ARTERIAL HIGHWAY *

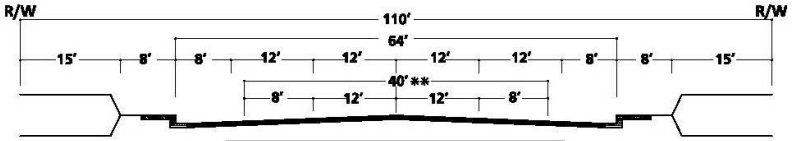


CURBED MEDIAN

ARTERIAL HIGHWAY *

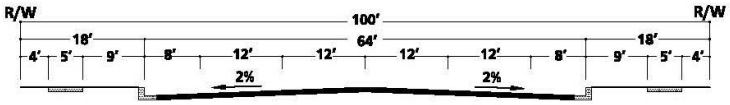


MAJOR HIGHWAY - 4 LANES

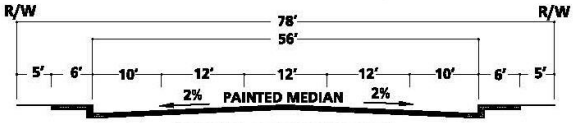


MOUNTAIN ARTERIAL - 2 TO 4 LANES

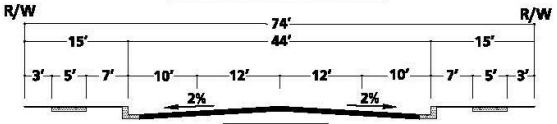
** 2 LANE SECTION



SECONDARY HIGHWAY



INDUSTRIAL COLLECTOR



COLLECTOR

* IMPROVEMENTS MAY BE RECONFIGURED TO ACCOMMODATE EXCLUSIVE TRANSIT LANES OR ALTERNATIVE LANE ARRANGEMENTS ADDITIONAL RIGHT OF WAY MAY BE REQUIRED AT INTERSECTIONS TO ACCOMMODATE ULTIMATE IMPROVEMENTS FOR STATE HIGHWAYS SHALL CONFORM TO CALTRANS DESIGN STANDARDS.

NOT TO SCALE

EXHIBIT 3-5: CITY OF ONTARIO 2050 BICYCLE FACILITIES

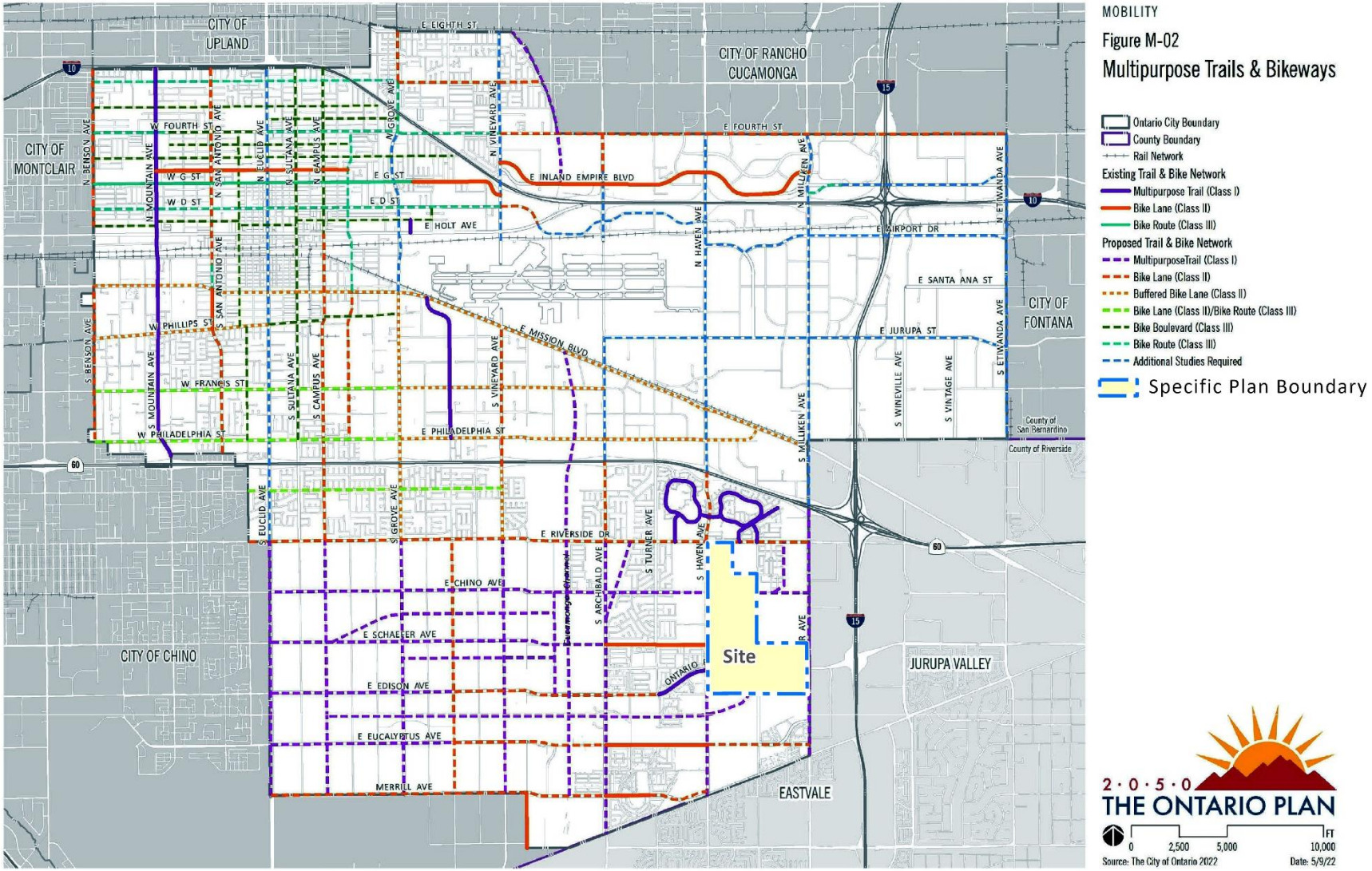


EXHIBIT 3-6: EXISTING PEDESTRIAN FACILITIES

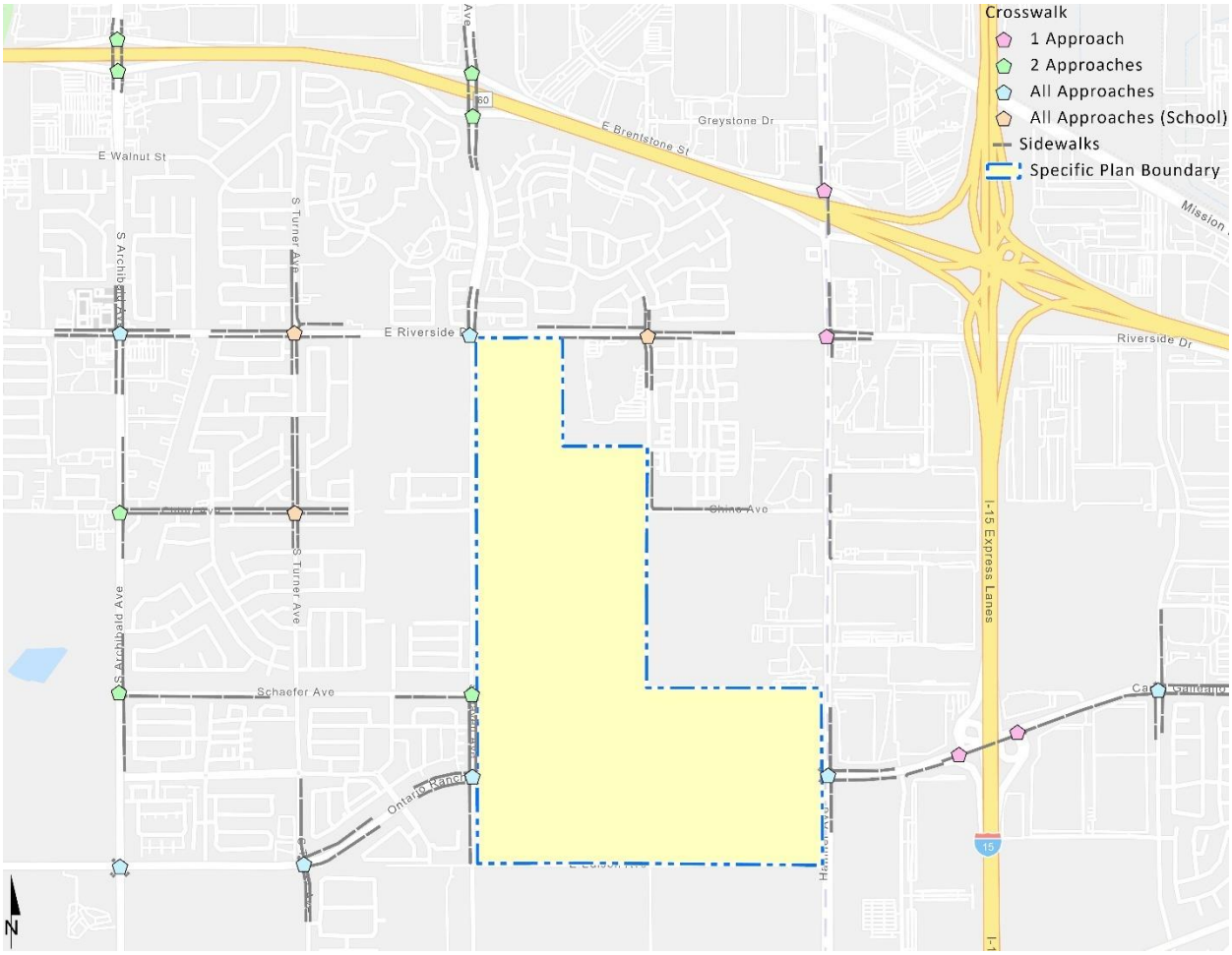


EXHIBIT 3-7: CITY OF ONTARIO 2050 GENERAL PLAN TRANSIT ROUTES

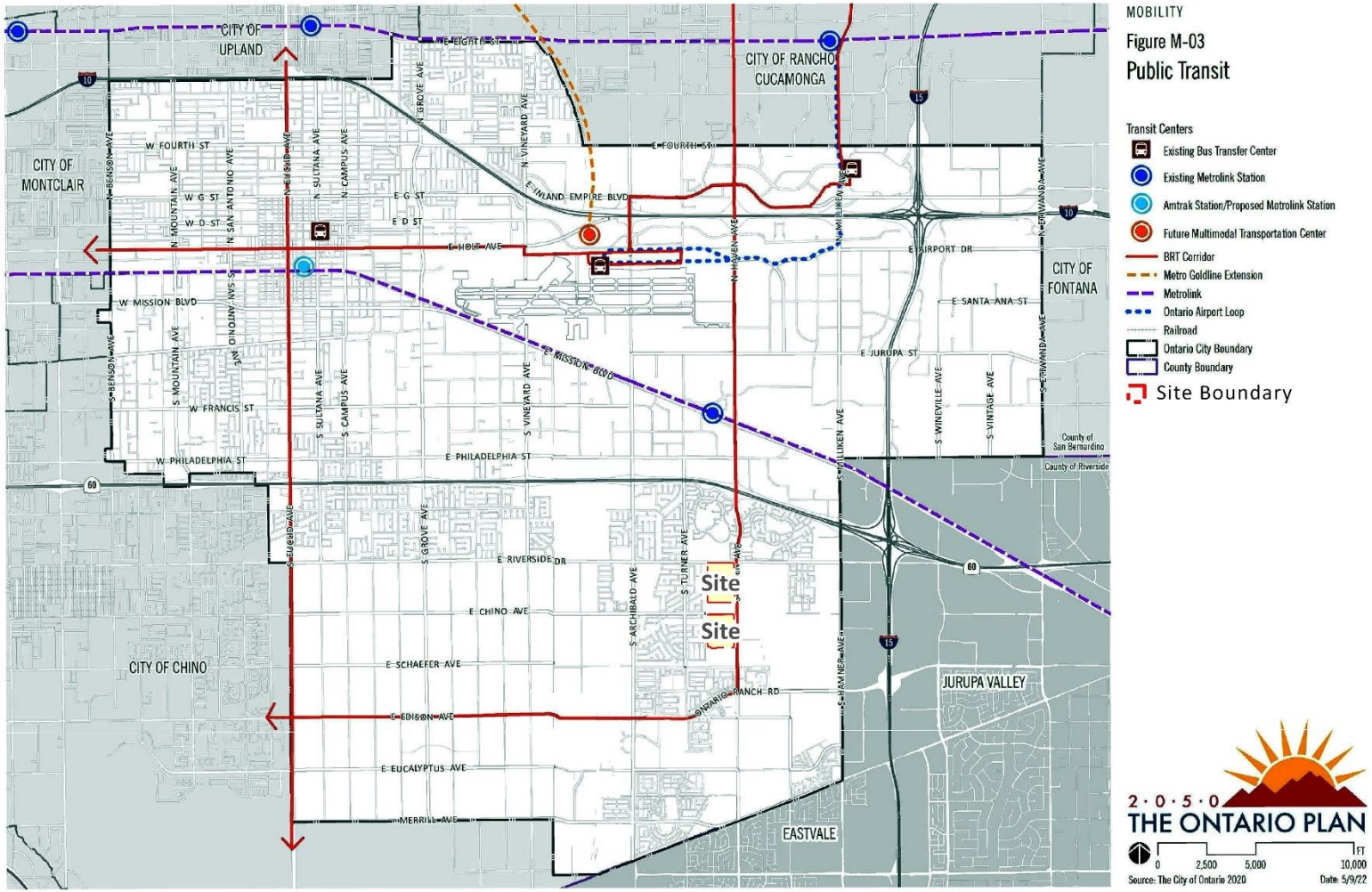
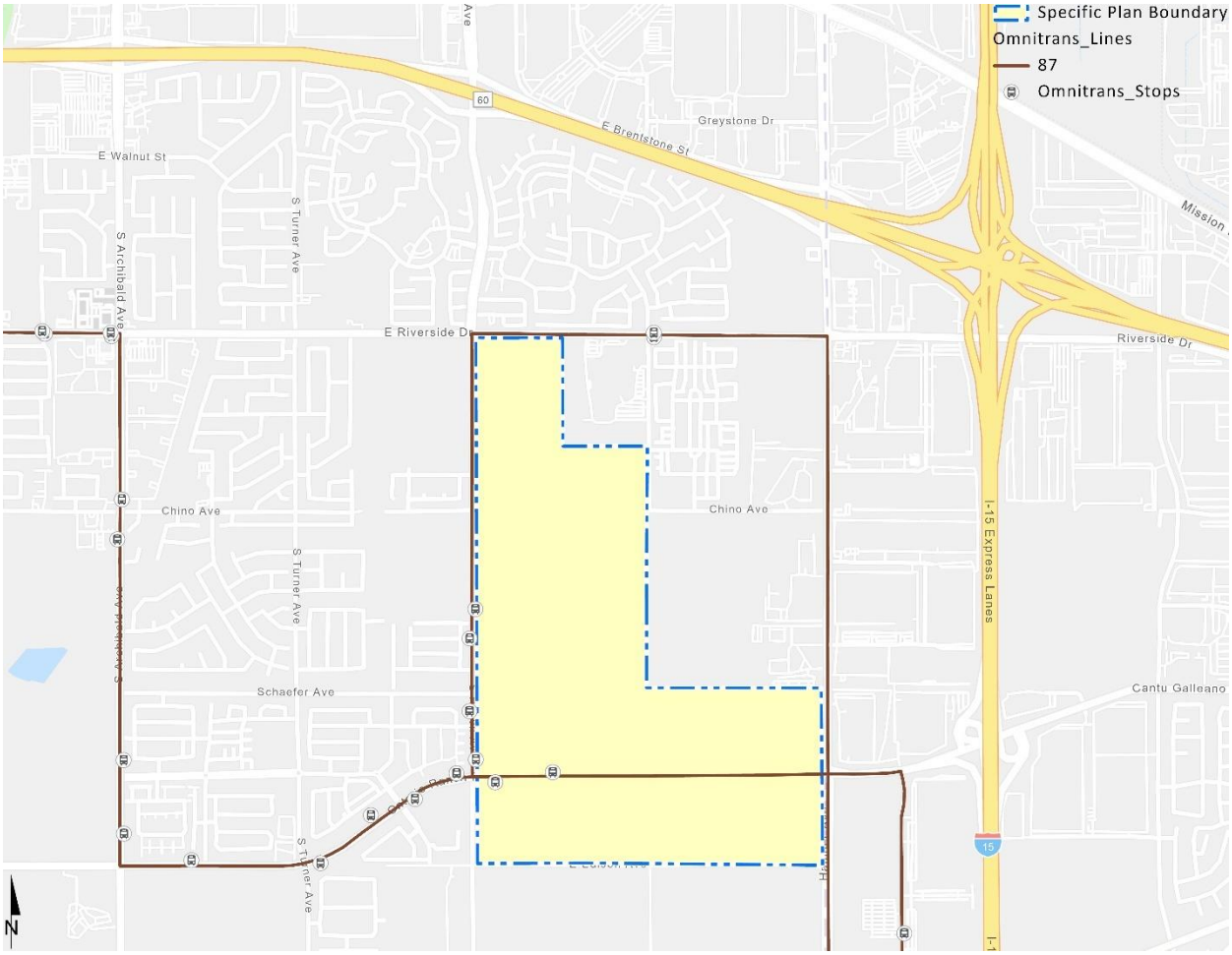


EXHIBIT 3-8: EXISTING TRANSIT FACILITIES



The 2022 weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules. As such, no additional adjustments were made to the traffic counts to establish the baseline condition. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

Existing weekday ADT volumes are shown on Exhibit 3-11. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 12.65 = Leg Volume

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 7.91 percent. As such, the above equation utilizing a factor of 12.65 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of 7.91 percent (i.e., 1/0.0791 = 12.65) and was assumed to sufficiently estimate average daily traffic (ADT) volumes for planning-level analyses. Existing weekday and weekend peak hour intersection volumes are also shown on Exhibit 3-9.

3.7 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1, which indicates that the following study area intersection is currently operating at an unacceptable LOS during the peak hours:

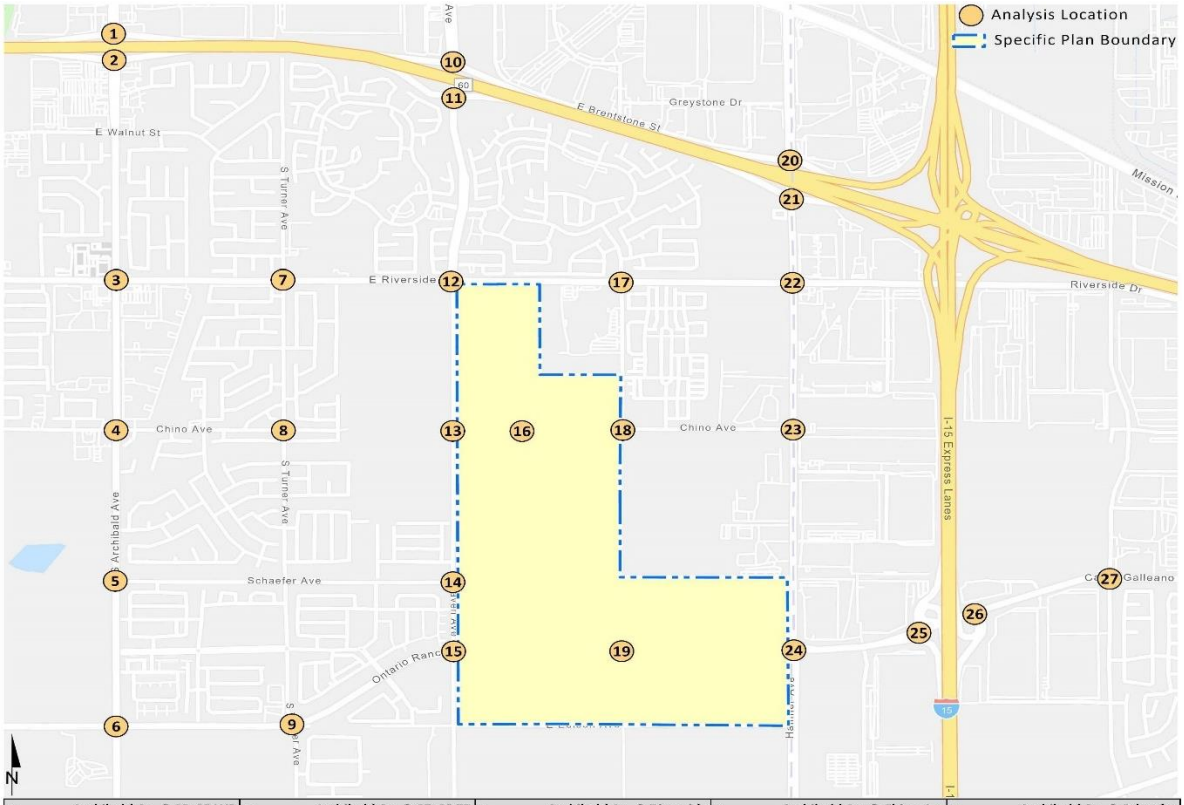
- Haven Avenue & Riverside Drive (#13) – LOS F AM peak hour only

The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

3.8 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The intersection of Turner Avenue & Chino Avenue (#8) currently meets a traffic signal warrant under Existing (2022) traffic conditions. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

EXHIBIT 3-9: EXISTING (2022) TRAFFIC VOLUMES (PAGE 1 OF 2)



1 Archibald Av. & SR-60 WB Ramps

24,400		6,050
↲ 95(266) ← 328(1091)		↱ 385(151) ← 7(1) ↰ 270(316)
	↳ 719(461) ↑ 839(381)	
9,400		29,050

2 Archibald Av. & SR-60 EB Ramps

29,050		11,700
← 502(954) ↳ 101(453)		
273(65) → 4(1) → 380(391) ↲	↑ 1271(779) ↱ 417(453)	
5,900		33,250

3 Archibald Av. & Riverside Dr.

27,350		18,150
↲ 164(193) ← 413(677) ↳ 160(238)		↱ 207(133) ← 434(362) ↰ 85(112)
132(159) → 314(493) → 125(271) ↲	↳ 255(226) ↑ 1082(719) ↱ 75(67)	
22,000		26,750

4 Archibald Av. & Chino Av.

25,250		5,400
↲ 47(46) ← 494(802) ↳ 48(68)		↱ 167(55) ← 96(49) ↰ 79(9)
65(136) → 66(220) → 43(120) ↲	↳ 143(85) ↑ 1061(848) ↱ 85(18)	
8,450		24,300

5 Archibald Av. & Schaefer Av.

23,800		1,000
← 636(902) ↳ 42(44)		↱ 61(15) ↰ 26(9)
	↳ 1128(883) ↱ 19(11)	
23,300		

6 Archibald Av. & Ontario Ranch Rd.

21,900		16,300
↲ 45(38) ← 431(670) ↳ 75(140)		↱ 98(99) ← 258(139) ↰ 176(176)
21(77) → 99(458) → 60(253) ↲	↳ 161(87) ↑ 937(673) ↱ 198(249)	
13,600		27,200

7 Turner Av. & Riverside Dr.

3,550		16,800
↲ 109(53) ← 159(36) ↳ 110(21)		↱ 128(34) ← 430(546) ↰ 83(113)
114(86) → 340(458) → 109(182) ↲	↳ 236(133) ↑ 207(44) ↱ 218(128)	
18,800		8,200

8 Turner Av. & Chino Av.

6,150		2,450
↲ 73(41) ← 182(184) ↳ 33(13)		↱ 75(29) ← 96(41) ↰ 11(11)
96(92) → 58(89) → 96(53) ↲	↳ 129(18) ↑ 396(119) ↱ 15(8)	
4,300		5,050

9 Turner Av. & Ontario Ranch Rd.

1,600		18,450
↲ 19(8) ← 63(25) ↳ 51(41)		↱ 24(24) ← 538(476) ↰ 31(54)
31(16) → 331(809) → 15(43) ↲	↳ 33(16) ↑ 128(11) ↱ 34(27)	
17,650		2,250

10 Haven Av. & SR-60 WB Ramps

40,250		9,750
← 301(594) ↳ 656(1314)		↱ 617(491) ← 3(9) ↰ 162(257)
	↳ 297(141) ↑ 297(141)	
9,600		31,350

11 Haven Av. & SR-60 EB Ramps

31,650		9,500
← 599(1030) ↳ 241(560)		
602(260) → 3(1) → 163(209) ↲	↑ 1002(600) ↱ 313(175)	
6,050		26,000

12 Haven Av. & Riverside Dr.

18,550		10,950
↲ 223(330) ← 174(338) ↳ 260(119)		↱ 175(77) ← 336(260) ↰ 99(51)
311(276) → 433(290) → 25(46) ↲	↳ 17(28) ↑ 283(295) ↱ 89(50)	
15,900		10,450

13 Haven Av. & Chino Av.

9,900		
↲ 37(27) ← 197(419)		
49(38) → 64(67) ↲	↳ 143(68) ↑ 364(305)	
2,550		11,100

14 Haven Av. & Schaefer Av.

11,050		
↲ 21(20) ← 259(462)		
38(21) → 74(76) ↲	↳ 95(114) ↑ 440(354)	
3,000		13,000

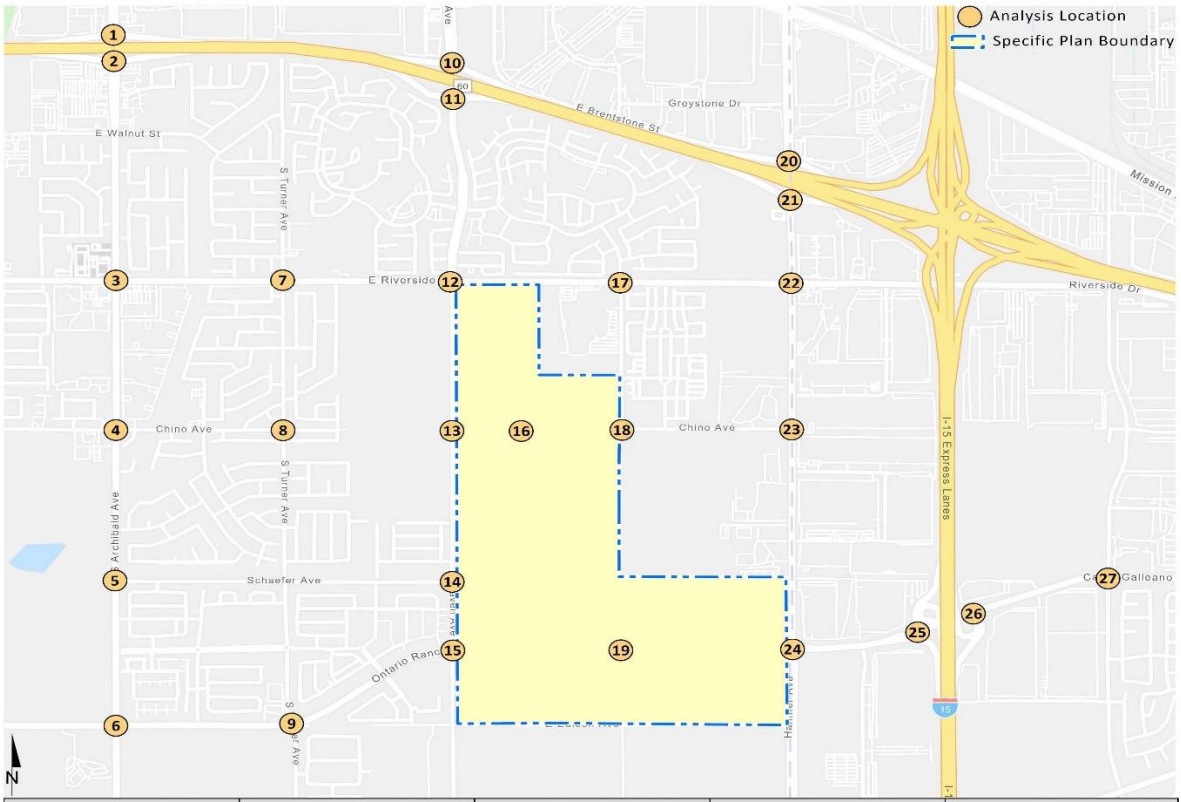
15 Haven Av. & Ontario Ranch Rd.

13,500		23,750
↲ 48(46) ← 176(302) ↳ 187(192)		↱ 138(188) ← 396(494) ↰ 69(216)
99(141) → 432(685) → 17(34) ↲	↳ 31(17) ↑ 275(176) ↱ 109(65)	
18,300		10,450

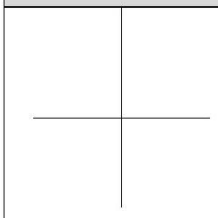
##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

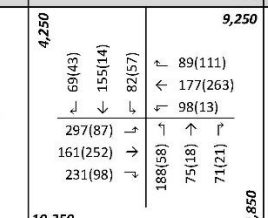
EXHIBIT 3-9: EXISTING (2022) TRAFFIC VOLUMES (PAGE 2 OF 2)



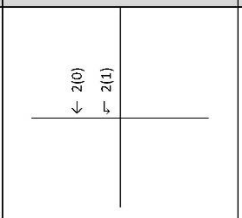
16 Twinkle Av. & Chino Av.



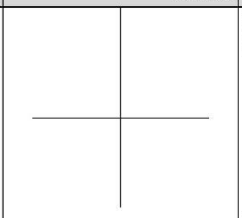
17 Mill Creek Av. & Riverside Dr.



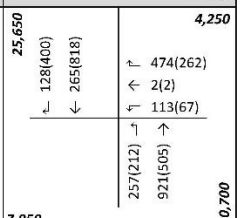
18 Mill Creek Av. & Chino Av.



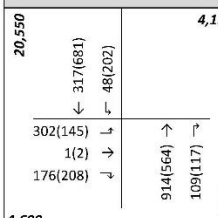
19 Mill Creek Av. & Ontario Ranch Rd.



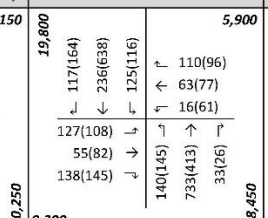
20 Milliken Av. & SR-60 WB Ramps



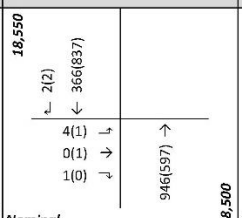
21 Milliken Av. & SR-60 EB Ramps



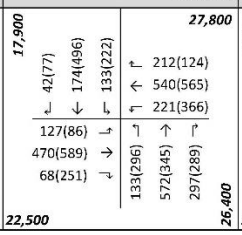
22 Milliken Av. & Riverside Dr.



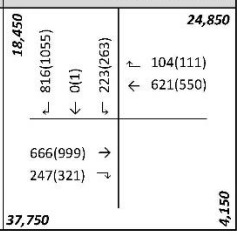
23 Hamner Av. & Chino Av.



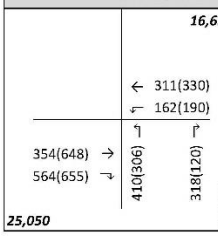
24 Hamner Av. & Ontario Ranch Rd.



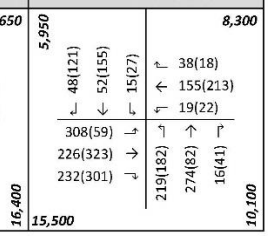
25 I-15 SB Ramps & Cantu Galleano Ranch Rd.



26 I-15 NB Ramps & Cantu Galleano Ranch Rd.



27 Wineville Av. & Cantu Galleano Ranch Rd.



##(##) AM(PM) Peak Hour Intersection Volumes

***Average Daily Trips***

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2022) CONDITIONS

#	Intersection	Traffic Control[2]	Delay[1] (secs.) AM	Delay[1] (secs.) PM	Level of Service AM	Level of Service PM	Acceptable LOS
1	Archibald Av. & SR-60 WB Ramps	TS	18.5	28.9	B	C	D
2	Archibald Av. & SR-60 EB Ramps	TS	14.9	13.9	B	B	D
3	Archibald Av. & Riverside Dr.	TS	39.2	34.8	D	C	E
4	Archibald Av. & Chino Av.	TS	20.3	23.7	C	C	E
5	Archibald Av. & Schaefer Av.	TS	10.6	5.9	B	A	E
6	Archibald Av. & Ontario Ranch Rd.	TS	30.6	28.6	C	C	E
7	Turner Av. & Riverside Dr.	TS	33.2	22.5	C	C	E
8	Turner Av. & Chino Av.	AWS	27.3	10.0	D	A	E
9	Turner Av. & Ontario Ranch Rd.	TS	16.3	13.3	B	B	E
10	Haven Av. & SR-60 WB Ramps	TS	14.4	11.2	B	B	D
11	Haven Av. & SR-60 EB Ramps	TS	22.7	17.2	C	B	D
12	Haven Av. & Riverside Dr.	TS	**106.4**	**82.4**	**F**	**F**	E
13	Haven Av. & Chino Av.	CSS	12.7	13.1	B	B	E
14	Haven Av. & Schaefer Av.	TS	9.0	9.4	A	A	E
15	Haven Av. & Ontario Ranch Rd.	TS	32.1	45.0	C	D	E
16	Twinkle Av. & Chino Av.		Future Intersection				E
17	Mill Creek Av. & Riverside Dr.	TS	40.9	21.2	D	C	E
18	Mill Creek Av. & Chino Av.	AWS	7.1	7.2	A	A	E
19	Mill Creek Av. & Ontario Ranch Rd.		Future Intersection				E
20	Milliken Av. & SR-60 WB Ramps	TS	18.6	16.1	B	B	D
21	Milliken Av. & SR-60 EB Ramps	TS	22.4	16.5	C	B	D
22	Milliken Av. & Riverside Dr.	TS	50.7	27.1	D	C	D
23	Hamner Av. & Chino Av.	CSS	13.1	16.3	B	C	D
24	Hamner Av. & Ontario Ranch Rd.	TS	22.6	29.6	C	C	D
25	I-15 SB Ramps & Cantu Galleano Ranch Rd.	TS	26.8	24.3	C	C	D
26	I-15 NB Ramps & Cantu Galleano Ranch Rd.	TS	18.1	18.1	B	B	D
27	Wineville Av. & Cantu Galleano Ranch Rd.	TS	17.8	17.8	B	B	D

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

2 TS = Traffic Signal; AWS = All-way Stop; CSS = Cross-street Stop

3.9 OFF-RAMP QUEUING ANALYSIS

A queuing analysis was performed for the off-ramps at the SR-60 Freeway at the Archibald Avenue and Haven Avenue interchanges to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the SR-60 Freeway mainline. Queuing analysis findings are presented in Table 3-2. It is important to note that off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. As shown in Table 3-2, there are no movements that are currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Worksheets for Existing (2022) traffic conditions off-ramp queuing analysis are provided in Appendix 3.4.

TABLE 3-2: PEAK HOUR OFF-RAMP QUEUING SUMMARY FOR EXISTING (2022) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)[3]		Acceptable? [1]	
			AM Peak Hour	PM Peak Hour	AM	PM
Archibald Av. & SR-60 WB Ramps	WBL	365	308 [2]	190	Yes	Yes
	WBL/T/R	1,285	178 [2]	193	Yes	Yes
	WBR	365	131	53	Yes	Yes
Archibald Av. & SR-60 EB Ramps	EBL	325	228	101	Yes	Yes
	EBL/T/R	1,265	160	132	Yes	Yes
	EBR	325	74	123	Yes	Yes
Haven Av. & SR-60 WB Ramps	WBL	240	52	141	Yes	Yes
	WBL/T	1,370	256	140	Yes	Yes
	WBR	240	0	0	Yes	Yes
Haven Av. & SR-60 EB Ramps	EBL	1,400	302 [2]	163	Yes	Yes
	EBL/T	660	307 [2]	165	Yes	Yes
	EBR	285	42	120	Yes	Yes
Milliken Av. & SR-60 WB Ramps	WBL	215	95	83	Yes	Yes
	WBR	1,490	439 [2]	118	Yes	Yes
Milliken Av. & SR-60 EB Ramps	EBL	1,415	361 [2]	212	Yes	Yes
	EBR	1,165	120	167	Yes	Yes
I-15 NB Ramps & Cantu Galleano Ranch Rd.	SBL	1,435	244	154	Yes	Yes
	SBL/R	550	126	517	Yes	Yes
	SBR	455	89	466 [3]	Yes	Yes
Wineville Av. & Cantu Galleano Ranch Rd.	NBL	1,615	268	188	Yes	Yes
	NBL/R	585	74	61	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.
[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-15Freeway mainline.

4 PROJECTED FUTURE TRAFFIC

This section presents the traffic volumes estimated to be generated by the Project, as well as the Project's trip assignment onto the study area roadway network. A preliminary land use plan for the proposed Project is shown previously on Exhibit 1-2. The proposed Project is to consist of 7,194 single family and multifamily residential dwelling units, 27.0 acres of public park, 2,780,000 square feet of industrial uses, and 772,500 square feet of retail/office uses. Table 4-1 provides a summary of the proposed land uses and Planning Areas. Note that portions of Planning Areas 3A and 4A have already been developed (currently existing). Planning Areas 2, 3, 4A, 5C, 6, 10, and portions of 7, 8, and 9 are anticipated to be developed as part of the first phase with an anticipated Opening Year of 2024. Project Buildout is anticipated in Year 2027. Access to the proposed Project would be provided to the surrounding roadways of Riverside Drive to the north, Haven Avenue to the west, Ontario Ranch Road to the south, and Mill Creek Avenue to the east. Chino Avenue is also an east-west roadway that runs through the Project.

Regional access to the Project site is available from the SR-60 Freeway via Archibald Avenue, Haven Avenue, and Milliken Avenue interchanges and the I-15 Freeway via Cantu Galleano Road. Exhibit 1-3 depicts the location of the proposed Project in relation to the existing roadway network and the study area intersections.

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development. Trip generation rates for the proposed Project are provided in Appendix 4.1.

4.1.1 CURRENTLY APPROVED

Trip generation for the currently approved land uses are shown in Table 4-2 as evaluated in the Traffic Impact Analysis Report Rich Haven Specific Plan PA 1 & PA 7 Amendment (dated January 2021, prepared by LLG Engineers). The currently approved Specific Plan land uses include 7,194 single family detached and multifamily residential dwelling units, 27.0 acres of public park, 1,183,525 square feet of industrial uses and 990,902 square feet of retail/office uses. As shown in Table 4-2, the currently approved uses generate a total of 91,993 trip-ends per day with 6,372 AM peak hour trips and 8,772 PM peak hour trips.

TABLE 4-1: PROPOSED LAND USE SUMMARY

PA	Land Use	Quantity	Unit[1]
1A	Single Family Residential (0-5 DU/Ac)	128	DU
1B	Single Family Residential (5.1-12 DU/Ac)	94	DU
1B	Multifamily Residential (12.1-25 DU/Ac)	200	DU
1C	Single Family Residential (5.1-12 DU/Ac)	231	DU
1C	Multifamily Residential (12.1-25 DU/Ac)	800	DU
	Open Space (Edison Easement)	20.0	AC
	Public Park	27.0	AC
2B	Multifamily Residential (12.1-25 DU/Ac)	190	DU
2C	Light Industrial	560.617	TSF
	Public Park	1.3	AC
3A	Single Family Residential (5.1-12 DU/Ac)	100	DU
3A	Multifamily Residential (12.1-25 DU/Ac)	110	DU
3A	Single Family Residential (5.1-12 DU/Ac)	100	DU
3A	Multifamily Residential (12.1-25 DU/Ac)	250	DU
3B	Multifamily Residential (12.1-25 DU/Ac)	190	DU
3C	Light Industrial	512.701	TSF
4A	Regional Commercial/Stand Alone Residential Overlay	1,099	DU
4B	Regional Commercial/Stand Alone Residential Overlay	1,150	DU
		166.182	TSF
5A	Light Industrial	510.305	TSF
	Open Space	3.7	AC
5B	Regional Commercial/Stand Alone Residential Overlay	1,150	DU
		76.320	TSF
5C	Regional Commercial	7.500	TSF
5E	Open Space (Edison Easement)	8.3	AC
5F	Open Space (Edison Easement)	8.5	AC
6A	Light Industrial	1,183.525	TSF
6B	Regional Commercial	300.000	TSF
7/8/9	Regional Commercial/Mixed Use Overlay	852	DU
		325.000	TSF
10A/10B	Regional Commercial/Stand Alone Residential Overlay	550	DU
		50.000	TSF

[1] DU = Dwelling Units; TSF = Thousand Square Feet; AC = Acres

Portions of this Planning Area has been developed.

TABLE 4-2: CURRENTLY APPROVED LAND USES TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
PA 1A: Single Family Detached Residential	115	DU	21	64	85	72	42	114	1,086
PA 1B: Single Family Detached Residential	175	DU	32	98	130	109	64	173	1,652
PA 1C: Single Family Detached Residential	231	DU	31	95	126	106	62	168	1,605
PA 1C: Multifamily (Low-Rise) Residential	500	DU	59	199	258	198	116	314	4,107
Public Park	27.0	AC	1	0	1	2	1	3	21
PA 2C: Single Family Detached Residential	154	DU	28	86	114	96	56	152	1,454
PA 2B: Single Family Detached Residential	101	DU	19	56	75	63	37	100	953
PA 2B: Single Family Detached Residential	108	DU	20	60	80	67	40	107	1,020
PA 3A: Single Family Detached Residential	109	DU	20	61	81	68	40	108	1,029
PA 5C: Single Family Detached Residential	65	DU	12	36	48	41	23	64	614
PA 5C: Multifamily (Low-Rise) Residential	100	DU	11	35	46	35	21	56	732
PA 3A: Single Family Detached Residential	332	DU	61	185	246	207	122	329	3,134
PA 3B: Single Family Detached Residential	81	DU	15	45	60	51	29	80	765
PA 3B: Multifamily (Low-Rise) Residential	280	DU	30	99	129	99	58	157	2,050
PA 4A: Single Family Detached Residential	1,089	DU	201	605	806	679	399	1,078	10,280
PA 4A: General Office	41.546	TSF	41	7	48	8	40	48	405
PA 4A: Shopping Center	41.545	TSF	24	15	39	76	82	158	1,568
PA 5A: Single Family Detached Residential	703	DU	130	390	520	438	258	696	6,636
PA 5A: General Office	19.080	TSF	19	3	22	4	18	22	186
PA 5A: Shopping Center	19.080	TSF	11	7	18	35	38	73	720
PA 6A: High-Cube Transload	591.763	TSF	53	11	64	27	47	74	1,092
PA 6A: High-Cube Fulfillment Center	295.881	TSF	270	66	336	163	258	421	2,516
PA 6A: High-Cube Cold Storage	295.881	TSF	29	9	38	13	32	45	827
PA 6B: Shopping Center	225.000	TSF	55	33	88	171	186	357	3,539
PA 6B: High Turnover Restaurant	45.000	TSF	102	84	186	113	70	183	2,103
PA 6B: Fast-Food Restaurant w/ Drive-Through	30.000	TSF	256	246	502	212	196	408	5,887
PA 7, 8, 9: Single Family Detached Residential	852	DU	158	472	630	531	312	843	8,043
PA 7, 8, 9: General Office	162.500	TSF	162	27	189	30	157	187	1,583
PA 7, 8, 9: Shopping Center	162.500	TSF	95	58	153	297	322	619	6,134
PA 10A, 10B: Multifamily (Low-Rise) Residential	407	DU	43	144	187	144	84	228	2,979
PA 10A, 10B: General Office	61.700	TSF	62	10	72	11	60	71	601
PA 10A, 10B: Shopping Center	61.700	TSF	36	22	58	113	122	235	2,329
PA 4B: Single Family Detached Residential	1,089	DU	201	605	806	679	399	1,078	10,280
PA 4B: General Office	41.546	TSF	41	7	48	8	40	48	405
PA 4B: Shopping Center	41.545	TSF	24	15	39	76	82	158	1,568
PA 5B: Single Family Detached Residential	703	DU	130	390	520	438	258	696	6,636
PA 5B: General Office	19.080	TSF	19	3	22	4	18	22	186
PA 5B: Shopping Center	19.080	TSF	11	7	18	35	38	73	720
Internal Capture			-72	-137	-209	-182	-135	-317	-3,061
Pass-by Reduction			-159	-148	-307	-334	-323	-657	-2,391
Total Trips			**2,302**	**4,070**	**6,372**	**5,003**	**3,769**	**8,772**	**91,993**

Source: Traffic Impact Analysis Report Rich Haven Specific Plan PA 1 & PA 7 Amendment, LLG Engineers, January 2021.

[1] DU = dwelling units; TSF = thousand square feet; AC = acres

4.1.2 PROPOSED PROJECT

The proposed Project is to consist of 7,194 single family and multifamily residential dwelling units, 27.0 acres of public park, 2,780,000 square feet of industrial uses, and 772,500 square feet of retail/office uses. The trip generation rates used the proposed Project are based upon information collected by the ITE as provided in their latest Trip Generation Manual, 11th Edition, 2021. The proposed Project trip generation summary is shown in Table 4-3. Detailed trip generation calculations are provided in Appendix 4.1. The proposed Project is anticipated to generate a total of 95,538 two-way trips per day with 8,078 AM peak hour trips and 8,036 PM peak hour trips, in actual vehicles. Pass-by is based on the ITE's latest Trip Generation Manual. For the purposes of the operations analysis, the PCE trip generation has been utilized, consistent with the City of Ontario traffic study guidelines.

TABLE 4-3: PROPOSED PROJECT TRIP GENERATION SUMMARY

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Actual Vehicles:							
Phase 1 Total Trips	1,634	2,101	3,735	2,199	1,832	4,031	47,226
Phase 2 Total Trips	2,005	2,338	4,343	2,281	1,724	4,005	48,312
Project Buildout Total Trips (Actual Vehicles)	**3,639**	**4,439**	**8,078**	**4,480**	**3,556**	**8,036**	**95,538**
Passenger Car Equivalent (PCE):							
Phase 1 Total Trips	1,694	2,140	3,834	2,231	1,893	4,124	48,922
Phase 2 Total Trips	2,005	2,338	4,343	2,281	1,724	4,005	48,312
Project Buildout Total Trips (PCE)	**3,699**	**4,478**	**8,177**	**4,512**	**3,617**	**8,129**	**97,234**

[1] DU = dwelling units; TSF = thousand square feet; AC = acres

4.1.3 TRIP GENERATION COMPARISON

As shown in Table 4-4, the proposed Project is anticipated to generate an additional 7,411 trip-ends per day with 1,969 additional AM peak hour trips and 392 fewer PM peak hour trips as compared to the uses evaluated in the currently approved Specific Plan. Since the currently approved TOP 2050 traffic forecasts include the currently approved Rich Haven Specific Plan, the trip generation comparison shown in Table 4-4 has been utilized for Horizon Year (2050) traffic conditions only.

TABLE 4-4: TRIP GENERATION COMPARISON SUMMARY

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
2021 SPA Trip Generation	2,302	4,070	6,372	5,003	3,769	8,772	91,993
Proposed Project Trip Generation	3,639	4,439	8,078	4,480	3,556	8,036	95,538
Existing Uses	67	196	263	217	127	344	3,866
Variance	**1,404**	**565**	**1,969**	**-306**	**-86**	**-392**	**7,411**

4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional freeway system. Since the distribution patterns is influence by the type of land use, separate distribution patterns have been evaluated for the residential, non-residential, and industrial (passenger cars and trucks) uses. The Project trip distribution patterns are shown on the following Exhibits:

- Exhibit 4-1: Project (Residential) Trip Distribution
- Exhibit 4-2: Project (Non-Residential) Trip Distribution
- Exhibit 4-3: Project (2C, 3C & 5A Industrial – Passenger Cars) Trip Distribution
- Exhibit 4-4: Project (2C, 3C & 5A Industrial – Trucks) Trip Distribution
- Exhibit 4-5: Project (6A Industrial – Passenger Cars) Trip Distribution
- Exhibit 4-6: Project (6A Industrial – Trucks) Trip Distribution

4.3 MODAL SPLIT

The potential for Project trips to be reduced by the use of public transit, walking or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project (Phase 1) and Project (Project Buildout) weekday ADT and weekday peak hour intersection turning movement volumes, in actual vehicles, are shown on Exhibits 4-7 and 4-8, respectively. The Project Only traffic volumes, in actual vehicles, for the variance in trip generation from the proposed Project to the currently approved Specific Plan utilized for Horizon Year (2050) conditions is shown in Exhibit 4-9.

EXHIBIT 4-1: PROJECT (RESIDENTIAL) TRIP DISTRIBUTION

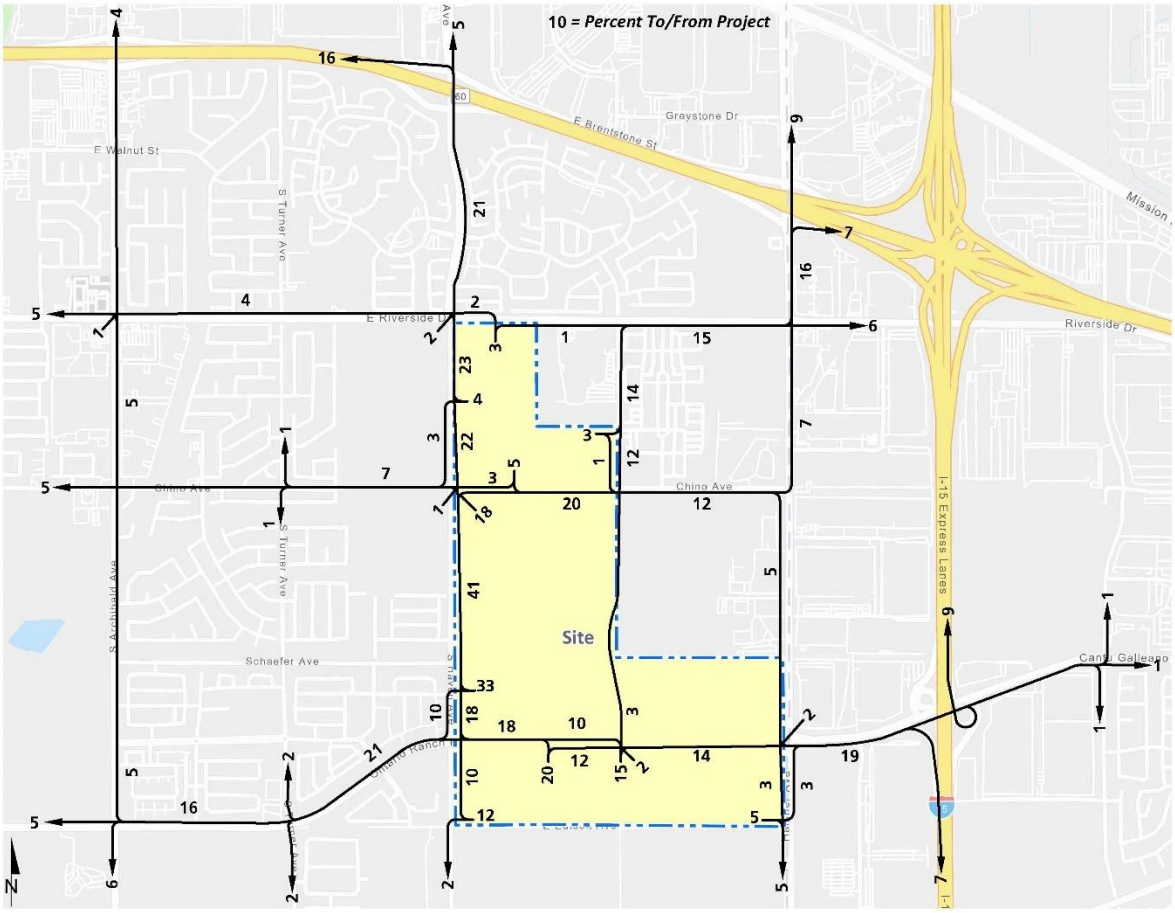


EXHIBIT 4-2: PROJECT (NON-RESIDENTIAL) TRIP DISTRIBUTION

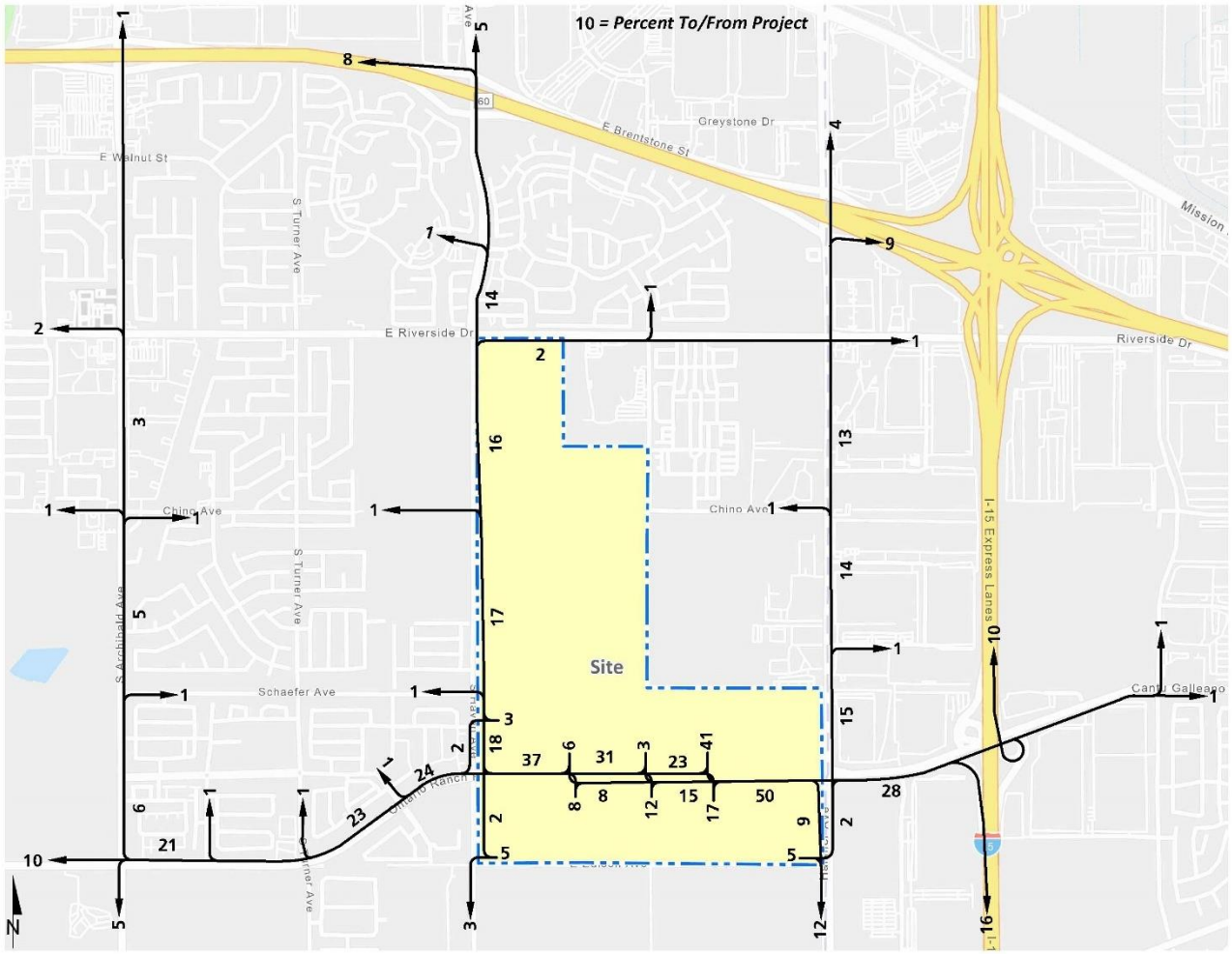


EXHIBIT 4-3: PROJECT (2C, 3C & 5A INDUSTRIAL – PASSENGER CARS) TRIP DISTRIBUTION

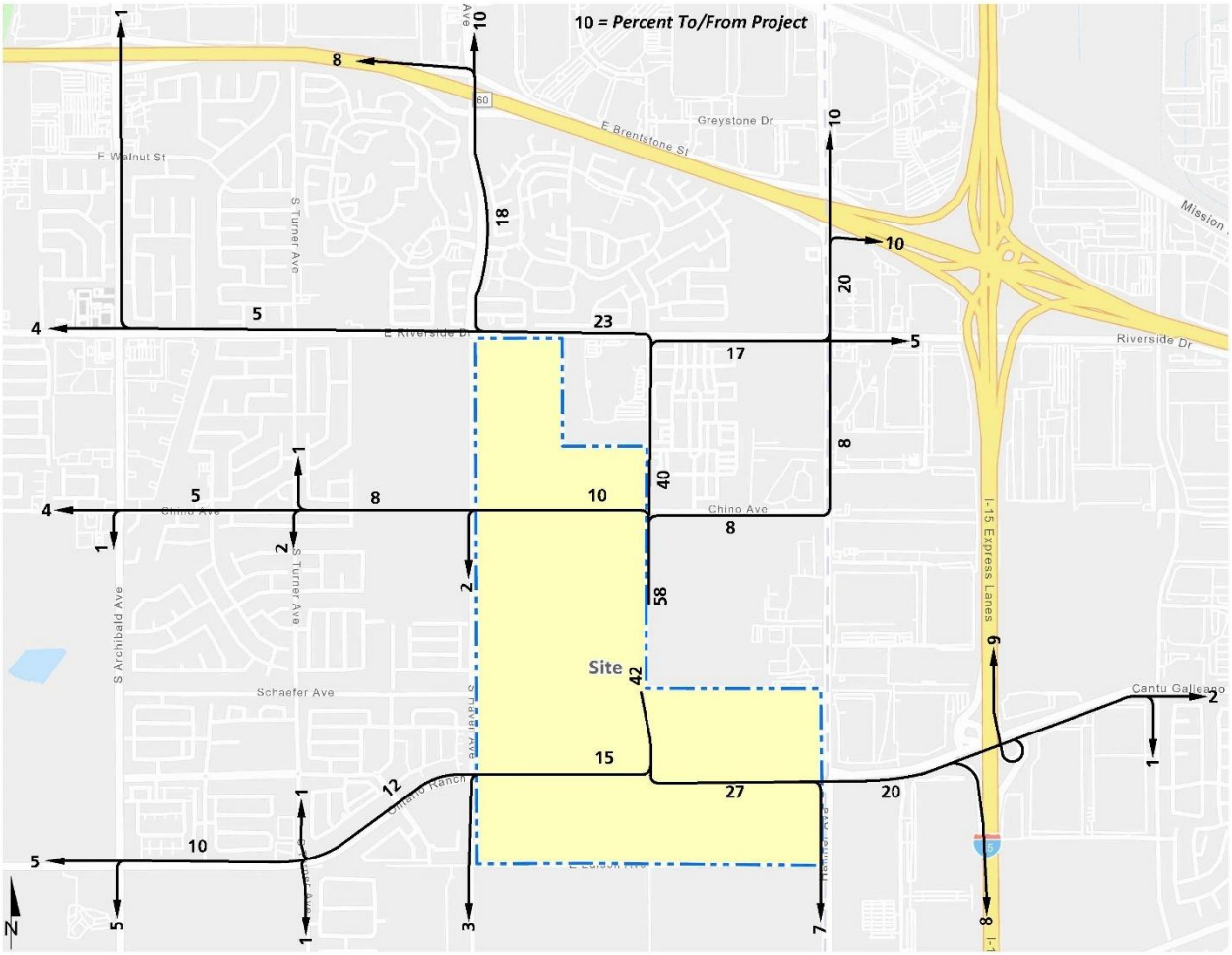


EXHIBIT 4-4: PROJECT (2C, 3C & 5A INDUSTRIAL – TRUCKS) TRIP DISTRIBUTION

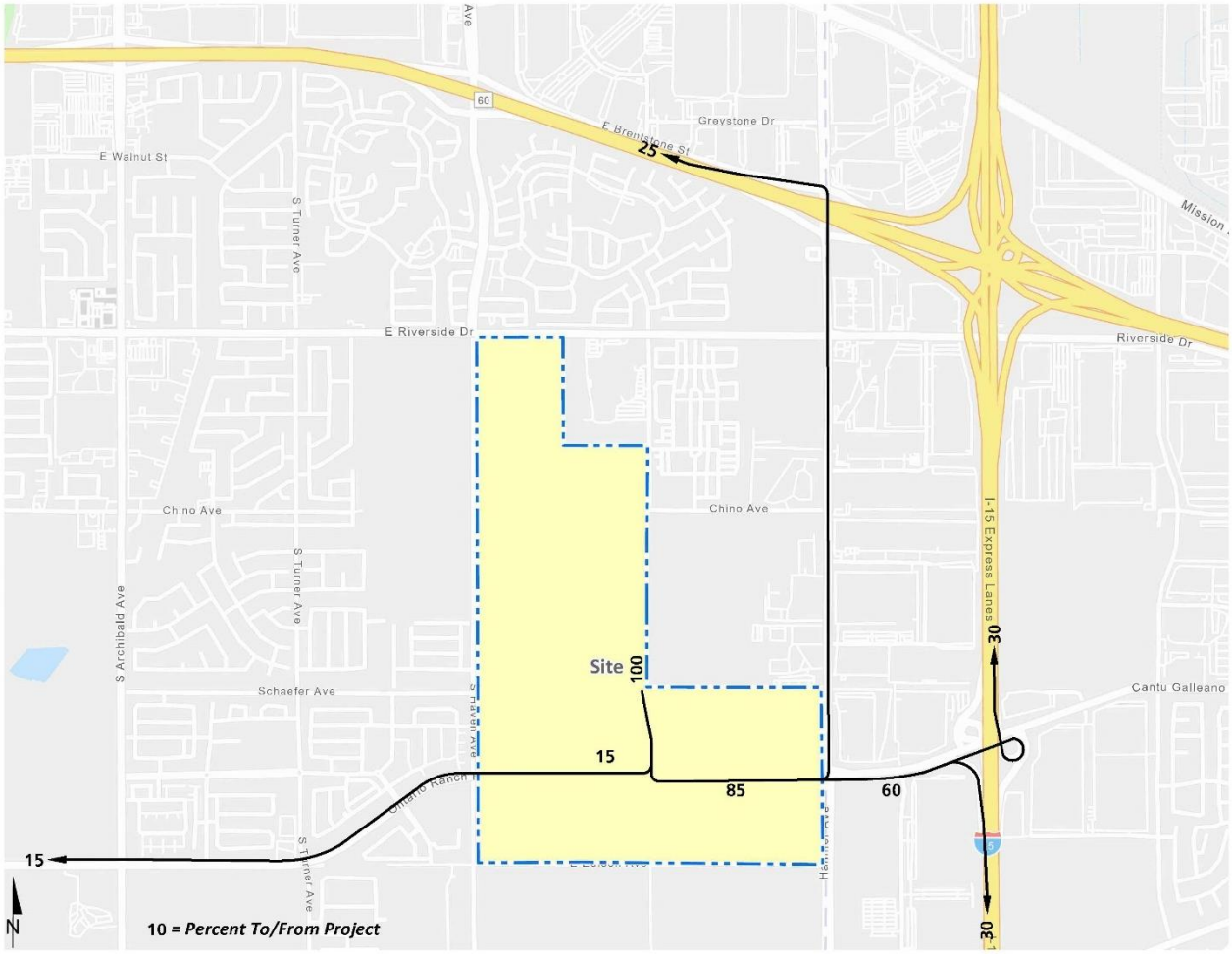


EXHIBIT 4-5: PROJECT (6A INDUSTRIAL – PASSENGER CARS) TRIP DISTRIBUTION

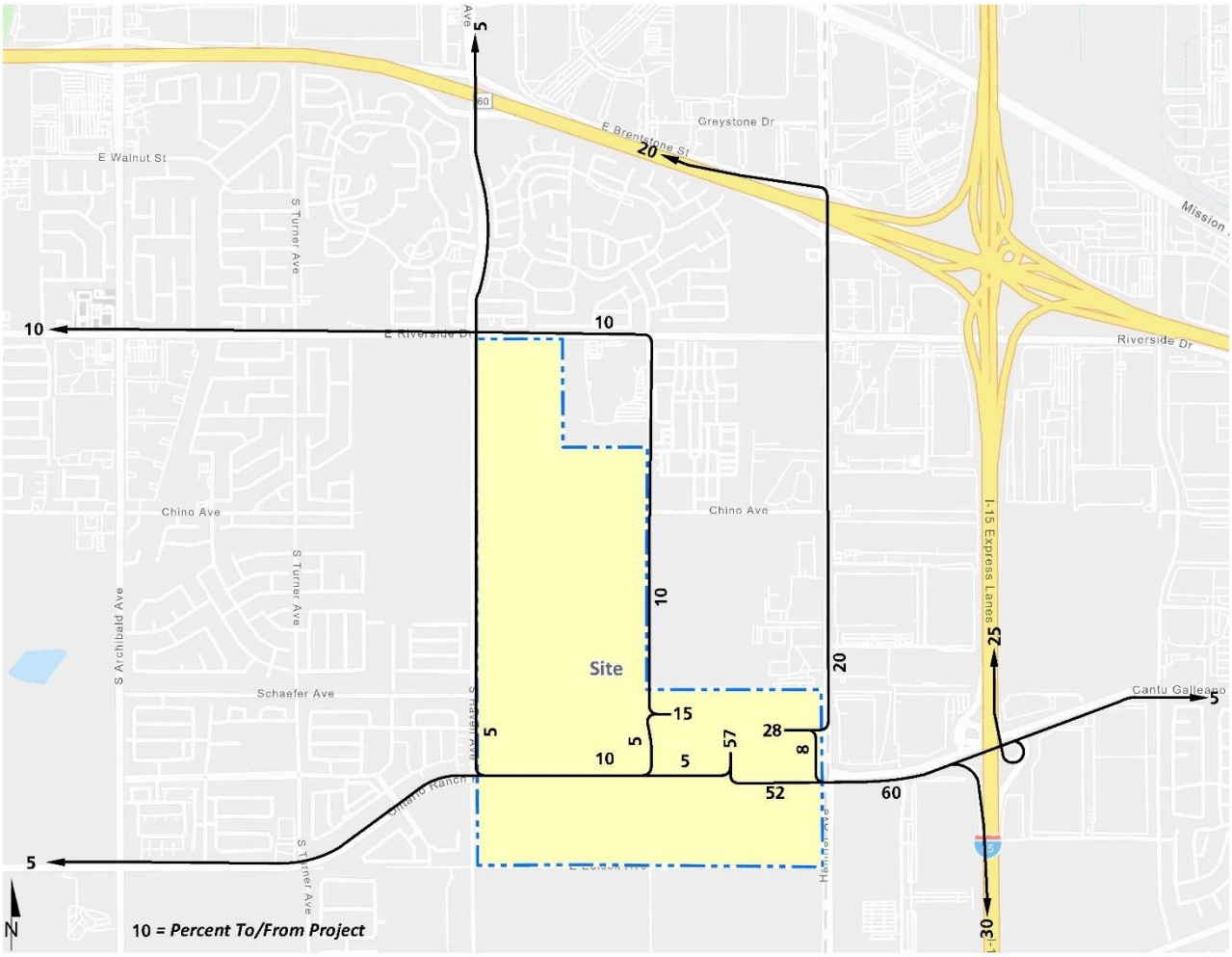


EXHIBIT 4-6: PROJECT (6A INDUSTRIAL – TRUCKS) TRIP DISTRIBUTION

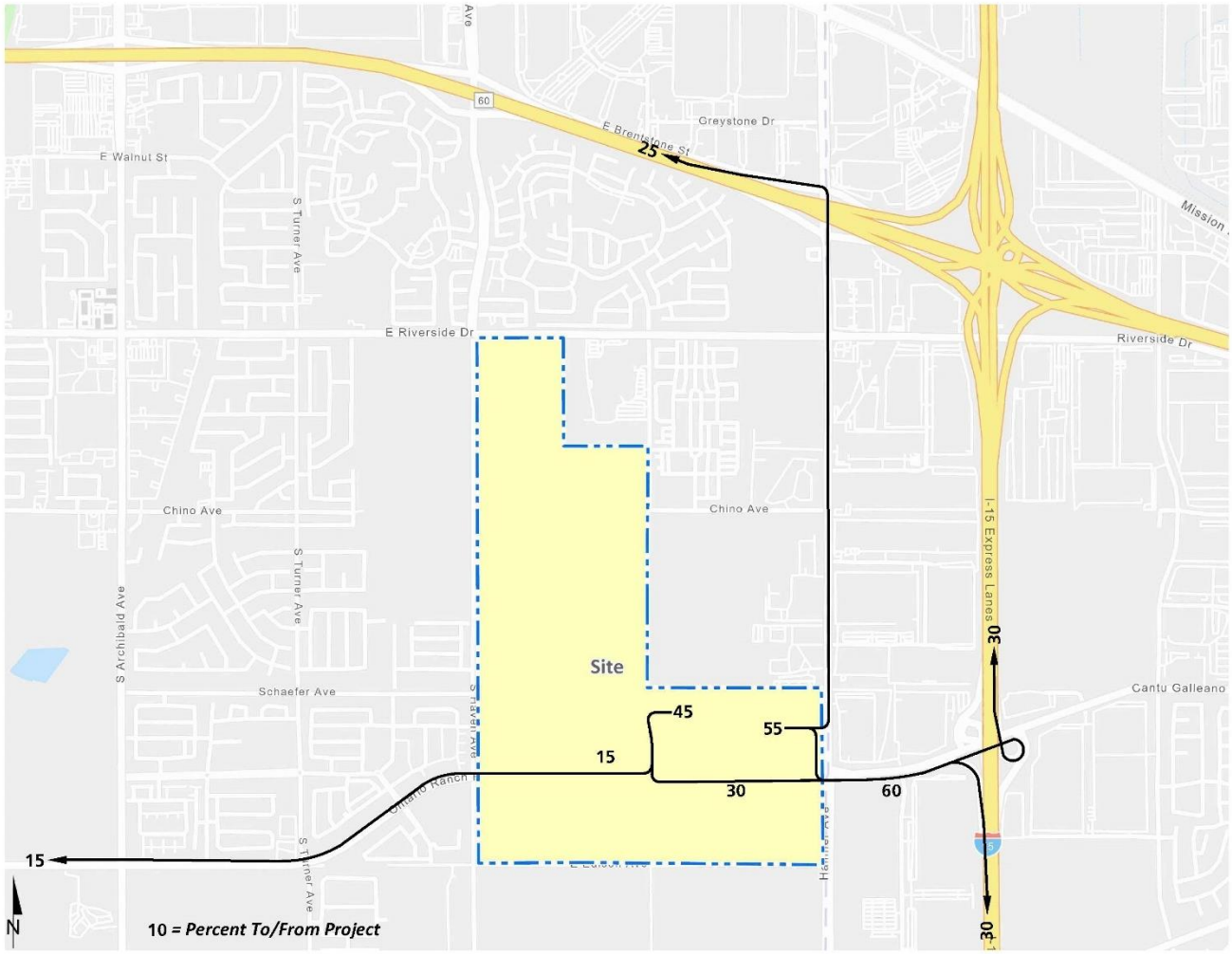
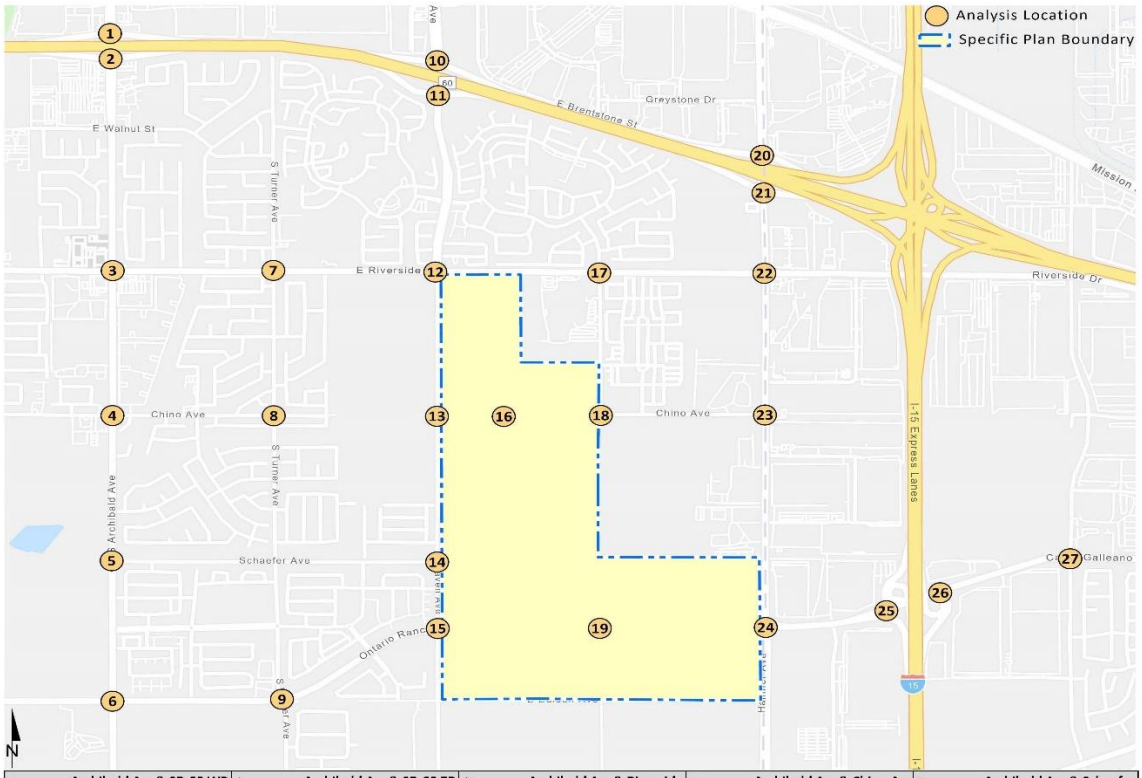
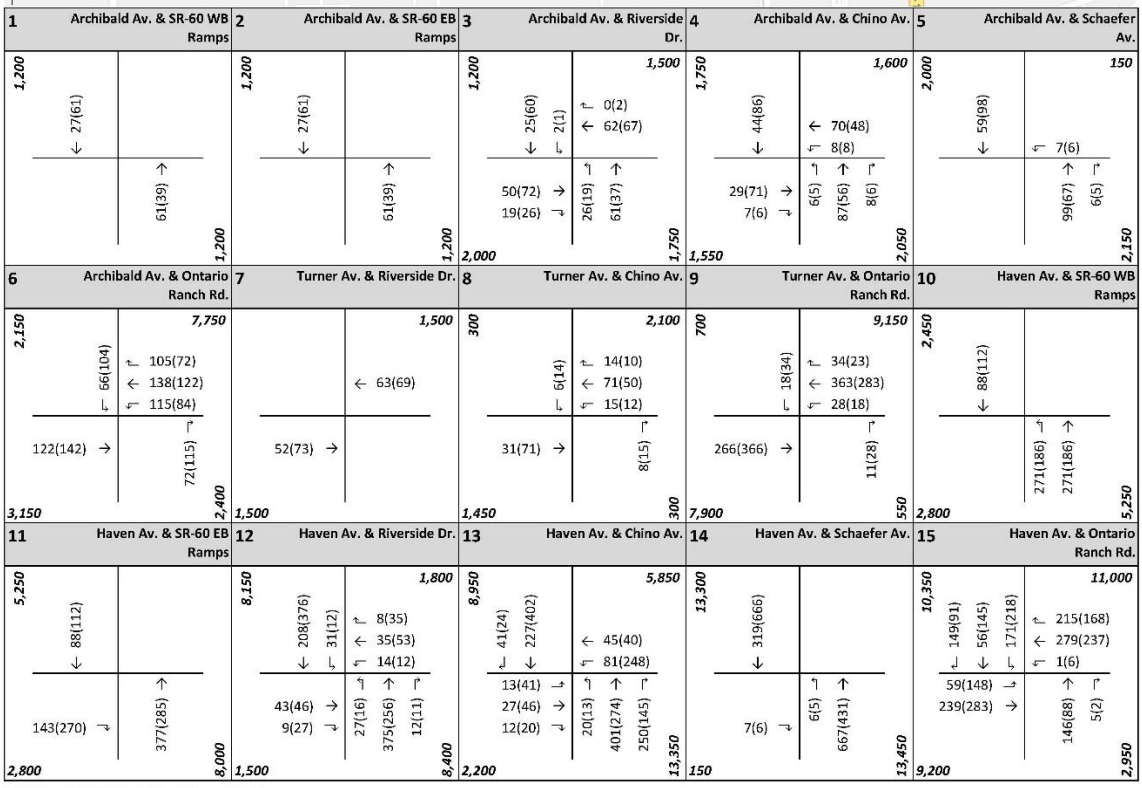


EXHIBIT 4-7: PROJECT ONLY (PHASE 1) TRAFFIC VOLUMES (PAGE 1 OF 2)

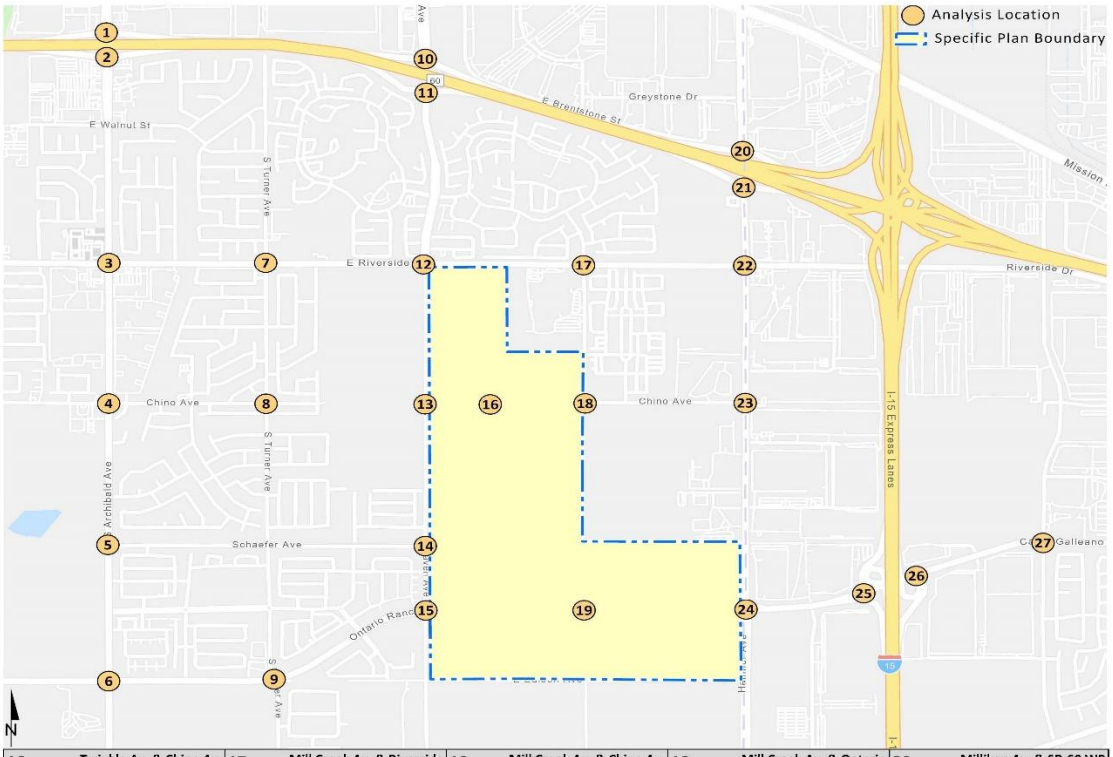




##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 4-7: PROJECT ONLY (PHASE 1) TRAFFIC VOLUMES (PAGE 2 OF 2)



16 Twinkle Av. & Chino Av.

1,300 | 5,550
41(24) | 27(16) | ← 85(264) ↱ 9(27)
13(41) →
264(151) →
5,850

17 Mill Creek Av. & Riverside Dr.

150 | 4,600
7(6) ↰ | ← 92(202) ↰ 12(20)
6(5) → | ↰ | ↱
20(13) →
65(31) ↴
16(72) | 200(145)
1,500 | 5,150

18 Mill Creek Av. & Chino Av.

4,900 | 3,400
40(122) | 108(84) | 14(8) ↰ | ← 49(149) ↰ 4(14)
123(72) → | ↰ | ↑ | ↱ ← 14(6)
151(88) →
17(7) ↴
5(20) | 65(129) | 4(16)
5,550 | 2,800

19 Mill Creek Av. & Ontario Ranch Rd.

5,500 | 12,150
40(72) | 13(41) | 67(232) ↰ | ← 197(316) ↰ 226(131)
66(40) → | ↰ | ↑ | ↱ ← 94(90)
343(250) →
130(198) ↴
215(139) | 41(24) | 106(74)
12,100 | 7,600

20 Milliken Av. & SR-60 WB Ramps

3,200 | 1,700
86(153) ← | ↰ 114(156)
17(63) ↰ | ↑
152(113) ↑
450 | 5,350

21 Milliken Av. & SR-60 EB Ramps

5,350 | 1,700
200(309) ← | ↑ 169(176) | ↱ 155(123)
60(36) ↴
450 | 7,500

22 Milliken Av. & Riverside Dr.

7,500 | 1,850
61(131) ↰ | 199(214) ↓ | ← 43(91)
129(95) →
91(63) →
195(204) ↑
4,600 | 4,750

23 Hamner Av. & Chino Av.

4,750 | 45(101) | 154(114)
100(72) →
76(46) ↴
28(73) | 96(132)
3,550 | 4,100

24 Hamner Av. & Ontario Ranch Rd.

3,950 | 11,900
115(92) | 41(24) | 36(40) ↰ | ← 436(449) ↰ 33(42)
93(87) → | ↰ | ↑ | ↱ ← 28(53)
397(449) →
58(61) ↴
77(58) | 13(41) | 53(35)
13,650 | 3,300

25 I-15 SB Ramps & Cantu Galleano Ranch Rd.

2,550 | 6,600
203(233) ↰ | ← 294(311)
267(275) →
220(249) ↴
11,900 | 2,750

26 I-15 NB Ramps & Cantu Galleano Ranch Rd.

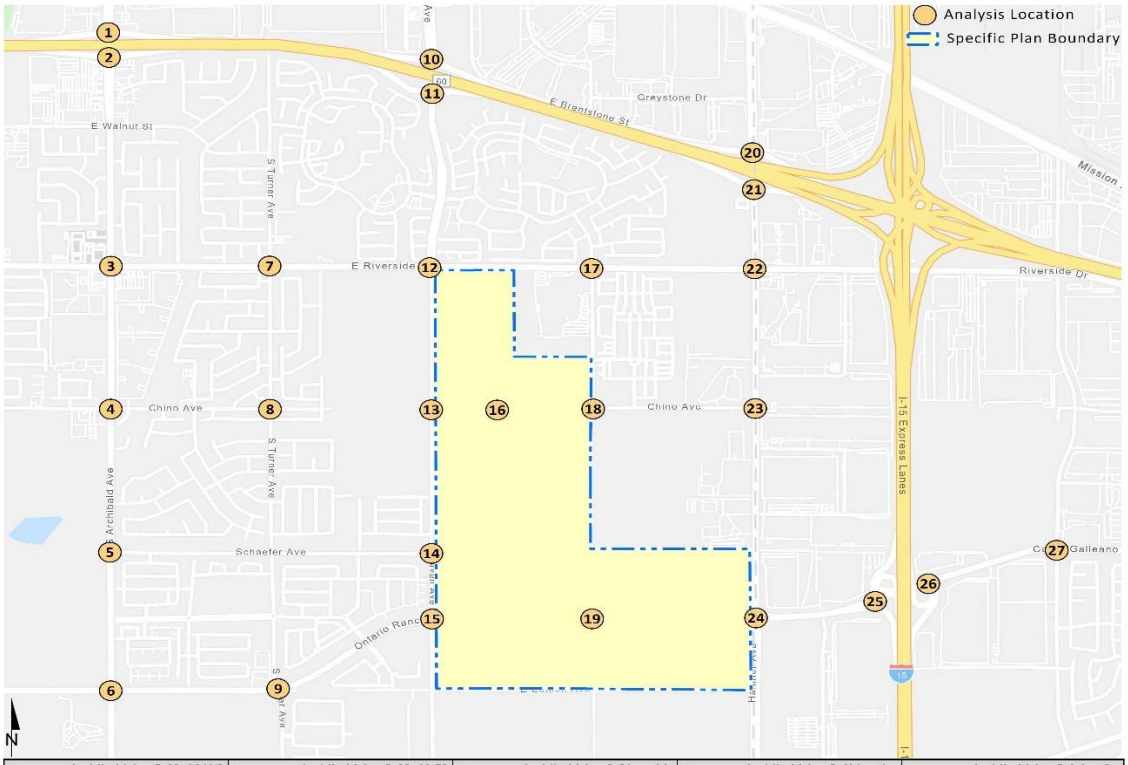
150 | 1,300
← 46(62)
14(8) → | ↰
57(54) →
196(213) ↴
248(249)
6,600 | 5,150

27 Wineville Av. & Cantu Galleano Ranch Rd.

400 | 600
12(20) ↰ | ← 28(29)
20(13) → | ↰
23(31) →
14(10) ↴
6(14)
1,300 | 300

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

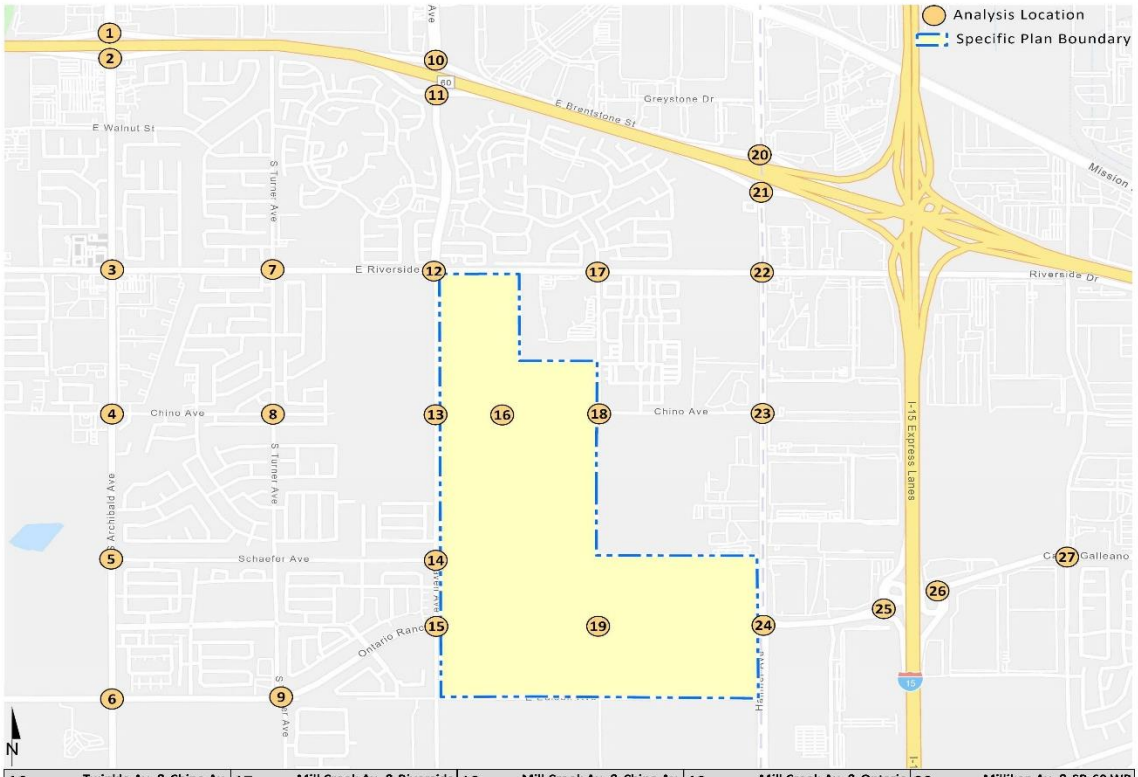
EXHIBIT 4-8: PROJECT ONLY (PROJECT BUILDOUT) TRAFFIC VOLUMES (PAGE 1 OF 2)



1 Archibald Av. & SR-60 WB Ramps	2 Archibald Av. & SR-60 EB Ramps	3 Archibald Av. & Riverside Dr.	4 Archibald Av. & Chino Av.	5 Archibald Av. & Schaefer Av.
2,200 / 56(110) ↓ / 111(72) → / 2,200	2,200 / 56(110) ↓ / 111(72) → / 2,200	2,200 / 54(110) ↓ 2(1) ↰ / 62(108) → 56(62) ↲ / ↰ 0(2) ← 98(87) / 64(48) → 111(70) ↑ / 2,150 / 3,500	3,500 / 110(172) ↓ / ← 115(74) ↰ 25(22) / 44(115) → 24(20) ↲ / 21(17) ↰ 174(118) ↑ 22(18) ↱ / 2,750 / 2,750	4,450 / 159(212) ↓ / ↰ 24(20) / 216(153) ↑ 21(17) ↱ / 450 / 4,900
6 Archibald Av. & Ontario Ranch Rd.	**7 Turner Av. & Riverside Dr.**	**8 Turner Av. & Chino Av.**	**9 Turner Av. & Ontario Ranch Rd.**	**10 Haven Av. & SR-60 WB Ramps**
4,900 / 183(232) ↳ / ← 236(170) 327(269) ↰ 240(176) / 308(326) → / 175(238) ↱ / 17,050 / 7,150 / 5,000	2,150 / ← 98(89) / 63(108) → / 2,150	450 / 9(23) ↳ / ← 23(15) 115(76) ↰ 23(17) / 45(115) → / 11(24) ↱ / 3,250 / 2,300 / 500	1,350 / 41(65) ↳ / ← 66(46) 825(632) ↰ 46(28) / 690(815) → / 16(45) ↱ / 19,750 / 17,500 / 900	4,850 / 189(226) ↓ / 529(365) ↑ 529(365) ↱ / 5,400 / 10,250
11 Haven Av. & SR-60 EB Ramps	**12 Haven Av. & Riverside Dr.**	**13 Haven Av. & Chino Av.**	**14 Haven Av. & Schaefer Av.**	**15 Haven Av. & Ontario Ranch Rd.**
10,250 / 189(226) ↓ / 327(524) ↲ / 752(551) → / 15,650 / 5,400	16,100 / 509(757) ← 31(12) ↳ / 49(64) → 15(45) ↲ / ↰ 8(35) ← 53(63) 49(40) ↱ / 45(26) ↰ 764(533) ↑ 41(35) ↱ / 2,750 / 2,150 / 17,350	18,200 / 68(40) ↳ 565(820) ← / 22(67) → 36(73) → 32(42) ↲ / ← 71(55) 133(407) ↱ / 43(31) ↰ 828(581) ↑ 409(238) ↱ / 9,400 / 3,700 / 25,650	25,550 / 729(1265) ↓ / 24(20) ↲ / 21(17) ↰ 1277(849) ↑ / 26,000 / 450	21,550 / 266(166) ↳ 110(254) ← 486(526) ↲ / 122(264) ↳ 637(672) → / ↰ 533(414) ← 680(548) 1(6) ↱ / 256(158) ↑ 5(2) ↱ / 26,150 / 19,950 / 5,100

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 4-8: PROJECT ONLY (PROJECT BUILDOUT) TRAFFIC VOLUMES (PAGE 2 OF 2)



16 Twinkle Av. & Chino Av.

2,150		8,950
68(40) ↲	45(26) ↳	↰ 15(45)
		← 137(423)
22(67) ↦		
423(244) →		
9,400		

17 Mill Creek Av. & Riverside Dr.

450		7,450
24(20) ↲		← 32(42)
		↰ 132(325)
21(17) ↦	↱	
43(31) →	16(72) ↱	
65(31) ↲	323(218)	
2,300		7,550

18 Mill Creek Av. & Chino Av.

7,100		5,400
66(202) ↲	116(110) ↓	23(13) ↳
		↰ 7(22)
		← 81(246)
		↰ 14(6)
203(119) ↦	↰	↗ ↱
248(145) →	5(20) ↰	92(144) ↗ 4(16) ↱
17(7) ↲		
8,950		3,300

19 Mill Creek Av. & Ontario Ranch Rd.

9,450		26,450
92(121) ↲	22(67) ↓	94(256) ↳
		↰ 266(170)
		← 610(688)
		↰ 274(279)
112(80) ↦	↰	↗ ↱
877(630) →	462(351) ↰	67(39) ↗ 282(246) ↱
333(459) ↲		
28,100		23,800

20 Milliken Av. & SR-60 WB Ramps

6,000		3,700
181(288) ↓		
		↰ 288(343)
17(63) ↰	↗	
290(208) ↗		
450		10,150

21 Milliken Av. & SR-60 EB Ramps

10,150		3,700
469(632) ↓		
		↱
60(36) ↲	307(271) ↗	348(268)
450		14,250

22 Milliken Av. & Riverside Dr.

14,250		3,200
87(210) ↲	443(458) ↓	
		← 77(158)
208(142) ↦		
158(106) →	446(397) ↗	
7,450		10,000

23 Hamner Av. & Chino Av.

10,000		
65(162) ↲	377(296) ↓	
161(108) ↦	↰	↗
137(86) ↲	57(129)	285(289)
5,900		9,350

24 Hamner Av. & Ontario Ranch Rd.

9,500		23,900
373(302) ↲	68(40) ↓	54(51) ↳
		↰ 38(60)
		← 923(936)
		↰ 71(107)
311(268) ↦	↰	↗ ↱
899(835) →	232(184) ↰	22(67) ↗ 109(74) ↱
189(170) ↲		
31,750		7,800

25 I-15 SB Ramps & Cantu Galleano Ranch Rd.

4,900		13,150
400(452) ↲		
		← 632(651)
547(482) →		
515(478) ↲		
23,900		5,850

26 I-15 NB Ramps & Cantu Galleano Ranch Rd.

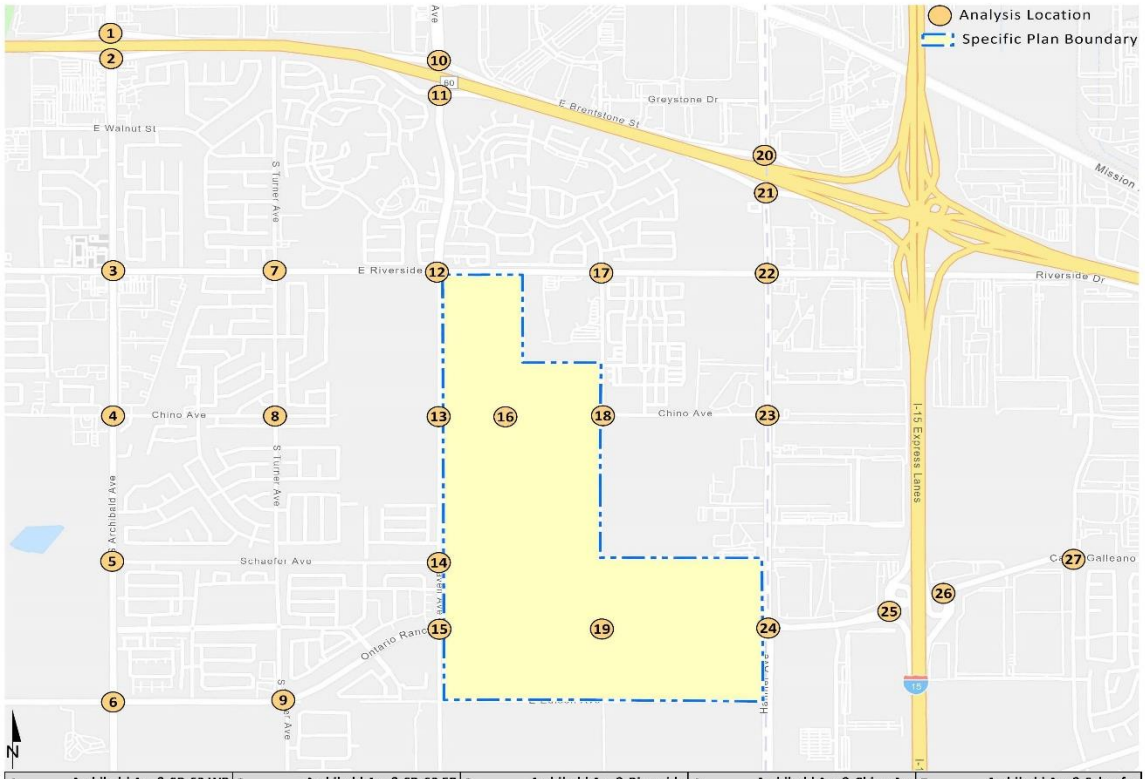
200		2,450
		← 89(117)
23(13) ↦	↰	
113(94) →	543(534)	
412(375) ↲		
13,150		10,500

27 Wineville Av. & Cantu Galleano Ranch Rd.

900		1,100
32(42) ↲		
		← 48(51)
43(31) ↦	↰	
47(48) →	9(23)	
23(15) ↲		
2,450		450

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 4-9: PROJECT ONLY (VARIANCE) TRAFFIC VOLUMES (PAGE 1 OF 2)



1 Archibald Av. & SR-60 WB Ramps

	Nominal ← 2(-53)	
		→ -33(-30) Nominal

2 Archibald Av. & SR-60 EB Ramps

	Nominal ← 2(-53)	
		→ -33(-30) Nominal

3 Archibald Av. & Riverside Dr.

	Nominal ← 0(-53) ↳ 2(1)	Nominal ↱ 0(2) ← -48(-24)
	-1(-60) → 30(10) ↳	↴ 23(5) → -33(-32) Nominal
	Nominal	

4 Archibald Av. & Chino Av.

	Nominal ← 30(-44)	Nominal ← -62(-41) ↰ 18(15)
	-14(-81) → 17(13) ↳	↴ 18(7) → -10(-27) ↱ 20(8)
	Nominal	250

5 Archibald Av. & Schaefer Av.

	250 ← 65(-17)	250 ↰ 17(13)
		→ 26(-13) ↱ 18(7) 450

6 Archibald Av. & Ontario Ranch Rd.

	450 ↳ 82(-4)	2,050 ↱ 44(-5) ← 117(22) ↰ 16(-13)
	141(44) →	↱ 69(-31)
	1,400	200

7 Turner Av. & Riverside Dr.

		Nominal ← -48(-23)
	1(-59) →	
	Nominal	

8 Turner Av. & Chino Av.

	Nominal ↳ -2(-16)	Nominal ↱ -12(-8) ← -61(-39) ↰ -12(-6)
	-12(-80) →	↱ -1(-15) Nominal
	Nominal	

9 Turner Av. & Ontario Ranch Rd.

	Nominal ↳ 10(-19)	1,850 ↱ -7(-10) ← 195(12) ↰ -25(-18)
	309(22) →	↱ -7(-33) Nominal
	2,300	

10 Haven Av. & SR-60 WB Ramps

	600 ← 86(-8)	
		→ -56(-83) ↱ -56(-83) 200
		Nominal

11 Haven Av. & SR-60 EB Ramps

	200 ← 86(-8)	
	84(-156) ↳	→ -25(-72) Nominal
	Nominal	

12 Haven Av. & Riverside Dr.

	← 156(-163) ↳ 31(12)	850 ↱ 8(35) ← -22(-3) ↰ 34(26)
	9(-26) → -8(-33) ↳	↴ -25(-20) → -16(-100) ↱ 36(15) Nominal
	Nominal	

13 Haven Av. & Chino Av.

	Nominal ↳ -38(-29) ← 186(-154)	Nominal ← -35(-14) ↰ -75(-296)
	-13(-50) → 1(-44) → 13(-3) ↳	↴ 5(-3) → 8(-95) ↱ -226(-174) Nominal
	Nominal	

14 Haven Av. & Schaefer Av.

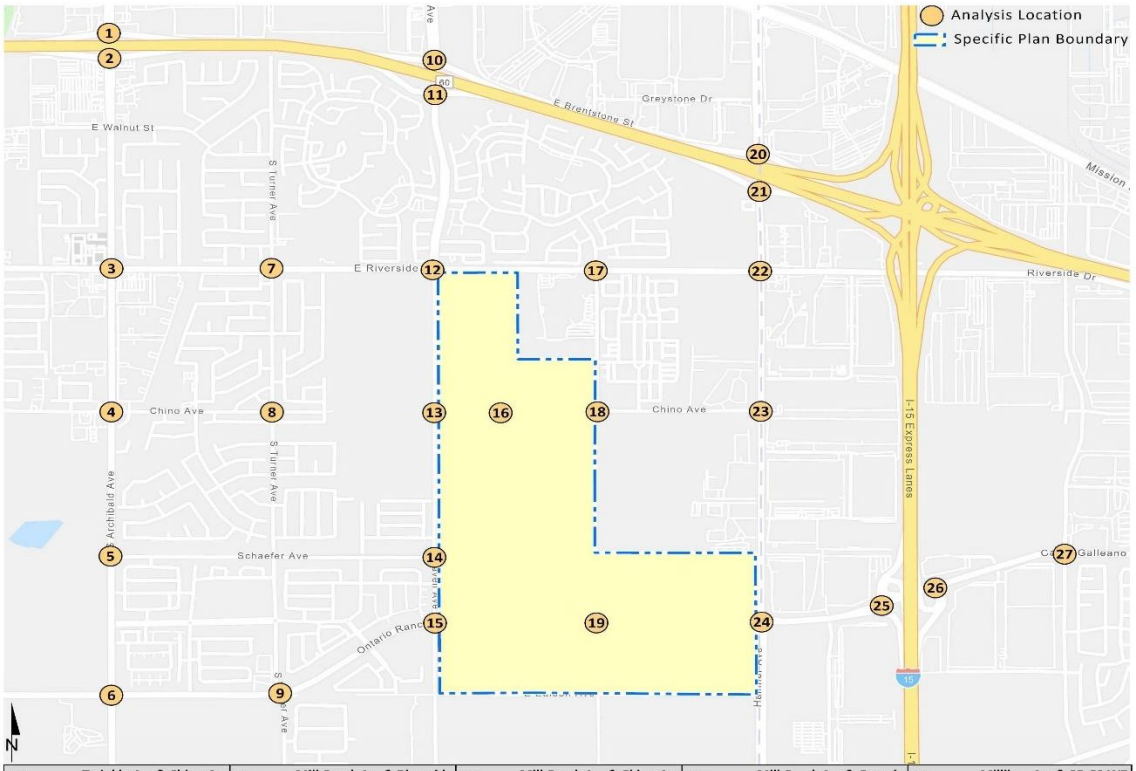
	Nominal ← 123(-457)	
	17(13) ↳	↴ 18(7) → -217(-274) Nominal
	250	

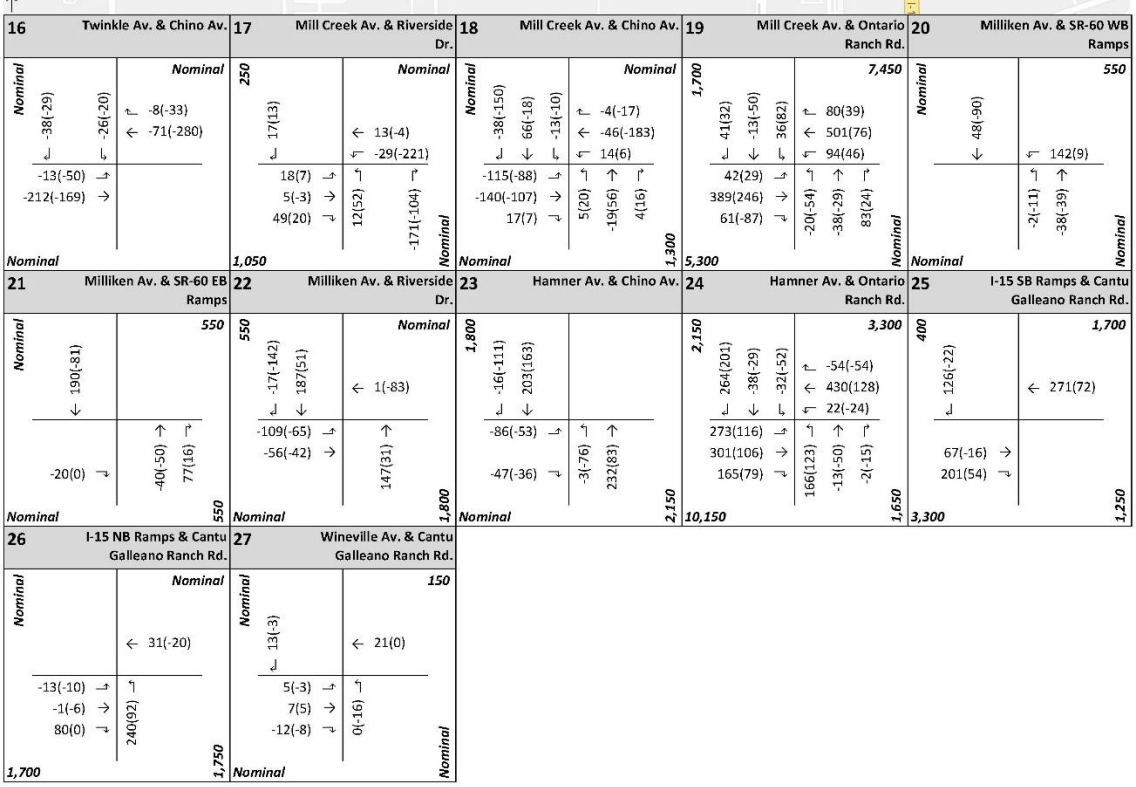
15 Haven Av. & Ontario Ranch Rd.

	Nominal ↳ -92(-83) ← -16(-147) ↰ 262(93)	5,900 ↱ 204(49) ← 263(70) ↰ 1(6)
	-8(-140) → 329(117) →	↴ → -101(-87) ↱ 5(2) Nominal
	2,000	

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 4-9: PROJECT ONLY (VARIANCE) TRAFFIC VOLUMES (PAGE 2 OF 2)





##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon background (ambient) growth at 2% per year, compounded annually, for 2027 traffic conditions. The total ambient growth is 14.9% for 2027 traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in conjunction with traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. 2027 traffic volumes are provided in Section 6 of this report. The traffic generated by the proposed Project was then manually added to the base volume to determine With Project forecasts.

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Ontario. The cumulative projects listed are those that would generate traffic and would contribute traffic to study area intersections. Exhibit 4-10 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown in Table 4-5. If applicable, the traffic generated by individual cumulative projects was manually added to the Without Project forecasts to ensure that traffic generated by the listed cumulative development projects in Table 4-5 are reflected as part of the background traffic. In an effort to conduct a conservative analysis, the cumulative projects are added in conjunction with the ambient growth identified in Section 4.5 *Background Traffic*. The Cumulative Only ADT and peak hour intersection turning movement volumes, in actual vehicles, are shown on Exhibit 4-11.

EXHIBIT 4-10: CUMULATIVE DEVELOPMENT LOCATON MAP

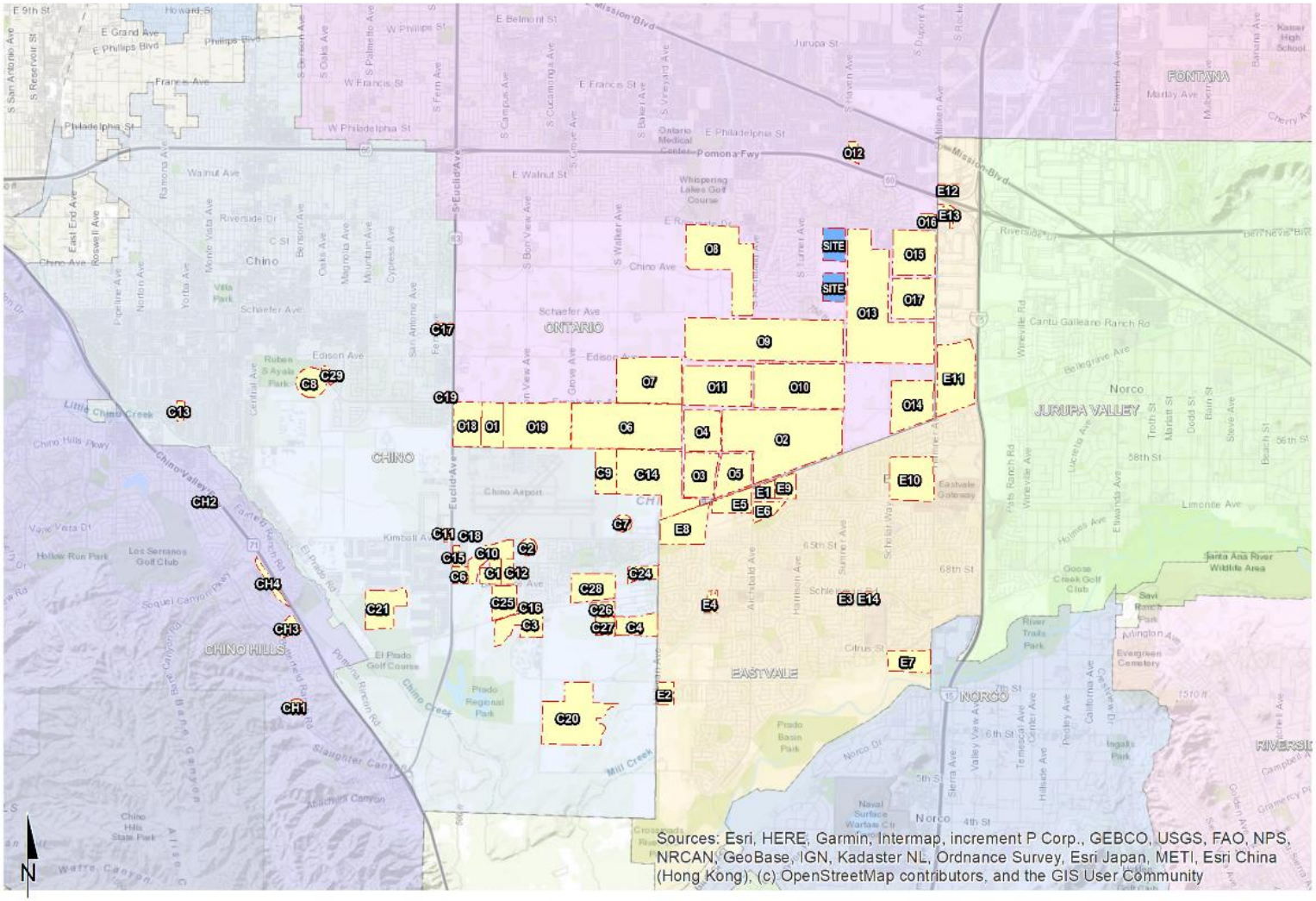
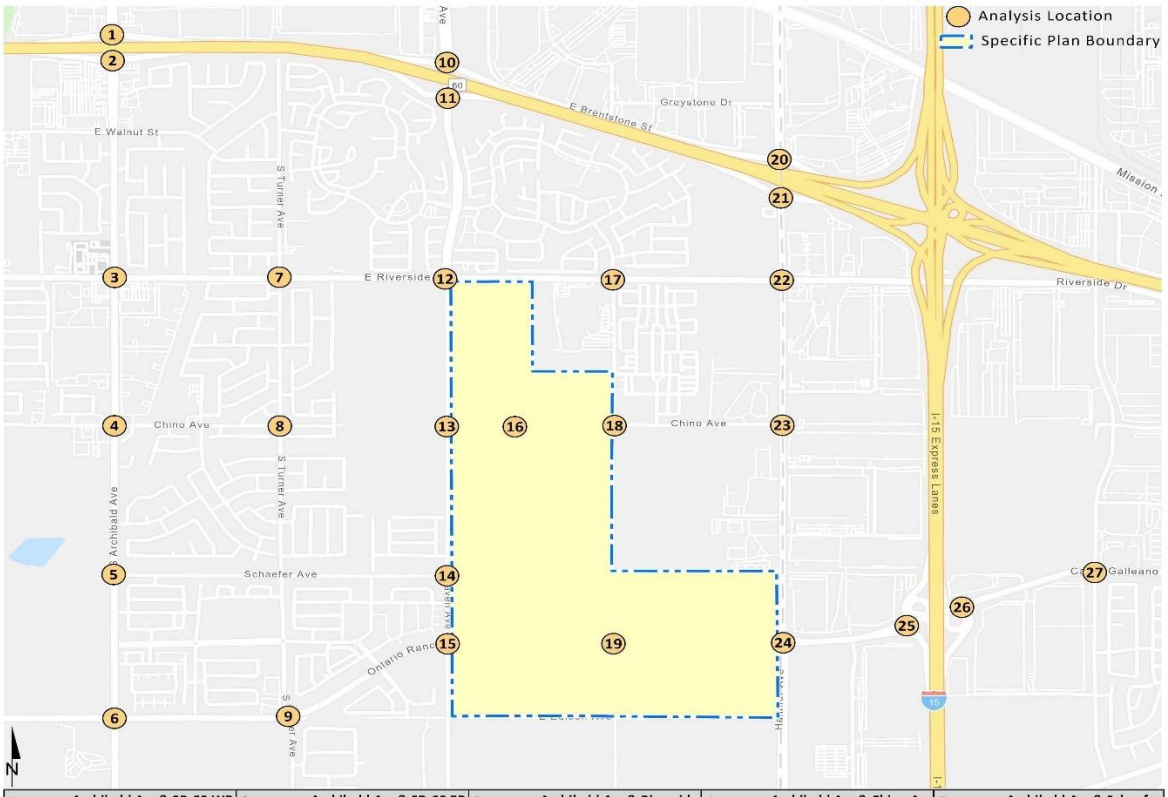


EXHIBIT 4-11: CUMULATIVE ONLY TRAFFIC VOLUMES (PAGE 1 OF 2)

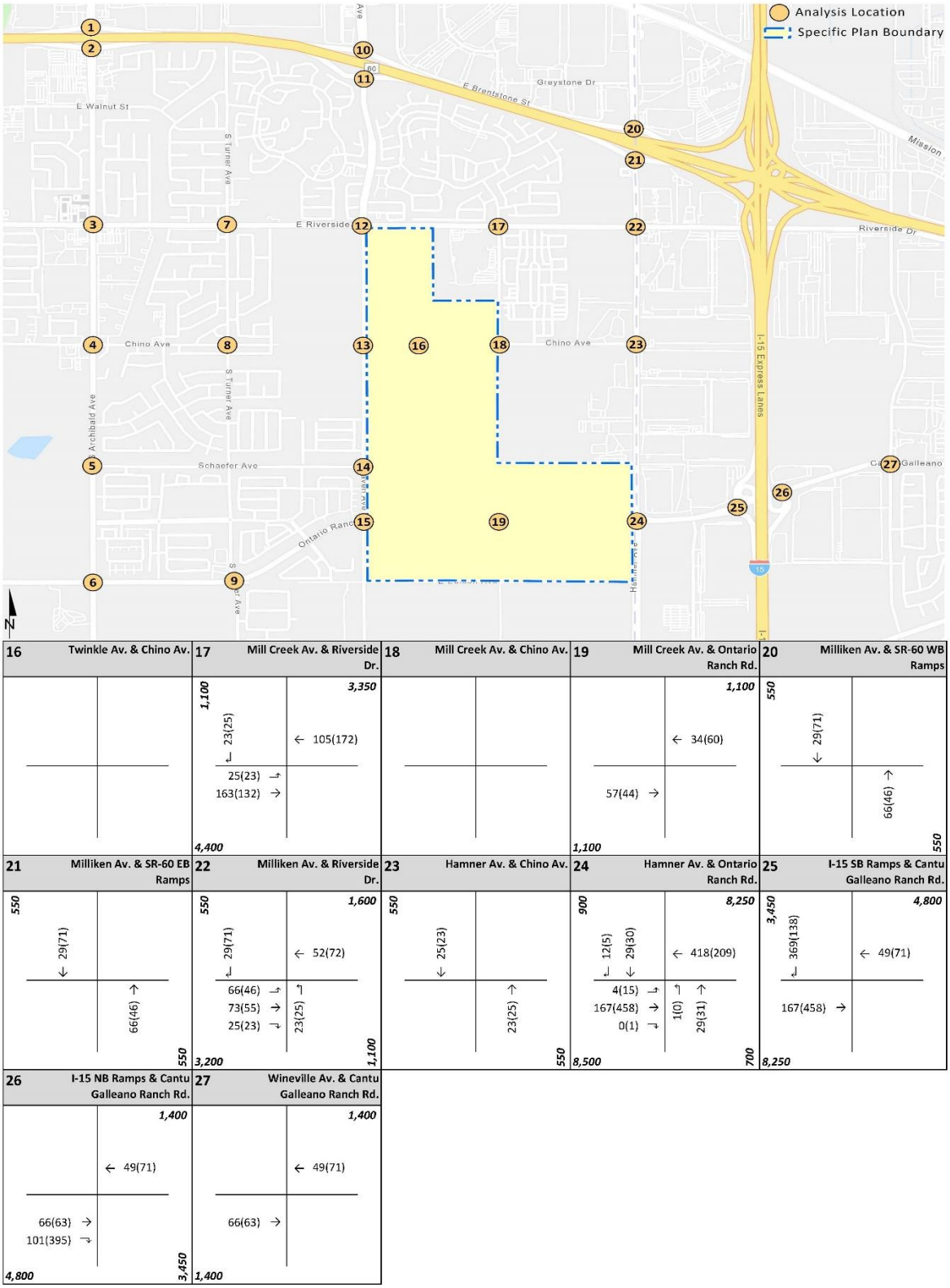


1 Archibald Av. & SR-60 WB Ramps	2 Archibald Av. & SR-60 EB Ramps	3 Archibald Av. & Riverside Dr.	4 Archibald Av. & Chino Av.	5 Archibald Av. & Schaefer Av.
1,750 / 450 / 75(146) / 45(31) / 49(47) / 135(107) / 650 / 2,850	2,850 / 450 / 120(177) / 41(53) / 184(154) / 26(50) / 650 / 3,950	3,950 / 3,600 / 110(173) / 52(55) / 57(51) / 25(23) / 36(98) / 23(25) / 3(2) / 2(4) / 152(153) / 87(64) / 1,150 / 1,700	1,700 / 3,550 / 143(267) / 6(6) / 6(6) / 32(28) / 52(54) / 29(31) / 235(215) / 52(54) / 1,350 / 3,400	3,400 / 2,150 / 19(17) / 175(303) / 25(23) / 25(23) / 17(18) / 23(25) / 269(251) / 23(25) / 1,900 / 3,650
6 Archibald Av. & Ontario Ranch Rd.	**7 Turner Av. & Riverside Dr.**	**8 Turner Av. & Chino Av.**	**9 Turner Av. & Ontario Ranch Rd.**	**10 Haven Av. & SR-60 WB Ramps**
2,150 / 1,900 / 150(280) / 109(105) / 90(136) / 246(226) / 1,900 / 2,150	250 / 1,750 / 10(18) / 74(132) / 121(101) / 40(43) / 44(40) / 17(13) / 3,600 / 2,150	2,150 / 7,000 / 4(12) / 46(49) / 51(45) / 90(88) / 32(28) / 87(91) / 11(7) / 29(31) / 3,500 / 1,350	1,900 / 109(105) / 90(136) / 1,900	4,100 / 1,050 / 100(129) / 46(49) / 5,150
11 Haven Av. & SR-60 EB Ramps	**12 Haven Av. & Riverside Dr.**	**13 Haven Av. & Chino Av.**	**14 Haven Av. & Schaefer Av.**	**15 Haven Av. & Ontario Ranch Rd.**
5,150 / 1,050 / 146(179) / 129(110) / 51(45) / 6,250	6,500 / 4,400 / 29(31) / 123(154) / 36(98) / 92(99) / 32(28) / 87(64) / 154(133) / 101(91) / 1,450 / 9,450	9,450 / 3,200 / 86(92) / 129(160) / 50(61) / 23(25) / 95(85) / 62(52) / 160(139) / 25(23) / 6,200 / 6,500	3,850 / 34(37) / 65(82) / 38(34) / 32(28) / 29(31) / 80(74) / 2,950 / 3,550	3,550 / 1,100 / 58(77) / 13(11) / 25(23) / 23(25) / 95(68) / 74(68) / 56(111) / 11(12) / 1,900 / 600

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 4-11: CUMULATIVE ONLY TRAFFIC VOLUMES (PAGE 2 OF 2)



##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

TABLE 4-5: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

#	Project/Location	Land Use	Quantity	Units[1]
City of Ontario				
O1	Ontario Ranch Business Park	Business Park	227.951	TSF
		High-Cube Fulfillment Center Warehouse	913.053	TSF
		High-Cube Cold Storage Warehouse	179.135	TSF
		Warehouse	320.551	TSF
O2	Subarea 29 & Amendment (75% complete)	Single Family Detached	716	DU
		Shopping Center	87.000	TSF
O3	Ontario Ranch Commerce Center	High-Cube Fulfillment Warehouse	1,447.123	TSF
		Business Park	457.904	TSF
O4	South Ontario Logistics Center	Business Park	1,075.235	TSF
		High-Cube Fulfillment Warehouse	2,819.282	TSF
		High-Cube Cold Storage Warehouse	563.857	TSF
		Warehousing	954.218	TSF
O5	Parkside Specific Plan	Single Family Detached	804	DU
		Multifamily Housing (Low-Rise)	2,046	DU
		Park	58.860	AC
O6	Merrill Commerce Center	High-Cube Fulfillment Warehouse	7014.000	TSF
		Business Park	1441.000	TSF
O7	Parente Home Ranch SP	Single Family Detached	270	DU
		Condo/Townhouse	1,872	DU
		General Office	462.281	TSF
		Shopping Center	194.278	TSF
O8	Countryside	Single Family Detached	819	DU
	Armstrong Ranch	Single Family Detached	994	DU
O9	The Avenue (50% Complete)	Single Family Detached	2,020	DU
		Multi-Family Attached (Apartments)	586	DU
		Shopping Center	250.000	TSF
O10	Grand Park (80% Complete)	Single Family Detached	484	DU
		Multi-Family Attached (Apartments)	843	DU
O11	West Haven	Single Family Detached	149	DU
		Multifamily Housing	654	DU
		Elementary School	650	STU
		Shopping Center	87.000	TSF
O12	Haven Gateway	General Light Industrial	42.160	TSF
		High-Cube Warehouse	168.640	TSF
O13	PDEV10-008 - Dry Food Storage	Mini-Warehouse	17.000	TSF
O14	Esperanza (50% Complete)	Single Family Detached	914	DU
		Multi-Family Attached (Apartments)	496	DU
O15	Edenglen (50% Complete)	Single Family Detached	310	DU
		Multi-Family Attached (Condo)	274	DU
		Shopping Center	217.520	TSF
		Business Park	550.000	TSF
O17	Tuscana Village	Single Family Detached	176	DU
		Shopping Center	26.000	TSF

City of Chino		Shopping Center	15	TSF
		Multifamily Housing (Low-Rise)	698	DU
		Multifamily Housing (Mid-Rise)	440	DU
C1	Falloncrest at the Preserve	Public Parks	21.60	AC
		General Office	77.597	TSF
		Shopping Center	77.597	TSF
		Multifamily Housing	549	DU
		Office	16.300	TSF
		Shopping Center	36.800	TSF
C2	The Preserve Town Center (Blocks 6 and 7)	Pharmacy with Drive-Thru	12.900	TSF
		Supermarket	45.000	TSF
		Fast-Food Restaurant with Drive-Thru	6.500	TSF
		Fast Casual Restaurant	13.750	TSF
		Quality Restaurant	13.750	TSF
		Single Family Detached	552	DU
C3	Pines Community	Public Park	3.0	AC
		Self Storage & RV Storage	120.000	TSF
		Sports Park	41.8	AC
C4	Ag. Buffer, Bungalow, Lic. Product, Liberty Deluxe, Lyon 2 & 3	Single Family Detached	474	DU
C5	Farmer Boys	Fast-food w/ Drive-Thru	3.218	TSF
		Shopping Center	2.300	TSF
C6	Euclid & Bickmore Warehouse	Warehousing	205.820	TSF
		General Light Industrial	51.030	TSF
		Business Park	110.620	TSF
C7	Kimball Business Park	Gas Station w/ Market	16	VFP
		Fast-Food with Drive-Thru	2.500	TSF
C8	Chaffey College Expansion	Junior/Community College	93.50	AC
	College Park Commercial	Shopping Center	7.50	AC
C9	The Campus at College Park	Church	27.000	TSF
		General Office	16.969	TSF
		Shopping Center	17.785	TSF
		High-Turnover (Sit Down) Restaurant	15.876	TSF
C10	Altitude Business Centre	Warehousing	715.000	TSF
		Light Industrial	255.000	TSF
		Business Park	233.000	TSF
		Self-Storage	110.000	TSF
C11	Majestic Gateway	Specialty Retail	25.000	TSF
		Pharmacy/Drugstore with Drive-Thru	13.000	TSF
		Fast-Food with Drive-Thru	8.600	TSF
C12	The Preserve Civic Center	Elementary School	1,200	STU
		Library	10.00	AC
		Community Center	10.00	AC
		Park	8.00	AC
C13	Fairfield Inn & Suites (PL 17-0060 & PL 17-0061)	Hotel	111	RM
C14	Watson Industrial Park (90% complete)	High-Cube Warehouse	388.990	TSF

C15	Majestic Chino Heritage	High-Cube Fulfillment Warehouse	1982.700	TSF
		High-Cube Cold Storage Warehouse	100.000	TSF
C16	Church	Church	47.979	TSF
		Daycare	190	STU
C17	Appesetche Residential	Single Family Detached	60	DU
		Condo/Townhouse	160	DU
C18	Archibald's (PL 17-0037)	Fast-Food with Drive-Thru	3.147	TSF
C19	Rancho Miramonte	Single Family Detached	691	DU
		Condo/Townhouse	132	DU
		Neighborhood Retail	21.780	TSF
		Church	400	SEAT
C20	Eagle's Nest (storage for 33 aircraft)	Aviation Storage	8.3	AC
C21	Lewis Block 3	Single Family Detached	114	DU
C22	Lewis Block 11	Single Family Detached	220	DU
		Multifamily (Low-Rise) Residential	85	DU
		Recreational Community Center	16.000	TSF
C23	Chino Flight	High-Cube Cold Storage Warehouse	138.804	TSF
		High-Cube Fulfillment Center Warehouse	786.558	TSF
City of Eastvale				
E1	Magnolia Ranch	Single Family Detached	39	DU
		Multifamily Housing	90	DU
E2	TR29997	Single Family Detached	122	DU
E3	Sumner Place	Multifamily Housing	216	DU
		Shopping Center	2.500	TSF
		Fast-Food Without Drive-Thru	2.500	TSF
E4	Eastvale Commerce Center (75% complete)	Shopping Center	162.500	TSF
E5	PP23219 (PM35865) (50% complete)	General Light Industrial	738.430	TSF
E6	Eastvale Shopping Center	Free-Standing Discount Superstore	192.000	TSF
		Specialty Retail	9.200	TSF
		Fast-Food Without Drive-Thru	7.200	TSF
		Coffee/Donut Shop w/ Drive Thru	2.000	TSF
		Fast-Food with Drive-Thru	3.500	TSF
		Gas Station w/ convenience store and car wash	16	VFP
E8	SP00358 - The Ranch at Eastvale (75% complete)	Shopping Center	267.200	TSF
		General Light Industrial	801.500	TSF
		Business Park	280.275	TSF
E9	15-1508 - Industrial Warehouse	Warehousing	155.000	TSF
E10	Leal Master Plan	Lifestyle Center (Commercial)	1,300.000	TSF
		General Commercial	225.000	TSF
		Office	920.000	TSF
		Hotel	450	RM
		High Density Residential	500-660	DU
City of Chino Hills				
CH1	Country Club Villas	Condo/Townhouse	46	DU
CH2	Heritage Professional Center	Hospital	55.000	TSF
		Medical Office Building	86.952	TSF
		Hotel	120	RM
		Shopping Center	38.848	TSF
		Restaurant	7.200	TSF

[1] TSF = Thousand Square Feet; DU = Dwelling Unit; VFP = Vehicle Fueling Position ; AC = Acres; RM = Rooms

4.7 NEAR-TERM TRAFFIC CONDITIONS

The "buildup" approach combines existing traffic counts with a background ambient growth factor to forecast Opening Year Cumulative (2027) traffic conditions. An ambient growth factor accounts for background (area-wide) traffic increases that occur over time up to the year 2027 from the year 2022. Traffic volumes generated by the Project are then added to assess the near-term traffic conditions. The 2027 roadway networks are similar to the Existing conditions roadway network, with the exception of future driveways proposed to be developed by the Project.

The near-term traffic analysis includes the following traffic conditions, with the various traffic components:

- Opening Year Cumulative (2027) Without Project
  - Existing 2022 counts
  - Ambient growth traffic (14.9%)
  - Cumulative Development Traffic

  - Opening Year Cumulative (2027) With Project
  - Existing 2022 counts
  - Ambient growth traffic (14.9%)
  - Cumulative Development Traffic
  - Project (Project Buildout) traffic

4.8 HORIZON YEAR (2050) VOLUME DEVELOPMENT

Traffic projections for Horizon Year (2050) without Project conditions were derived from the SBTAM using accepted procedures for model forecast refinement and smoothing for study area intersections located within the County of San Bernardino and are based on the City on Ontario TOP 2050 currently approved General Plan forecasts. The traffic forecasts reflect the area-wide growth anticipated between Existing (2022) conditions and Horizon Year (2050) traffic conditions. In most instances the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Therefore, the Horizon Year (2050) peak hour forecasts were refined using the model derived long range forecasts, base (validation) year model forecasts, along with existing peak hour traffic count data collected at each analysis location in May 2022. The SBTAM has a base (validation) year of 2016 and a horizon (future forecast) year of 2050. The difference in model volumes (2050-2016) defines the growth in traffic over the 32-year period.

The refined future peak hour approach and departure volumes obtained from the model output data are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 765), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

The SBTAM uses an AM peak period-to-peak hour factor of 0.35 and a PM peak period-to-peak hour factor of 0.27. These factors represent the relationship of the highest single AM peak hour to the modeled 3-hour AM peak period (an even distribution would result in a factor of 0.33) and the highest single PM peak hour to the modeled 4-hour PM peak period (an even distribution would result in a factor of 0.25).

5 E+P TRAFFIC CONDITIONS

This section discusses the traffic forecasts for E+P conditions and the resulting intersection operations, traffic signal warrant, and off-ramp queuing analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for E+P conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for E+P conditions only (e.g., intersection and roadway improvements at the Project's frontage and driveways).

5.2 E+P (PHASE 1) GROWTH TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus the addition of Project (Phase 1) traffic. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for E+P traffic conditions are shown on Exhibit 5-1.

5.2 E+P (PROJECT BUILDOUT) GROWTH TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus the addition of Project (Project Buildout) traffic. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for E+P traffic conditions are shown on Exhibit 5-2.

5.3 INTERSECTION OPERATIONS ANALYSIS

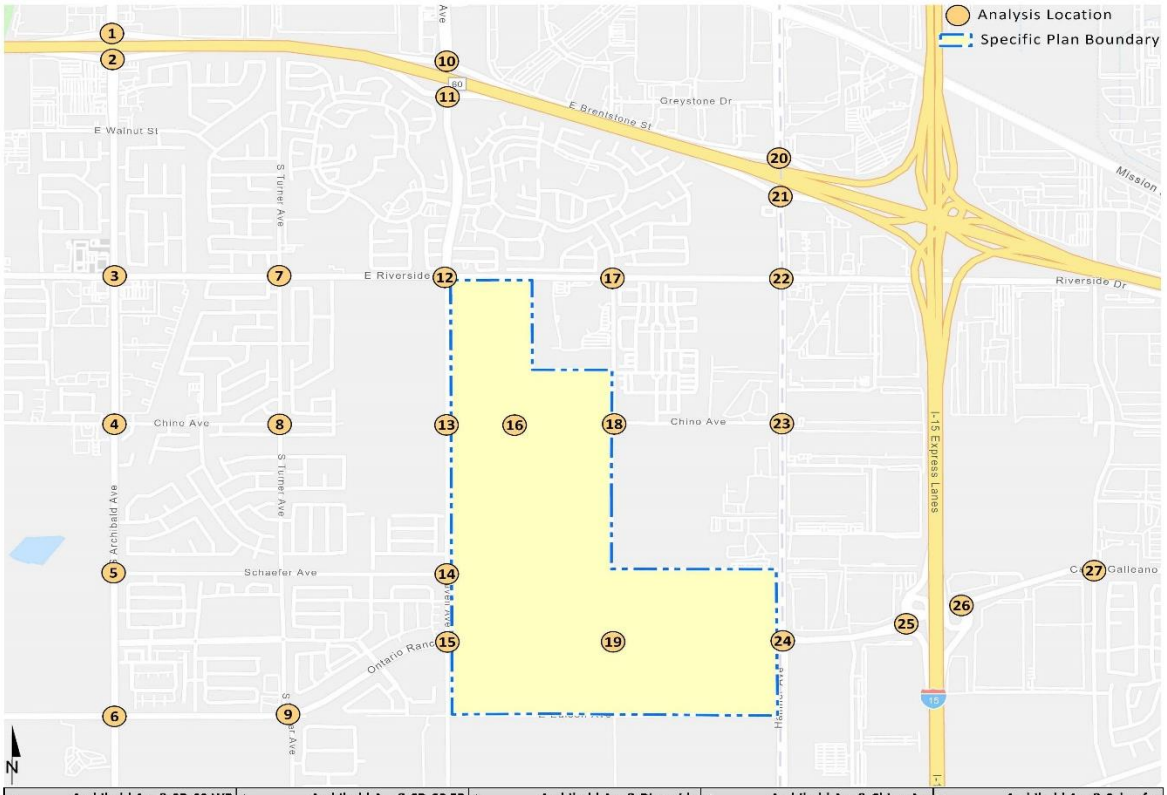
E+P peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 5-1 for E+P traffic conditions, which indicates that the following additional study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under E+P (Phase 1) traffic conditions, in addition to the intersections identified under Existing (2022) traffic conditions:

- Haven Avenue & Chino Avenue (#13) – LOS F PM peak hour only
- Haven Avenue & Ontario Ranch Road (#15) – LOS F PM peak hour only
- Milliken Avenue & Riverside Drive (#22) – LOS E AM peak hour only
- Hamner Avenue & Chino Avenue (#23) – LOS F PM peak hour only
- Hamner Avenue & Ontario Ranch Road (#24) – LOS E PM peak hour only

The following additional study area intersection is anticipated to operate at an unacceptable LOS during the peak hours under E+P (Project Buildout) traffic conditions, in addition to the intersections identified under Existing (2022) traffic conditions:

- Archibald Avenue & Ontario Ranch Road (#6) – LOS F AM and PM peak hours

EXHIBIT 5-1: E+P (PHASE 1) TRAFFIC VOLUMES (PAGE 1 OF 2)



1 Archibald Av. & SR-60 WB Ramps	2 Archibald Av. & SR-60 EB Ramps	3 Archibald Av. & Riverside Dr.	4 Archibald Av. & Chino Av.	5 Archibald Av. & Schaefer Av.
25,600 / 6,050	30,300 / 11,700	28,600 / 19,650	26,950 / 7,000	25,800 / 1,150
↲ 95(266) ← 355(1152)	← 529(1015) ↳ 101(453)	↲ 164(193) ← 438(737) ↳ 162(239)	↲ 47(46) ← 538(888) ↳ 48(68)	← 695(1000) ↳ 42(44)
↰ 385(151) ← 7(1) ↰ 270(316)	273(65) ↳ 4(1) → 380(391) ↴	↰ 207(135) ← 496(429) ↰ 85(112)	↰ 167(55) ← 166(97) ↰ 87(17)	↰ 61(15) ↰ 33(15)
↰ ↑ 719(461) 900(420)	↑ ↱ 1332(818) 417(453)	↰ ↑ ↱ 132(159) 364(565) 144(297) / 281(245) 1143(756) 75(67)	↰ ↑ ↱ 149(90) 1148(904) 93(24)	→ ↱ 1227(950) 25(16)
9,400 / 30,250	5,900 / 34,500	24,000 / 28,500	10,050 / 26,350	25,450

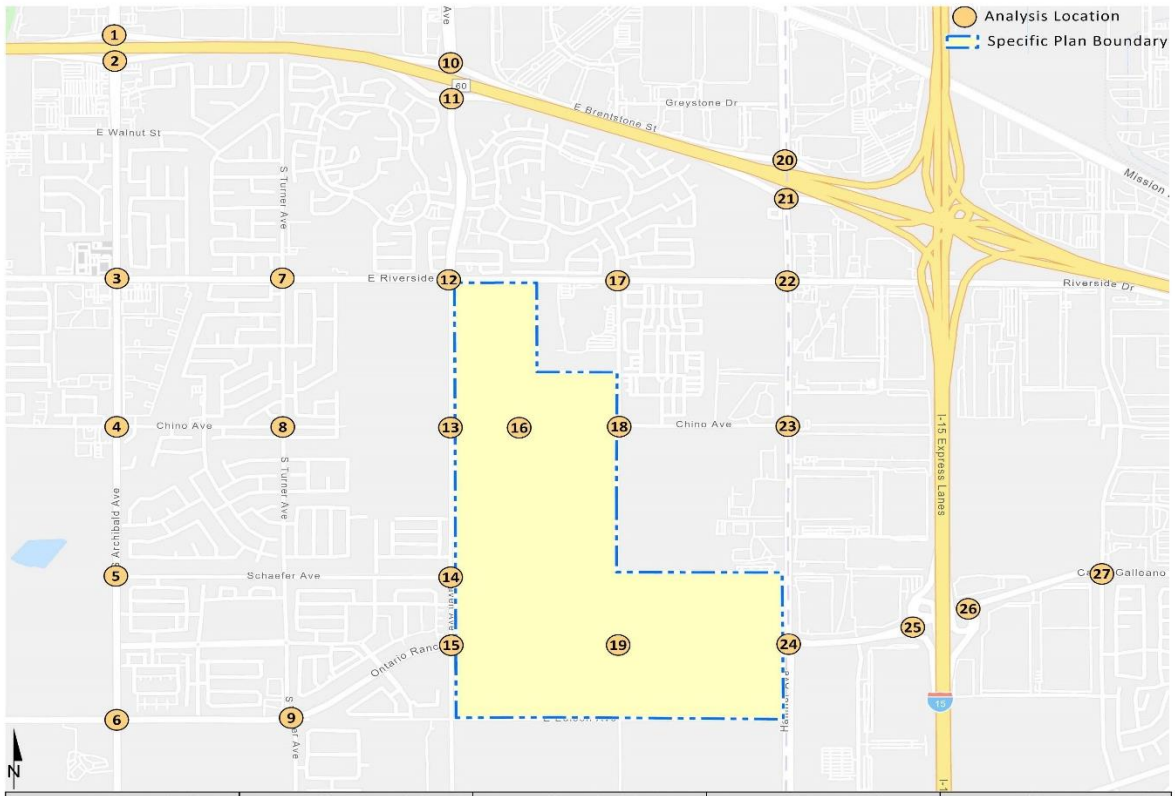
6 Archibald Av. & Ontario Ranch Rd.	7 Turner Av. & Riverside Dr.	8 Turner Av. & Chino Av.	9 Turner Av. & Ontario Ranch Rd.	10 Haven Av. & SR-60 WB Ramps
24,050 / 24,000	3,550 / 18,300	6,450 / 4,550	2,300 / 27,600	42,700 / 9,750
↲ 45(38) ← 431(670) ↳ 141(244)	↲ 109(53) ← 159(36) ↳ 110(21)	↲ 73(41) ← 182(184) ↳ 39(27)	↲ 19(8) ← 63(25) ↳ 69(75)	← 301(594) ↳ 744(1426)
↰ 203(171) ← 396(261) ↰ 291(260)	↰ 128(34) ← 493(615) ↰ 83(113)	↰ 89(39) ← 167(91) ↰ 26(23)	↰ 58(47) ← 901(759) ↰ 59(72)	↰ 617(491) ← 3(9) ↰ 162(257)
21(77) ↳ 221(600) → 60(253) ↴ / ↰ ↑ ↱ 161(87) 937(673) 270(364)	114(86) ↳ 392(531) → 109(182) ↴ / ↰ ↑ ↱ 236(133) 207(44) 218(128)	96(92) ↳ 89(160) → 96(53) ↴ / ↰ ↑ ↱ 129(18) 396(119) 23(23)	31(16) ↳ 597(1175) → 15(43) ↴ / ↰ ↑ ↱ 33(16) 128(11) 45(55)	↰ ↑ 568(327) 568(327)
16,750 / 29,650	20,300 / 8,200	5,800 / 5,400	25,550 / 2,850	12,400 / 36,600

11 Haven Av. & SR-60 EB Ramps	12 Haven Av. & Riverside Dr.	13 Haven Av. & Chino Av.	14 Haven Av. & Schaefer Av.	15 Haven Av. & Ontario Ranch Rd.
36,850 / 9,500	26,700 / 12,700	18,850 / 5,850	24,350	23,850 / 34,750
← 687(1142) ↳ 241(560)	↲ 223(330) ← 382(714) ↳ 291(131)	↲ 78(51) ← 424(821)	↲ 21(20) ← 578(1128)	↲ 197(137) ← 232(447) ↳ 358(410)
	↰ 183(112) ← 371(313) ↰ 113(63)	← 45(40) ↰ 81(248)		↰ 353(356) ← 675(731) ↰ 70(222)
602(260) ↳ 3(1) → 306(479) ↴ / → ↱ 1379(885) 313(175)	311(276) ↳ 476(336) → 34(73) ↴ / ↰ ↑ ↱ 44(44) 658(551) 101(61)	62(79) ↳ 27(46) → 76(87) ↴ / ↰ ↑ ↱ 163(81) 765(579) 250(145)	38(21) ↳ 81(82) ↴ / ↰ ↑ 101(119) 1107(785)	158(289) ↳ 671(968) → 17(34) ↴ / ↰ ↑ ↱ 31(17) 421(264) 114(67)
8,850 / 34,000	17,350 / 18,850	4,800 / 24,450	3,100 / 26,450	27,500 / 13,400

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 5-1: E+P (PHASE 1) TRAFFIC VOLUMES (PAGE 2 OF 2)



16 Twinkle Av. & Chino Av.

1,300			5,550
↳ 41(24)	↳ 27(16)	↱ 9(27)	
		← 85(264)	
13(41) →			
264(151) →			
5,850			

17 Mill Creek Av. & Riverside Dr.

4,400			13,850
↳ 76(49)	↳ 155(14)	↳ 82(57)	↱ 89(111)
			← 189(283)
			↰ 190(215)
303(92) →	↰	↑	↱
181(265) →	→ 204(130)	→ 75(18)	→ 271(166)
296(129) ↴			
11,850			8,050

18 Mill Creek Av. & Chino Av.

4,900			3,400
↳ 40(122)	↳ 110(84)	↳ 16(9)	↱ 4(14)
			← 49(149)
			↰ 14(6)
123(72) →	↰	↑	↱
151(88) →	→ 5(20)	→ 65(129)	→ 4(16)
17(7) ↴			
5,550			2,800

19 Mill Creek Av. & Ontario Ranch Rd.

5,500			12,150
↳ 40(72)	↳ 13(41)	↳ 67(232)	↱ 226(131)
			← 197(316)
			↰ 94(90)
66(40) →	↰	↑	↱
343(250) →	→ 215(139)	→ 41(24)	→ 106(74)
130(198) ↴			
12,100			7,600

20 Milliken Av. & SR-60 WB Ramps

28,850			5,950
↳ 128(400)	↳ 351(971)		↱ 474(262)
			← 2(2)
			↰ 227(223)
	↰	↑	
	→ 274(275)	→ 1073(618)	
8,350			26,050

21 Milliken Av. & SR-60 EB Ramps

25,900			5,850
↳ 517(990)	↳ 48(202)		
		↑	↱
302(145) →		1083(740)	264(240) →
1(2) →			
236(244) ↴			
5,000			27,750

22 Milliken Av. & Riverside Dr.

27,300			7,800
↳ 178(295)	↳ 435(852)	↳ 125(116)	↱ 110(96)
			← 106(168)
			↰ 16(61)
256(203) →	↰	↑	↱
146(145) →	→ 140(145)	→ 928(617)	→ 33(26)
138(145) ↴			
13,900			23,200

23 Hamner Av. & Chino Av.

23,300			
↳ 47(103)	↳ 520(951)		
		↑	↱
104(73) →		28(73)	1042(729) →
0(1) →			
77(46) ↴			
3,600			22,650

24 Hamner Av. & Ontario Ranch Rd.

21,800			39,700
↳ 157(169)	↳ 215(520)	↳ 169(262)	↱ 245(166)
			← 976(1014)
			↰ 249(419)
220(173) →	↰	↑	↱
867(1038) →	→ 210(354)	→ 585(386)	→ 350(324)
126(312) ↴			
36,200			29,700

25 I-15 SB Ramps & Cantu Galleano Ranch Rd.

21,000			31,450
↳ 1019(1288)	↳ 0(1)	↳ 223(263)	↱ 104(111)
			← 915(861)
933(1274) →			
467(570) ↴			
49,650			6,900

26 I-15 NB Ramps & Cantu Galleano Ranch Rd.

150			17,950
			← 357(392)
			↰ 162(190)
14(8) →	↰	↱	
411(702) →	→ 658(555)	→ 318(120)	
760(868) ↴			
31,650			21,600

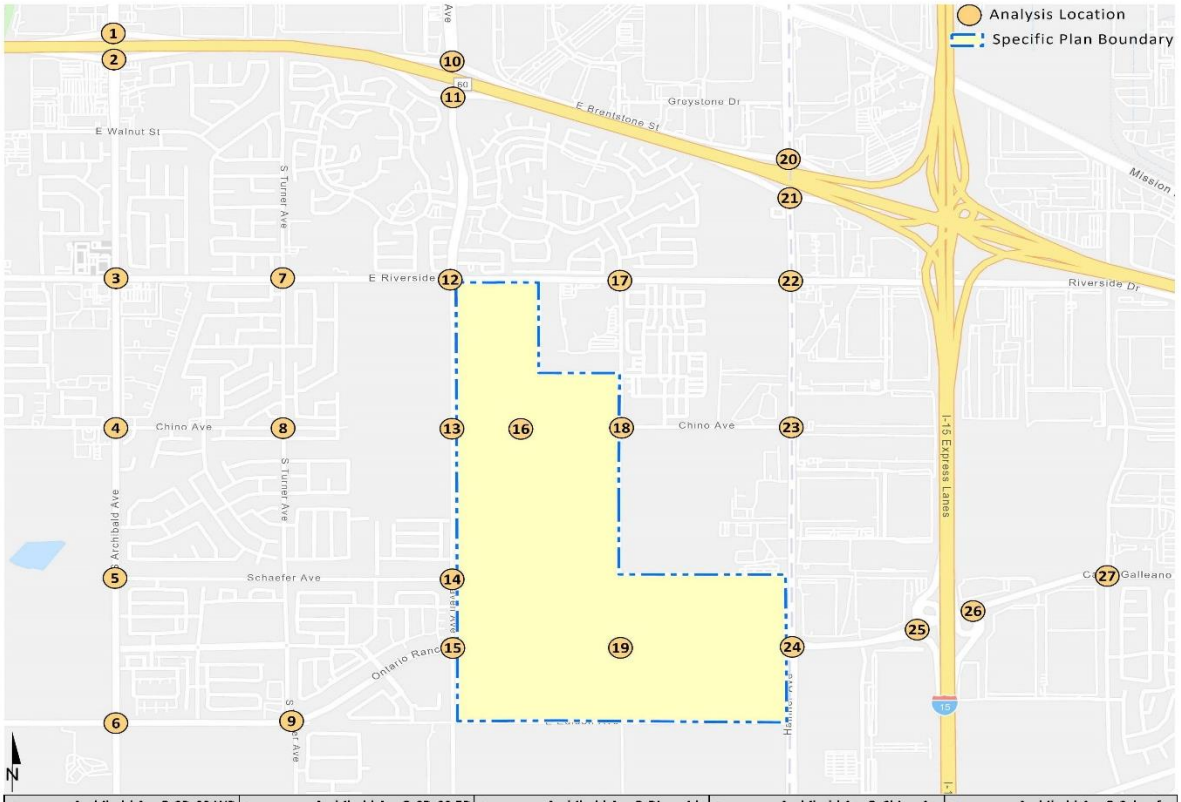
27 Wineville Av. & Cantu Galleano Ranch Rd.

6,350			8,900
↳ 60(141)	↳ 52(155)	↳ 15(27)	↱ 38(18)
			← 183(242)
			↰ 19(22)
328(72) →	↰	↑	↱
249(354) →	→ 225(196)	→ 274(82)	→ 16(41)
246(311) ↴			
16,800			10,400

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 5-2: E+P (BUILDOUT) TRAFFIC VOLUMES (PAGE 1 OF 2)



1 Archibald Av. & SR-60 WB Ramps

	6,050	
26,600	↱ 385(151)	
↲ 95(266)	← 7(1)	
← 384(1201)	↰ 270(316)	
	↴ ↑	
	719(461) 950(453)	
9,400		31,250

2 Archibald Av. & SR-60 EB Ramps

	11,700	
31,250	← 558(1064)	↳ 101(453)
	273(65) ↳	
	4(1) →	
	380(391) ↴	
	↑	↱
	1382(851)	417(453)
5,900		35,500

3 Archibald Av. & Riverside Dr.

	20,300	
29,550	↱ 207(135)	
↲ 164(193)	← 532(449)	
← 467(787)	↰ 85(112)	
↳ 162(239)	↴ ↑ ↱	
132(159) ↳	319(274) 1193(789) 75(67)	
376(601) →		
181(333) ↴		
25,500		30,250

4 Archibald Av. & Chino Av.

	8,150	
28,750	↱ 167(55)	
↲ 47(46)	← 211(123)	
← 604(974)	↰ 104(31)	
↳ 48(68)	↴ ↑ ↱	
65(136) ↳	164(102) 1235(966) 107(36)	
110(335) →		
67(140) ↴		
11,200		28,750

5 Archibald Av. & Schaefer Av.

	1,450	
28,250	↱ 61(15)	
← 795(1114)	← 42(44)	
↳ 42(44)	↰ 50(29)	
	↑ ↱	
	1344(1036) 40(28)	
28,200		

6 Archibald Av. & Ontario Ranch Rd.

	33,300	
26,800	↱ 334(269)	
↲ 45(38)	← 585(408)	
← 431(670)	↰ 416(352)	
↳ 258(372)	↴ ↑ ↱	
21(77) ↳	161(87) 937(673) 373(487)	
407(784) →		
60(253) ↴		
20,750		32,200

7 Turner Av. & Riverside Dr.

	18,950	
3,550	↱ 128(34)	
↲ 109(53)	← 528(635)	
← 159(36)	↰ 83(113)	
↳ 110(21)	↴ ↑ ↱	
114(86) ↳	236(133) 207(44) 218(128)	
403(566) →		
109(182) ↴		
21,000		8,200

8 Turner Av. & Chino Av.

	5,750	
6,650	↱ 98(44)	
↲ 73(41)	← 211(117)	
← 182(184)	↰ 34(28)	
↳ 42(36)	↴ ↑ ↱	
96(92) ↳	129(18) 396(119) 26(32)	
103(204) →		
96(53) ↴		
6,600		5,550

9 Turner Av. & Ontario Ranch Rd.

	38,200	
2,950	↱ 90(70)	
↲ 19(8)	← 1363(1108)	
← 63(25)	↰ 77(82)	
↳ 92(106)	↴ ↑ ↱	
31(16) ↳	33(16) 128(11) 50(72)	
1021(1624) →		
15(43) ↴		
35,150		3,150

10 Haven Av. & SR-60 WB Ramps

	9,750	
45,100	↱ 617(491)	
← 301(594)	← 3(9)	
← 845(1540)	↰ 162(257)	
	↰ ↑	
	826(506) 826(506)	
15,000		41,650

11 Haven Av. & SR-60 EB Ramps

	9,500	
41,900		
← 788(1256)		
↳ 241(560)		
602(260) ↳	↑	↱
3(1) →	1754(1151)	313(175)
490(733) ↴		
11,450		41,650

12 Haven Av. & Riverside Dr.

	13,700	
34,650	↱ 183(112)	
← 223(330)	← 389(323)	
↳ 683(1095)	↰ 148(91)	
↳ 291(131)	↴ ↑ ↱	
311(276) ↳	62(54) 1047(828) 130(85)	
482(354) →		
40(91) ↴		
18,050		27,750

13 Haven Av. & Chino Av.

	9,400	
28,050	← 71(55)	
← 105(67)	↰ 133(407)	
↳ 762(1239)	↴ ↑ ↱	
71(105) ↳	186(99) 1192(886) 409(238)	
36(73) →		
96(109) ↴		
6,300		36,700

14 Haven Av. & Schaefer Av.

36,650		
← 21(20)		
↳ 988(1727)		
38(21) ↳	↑	
	116(131)	1717(1203)
98(96) ↴		
3,450		39,000

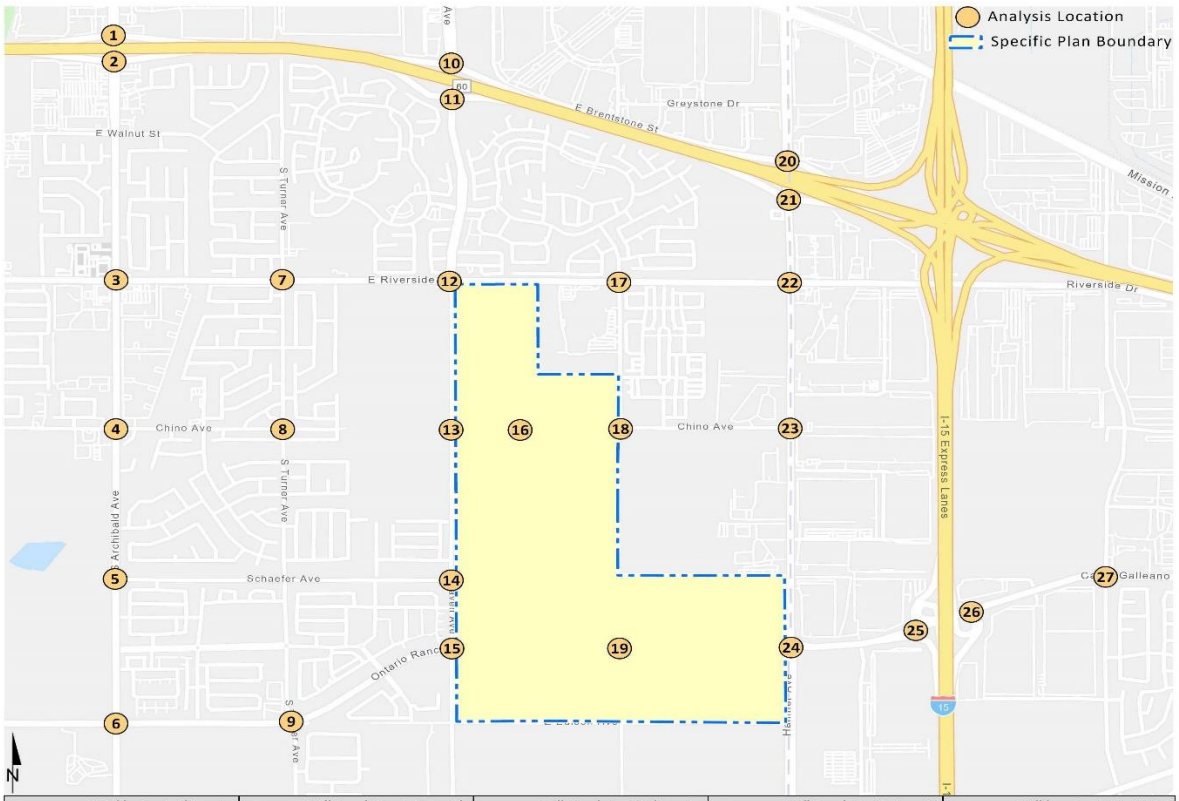
15 Haven Av. & Ontario Ranch Rd.

	49,900	
35,050	↱ 671(602)	
← 314(212)	← 1076(1042)	
↳ 286(556)	↰ 70(222)	
↳ 673(718)	↴ ↑ ↱	
221(405) ↳	31(17) 531(334) 114(67)	
1069(1357) →		
17(34) ↴		
38,250		15,550

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 5-2: E+P (BUILDOUT) TRAFFIC VOLUMES (PAGE 2 OF 2)



16 Twinkle Av. & Chino Av.

2,150			8,950
↲ 68(40)	↳ 45(26)	↱ 15(45)	
		← 137(423)	
22(67) ↦			
423(244) →			
9,400			

17 Mill Creek Av. & Riverside Dr.

4,700			16,700
↲ 93(63)	↳ 155(14)	↱ 82(57)	↱ 89(111)
			← 209(305)
			↰ 230(338)
318(104) ↦			↰ ↑ ↱
204(283) →			204(130) 75(18) 394(239)
296(129) ↴			
12,650			10,400

18 Mill Creek Av. & Chino Av.

7,100			5,450
↲ 66(202)	↳ 118(110)	↱ 25(14)	↱ 7(22)
			← 81(246)
			↰ 14(6)
203(119) ↦			↰ ↑ ↱
248(145) →			5(20) 92(144) 4(16)
17(7) ↴			
8,950			3,300

19 Mill Creek Av. & Ontario Ranch Rd.

9,450			26,450
↲ 92(121)	↳ 22(67)	↱ 94(256)	↱ 266(170)
			← 610(688)
			↰ 274(279)
112(80) ↦			↰ ↑ ↱
877(630) →			462(351) 67(39) 282(246)
333(459) ↴			
28,100			23,800

20 Milliken Av. & SR-60 WB Ramps

31,650			7,950
↲ 128(400)	↳ 446(1106)		↱ 474(262)
			← 2(2)
			↰ 401(410)
			↰ ↑
			274(275) 1211(713)
8,350			30,800

21 Milliken Av. & SR-60 EB Ramps

30,700			7,850
↲ 786(1313)	↳ 48(202)		
302(145) ↦		↑	↱
1(2) →		1221(835)	457(385)
236(244) ↴			
5,000			34,550

22 Milliken Av. & Riverside Dr.

34,100			9,100
↲ 204(374)	↳ 679(1096)	↱ 125(116)	↱ 110(96)
			← 140(235)
			↰ 16(61)
335(250) ↦			↰ ↑ ↱
213(188) →			140(145) 1179(810) 33(26)
138(145) ↴			
16,750			28,450

23 Hamner Av. & Chino Av.

28,550			
↲ 67(164)	↳ 743(1133)		
165(109) ↦		↑	↱
0(1) →		57(129)	1231(886)
138(86) ↴			
5,950			27,900

24 Hamner Av. & Ontario Ranch Rd.

27,400			51,750
↲ 415(379)	↳ 242(536)	↱ 187(273)	↱ 250(184)
			← 1463(1501)
			↰ 292(473)
438(354) ↦			↰ ↑ ↱
1369(1424) →			365(480) 594(412) 406(363)
257(421) ↴			
54,250			34,150

25 I-15 SB Ramps & Cantu Galleano Ranch Rd.

23,350			38,000
↲ 1216(1507)	↳ 0(1)	↱ 223(263)	↱ 104(111)
			← 1253(1201)
1213(1481) →			
762(799) ↴			
61,650			10,000

26 I-15 NB Ramps & Cantu Galleano Ranch Rd.

200			19,050
		← 400(447)	
		↰ 162(190)	
23(13) ↦		↰	↱
467(742) →		953(840)	318(120)
976(1030) ↴			
38,200			26,950

27 Wineville Av. & Galleano Ranch Rd.

6,850			9,400
↲ 80(163)	↳ 52(155)	↱ 15(27)	↱ 38(18)
			← 203(264)
			↰ 19(22)
351(90) ↦			↰ ↑ ↱
273(371) →			228(205) 274(82) 16(41)
255(316) ↴			
17,900			10,550

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 5-1: INTERSECTION ANALYSIS FOR E+P CONDITIONS

#	Intersection	Traffic Control[2]	Existing (2022) Delay[1] (secs.) AM	PM	Existing (2022) Level of Service AM	PM	E+P (Phase 1) Delay[1] (secs.) AM	PM	E+P (Phase 1) Level of Service AM	PM	E+P (Project Buildout) Delay[1] (secs.) AM	PM	E+P (Project Buildout) Level of Service AM	PM	Acceptable LOS
1	Archibald Av. & SR-60 WB Ramps	TS	18.5	28.9	B	C	18.3	28.5	B	C	18.2	28.2	A	C	D
2	Archibald Av. & SR-60 EB Ramps	TS	14.9	13.9	B	B	14.8	13.6	B	B	14.6	13.4	B	B	D
3	Archibald Av. & Riverside Dr.	TS	39.2	34.8	D	C	44.0	39.1	D	D	48.3	44.8	D	D	E
4	Archibald Av. & Chino Av.	TS	20.3	23.7	C	C	23.9	30.9	C	C	28.2	42.6	C	D	E
5	Archibald Av. & Schaefer Av.	TS	10.6	5.9	B	A	10.9	6.0	B	A	11.4	6.4	B	A	E
6	Archibald Av. & Ontario Ranch Rd.	TS	30.6	28.6	C	C	36.2	22.8	D	C	**142.5**	**91.8**	**F**	**F**	E
7	Turner Av. & Riverside Dr.	TS	33.2	22.5	C	C	35.9	22.8	D	C	37.7	22.9	D	C	E
8	Turner Av. & Chino Av.	AWS	27.3	10.0	D	A	36.6	10.9	E	B	45.4	11.5	E	B	E
9	Turner Av. & Ontario Ranch Rd.	TS	16.3	13.3	B	B	18.5	14.9	B	B	26.8	24.1	C	C	E
10	Haven Av. & SR-60 WB Ramps	TS	14.4	11.2	B	B	16.7	13.9	B	B	19.0	16.5	B	B	D
11	Haven Av. & SR-60 EB Ramps	TS	22.7	17.2	C	B	23.6	20.4	C	C	39.9	45.6	D	D	D
12	Haven Av. & Riverside Dr.	TS	**106.4**	**82.4**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**	E
13	Haven Av. & Chino Av.	CSS/**TS**	12.7	13.1	B	B	35.5	**>100.0**	D	**F**	**>100.0**	**>100.0**	**F**	**F**	E
14	Haven Av. & Schaefer Av.	TS	9.0	9.4	A	A	14.4	11.3	B	B	**93.5**	28.4	**F**	C	E
15	Haven Av. & Ontario Ranch Rd.	TS	32.1	45.0	C	D	74.6	**84.4**	E	**F**	**>200.0**	**>200.0**	**F**	**F**	E
16	Twinkle Av. & Chino Av.	RB	Future Intersection				4.7	4.9	A	A	6.4	6.8	A	A	E
17	Mill Creek Av. & Riverside Dr.	TS	40.9	21.2	D	C	56.3	24.5	E	C	60.8	27.1	E	C	E
18	Mill Creek Av. & Chino Av.	AWS/**RB**	7.1	7.2	A	A	10.6	9.5	B	A	12.5	11.5	B	B	E
19	Mill Creek Av. & Ontario Ranch Rd.	TS	Future Intersection				22.0	22.7	C	C	53.5	41.9	D	D	E
20	Milliken Av. & SR-60 WB Ramps	TS	18.6	16.1	B	B	20.4	23.7	C	C	23.4	45.2	C	D	D
21	Milliken Av. & SR-60 EB Ramps	TS	22.4	16.5	C	B	25.0	17.0	C	B	31.5	19.4	C	B	D
22	Milliken Av. & Riverside Dr.	TS	50.7	27.1	D	C	**60.3**	40.6	**E**	D	**93.5**	**66.2**	**F**	**E**	D
23	Hamner Av. & Chino Av.	CSS	13.1	16.3	B	C	29.3	**51.2**	D	**F**	**>100.0**	**>100.0**	**F**	**F**	D
24	Hamner Av. & Ontario Ranch Rd.	TS	22.6	29.6	C	C	33.8	**70.2**	C	**E**	**139.7**	**171.1**	**F**	**F**	D
25	I-15 SB Ramps & Cantu Galleano Ranch Rd.	TS	26.8	24.3	C	C	30.2	24.9	C	C	19.3	26.4	B	C	D
26	I-15 NB Ramps & Cantu Galleano Ranch Rd.	TS	18.1	18.1	B	B	38.4	24.8	D	C	41.1	35.5	D	D	D
27	Wineville Av. & Cantu Galleano Ranch Rd.	TS	17.8	17.8	B	B	18.0	18.2	B	B	18.7	18.7	B	B	D

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

1 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

2 TS = Traffic Signal; AWS = All-way Stop; CSS = Cross-street Stop; RB = Roundabout; **TS** = Traffic Signal

The intersection operations analysis worksheets for E+P (Phase 1) and E+P (Project Buildout) traffic conditions are included in Appendices 5.1 and 5.2, respectively.

5.4 TRAFFIC SIGNAL WARRANTS ANALYSIS

The traffic signal warrant analysis for E+P traffic conditions is based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. The following unsignalized study area intersections of are anticipated to meet a traffic signal warrant under E+P (Phase 1) traffic conditions (see Appendix 5.3):

- Haven Avenue & Chino Avenue (#13)
- Hamner Avenue & Chino Avenue (#23)

There are no unsignalized study area intersections evaluated for E+P (Project Buildout) traffic conditions, since all unsignalized study area intersections have previously met a traffic signal warrant under Existing or E+P (Phase 1) traffic conditions.

5.5 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for E+P are presented in Table 5-2. As shown in Table 5-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows, consistent with Existing (2022) traffic conditions. Worksheets for E+P (Phase 1) and E+P (Project Buildout) traffic conditions queuing analysis are provided in Appendices 5.4 and 5.5, respectively.

5.6 PROJECT DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections or off-ramps that are anticipated to operate at a deficient LOS under E+P traffic conditions.

5.6.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Improvement strategies have been recommended at intersections that have been identified as deficient under E+P traffic conditions in an effort to achieve an acceptable LOS. The effectiveness of the recommended improvement strategies to address E+P traffic deficiencies are presented in Table 5-3. Worksheets for E+P (Phase 1) and E+P (Project Buildout) conditions, with improvements, HCM calculation worksheets are provided in Appendices 5.6 and 5.7, respectively.

5.6.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown in Table 5-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for E+P traffic conditions. As such, no improvements have been identified.

TABLE 5-2: PEAK HOUR OFF-RAMP QUEUING SUMMARY FOR E+P CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	Existing (2022) 95th Percentile Queue (Feet) AM Peak	Existing (2022) 95th Percentile Queue (Feet) PM Peak	Existing (2022) Acceptable? [1] AM	Existing (2022) Acceptable? [1] PM	E+P (Phase 1) 95th Percentile Queue (Feet) AM Peak	E+P (Phase 1) 95th Percentile Queue (Feet) PM Peak	E+P (Phase 1) Acceptable? [1] AM	E+P (Phase 1) Acceptable? [1] PM	E+P (Project Buildout) 95th Percentile Queue (Feet) AM Peak	E+P (Project Buildout) 95th Percentile Queue (Feet) PM Peak	E+P (Project Buildout) Acceptable? [1] AM	E+P (Project Buildout) Acceptable? [1] PM
Archibald Av. & SR-60 WB Ramps	WBL	365	308 [2]	190	Yes	Yes	308 [2]	190	Yes	Yes	308 [2]	190	Yes	Yes
	WBL/T/R	1,285	178 [2]	193	Yes	Yes	178 [2]	193	Yes	Yes	178 [2]	193	Yes	Yes
	WBR	365	131	53	Yes	Yes	146	53	Yes	Yes	155	53	Yes	Yes
Archibald Av. & SR-60 EB Ramps	EBL	325	228	101	Yes	Yes	228	101	Yes	Yes	228	101	Yes	Yes
	EBL/T/R	1,265	160	132	Yes	Yes	160	143	Yes	Yes	160	151	Yes	Yes
	EBR	325	74	123	Yes	Yes	84	133	Yes	Yes	94	141	Yes	Yes
Haven Av. & SR-60 WB Ramps	WBL	240	52	141	Yes	Yes	52	141	Yes	Yes	52	141	Yes	Yes
	WBL/T	1,370	256	140	Yes	Yes	256	140	Yes	Yes	256	140	Yes	Yes
	WBR	240	0	0	Yes	Yes	0	0	Yes	Yes	0	0	Yes	Yes
Haven Av. & SR-60 EB Ramps	EBL	1,400	302 [2]	163	Yes	Yes	302 [2]	163	Yes	Yes	302 [2]	163	Yes	Yes
	EBL/T	660	307 [2]	165	Yes	Yes	307 [2]	165	Yes	Yes	307 [2]	165	Yes	Yes
	EBR	285	42	120	Yes	Yes	129	491 [2,3]	Yes	Yes	367 [2,3]	843 [2,3]	Yes	Yes
Milliken Av. & SR-60 WB Ramps	WBL	215	95	83	Yes	Yes	172	235 [2,3]	Yes	Yes	313 [3]	504 [2,3]	Yes	Yes
	WBR	1,490	439 [2]	118	Yes	Yes	439 [2]	159	Yes	Yes	439 [2]	208 [2]	Yes	Yes
Milliken Av. & SR-60 EB Ramps	EBL	1,415	361 [2]	212	Yes	Yes	380 [2]	212	Yes	Yes	380 [2]	212	Yes	Yes
	EBR	1,165	120	167	Yes	Yes	184	332 [2]	Yes	Yes	308 [2]	384 [2]	Yes	Yes
I-15 NB Ramps & Cantu Galleano Ranch Rd.	SBL	1,435	244	154	Yes	Yes	209	154	Yes	Yes	183	154	Yes	Yes
	SBL/R	550	126	517	Yes	Yes	239	875 [2,3]	Yes	Yes	941 [2,3]	1,101 [2,3]	Yes	Yes
	SBR	455	89	466 [3]	Yes	Yes	218	734 [2,3]	Yes	Yes	883 [2,3]	1,004 [2,3]	Yes	Yes
Wineville Av. & Cantu Galleano Ranch Rd.	NBL	1,615	268	188	Yes	Yes	447 [2]	420 [2]	Yes	Yes	724 [2]	694 [2]	Yes	Yes
	NBL/R	585	74	61	Yes	Yes	89	63	Yes	Yes	163	86	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the SR-60 and I-15 Freeway mainline.

TABLE 5-3: E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WITH IMPROVEMENTS

	Traffic	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service		Acceptable
		Northbound			Southbound			Eastbound			Westbound							
	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	LOS
6 Archibald Av. & Ontario Ranch Rd.																		
E+P (Phase 1):		Not Applicable																E
E+P (Project Buildout):	TS	1	2	1	**2**	2	1	2	2	1	2	**2**	1	62.7	52.0	E	D	
12 Haven Av. & Riverside Dr.																		
E+P (Phase 1):	TS	**1**	**2**	0	1	1	1	1	**2**	0	1	2	0	44.8	35.3	D	D	E
E+P (Project Buildout):	TS	**1**	**2**	0	1	1	1	1	**2**	0	1	2	0	77.8	65.7	E	E	
13 Haven Av. & Chino Av.																		
E+P (Phase 1):	**TS**	1	**2**	0	**1**	**2**	0	1	**1**	**0**	**1**	**1**	0	17.8	23.4	B	C	E
E+P (Project Buildout):	**TS**	1	**2**	0	**1**	**2**	0	1	**1**	**0**	**1**	**1**	0	22.7	68.0	C	E	
14 Haven Av. & Schaefer Av.																		
E+P (Phase 1):		Not Applicable																E
E+P (Project Buildout):	TS	1	**2**	0	0	2	0	1	0	1	0	0	0	5.0	18.3	A	B	
15 Haven Av. & Ontario Ranch Rd.																		
E+P (Phase 1):	TS	1	**2**	1	**2**	**2**	1	**2**	3	1	2	4	1	28.0	24.7	C	C	E
E+P (Project Buildout):	TS	1	**2**	1	**2**	**2**	1	**2**	3	1	2	4	1	54.9	78.2	D	E	
22 Milliken Av. & Riverside Dr.																		
E+P (Phase 1):	TS	**2**	2	1	1	2	1	1	1	1	1	1	1	29.2	23.6	C	C	D
E+P (Project Buildout):	TS	**2**	2	1	1	2	1	1	1	1	1	1	1	39.7	30.9	D	C	
23 Hamner Av. & Chino Av.																		
E+P (Phase 1):	**TS**	0	2	0	0	**2**	0	0	1	0	0	0	0	6.2	6.3	A	A	D
E+P (Project Buildout):	**TS**	0	2	0	0	**2**	0	0	1	0	0	0	0	10.7	8.5	B	A	
24 Hamner Av. & Ontario Ranch Rd.																		
E+P (Phase 1):	**TS**	2	3	1	2	**4**	**2**	2	4	**1**	2	**4**	1	25.3	33.5	C	C	D
E+P (Project Buildout):	**TS**	2	3	1	2	**4**	**2**	2	4	**1**	2	**4**	1	71.2	75.2	E	E	

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; **TS** = Traffic Signal

[4] Improvement includes modifying the traffic signal to implement protected left turn phasing for the northbound and southbound approaches.

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6 OPENING YEAR CUMULATIVE (2027) TRAFFIC CONDITIONS

This section discusses the traffic forecasts for Opening Year Cumulative (2027) conditions and the resulting intersection operations, traffic signal warrant, and off-ramp queuing analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2027) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year Cumulative (2027) conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).
- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year Cumulative (2027) conditions (e.g., intersection and roadway improvements at the Project's frontage and driveways).

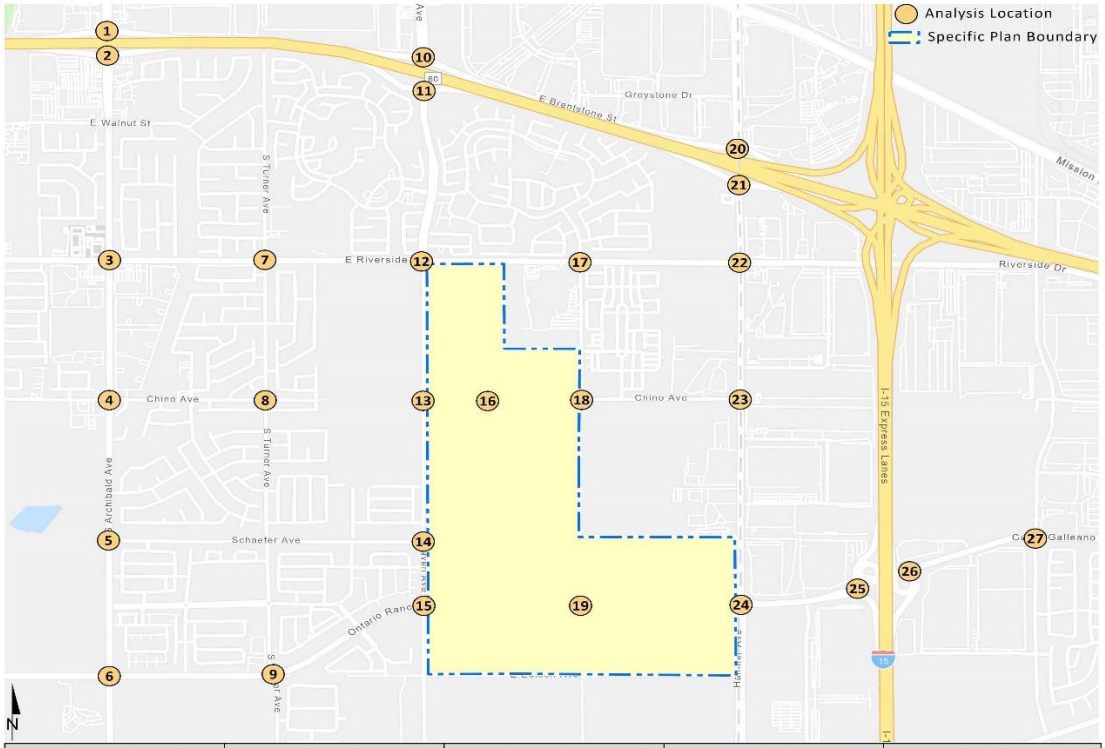
6.2 OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT GROWTH TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 14.9% plus traffic from pending and approved but not yet constructed known development projects in the area. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Opening Year Cumulative (2027) Without Project traffic conditions are shown on Exhibit 6-1.

6.3 OPENING YEAR CUMULATIVE (2027) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Opening Year Cumulative (2027) Without Project traffic in conjunction with the addition of Project (Project Buildout) traffic. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Opening Year Cumulative (2027) With Project traffic conditions are shown on Exhibit 6-2.

EXHIBIT 6-1: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT TRAFFIC VOLUMES (PAGE 1 OF 2)



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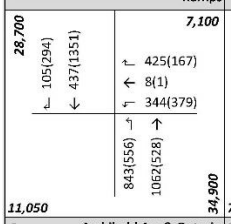

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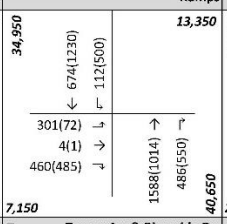
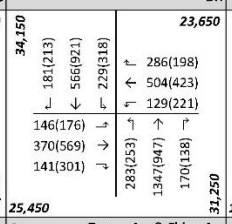
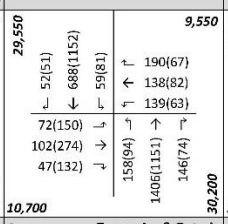


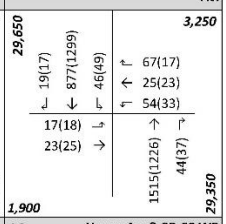
3 Archibald Av. & Riverside Dr.



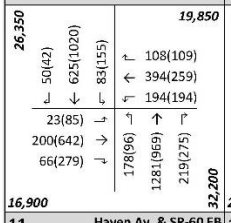
4 Archibald Av. & Chino Av.



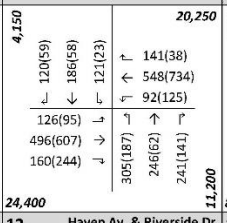
5 Archibald Av. & Schaefer Av.



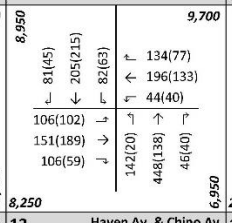
6 Archibald Av. & Ontario Ranch Rd.



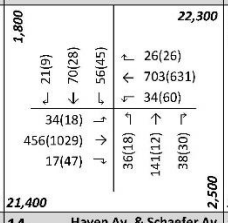
7 Turner Av. & Riverside Dr.



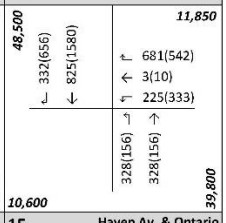
8 Turner Av. & Chino Av.



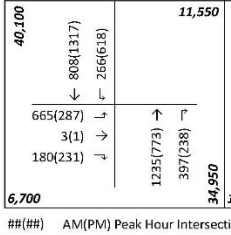
9 Turner Av. & Ontario Ranch Rd.



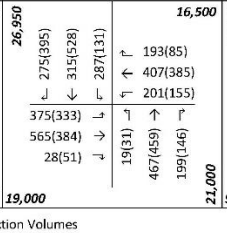
10 Haven Av. & SR-60 WB Ramps



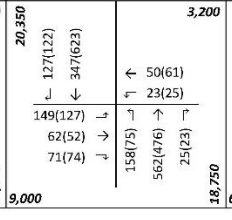
11 Haven Av. & SR-60 EB Ramps



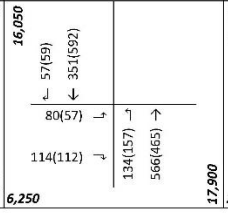
12 Haven Av. & Riverside Dr.



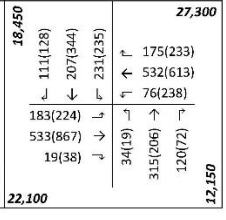
13 Haven Av. & Chino Av.



14 Haven Av. & Schaefer Av.



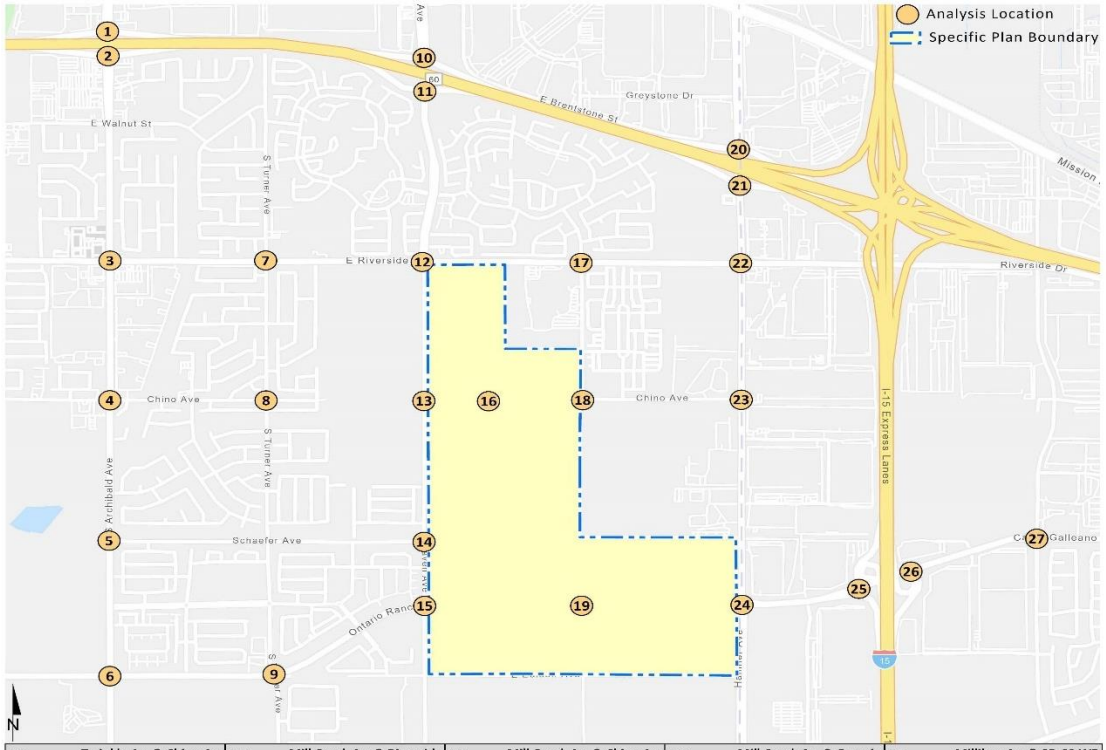
15 Haven Av. & Ontario Ranch Rd.



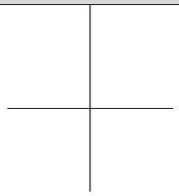
##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

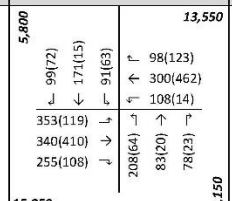
EXHIBIT 6-1: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT TRAFFIC VOLUMES (PAGE 2 OF 2)



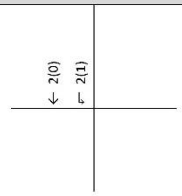
16 Twinkle Av. & Chino Av.



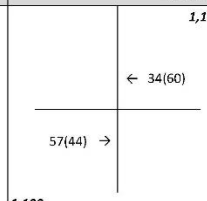
17 Mill Creek Av. & Riverside Dr.



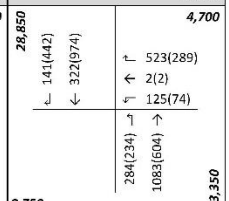
18 Mill Creek Av. & Chino Av.



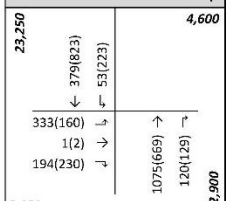
19 Mill Creek Av. & Ontario Ranch Rd.



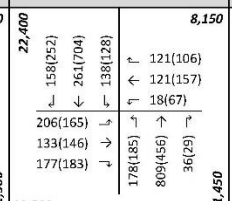
20 Milliken Av. & SR-60 WB Ramps



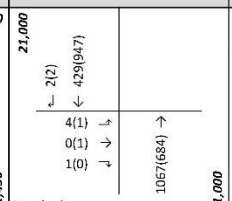
21 Milliken Av. & SR-60 EB Ramps



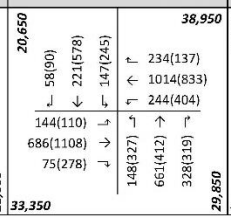
22 Milliken Av. & Riverside Dr.



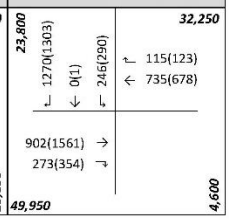
23 Hamner Av. & Chino Av.



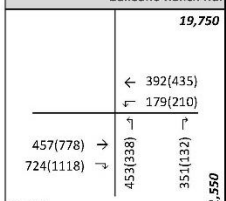
24 Hamner Av. & Ontario Ranch Rd.



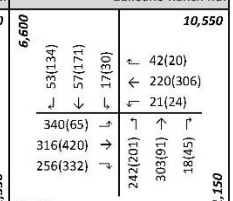
25 I-15 SB Ramps & Cantu Galleano Ranch Rd.



26 I-15 NB Ramps & Cantu Galleano Ranch Rd.

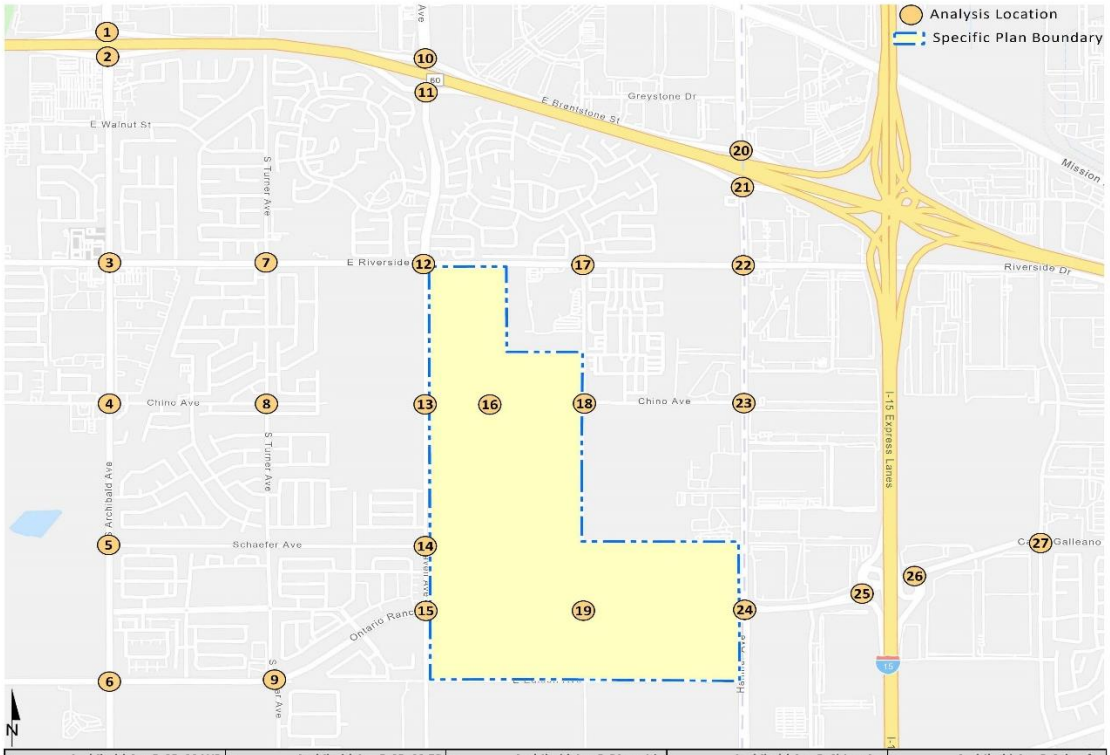


27 Wineville Av. & Cantu Galleano Ranch Rd.



##(##) AM(PM) Peak Hour Intersection Volumes
***Average Daily Trips***

EXHIBIT 6-2: OPENING YEAR CUMULATIVE (2027) WITH PROJECT TRAFFIC VOLUMES (PAGE 1 OF 2)



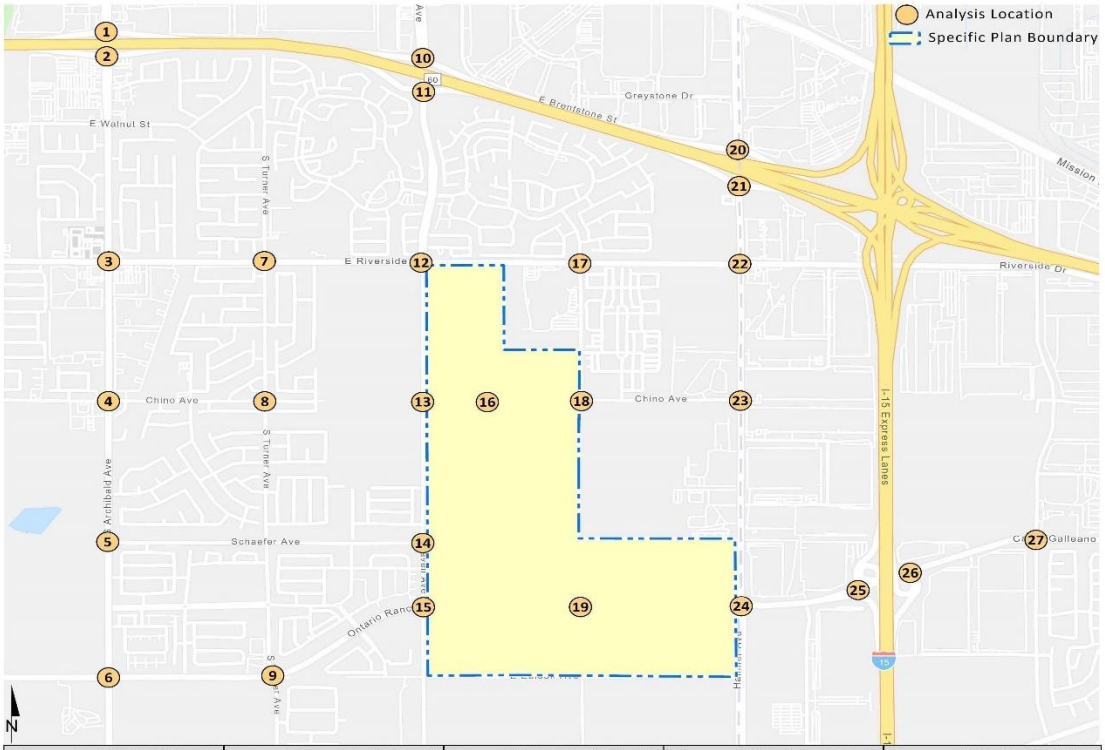
1 Archibald Av. & SR-60 WB Ramps	2 Archibald Av. & SR-60 EB Ramps	3 Archibald Av. & Riverside Dr.	4 Archibald Av. & Chino Av.	5 Archibald Av. & Schaefer Av.
30,900 / 7,100	37,150 / 13,350	36,350 / 25,800	33,100 / 12,300	34,100 / 3,700
↳ 105(294) ← 493(1461) ↰ 425(167) ← 8(1) ↰ 344(379)	← 730(1340) ↲ 112(500) 301(72) ↳ 4(1) → 460(485) ↲	↳ 181(213) ← 620(1031) ↲ 231(319) ↰ 286(200) ← 602(510) ↰ 129(221) 146(176) ↳ 432(677) → 197(363) ↲	↳ 52(51) ← 798(1324) ↲ 59(81) ↰ 190(67) ← 253(156) ↰ 164(85) 72(150) ↳ 146(389) → 71(152) ↲	↳ 19(17) ← 1036(1511) ↲ 46(49) ↰ 67(17) ← 25(23) ↰ 78(53) 17(18) ↳ 23(25) →
↰ 843(556) → 1173(600) ↱ 37,100	→ 1699(1086) ↱ 486(550) 42,900	↰ 347(301) → 1458(1017) ↱ 170(138) 34,750	↰ 179(111) → 1580(1269) ↱ 168(92) 34,650	→ 1731(1379) ↱ 65(54) 34,250
11,050	7,150	28,900	13,450	1,900

6 Archibald Av. & Ontario Ranch Rd.	7 Turner Av. & Riverside Dr.	8 Turner Av. & Chino Av.	9 Turner Av. & Ontario Ranch Rd.	10 Haven Av. & SR-60 WB Ramps
31,200 / 36,900	4,150 / 22,450	9,400 / 12,950	3,150 / 42,000	53,400 / 11,850
↳ 50(42) ← 625(1020) ↲ 266(387) ↰ 344(279) ← 721(528) ↰ 434(370) 23(85) ↳ 508(968) → 66(279) ↲	↳ 120(59) ← 186(58) ↲ 121(23) ↰ 141(38) ← 646(823) ↰ 92(125) 126(95) ↳ 559(715) → 160(244) ↲	↳ 81(45) ← 205(215) ↲ 91(86) ↰ 157(92) ← 311(209) ↰ 67(57) 106(102) ↳ 196(304) → 106(59) ↲	↳ 21(9) ← 70(28) ↲ 97(110) ↰ 92(72) ← 1528(1263) ↰ 80(88) 34(18) ↳ 1146(1844) → 17(47) ↲	↳ 332(656) ← 1014(1806) ↰ 681(542) ← 3(10) ↰ 225(333)
↰ 178(96) → 1281(969) ↱ 394(513) 37,200	↰ 305(187) → 246(62) ↱ 241(141) 11,200	↰ 142(20) → 448(138) ↱ 57(64) 7,450	↰ 36(18) → 141(12) ↱ 54(75) 3,400	↰ 857(521) → 857(521) ↱ 50,050
24,050	26,550	10,550	38,900	16,000

11 Haven Av. & SR-60 EB Ramps	12 Haven Av. & Riverside Dr.	13 Haven Av. & Chino Av.	14 Haven Av. & Schaefer Av.	15 Haven Av. & Ontario Ranch Rd.
50,350 / 11,550	43,050 / 19,250	38,550 / 12,600	41,600	40,000 / 53,450
← 997(1543) ↲ 266(618)	↳ 275(395) ← 824(1285) ↲ 318(143) ↰ 201(120) ← 460(448) ↰ 250(195) 375(333) ↳ 614(448) → 43(96) ↲	↳ 195(162) ← 912(1443) ↰ 121(116) ← 156(432) 171(194) ↳ 98(125) → 103(116) ↲	↳ 57(59) ← 1080(1857) 80(57) ↳ 138(132) ↲	↳ 377(294) ← 317(598) ↲ 717(761) ↰ 708(647) ← 1212(1161) ↰ 77(244) 305(488) ↳ 1170(1539) → 19(38) ↲
665(287) ↳ 3(1) → 507(755) ↲	↲ 64(57) → 1231(992) ↱ 240(181) 38,300	↰ 201(106) → 1390(1057) ↱ 434(261) 44,400	155(174) → 1843(1314) 43,900	↰ 34(19) → 571(364) ↱ 125(74) 17,250
→ 1987(1324) ↱ 397(238) 50,600				
12,100	21,150	12,750	6,700	42,050

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 6-2: OPENING YEAR CUMULATIVE (2027) WITH PROJECT TRAFFIC VOLUMES (PAGE 2 OF 2)



16 Twinkle Av. & Chino Av.	17 Mill Creek Av. & Riverside Dr.	18 Mill Creek Av. & Chino Av.	19 Mill Creek Av. & Ontario Ranch Rd.	20 Milliken Av. & SR-60 WB Ramps
2,150 / 8,950	6,250 / 21,000	7,100 / 5,450	9,450 / 27,550	34,850 / 8,400
68(40) / 45(26) / 15(45) / 137(423)	123(92) / 171(15) / 91(63) / 98(123) / 332(504) / 240(339)	66(202) / 118(110) / 25(14) / 7(22) / 81(246) / 14(6)	92(121) / 22(67) / 94(256) / 266(170) / 644(748) / 274(279)	141(442) / 503(1262) / 523(289) / 2(2) / 413(417)
22(67) / 423(244)	374(136) / 383(441) / 320(139) / 224(136) / 83(20) / 401(241)	203(119) / 248(145) / 17(7) / 5(20) / 92(144) / 4(16)	112(80) / 934(674) / 333(459) / 462(351) / 67(39) / 282(246)	301(297) / 1373(812)
9,400	18,150 / 10,700	8,950 / 3,300	29,150 / 23,800	9,200 / 33,500

21 Milliken Av. & SR-60 EB Ramps	22 Milliken Av. & Riverside Dr.	23 Hamner Av. & Chino Av.	24 Hamner Av. & Ontario Ranch Rd.	25 I-15 SB Ramps & Cantu Galleano Ranch Rd.
33,350 / 8,300	36,700 / 11,350	31,050	30,150 / 62,900	28,700 / 45,400
848(1455) / 53(223)	245(462) / 704(1162) / 138(128) / 121(106) / 198(315) / 18(67)	67(164) / 806(1243)	431(392) / 289(618) / 201(296) / 272(197) / 1937(1769) / 315(511)	1670(1755) / 0(1) / 246(290) / 115(123) / 1367(1329)
333(160) / 1(2) / 254(266) / 1382(940) / 468(397)	414(307) / 291(252) / 177(183) / 178(185) / 1255(853) / 36(29)	165(109) / 0(1) / 138(86) / 57(129) / 1352(973)	455(378) / 1585(1943) / 264(448) / 380(511) / 683(479) / 437(393)	1449(2043) / 788(832)
5,500 / 37,200	20,950 / 31,450	5,950 / 30,350	65,100 / 37,600	73,850 / 10,450

26 I-15 NB Ramps & Cantu Galleano Ranch Rd.	27 Wineville Av. & Cantu Galleano Ranch Rd.
200 / 22,200	7,450 / 11,650
481(552) / 179(210)	85(176) / 57(171) / 17(30) / 42(20) / 268(357) / 21(24)
23(13) / 570(872) / 1136(1493) / 996(872) / 351(132)	383(96) / 363(468) / 279(347) / 251(224) / 303(91) / 18(45)
45,650 / 32,050	20,900 / 11,600

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

6.4 INTERSECTION OPERATIONS ANALYSIS

Opening Year Cumulative (2027) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2 *Methodologies* of this TA. The intersection analysis results are summarized in Table 6-1 for Opening Year Cumulative (2027) traffic conditions, which indicates that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year Cumulative (2027) Without Project traffic conditions:

- Turner Avenue & Chino Avenue (#8) – LOS F AM peak hour only
- Haven Avenue & Riverside Drive (#12) – LOS F AM and PM peak hours
- Milliken Avenue & Riverside Drive (#22) – LOS F AM peak hour only

The following additional study area intersections anticipated to operate at an unacceptable LOS during the peak hours with the addition of Project traffic under Opening Year Cumulative (2027) With Project traffic conditions:

- Archibald Avenue & Riverside Drive (#3) – LOS F AM and PM peak hours
- Archibald Avenue & Ontario Ranch Road (#6) – LOS F AM and PM peak hours
- Haven Avenue & Chino Avenue (#13) – LOS F PM peak hour only
- Haven Avenue & Schaefer Avenue (#14) – LOS F AM peak hour only
- Haven Avenue & Ontario Ranch Road (#15) – LOS F AM and PM peak hours
- Hamner Avenue & Chino Avenue (#23) – LOS F AM and PM peak hours
- Hamner Avenue & Ontario Ranch Road (#24) – LOS F AM and PM peak hours

The intersection operations analysis worksheets for Opening Year Cumulative (2027) Without Project and With Project traffic conditions are included in Appendices 6.1 and 6.2, respectively.

6.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

All unsignalized study area intersections are anticipated to meet a traffic signal warrant under previous scenarios. As such, traffic signal warrants have not been evaluated for Opening Year Cumulative (2027) traffic conditions.

6.6 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Opening Year Cumulative (2027) traffic conditions are presented in Table 6-2. As shown in Table 6-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Worksheets for Opening Year Cumulative (2027) Without Project and With Project traffic conditions queuing analysis are provided in Appendices 6.3 and 6.4, respectively.

TABLE 6-1: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS

#	Intersection	Traffic Control[2]	2027 Without Project Delay[1] (secs.) AM	2027 Without Project Delay[1] (secs.) PM	2027 Without Project Level of Service AM	2027 Without Project Level of Service PM	2027 With Project Delay[1] (secs.) AM	2027 With Project Delay[1] (secs.) PM	2027 With Project Level of Service AM	2027 With Project Level of Service PM	Acceptable LOS
1	Archibald Av. & SR-60 WB Ramps	TS	21.9	28.8	C	C	21.5	28.5	C	C	D
2	Archibald Av. & SR-60 EB Ramps	TS	15.9	15.0	B	B	15.8	14.6	B	B	D
3	Archibald Av. & Riverside Dr.	TS	79.3	68.9	E	E	**101.6**	**93.7**	**F**	**F**	E
4	Archibald Av. & Chino Av.	TS	31.2	48.6	C	D	51.9	76.2	D	E	E
5	Archibald Av. & Schaefer Av.	TS	13.0	10.7	B	B	15.5	11.2	B	B	E
6	Archibald Av. & Ontario Ranch Rd.	TS	60.1	49.1	E	D	**194.8**	**128.0**	**F**	**F**	E
7	Turner Av. & Riverside Dr.	TS	54.9	26.4	D	C	56.4	26.7	E	C	E
8	Turner Av. & Chino Av.	AWS	**92.9**	12.6	**F**	B	**>100.0**	16.2	**F**	C	E
9	Turner Av. & Ontario Ranch Rd.	TS	17.5	13.5	B	B	42.1	42.1	D	D	E
10	Haven Av. & SR-60 WB Ramps	TS	17.6	12.8	B	B	44.7	19.1	D	B	D
11	Haven Av. & SR-60 EB Ramps	TS	27.0	17.1	C	B	47.7	43.0	D	D	D
12	Haven Av. & Riverside Dr.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**	E
13	Haven Av. & Chino Av.	CSS/**TS**	29.9	25.2	D	D	**179.0**	**>200.0**	**F**	**F**	E
14	Haven Av. & Schaefer Av.	TS	12.1	12.9	B	B	**116.2**	57.5	**F**	E	E
15	Haven Av. & Ontario Ranch Rd.	TS	49.9	62.6	D	E	**>200.0**	**>200.0**	**F**	**F**	E
16	Twinkle Av. & Chino Av.	RB	Future Intersection				6.4	6.8	A	A	E
17	Mill Creek Av. & Riverside Dr.	TS	61.6	22.2	E	C	78.7	30.4	E	C	E
18	Mill Creek Av. & Chino Av.	AWS/**RB**	7.1	7.2	A	A	12.5	11.5	B	B	E
19	Mill Creek Av. & Ontario Ranch Rd.	TS	Future Intersection				55.0	43.2	D	D	E
20	Milliken Av. & SR-60 WB Ramps	TS	17.3	19.5	B	B	26.2	50.1	C	D	D
21	Milliken Av. & SR-60 EB Ramps	TS	26.8	17.3	C	B	40.0	26.0	D	C	D
22	Milliken Av. & Riverside Dr.	TS	**82.3**	46.9	**F**	D	**168.3**	**160.4**	**F**	**F**	D
23	Hamner Av. & Chino Av.	CSS	14.0	18.1	B	C	**196.8**	**>100.0**	**F**	**F**	D
24	Hamner Av. & Ontario Ranch Rd.	TS	31.0	50.3	C	D	**184.5**	**>200.0**	**F**	**F**	D
25	I-15 SB Ramps & Cantu Galleano Ranch Rd.	TS	30.7	28.0	C	C	22.6	23.9	C	C	D
26	I-15 NB Ramps & Cantu Galleano Ranch Rd.	TS	35.6	16.0	D	B	51.8	54.3	D	D	D
27	Wineville Av. & Cantu Galleano Ranch Rd.	TS	18.5	18.8	B	B	20.1	19.8	C	B	D

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported in seconds.

[2] TS = Traffic Signal; AWS = All-way Stop; CSS = Cross-street Stop; RB = Roundabout

TABLE 6-2: PEAK HOUR OFF-RAMP QUEUING SUMMARY FOR OPENING YEAR CUMULATIVE (2027) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	2027 Without Project				2027 With Project			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
Archibald Av. & SR-60 WB Ramps	WBL	365	373 [2,3]	245 [2]	Yes	Yes	373 [2,3]	245 [2]	Yes	Yes
	WBL/T/R	1,285	300 [2]	251 [2]	Yes	Yes	308 [2]	251 [2]	Yes	Yes
	WBR	365	257 [2]	55	Yes	Yes	257 [2]	55	Yes	Yes
Archibald Av. & SR-60 EB Ramps	EBL	325	269	109	Yes	Yes	269	109	Yes	Yes
	EBL/T/R	1,265	180	261 [2]	Yes	Yes	193	278 [2]	Yes	Yes
	EBR	325	164	225 [2]	Yes	Yes	177	225 [2]	Yes	Yes
Haven Av. & SR-60 WB Ramps	WBL	240	69	174	Yes	Yes	69	174	Yes	Yes
	WBL/T	1,370	427 [2]	176	Yes	Yes	427 [2]	176	Yes	Yes
	WBR	240	0	0	Yes	Yes	0	0	Yes	Yes
Haven Av. & SR-60 EB Ramps	EBL	1,400	349 [2]	178	Yes	Yes	349 [2]	178	Yes	Yes
	EBL/T	660	353 [2]	181	Yes	Yes	353 [2]	181	Yes	Yes
	EBR	285	69	149	Yes	Yes	400 [2,3]	873 [2,3]	Yes	Yes
Milliken Av. & SR-60 WB Ramps	WBL	215	103	90	Yes	Yes	325 [3]	514 [2,3]	Yes	Yes
	WBR	1,490	514 [2]	220 [2]	Yes	Yes	514 [2]	294 [2]	Yes	Yes
Milliken Av. & SR-60 EB Ramps	EBL	1,415	418 [2]	234	Yes	Yes	438 [2]	234	Yes	Yes
	EBR	1,165	150	272 [2]	Yes	Yes	381 [2]	449 [2]	Yes	Yes
I-15 NB Ramps & Cantu Galleano Ranch Rd.	SBL	1,435	232	172	Yes	Yes	185	172	Yes	Yes
	SBL/R	550	571 [2,3]	881 [2,3]	Yes	Yes	1,362 [2]	1,362 [2]	**No**	**No**
	SBR	455	444	802 [2,3]	Yes	Yes	1,293 [2]	1,260 [2]	**No**	**No**
Wineville Av. & Cantu Galleano Ranch Rd.	NBL	1,615	313	214	Yes	Yes	759 [2]	604 [2]	Yes	Yes
	NBL/R	585	81	67	Yes	Yes	189	73	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the SR-60 Freeway mainline.

6.7 PROJECT DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections or off-ramps that are anticipated to operate at a deficient LOS under Opening Year Cumulative (2027) traffic conditions.

6.7.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Improvement strategies have been recommended at intersections that have been identified as deficient under Opening Year Cumulative (2027) traffic conditions in an effort to achieve an acceptable LOS. The effectiveness of the recommended improvement strategies to address Opening Year Cumulative (2027) traffic deficiencies are presented in Table 6-3. Worksheets for Opening Year Cumulative (2027) Without Project and With Project traffic conditions, with improvements, HCM calculation worksheets are provided in Appendices 6.5 and 6.6, respectively.

6.7.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 6-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Opening Year Cumulative (2027) traffic conditions. As such, no improvements have been identified.

TABLE 6-3: OPENING YEAR CUMULATIVE (2027) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WITH IMPROVEMENTS

	Traffic	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service		Acceptable
		Northbound			Southbound			Eastbound			Westbound							
	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	LOS
3 Archibald Av. & Riverside Dr.																		
Without Project:	TS	**2**	3	0	**2**	3	0	1	2	1	1	2	1	45.2	45.5	D	D	E
With Project:	TS	**2**	3	0	**2**	3	0	1	2	1	1	2	1	53.6	52.9	D	D	
6 Archibald Av. & Merrill Av.																		
Without Project:	TS	**2**	**3**	1	**2**	**3**	1	2	**3**	1	2	**2**	1	24.4	26.2	C	C	E
With Project:	TS	**2**	**3**	1	**2**	**3**	1	2	**3**	1	2	**2**	1	55.1	47.0	E	D	
8 Turner Av. & Chino Av.																		
Without Project:	**TS**	1	2	0	1	2	0	1	2	0	1	2	0	10.7	6.,5	B	A	E
With Project:	**TS**	1	2	0	1	2	0	1	2	0	1	2	0	13.2	7.0	B	A	
12 Haven Av. & Riverside Dr.																		
Without Project:	TS	**1**	**2**	0	1	1	1	1	**2**	0	1	2	0	35.0	21.9	C	C	E
With Project:	TS	**1**	**2**	0	1	1	1	1	**2**	0	1	2	0	79.2	32.3	E	C	
13 Haven Av. & Chino Av.																		
Without Project:	**TS**	1	1	0	0	**2**	0	1	0	1	0	0	0	18.2	19.7	B	B	E
With Project:	**TS**	1	**2**	0	**1**	**2**	0	1	**1**	**0**	**1**	**1**	0	32.0	75.4	C	E	
14 Haven Av. & Schaefer Av.																		
Without Project:	TS	1	**2**	0	0	2	0	1	0	1	0	0	0	10.9	12.3	B	B	E
With Project:	TS	1	**2**	0	0	2	0	1	0	1	0	0	0	12.7	36.4	B	D	
15 Haven Av. & Ontario Ranch Rd.																		
Without Project:	TS	1	**2**	1	**2**	**2**	1	**2**	3	1	2	4	1	26.2	25.3	C	C	E
With Project:	TS	1	**2**	1	**2**	**2**	1	**2**	3	1	2	4	1	77.3	77.9	E	E	
22 Milliken Av. & Riverside Dr.																		
Without Project:	TS	**2**	2	1	**2**	2	1	1	1	1	1	1	1	23.5	20.9	C	C	D
With Project:	TS	**2**	2	1	**2**	2	1	1	1	1	1	1	1	54.3	23.1	D	C	
23 Hamner Av. & Chino Av.																		
Without Project:	**TS**	0	2	0	0	**2**	0	0	1	0	0	0	0	2.5	23.1	A	C	D
With Project:	**TS**	0	2	0	0	**2**	0	0	1	0	0	0	0	12.0	3.4	B	A	
24 Hamner Av. & Ontario Ranch Rd.																		
Without Project:	**TS**	2	3	1	2	**4**	**2**	2	4	**1**	2	**4**	1	22.2	28.1	C	C	D
With Project:	**TS**	2	3	1	2	**4**	**2**	2	4	**1**	2	**4**	1	35.8	54.7	D	D	

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; **TS** = Traffic Signal

[4] Improvement includes modifying the traffic signal to implement protected left turn phasing for the northbound and southbound approaches.

7 HORIZON YEAR (2050) TRAFFIC CONDITIONS

This section discusses the methods used to develop Horizon Year (2050) Without and With Project traffic forecasts, and the resulting intersection operations and traffic signal warrant analyses.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Horizon Year (2050) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Horizon Year conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- If applicable, driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Horizon Year conditions only.

7.2 WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from the SBTAM (see Section 4.8 *Horizon Year (2050) Volume Development* of this TA for a detailed discussion on the post-processing methodology). The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Horizon Year (2050) Without Project traffic conditions are shown on Exhibit 7-1.

7.3 WITH PROJECT TRAFFIC VOLUME FORECASTS

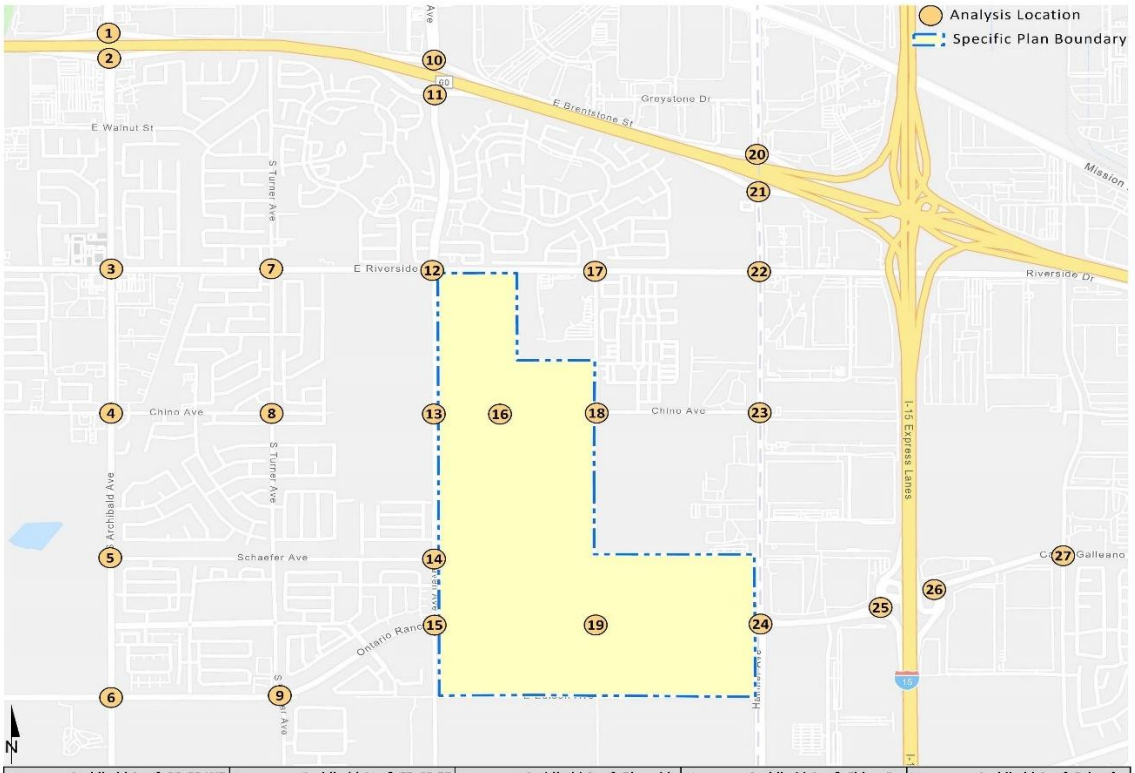
This scenario includes the refined post-process volumes obtained from the SBTAM, plus the variance in traffic generated by the buildout proposed Project compared to the approved Specific Plan. The weekday ADT and weekday AM and PM peak hour volumes, in actual vehicles, which can be expected for Horizon Year (2050) With Project traffic conditions are shown on Exhibit 7-2.

7.4 INTERSECTION OPERATIONS ANALYSIS

LOS calculations were conducted for the study intersections to evaluate their operations under Horizon Year (2050) Without Project conditions with roadway and intersection geometrics consistent with Section 7.1 *Roadway Improvements*. As shown on Table 7-1, the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours:

- Archibald Avenue & Riverside Drive (#3) – LOS F AM and PM peak hours
- Archibald Avenue & Chino Avenue (#4) – LOS F PM peak hour only
- Turner Avenue & Chino Avenue (#8) – LOS F PM peak hour only
- Haven Avenue & Riverside Drive (#12) – LOS F AM and PM peak hours
- Haven Avenue & Chino Avenue (#13) – LOS F AM and PM peak hours
- Haven Avenue & Ontario Ranch Road (#15) – LOS F PM peak hour only

EXHIBIT 7-1: HORIZON YEAR (2050) WITHOUT PROJECT TRAFFIC VOLUMES (PAGE 1 OF 2)



1 Archibald Av. & SR-60 WB Ramps			2 Archibald Av. & SR-60 EB Ramps			3 Archibald Av. & Riverside Dr.			4 Archibald Av. & Chino Av.			5 Archibald Av. & Schaefer Av.		
45,700		7,850	45,700		14,700	38,000		32,350	32,750		11,000	32,400		7,100
↲ 115(323)	↑ 468(183)		↓ 739(1642)	↱ 1860(1146)		↓ 199(307)	↰ 314(216)		↓ 121(134)	↰ 209(77)		↓ 21(19)	↰ 248(74)	
↓ 479(1954)	← 9(1)		↲ 149(662)	↱ 535(605)		↲ 623(1159)	← 669(793)		← 727(1658)	← 214(211)		← 899(1584)	← 28(25)	
	↰ 378(417)					↲ 250(349)	↰ 174(244)		↲ 85(93)	↰ 135(55)		↲ 82(242)	↰ 42(23)	
	↰ 927(612)	↱ 1201(611)	433(79) →	↑ 1860(1146)	↱ 535(605)	203(223) →	↰ ↑ ↱		148(185) →	↰ ↑ ↱		19(20) →	↑	↱
			5(1) →			719(973) →	↰ ↑ ↱		141(428) →	↰ ↑ ↱		25(28) →		
			506(533) ↲			276(695) ↲	386(374)	1594(1074) 186(152)	47(266) ↲	275(223)	1775(1293) 141(73)		1796(1361)	30(34)
12,150		40,800	7,900		45,200	28,200		34,600	15,750		32,950	2,050		31,850

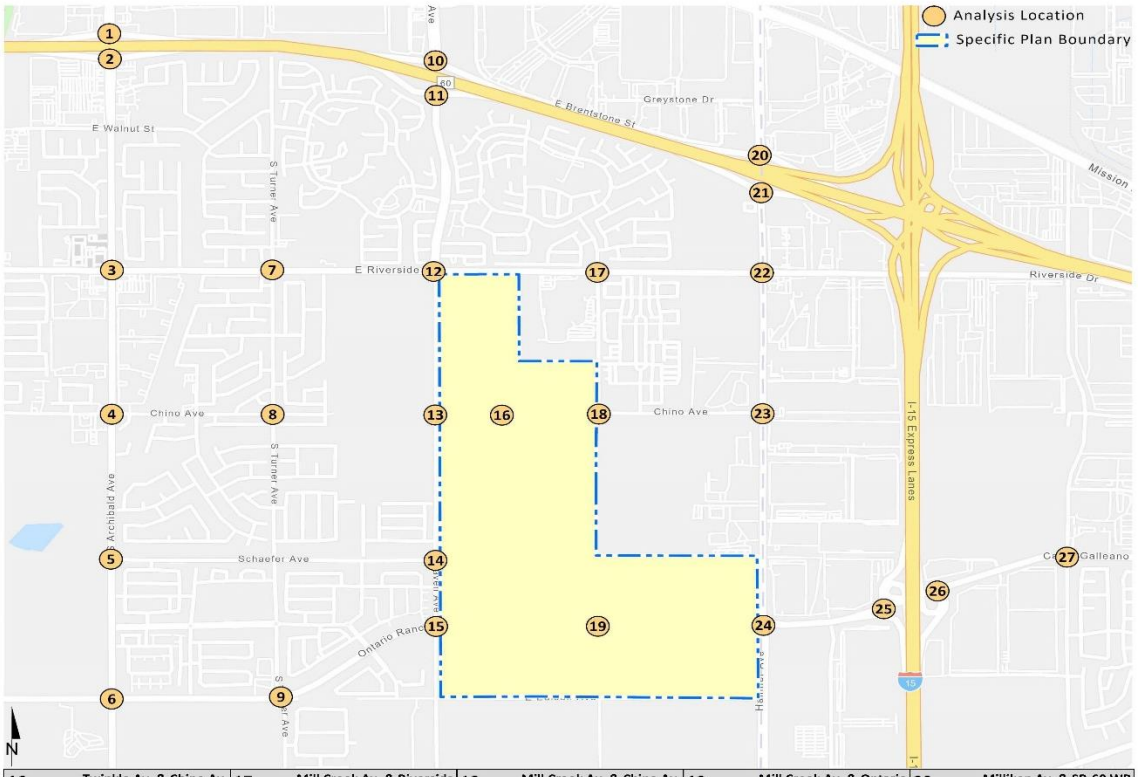
6 Archibald Av. & Ontario Ranch Rd.			7 Turner Av. & Riverside Dr.			8 Turner Av. & Chino Av.			9 Turner Av. & Ontario Ranch Rd.			10 Haven Av. & SR-60 WB Ramps		
37,900		19,750	4,600		33,000	10,000		11,700	8,100		52,150	57,700		13,050
↲ 101(126)	← 75(125)		↲ 143(64)	← 155(49)		↲ 109(69)	← 159(93)		↲ 131(70)	← 55(163)		↲ 366(721)	← 749(628)	
↓ 943(1716)	← 340(262)		↓ 204(64)	← 730(1118)		↓ 225(237)	← 276(185)		↓ 77(38)	← 1331(1880)		↓ 1098(2187)	← 4(11)	
↲ 9(185)	↰ 288(238)		↲ 134(36)	↰ 101(137)		↲ 93(86)	↰ 61(50)		↲ 210(179)	↰ 63(84)			↰ 247(366)	
43(178) →	↰ ↑ ↱		171(104) →	↰ ↑ ↱		170(192) →	↰ ↑ ↱		150(158) →	↰ ↑ ↱			↰ ↑	
79(756) →	↰ ↑ ↱		814(1070) →	↰ ↑ ↱		178(288) →	↰ ↑ ↱		1115(2185) →	↰ ↑ ↱				
292(874) ↲	690(305)	1637(1220) 219(372)	176(268) ↲	335(206)	270(68) 271(163)	117(74) ↲	157(22)	493(152) 51(59)	18(52) ↲	46(19)	155(19) 48(66)		417(260)	417(260)
18,500		45,950	32,350		12,350	9,850		7,750	53,450		3,100	12,050		51,350

11 Haven Av. & SR-60 EB Ramps			12 Haven Av. & Riverside Dr.			13 Haven Av. & Chino Av.			14 Haven Av. & Schaefer Av.			15 Haven Av. & Ontario Ranch Rd.		
51,450		12,700	33,650		31,800	28,750		8,800	26,700		24,350	24,000		41,400
↓ 965(1947)			↓ 303(571)	↑ 431(115)		↓ 178(385)	← 90(81)		↓ 63(65)	↑ 293(148)		↓ 264(264)	↑ -11(228)	
↲ 336(680)			↓ 256(919)	← 548(538)		↓ 425(889)	↰ 100(324)		↓ 263(1109)	← 323(114)		↓ 435(568)	← 829(1679)	
			↲ 447(262)	↰ 287(145)					↲ 5(311)	↰ 553(257)		↲ 227(165)	↰ 126(264)	
731(316) →	↰ ↑ ↱		546(462) →	↰ ↑ ↱		265(190) →	↰ ↑ ↱		88(63) →	↰ ↑ ↱		238(602) →	↰ ↑ ↱	
4(1) →	↰ ↑ ↱		754(709) →	↰ ↑ ↱		67(101) →	↰ ↑ ↱		210(380) →	↰ ↑ ↱		1174(1661) →	↰ ↑ ↱	
114(410) ↲		1792(1236) 436(262)	65(138) ↲	46(85)	529(742) 183(146)	195(84) ↲	169(187)	677(799) 254(199)	120(110) ↲	129(166)	839(786) 146(369)	54(95) ↲	75(93)	447(486) 187(115)
7,800		45,650	33,000		28,400	15,400		26,650	6,650		26,900	52,050		14,750

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 7-1: HORIZON YEAR (2050) WITHOUT PROJECT TRAFFIC VOLUMES (PAGE 2 OF 2)



16 Twinkle Av. & Chino Av.

17 Mill Creek Av. & Riverside Dr. — 6,150 / 36,200

92(67)	188(17)	100(69)
370(124)		108(135)
774(1343)		973(1034)
232(99)		148(515)
216(18)	91(22)	422(130)

28,200 / 7,400

18 Mill Creek Av. & Chino Av. — 7,200 / 9,800

133(386)	-62(96)	26(80)
383(88)		23(17)
322(595)		138(479)
-11(54)		-14(5)
28(-12)	81(-56)	1(-14)

16,150 / 100

19 Mill Creek Av. & Ontario Ranch Rd. — Nominal / 48,000

-41(7)	13(64)	-36(17)
-18(-26)		-23(-33)
1073(1539)		772(1450)
-49(114)		-66(13)
67(68)	57(30)	45(12)

42,000 / 3,000

20 Milliken Av. & SR-60 WB Ramps — 44,500 / 9,900

182(486)	867(1649)	
		677(548)
		2(3)
		-5(258)
314(394)	1626(1413)	

9,700 / 47,850

21 Milliken Av. & SR-60 EB Ramps — 47,850 / 10,550

738(1779)	68(245)	
367(176)		
1(2)		
502(332)		
	1608(1772)	314(336)

5,650 / 53,350

22 Milliken Av. & Riverside Dr. — 53,350 / 15,550

287(646)	641(1367)	287(164)
480(393)		151(250)
217(202)		132(274)
619(303)		34(109)
263(482)	1221(1412)	62(40)

36,200 / 41,550

23 Hamner Av. & Chino Av. — 39,600 / 42,850

18(121)	1397(1692)	
110(54)		
0(1)		
57(36)		
3(76)	1454(1822)	

9,550 / 42,850

24 Hamner Av. & Ontario Ranch Rd. — 46,100 / 50,100

177(573)	281(855)	405(663)
577(715)		361(406)
1208(1487)		975(1509)
-72(331)		246(469)
148(236)	762(503)	363(366)

45,350 / 31,150

25 I-15 SB Ramps & Cantu Galleano Ranch Rd. — 25,800 / 33,750

1413(1515)	0(1)	271(319)
		360(504)
		537(1164)
1342(1917)		
99(336)		

51,600 / 3,800

26 I-15 NB Ramps & Cantu Galleano Ranch Rd. — 100 / 21,700

		401(712)
		253(236)
13(10)		
530(862)		
977(1424)		
382(906)		481(146)

34,000 / 27,200

27 Wineville Av. & Cantu Galleano Ranch Rd. — 9,600 / 11,500

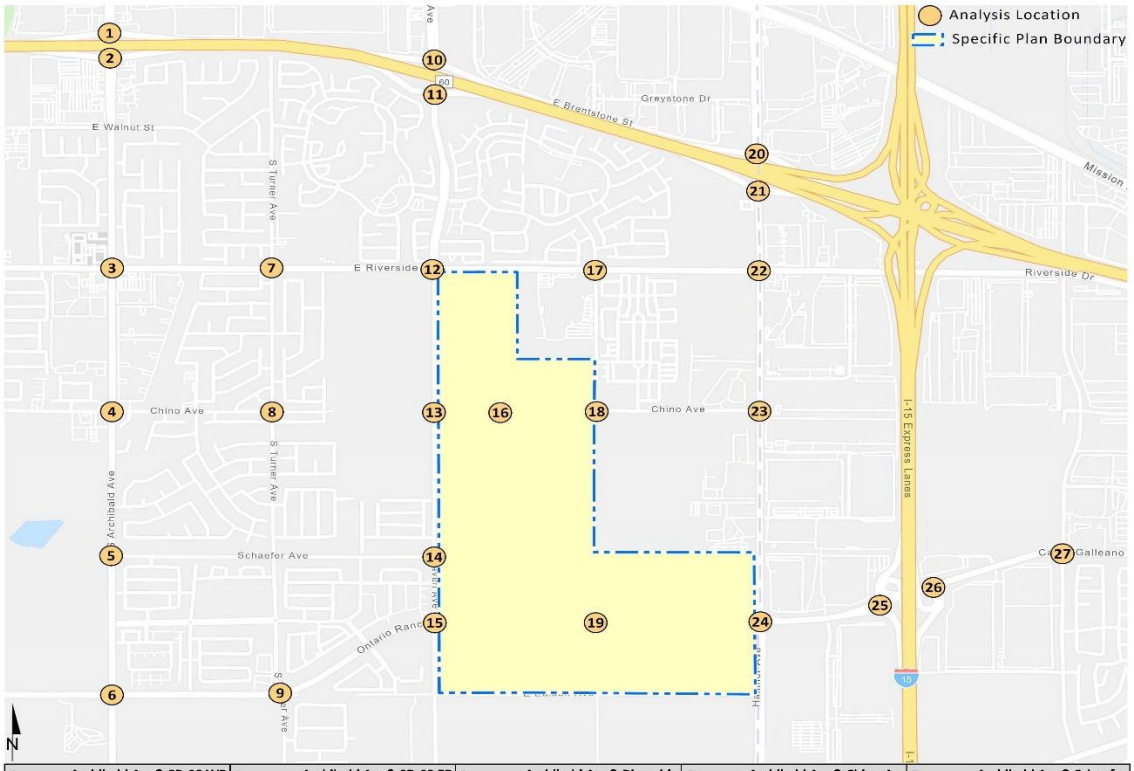
93(269)	63(188)	23(33)
		65(35)
		256(449)
		23(27)
563(143)		
340(457)		
294(374)		
266(237)	333(100)	19(50)

20,300 / 12,450

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 7-2: HORIZON YEAR (2050) WITH PROJECT TRAFFIC VOLUMES (PAGE 1 OF 2)



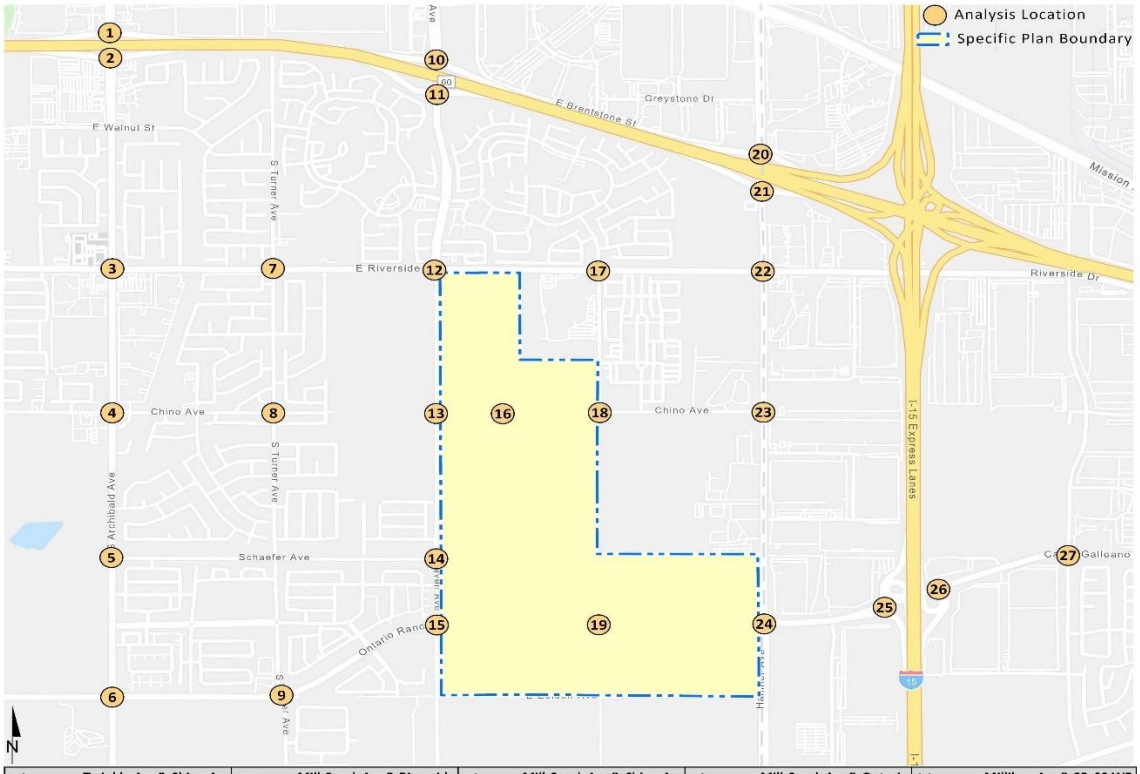
1 Archibald Av. & SR-60 WB Ramps	2 Archibald Av. & SR-60 EB Ramps	3 Archibald Av. & Riverside Dr.	4 Archibald Av. & Chino Av.	5 Archibald Av. & Schaefer Av.
45,250	45,250	37,550	32,550	32,650
↳ 115(323)	↓ 741(1589)	↳ 199(307)	↳ 121(134)	↳ 21(19)
↓ 481(1901)	↳ 149(662)	↓ 623(1106)	↓ 757(1614)	↓ 964(1567)
7,850	14,700	↳ 252(350)	↳ 85(93)	↳ 82(242)
↰ 468(183)		31,900	10,500	7,300
← 9(1)		↱ 314(218)	↱ 209(77)	↱ 248(74)
↰ 378(417)		← 621(769)	← 152(170)	← 28(25)
↰ ↑		↰ 174(244)	↰ 153(70)	↰ 59(36)
927(612) 1168(581)	433(79) ↳	203(223) ↳	148(185) ↳	19(20) ↳
40,300	5(1) →	718(913) →	127(347) →	25(28) →
12,150	506(533) ↳	306(705) ↳	64(279) ↳	↑ ↱
	↑ ↱	↰ ↑ ↱	↰ ↑ ↱	1822(1348) 48(41)
	1827(1116) 535(605)	409(379) 1561(1042) 186(152)	293(230) 1765(1266) 161(81)	32,300
	44,750	34,350	33,200	2,050

6 Archibald Av. & Ontario Ranch Rd.	7 Turner Av. & Riverside Dr.	8 Turner Av. & Chino Av.	9 Turner Av. & Ontario Ranch Rd.	10 Haven Av. & SR-60 WB Ramps
38,350	4,600	9,850	8,000	58,300
↳ 101(126)	↳ 143(64)	↳ 109(69)	↳ 131(70)	↳ 366(721)
↓ 943(1716)	↓ 204(64)	↓ 225(237)	↓ 77(38)	↓ 1184(2179)
↳ 91(181)	↳ 134(36)	↳ 91(70)	↳ 220(160)	13,050
21,850	32,500	10,650	54,050	↱ 749(628)
↱ 119(120)	↱ 155(49)	↱ 147(85)	↱ 48(153)	← 4(11)
← 457(284)	← 682(1095)	← 215(146)	← 1526(1892)	↰ 247(366)
↰ 304(225)	↰ 101(137)	↰ 49(44)	↰ 38(66)	↰ ↑
43(178) ↳	171(104) ↳	170(192) ↳	150(158) ↳	361(177) 361(177)
220(800) →	815(1011) →	166(208) →	1424(2207) →	51,500
292(874) ↳	176(268) ↳	117(74) ↳	18(52) ↳	11,650
↰ ↑ ↱	↰ ↑ ↱	↰ ↑ ↱	↰ ↑ ↱	
690(305) 1637(1220) 288(341)	335(206) 270(68) 271(163)	157(22) 493(152) 50(44)	46(19) 155(19) 41(33)	
46,200	12,350	7,650	2,750	
19,900	31,900	9,100	55,750	

11 Haven Av. & SR-60 EB Ramps	12 Haven Av. & Riverside Dr.	13 Haven Av. & Chino Av.	14 Haven Av. & Schaefer Av.	15 Haven Av. & Ontario Ranch Rd.
51,600	33,650	27,950	23,250	23,700
↓ 1051(1939)	303(571)	140(356)	63(65)	172(181)
↳ 336(680)	↓ 412(756)	↓ 611(735)	↓ 386(652)	↓ 419(421)
12,700	↳ 478(274)	5,300	↳ 5(311)	↳ 489(258)
	32,650	← 55(67)	24,350	47,300
	↱ 439(150)	↰ 25(28)	↱ 293(148)	↱ 193(277)
	← 526(535)		← 323(114)	← 1092(1749)
	↰ 321(171)		↰ 553(257)	↰ 127(270)
731(316) ↳	↰ ↑ ↱	252(140) ↳	88(63) ↳	230(462) ↳
4(1) →	546(462) ↳	68(57) →	210(380) →	1503(1778) →
198(254) ↳	763(683) →	208(81) ↳	137(123) ↳	54(95) ↳
↰ ↑ ↱	57(105) ↳	↰ ↑ ↱	↰ ↑ ↱	↰ ↑ ↱
1767(1164) 436(262)	21(65) 513(642) 219(161)	174(184) 685(704) 28(25)	147(173) 622(512) 146(369)	75(93) 346(399) 192(117)
45,400	27,950	23,250	23,700	13,350
7,350	32,500	14,600	6,850	54,050

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 7-2: HORIZON YEAR (2050) WITH PROJECT TRAFFIC VOLUMES (PAGE 2 OF 2)



16 Twinkle Av. & Chino Av.

2,150												8,950
	68(40)	45(26)								↱	15(45)	
	↲	↳								←	137(423)	
	22(67)	→										
	423(244)	→										
9,400												

17 Mill Creek Av. & Riverside Dr.

6,350												34,250
	109(80)	188(17)	100(69)							↱	108(135)	
	↲	↓	↳							←	986(1030)	
	388(131)	→								↰	119(294)	
	779(1340)	→		↰	↑	↱						
	281(119)	↲		228(70)	91(22)	251(26)						
29,250												6,150

18 Mill Creek Av. & Chino Av.

6,150												7,850
	95(236)	4(78)	13(70)							↱	19(0)	
	↲	↓	↳							←	92(296)	
	268(0)	→								↰	0(11)	
	182(488)	→		↰	↑	↱						
	6(61)	↲		33(8)	62(0)	5(2)						
12,850												1,400

19 Mill Creek Av. & Ontario Ranch Rd.

1,300												55,500
	0(39)	0(14)	0(99)							↱	57(6)	
	↲	↓	↳							←	1273(1526)	
	24(3)	→								↰	28(59)	
	1462(1785)	→		↰	↑	↱						
	12(27)	↲		47(14)	19(1)	128(36)						
47,300												3,050

20 Milliken Av. & SR-60 WB Ramps

44,050												10,450
	182(486)	915(1559)								↱	677(548)	
	↲	↓								←	2(3)	
										↰	137(267)	
				↰	↑							
				312(383)	1588(1374)							
9,650												47,900

21 Milliken Av. & SR-60 EB Ramps

47,900												11,100
		928(1698)	68(245)									
		↓	↳									
	367(176)	→			↑	↱						
	1(2)	→										
	482(332)	↲			1568(1722)	391(352)						
5,550												53,900

22 Milliken Av. & Riverside Dr.

53,900												14,850
	270(504)	828(1418)	287(164)							↱	151(250)	
	↲	↓	↳							←	133(191)	
	371(328)	→								↰	34(109)	
	161(160)	→		↰	↑	↱						
	619(303)	↲		263(482)	1368(1443)	62(40)						
34,250												43,350

23 Hamner Av. & Chino Av.

41,400												
		2(10)	1600(1855)									
		↓	↳									
		24(1)	→									
		0(1)	→									
		10(0)	↲									
					1686(1905)	→						
7,850												45,000

24 Hamner Av. & Ontario Ranch Rd.

48,300												53,400
	441(774)	243(826)	373(611)							↱	307(352)	
	↲	↓	↳							←	1405(1637)	
	850(831)	→								↰	268(445)	
	1509(1593)	→		↰	↑	↱						
	93(410)	↲		314(359)	749(453)	361(351)						
55,500												32,800

25 I-15 SB Ramps & Cantu Galleano Ranch Rd.

26,200												35,450
		1539(1493)	0(1)	271(319)						↱	360(504)	
		↲	↓	↳						←	808(1236)	
		1409(1901)	→									
		300(390)	↲									
54,950												5,050

26 I-15 NB Ramps & Cantu Galleano Ranch Rd.

												21,750
										←	432(692)	
										↰	253(236)	
				↰	↑	↱						
	529(856)	→		622(998)		481(146)						
	1057(1424)	↲										
35,700												28,950

27 Wineville Av. & Cantu Galleano Ranch Rd.

9,650												11,650
	106(266)	63(188)	23(33)							↱	65(35)	
	↲	↓	↳							←	277(449)	
										↰	23(27)	
	568(140)	→		↰	↑	↱						
	347(462)	→										
	282(366)	↲		266(221)	333(100)	19(50)						
20,350												12,300

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

TABLE 7-1: INTERSECTION ANALYSIS FOR HORIZON YEAR (2050) CONDITIONS

#	Intersection	Traffic Control[2]	2045 Without Project Delay[1] (secs.) AM	2045 Without Project Delay[1] (secs.) PM	2045 Without Project Level of Service AM	2045 Without Project Level of Service PM	2045 With Project Delay[1] (secs.) AM	2045 With Project Delay[1] (secs.) PM	2045 With Project Level of Service AM	2045 With Project Level of Service PM	Acceptable LOS
1	Archibald Av. & SR-60 WB Ramps	TS	26.4	29.8	C	C	26.7	29.7	C	C	D
2	Archibald Av. & SR-60 EB Ramps	TS	17.6	17.0	B	B	17.6	17.2	B	B	D
3	Archibald Av. & Riverside Dr.	TS	**124.3**	**159.7**	**F**	**F**	**119.2**	**153.1**	**F**	**F**	E
4	Archibald Av. & Chino Av.	TS	56.9	**107.1**	E	**F**	59.3	**105.4**	E	**F**	E
5	Archibald Av. & Schaefer Av.	TS	24.2	15.1	C	B	25.7	20.4	C	C	E
6	Archibald Av. & Ontario Ranch Rd.	TS	**>200.0**	**167.8**	**F**	**F**	**>200.0**	**169.7**	**F**	**F**	E
7	Turner Av. & Riverside Dr.	TS	72.1	30.3	E	D	78.7	37.6	E	D	E
8	Turner Av. & Chino Av.	AWS	**>100.0**	18.4	**F**	C	**>100.0**	15.7	**F**	C	E
9	Turner Av. & Ontario Ranch Rd.	TS	45.1	74.5	D	E	62.6	62.1	E	E	E
10	Haven Av. & SR-60 WB Ramps	TS	21.3	17.0	C	B	20.5	15.1	C	B	D
11	Haven Av. & SR-60 EB Ramps	TS	51.0	17.9	D	B	50.6	16.6	D	B	D
12	Haven Av. & Riverside Dr.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**	E
13	Haven Av. & Chino Av.	CSS/**TS**	**>100.0**	**>100.0**	**F**	**F**	60.8	62.6	E	E	E
14	Haven Av. & Schaefer Av.	TS	12.9	16.3	B	B	13.0	13.7	B	B	E
15	Haven Av. & Ontario Ranch Rd.	TS	71.5	**>200.0**	E	**F**	**105.3**	**131.1**	**F**	**F**	E
16	Twinkle Av. & Chino Av.	**RB**	Future Intersection				6.4	6.8	A	A	E
17	Mill Creek Av. & Riverside Dr.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**144.5**	**F**	**F**	E
18	Mill Creek Av. & Chino Av.	AWS/**RB**	8.0	23.2	A	C	11.6	12.1	B	B	E
19	Mill Creek Av. & Ontario Ranch Rd.	TS	Future Intersection				12.5	17.4	B	B	E
20	Milliken Av. & SR-60 WB Ramps	TS	29.7	54.4	C	D	33.4	51.0	C	D	D
21	Milliken Av. & SR-60 EB Ramps	TS	54.9	49.9	D	D	49.5	48.4	D	D	D
22	Milliken Av. & Riverside Dr.	TS	**>200.0**	**>200.0**	**F**	**F**	**>200.0**	**>200.0**	**F**	**F**	D
23	Hamner Av. & Chino Av.	CSS	**>100.0**	**>100.0**	**F**	**F**	**52.6**	**43.3**	**F**	**E**	D
24	Hamner Av. & Ontario Ranch Rd.	TS	**124.6**	**>200.0**	**F**	**F**	**276.3**	**>200.0**	**F**	**F**	D
25	I-15 SB Ramps & Cantu Galleano Ranch Rd.	TS	33.6	45.0	C	D	19.5	22.7	B	C	D
26	I-15 NB Ramps & Cantu Galleano Ranch Rd.	TS	36.5	48.4	D	D	28.0	53.2	C	D	D
27	Wineville Av. & Cantu Galleano Ranch Rd.	TS	21.7	21.3	C	C	22.3	20.9	C	C	D

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

[1] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown. HCM delay reported

[2] TS = Traffic Signal; AWS = All-way Stop; CSS = Cross-street Stop; RB = Roundabout

- Mill Creek Road & Riverside Drive (#15) – LOS F AM and PM peak hours
- Milliken Avenue & Riverside Drive (#22) – LOS F AM peak hour only
- Archibald Avenue & Ontario Ranch Road (#6) – LOS F AM and PM peak hours
- Haven Avenue & Chino Avenue (#13) – LOS F PM peak hour only
- Haven Avenue & Schaefer Avenue (#14) – LOS F AM peak hour only
- Haven Avenue & Ontario Ranch Road (#15) – LOS F AM and PM peak hours
- Mill Creek Avenue & Riverside Drive (#17) – LOS F AM and PM peak hours
- Milliken Avenue & Riverside Drive (#22) – LOS F AM and PM peak hours
- Hamner Avenue & Chino Avenue (#23) – LOS F AM and PM peak hours
- Hamner Avenue & Ontario Ranch Road (#24) – LOS F AM and PM peak hours

As shown on Table 7-1, the addition of the variance in Project (Project Buildout) traffic is not anticipated to result in any new deficiencies from those identified under Horizon Year (2050) Without Project traffic conditions. The intersection operations analysis worksheets for Horizon Year (2050) Without Project and With Project traffic conditions are included in Appendices 7.1 and 7.2, respectively.

7.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

All unsignalized study area intersections are anticipated to meet a traffic signal warrant under previous scenarios. As such, traffic signal warrants have not been evaluated for Horizon Year (2050) traffic conditions.

7.6 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Horizon Year (2050) traffic conditions are presented in Table 7-2. As shown in Table 7-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Worksheets for Horizon Year (2050) Without Project and With Project traffic conditions queuing analysis are provided in Appendices 7.3 and 7.4, respectively.

TABLE 7-2: PEAK HOUR OFF-RAMP QUEUING SUMMARY FOR HORIZON YEAR (2050) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	2045 Without Project				2045 With Project			
			95th Percentile Queue (Feet)		Acceptable? [1]		95th Percentile Queue (Feet)		Acceptable? [1]	
			AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
Archibald Av. & SR-60 WB Ramps	WBL	365	421 [2,3]	282 [2]	Yes	Yes	421 [2,3]	282 [2]	Yes	Yes
	WBL/T/R	1,285	363 [2]	290 [2]	Yes	Yes	358 [2]	290 [2]	Yes	Yes
	WBR	365	302 [2]	57	Yes	Yes	302 [2]	57	Yes	Yes
Archibald Av. & SR-60 EB Ramps	EBL	325	305	117	Yes	Yes	305	117	Yes	Yes
	EBL/T/R	1,265	235	336 [2]	Yes	Yes	235	331 [2]	Yes	Yes
	EBR	325	210	264 [2]	Yes	Yes	210	264 [2]	Yes	Yes
Haven Av. & SR-60 WB Ramps	WBL	240	75	195 [2]	Yes	Yes	75	195 [2]	Yes	Yes
	WBL/T	1,370	487 [2]	191	Yes	Yes	487 [2]	191	Yes	Yes
	WBR	240	0	0	Yes	Yes	0	0	Yes	Yes
Haven Av. & SR-60 EB Ramps	EBL	1,400	397 [2]	196	Yes	Yes	397 [2]	196	Yes	Yes
	EBL/T	660	403 [2]	198	Yes	Yes	403 [2]	198	Yes	Yes
	EBR	285	37	392 [2,3]	Yes	Yes	86	169	Yes	Yes
Milliken Av. & SR-60 WB Ramps	WBL	215	16	269 [2]	Yes	No	112	283 [2,3]	Yes	Yes
	WBR	1,490	645 [2]	611 [2]	Yes	Yes	645 [2]	611 [2]	Yes	Yes
Milliken Av. & SR-60 EB Ramps	EBL	1,415	503 [2]	263 [2]	Yes	Yes	503 [2]	263 [2]	Yes	Yes
	EBR	1,165	581 [2]	512 [2]	Yes	Yes	522 [2]	447 [2]	Yes	Yes
I-15 NB Ramps & Cantu Galleano Ranch Rd.	SBL	1,435	307	192	Yes	Yes	205	192	Yes	Yes
	SBL/R	550	659 [2,3]	1,108 [2,3]	Yes	Yes	1,093 [2,3]	1,049 [2,3]	Yes	Yes
	SBR	455	612 [2,3]	1,104 [2]	Yes	Yes	1,018 [2,3]	945 [2,3]	Yes	Yes
Wineville Av. & Cantu Galleano Ranch Rd.	NBL	1,615	319	646 [2]	Yes	Yes	444 [2]	699 [2]	Yes	Yes
	NBL/R	585	82	86	Yes	Yes	96	93	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

[2] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

[3] Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the SR-60 and I-15 Freeway mainline.

7.7 PROJECT DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

Improvements needed to achieve acceptable LOS have been identified at intersections or off-ramps that are anticipated to operate at a deficient LOS under Horizon Year (2050) traffic conditions.

7.7.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

Improvement strategies have been recommended at intersections that have been identified as deficient under Horizon Year (2050) traffic conditions in an effort to achieve an acceptable LOS. The effectiveness of the recommended improvement strategies to address Opening Year Cumulative (2050) traffic deficiencies are presented in Table 6-3. Worksheets for Horizon Year (2050) Without Project and With Project traffic conditions, with improvements, HCM calculation worksheets are provided in Appendices 7.5 and 7.6, respectively.

7.7.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 7-2, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Horizon Year (2050) traffic conditions. As such, no improvements have been identified.

TABLE 7-3: HORIZON YEAR (2045) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WITH IMPROVEMENTS

	Traffic Control[3]	Intersection Approach Lanes[1] Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R	Delay[2] (secs.) AM	PM	Level of Service AM	PM	Acceptable LOS
3 Archibald Av. & Riverside Dr.																		
Without Project:	TS	**2**	3	0	**2**	3	0	1	2	1	1	2	1	63.4	71.6	E	E	E
With Project:	TS	**2**	3	0	**2**	3	0	1	2	1	1	2	1	69.7	76.2	E	E	
4 Archibald Av. & Chino Av.																		
Without Project:	TS	1	3	0	1	2	0	1	1	**1**	1	1	1	47.5	75.8	D	E	E
With Project:	TS	1	3	0	1	2	0	1	1	**1**	1	1	1	48.1	67.7	D	E	
6 Archibald Av. & Merrill Av.																		
Without Project:	TS	**2**	**3**	1	**2**	**3**	1	2	**3**	1	2	**2**	1	57.7	45.4	E	D	E
With Project:	TS	**2**	**3**	1	**2**	**3**	1	2	**3**	1	2	**2**	1	71.9	45.7	E	D	
8 Turner Av. & Chino Av.																		
Without Project:	**TS**	1	2	0	1	2	0	1	2	0	1	2	0	15.6	7.3	B	A	E
With Project:	**TS**	1	2	0	1	2	0	1	2	0	1	2	0	16.6	7.3	B	A	
12 Haven Av. & Riverside Dr.																		
Without Project:	TS	**1**	**2**	**1**	1	**2**	1	**2**	**2**	0	**2**	2	0	66.7	61.6	E	E	E
With Project:	TS	**1**	**2**	**1**	1	**2**	1	**2**	**2**	0	**2**	2	0	69.3	63.0	E	E	
13 Haven Av. & Chino Av.																		
Without Project:	**TS**	1	1	0	**1**	**2**	0	1	**1**	**0**	**1**	**1**	0	19.4	53.5	B	D	E
With Project:	**TS**	1	**2**	0	**1**	**2**	0	1	**1**	**0**	**1**	**1**	0	26.6	27.5	C	C	
15 Haven Av. & Ontario Ranch Rd.																		
Without Project:	TS	1	**2**	1	1	**2**	1	**2**	3	1	2	4	1	29.9	47.0	C	D	E
With Project:	TS	1	**2**	1	1	**2**	1	**2**	3	1	2	4	1	62.2	79.0	E	E	
17 Mill Creek Av. & Riverside Dr.																		
Without Project:	**TS**	1	1	1	1	1	0	1	**3**	0	1	**3**	0	74.1	51.5	E	D	E
With Project:	**TS**	1	1	1	1	1	0	1	**3**	0	1	**3**	0	78.5	30.6	E	C	
22 Milliken Av. & Riverside Dr.																		
Without Project:	TS	**2**	2	1	**2**	2	**2**	1	1	1	1	1	1	40.7	48.4	D	D	D
With Project:	TS	**2**	2	1	**2**	2	**2**	1	1	1	1	1	1	41.2	45.6	D	D	
23 Hamner Av. & Chino Av.																		
Without Project:	**TS**	0	2	0	0	**2**	0	0	1	0	0	0	0	6.7	12.4	A	B	D
With Project:	**TS**	0	2	0	0	**2**	0	0	1	0	0	0	0	3.1	4.2	A	A	
24 Hamner Av. & Ontario Ranch Rd.																		
Without Project:	**TS**	2	3	1	2	**4**	**2**	2	4	**1**	2	**4**	1	43.7	52.8	D	D	D
With Project:	**TS**	2	3	1	2	**4**	**2**	2	4	**1**	2	**4**	1	54.6	54.7	D	D	

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; **1** = Improvement

[2] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; **TS** = Traffic Signal

[4] Improvement includes modifying the traffic signal to implement protected left turn phasing for the northbound and southbound approaches.

8 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Ontario are funded through a combination of construction of improvements, development impact fee programs or fair share contributions, such as the City of Ontario Development Impact Fee (DIF) program. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

8.1 CITY OF ONTARIO DEVELOPMENT IMPACT FEE PROGRAM

The City of Ontario has created its own local DIF program to impose and collect fees from new residential, commercial, and industrial development for the purpose of funding roadways and intersections necessary to accommodate City growth as identified in the City's General Plan Circulation Element. The City's DIF includes regional improvements to comply with Measure "I." The fee schedule was last updated in January 2020 and is reviewed/adjusted annually based upon changes in the construction cost index (CCI). Under the City's DIF program, the City may grant to developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City's Public Works Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are also periodically performed by City staff and consultants. The City uses this data to determine the timing of implementing the improvements listed in its facilities list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS falls below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City's LOS performance thresholds.

The Project Applicant will be subject to the City's DIF fee program and will pay the requisite City DIF fees at the rates then in effect pursuant to the City's ordinance. The Project Applicant's payment of the requisite DIF at the rates then in effect, pursuant to the City DIF Program, would satisfy the Project's proportional improvement requirements at potentially affected DIF-funded facilities.

TABLE 8-1: ESTIMATED FEE OBLIGATION

Fee Reference	$ PER UNIT
Detached Dwellings	$4,847.00
Attached Dwellings	$3,237.00
Retail/Service Uses	$9.794
Business Park Uses	$5.824
Industrial Uses	$3.002

Source: City of Ontario General City (GC) Development Impact Fees (DIF), effective January 1, 2020.

Fee Calculation

Program	Category	Unit Cost	Units	Local Circulation
Streets, Signals and Bridges	Detached Dwellings	$4,847.00	1,553	$7,527,391
Streets, Signals and Bridges	Attached Dwellings	$3,237.00	5,641	$18,259,917
Streets, Signals and Bridges	Retail/Service Uses	$9.794	925,002	$9,059,470
Streets, Signals and Bridges	Business Park Uses	$5.824	316,724.6	$1,844,604
Streets, Signals and Bridges	Industrial Uses	$3.002	2,450,423.4	$7,356,171
		Total Transportation Impact Fees		**$44,047,553**

8.2 MEASURE "I" FUNDS

In 2004, the voters of San Bernardino County approved the 30-year extension of Measure "I," a one-half of one percent sales tax on retail transactions, through the year 2040, for transportation projects including, but not limited to, infrastructure improvements, commuter rail, public transit, and other identified improvements. The Measure "I" extension requires that a regional traffic impact fee be created to ensure development is paying its fair share. A regional Nexus study was prepared by SBCTA and concluded that each jurisdiction should include a regional fee component in their local programs in order to meet the Measure "I" requirement. The regional component assigns specific facilities and cost sharing formulas to each jurisdiction and was most recently updated in November 2011. Revenues collected through these programs are used in tandem with Measure "I" funds to deliver projects identified in the Nexus Study. While Measure "I" is a self-executing sales tax administered by SBCTA, it bears discussion here because the funds raised through Measure "I" have funded in the past and will continue to fund new transportation facilities in San Bernardino County.

8.3 FAIR SHARE CONTRIBUTION

Project improvement may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the City's discretion).

When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each peak hour, has been provided in Table 8-2 for the applicable deficient study area intersections.

These fees are collected with the proceeds solely used as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases.

TABLE 8-2: PROJECT FAIR SHARE CALCULATIONS

#	Intersection		Existing (2022)	Project Buildout	2045 With Project[2]	Total New Traffic	Project % of New Traffic[1]
3	Archibald Av. & Riverside Dr.						
		AM:	3,446	447	4,798	1,352	**33.1%**
		PM:	3,650	488	5,165	1,515	32.2%
4	Archibald Av. & Chino Av.						
		AM:	2,394	17	4,035	1,641	1.0%
		PM:	2,456	556	3,928	1,472	**37.8%**
6	Archibald Av. & Merrill Av.						
		AM:	2,559	469	5,185	2,626	**17.9%**
		PM:	3,059	13	6,371	3,312	0.4%
8	Turner Av. & Chino Av.						
		AM:	1,260	226	1,967	707	32.0%
		PM:	698	270	1,391	693	**39.0%**
12	Haven Av. & Riverside Dr.						
		AM:	2,425	203	4,598	2,173	9.3%
		PM:	2,160	1,610	4,693	2,533	**63.6%**
17	Mill Creek Av. & Riverside Dr.						
		AM:	1,693	656	2,841	1,148	57.1%
		PM:	1,035	756	2,250	1,215	**62.2%**
22	Milliken Av. & Riverside Dr.						
		AM:	1,893	153	4,547	2,654	5.8%
		PM:	2,071	1,471	5,392	3,321	**44.3%**
24	Hamner Av. & Ontario Ranch Rd.						
		AM:	2,989	1,482	6,913	3,924	**37.8%**
		PM:	3,706	529	8,642	4,936	10.7%

[1] **BOLD =** Highest fair share percentage is highlighted.

[2] For intersections where the Horizon Year project only volumes are negative, the opening year cumulative volumes have been utilized.

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9 REFERENCES

1. **County of San Bernardino.** *Transportation Impact Study Guidelines.* County of San Bernardino : s.n., July 2019.
2. **Institute of Transportation Engineers.** *Trip Generation Manual.* 11th Edition. 2021.
3. **San Bernardino Associated Governments.** *Congestion Management Program for County of San Bernardino.* County of San Bernardino : s.n., Updated June 2016.
4. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2016.
5. **California Department of Transportation.** California Manual on Uniform Traffic Control Devices (CA MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CA MUTCD).* 2014, Updated March 30, 2021 (Revision 6).
6. **The Planning Center for The City of Ontario.** *The Ontario Plan Environmental Impact Report.* Ontario : s.n., July 2009.
7. **The City of Eastvale.** *Adopted Genreal Plan.* Eastvale : s.n., June 13, 2012.
8. **California Department of Transportation.** *Guide for the Preparation of Traffic Impact Studies.* December 2002.

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APPENDIX 1.1: APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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URBAN | CROSSROADS

August 19, 2022

Mr. Jay Bautista
City of Ontario
303 E. B Street
Ontario, CA 91764

RICH HAVEN SPECIFIC PLAN TRAFFIC STUDY SCOPING AGREEMENT

Mr. Jay Bautista,

Urban Crossroads, Inc. has prepared the following assessment for the proposed Rich Haven Specific Plan development (**Project**) to establish a traffic analysis (**TA**) scope of work that would be prepared in support of the proposed Rich Haven Specific Plan Amendment. The Project is north of Ontario Ranch Road, south of Riverside Drive, east of Haven Avenue, and on either side of Mill Creek Avenue in the City of Ontario. The following memo outlines the project-related trip generation, trip distribution patterns, proposed study area and analysis scenarios expected to be included in the Project traffic analysis.

PROJECT DESCRIPTION

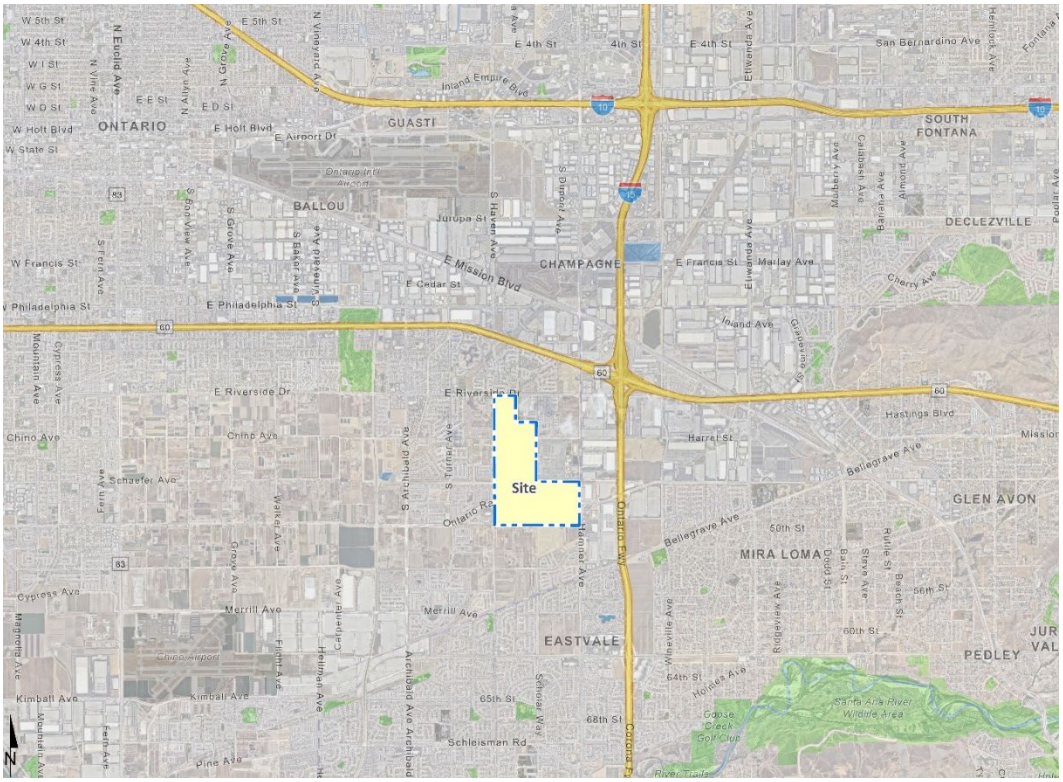
Exhibit 1 illustrates the location map for the proposed Project and Exhibit 2 shows the proposed land use plan. It is our understanding that the Project is to consist of amending the Rich Haven Specific Plan to accomplish the following:

1. Total acreage of the Specific Plan would increase by approximately 6.3-acres (approximately 1 percent) to include all properties accurately and correctly within the Specific Plan boundary.
2. Total residential development within the Specific Plan would be maintained at 7,194 dwelling units. Residential units and densities would however be reassigned within the Specific Plan.
3. Total commercial development would be reduced by 65,900 square feet (approximately 7 percent reduction from the 2021 Specific Plan commercial entitlements).
4. Total light industrial development would be increased by 1,583,623 square feet (approximately 134 percent increase from the 2021 Specific Plan light industrial entitlements).

Note that portions of Planning Areas 5A, 5C, and 6A have already been developed (currently existing). For Planning Areas 5A and 5C, approximately 164 dwelling units of the proposed 560 dwelling units have been built and occupied. Planning Area 6A is proposed to allow for 1,099 dwelling units and as of the date of the traffic counts 316 dwelling units have been sold. Remaining units in these PAs will be included as part of Phase 1. Planning Areas 4A, 4B, 4C, 5A, 5B, 5C, 5D, 6A, 6B, 6D, 7A, 8A, 8B, and 9A are anticipated to be developed as part of the first phase with an anticipated Opening Year of 2024. Project Buildout is anticipated in Year 2027. For purposes of the TA, the mix of uses for each planning area is summarized on Table 1. Access to the proposed Project would be provided to the surrounding roadways of Riverside Drive to the

north, Haven Avenue to the west, Ontario Ranch Road to the south, and Mill Creek Avenue to the east. Chino Avenue is also an east-west roadway that runs through the Project.

EXHIBIT 1: LOCATION MAP



PROPOSED ANALYSIS SCENARIOS

The following analysis scenarios are proposed to be evaluated in the Traffic Study:

- Existing (2022)
- Existing plus Project – Phase 1
- Existing plus Project – Project Buildout
- Opening Year Cumulative (2027) Without Project
- Opening Year Cumulative (2027) With Project – Project Buildout only
- Horizon Year (2050) Without Project – will be evaluated based on both the Currently Adopted and Draft TOP Update
- Horizon Year (2050) With Project – Project Buildout only

Horizon Year (2050) forecasts will be developed for both the currently adopted General Plan and based on The Ontario Plan (TOP 2050) General Plan Update (Draft). As such, there will be two Horizon Year (2050) Without Project and two Horizon Year (2050) With Project traffic conditions evaluated for the purposes of this TA.

EXHIBIT 2: PROPOSED LAND USE PLAN

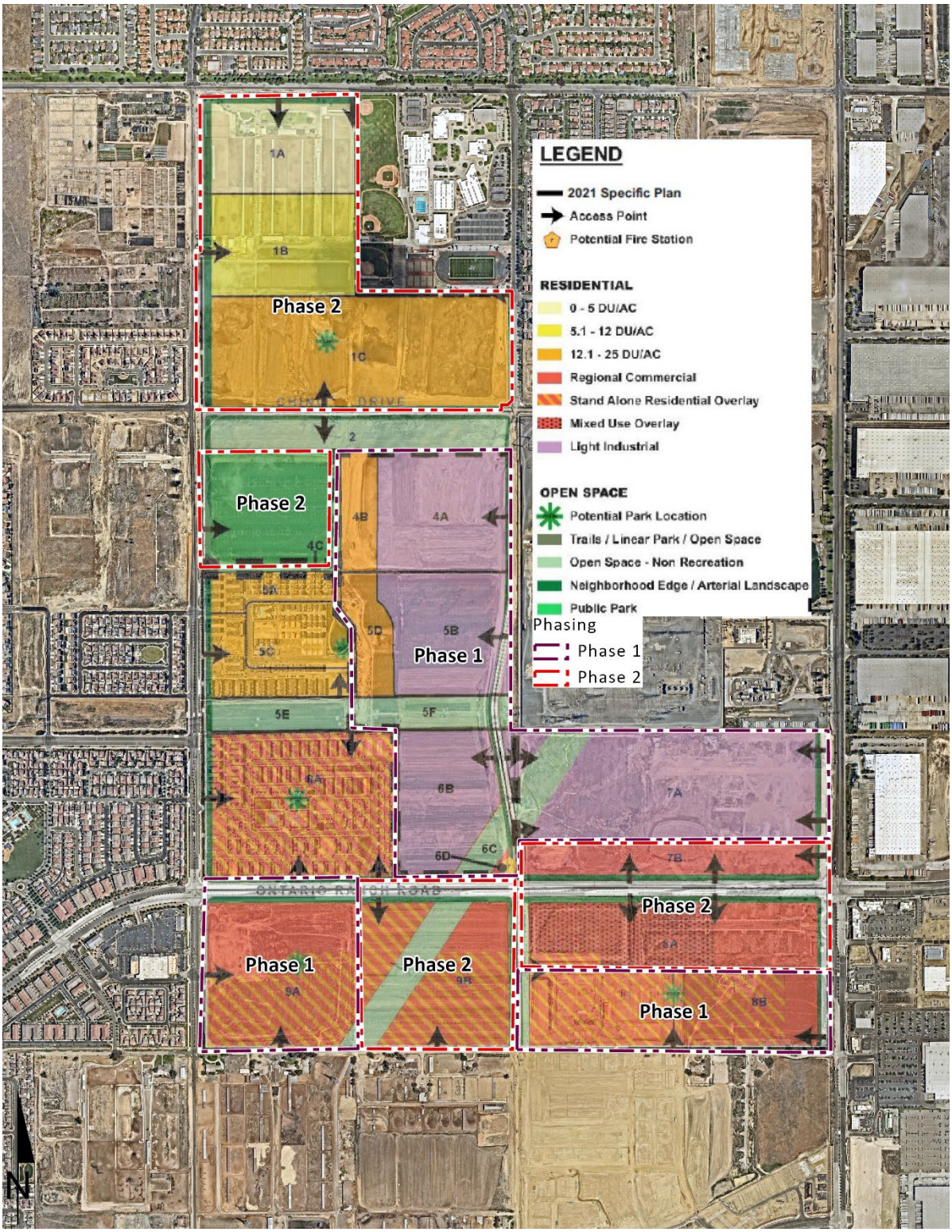


TABLE 1: SUMMARY OF PROPOSED LAND USES

PA	Land Use	Quantity	Unit[1]
1A	Single Family Residential (0-5 DU/Ac)	128	DU
1B	Single Family Residential (5.1-12 DU/Ac)	94	DU
	Multifamily Residential (12.1-25 DU/Ac)	200	DU
1C	Single Family Residential (5.1-12 DU/Ac)	231	DU
	Multifamily Residential (12.1-25 DU/Ac)	800	DU
2	Open Space (Edison Easement)	20.0	AC
3	Public Park	27.0	AC
4A	Light Industrial	560.617	TSF
4B	Multifamily Residential (12.1-25 DU/Ac)	190	DU
4C	Public Park	1.3	AC
5A	Single Family Residential (5.1-12 DU/Ac)	100	DU
	Multifamily Residential (12.1-25 DU/Ac)	110	DU
5B	Light Industrial	512.701	TSF
5C	Single Family Residential (5.1-12 DU/Ac)	100	DU
	Multifamily Residential (12.1-25 DU/Ac)	250	DU
5D	Multifamily Residential (12.1-25 DU/Ac)	190	DU
5E	Open Space (Edison Easement)	8.3	AC
5F	Open Space (Edison Easement)	8.5	AC
6A	Regional Commercial/Stand Alone Residential Overlay	1,099	DU
6B	Light Industrial	510.305	TSF
6C	Open Space	3.7	AC
6D	Regional Commercial	7.500	TSF
7A	Light Industrial	1,183.525	TSF
7B	Regional Commercial	300.000	TSF
8A	Regional Commercial/Mixed Use Overlay	852	DU
		325.000	TSF
8B	Regional Commercial/Stand Alone Residential Overlay	550	DU
		50.000	TSF
9A	Regional Commercial/Stand Alone Residential Overlay	1,150	DU
		166.182	TSF
9B	Regional Commercial/Stand Alone Residential Overlay	1,150	DU
		76.320	TSF

[1] DU = Dwelling Units; TSF = Thousand Square Feet; AC = Acres

EXISTING COUNT DATA

We are proposing to use new traffic counts for the study area intersections that were conducted in April and May 2022 while local schools were in session and will not apply any further adjustments in establishing the baseline as traffic counts would reflect the current conditions, including any foreseeable lasting effects due to the COVID-19 pandemic.

AMBIENT GROWTH

Future year traffic forecasts will be based upon a background (ambient) growth of 2% per year, compounded annually for five years. The growth factor for Opening Year Cumulative (2027) traffic conditions will be 10.41% (or $1.02^{5\ years}$).

TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development.

CURRENTLY APPROVED LAND USES

Trip generation for the currently approved land uses are shown in Table 2 as evaluated in the Traffic Study for the Rich Haven Specific Plan PA 1 & PA 7 Amendment (dated January 22, 2021, prepared by Linscott Law & Greenspan Engineers, referred to as **2021 Traffic Study** in support of the **2021 Specific Plan Amendment**). The currently approved Specific Plan (2021 Specific Plan Amendment) land uses include 7,194 residential dwelling units, 990,902 square feet of commercial retail/general office use, and 1,183,525 square feet of light industrial use. The trip generation utilized for the project was obtained from the 2021 Traffic Study. As shown in Table 2, the currently approved uses generate a net total of 91,993 two-way trips per day with 6,372 AM peak hour trips and 8,772 PM peak hour trips.

TABLE 2: CURRENTLY APPROVED TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
PA 1A: Single Family Detached Residential	115	DU	21	64	85	72	42	114	1,086
PA 1B: Single Family Detached Residential	175	DU	32	98	130	109	64	173	1,652
PA 1C: Single Family Detached Residential	231	DU	31	95	126	106	62	168	1,605
PA 1C: Multifamily (Low-Rise) Residential	500	DU	59	199	258	198	116	314	4,107
PA 3: Public Park	27.0	AC	1	0	1	2	1	3	21
PA 4A: Single Family Detached Residential	154	DU	28	86	114	96	56	152	1,454
PA 4B: Single Family Detached Residential	101	DU	19	56	75	63	37	100	953
PA 4C: Single Family Detached Residential	108	DU	20	60	80	67	40	107	1,020
PA 5A: Single Family Detached Residential	109	DU	20	61	81	68	40	108	1,029
PA 5B: Single Family Detached Residential	65	DU	12	36	48	41	23	64	614
PA 5B: Multifamily (Low-Rise) Residential	100	DU	11	35	46	35	21	56	732
PA 5C: Single Family Detached Residential	332	DU	61	185	246	207	122	329	3,134
PA 5D: Single Family Detached Residential	81	DU	15	45	60	51	29	80	765
PA 5D: Multifamily (Low-Rise) Residential	280	DU	30	99	129	99	58	157	2,050
PA 6A: Single Family Detached Residential	1,089	DU	201	605	806	679	399	1,078	10,280
PA 6A: General Office	41.546	TSF	41	7	48	8	40	48	405
PA 6A: Shopping Center	41.545	TSF	24	15	39	76	82	158	1,568
PA 6B: Single Family Detached Residential	703	DU	130	390	520	438	258	696	6,636
PA 6B: General Office	19.080	TSF	19	3	22	4	18	22	186
PA 6B: Shopping Center	19.080	TSF	11	7	18	35	38	73	720
PA 7A: High-Cube Transload	591.763	TSF	53	11	64	27	47	74	1,092
PA 7A: High-Cube Fulfillment Center	295.881	TSF	270	66	336	163	258	421	2,516
PA 7A: High-Cube Cold Storage	295.881	TSF	29	9	38	13	32	45	827
PA 7B: Shopping Center	225.000	TSF	55	33	88	171	186	357	3,539
PA 7B: High Turnover Restaurant	45.000	TSF	102	84	186	113	70	183	2,103
PA 7B: Fast-Food Restaurant w/ Drive-Through	30.000	TSF	256	246	502	212	196	408	5,887
PA 8A: Single Family Detached Residential	852	DU	158	472	630	531	312	843	8,043
PA 8A: General Office	162.500	TSF	162	27	189	30	157	187	1,583
PA 8A: Shopping Center	162.500	TSF	95	58	153	297	322	619	6,134
PA 8B: Multifamily (Low-Rise) Residential	407	DU	43	144	187	144	84	228	2,979
PA 8B: General Office	61.700	TSF	62	10	72	11	60	71	601
PA 8B: Shopping Center	61.700	TSF	36	22	58	113	122	235	2,329
PA 9A: Single Family Detached Residential	1,089	DU	201	605	806	679	399	1,078	10,280
PA 9A: General Office	41.546	TSF	41	7	48	8	40	48	405
PA 9A: Shopping Center	41.545	TSF	24	15	39	76	82	158	1,568
PA 9B: Single Family Detached Residential	703	DU	130	390	520	438	258	696	6,636
PA 9B: General Office	19.080	TSF	19	3	22	4	18	22	186
PA 9B: Shopping Center	19.080	TSF	11	7	18	35	38	73	720
PA 6, PA 7, PA 8 & PA 9 Internal Capture			-72	-137	-209	-182	-135	-317	-3,061
PA 6, PA 7, PA 8 & PA 9 Pass-by Reduction			-159	-148	-307	-334	-323	-657	-2,391
Total Trips			**2,302**	**4,070**	**6,372**	**5,003**	**3,769**	**8,772**	**91,993**

Source: Traffic Impact Analysis Report Rich Haven Specific Plan PA 1 & PA 7 Amendment, LLG Engineers, January 2021.

[1] DU = dwelling units; TSF = thousand square feet; AC = acres

PROPOSED PROJECT

The trip generation rates used the proposed Project are based upon information collected by the ITE as provided in their latest Trip Generation Manual, 11th Edition, 2021 and the High Cube Warehouse Trip Generation Study (WSP, January 2019). Attachment A contains the Project's trip generation rates and summary tables. Table A-1 in Attachment A summarizes the trip generation rates used for the proposed Project. The proposed Project trip generation summary is shown on Table A-2 in actual vehicles and on Table A-3 in PCE. A condensed summary of the Project's trip generation is shown on Table 3 summarizing the detailed trip generation provided in Attachment A. The proposed Project is anticipated to generate a total of 95,538 two-way trips per day with 8,078 AM peak hour trips and 8,036 PM peak hour trips. Internal capture percentages have been derived from the worksheets included in Attachment A and pass-by reductions are based on the latest ITE Trip Generation Manual for each applicable retail/restaurant land use.

TABLE 3: PROJECT TRIP GENERATION SUMMARY

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Actual Vehicles:							
Phase 1 Total Trips	1,634	2,101	3,735	2,199	1,832	4,031	47,226
Phase 2 Total Trips	2,005	2,338	4,343	2,281	1,724	4,005	48,312
Project Buildout Total Trips (Actual Vehicles)	**3,639**	**4,439**	**8,078**	**4,480**	**3,556**	**8,036**	**95,538**
Passenger Car Equivalent (PCE):							
Phase 1 Total Trips	1,694	2,140	3,834	2,231	1,893	4,124	48,922
Phase 2 Total Trips	2,005	2,338	4,343	2,281	1,724	4,005	48,312
Project Buildout Total Trips (PCE)	**3,699**	**4,478**	**8,177**	**4,512**	**3,617**	**8,129**	**97,234**

[1] DU = dwelling units; TSF = thousand square feet; AC = acres

TRIP GENERATION COMPARISON

As shown on Table 4, the proposed Project is anticipated to generate 7,411 more two-way peak hour trips, 1,969 more AM peak hour trips, and 392 fewer PM peak hour trips as compared to the uses evaluated in the 2021 Specific Plan Amendment.

TABLE 4: TRIP GENERATION COMPARISON

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
2021 SPA Trip Generation	2,302	4,070	6,372	5,003	3,769	8,772	91,993
Proposed Project Trip Generation	3,639	4,439	8,078	4,480	3,556	8,036	95,538
Existing Uses	67	196	263	217	127	344	3,866
Variance	**1,404**	**565**	**1,969**	**-306**	**-86**	**-392**	**7,411**

TRIP DISTRIBUTION

The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. Trip distribution patterns have been developed for each land use component of the Specific Plan as follows:

- Exhibit 4: Project (Residential) Trip Distribution
- Exhibit 5: Project (Non-Residential) Trip Distribution
- Exhibit 6: Project (4A, 5B, and 6B Industrial – Passenger Cars) Trip Distribution
- Exhibit 7: Project (4A, 5B, and 6B Industrial – Trucks) Trip Distribution
- Exhibit 8: Project (7A Industrial – Passenger Cars) Trip Distribution
- Exhibit 9: Project (7A Industrial – Trucks) Trip Distribution

The proposed residential, non-residential, and industrial trip distributions are based on select zone runs for the Project from the latest TOP traffic model. The trip distribution patterns for passenger cars and trucks for PA 7A is consistent with the 2021 Traffic Study prepared for the last Specific Plan Amendment. The non-residential land uses include the general office, shopping center, retail, and restaurant uses.

EXHIBIT 4: PROJECT (RESIDENTIAL) TRIP DISTRIBUTION

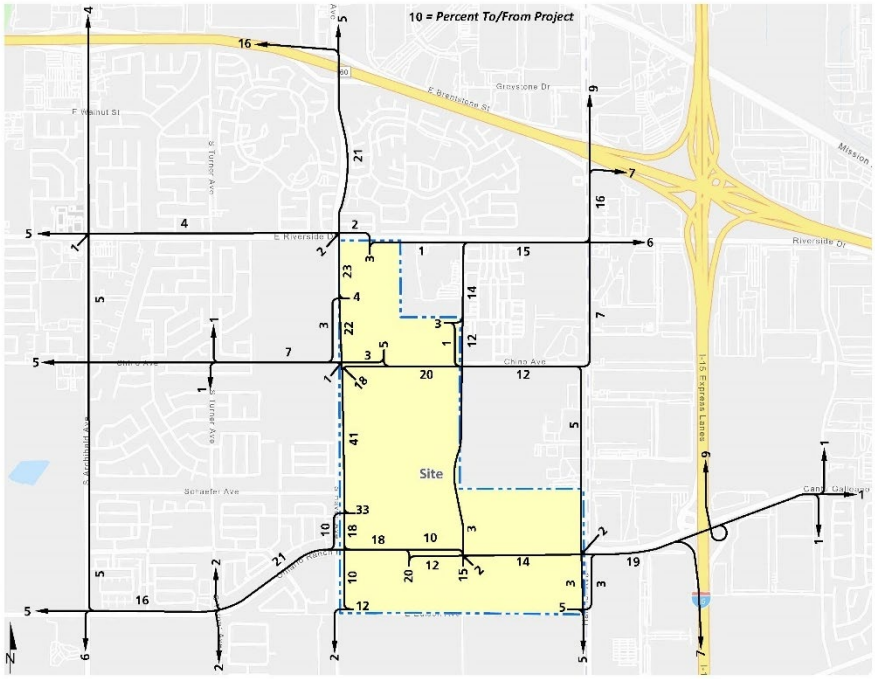


EXHIBIT 5: PROJECT (NON-RESIDENTIAL) TRIP DISTRIBUTION

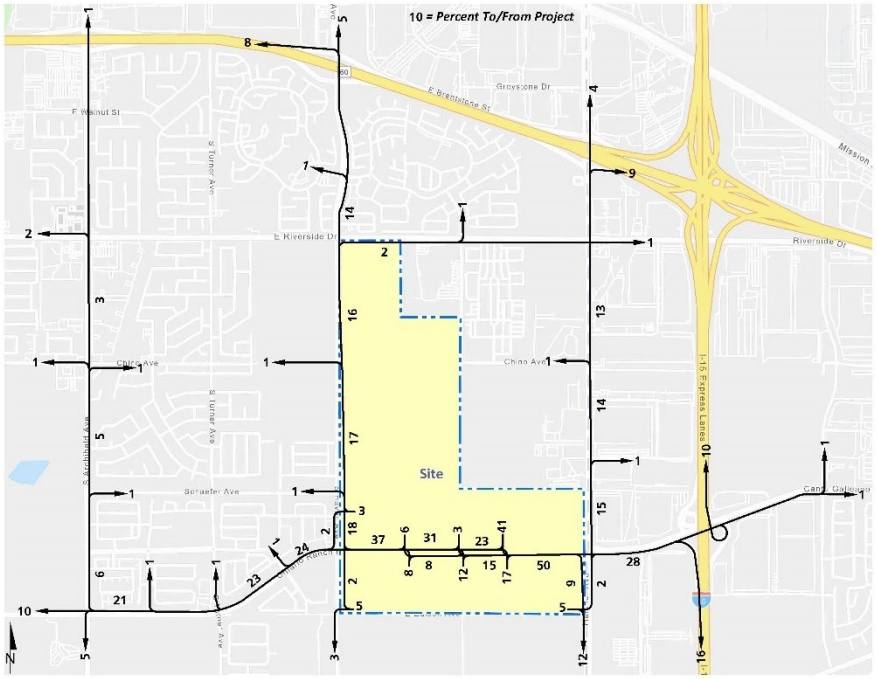


EXHIBIT 6: PROJECT (4A, 5B & 6B INDUSTRIAL – PASSENGER CARS) TRIP DISTRIBUTION

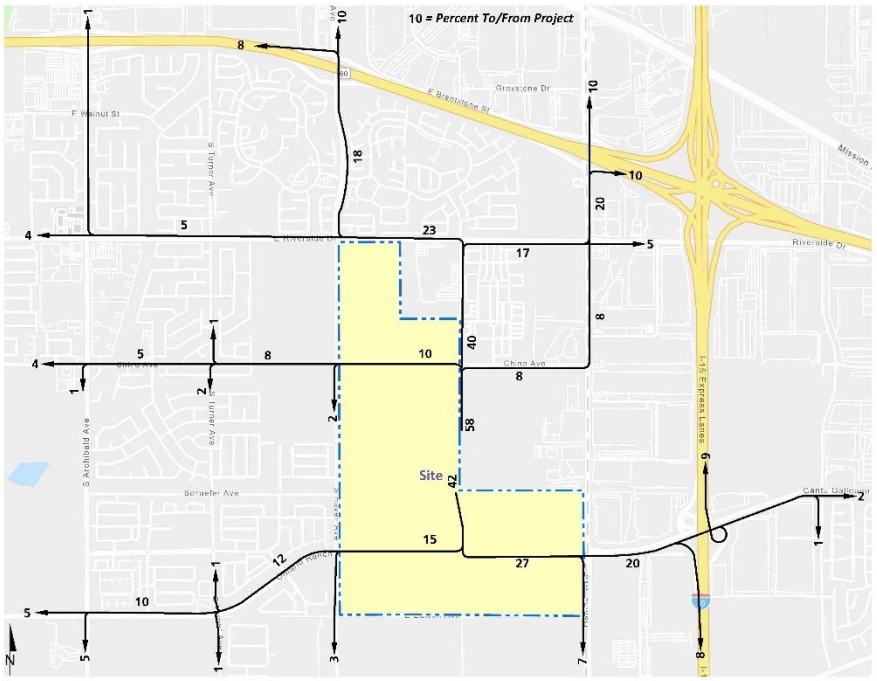


EXHIBIT 7: PROJECT (4A, 5B & 6B INDUSTRIAL – TRUCKS) TRIP DISTRIBUTION

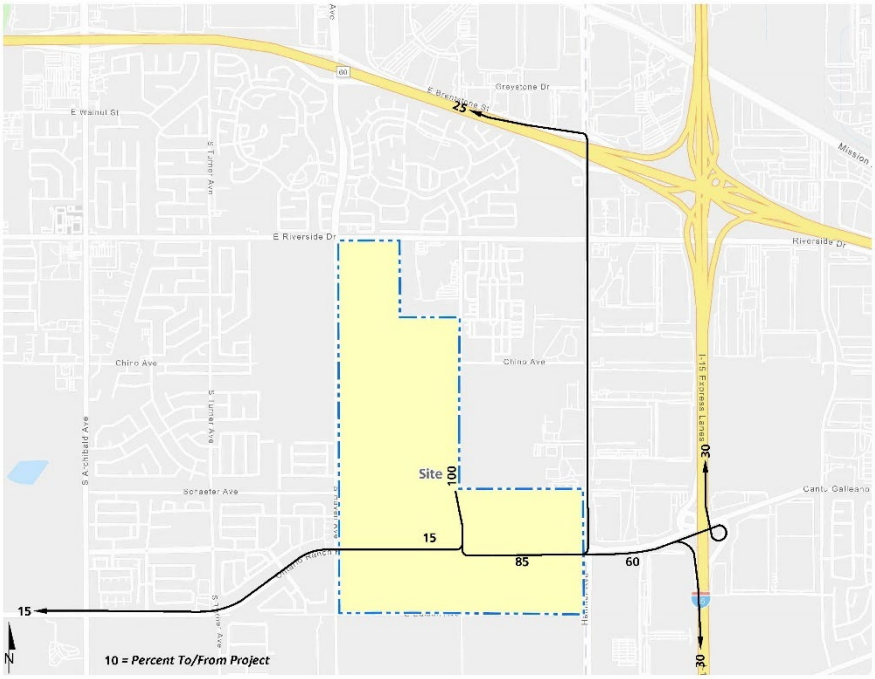


EXHIBIT 8: PROJECT (7A INDUSTRIAL – PASSENGER CARS) TRIP DISTRIBUTION

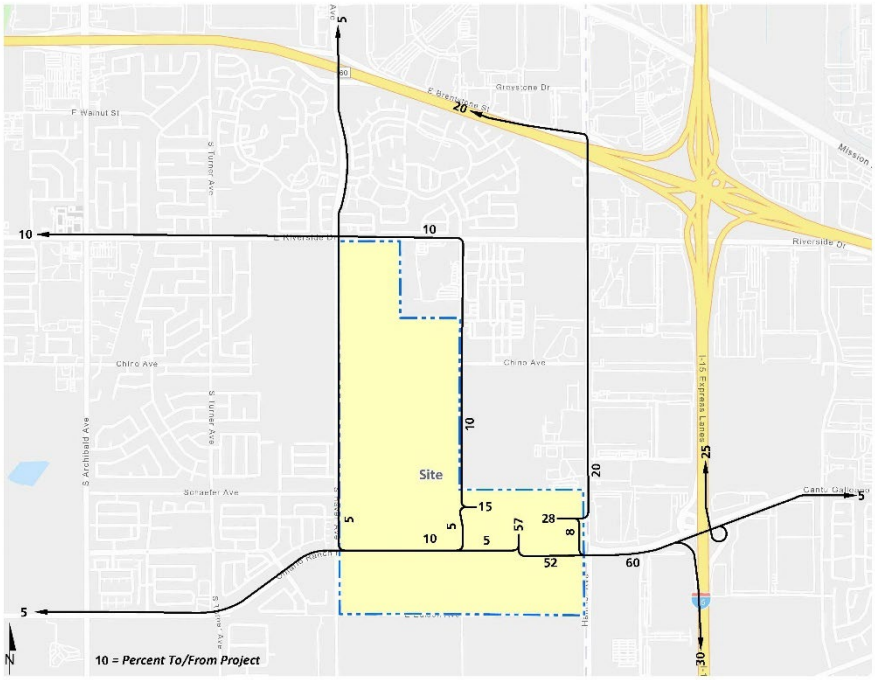
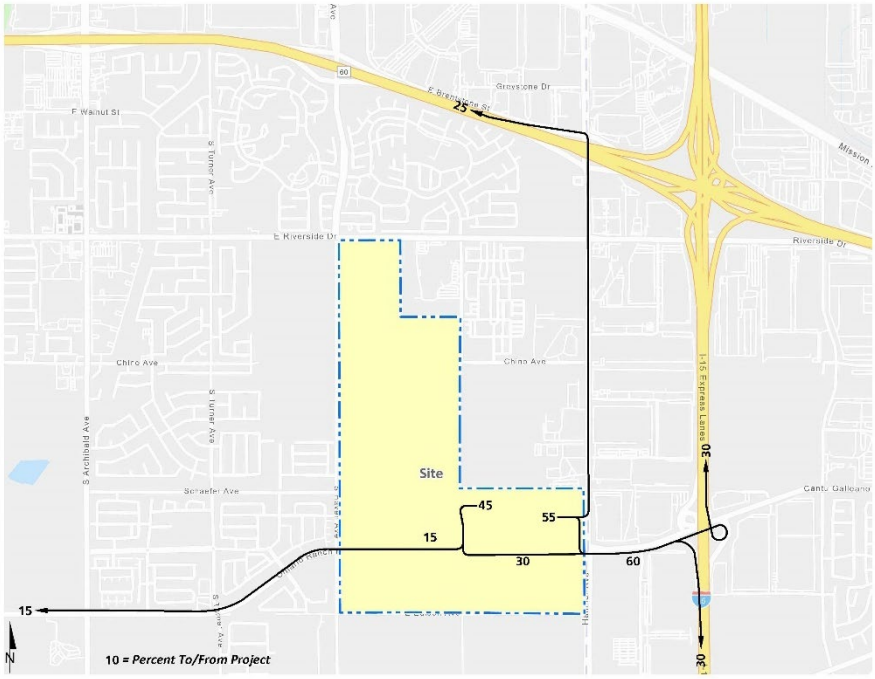


EXHIBIT 9: PROJECT (7A INDUSTRIAL – TRUCKS) TRIP DISTRIBUTION



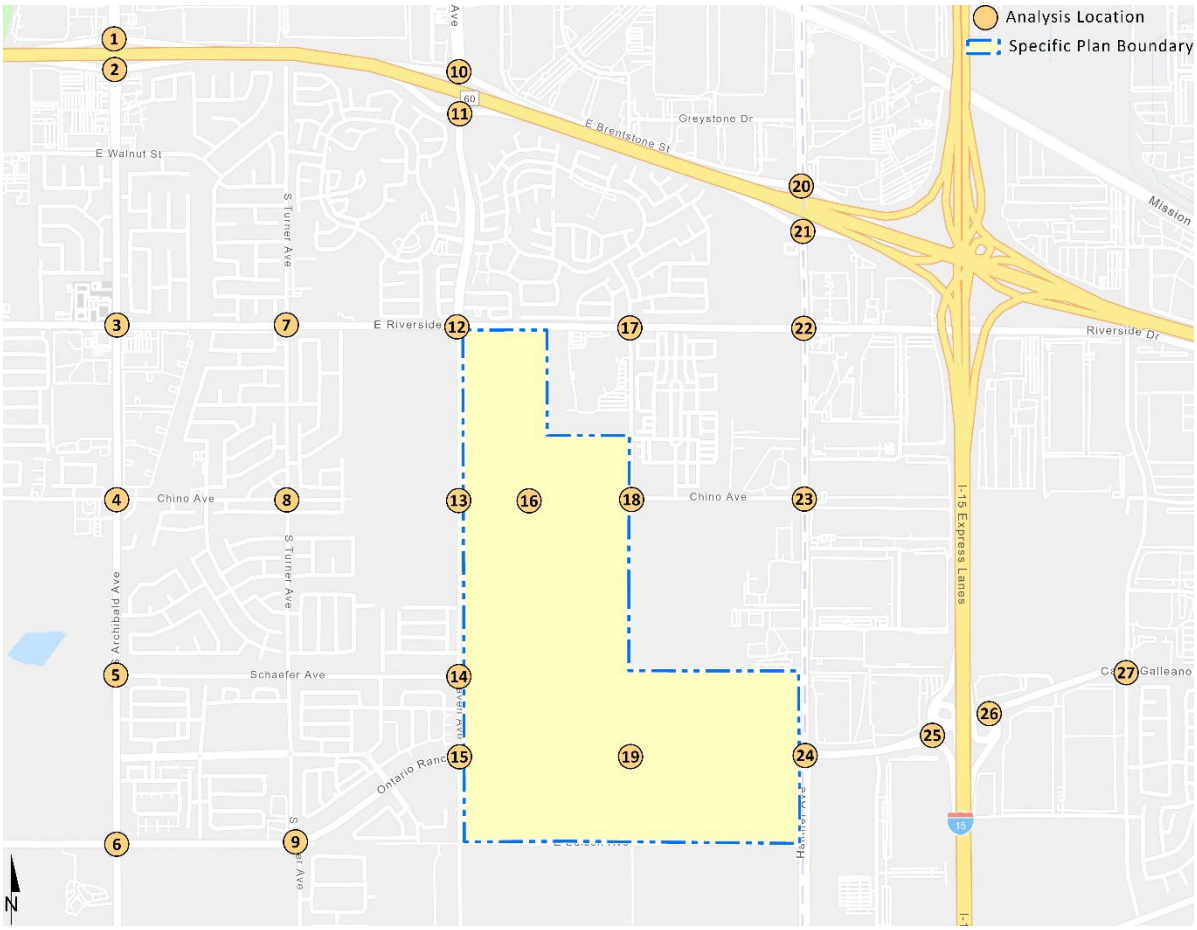
INTERSECTION ANALYSIS LOCATIONS

Exhibit 10 depicts the recommended intersection analysis locations, based upon the Project trip generation and trip distribution patterns included as part of this letter. The study area intersections are consistent with the locations evaluated in the Specific Plan. Table 5 also includes a summary of the study area intersections.

TABLE 5: INTERSECTION ANALYSIS LOCATIONS

#	Intersections
1	Archibald Av. & SR-60 WB Ramps
2	Archibald Av. & SR-60 EB Ramps
3	Archibald Av. & Riverside Dr.
4	Archibald Av. & Chino Av.
5	Archibald Av. & Schaefer Av.
6	Archibald Av. & Merrill Av.
7	Turner Av. & Riverside Dr.
8	Turner Av. & Chino Av.
9	Turner Av. & Ontario Ranch Rd.
10	Haven Av. & SR-60 WB Ramps
11	Haven Av. & SR-60 EB Ramps
12	Haven Av. & Riverside Dr.
13	Haven Av. & Chino Av.
14	Haven Av. & Schaefer Av.
15	Haven Av. & Ontario Ranch Rd.
16	Twinkle Av. & Chino Av.
17	Mill Creek Av. & Riverside Dr.
18	Mill Creek Av. & Chino Av.
19	Mill Creek Av. & Ontario Ranch Rd.
20	Milliken Av. & SR-60 WB Ramps
21	Milliken Av. & SR-60 EB Ramps
22	Milliken Av. & Riverside Dr.
23	Hamner Av. & Chino Av.
24	Hamner Av. & Ontario Ranch Rd.
25	I-15 SB Ramps & Cantu Galleano Ranch Rd.
26	I-15 NB Ramps & Cantu Galleano Ranch Rd.
27	Wineville Av. & Cantu Galleano Ranch Rd.

EXHIBIT 10: STUDY AREA



VEHICLE MILES TRAVELLED (VMT)

The VMT thresholds and methodology outlined in the City of Ontario's May 2020 VMT guidelines will be utilized to conduct the VMT analysis for the Project. The VMT analysis will be prepared and submitted under separate cover.

TRAFFIC SIGNAL WARRANTS

Traffic signal warrant analysis will be conducted for all unsignalized full access driveways/intersections following the guidance of the California Manual on Uniform Control Devices (CA MUTCD).

OPEN ITEMS – CUMULATIVE DEVELOPMENT PROJECTS

It is requested that the City of Ontario provide a current list of cumulative development projects for inclusion in our traffic study. A preliminary list of cumulative development projects is provided on Table 6 and graphically shown on Exhibit 11.

SPECIAL ISSUES

The following special issues will be addressed as part of the TA:

- The proposed reduced lanes along Chino Avenue between Haven Avenue and Mill Creek Avenue will also be evaluated as part of the Traffic Study to ensure acceptable operations. Chino Avenue between Haven Avenue and Mill Creek Avenue is proposed to maintain the ultimate right-of-way (88-feet) but is proposed to accommodate one lane in each direction, separated by a raised median. Chino Avenue will accommodate two-lanes of travel in each direction between Mill Creek Avenue and Hamner Avenue, consistent with the standard street section.
- Assess the roadway segment capacity for Chino Avenue to determine the necessary roadway cross-section.
- The proposed roundabouts located at Twinkle Avenue (#16) and Mill Creek Avenue (#18) along Chino Avenue will also be evaluated as part of the Traffic Study based on the preliminary concept plans for both locations. Twinkle Avenue is located approximately mid-block between Haven Avenue and Mill Creek Avenue.
- A concept striping plan will be included in the traffic study to reflect the proposed single lane roundabouts and the design necessary to transition to the adjacent roadway segments.
- Traffic signal warrant analyses will be conducted for all unsignalized study area intersections for all applicable analysis scenarios.

OPEN ITEMS – SIGNAL TIMING

It is requested that the City provide traffic signal timing for any City controlled intersections that we should take into consideration in our operations analysis. Applicable signal timing for Caltrans facilities will be obtained from District 8.

If you have any questions or comments, I can be reached at cso@urbanxroads.com.

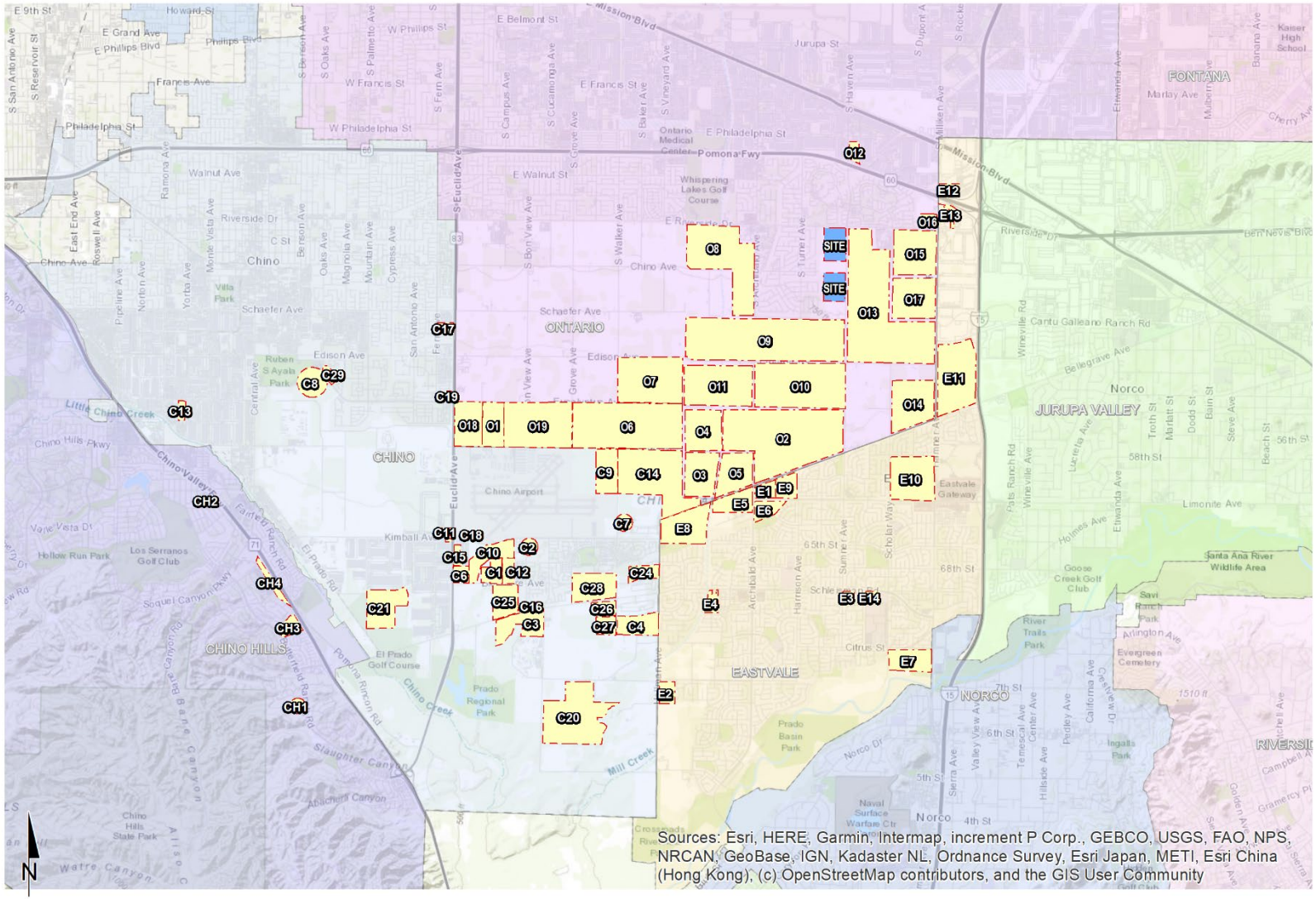
Respectfully submitted,

URBAN CROSSROADS, INC.

Charlene So

Charlene So, PE
Principal

EXHIBIT 11: CUMULATIVE DEVELOPMENT LOCATION MAP



ATTACHMENT A: TRIP GENERATION TABLES

TABLE A-1: TRIP GENERATION RATES

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
Industrial Park[3]	TSF	130	0.275	0.065	0.340	0.075	0.265	0.340	3.370
Passenger Cars			0.243	0.057	0.300	0.066	0.234	0.300	2.800
2-Axle Trucks			0.005	0.001	0.007	0.001	0.005	0.007	0.095
3-Axle Trucks			0.007	0.002	0.008	0.002	0.006	0.008	0.118
4+-Axle Trucks			0.020	0.005	0.025	0.006	0.020	0.025	0.357
High-Cube Transload Warehouse[3]	TSF	154	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars			0.052	0.008	0.060	0.023	0.067	0.090	1.180
2-Axle Trucks			0.002	0.001	0.003	0.001	0.001	0.002	0.037
3-Axle Trucks			0.002	0.002	0.004	0.001	0.001	0.002	0.046
4+-Axle Trucks			0.006	0.007	0.013	0.003	0.003	0.006	0.138
High-Cube Fulfillment Center (Sort)[3]	TSF	155	0.705	0.165	0.870	0.468	0.732	1.200	6.440
Passenger Cars			0.695	0.155	0.850	0.458	0.722	1.180	6.250
2-Axle Trucks			0.002	0.001	0.003	0.002	0.001	0.003	0.032
3-Axle Trucks			0.002	0.002	0.004	0.002	0.002	0.004	0.039
4+-Axle Trucks			0.006	0.007	0.013	0.006	0.007	0.013	0.119
High-Cube Cold Storage Warehouse[3]	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.062	0.018	0.080	0.025	0.065	0.090	1.370
2-Axle Trucks			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-Axle Trucks			0.005	0.011	0.016	0.008	0.008	0.016	0.407
High-Cube Fulfillment Center Warehouse[4]	TSF	--	0.094	0.028	0.122	0.046	0.119	0.165	2.129
Passenger Cars			0.079	0.024	0.103	0.040	0.104	0.144	1.750
2-4 Axle Trucks			0.006	0.002	0.008	0.003	0.008	0.011	0.162
5+-Axle Trucks			0.008	0.003	0.011	0.003	0.007	0.010	0.217
Single Family Detached Residential	DU	210	0.18	0.52	0.70	0.59	0.35	0.94	9.43
Multifamily (Low-Rise) Housing	DU	220	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Public Park	AC	411	0.01	0.01	0.02	0.06	0.05	0.11	0.78
General Office	TSF	710	1.34	0.18	1.52	0.24	1.20	1.44	10.84
Shopping Center (>150,000 SF)	TSF	820	0.52	0.32	0.84	1.63	1.77	3.40	37.01
Shopping Center (40,000-150,000 SF)	TSF	821	1.07	0.66	1.73	2.54	2.65	5.19	67.52
Strip Retail (<40,000 SF)	TSF	822	1.42	0.94	2.36	3.30	3.29	6.59	54.45
High Turnover Restaurant	TSF	932	5.26	4.31	9.57	5.52	3.53	9.05	107.20
Fast-Food Restaurant With Drive-Thru Window	TSF	934	22.75	21.86	44.61	17.18	15.85	33.03	467.48
Gas Station (4,000-5,500 SF Convenience)	VFP	945	13.52	13.52	27.04	11.38	11.38	22.76	257.13

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet; DU = Dwelling Units; AC = Acres; VFP = Vehicle Fueling Position

[3] Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.

Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

[4] Vehicle Mix Source: High Cube Warehouse Trip Generation Study, WSP, January 29, 2019.

Inbound and outbound split source: ITE Trip Generation Manual, Eleventh Edition (2021) for ITE Land Use Code 154.

TABLE A-2: PROJECT TRIP GENERATION SUMMARY (ACTUAL VEHICLES)

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Existing Uses:									
PA 5A: Multifamily (Low-Rise) Residential	106	DU	19	55	74	63	37	100	1,000
PA 5C: Single Family Detached Residential	58	DU	11	30	41	34	20	54	548
PA 6A: Single Family Detached Residential	70	DU	13	36	49	41	24	65	660
PA 6A: Multifamily (Low-Rise) Residential	246	DU	24	75	99	79	46	125	1,658
PA 5A, 5C, & 6A Subtotal			**67**	**196**	**263**	**217**	**127**	**344**	**3,866**
Phase 1:									
PA 4A, 5B, 6B: Business Park (20%)	316.725	TSF							
Passenger Cars			77	18	95	21	74	95	888
Trucks			10	2	12	3	10	13	182
PA 4A, 5B, 6B: High-Cube Cold Storage (10%)	158.362	TSF							
Passenger Cars			10	3	13	4	10	14	218
Trucks			1	3	4	2	2	4	120
PA 4A, 5B, 6B: High-Cube Fulfillment (70%)	1,108.536	TSF							
Passenger Cars			88	26	114	45	115	160	1,940
Trucks			16	5	21	7	17	24	420
Internal Capture (1% AM, 2% PM/Daily)			-2	0	-2	-1	-4	-5	-62
PA 4B: Multifamily (Low-Rise) Residential	190	DU	18	58	76	61	36	97	1,282
PA 4C: Public Park	1.3	AC	0	0	0	0	0	0	2
PA 5A: Single Family Detached Residential	100	DU	18	52	70	59	35	94	944
PA 5A: Multifamily (Low-Rise) Residential	4	DU	0	1	1	1	1	2	28
PA 5C: Single Family Detached Residential	42	DU	8	22	30	25	15	40	396
PA 5C: Multifamily (Low-Rise) Residential	250	DU	24	76	100	80	47	127	1,686
PA 5D: Multifamily (Low-Rise) Residential	190	DU	18	58	76	61	36	97	1,282
PA 6A: Single Family Detached Residential	230	DU	42	119	161	136	80	216	2,170
PA 6A: Multifamily (Low-Rise) Residential	553	DU	53	168	221	178	104	282	3,728
Internal Capture (4% AM, 12% PM/Daily)			-7	-22	-29	-72	-42	-114	-1,382
PA 6D: Strip Retail	7.500	TSF	11	7	18	25	25	50	408
Internal Capture (3% AM, 19% PM/Daily)			0	0	0	-5	-5	-10	-78
PA 6D: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 4, 5, & 6 Subtotal			**435**	**646**	**1,081**	**667**	**593**	**1,260**	**15,004**
PA 7A: High-Cube Transload (50%)	591.763	TSF							
Passenger Cars			31	5	36	14	40	54	698
Trucks			6	6	12	3	3	6	130
PA 7A: High-Cube Fulfillment Center (25%)	295.881	TSF							
Passenger Cars			206	46	252	136	214	350	1,850
Trucks			3	3	6	3	3	6	56
PA 7A: High-Cube Cold Storage (25%)	295.881	TSF							
Passenger Cars			18	5	23	7	19	26	406
Trucks			3	6	9	4	4	8	222
Internal Capture (1% AM, 2% PM/Daily)			-3	-1	-4	-3	-5	-8	-60
PA 7 Subtotal			**264**	**70**	**334**	**164**	**278**	**442**	**3,302**
PA 8A: Single Family Detached Residential	300	DU	55	155	210	178	104	282	2,829
PA 8A: Multifamily (Low-Rise) Residential	552	DU	53	168	221	177	104	281	3,720
PA 8B: Multifamily (Low-Rise) Residential	550	DU	53	167	220	177	104	281	3,707
Internal Capture (4% AM, 12% PM/Daily)			-6	-20	-26	-64	-37	-101	-1,232
PA 8B: Shopping Center (75%)	37.500	TSF	40	25	65	95	99	194	2,532
Internal Capture (3% AM, 19% PM/Daily)			-1	-1	-2	-18	-19	-37	-482
Pass-by (40% PM/Daily)			0	0	0	-32	-32	-64	-820
PA 8B: High Turnover Restaurant (15%)	7.500	TSF	39	32	71	41	26	67	804
Internal Capture (8% AM, 17% PM/Daily)			-3	-3	-6	-7	-4	-11	-130
Pass-by (43% PM/Daily)			0	0	0	-9	-9	-18	-290
PA 8B: Fast-Food Restaurant w/ Drive-Through (10%)	5.000	TSF	114	109	223	86	79	165	2,338
Internal Capture (8% AM, 17% PM/Daily)			-9	-9	-18	-15	-13	-28	-374
Pass-by (50% AM, 55% PM/Daily)			-50	-50	-100	-34	-34	-68	-1,022
PA 8B: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 8 Subtotal			**335**	**623**	**958**	**612**	**405**	**1,017**	**12,412**

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
PA 9A: Single Family Detached Residential	150	DU	27	78	105	89	52	141	1,416
PA 9A: Multifamily (Low-Rise) Residential	1,000	DU	96	304	400	321	189	510	6,740
Internal Capture (4% AM, 12% PM/Daily)			-5	-15	-20	-49	-29	-78	-980
PA 9A: Shopping Center (75%)	124.637	TSF	134	82	216	317	330	647	8,416
Internal Capture (3% AM, 19% PM/Daily)			-4	-2	-6	-60	-63	-123	-1,600
Pass-by (40% PM/Daily)			0	0	0	-107	-107	-214	-2,726
PA 9A: High Turnover Restaurant (15%)	24.927	TSF	131	107	238	138	88	226	2,672
Internal Capture (8% AM, 17% PM/Daily)			-10	-9	-19	-23	-15	-38	-428
Pass-by (43% PM/Daily)			0	0	0	-31	-31	-62	-966
PA 9A: Fast-Food Restaurant w/ Drive-Through (10%)	16.618	TSF	378	363	741	285	263	548	7,770
Internal Capture (8% AM, 17% PM/Daily)			-30	-29	-59	-48	-45	-93	-1,244
Pass-by (50% AM, 55% PM/Daily)			-167	-167	-334	-113	-113	-226	-3,394
PA 9A: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 9 Subtotal			**600**	**762**	**1,362**	**756**	**556**	**1,312**	**16,508**
Phase 1 Total (Actual Vehicles)			**1,634**	**2,101**	**3,735**	**2,199**	**1,832**	**4,031**	**47,226**
Phase 2:									
PA 1A: Single Family Detached Residential	128	DU	23	66	89	76	45	121	1,208
PA 1B: Single Family Detached Residential	94	DU	17	49	66	56	33	89	886
PA 1B: Multifamily (Low-Rise) Residential	200	DU	19	61	80	64	38	102	1,348
PA 1C: Single Family Detached Residential	231	DU	42	120	162	137	80	217	2,178
PA 1C: Multifamily (Low-Rise) Residential	800	DU	77	243	320	257	151	408	5,392
Internal Capture (4% AM, 12% PM/Daily)			-7	-22	-29	-71	-42	-113	-1,322
PA 1 Subtotal			**171**	**517**	**688**	**519**	**305**	**824**	**9,690**
PA 3: Public Park	27.0	AC	0	0	0	2	1	3	22
PA 3 Subtotal			**0**	**0**	**0**	**2**	**1**	**3**	**22**
PA 7B: Shopping Center (75%)	225.000	TSF	117	72	189	367	398	765	8,328
Internal Capture (3% AM, 19% PM/Daily)			-4	-2	-6	-70	-76	-146	-1,582
Pass-by (40% PM/Daily)			0	0	0	-129	-129	-258	-2,698
PA 7B: High Turnover Restaurant (15%)	45.000	TSF	237	194	431	248	159	407	4,824
Internal Capture (8% AM, 17% PM/Daily)			-19	-16	-35	-42	-27	-69	-772
Pass-by (43% PM/Daily)			0	0	0	-57	-57	-114	-1,742
PA 7B: Fast-Food Restaurant w/ Drive-Through (10%)	30.000	TSF	683	656	1,339	515	476	991	14,024
Internal Capture (8% AM, 17% PM/Daily)			-55	-52	-107	-88	-81	-169	-2,244
Pass-by (50% AM, 55% PM/Daily)			-302	-302	-604	-205	-205	-410	-6,126
PA 7B: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 7 Subtotal			**707**	**600**	**1,307**	**576**	**495**	**1,071**	**12,844**
PA 8A: Shopping Center (75%)	243.750	TSF	127	78	205	398	431	829	9,022
Internal Capture (3% AM, 19% PM/Daily)			-4	-2	-6	-76	-82	-158	-1,714
Pass-by (40% PM/Daily)			0	0	0	-140	-140	-280	-2,924
PA 8A: High Turnover Restaurant (15%)	48.750	TSF	257	210	467	269	172	441	5,226
Internal Capture (8% AM, 17% PM/Daily)			-21	-17	-38	-46	-29	-75	-836
Pass-by (43% PM/Daily)			0	0	0	-61	-61	-122	-1,888
PA 8A: Fast-Food Restaurant w/ Drive-Through (10%)	32.500	TSF	739	710	1,449	558	515	1,073	15,194
Internal Capture (8% AM, 17% PM/Daily)			-59	-57	-116	-95	-88	-183	-2,432
Pass-by (50% AM, 55% PM/Daily)			-327	-327	-654	-222	-222	-444	-6,636
PA 8A: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 8 Subtotal			**762**	**645**	**1,407**	**622**	**533**	**1,155**	**13,844**
PA 9B: Single Family Detached Residential	150	DU	27	78	105	89	52	141	1,416
PA 9B: Multifamily (Low-Rise) Residential	1,000	DU	96	304	400	321	189	510	6,740
Internal Capture (4% AM, 12% PM/Daily)			-5	-15	-20	-49	-29	-78	-980
PA 6B/9B: Shopping Center (75%)	57.240	TSF	61	38	99	146	152	298	3,865
Internal Capture (3% AM, 19% PM/Daily)			-2	-1	-3	-28	-29	-57	-734
Pass-by (40% PM/Daily)			0	0	0	-49	-49	-98	-1,252
PA 6B/9B: High Turnover Restaurant (15%)	11.448	TSF	60	49	109	63	40	103	1,227
Internal Capture (8% AM, 17% PM/Daily)			-5	-4	-9	-11	-7	-18	-196
Pass-by (43% PM/Daily)			0	0	0	-14	-14	-28	-444
PA 6B/9B: Fast-Food Restaurant w/ Drive-Through (10%)	7.632	TSF	174	167	341	131	121	252	3,568
Internal Capture (8% AM, 17% PM/Daily)			-14	-13	-27	-22	-21	-43	-572
Pass-by (50% AM, 55% PM/Daily)			-77	-77	-154	-52	-52	-104	-1,558
PA 6B/9B: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 6B & 9 Subtotal			**365**	**576**	**941**	**562**	**390**	**952**	**11,912**
Phase 2 Total Trips			**2,005**	**2,338**	**4,343**	**2,281**	**1,724**	**4,005**	**48,312**
Project Buildout Total Trips (Actual Vehicles)			**3,639**	**4,439**	**8,078**	**4,480**	**3,556**	**8,036**	**95,538**

[1] DU = dwelling units; TSF = thousand square feet; AC = acres

TABLE A-3: PROJECT TRIP GENERATION SUMMARY (PCE)

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Existing Uses:									
PA 5A: Multifamily (Low-Rise) Residential	106	DU	19	55	74	63	37	100	1,000
PA 5C: Single Family Detached Residential	58	DU	11	30	41	34	20	54	548
PA 6A: Single Family Detached Residential	70	DU	13	36	49	41	24	65	660
PA 6A: Multifamily (Low-Rise) Residential	246	DU	24	75	99	79	46	125	1,658
PA 5A, 5C, & 6A Subtotal			**67**	**196**	**263**	**217**	**127**	**344**	**3,866**
Phase 1:									
PA 4A, 5B, 6B: Business Park (20%)	316.725	TSF							
Passenger Cars			77	18	95	21	74	95	888
Trucks (PCE)			26	6	32	7	25	32	460
PA 4A, 5B, 6B: High-Cube Cold Storage (10%)	158.362	TSF							
Passenger Cars			10	3	13	4	10	14	218
Trucks (PCE)			3	8	11	6	6	12	282
PA 4A, 5B, 6B: High-Cube Fulfillment (70%)	1,108.536	TSF							
Passenger Cars			88	26	114	45	115	160	1,940
Trucks (PCE)			42	12	54	16	42	58	1,082
Internal Capture (1% AM, 2% PM/Daily)			-2	0	-2	-1	-4	-5	-62
PA 4B: Multifamily (Low-Rise) Residential	190	DU	18	58	76	61	36	97	1,282
PA 4C: Public Park	1.3	AC	0	0	0	0	0	0	2
PA 5A: Single Family Detached Residential	100	DU	18	52	70	59	35	94	944
PA 5A: Multifamily (Low-Rise) Residential	4	DU	0	1	1	1	1	2	28
PA 5C: Single Family Detached Residential	42	DU	8	22	30	25	15	40	396
PA 5C: Multifamily (Low-Rise) Residential	250	DU	24	76	100	80	47	127	1,686
PA 5D: Multifamily (Low-Rise) Residential	190	DU	18	58	76	61	36	97	1,282
PA 6A: Single Family Detached Residential	230	DU	42	119	161	136	80	216	2,170
PA 6A: Multifamily (Low-Rise) Residential	553	DU	53	168	221	178	104	282	3,728
Internal Capture (4% AM, 12% PM/Daily)			-7	-22	-29	-72	-42	-114	-1,382
PA 6D: Strip Retail	7.500	TSF	11	7	18	25	25	50	408
Internal Capture (3% AM, 19% PM/Daily)			0	0	0	-5	-5	-10	-78
PA 6D: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 4, 5, & 6 Subtotal			**479**	**662**	**1,141**	**684**	**637**	**1,321**	**16,106**
PA 7A: High-Cube Transload (50%)	591.763	TSF							
Passenger Cars			31	5	36	14	40	54	698
Trucks (PCE)			15	15	30	7	8	15	332
PA 7A: High-Cube Fulfillment Center (25%)	295.881	TSF							
Passenger Cars			206	46	252	136	214	350	1,850
Trucks (PCE)			7	8	15	7	8	15	144
PA 7A: High-Cube Cold Storage (25%)	295.881	TSF							
Passenger Cars			18	5	23	7	19	26	406
Trucks (PCE)			6	15	21	11	11	22	526
Internal Capture (1% AM, 2% PM/Daily)			-3	-1	-4	-3	-5	-8	-60
PA 7 Subtotal			**280**	**93**	**373**	**179**	**295**	**474**	**3,896**
PA 8A: Single Family Detached Residential	300	DU	55	155	210	178	104	282	2,829
PA 8A: Multifamily (Low-Rise) Residential	552	DU	53	168	221	177	104	281	3,720
PA 8B: Multifamily (Low-Rise) Residential	550	DU	53	167	220	177	104	281	3,707
Internal Capture (4% AM, 12% PM/Daily)			-6	-20	-26	-64	-37	-101	-1,232
PA 8B: Shopping Center (75%)	37.500	TSF	40	25	65	95	99	194	2,532
Internal Capture (3% AM, 19% PM/Daily)			-1	-1	-2	-18	-19	-37	-482
Pass-by (40% PM/Daily)			0	0	0	-32	-32	-64	-820
PA 8B: High Turnover Restaurant (15%)	7.500	TSF	39	32	71	41	26	67	804
Internal Capture (8% AM, 17% PM/Daily)			-3	-3	-6	-7	-4	-11	-130
Pass-by (43% PM/Daily)			0	0	0	-9	-9	-18	-290
PA 8B: Fast-Food Restaurant w/ Drive-Through (10%	5.000	TSF	114	109	223	86	79	165	2,338
Internal Capture (8% AM, 17% PM/Daily)			-9	-9	-18	-15	-13	-28	-374
Pass-by (50% AM, 55% PM/Daily)			-50	-50	-100	-34	-34	-68	-1,022
PA 8B: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 8 Subtotal			**335**	**623**	**958**	**612**	**405**	**1,017**	**12,412**

Land Use	Quantity Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
PA 9A: Single Family Detached Residential	150 DU	27	78	105	89	52	141	1,416
PA 9A: Multifamily (Low-Rise) Residential	1,000 DU	96	304	400	321	189	510	6,740
Internal Capture (4% AM, 12% PM/Daily)		-5	-15	-20	-49	-29	-78	-980
PA 9A: Shopping Center	124.637 TSF	134	82	216	317	330	647	8,416
Internal Capture (3% AM, 19% PM/Daily)		-4	-2	-6	-60	-63	-123	-1,600
Pass-by (40% PM/Daily)		0	0	0	-107	-107	-214	-2,726
PA 9A: High Turnover Restaurant (15%)	24.927 TSF	131	107	238	138	88	226	2,672
Internal Capture (8% AM, 17% PM/Daily)		-10	-9	-19	-23	-15	-38	-428
Pass-by (43% PM/Daily)		0	0	0	-31	-31	-62	-966
PA 9A: Fast-Food Restaurant w/ Drive-Through (10	16.618 TSF	378	363	741	285	263	548	7,770
Internal Capture (8% AM, 17% PM/Daily)		-30	-29	-59	-48	-45	-93	-1,244
Pass-by (50% AM, 55% PM/Daily)		-167	-167	-334	-113	-113	-226	-3,394
PA 9A: Gas Station	16 VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)		-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)		-160	-160	-320	-110	-110	-220	-2,500
PA 9 Subtotal		**600**	**762**	**1,362**	**756**	**556**	**1,312**	**16,508**
Phase 1 Total (PCE)		**1,694**	**2,140**	**3,834**	**2,231**	**1,893**	**4,124**	**48,922**
Phase 2:								
PA 1A: Single Family Detached Residential	128 DU	23	66	89	76	45	121	1,208
PA 1B: Single Family Detached Residential	94 DU	17	49	66	56	33	89	886
PA 1B: Multifamily (Low-Rise) Residential	200 DU	19	61	80	64	38	102	1,348
PA 1C: Single Family Detached Residential	231 DU	42	120	162	137	80	217	2,178
PA 1C: Multifamily (Low-Rise) Residential	800 DU	77	243	320	257	151	408	5,392
Internal Capture (4% AM, 12% PM/Daily)		-7	-22	-29	-71	-42	-113	-1,322
PA 1 Subtotal		**171**	**517**	**688**	**519**	**305**	**824**	**9,690**
PA 3: Public Park	27.0 AC	0	0	0	2	1	3	22
PA 3 Subtotal		**0**	**0**	**0**	**2**	**1**	**3**	**22**
PA 7B: Shopping Center	225.000 TSF	117	72	189	367	398	765	8,328
Internal Capture (3% AM, 19% PM/Daily)		-4	-2	-6	-70	-76	-146	-1,582
Pass-by (40% PM/Daily)		0	0	0	-129	-129	-258	-2,698
PA 7B: High Turnover Restaurant	45.000 TSF	237	194	431	248	159	407	4,824
Internal Capture (8% AM, 17% PM/Daily)		-19	-16	-35	-42	-27	-69	-772
Pass-by (43% PM/Daily)		0	0	0	-57	-57	-114	-1,742
PA 7B: Fast-Food Restaurant w/ Drive-Through	30.000 TSF	683	656	1,339	515	476	991	14,024
Internal Capture (8% AM, 17% PM/Daily)		-55	-52	-107	-88	-81	-169	-2,244
Pass-by (50% AM, 55% PM/Daily)		-302	-302	-604	-205	-205	-410	-6,126
PA 7B: Gas Station	16 VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)		-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)		-160	-160	-320	-110	-110	-220	-2,500
PA 7 Subtotal		**707**	**600**	**1,307**	**576**	**495**	**1,071**	**12,844**
PA 8A: Shopping Center (75%)	243.750 TSF	127	78	205	398	431	829	9,022
Internal Capture (3% AM, 19% PM/Daily)		-4	-2	-6	-76	-82	-158	-1,714
Pass-by (40% PM/Daily)		0	0	0	-140	-140	-280	-2,924
PA 8A: High Turnover Restaurant (15%)	48.750 TSF	257	210	467	269	172	441	5,226
Internal Capture (8% AM, 17% PM/Daily)		-21	-17	-38	-46	-29	-75	-836
Pass-by (43% PM/Daily)		0	0	0	-61	-61	-122	-1,888
PA 8A: Fast-Food Restaurant w/ Drive-Through (10	32.500 TSF	739	710	1,449	558	515	1,073	15,194
Internal Capture (8% AM, 17% PM/Daily)		-59	-57	-116	-95	-88	-183	-2,432
Pass-by (50% AM, 55% PM/Daily)		-327	-327	-654	-222	-222	-444	-6,636
PA 8A: Gas Station	16 VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)		-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)		-160	-160	-320	-110	-110	-220	-2,500
PA 8 Subtotal		**762**	**645**	**1,407**	**622**	**533**	**1,155**	**13,844**
PA 9B: Single Family Detached Residential	150 DU	27	78	105	89	52	141	1,416
PA 9B: Multifamily (Low-Rise) Residential	1,000 DU	96	304	400	321	189	510	6,740
Internal Capture (4% AM, 12% PM/Daily)		-5	-15	-20	-49	-29	-78	-980
PA 6B/9B: Shopping Center (75%)	57.240 TSF	61	38	99	146	152	298	3,865
Internal Capture (3% AM, 19% PM/Daily)		-2	-1	-3	-28	-29	-57	-734
Pass-by (40% PM/Daily)		0	0	0	-49	-49	-98	-1,252
PA 6B/9B: High Turnover Restaurant (15%)	11.448 TSF	60	49	109	63	40	103	1,227
Internal Capture (8% AM, 17% PM/Daily)		-5	-4	-9	-11	-7	-18	-196
Pass-by (43% PM/Daily)		0	0	0	-14	-14	-28	-444
PA 6B/9B: Fast-Food Restaurant w/ Drive-Through (	7.632 TSF	174	167	341	131	121	252	3,568
Internal Capture (8% AM, 17% PM/Daily)		-14	-13	-27	-22	-21	-43	-572
Pass-by (50% AM, 55% PM/Daily)		-77	-77	-154	-52	-52	-104	-1,558
PA 6B/9B: Gas Station	16 VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)		-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)		-160	-160	-320	-110	-110	-220	-2,500
PA 6B & 9 Subtotal		**365**	**576**	**941**	**562**	**390**	**952**	**11,912**
Phase 2 Total Trips		**2,005**	**2,338**	**4,343**	**2,281**	**1,724**	**4,005**	**48,312**
Project Buildout Total Trips (PCE)		**3,699**	**4,478**	**8,177**	**4,512**	**3,617**	**8,129**	**97,234**

[1] DU = dwelling units; TSF = thousand square feet; AC = acres

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Rich Haven	**Organization:**	Urban Crossroads, Inc.
Project Location:	City of Ontario	**Performed By:**	CS
Scenario Description:	Project Buildout	**Date:**	7/27/2022
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				533	430	103
Retail				3,384	1,786	1,598
Restaurant				5,843	3,037	2,806
Cinema/Entertainment				0		
Residential				3,113	766	2,347
Hotel				0		
All Other Land Uses[2]				0		
				12,873	6,019	6,854

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		29	65	0	0	0
Retail	17		208	0	15	0
Restaurant	60	143		0	38	0
Cinema/Entertainment	0	0	0		0	0
Residential	13	23	469	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	12,873	6,019	6,854
Internal Capture Percentage	17%	18%	16%
External Vehicle-Trips[5]	10,713	4,939	5,774
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	21%	91%
Retail	11%	15%
Restaurant	24%	9%
Cinema/Entertainment	N/A	N/A
Residential	7%	22%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Rich Haven	**Organization:**	Urban Crossroads, Inc.
Project Location:	City of Ontario	**Performed By:**	CS
Scenario Description:	Project Buildout	**Date:**	7/27/2022
Analysis Year:		**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				749	277	472
Retail				4,967	2,440	2,527
Restaurant				4,616	2,521	2,095
Cinema/Entertainment				0		
Residential				4,038	2,543	1,495
Hotel				0		
All Other Land Uses[2]				0		
				14,370	7,781	6,589

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		94	19	0	9	0
Retail	51		731	0	657	0
Restaurant	63	859		0	377	0
Cinema/Entertainment	0	0	0		0	0
Residential	60	244	314	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	14,370	7,781	6,589
Internal Capture Percentage	48%	45%	53%
External Vehicle-Trips[5]	7,414	4,303	3,111
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	63%	26%
Retail	49%	57%
Restaurant	42%	62%
Cinema/Entertainment	N/A	N/A
Residential	41%	41%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

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APPENDIX 3.1: TRAFFIC COUNTS – 2022

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INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Apr 13, 22	LOCATION:	Ontario	PROJECT #: SC3380
	NORTH & SOUTH:	Archibale	LOCATION #: 11
	EAST & WEST:	SR-60 WB Ramps	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Archibale)			SOUTHBOUND (Archibale)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)			
	LANES:	NL 2	NT 3	NR X	SL X	ST 4	SR 1	EL X	ET X	ER X	WL 1.3	WT 0.3	WR 1.3	TOTAL
AM	7:00 AM	173	149	0	0	68	14	0	0	0	66	3	80	553
	7:15 AM	179	171	0	0	60	33	0	0	0	69	3	69	584
	7:30 AM	211	208	0	0	73	17	0	0	0	73	3	98	683
	7:45 AM	156	238	0	0	97	24	0	0	0	64	1	116	696
	8:00 AM	173	222	0	0	98	21	0	0	0	64	0	102	680
	8:15 AM	154	183	0	0	79	22	0	0	0	58	2	72	570
	8:30 AM	164	144	0	0	83	32	0	0	0	46	1	63	533
	8:45 AM	160	204	0	0	73	23	0	0	0	46	1	64	571
	VOLUMES	1,370	1,519	0	0	631	186	0	0	0	486	14	664	4,870
	APPROACH %	47%	53%	0%	0%	77%	23%	0%	0%	0%	42%	1%	57%	
	APP/DEPART	2,889	/	2,183	817	/	1,117	0	/	0	1,164	/	1,570	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	719	839	0	0	328	95	0	0	0	270	7	385	2,643
	APPROACH %	46%	54%	0%	0%	78%	22%	0%	0%	0%	41%	1%	58%	
	PEAK HR FACTOR		0.930			0.874			0.000			0.914		0.949
	APP/DEPART	1,558	/	1,224	423	/	598	0	/	0	662	/	821	0
PM	4:00 PM	130	106	0	0	247	62	0	0	0	62	2	27	636
	4:15 PM	117	121	0	0	200	47	0	0	0	72	0	51	608
	4:30 PM	112	93	0	0	281	81	0	0	0	83	0	30	680
	4:45 PM	116	84	0	0	271	52	0	0	0	70	0	43	636
	5:00 PM	118	105	0	0	278	82	0	0	0	61	0	36	680
	5:15 PM	115	99	0	0	261	51	0	0	0	102	1	42	671
	5:30 PM	121	82	0	0	219	78	0	0	0	88	3	44	635
	5:45 PM	104	113	0	0	195	33	0	0	0	65	2	47	559
	VOLUMES	933	803	0	0	1,952	486	0	0	0	603	8	320	5,105
	APPROACH %	54%	46%	0%	0%	80%	20%	0%	0%	0%	65%	1%	34%	
	APP/DEPART	1,736	/	1,123	2,438	/	2,556	0	/	0	931	/	1,426	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	461	381	0	0	1,091	266	0	0	0	316	1	151	2,667
	APPROACH %	55%	45%	0%	0%	80%	20%	0%	0%	0%	68%	0%	32%	
	PEAK HR FACTOR		0.944			0.937			0.000			0.807		0.981
	APP/DEPART	842	/	532	1,357	/	1,408	0	/	0	468	/	727	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1

RTOR

NRR	SRR	ERR	WRR
X	0	X	0
0	2	0	43
0	11	0	37
0	7	0	40
0	9	0	54
0	6	0	41
0	12	0	38
0	12	0	35
0	10	0	27
0	69	0	315
0	33	0	172
0	18	0	11
0	16	0	29
0	32	0	23
0	20	0	29
0	29	0	27
0	17	0	27
0	32	0	28
0	17	0	26
0	181	0	200
0	98	0	106

Archibale

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

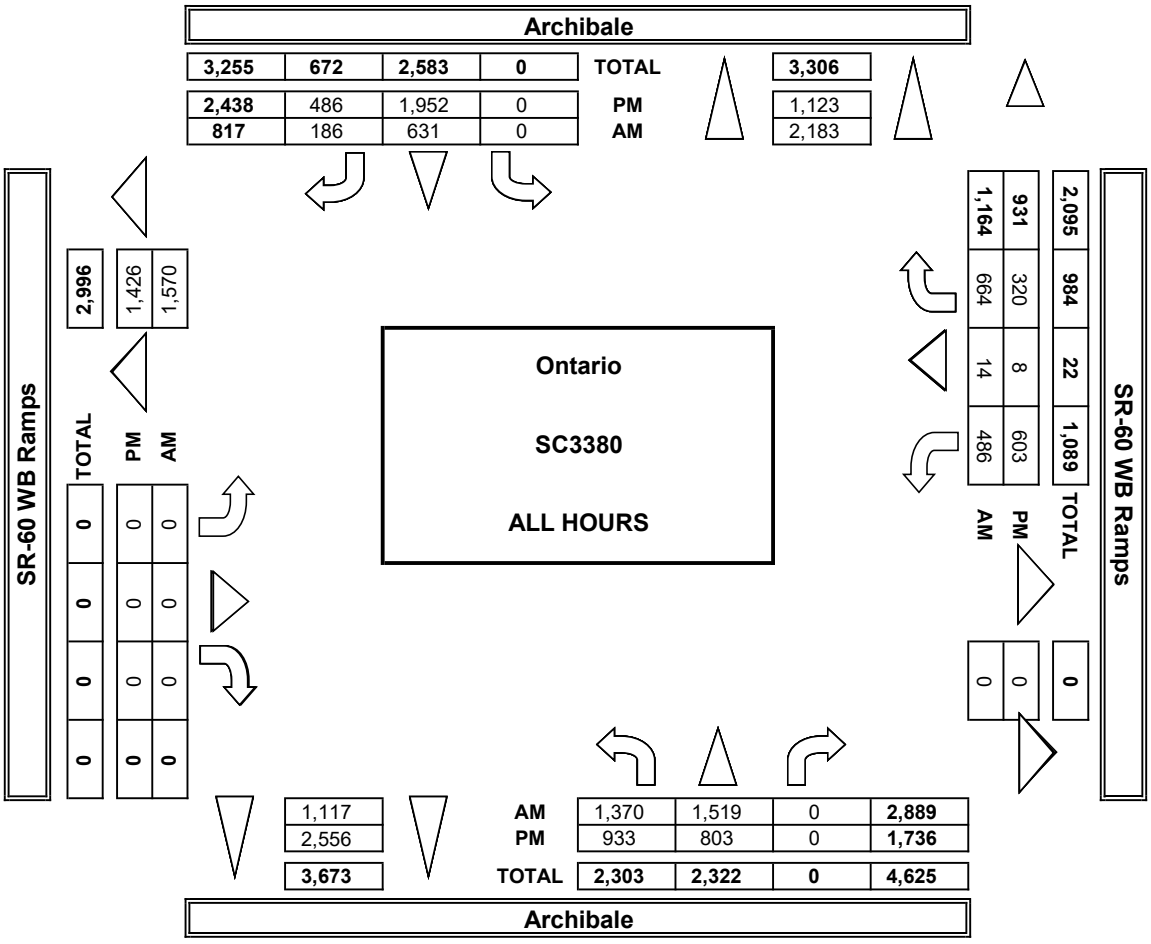
SOUTH SIDE

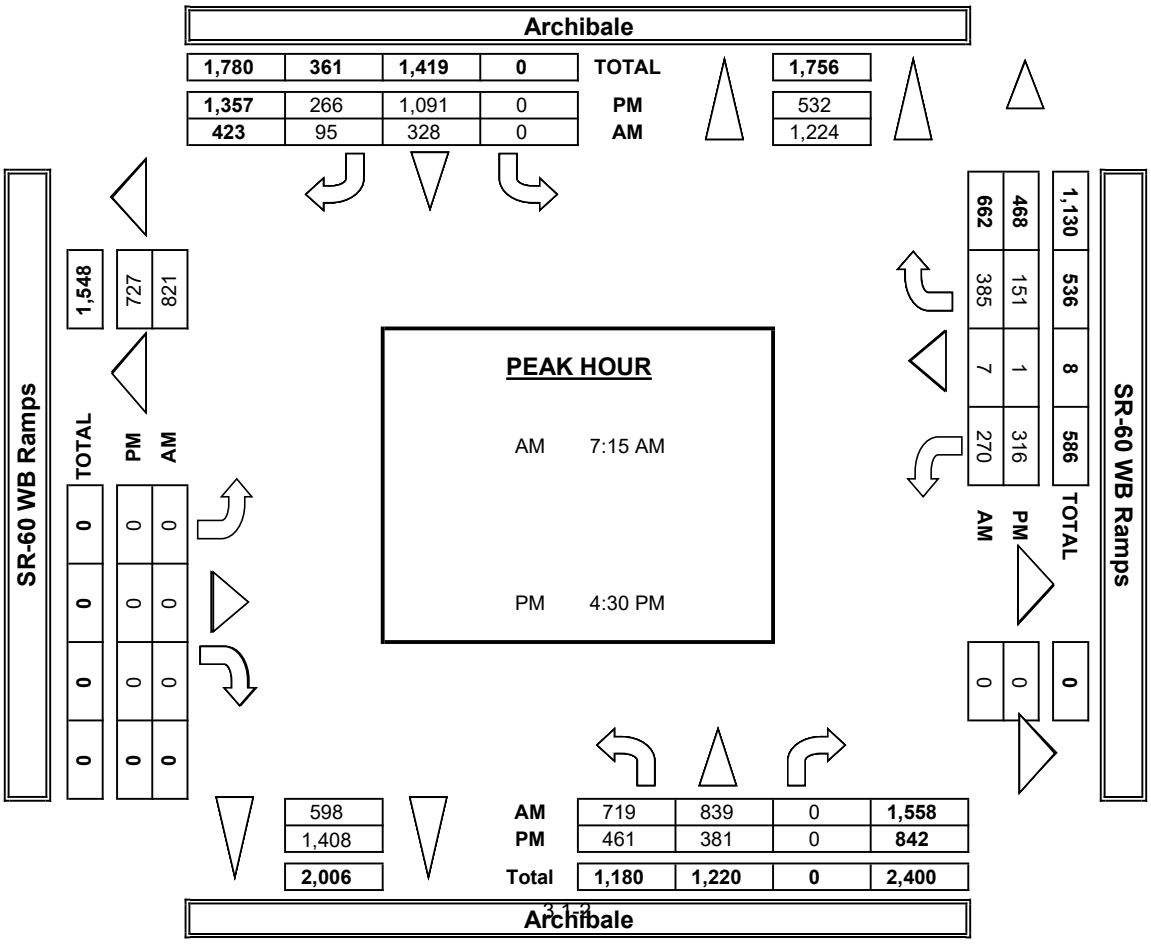
Archibale

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	8:30 AM	2	1	0	2	5	1	1	0	2	4	1	0	0	0	1
	8:45 AM	1	1	1	1	4	0	1	1	1	3	1	0	0	0	1
	TOTAL	5	4	1	3	13	2	3	1	3	9	3	1	0	0	4
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	1	2	0	0	3	0	1	0	0	1	1	1	0	0	2
	4:45 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	5:00 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2
	5:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:45 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	TOTAL	4	6	0	0	10	1	1	0	0	2	3	5	0	0	8

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibale	LOCATION #:	11
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

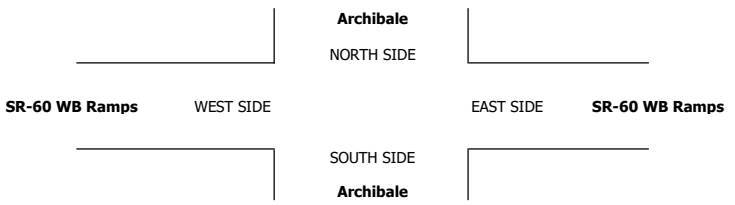
		NORTHBOUND (Archibale)			SOUTHBOUND (Archibale)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)			
	LANES:	NL 2	NT 3	NR X	SL X	ST 4	SR 1	EL X	ET X	ER X	WL 1.3	WT 0.3	WR 1.3	TOTAL
AM	7:00 AM	162	134	0	0	47	5	0	0	0	53	3	72	476
	7:15 AM	165	150	0	0	44	16	0	0	0	54	2	59	490
	7:30 AM	198	183	0	0	59	10	0	0	0	59	3	83	595
	7:45 AM	151	214	0	0	75	9	0	0	0	52	1	108	610
	8:00 AM	160	197	0	0	84	7	0	0	0	51	0	92	591
	8:15 AM	145	159	0	0	62	14	0	0	0	41	0	58	479
	8:30 AM	154	123	0	0	58	14	0	0	0	38	1	50	438
	8:45 AM	149	175	0	0	55	8	0	0	0	35	1	54	477
	VOLUMES	1,284	1,335	0	0	484	83	0	0	0	383	11	576	4,156
	APPROACH %	49%	51%	0%	0%	85%	15%	0%	0%	0%	39%	1%	59%	
	APP/DEPART	2,619	/	1,911	567	/	867	0	/	0	970	/	1,378	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	674	744	0	0	262	42	0	0	0	216	6	342	2,286
	APPROACH %	48%	52%	0%	0%	86%	14%	0%	0%	0%	38%	1%	61%	
	PEAK HR FACTOR		0.930			0.835			0.000			0.876		0.937
	APP/DEPART	1,418	/	1,086	304	/	478	0	/	0	564	/	722	0
PM	4:00 PM	113	83	0	0	230	53	0	0	0	52	2	19	552
	4:15 PM	109	96	0	0	183	40	0	0	0	61	0	43	532
	4:30 PM	105	75	0	0	259	74	0	0	0	69	0	27	609
	4:45 PM	108	69	0	0	248	44	0	0	0	62	0	37	568
	5:00 PM	113	80	0	0	256	73	0	0	0	52	0	32	606
	5:15 PM	105	78	0	0	242	39	0	0	0	90	1	34	589
	5:30 PM	113	71	0	0	209	70	0	0	0	79	3	36	581
	5:45 PM	99	93	0	0	187	27	0	0	0	57	2	41	506
	VOLUMES	865	645	0	0	1,814	420	0	0	0	522	8	269	4,543
	APPROACH %	57%	43%	0%	0%	81%	19%	0%	0%	0%	65%	1%	34%	
	APP/DEPART	1,510	/	914	2,234	/	2,337	0	/	0	799	/	1,292	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	430	302	0	0	1,005	230	0	0	0	273	1	130	2,372
	APPROACH %	59%	41%	0%	0%	81%	19%	0%	0%	0%	68%	0%	32%	
	PEAK HR FACTOR		0.949			0.927			0.000			0.808		0.974
	APP/DEPART	733	/	432	1,235	/	1,279	0	/	0	404	/	661	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	38
0	4	0	32
0	1	0	36
0	4	0	52
0	1	0	40
0	8	0	32
0	6	0	29
0	4	0	25
0	28	0	284
0	10	0	160
0	15	0	9
0	14	0	23
0	30	0	21
0	17	0	24
0	27	0	24
0	13	0	21
0	30	0	24
0	14	0	24
0	160	0	170
0	87	0	90



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibale	LOCATION #:	11
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Archibale			SOUTHBOUND Archibale			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 2	NT 3	NR X	SL X	ST 4	SR 1	EL X	ET X	ER X	WL 1.3	WT 0.3	WR 1.3	TOTAL
AM	7:00 AM	6	2	0	0	13	4	0	0	0	4	0	4	33
	7:15 AM	11	6	0	0	8	8	0	0	0	4	1	6	44
	7:30 AM	7	8	0	0	5	3	0	0	0	6	0	6	35
	7:45 AM	0	10	0	0	13	7	0	0	0	2	0	2	34
	8:00 AM	7	10	0	0	8	7	0	0	0	3	0	4	39
	8:15 AM	5	6	0	0	4	4	0	0	0	4	2	9	34
	8:30 AM	8	12	0	0	14	3	0	0	0	3	0	3	43
	8:45 AM	6	11	0	0	5	3	0	0	0	2	0	1	28
	VOLUMES	50	65	0	0	70	39	0	0	0	28	3	35	290
	APPROACH %	43%	57%	0%	0%	64%	36%	0%	0%	0%	42%	5%	53%	
	APP/DEPART	115	/	100	109	/	98	0	/	0	66	/	92	0
	BEGIN PEAK HR	7:15 AM												
	VOLUMES	25	34	0	0	34	25	0	0	0	15	1	18	152
	APPROACH %	42%	58%	0%	0%	58%	42%	0%	0%	0%	44%	3%	53%	
	PEAK HR FACTOR	0.868			0.738			0.000			0.708			0.864
	APP/DEPART	59	/	52	59	/	49	0	/	0	34	/	51	0
PM	4:00 PM	10	11	0	0	8	3	0	0	0	3	0	2	37
	4:15 PM	4	12	0	0	10	0	0	0	0	3	0	5	34
	4:30 PM	4	7	0	0	11	0	0	0	0	4	0	1	27
	4:45 PM	4	8	0	0	13	1	0	0	0	0	0	2	28
	5:00 PM	4	12	0	0	15	6	0	0	0	3	0	3	43
	5:15 PM	6	13	0	0	10	1	0	0	0	3	0	5	38
	5:30 PM	5	3	0	0	6	3	0	0	0	2	0	6	25
	5:45 PM	3	11	0	0	4	0	0	0	0	3	0	1	22
	VOLUMES	40	77	0	0	77	14	0	0	0	21	0	25	254
	APPROACH %	34%	66%	0%	0%	85%	15%	0%	0%	0%	46%	0%	54%	
	APP/DEPART	117	/	102	91	/	98	0	/	0	46	/	54	0
	BEGIN PEAK HR	4:30 PM												
	VOLUMES	18	40	0	0	49	8	0	0	0	10	0	11	136
	APPROACH %	31%	69%	0%	0%	86%	14%	0%	0%	0%	48%	0%	52%	
	PEAK HR FACTOR	0.763			0.679			0.000			0.656			0.791
	APP/DEPART	58	/	51	57	/	59	0	/	0	21	/	26	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	1	0	2
0	4	0	4
0	2	0	2
0	3	0	1
0	2	0	0
0	2	0	5
0	2	0	1
0	2	0	0
0	18	0	15
0	11	0	7
0	0	0	1
0	0	0	4
0	0	0	0
0	0	0	2
0	2	0	2
0	1	0	5
0	0	0	4
0	0	0	1
0	3	0	19
0	3	0	9

Archibale

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Archibale

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibale	LOCATION #:	11
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Archibale			SOUTHBOUND Archibale			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 2	NT 3	NR X	SL X	ST 4	SR 1	EL X	ET X	ER X	WL 1.3	WT 0.3	WR 1.3	TOTAL
AM	7:00 AM	3	3	0	0	1	0	0	0	0	6	0	1	14
	7:15 AM	1	4	0	0	3	1	0	0	0	5	0	1	15
	7:30 AM	1	6	0	0	3	1	0	0	0	3	0	0	14
	7:45 AM	2	6	0	0	5	0	0	0	0	6	0	0	19
	8:00 AM	1	3	0	0	1	2	0	0	0	6	0	1	14
	8:15 AM	0	3	0	0	3	0	0	0	0	1	0	0	7
	8:30 AM	1	0	0	0	3	1	0	0	0	0	0	0	5
	8:45 AM	3	5	0	0	2	0	0	0	0	5	0	0	15
	VOLUMES	12	30	0	0	21	5	0	0	0	32	0	3	103
	APPROACH %	29%	71%	0%	0%	81%	19%	0%	0%	0%	91%	0%	9%	
	APP/DEPART	42	/	33	26	/	53	0	/	0	35	/	17	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	5	19	0	0	12	4	0	0	0	20	0	2	62
	APPROACH %	21%	79%	0%	0%	75%	25%	0%	0%	0%	91%	0%	9%	
	PEAK HR FACTOR		0.750			0.800			0.000			0.786		0.816
	APP/DEPART	24	/	21	16	/	32	0	/	0	22	/	9	0
PM	4:00 PM	1	3	0	0	3	0	0	0	0	1	0	0	8
	4:15 PM	3	4	0	0	1	2	0	0	0	2	0	0	12
	4:30 PM	1	3	0	0	2	0	0	0	0	1	0	0	7
	4:45 PM	0	3	0	0	3	1	0	0	0	0	0	0	7
	5:00 PM	0	5	0	0	1	1	0	0	0	2	0	0	9
	5:15 PM	0	1	0	0	2	1	0	0	0	4	0	1	9
	5:30 PM	0	1	0	0	1	1	0	0	0	1	0	0	4
	5:45 PM	0	1	0	0	1	1	0	0	0	1	0	0	4
	VOLUMES	5	21	0	0	14	7	0	0	0	12	0	1	60
	APPROACH %	19%	81%	0%	0%	67%	33%	0%	0%	0%	92%	0%	8%	
	APP/DEPART	26	/	22	21	/	26	0	/	0	13	/	12	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	1	12	0	0	8	3	0	0	0	7	0	1	32
	APPROACH %	8%	92%	0%	0%	73%	27%	0%	0%	0%	88%	0%	13%	
	PEAK HR FACTOR		0.650			0.688			0.000			0.400		0.889
	APP/DEPART	13	/	13	11	/	15	0	/	0	8	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	1
0	1	0	1
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0

Archibale

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Archibale

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibale	LOCATION #:	11
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Archibale)			SOUTHBOUND (Archibale)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)			
	LANES:	NL 2	NT 3	NR X	SL X	ST 4	SR 1	EL X	ET X	ER X	WL 1.3	WT 0.3	WR 1.3	TOTAL
AM	7:00 AM	2	10	0	0	6	5	0	0	0	3	0	3	29
	7:15 AM	2	9	0	0	5	8	0	0	0	6	0	3	33
	7:30 AM	3	10	0	0	6	3	0	0	0	5	0	9	36
	7:45 AM	2	8	0	0	4	8	0	0	0	4	0	6	32
	8:00 AM	5	12	0	0	5	5	0	0	0	4	0	5	36
	8:15 AM	4	14	0	0	10	4	0	0	0	12	0	5	49
	8:30 AM	1	9	0	0	8	14	0	0	0	5	0	10	47
	8:45 AM	2	13	0	0	9	12	0	0	0	4	0	9	49
	VOLUMES	21	85	0	0	53	59	0	0	0	43	0	50	311
	APPROACH %	20%	80%	0%	0%	47%	53%	0%	0%	0%	46%	0%	54%	
	APP/DEPART	106	/	135	112	/	96	0	/	0	93	/	80	0
	BEGIN PEAK HR	7:15 AM												
	VOLUMES	12	39	0	0	20	24	0	0	0	19	0	23	137
	APPROACH %	24%	76%	0%	0%	45%	55%	0%	0%	0%	45%	0%	55%	
	PEAK HR FACTOR	0.750			0.846			0.000			0.750			0.951
	APP/DEPART	51	/	62	44	/	39	0	/	0	42	/	36	0
PM	4:00 PM	4	9	0	0	6	6	0	0	0	6	0	6	37
	4:15 PM	1	7	0	0	6	5	0	0	0	6	0	3	28
	4:30 PM	2	8	0	0	8	6	0	0	0	9	0	2	35
	4:45 PM	4	4	0	0	7	6	0	0	0	8	0	4	33
	5:00 PM	1	8	0	0	6	2	0	0	0	4	0	1	22
	5:15 PM	4	7	0	0	7	10	0	0	0	5	0	2	35
	5:30 PM	3	7	0	0	3	4	0	0	0	6	0	2	25
	5:45 PM	2	8	0	0	3	5	0	0	0	4	0	5	27
	VOLUMES	21	58	0	0	46	44	0	0	0	48	0	25	242
	APPROACH %	27%	73%	0%	0%	51%	49%	0%	0%	0%	66%	0%	34%	
	APP/DEPART	79	/	83	90	/	94	0	/	0	73	/	65	0
	BEGIN PEAK HR	4:30 PM												
	VOLUMES	11	27	0	0	28	24	0	0	0	26	0	9	125
	APPROACH %	29%	71%	0%	0%	54%	46%	0%	0%	0%	74%	0%	26%	
	PEAK HR FACTOR	0.864			0.765			0.000			0.729			0.893
	APP/DEPART	38	/	36	52	/	54	0	/	0	35	/	35	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	1	0	3
0	3	0	1
0	3	0	2
0	2	0	1
0	3	0	0
0	2	0	1
0	4	0	5
0	4	0	2
0	22	0	15
0	11	0	4
0	3	0	1
0	2	0	2
0	2	0	2
0	2	0	3
0	0	0	1
0	3	0	1
0	2	0	0
0	3	0	1
0	17	0	11
0	7	0	7

Archibale

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Archibale

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibale	LOCATION #:	11
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibale			SOUTHBOUND Archibale			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 2	NT 3	NR X	SL X	ST 4	SR 1	EL X	ET X	ER X	WL 1.3	WT 0.3	WR 1.3	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	1	0	0	0	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	1	/	1	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	0	1	0	0	0	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.250			0.000			0.000		0.250
	APP/DEPART	0	/	0	1	/	1	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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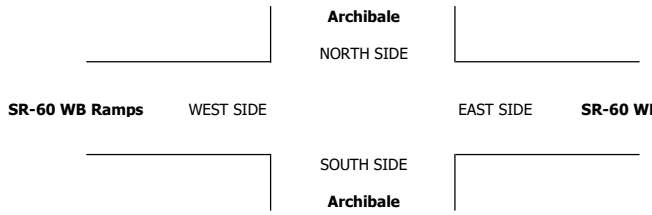
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

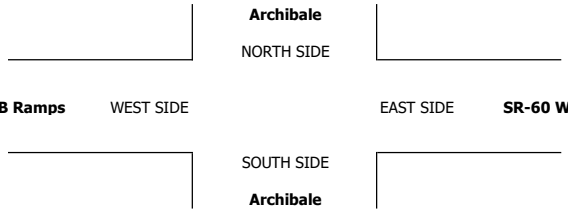
DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibale	LOCATION #:	11
WEDNESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibale			SOUTHBOUND Archibale			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps				U-TURNS					RTOR			
	LANES:	NL 2	NT 3	NR X	SL X	ST 4	SR 1	EL X	ET X	ER X	WL 1.3	WT 0.3	WR 1.3	TOTAL	NB	SB	EB	WB	TTL	NRR X	SRR 0	ERR X	WRR 0
AM	7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	7:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	7:30 AM	2	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
	7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	VOLUMES	3	4	0	0	3	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0
	APPROACH %	43%	57%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	7	/	4	3	/	3	0	/	0	0	/	3	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	3	3	0	0	0	0	0	0	0	0	0	0	6						0	0	0	0
	APPROACH %	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.500			0.000			0.000			0.000		0.500									
	APP/DEPART	6	/	3	0	/	0	0	/	0	0	/	3	0									
PM	4:00 PM	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	2	0	0	0	1	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
	APPROACH %	50%	50%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%										
	APP/DEPART	4	/	2	1	/	0	0	/	0	0	/	3	0									
	BEGIN PEAK HR		4:30 PM																				
	VOLUMES	0	0	0	0	0	1	0	0	0	0	0	0	1						0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.000			0.250			0.000			0.000		0.250									
	APP/DEPART	0	/	0	1	/	0	0	/	0	0	/	1	0									



INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

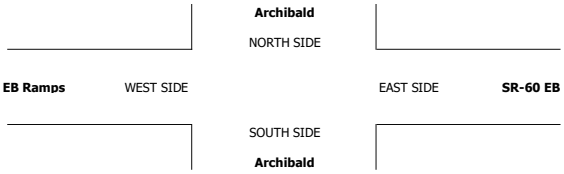
DATE: Wed, Apr 13, 22	LOCATION:	Ontario	PROJECT #: SC3380
	NORTH & SOUTH:	Archibald	LOCATION #: 12
	EAST & WEST:	SR-60 EB Ramps	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

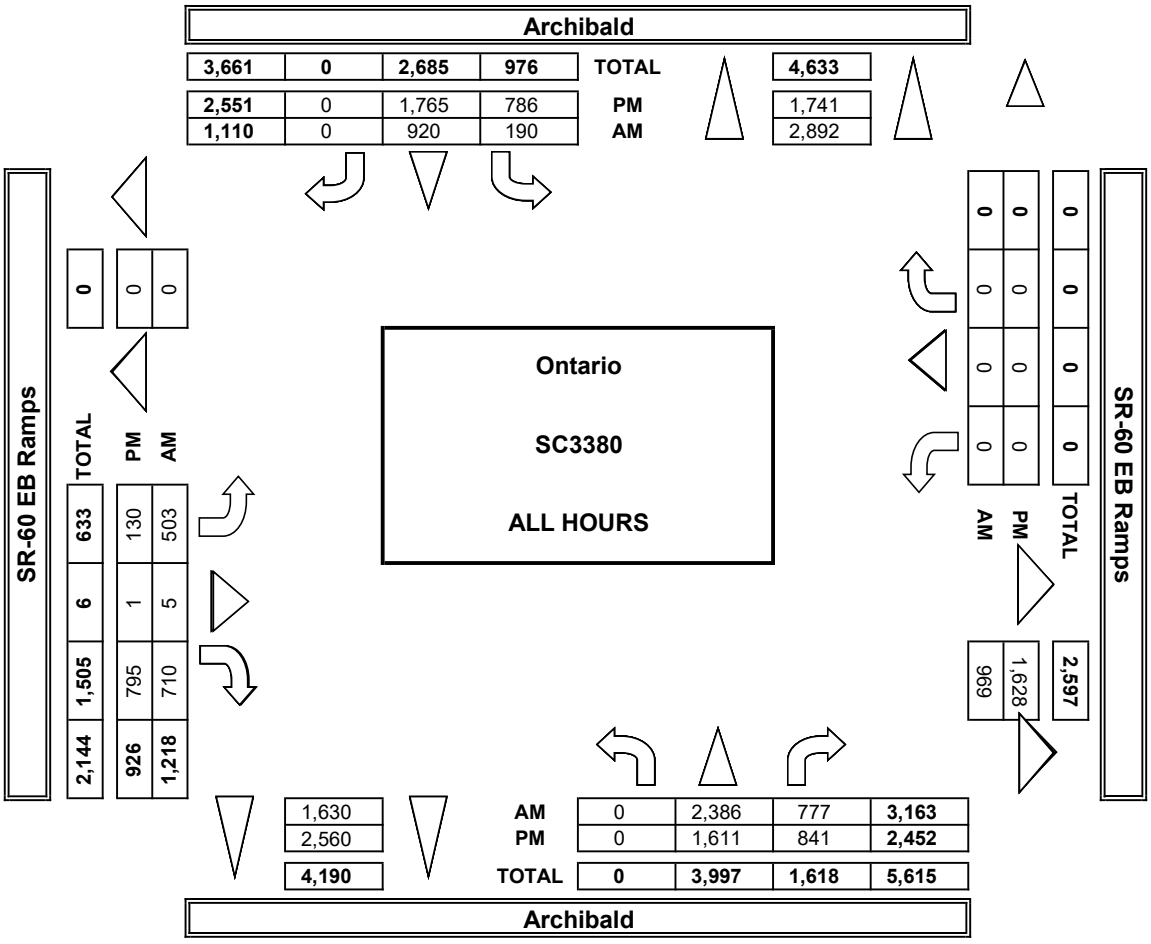
	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps				U-TURNS					RTOR			
LANES:	NL X	NT 4	NR 1	SL 2	ST 3	SR X	EL 1.3	ET 0.3	ER 1.3	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR 0	SRR X	ERR 0	WRR X
AM 7:00 AM	0	270	94	22	111	0	53	1	71	0	0	0	622	0	0	0	0	0	36	0	28	0
7:15 AM	0	285	90	18	110	0	65	0	79	0	0	0	647	0	0	0	0	0	31	0	42	0
7:30 AM	0	358	127	19	127	0	61	4	97	0	0	0	793	0	0	0	0	0	49	0	57	0
7:45 AM	0	314	98	35	125	0	79	0	87	0	0	0	738	0	1	0	0	1	43	0	43	0
8:00 AM	0	323	95	28	132	0	71	0	100	0	0	0	749	0	1	0	0	1	37	0	48	0
8:15 AM	0	276	97	19	118	0	62	0	96	0	0	0	668	0	0	0	0	0	38	0	50	0
8:30 AM	0	258	88	27	101	0	49	0	92	0	0	0	615	0	1	0	0	1	44	0	58	0
8:45 AM	0	302	88	22	96	0	63	0	88	0	0	0	659	0	0	0	0	0	32	0	44	0
VOLUMES	0	2,386	777	190	920	0	503	5	710	0	0	0	5,491	0	3	0	0	3	310	0	370	0
APPROACH %	0%	75%	25%	17%	83%	0%	41%	0%	58%	0%	0%	0%										
APP/DEPART	3,163	/	2,892	1,110	/	1,630	1,218	/	969	0	/	0	0									
BEGIN PEAK HR		7:30 AM																				
VOLUMES	0	1,271	417	101	502	0	273	4	380	0	0	0	2,948						167	0	198	0
APPROACH %	0%	75%	25%	17%	83%	0%	42%	1%	58%	0%	0%	0%										
PEAK HR FACTOR		0.870			0.942			0.961			0.000		0.929									
APP/DEPART	1,688	/	1,546	603	/	882	657	/	520	0	/	0	0									
PM 4:00 PM	0	218	101	106	203	0	18	0	94	0	0	0	740	0	0	0	0	0	50	0	53	0
4:15 PM	0	223	114	84	186	0	15	0	100	0	0	0	722	0	0	0	0	0	42	0	62	0
4:30 PM	0	181	116	124	240	0	24	0	82	0	0	0	767	0	0	0	0	0	40	0	51	0
4:45 PM	0	191	132	107	234	0	9	0	98	0	0	0	771	0	0	0	0	0	49	0	57	0
5:00 PM	0	204	103	122	217	0	21	0	108	0	0	0	775	0	0	0	0	0	43	0	66	0
5:15 PM	0	203	102	100	263	0	11	1	103	0	0	0	783	0	0	0	0	0	42	0	58	0
5:30 PM	0	193	99	71	236	0	10	0	99	0	0	0	708	0	0	0	0	0	40	0	50	0
5:45 PM	0	198	74	72	186	0	22	0	111	0	0	0	663	0	0	0	0	0	25	0	73	0
VOLUMES	0	1,611	841	786	1,765	0	130	1	795	0	0	0	5,929	0	0	0	0	0	331	0	470	0
APPROACH %	0%	66%	34%	31%	69%	0%	14%	0%	86%	0%	0%	0%										
APP/DEPART	2,452	/	1,741	2,551	/	2,560	926	/	1,628	0	/	0	0									
BEGIN PEAK HR		4:30 PM																				
VOLUMES	0	779	453	453	954	0	65	1	391	0	0	0	3,096						174	0	232	0
APPROACH %	0%	63%	37%	32%	68%	0%	14%	0%	86%	0%	0%	0%										
PEAK HR FACTOR		0.954			0.966			0.886			0.000		0.989									
APP/DEPART	1,232	/	844	1,407	/	1,345	457	/	907	0	/	0	0									

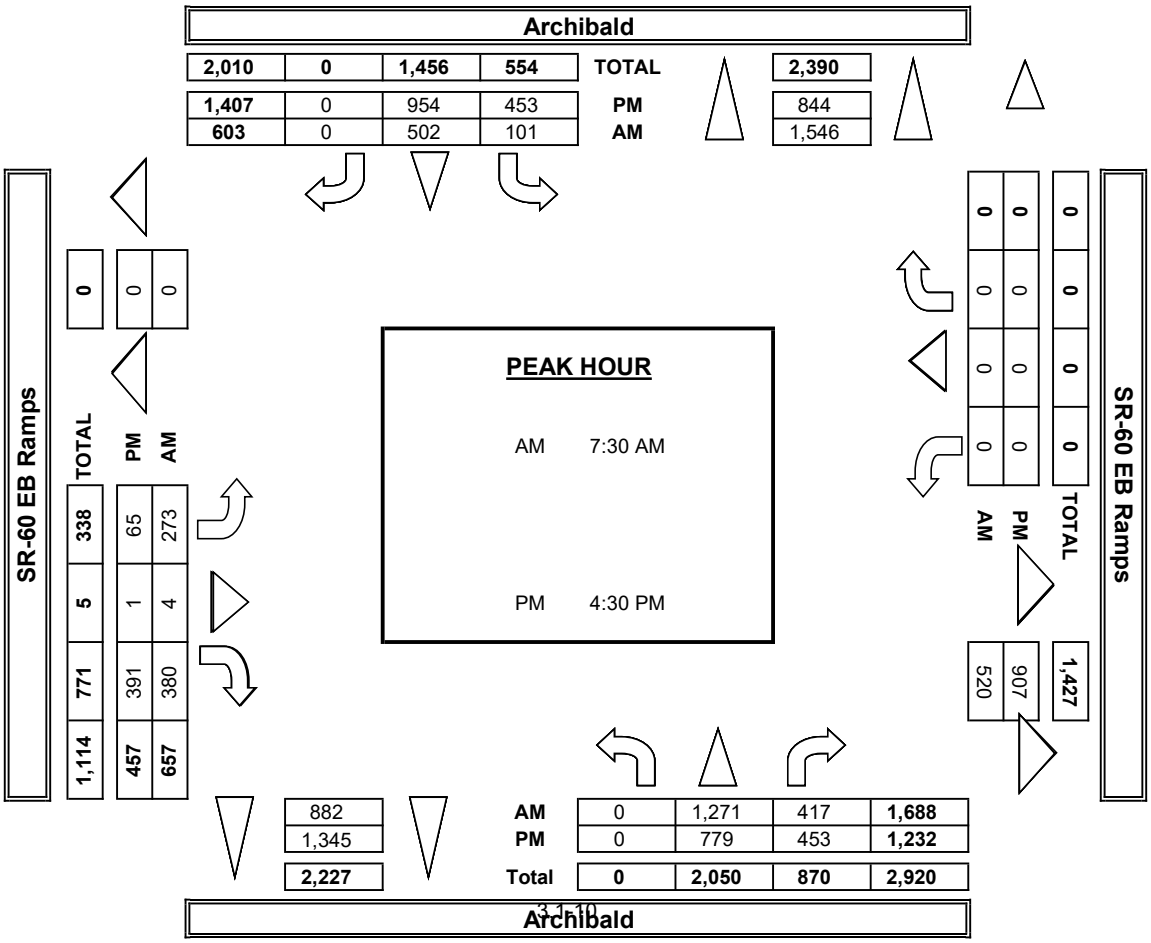


	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
8:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
8:45 AM	2	3	0	0	5	0	3	0	0	3	2	0	0	0	2
TOTAL	5	5	0	0	10	2	4	0	0	6	3	1	0	0	4
PM 4:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
4:45 PM	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1
5:00 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
5:45 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
TOTAL	4	7	0	0	11	1	2	0	0	3	3	5	0	0	8

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	12
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

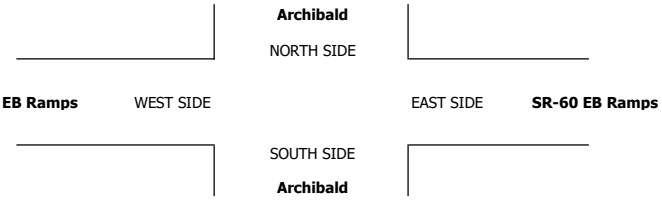
		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)			
	LANES:	NL X	NT 4	NR 1	SL 2	ST 3	SR X	EL 1.3	ET 0.3	ER 1.3	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	256	68	9	90	0	41	1	54	0	0	0	519
	7:15 AM	0	258	71	8	89	0	57	0	70	0	0	0	553
	7:30 AM	0	334	108	13	105	0	47	3	87	0	0	0	697
	7:45 AM	0	296	72	25	101	0	68	0	75	0	0	0	637
	8:00 AM	0	301	74	17	116	0	55	0	90	0	0	0	653
	8:15 AM	0	258	69	7	96	0	47	0	83	0	0	0	560
	8:30 AM	0	239	57	14	81	0	37	0	80	0	0	0	508
	8:45 AM	0	281	65	13	76	0	44	0	72	0	0	0	551
	VOLUMES	0	2,223	584	106	754	0	396	4	611	0	0	0	4,678
	APPROACH %	0%	79%	21%	12%	88%	0%	39%	0%	60%	0%	0%	0%	
	APP/DEPART	2,807	/	2,622	860	/	1,365	1,011	/	691	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	1,189	323	60	418	0	217	3	335	0	0	0	2,547
	APPROACH %	0%	79%	21%	13%	87%	0%	39%	1%	60%	0%	0%	0%	
	PEAK HR FACTOR		0.855			0.902			0.957			0.000		0.914
	APP/DEPART	1,512	/	1,408	480	/	753	555	/	386	0	/	0	0
PM	4:00 PM	0	186	82	95	187	0	10	0	82	0	0	0	642
	4:15 PM	0	197	99	76	166	0	8	0	94	0	0	0	640
	4:30 PM	0	166	98	118	210	0	14	0	71	0	0	0	677
	4:45 PM	0	172	113	101	209	0	5	0	86	0	0	0	686
	5:00 PM	0	185	94	115	193	0	10	0	105	0	0	0	702
	5:15 PM	0	179	93	94	238	0	4	1	94	0	0	0	703
	5:30 PM	0	179	92	67	221	0	5	0	93	0	0	0	657
	5:45 PM	0	184	69	70	172	0	11	0	103	0	0	0	609
	VOLUMES	0	1,448	740	736	1,596	0	67	1	728	0	0	0	5,316
	APPROACH %	0%	66%	34%	32%	68%	0%	8%	0%	91%	0%	0%	0%	
	APP/DEPART	2,188	/	1,515	2,332	/	2,324	796	/	1,477	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	702	398	428	850	0	33	1	356	0	0	0	2,768
	APPROACH %	0%	64%	36%	33%	67%	0%	8%	0%	91%	0%	0%	0%	
	PEAK HR FACTOR		0.965			0.962			0.848			0.000		0.984
	APP/DEPART	1,100	/	735	1,278	/	1,206	390	/	827	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	3	0	0	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
28	0	23	0
20	0	36	0
40	0	50	0
31	0	35	0
31	0	42	0
26	0	43	0
28	0	50	0
23	0	34	0
227	0	313	0
128	0	170	0
40	0	45	0
33	0	58	0
35	0	45	0
43	0	49	0
40	0	65	0
37	0	56	0
38	0	45	0
24	0	69	0
290	0	432	0
155	0	215	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	12
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

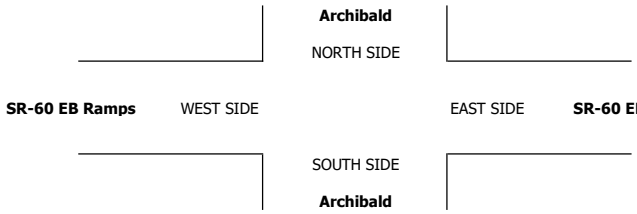
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 4	NR 1	SL 2	ST 3	SR X	EL 1.3	ET 0.3	ER 1.3	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	3	10	8	9	0	5	0	9	0	0	0	44
	7:15 AM	0	12	8	5	7	0	5	0	6	0	0	0	43
	7:30 AM	0	11	5	3	8	0	4	1	6	0	0	0	38
	7:45 AM	0	6	9	5	10	0	4	0	7	0	0	0	41
	8:00 AM	0	10	3	6	5	0	7	0	2	0	0	0	33
	8:15 AM	0	7	7	3	5	0	4	0	8	0	0	0	34
	8:30 AM	0	14	7	7	10	0	6	0	4	0	0	0	48
	8:45 AM	0	11	11	4	3	0	6	0	8	0	0	0	43
	VOLUMES	0	74	60	41	57	0	41	1	50	0	0	0	324
	APPROACH %	0%	55%	45%	42%	58%	0%	45%	1%	54%	0%	0%	0%	
	APP/DEPART	134	/	115	98	/	107	92	/	102	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	34	24	17	28	0	19	1	23	0	0	0	146
	APPROACH %	0%	59%	41%	38%	62%	0%	44%	2%	53%	0%	0%	0%	
	PEAK HR FACTOR		0.906			0.750			0.896			0.000		0.890
	APP/DEPART	58	/	53	45	/	51	43	/	42	0	/	0	0
PM	4:00 PM	0	20	6	6	5	0	1	0	10	0	0	0	48
	4:15 PM	0	12	10	5	8	0	4	0	2	0	0	0	41
	4:30 PM	0	8	12	5	10	0	3	0	6	0	0	0	44
	4:45 PM	0	11	14	4	9	0	1	0	9	0	0	0	48
	5:00 PM	0	13	3	2	16	0	3	0	2	0	0	0	39
	5:15 PM	0	18	5	5	8	0	1	0	3	0	0	0	40
	5:30 PM	0	7	2	2	6	0	1	0	3	0	0	0	21
	5:45 PM	0	8	2	1	6	0	6	0	5	0	0	0	28
	VOLUMES	0	97	54	30	68	0	20	0	40	0	0	0	309
	APPROACH %	0%	64%	36%	31%	69%	0%	33%	0%	67%	0%	0%	0%	
	APP/DEPART	151	/	117	98	/	108	60	/	84	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	50	34	16	43	0	8	0	20	0	0	0	171
	APPROACH %	0%	60%	40%	27%	73%	0%	29%	0%	71%	0%	0%	0%	
	PEAK HR FACTOR		0.840			0.819			0.700			0.000		0.891
	APP/DEPART	84	/	58	59	/	63	28	/	50	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
2	0	3	0
2	0	4	0
3	0	5	0
3	0	5	0
0	0	2	0
2	0	3	0
5	0	2	0
3	0	5	0
20	0	29	0
8	0	15	0
2	0	6	0
6	0	2	0
4	0	4	0
4	0	5	0
0	0	1	0
3	0	2	0
1	0	2	0
1	0	2	0
21	0	24	0
11	0	12	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	12
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

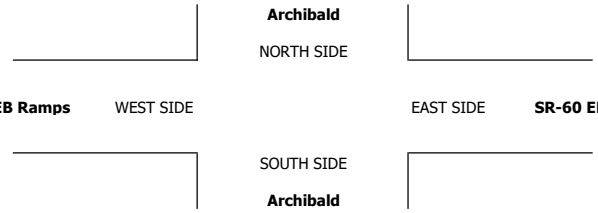
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 4	NR 1	SL 2	ST 3	SR X	EL 1.3	ET 0.3	ER 1.3	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	4	4	0	7	0	2	0	3	0	0	0	20
	7:15 AM	0	5	2	3	5	0	0	0	0	0	0	0	15
	7:30 AM	0	6	3	1	5	0	1	0	1	0	0	0	17
	7:45 AM	0	5	3	1	10	0	3	0	2	0	0	0	24
	8:00 AM	0	2	3	1	6	0	2	0	5	0	0	0	19
	8:15 AM	0	2	6	0	4	0	1	0	1	0	0	0	14
	8:30 AM	0	1	5	1	2	0	0	0	2	0	0	0	11
	8:45 AM	0	7	3	0	7	0	1	0	4	0	0	0	22
	VOLUMES	0	32	29	7	46	0	10	0	18	0	0	0	142
	APPROACH %	0%	52%	48%	13%	87%	0%	36%	0%	64%	0%	0%	0%	
	APP/DEPART	61	/	42	53	/	64	28	/	36	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	15	15	3	25	0	7	0	9	0	0	0	74
	APPROACH %	0%	50%	50%	11%	89%	0%	44%	0%	56%	0%	0%	0%	
	PEAK HR FACTOR		0.833			0.636			0.571			0.000		0.771
	APP/DEPART	30	/	22	28	/	34	16	/	18	0	/	0	0
PM	4:00 PM	0	4	4	2	2	0	0	0	2	0	0	0	14
	4:15 PM	0	7	1	0	3	0	0	0	1	0	0	0	12
	4:30 PM	0	2	2	0	3	0	2	0	1	0	0	0	10
	4:45 PM	0	2	0	1	2	0	1	0	1	0	0	0	7
	5:00 PM	0	4	3	1	2	0	1	0	0	0	0	0	11
	5:15 PM	0	0	2	0	6	0	1	0	3	0	0	0	12
	5:30 PM	0	1	2	0	2	0	0	0	1	0	0	0	6
	5:45 PM	0	1	1	0	2	0	0	0	1	0	0	0	5
	VOLUMES	0	21	15	4	22	0	5	0	10	0	0	0	77
	APPROACH %	0%	58%	42%	15%	85%	0%	33%	0%	67%	0%	0%	0%	
	APP/DEPART	36	/	26	26	/	32	15	/	19	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	8	7	2	13	0	5	0	5	0	0	0	40
	APPROACH %	0%	53%	47%	13%	87%	0%	50%	0%	50%	0%	0%	0%	
	PEAK HR FACTOR		0.536			0.625			0.625			0.000		0.833
	APP/DEPART	15	/	13	15	/	18	10	/	9	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
1	0	0	0
1	0	0	0
2	0	1	0
3	0	1	0
1	0	4	0
4	0	1	0
4	0	2	0
1	0	4	0
17	0	13	0
10	0	7	0
2	0	2	0
1	0	0	0
1	0	0	0
0	0	1	0
2	0	0	0
1	0	0	0
1	0	1	0
0	0	0	0
8	0	4	0
4	0	1	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	12
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 4	NR 1	SL 2	ST 3	SR X	EL 1.3	ET 0.3	ER 1.3	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	7	12	5	4	0	5	0	2	0	0	0	35
	7:15 AM	0	8	8	2	9	0	3	0	2	0	0	0	32
	7:30 AM	0	4	11	2	9	0	9	0	3	0	0	0	38
	7:45 AM	0	6	14	4	4	0	4	0	2	0	0	0	34
	8:00 AM	0	10	15	4	5	0	7	0	3	0	0	0	44
	8:15 AM	0	8	15	9	13	0	10	0	4	0	0	0	59
	8:30 AM	0	4	19	5	8	0	6	0	6	0	0	0	48
	8:45 AM	0	3	9	5	8	0	12	0	4	0	0	0	41
	VOLUMES	0	50	103	36	60	0	56	0	26	0	0	0	331
	APPROACH %	0%	33%	67%	38%	63%	0%	68%	0%	32%	0%	0%	0%	
	APP/DEPART	153	/	106	96	/	86	82	/	139	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	28	55	19	31	0	30	0	12	0	0	0	175
	APPROACH %	0%	34%	66%	38%	62%	0%	71%	0%	29%	0%	0%	0%	
	PEAK HR FACTOR		0.830			0.568			0.750			0.000		0.742
	APP/DEPART	83	/	58	50	/	43	42	/	74	0	/	0	0
PM	4:00 PM	0	6	9	3	9	0	7	0	0	0	0	0	34
	4:15 PM	0	5	4	3	9	0	3	0	3	0	0	0	27
	4:30 PM	0	5	4	1	16	0	5	0	4	0	0	0	35
	4:45 PM	0	6	5	1	14	0	2	0	2	0	0	0	30
	5:00 PM	0	2	3	4	6	0	7	0	1	0	0	0	23
	5:15 PM	0	6	2	1	11	0	5	0	3	0	0	0	28
	5:30 PM	0	6	3	2	7	0	4	0	2	0	0	0	24
	5:45 PM	0	5	2	1	6	0	5	0	2	0	0	0	21
	VOLUMES	0	41	32	16	78	0	38	0	17	0	0	0	222
	APPROACH %	0%	56%	44%	17%	83%	0%	69%	0%	31%	0%	0%	0%	
	APP/DEPART	73	/	79	94	/	95	55	/	48	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	19	14	7	47	0	19	0	10	0	0	0	116
	APPROACH %	0%	58%	42%	13%	87%	0%	66%	0%	34%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.794			0.806			0.000		0.829
	APP/DEPART	33	/	38	54	/	57	29	/	21	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
5	0	1	0
8	0	1	0
4	0	1	0
6	0	1	0
5	0	0	0
6	0	3	0
7	0	4	0
5	0	1	0
46	0	12	0
21	0	5	0
6	0	0	0
2	0	2	0
0	0	2	0
2	0	2	0
1	0	0	0
1	0	0	0
0	0	2	0
0	0	2	0
12	0	10	0
4	0	4	0

Archibald

NORTH SIDE

SR-60 EB Ramps WEST SIDE EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	12
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

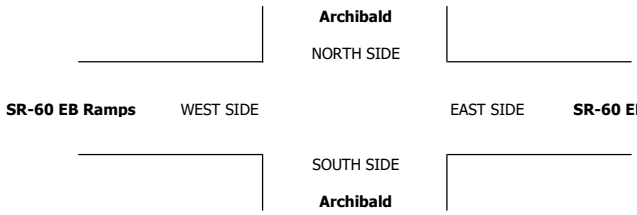
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 4	NR 1	SL 2	ST 3	SR X	EL 1.3	ET 0.3	ER 1.3	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	1	0	0	0	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	1	/	1	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	0	1	0	0	0	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.250			0.000			0.000		0.250
	APP/DEPART	0	/	0	1	/	1	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	12
WEDNESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

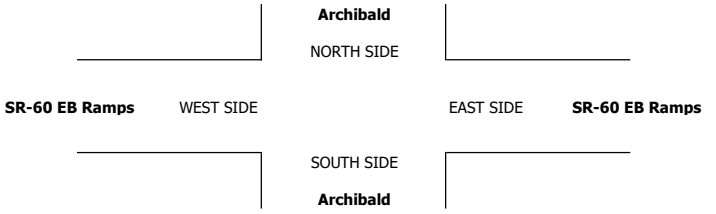
CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 4	NR 1	SL 2	ST 3	SR X	EL 1.3	ET 0.3	ER 1.3	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	1	0	0	0	3	0	0	0	4
	7:15 AM	0	2	1	0	0	0	0	0	1	0	0	0	4
	7:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
	7:45 AM	0	1	0	0	0	0	0	0	1	0	0	0	2
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	VOLUMES	0	7	1	0	3	0	0	0	5	0	0	0	16
	APPROACH %	0%	88%	13%	0%	100%	0%	0%	0%	100%	0%	0%	0%	
	APP/DEPART	8	/	7	3	/	8	5	/	1	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	5	0	0	0	0	0	0	1	0	0	0	6
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.417			0.000			0.250			0.000		0.500
	APP/DEPART	5	/	5	0	/	1	1	/	0	0	/	0	0
PM	4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
	4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	4	0	0	0	0	0	0	0	0	0	0	4
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	4	/	4	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS					RTOR			
NB	SB	EB	WB	TTL	NRR 0	SRR X	ERR 0	WRR X
0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	3	0
					0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
					0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Apr 13, 22

LOCATION: Ontario
NORTH & SOUTH: Archibald
EAST & WEST: Riverside

PROJECT #: SC3380
LOCATION #: 13
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

N ▲ | ◄ W | E ► | S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	48	222	9	23	84	29	26	45	16	15	63	29	609
AM	7:15 AM	52	252	13	23	74	22	23	47	26	13	86	53	684
AM	7:30 AM	56	319	17	30	88	36	42	90	24	19	112	58	891
AM	7:45 AM	76	263	22	48	106	57	36	66	28	24	126	48	900
AM	8:00 AM	75	247	18	54	110	48	31	88	40	19	113	56	899
AM	8:15 AM	48	253	18	28	109	23	23	70	33	23	83	45	756
AM	8:30 AM	63	231	13	19	108	12	23	40	36	21	102	35	703
AM	8:45 AM	78	219	10	31	76	17	14	46	29	17	57	24	618
AM	VOLUMES	496	2,006	120	256	755	244	218	492	232	151	742	348	6,060
AM	APPROACH %	19%	77%	5%	20%	60%	19%	23%	52%	25%	12%	60%	28%	
AM	APP/DEPART	2,622	/ 2,574		1,255	/ 1,154		942	/ 867		1,241	/ 1,465		0
AM	BEGIN PEAK HR		7:30 AM											
AM	VOLUMES	255	1,082	75	160	413	164	132	314	125	85	434	207	3,446
AM	APPROACH %	18%	77%	5%	22%	56%	22%	23%	55%	22%	12%	60%	29%	
AM	PEAK HR FACTOR		0.901			0.869			0.898			0.917		0.957
AM	APP/DEPART	1,412	/ 1,422		737	/ 631		571	/ 549		726	/ 844		0
PM	4:00 PM	60	221	26	50	160	32	29	122	56	28	73	31	888
PM	4:15 PM	73	199	14	57	134	30	29	120	69	27	79	29	860
PM	4:30 PM	70	198	21	48	177	46	37	88	70	21	59	22	857
PM	4:45 PM	72	193	25	53	143	42	56	102	63	29	60	36	874
PM	5:00 PM	44	183	20	60	157	37	39	159	80	22	100	33	934
PM	5:15 PM	59	185	18	50	172	41	36	130	73	28	99	31	922
PM	5:30 PM	64	172	16	67	170	53	50	101	54	37	85	35	904
PM	5:45 PM	59	179	13	61	178	62	34	103	64	25	78	34	890
PM	VOLUMES	501	1,530	153	446	1,291	343	310	925	529	217	633	251	7,129
PM	APPROACH %	23%	70%	7%	21%	62%	16%	18%	52%	30%	20%	57%	23%	
PM	APP/DEPART	2,184	/ 2,092		2,080	/ 2,099		1,764	/ 1,522		1,101	/ 1,416		0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	226	719	67	238	677	193	159	493	271	112	362	133	3,650
PM	APPROACH %	22%	71%	7%	21%	61%	17%	17%	53%	29%	18%	60%	22%	
PM	PEAK HR FACTOR		0.966			0.920			0.830			0.960		0.977
PM	APP/DEPART	1,012	/ 1,010		1,108	/ 1,086		923	/ 798		607	/ 756		0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	1	0	0	1
3	0	0	0	3
1	0	0	1	2
2	1	0	0	3
3	0	0	0	3
3	0	0	0	3
2	0	0	0	2
3	0	0	0	3
17	2	0	1	20
11	0	0	0	11
11	1	0	0	12
5	0	0	0	5
9	1	0	0	10
5	0	0	0	5
5	0	0	0	5
9	0	0	0	9
7	0	1	0	8
62	2	1	0	65

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
1	9	5	9
1	8	11	12
2	7	11	13
0	13	14	6
1	6	17	20
0	12	14	22
2	4	16	14
0	4	8	8
7	63	96	104
3	38	56	61
3	8	16	15
0	8	17	7
3	10	20	11
3	9	26	11
2	5	23	8
1	9	12	7
2	9	20	15
2	9	13	18
16	67	147	92
7	32	68	48

Archibald

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

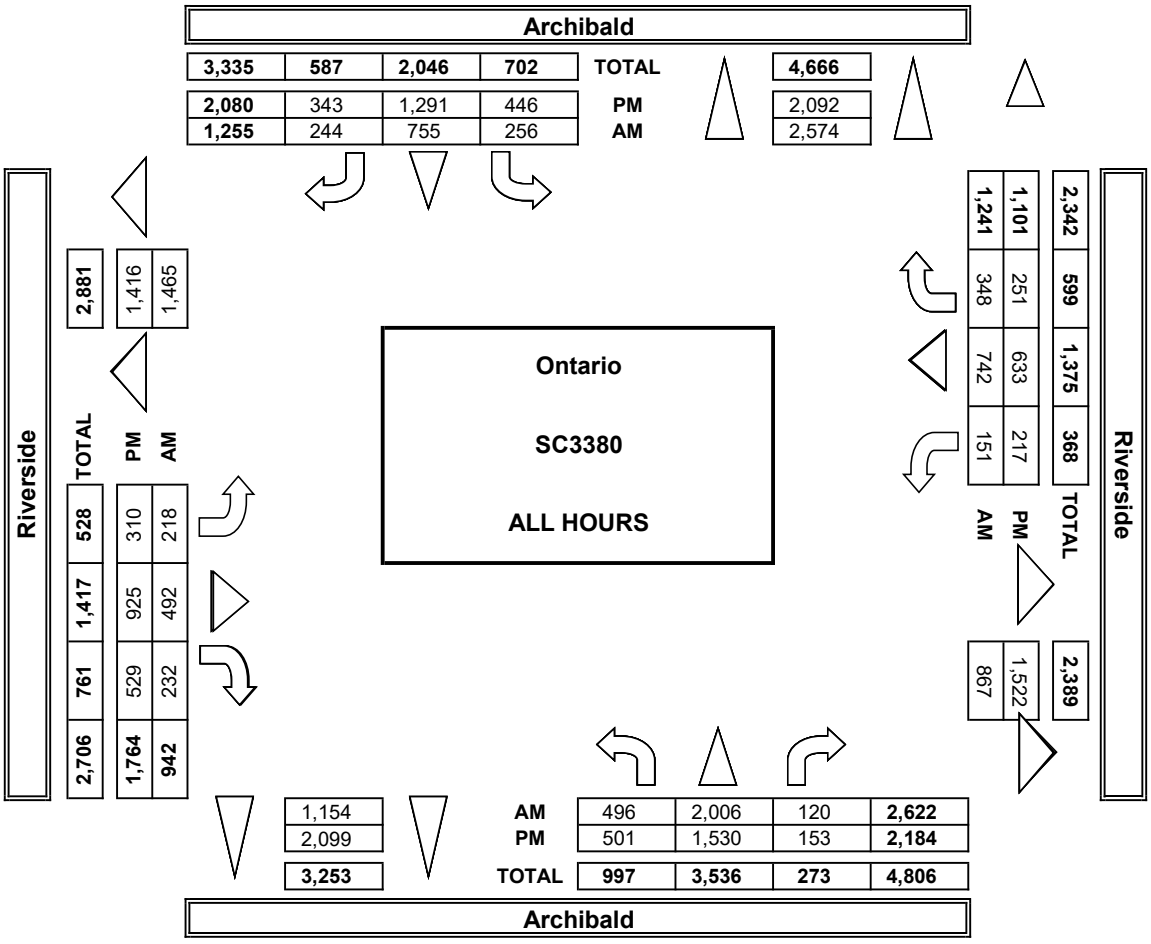
SOUTH SIDE

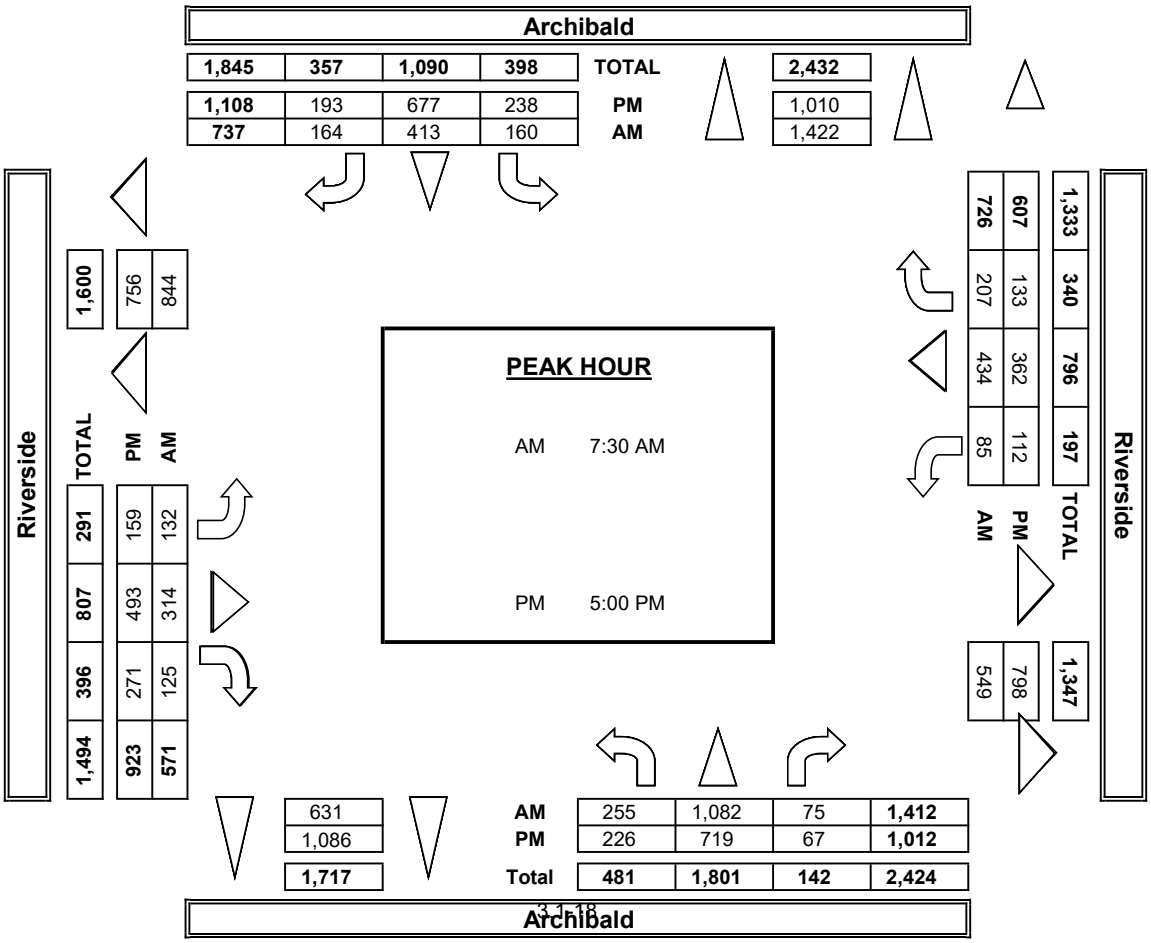
Archibald

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	1	4	1	8	14	1	3	1	7	12	0	1	0	1	2
AM	7:30 AM	1	0	2	0	3	1	0	0	0	1	0	0	2	0	2
AM	7:45 AM	1	1	2	5	9	1	0	2	4	7	0	1	0	1	2
AM	8:00 AM	2	1	0	0	3	1	1	0	0	2	1	0	0	0	1
AM	8:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
AM	8:30 AM	0	0	1	1	2	0	0	0	1	1	0	0	1	0	1
AM	8:45 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
AM	TOTAL	5	6	6	16	33	4	4	3	13	24	1	2	3	3	9
PM	4:00 PM	0	0	2	1	3	0	0	2	1	3	0	0	0	0	0
PM	4:15 PM	0	3	8	1	12	0	3	8	1	12	0	0	0	0	0
PM	4:30 PM	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0
PM	4:45 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
PM	5:00 PM	0	0	1	3	4	0	0	1	3	4	0	0	0	0	0
PM	5:15 PM	4	4	5	0	13	2	4	5	0	11	2	0	0	0	2
PM	5:30 PM	0	6	5	0	11	0	6	4	0	10	0	0	1	0	1
PM	5:45 PM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	TOTAL	5	17	22	6	50	3	17	21	6	47	2	0	1	0	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

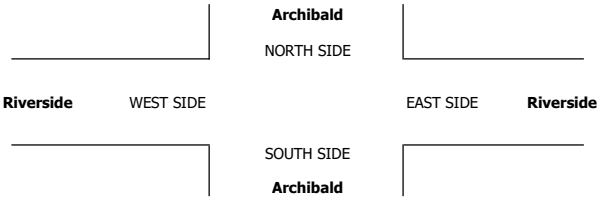
	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	48	195	8	22	58	27	24	39	16	12	60	29	538
7:15 AM	49	214	11	18	56	21	19	45	24	13	81	50	601
7:30 AM	55	286	14	27	71	34	38	84	20	18	108	54	809
7:45 AM	71	232	21	42	87	55	32	63	25	23	122	48	821
8:00 AM	71	219	17	52	96	41	30	85	34	19	109	54	827
8:15 AM	44	213	16	22	87	20	18	67	30	22	78	45	662
8:30 AM	59	197	13	19	82	12	19	37	33	19	98	32	620
8:45 AM	76	195	8	28	58	17	12	42	29	16	54	23	558
AM VOLUMES	473	1,751	108	230	595	227	192	462	211	142	710	335	5,436
AM APPROACH %	20%	75%	5%	22%	57%	22%	22%	53%	24%	12%	60%	28%	
AM APP/DEPART	2,332	/	2,280	1,052	/	963	865	/	799	1,187	/	1,394	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	232	950	68	142	341	150	118	299	109	81	417	201	3,119
APPROACH %	18%	75%	5%	22%	54%	24%	22%	57%	21%	12%	60%	29%	
PEAK HR FACTOR		0.887			0.839			0.883			0.907		0.943
APP/DEPART	1,259	/	1,270	634	/	540	526	/	510	700	/	799	0
4:00 PM	60	192	25	50	138	29	25	118	53	25	70	29	814
4:15 PM	72	165	13	55	121	30	26	118	66	27	76	28	797
4:30 PM	70	172	21	47	147	43	35	85	68	20	57	22	787
4:45 PM	69	169	24	50	126	42	54	94	62	28	58	35	811
5:00 PM	42	167	20	58	140	37	36	151	77	22	98	31	879
5:15 PM	59	159	16	49	150	39	33	127	70	28	95	29	854
5:30 PM	63	160	14	66	155	52	48	96	52	36	84	34	860
5:45 PM	59	162	13	60	157	60	32	101	62	24	74	32	836
PM VOLUMES	494	1,346	146	435	1,134	332	289	890	510	210	612	240	6,638
PM APPROACH %	25%	68%	7%	23%	60%	17%	17%	53%	30%	20%	58%	23%	
PM APP/DEPART	1,986	/	1,877	1,901	/	1,916	1,689	/	1,469	1,062	/	1,376	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	197	648	63	233	602	188	149	475	261	110	351	126	3,429
APPROACH %	21%	69%	7%	23%	59%	18%	17%	54%	29%	19%	60%	21%	
PEAK HR FACTOR		0.985			0.923			0.838			0.953		0.975
APP/DEPART	934	/	923	1,023	/	999	885	/	771	587	/	736	0

U-TURNS

	NB	SB	EB	WB	TTL
AM	16	2	0	1	19
PM	62	2	0	0	64

RTOR

	NRR 0	SRR 0	ERR 0	WRR 0
AM	6	58	83	102
AM PEAK HR	2	33	47	61
PM	15	65	141	87
PM PEAK HR	7	32	65	46



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	4	0	0	14	2	0	5	0	3	3	0	31
	7:15 AM	3	14	0	2	5	0	0	1	2	0	3	2	32
	7:30 AM	1	13	2	2	3	2	2	5	2	0	2	2	36
	7:45 AM	2	9	1	5	6	1	1	3	3	1	3	0	35
	8:00 AM	2	5	1	2	2	5	0	2	2	0	3	1	25
	8:15 AM	2	9	2	4	5	3	4	3	2	1	3	0	38
	8:30 AM	3	13	0	0	9	0	1	2	2	1	4	3	38
	8:45 AM	1	3	2	1	4	0	0	1	0	0	2	1	15
	VOLUMES	14	70	8	16	48	13	8	22	13	6	23	9	250
	APPROACH %	15%	76%	9%	21%	62%	17%	19%	51%	30%	16%	61%	24%	
	APP/DEPART	92	/	87	77	/	68	43	/	46	38	/	49	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	7	36	6	13	16	11	7	13	9	2	11	3	134
	APPROACH %	14%	73%	12%	33%	40%	28%	24%	45%	31%	13%	69%	19%	
	PEAK HR FACTOR		0.766			0.833			0.806			1.000		0.882
	APP/DEPART	49	/	46	40	/	27	29	/	32	16	/	29	0
PM	4:00 PM	0	7	1	0	6	3	3	4	2	2	2	2	32
	4:15 PM	1	12	0	1	3	0	2	1	2	0	3	1	26
	4:30 PM	0	13	0	1	4	1	1	2	2	0	1	0	25
	4:45 PM	3	11	1	3	3	0	1	7	1	1	2	1	34
	5:00 PM	1	5	0	2	4	0	2	5	2	0	2	2	25
	5:15 PM	0	12	2	0	5	2	2	3	2	0	3	2	33
	5:30 PM	1	5	0	1	5	1	2	5	2	1	1	1	25
	5:45 PM	0	5	0	1	7	2	0	1	2	1	4	2	25
	VOLUMES	6	70	4	9	37	9	13	28	15	5	18	11	225
	APPROACH %	8%	88%	5%	16%	67%	16%	23%	50%	27%	15%	53%	32%	
	APP/DEPART	80	/	94	55	/	57	56	/	41	34	/	33	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	2	27	2	4	21	5	6	14	8	2	10	7	108
	APPROACH %	6%	87%	6%	13%	70%	17%	21%	50%	29%	11%	53%	37%	
	PEAK HR FACTOR		0.554			0.750			0.778			0.679		0.818
	APP/DEPART	31	/	40	30	/	31	28	/	20	19	/	17	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	2	0
1	0	1	0
0	1	3	0
0	3	1	0
0	1	1	0
0	0	2	2
0	0	0	0
1	5	10	2
1	5	6	0
1	1	1	1
0	0	0	1
0	1	1	0
0	0	0	1
0	0	0	0
0	0	1	0
0	0	2	0
0	0	0	2
1	2	5	5
0	0	3	2

Archibald

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	7	0	1	5	0	0	0	0	0	0	0	13
	7:15 AM	0	9	0	2	8	0	1	1	0	0	0	0	21
	7:30 AM	0	5	0	0	6	0	1	0	0	0	1	1	14
	7:45 AM	0	8	0	1	4	1	0	0	0	0	0	0	14
	8:00 AM	1	3	0	0	4	1	0	0	1	0	0	1	11
	8:15 AM	0	5	0	1	4	0	0	0	0	0	0	0	10
	8:30 AM	0	5	0	0	3	0	1	0	1	0	0	0	10
	8:45 AM	0	9	0	1	5	0	1	1	0	1	1	0	19
	VOLUMES	1	51	0	6	39	2	4	2	2	1	2	2	112
	APPROACH %	2%	98%	0%	13%	83%	4%	50%	25%	25%	20%	40%	40%	
	APP/DEPART	52	/	57	47	/	42	8	/	8	5	/	5	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	21	0	2	18	2	1	0	1	0	1	2	49
	APPROACH %	5%	95%	0%	9%	82%	9%	50%	0%	50%	0%	33%	67%	
	PEAK HR FACTOR		0.688			0.917			0.500			0.375		0.875
	APP/DEPART	22	/	24	22	/	19	2	/	2	3	/	4	0
PM	4:00 PM	0	7	0	0	4	0	0	0	0	1	1	0	13
	4:15 PM	0	12	1	1	4	0	1	1	0	0	0	0	20
	4:30 PM	0	3	0	0	7	0	0	0	0	0	1	0	11
	4:45 PM	0	3	0	0	0	0	1	1	0	0	0	0	5
	5:00 PM	0	7	0	0	3	0	0	1	1	0	0	0	12
	5:15 PM	0	4	0	0	7	0	1	0	1	0	0	0	13
	5:30 PM	0	2	2	0	1	0	0	0	0	0	0	0	5
	5:45 PM	0	1	0	0	4	0	1	1	0	0	0	0	7
	VOLUMES	0	39	3	1	30	0	4	4	2	1	2	0	86
	APPROACH %	0%	93%	7%	3%	97%	0%	40%	40%	20%	33%	67%	0%	
	APP/DEPART	42	/	43	31	/	33	10	/	8	3	/	2	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	14	2	0	15	0	2	2	2	0	0	0	37
	APPROACH %	0%	88%	13%	0%	100%	0%	33%	33%	33%	0%	0%	0%	
	PEAK HR FACTOR		0.571			0.536			0.750			0.000		0.712
	APP/DEPART	16	/	16	15	/	17	6	/	4	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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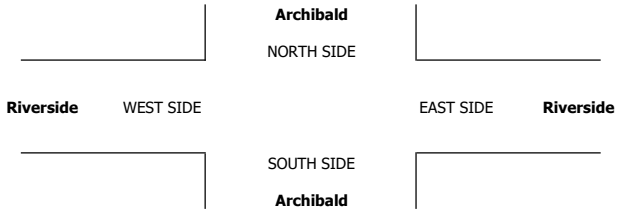
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	15	1	0	4	0	2	0	0	0	0	0	22
	7:15 AM	0	13	1	0	4	1	2	0	0	0	0	1	22
	7:30 AM	0	13	0	1	8	0	1	0	1	0	0	0	24
	7:45 AM	0	14	0	0	8	0	3	0	0	0	0	0	25
	8:00 AM	0	20	0	0	8	1	1	0	1	0	0	0	31
	8:15 AM	0	26	0	1	13	0	1	0	1	0	1	0	43
	8:30 AM	1	16	0	0	14	0	2	0	0	1	0	0	34
	8:45 AM	0	12	0	1	9	0	1	1	0	0	0	0	24
	VOLUMES	1	129	2	3	68	2	13	1	3	1	1	1	225
	APPROACH %	1%	98%	2%	4%	93%	3%	76%	6%	18%	33%	33%	33%	
	APP/DEPART	132	/	143	73	/	72	17	/	6	3	/	4	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	73	0	2	37	1	6	0	3	0	1	0	123
	APPROACH %	0%	100%	0%	5%	93%	3%	67%	0%	33%	0%	100%	0%	
	PEAK HR FACTOR		0.702			0.714			0.750			0.250		0.715
	APP/DEPART	73	/	79	40	/	40	9	/	2	1	/	2	0
PM	4:00 PM	0	14	0	0	12	0	0	0	0	0	0	0	26
	4:15 PM	0	9	0	0	6	0	0	0	0	0	0	0	15
	4:30 PM	0	10	0	0	19	2	1	1	0	1	0	0	34
	4:45 PM	0	10	0	0	14	0	0	0	0	0	0	0	24
	5:00 PM	0	4	0	0	10	0	1	2	0	0	0	0	17
	5:15 PM	0	10	0	1	10	0	0	0	0	0	1	0	22
	5:30 PM	0	5	0	0	9	0	0	0	0	0	0	0	14
	5:45 PM	0	11	0	0	10	0	0	0	0	0	0	0	21
	VOLUMES	0	73	0	1	90	2	2	3	0	1	1	0	173
	APPROACH %	0%	100%	0%	1%	97%	2%	40%	60%	0%	50%	50%	0%	
	APP/DEPART	73	/	75	93	/	91	5	/	4	2	/	3	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	30	0	1	39	0	1	2	0	0	1	0	74
	APPROACH %	0%	100%	0%	3%	98%	0%	33%	67%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.682			0.909			0.250			0.250		0.841
	APP/DEPART	30	/	31	40	/	39	3	/	3	1	/	1	0

U-TURNS NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	2	0
0	0	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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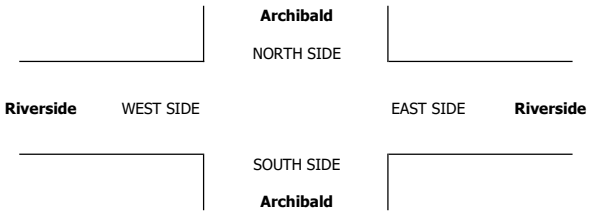
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM PM MD OTHER OTHER

▲ N S ▼ ◄ W E ►

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Riverside			WESTBOUND Riverside			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	0	1	2	0	1	2	0	
AM													
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM													
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
AM					
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
PM					
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES:	0	0	0	0
AM				
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
PM				
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

Archibald

NORTH SIDE

Riverside WEST SIDE

EAST SIDE **Riverside**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	13
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

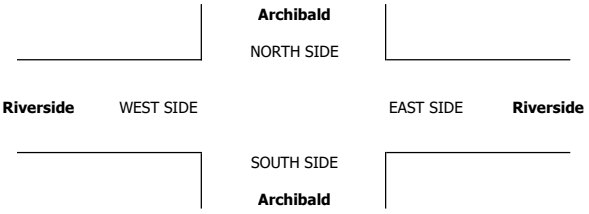
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	3	0	0	1	0	0	0	0	5
	7:15 AM	0	2	1	1	1	0	1	0	0	0	2	0	8
	7:30 AM	0	2	1	0	0	0	0	1	1	1	1	1	8
	7:45 AM	3	0	0	0	1	0	0	0	0	0	1	0	5
	8:00 AM	1	0	0	0	0	0	0	1	2	0	1	0	5
	8:15 AM	2	0	0	0	0	0	0	0	0	0	1	0	3
	8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:45 AM	1	0	0	0	0	0	0	1	0	0	0	0	2
	VOLUMES	7	5	2	1	5	0	1	5	3	1	6	1	37
	APPROACH %	50%	36%	14%	17%	83%	0%	11%	56%	33%	13%	75%	13%	
	APP/DEPART	14	/	7	6	/	9	9	/	8	8	/	13	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	6	2	1	0	1	0	0	2	3	1	4	1	21
	APPROACH %	67%	22%	11%	0%	100%	0%	0%	40%	60%	17%	67%	17%	
	PEAK HR FACTOR		0.750			0.250			0.417			0.500		0.656
	APP/DEPART	9	/	3	1	/	5	5	/	3	6	/	10	0
PM	4:00 PM	0	1	0	0	0	0	1	0	1	0	0	0	3
	4:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	2	0	0	0	0	1	0	2	0	0	0	6
	APPROACH %	33%	67%	0%	0%	0%	0%	33%	0%	67%	0%	0%	0%	
	APP/DEPART	3	/	3	0	/	2	3	/	0	0	/	1	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	1	0	0	0	0	0	0	0	0	0	0	0	1
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.000			0.000		0.250
	APP/DEPART	1	/	0	0	/	0	0	/	0	0	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0



INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Apr 13, 22

LOCATION: Ontario
NORTH & SOUTH: Archibald
EAST & WEST: Chino

PROJECT #: SC3380
LOCATION #: 14
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — N / W / E / S

☑ Add U-Turns to Left Turns

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Chino			WESTBOUND Chino			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	25	222	2	6	90	13	18	7	11	3	16	25	438
AM	7:15 AM	24	277	13	9	101	12	19	11	13	2	25	31	537
AM	7:30 AM	46	311	33	17	100	16	15	25	7	11	32	42	655
AM	7:45 AM	52	270	43	11	122	8	21	15	16	54	32	56	700
AM	8:00 AM	23	209	6	10	126	14	12	18	10	13	14	43	498
AM	8:15 AM	22	271	3	10	146	9	17	8	10	1	18	26	541
AM	8:30 AM	18	273	0	10	127	8	11	7	10	2	17	13	496
AM	8:45 AM	16	243	2	3	116	10	11	6	8	2	12	13	442
AM	VOLUMES	226	2,076	102	76	928	90	124	97	85	88	166	249	4,307
AM	APPROACH %	9%	86%	4%	7%	85%	8%	41%	32%	28%	17%	33%	50%	
AM	APP/DEPART	2,404	/	2,449	1,094	/	1,127	306	/	276	503	/	455	0
AM	BEGIN PEAK HR		7:30 AM											
AM	VOLUMES	143	1,061	85	48	494	47	65	66	43	79	96	167	2,394
AM	APPROACH %	11%	82%	7%	8%	84%	8%	37%	38%	25%	23%	28%	49%	
AM	PEAK HR FACTOR		0.826			0.892			0.837			0.602		0.855
AM	APP/DEPART	1,289	/	1,293	589	/	635	174	/	199	342	/	267	0
PM	4:00 PM	22	226	3	18	219	13	30	59	23	4	8	14	639
PM	4:15 PM	18	237	4	21	179	10	39	43	22	1	10	19	603
PM	4:30 PM	27	178	4	18	218	12	32	59	39	3	21	9	620
PM	4:45 PM	18	207	7	11	186	11	35	59	36	1	10	13	594
PM	5:00 PM	25	203	3	27	211	13	15	50	34	1	16	13	611
PM	5:15 PM	16	184	3	19	222	16	39	61	25	2	9	16	612
PM	5:30 PM	15	187	7	18	211	16	33	49	27	1	10	24	598
PM	5:45 PM	21	167	4	17	196	14	22	42	27	4	17	19	550
PM	VOLUMES	162	1,589	35	149	1,642	105	245	422	233	17	101	127	4,827
PM	APPROACH %	9%	89%	2%	8%	87%	6%	27%	47%	26%	7%	41%	52%	
PM	APP/DEPART	1,786	/	1,963	1,896	/	1,915	900	/	604	245	/	345	0
PM	BEGIN PEAK HR		4:00 PM											
PM	VOLUMES	85	848	18	68	802	46	136	220	120	9	49	55	2,456
PM	APPROACH %	9%	89%	2%	7%	88%	5%	29%	46%	25%	8%	43%	49%	
PM	PEAK HR FACTOR		0.918			0.916			0.915			0.856		0.961
PM	APP/DEPART	951	/	1,039	916	/	945	476	/	306	113	/	166	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
1	0	0	1	2
2	0	0	0	2
6	0	0	0	6
6	0	0	0	6
3	0	0	0	3
4	0	0	0	4
2	0	0	0	2
3	0	0	0	3
27	0	0	1	28
4	0	0	0	4
2	0	0	0	2
4	0	0	0	4
4	0	0	0	4
3	0	0	0	3
2	1	0	0	3
0	0	0	0	0
4	1	0	0	5
23	2	0	0	25

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
1	0	1	13
2	1	1	13
2	0	1	16
5	1	3	21
0	5	2	25
0	1	1	18
0	2	6	9
1	3	4	6
11	13	19	121
7	7	7	80
0	1	9	8
0	1	4	10
0	0	8	5
1	2	3	8
0	0	3	5
0	0	6	9
2	0	7	13
0	5	3	6
3	9	43	64
1	4	24	31

Archibald
NORTH SIDE

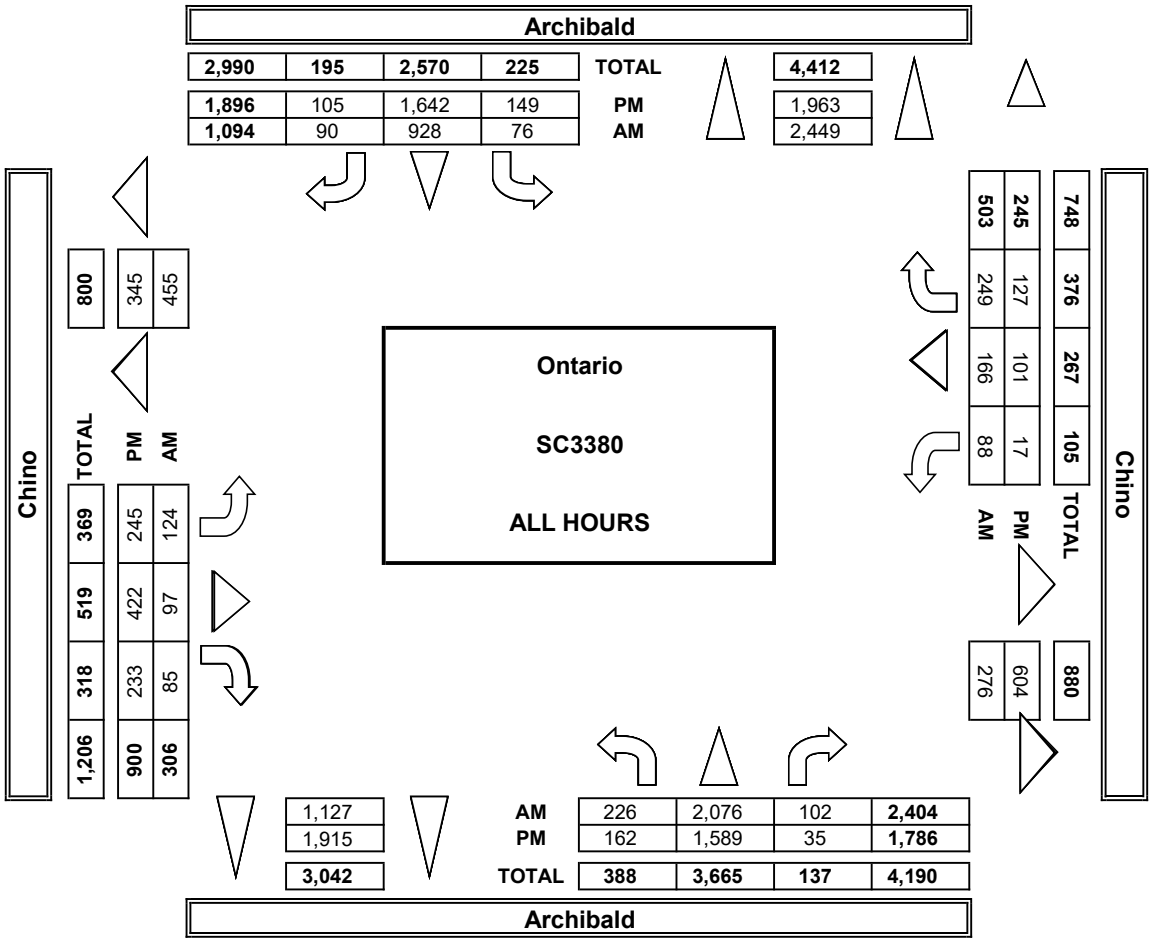
Chino WEST SIDE — EAST SIDE **Chino**

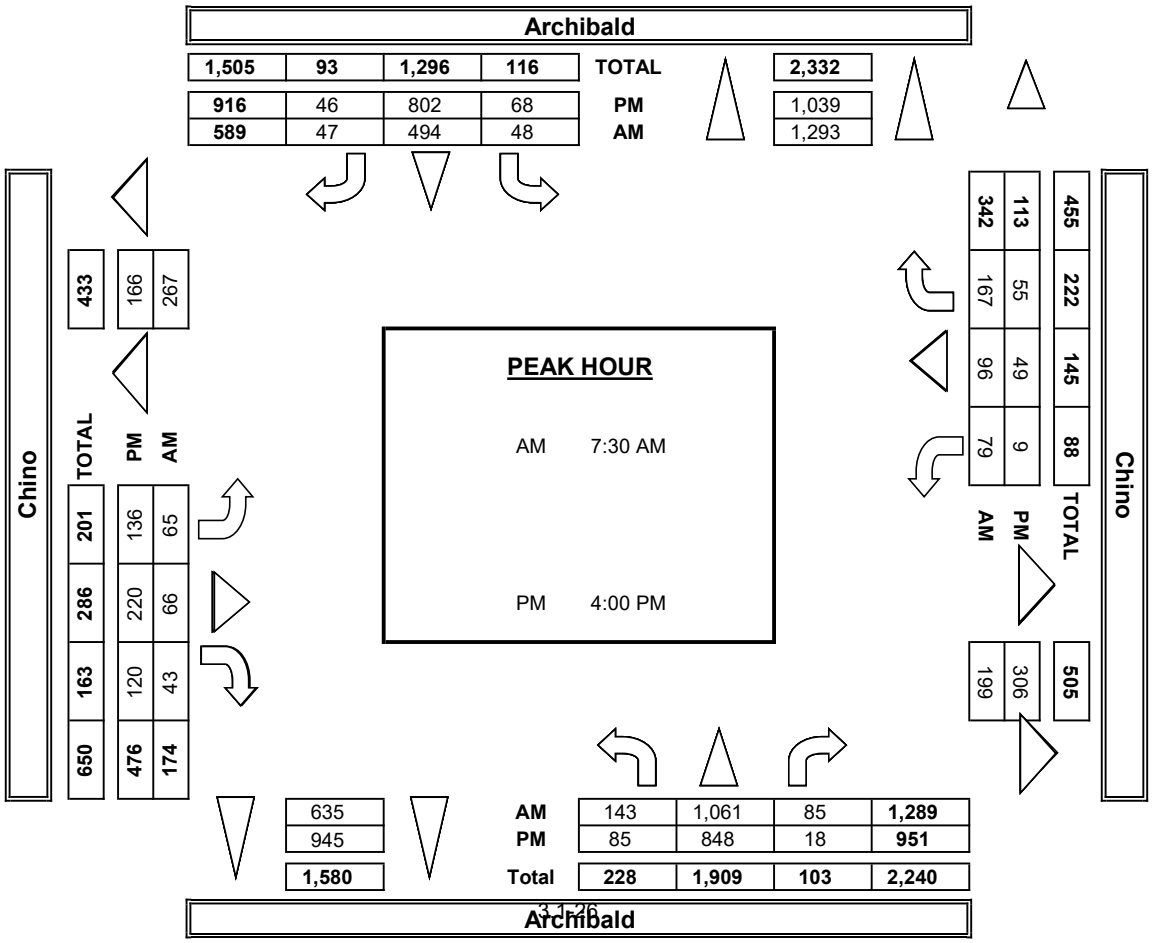
SOUTH SIDE
Archibald

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
AM	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	3	0	1	0	4	2	0	1	0	3	1	0	0	0	1
AM	TOTAL	4	1	1	1	7	2	0	1	0	3	2	1	0	1	4
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1
PM	4:30 PM	3	0	0	0	3	2	0	0	0	2	1	0	0	0	1
PM	4:45 PM	2	0	1	0	3	2	0	1	0	3	0	0	0	0	0
PM	5:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
PM	5:45 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	TOTAL	9	0	3	0	12	7	0	2	0	9	2	0	1	0	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Chino)			WESTBOUND (Chino)			
LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
7:00 AM	21	200	2	5	72	6	7	7	7	3	15	25	370
7:15 AM	21	250	12	7	83	8	6	9	12	2	25	30	465
7:30 AM	44	282	32	15	83	10	9	23	7	11	31	39	586
7:45 AM	51	239	43	11	107	7	12	13	14	54	31	53	635
8:00 AM	22	189	6	9	108	10	3	16	9	12	13	42	439
8:15 AM	17	240	3	9	125	5	9	8	9	1	17	25	468
8:30 AM	15	248	0	10	100	6	4	7	9	2	17	12	430
8:45 AM	12	224	2	3	98	4	2	4	6	2	12	13	382
AM VOLUMES	203	1,872	100	69	776	56	52	87	73	87	161	239	3,775
AM APPROACH %	9%	86%	5%	8%	86%	6%	25%	41%	34%	18%	33%	49%	
AM APP/DEPART	2,175	/	2,163	901	/	960	212	/	257	487	/	395	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	115	950	84	44	423	32	33	60	39	78	92	159	2,128
APPROACH %	10%	81%	7%	9%	85%	6%	25%	45%	30%	24%	28%	48%	
PEAK HR FACTOR		0.816			0.897			0.846			0.596		0.838
APP/DEPART	1,168	/	1,142	499	/	559	132	/	188	329	/	239	0
4:00 PM	20	203	3	18	194	10	25	55	22	3	7	14	574
4:15 PM	16	210	4	21	164	6	30	42	20	1	8	18	540
4:30 PM	25	162	4	17	191	9	26	59	36	3	21	8	561
4:45 PM	16	186	5	11	171	9	33	53	35	1	9	11	540
5:00 PM	23	186	3	27	192	13	14	48	33	1	16	13	569
5:15 PM	15	167	3	19	208	13	33	57	23	2	8	14	562
5:30 PM	15	178	7	17	196	13	28	48	27	1	9	24	563
5:45 PM	20	151	4	17	177	10	19	40	25	4	17	19	503
PM VOLUMES	150	1,443	33	147	1,493	83	208	402	221	16	95	121	4,412
PM APPROACH %	9%	89%	2%	9%	87%	5%	25%	48%	27%	7%	41%	52%	
PM APP/DEPART	1,626	/	1,774	1,723	/	1,752	831	/	580	232	/	306	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	64	761	16	67	720	34	114	209	113	8	45	51	2,215
APPROACH %	7%	89%	2%	8%	88%	4%	26%	48%	26%	8%	43%	49%	
PEAK HR FACTOR		0.928			0.925			0.901			0.813		0.965
APP/DEPART	854	/	926	821	/	854	436	/	292	104	/	143	0

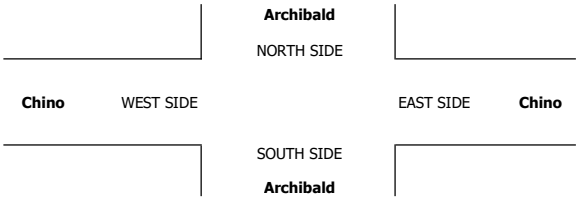
U-TURNS

	NB	SB	EB	WB	TTL
AM	25	0	0	1	26
PM	22	2	0	0	24

RTOR

	NRR	SRR	ERR	WRR
AM	11	9	17	115
PM	3	6	41	61

7:30 AM	7	6	7	76
4:00 PM	1	4	23	30



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

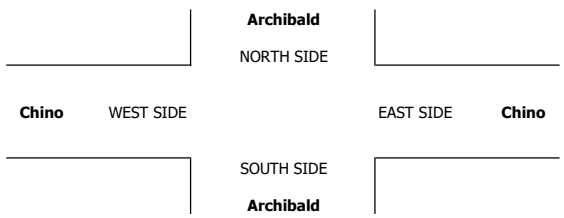
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Chino			WESTBOUND Chino			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	2	7	0	0	8	4	2	0	3	0	1	0	27
	7:15 AM	1	14	0	1	7	1	1	1	1	0	0	1	28
	7:30 AM	0	12	1	0	3	1	1	2	0	0	1	2	23
	7:45 AM	0	11	0	0	4	0	1	1	1	0	0	1	19
	8:00 AM	1	4	0	0	6	0	2	2	0	1	1	0	17
	8:15 AM	2	7	0	0	7	0	0	0	0	0	0	1	17
	8:30 AM	2	10	0	0	13	0	0	0	1	0	0	1	27
	8:45 AM	2	10	0	0	4	0	0	2	1	0	0	0	19
	VOLUMES	10	75	1	1	52	6	7	8	7	1	3	6	177
	APPROACH %	12%	87%	1%	2%	88%	10%	32%	36%	32%	10%	30%	60%	
	APP/DEPART	86	/	88	59	/	62	22	/	10	10	/	17	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	3	34	1	0	20	1	4	5	1	1	2	4	76
	APPROACH %	8%	89%	3%	0%	95%	5%	40%	50%	10%	14%	29%	57%	
	PEAK HR FACTOR		0.731			0.750			0.625			0.583		0.826
	APP/DEPART	38	/	42	21	/	22	10	/	6	7	/	6	0
PM	4:00 PM	1	6	0	0	9	0	1	2	0	1	1	0	21
	4:15 PM	1	15	0	0	4	2	4	0	1	0	1	0	28
	4:30 PM	0	6	0	0	6	0	2	0	2	0	0	1	17
	4:45 PM	2	9	1	0	3	0	1	5	1	0	0	1	23
	5:00 PM	1	6	0	0	4	0	0	1	0	0	0	0	12
	5:15 PM	0	7	0	0	1	0	3	4	1	0	1	1	18
	5:30 PM	0	1	0	1	6	1	2	1	0	0	1	0	13
	5:45 PM	0	4	0	0	9	1	0	2	2	0	0	0	18
	VOLUMES	5	54	1	1	42	4	13	15	7	1	4	3	150
	APPROACH %	8%	90%	2%	2%	89%	9%	37%	43%	20%	13%	50%	38%	
	APP/DEPART	60	/	70	47	/	51	35	/	17	8	/	12	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	3	36	1	0	22	2	8	7	4	1	2	2	89
	APPROACH %	7%	88%	2%	0%	92%	8%	42%	37%	21%	20%	40%	40%	
	PEAK HR FACTOR		0.641			0.667			0.679			0.625		0.795
	APP/DEPART	41	/	46	24	/	28	19	/	8	5	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	1	0
0	0	1	4
0	0	0	2
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	1
0	0	0	0
0	0	0	1
0	0	0	0
0	1	0	0
0	1	1	2
0	0	1	1



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

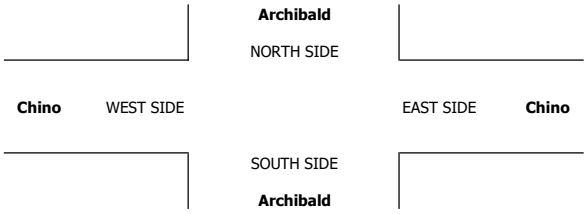
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Chino			WESTBOUND Chino			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	0	2	0	0	3	3	1	0	0	0	0	0	9
	7:15 AM	2	8	0	1	5	3	0	0	0	0	0	0	19
	7:30 AM	0	5	0	0	3	3	2	0	0	0	0	0	13
	7:45 AM	0	3	0	0	4	1	2	1	1	0	0	0	12
	8:00 AM	0	1	0	0	5	1	3	0	1	0	0	0	11
	8:15 AM	0	3	0	1	3	0	2	0	0	0	1	0	10
	8:30 AM	0	4	0	0	3	1	5	0	0	0	0	0	13
	8:45 AM	0	4	0	0	4	5	6	0	1	0	0	0	20
	VOLUMES	2	30	0	2	30	17	21	1	3	0	1	0	107
	APPROACH %	6%	94%	0%	4%	61%	35%	84%	4%	12%	0%	100%	0%	
	APP/DEPART	32	/	51	49	/	33	25	/	3	1	/	20	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	12	0	1	15	5	9	1	2	0	1	0	46
	APPROACH %	0%	100%	0%	5%	71%	24%	75%	8%	17%	0%	100%	0%	
	PEAK HR FACTOR		0.600			0.875			0.750			0.250		0.885
	APP/DEPART	12	/	21	21	/	17	12	/	2	1	/	6	0
PM	4:00 PM	0	6	0	0	5	1	3	1	0	0	0	0	16
	4:15 PM	1	5	0	0	3	1	2	0	0	0	1	1	14
	4:30 PM	2	3	0	0	3	1	2	0	0	0	0	0	11
	4:45 PM	0	3	0	0	1	0	0	0	0	0	1	1	6
	5:00 PM	0	6	0	0	4	0	1	1	0	0	0	0	12
	5:15 PM	0	1	0	0	2	3	1	0	0	0	0	0	7
	5:30 PM	0	2	0	0	0	1	2	0	0	0	0	0	5
	5:45 PM	0	0	0	0	3	0	1	0	0	0	0	0	4
	VOLUMES	3	26	0	0	21	7	12	2	0	0	2	2	75
	APPROACH %	10%	90%	0%	0%	75%	25%	86%	14%	0%	0%	50%	50%	
	APP/DEPART	29	/	40	28	/	21	14	/	2	4	/	12	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	3	17	0	0	12	3	7	1	0	0	2	2	47
	APPROACH %	15%	85%	0%	0%	80%	20%	88%	13%	0%	0%	50%	50%	
	PEAK HR FACTOR		0.833			0.625			0.500			0.500		0.734
	APP/DEPART	20	/	26	15	/	12	8	/	1	4	/	8	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	2	1	0
0	3	1	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

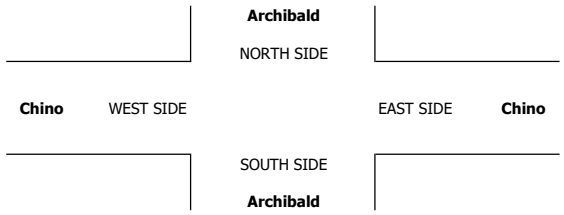
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Chino			WESTBOUND Chino			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	0	12	0	0	5	0	8	0	1	0	0	0	26
	7:15 AM	0	3	0	0	5	0	12	1	0	0	0	0	21
	7:30 AM	2	11	0	1	10	2	3	0	0	0	0	0	29
	7:45 AM	1	16	0	0	7	0	5	0	0	0	1	1	31
	8:00 AM	0	15	0	0	6	3	4	0	0	0	0	0	28
	8:15 AM	2	18	0	0	11	4	6	0	1	0	0	0	42
	8:30 AM	1	11	0	0	11	1	2	0	0	0	0	0	26
	8:45 AM	2	3	0	0	9	1	3	0	0	0	0	0	18
	VOLUMES	8	89	0	1	64	11	43	1	2	0	1	1	221
	APPROACH %	8%	92%	0%	1%	84%	14%	93%	2%	4%	0%	50%	50%	
	APP/DEPART	97	/	133	76	/	66	46	/	2	2	/	20	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	5	60	0	1	34	9	18	0	1	0	1	1	130
	APPROACH %	8%	92%	0%	2%	77%	20%	95%	0%	5%	0%	50%	50%	
	PEAK HR FACTOR		0.813			0.733			0.679			0.250		0.774
	APP/DEPART	65	/	79	44	/	35	19	/	1	2	/	15	0
PM	4:00 PM	1	9	0	0	10	2	1	1	1	0	0	0	25
	4:15 PM	0	7	0	0	8	1	3	1	1	0	0	0	21
	4:30 PM	0	7	0	0	18	2	2	0	1	0	0	0	30
	4:45 PM	0	8	1	0	11	2	1	1	0	0	0	0	24
	5:00 PM	1	5	0	0	11	0	0	0	1	0	0	0	18
	5:15 PM	1	9	0	0	11	0	2	0	0	0	0	1	24
	5:30 PM	0	6	0	0	9	1	1	0	0	0	0	0	17
	5:45 PM	1	12	0	0	7	3	2	0	0	0	0	0	25
	VOLUMES	4	63	1	0	85	11	12	3	4	0	0	1	184
	APPROACH %	6%	93%	1%	0%	89%	11%	63%	16%	21%	0%	0%	100%	
	APP/DEPART	68	/	76	96	/	89	19	/	4	1	/	15	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	1	31	1	0	47	7	7	3	3	0	0	0	100
	APPROACH %	3%	94%	3%	0%	87%	13%	54%	23%	23%	0%	0%	0%	
	PEAK HR FACTOR		0.825			0.675			0.650			0.000		0.833
	APP/DEPART	33	/	38	54	/	50	13	/	4	0	/	8	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	2	0	0
0	2	0	1
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM PM MD OTHER OTHER

▲ N ◀ W E ▶ S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Chino			WESTBOUND Chino			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	1	0	1	1	1	
AM													
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM													
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR		4:00 PM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

	NB	SB	EB	WB	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
VOLUMES	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0

RTOR

	NRR	SRR	ERR	WRR
LANES	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
VOLUMES	0	0	0	0
PEAK HR VOLUMES	0	0	0	0

Archibald

NORTH SIDE

Chino WEST SIDE

EAST SIDE **Chino**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

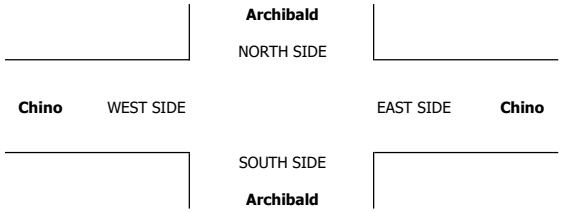
DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	14
WEDNESDAY	EAST & WEST:	Chino	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Chino			WESTBOUND Chino				U-TURNS					RTOR			
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL	NB	SB	EB	WB	TTL	NRR 0	SRR 0	ERR 0	WRR 0
AM	7:00 AM	2	1	0	1	2	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
	7:15 AM	0	2	1	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
	7:30 AM	0	1	0	1	1	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	1
	7:45 AM	0	1	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	1	1	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	1
	8:15 AM	1	3	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	2	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
	VOLUMES	3	10	1	3	6	0	1	0	0	0	0	3	27	0	0	0	0	0	0	0	0	2
	APPROACH %	21%	71%	7%	33%	67%	0%	100%	0%	0%	0%	0%	100%										
	APP/DEPART	14	/	14	9	/	6	1	/	4	3	/	3	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	1	5	0	2	2	0	1	0	0	0	0	3	14						0	0	0	2
	APPROACH %	17%	83%	0%	50%	50%	0%	100%	0%	0%	0%	0%	100%										
	PEAK HR FACTOR		0.375			0.500			0.250			0.750		0.875									
	APP/DEPART	6	/	9	4	/	2	1	/	2	3	/	1	0									
PM	4:00 PM	0	2	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	3	0	1	1	0	0	0	1	0	0	0	6	0	0	0	0	0	0	0	1	0
	APPROACH %	0%	100%	0%	50%	50%	0%	0%	0%	100%	0%	0%	0%										
	APP/DEPART	3	/	3	2	/	2	1	/	1	0	/	0	0									
	BEGIN PEAK HR		4:00 PM																				
	VOLUMES	0	3	0	1	1	0	0	0	0	0	0	0	5						0	0	0	0
	APPROACH %	0%	100%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%										
	PEAK HR FACTOR		0.375			0.500			0.000			0.000		0.417									
	APP/DEPART	3	/	3	2	/	1	0	/	1	0	/	0	0									



INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Apr 13, 22

LOCATION: Ontario
NORTH & SOUTH: Archibald
EAST & WEST: Schaefer

PROJECT #: SC3380
LOCATION #: 15
CONTROL: SIGNAL

NOTES:
W Leg closed

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	214	1	2	103	0	0	0	0	4	0	23	347
	7:15 AM	0	340	7	3	104	0	0	0	0	9	0	16	479
	7:30 AM	0	282	8	3	106	0	0	0	0	5	0	14	418
	7:45 AM	0	311	10	19	175	0	0	0	0	8	0	22	545
	8:00 AM	0	216	2	3	136	0	0	0	0	6	0	9	372
	8:15 AM	0	335	5	13	191	0	0	0	0	8	0	19	571
	8:30 AM	0	266	2	7	134	0	0	0	0	4	0	11	424
	8:45 AM	0	232	2	5	125	0	0	0	0	6	0	6	376
	VOLUMES	0	2,196	37	55	1,074	0	0	0	0	50	0	120	3,573
	APPROACH %	0%	98%	2%	5%	92%	0%	0%	0%	0%	29%	0%	71%	
	APP/DEPART	2,237	/	2,353	1,166	/	1,128	0	/	92	170	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	1,128	19	42	636	0	0	0	0	26	0	61	1,938
	APPROACH %	0%	98%	2%	6%	91%	0%	0%	0%	0%	30%	0%	70%	
	PEAK HR FACTOR		0.845			0.836			0.000			0.725		0.840
	APP/DEPART	1,149	/	1,213	702	/	664	0	/	61	87	/	0	0
PM	4:00 PM	0	237	5	11	195	0	0	0	0	2	0	8	458
	4:15 PM	0	231	1	13	193	0	0	0	0	3	0	8	449
	4:30 PM	0	194	1	6	252	0	0	0	0	3	0	2	458
	4:45 PM	0	229	4	13	212	0	0	0	0	1	0	2	461
	5:00 PM	0	229	5	12	245	0	0	0	0	2	0	3	496
	5:15 PM	0	173	2	16	225	0	0	0	0	2	0	7	425
	5:30 PM	0	206	6	12	217	0	0	0	0	3	0	8	452
	5:45 PM	0	180	1	9	212	0	0	0	0	4	0	13	419
	VOLUMES	0	1,679	25	92	1,751	0	0	0	0	20	0	51	3,702
	APPROACH %	0%	98%	1%	5%	91%	0%	0%	0%	0%	28%	0%	72%	
	APP/DEPART	1,711	/	1,807	1,920	/	1,778	0	/	117	71	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	883	11	44	902	0	0	0	0	9	0	15	1,906
	APPROACH %	0%	98%	1%	4%	92%	0%	0%	0%	0%	38%	0%	63%	
	PEAK HR FACTOR		0.959			0.908			0.000			0.545		0.940
	APP/DEPART	898	/	936	984	/	915	0	/	55	24	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	1	0	0	1
1	7	0	0	8
0	4	0	0	4
0	3	0	0	3
0	11	0	0	11
0	6	0	0	6
2	4	0	0	6
1	1	0	0	2
4	37	0	0	41
1	14	0	0	15
0	6	0	0	6
3	13	0	0	16
1	8	0	0	9
0	11	0	0	11
1	9	0	0	10
0	8	0	0	8
1	8	0	0	9
7	77	0	0	84

RTOR

NRR	SRR	ERR	WRR
0	X	X	0
0	0	0	9
1	0	0	11
0	0	0	10
0	0	0	15
0	0	0	8
0	0	0	12
1	0	0	12
0	0	0	7
0	0	0	3
2	0	0	75
1	0	0	42
0	0	0	6
0	0	0	4
0	0	0	1
1	0	0	0
1	0	0	1
0	0	0	4
0	0	0	4
0	0	0	4
2	0	0	24
2	0	0	6

Archibald
NORTH SIDE

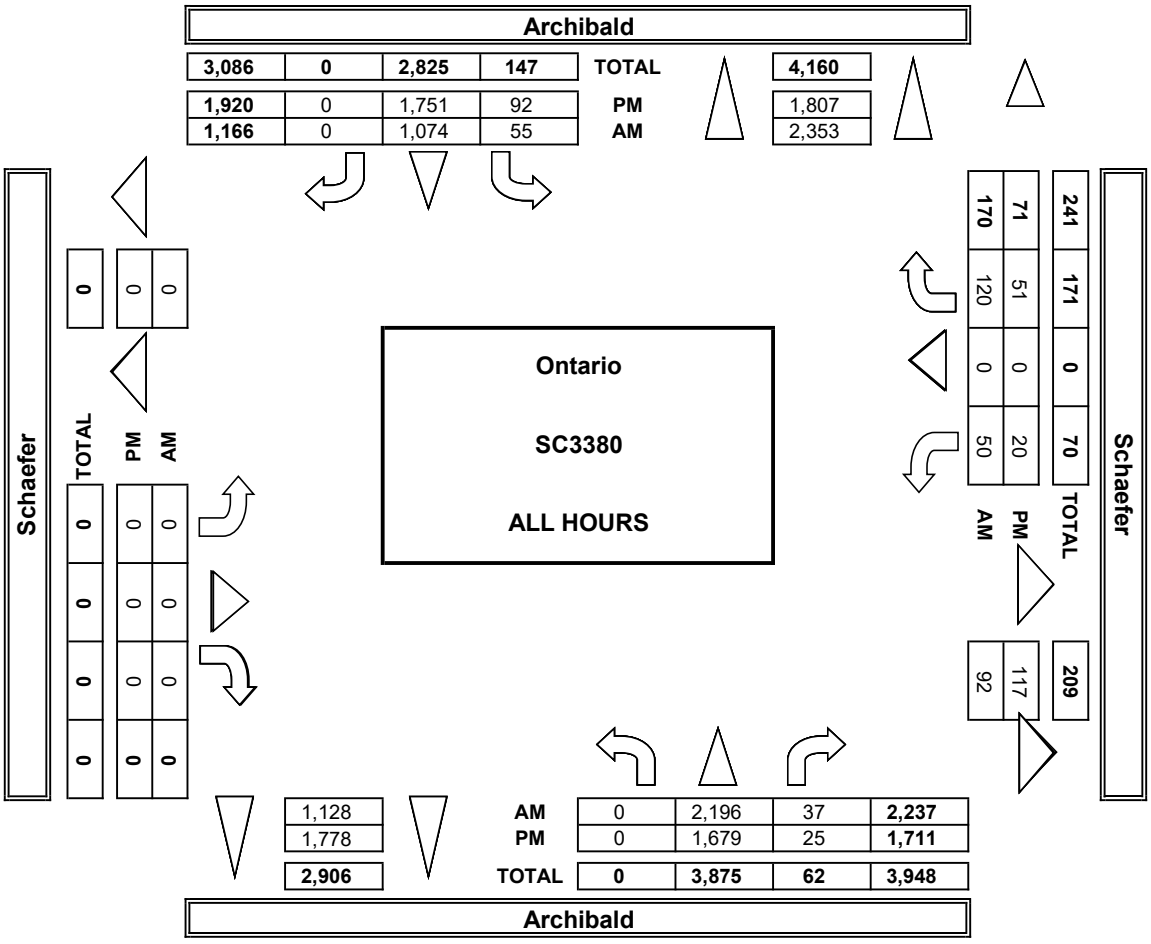
Schaefer WEST SIDE — EAST SIDE **Schaefer**

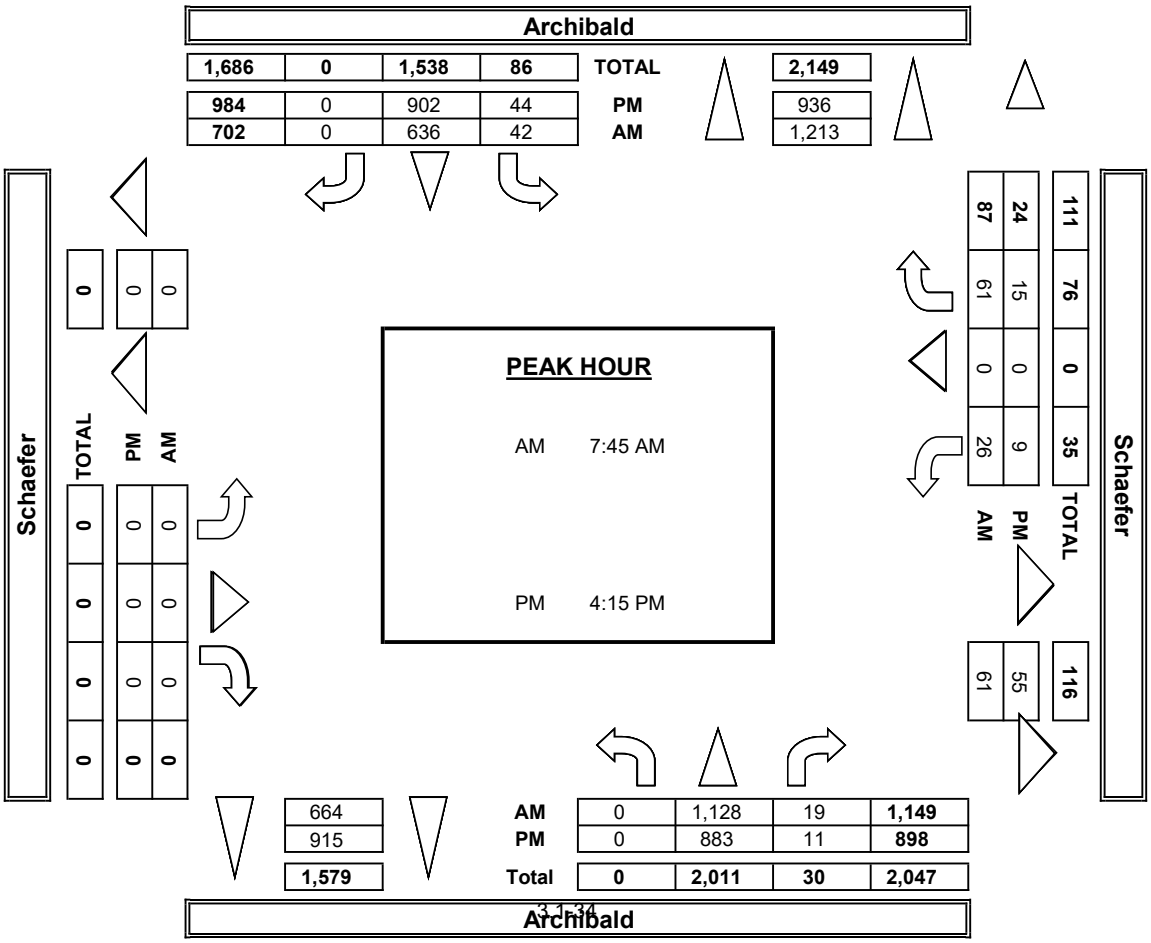
SOUTH SIDE
Archibald

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	7:45 AM	2	1	0	0	3	2	0	0	0	2	0	1	0	0	1
	8:00 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	8:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	TOTAL	6	2	0	0	8	3	0	0	0	3	3	2	0	0	5
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	5:45 PM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
	TOTAL	7	0	0	0	7	5	0	0	0	5	2	0	0	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	15
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	193	1	2	83	0	0	0	0	3	0	22	304
	7:15 AM	0	310	7	3	86	0	0	0	0	9	0	16	431
	7:30 AM	0	255	8	3	92	0	0	0	0	3	0	14	375
	7:45 AM	0	280	8	18	155	0	0	0	0	7	0	21	489
	8:00 AM	0	192	2	3	121	0	0	0	0	5	0	7	330
	8:15 AM	0	301	5	11	158	0	0	0	0	7	0	18	500
	8:30 AM	0	234	1	7	106	0	0	0	0	4	0	10	362
	8:45 AM	0	207	2	5	102	0	0	0	0	6	0	6	328
	VOLUMES	0	1,972	34	52	903	0	0	0	0	44	0	114	3,150
	APPROACH %	0%	98%	2%	5%	92%	0%	0%	0%	0%	28%	0%	72%	
	APP/DEPART	2,010	/	2,113	982	/	951	0	/	86	158	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	1,007	16	39	540	0	0	0	0	23	0	56	1,701
	APPROACH %	0%	98%	2%	7%	90%	0%	0%	0%	0%	29%	0%	71%	
	PEAK HR FACTOR		0.837			0.853			0.000			0.705		0.840
	APP/DEPART	1,025	/	1,081	597	/	565	0	/	55	79	/	0	0
PM	4:00 PM	0	211	5	11	173	0	0	0	0	2	0	8	410
	4:15 PM	0	206	1	13	176	0	0	0	0	2	0	8	406
	4:30 PM	0	175	1	6	226	0	0	0	0	3	0	2	413
	4:45 PM	0	203	4	12	194	0	0	0	0	1	0	2	416
	5:00 PM	0	207	5	11	225	0	0	0	0	2	0	3	453
	5:15 PM	0	158	2	15	206	0	0	0	0	2	0	7	390
	5:30 PM	0	196	5	12	202	0	0	0	0	3	0	8	426
	5:45 PM	0	158	1	9	194	0	0	0	0	4	0	13	379
	VOLUMES	0	1,514	24	89	1,596	0	0	0	0	19	0	51	3,368
	APPROACH %	0%	98%	2%	5%	91%	0%	0%	0%	0%	27%	0%	73%	
	APP/DEPART	1,544	/	1,634	1,754	/	1,621	0	/	113	70	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	791	11	42	821	0	0	0	0	8	0	15	1,724
	APPROACH %	0%	98%	1%	5%	92%	0%	0%	0%	0%	35%	0%	65%	
	PEAK HR FACTOR		0.949			0.914			0.000			0.575		0.933
	APP/DEPART	805	/	839	896	/	832	0	/	53	23	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
1	5	0	0	6
0	4	0	0	4
0	1	0	0	1
0	8	0	0	8
0	6	0	0	6
2	3	0	0	5
1	0	0	0	1
4	27	0	0	31
1	14	0	0	15
0	5	0	0	5
2	11	0	0	13
1	8	0	0	9
0	9	0	0	9
1	9	0	0	10
0	7	0	0	7
1	6	0	0	7
6	69	0	0	75

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	9
1	0	0	11
0	0	0	10
0	0	0	14
0	0	0	7
1	0	0	12
0	0	0	7
0	0	0	3
2	0	0	73
1	0	0	40
0	0	0	6
0	0	0	4
0	0	0	1
1	0	0	0
1	0	0	1
0	0	0	4
0	0	0	4
0	0	0	4
2	0	0	24
2	0	0	6

Archibald

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	15
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	6	0	0	9	0	0	0	0	1	0	0	16
	7:15 AM	0	16	0	0	7	0	0	0	0	0	0	0	23
	7:30 AM	0	14	0	0	2	0	0	0	0	2	0	0	18
	7:45 AM	0	11	1	1	9	0	0	0	0	1	0	1	24
	8:00 AM	0	4	0	0	3	0	0	0	0	1	0	1	9
	8:15 AM	0	9	0	0	10	0	0	0	0	1	0	0	20
	8:30 AM	0	15	1	0	14	0	0	0	0	0	0	0	30
	8:45 AM	0	12	0	0	10	0	0	0	0	0	0	0	22
	VOLUMES	0	87	2	1	64	0	0	0	0	6	0	2	169
	APPROACH %	0%	98%	2%	1%	89%	0%	0%	0%	0%	75%	0%	25%	
	APP/DEPART	89	/	96	72	/	70	0	/	3	8	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	39	2	1	36	0	0	0	0	3	0	2	87
	APPROACH %	0%	95%	5%	2%	88%	0%	0%	0%	0%	60%	0%	40%	
	PEAK HR FACTOR		0.641			0.683			0.000			0.625		0.702
	APP/DEPART	41	/	45	41	/	39	0	/	3	5	/	0	0
PM	4:00 PM	0	10	0	0	8	0	0	0	0	0	0	0	18
	4:15 PM	0	15	0	0	5	0	0	0	0	1	0	0	21
	4:30 PM	0	7	0	0	6	0	0	0	0	0	0	0	13
	4:45 PM	0	12	0	1	4	0	0	0	0	0	0	0	17
	5:00 PM	0	13	0	1	6	0	0	0	0	0	0	0	20
	5:15 PM	0	6	0	0	4	0	0	0	0	0	0	0	10
	5:30 PM	0	1	1	0	8	0	0	0	0	0	0	0	10
	5:45 PM	0	9	0	0	10	0	0	0	0	0	0	0	19
	VOLUMES	0	73	1	2	51	0	0	0	0	1	0	0	133
	APPROACH %	0%	97%	1%	4%	89%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	75	/	77	57	/	53	0	/	3	1	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	47	0	2	21	0	0	0	0	1	0	0	75
	APPROACH %	0%	98%	0%	8%	81%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.800			0.722			0.000			0.250		0.852
	APP/DEPART	48	/	50	26	/	23	0	/	2	1	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	1	0	0	1
0	2	0	0	2
0	0	0	0	0
0	1	0	0	1
0	2	0	0	2
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	7	0	0	7
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
1	4	0	0	5

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Archibald

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	15
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

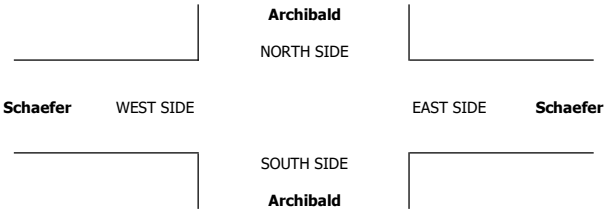
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	3	0	0	3	0	0	0	0	0	0	0	6
	7:15 AM	0	9	0	0	6	0	0	0	0	0	0	0	15
	7:30 AM	0	5	0	0	3	0	0	0	0	0	0	0	8
	7:45 AM	0	1	0	0	4	0	0	0	0	0	0	0	5
	8:00 AM	0	7	0	0	4	0	0	0	0	0	0	0	11
	8:15 AM	0	2	0	1	4	0	0	0	0	0	0	0	7
	8:30 AM	0	4	0	0	4	0	0	0	0	0	0	0	8
	8:45 AM	0	5	0	0	4	0	0	0	0	0	0	0	9
	VOLUMES	0	36	0	1	32	0	0	0	0	0	0	0	69
	APPROACH %	0%	100%	0%	3%	97%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	36	/	36	33	/	32	0	/	1	0	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	14	0	1	16	0	0	0	0	0	0	0	31
	APPROACH %	0%	100%	0%	6%	94%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.850			0.000			0.000		0.705
	APP/DEPART	14	/	14	17	/	16	0	/	1	0	/	0	0
PM	4:00 PM	0	8	0	0	3	0	0	0	0	0	0	0	11
	4:15 PM	0	4	0	0	4	0	0	0	0	0	0	0	8
	4:30 PM	0	4	0	0	4	0	0	0	0	0	0	0	8
	4:45 PM	0	4	0	0	2	0	0	0	0	0	0	0	6
	5:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	6
	5:15 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	5:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
	5:45 PM	0	0	0	0	3	0	0	0	0	0	0	0	3
	VOLUMES	0	26	0	0	21	0	0	0	0	0	0	0	47
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	26	/	26	21	/	21	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	15	0	0	13	0	0	0	0	0	0	0	28
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.938			0.813			0.000			0.000		0.875
	APP/DEPART	15	/	15	13	/	13	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	15
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

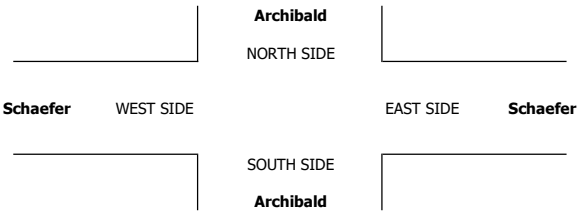
CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	11	0	0	6	0	0	0	0	0	0	0	17
	7:15 AM	0	2	0	0	4	0	0	0	0	0	0	0	6
	7:30 AM	0	7	0	0	8	0	0	0	0	0	0	0	15
	7:45 AM	0	18	0	0	6	0	0	0	0	0	0	0	24
	8:00 AM	0	12	0	0	7	0	0	0	0	0	0	0	19
	8:15 AM	0	21	0	1	19	0	0	0	0	0	0	0	41
	8:30 AM	0	13	0	0	10	0	0	0	0	0	0	0	23
	8:45 AM	0	7	0	0	9	0	0	0	0	0	0	0	16
	VOLUMES	0	91	0	1	69	0	0	0	0	0	0	0	162
	APPROACH %	0%	100%	0%	1%	97%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	91	/	92	71	/	69	0	/	1	0	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	64	0	1	42	0	0	0	0	0	0	0	108
	APPROACH %	0%	100%	0%	2%	95%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.762			0.550			0.000			0.000		0.659
	APP/DEPART	64	/	65	44	/	42	0	/	1	0	/	0	0
PM	4:00 PM	0	6	0	0	10	0	0	0	0	0	0	0	16
	4:15 PM	0	6	0	0	8	0	0	0	0	0	0	0	14
	4:30 PM	0	8	0	0	16	0	0	0	0	0	0	0	24
	4:45 PM	0	9	0	0	12	0	0	0	0	0	0	0	21
	5:00 PM	0	6	0	0	11	0	0	0	0	0	0	0	17
	5:15 PM	0	8	0	0	13	0	0	0	0	0	0	0	21
	5:30 PM	0	7	0	0	7	0	0	0	0	0	0	0	14
	5:45 PM	0	13	0	0	5	0	0	0	0	0	0	0	18
	VOLUMES	0	63	0	0	82	0	0	0	0	0	0	0	145
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	63	/	63	82	/	82	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	29	0	0	47	0	0	0	0	0	0	0	76
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.806			0.734			0.000			0.000		0.792
	APP/DEPART	29	/	29	47	/	47	0	/	0	0	/	0	0

U-TURNS					RTOR			
NB	SB	EB	WB	TTL	NRR 0	SRR X	ERR X	WRR 0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	1	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	1	0	0	1	0	0	0	0
					0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
					0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	15
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

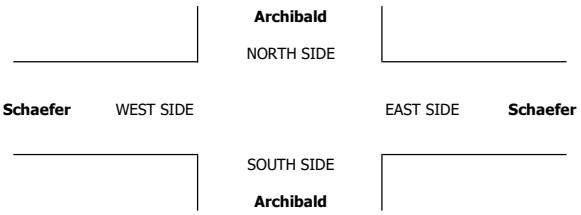
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	15
WEDNESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 6:	NOTES:	AM / PM / MD / OTHER / OTHER
BUSES		▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL
AM	7:00 AM	0	1	0	0	2	0	0	0	0	0	0	1	4
	7:15 AM	0	3	0	0	1	0	0	0	0	0	0	0	4
	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	7:45 AM	0	1	1	0	1	0	0	0	0	0	0	0	3
	8:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	3
	8:15 AM	0	2	0	0	0	0	0	0	0	0	0	1	3
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	0	10	1	0	6	0	0	0	0	0	0	4	21
	APPROACH %	0%	91%	9%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	11	/	14	6	/	6	0	/	1	4	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	4	1	0	2	0	0	0	0	0	0	3	10
	APPROACH %	0%	80%	20%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.625			0.500			0.000			0.750		0.833
	APP/DEPART	5	/	7	2	/	2	0	/	1	3	/	0	0
PM	4:00 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	3	0	1	1	0	0	0	0	0	0	0	5
	APPROACH %	0%	100%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	3	/	3	2	/	1	0	/	1	0	/	0	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	0	1	0	0	0	0	0	0	0	0	0	0	1
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.000			0.000		0.250
	APP/DEPART	1	/	1	0	/	0	0	/	0	0	/	0	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR 0	SRR X	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Archibald

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Apr 13, 22	LOCATION:	Ontario	PROJECT #: SC3380
	NORTH & SOUTH:	Archibald	LOCATION #: 16
	EAST & WEST:	Edison	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Edison)			WESTBOUND (Edison)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	30	158	42	14	75	0	6	23	11	54	53	23	489
	7:15 AM	41	238	60	14	76	9	5	18	12	50	80	21	624
	7:30 AM	48	268	44	11	102	10	8	29	16	44	58	32	670
	7:45 AM	41	259	43	22	128	15	2	31	17	49	66	31	704
	8:00 AM	31	172	51	28	125	11	6	21	15	33	54	14	561
	8:15 AM	25	196	40	13	105	12	7	35	17	34	58	25	567
	8:30 AM	27	230	56	18	101	11	6	26	15	53	47	13	603
	8:45 AM	34	202	54	14	103	13	4	20	23	36	37	12	552
	VOLUMES	277	1,723	390	134	815	81	44	203	126	353	453	171	4,770
	APPROACH %	12%	72%	16%	13%	79%	8%	12%	54%	34%	36%	46%	18%	
	APP/DEPART	2,390	/ 1,940		1,030	/ 1,297		373	/ 727		977	/ 806		0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	161	937	198	75	431	45	21	99	60	176	258	98	2,559
	APPROACH %	12%	72%	15%	14%	78%	8%	12%	55%	33%	33%	48%	18%	
	PEAK HR FACTOR		0.900			0.835			0.849			0.881		0.909
	APP/DEPART	1,296	/ 1,057		551	/ 669		180	/ 372		532	/ 461		0
PM	4:00 PM	28	175	77	29	145	14	22	85	38	40	27	31	711
	4:15 PM	11	167	62	35	141	6	20	104	60	41	43	34	724
	4:30 PM	30	171	65	40	185	11	17	95	64	41	30	28	777
	4:45 PM	18	169	68	30	178	5	23	129	70	48	40	27	805
	5:00 PM	20	188	67	32	138	15	11	122	57	45	32	24	751
	5:15 PM	19	145	49	38	169	7	26	112	62	42	37	20	726
	5:30 PM	27	175	56	26	181	14	16	94	51	42	38	19	739
	5:45 PM	18	138	52	33	174	10	12	82	57	77	51	21	725
	VOLUMES	171	1,328	496	263	1,311	82	147	823	459	376	298	204	5,958
	APPROACH %	9%	67%	25%	16%	79%	5%	10%	58%	32%	43%	34%	23%	
	APP/DEPART	1,995	/ 1,682		1,656	/ 2,146		1,429	/ 1,578		878	/ 552		0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	87	673	249	140	670	38	77	458	253	176	139	99	3,059
	APPROACH %	9%	67%	25%	17%	79%	4%	10%	58%	32%	43%	34%	24%	
	PEAK HR FACTOR		0.917			0.898			0.887			0.900		0.950
	APP/DEPART	1,009	/ 853		848	/ 1,099		788	/ 843		414	/ 264		0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	1	0	1	2
2	0	0	0	2
0	0	0	0	0
0	0	0	1	1
1	1	0	0	2
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
5	2	0	2	9
1	0	0	0	1
0	1	0	1	2
0	3	0	0	3
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
1	5	2	1	9

RTOR

NRR	SRR	ERR	WRR
X	0	X	0
0	0	0	12
0	2	0	5
0	2	0	7
0	3	0	3
0	3	0	6
0	2	0	9
0	3	0	6
0	2	0	2
0	17	0	50
0	10	0	21
0	5	0	15
0	2	0	12
0	4	0	12
0	2	0	11
0	9	0	4
0	3	0	13
0	1	0	9
0	0	0	12
0	26	0	88
0	18	0	40

Archibald

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

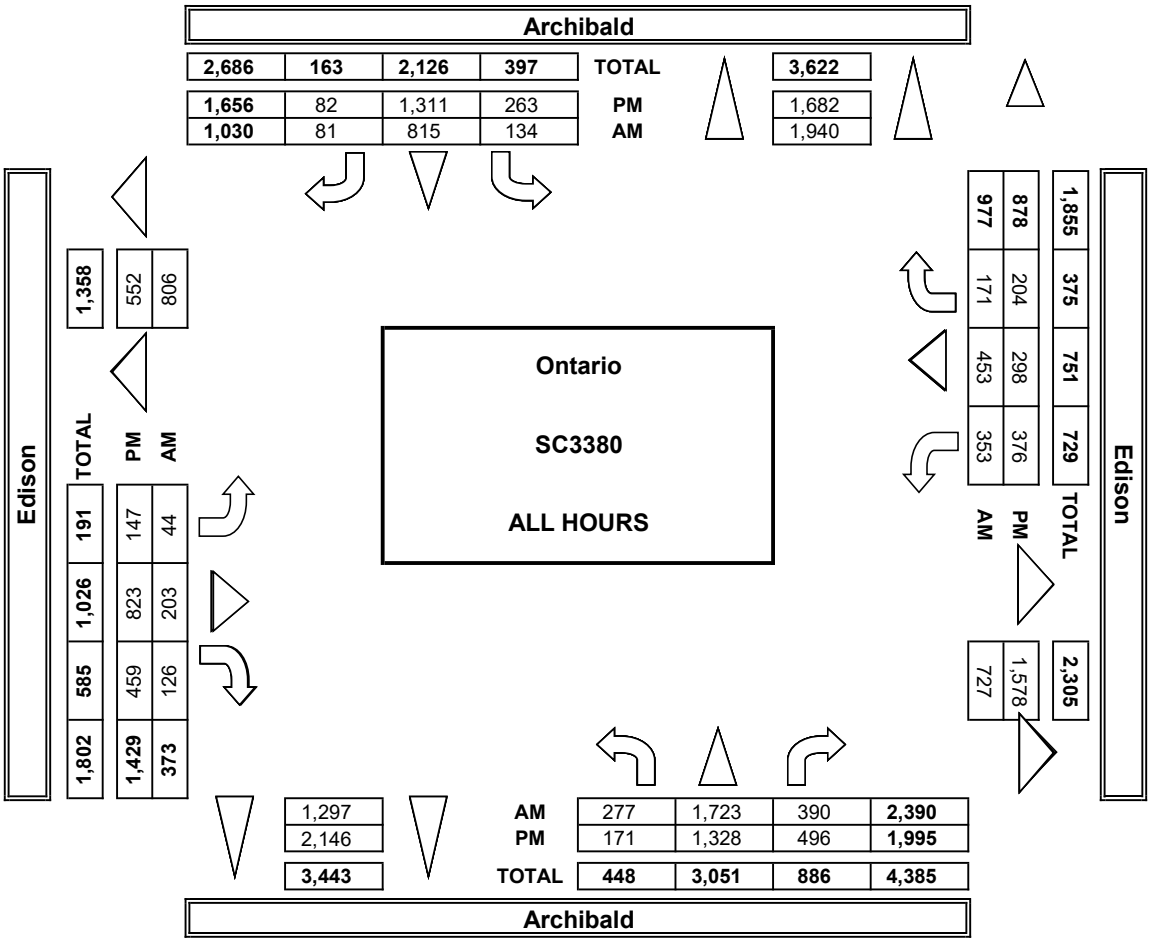
SOUTH SIDE

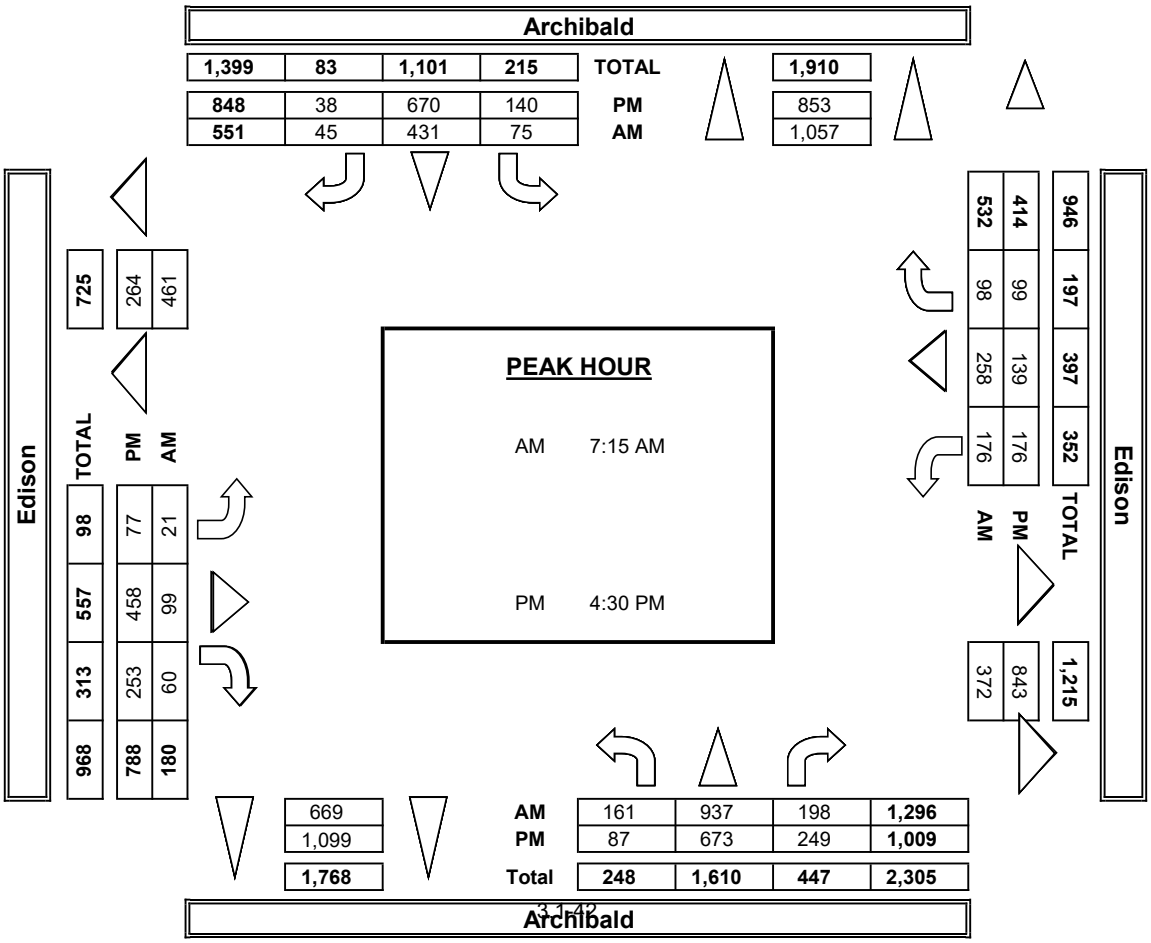
Archibald

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	1	0	1	2	0	0	0	0	0	0	1	0	1	2
	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	2	0	1	4	0	0	0	0	0	1	2	0	1	4
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	1	2	0	0	0	0	0	0	1	0	1	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	5:30 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	3	0	2	5	0	1	0	1	2	0	2	0	1	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	16
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

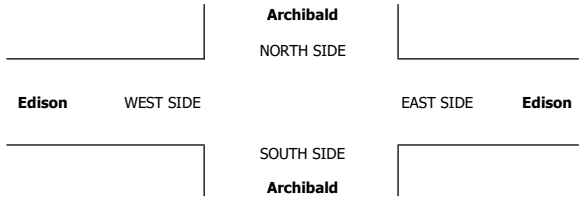
	NORTHBOUND (Archibald)			SOUTHBOUND (Archibald)			EASTBOUND (Edison)			WESTBOUND (Edison)			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
7:00 AM	26	141	34	11	54	0	1	11	9	40	43	22	392
7:15 AM	39	217	38	12	64	8	3	14	11	35	62	18	521
7:30 AM	47	243	30	8	85	6	4	23	15	32	46	30	569
7:45 AM	39	236	31	21	111	12	1	21	12	40	58	28	610
8:00 AM	29	153	37	22	114	7	4	16	13	23	50	13	481
8:15 AM	23	174	21	10	93	8	4	25	15	23	44	22	462
8:30 AM	26	214	33	16	81	6	3	18	14	36	37	11	495
8:45 AM	32	184	37	13	84	11	3	13	19	24	31	11	462
AM VOLUMES	261	1,562	261	113	686	58	23	141	108	253	371	155	3,992
AM APPROACH %	13%	75%	13%	13%	80%	7%	8%	52%	40%	32%	48%	20%	
AM APP/DEPART	2,084	/	1,741	857	/	1,047	272	/	516	779	/	688	0
BEGIN PEAK HR		7:15 AM											
AM VOLUMES	152	849	136	62	374	33	12	74	51	129	216	89	2,181
AM APPROACH %	13%	75%	12%	13%	80%	7%	9%	54%	37%	30%	50%	20%	
AM PEAK HR FACTOR		0.890			0.816			0.815			0.863		0.894
AM APP/DEPART	1,139	/	951	470	/	556	137	/	273	435	/	401	0
4:00 PM	26	152	58	28	129	5	21	74	38	29	19	28	607
4:15 PM	11	142	50	32	131	5	19	95	57	30	26	32	630
4:30 PM	27	156	56	37	167	7	14	81	58	31	26	27	687
4:45 PM	16	152	59	30	161	3	17	121	66	41	31	24	721
5:00 PM	16	171	56	31	127	8	10	111	54	29	26	22	661
5:15 PM	17	130	44	38	157	7	23	100	61	29	31	19	656
5:30 PM	26	163	43	24	169	9	15	85	50	36	37	19	676
5:45 PM	18	121	46	32	159	7	11	76	54	60	43	20	647
PM VOLUMES	157	1,187	412	252	1,200	51	130	743	438	285	239	191	5,285
PM APPROACH %	9%	68%	23%	17%	80%	3%	10%	57%	33%	40%	33%	27%	
PM APP/DEPART	1,756	/	1,512	1,503	/	1,924	1,311	/	1,402	715	/	447	0
BEGIN PEAK HR		4:30 PM											
PM VOLUMES	76	609	215	132	612	25	64	413	239	130	114	92	2,725
PM APPROACH %	8%	68%	24%	17%	79%	3%	9%	58%	33%	39%	34%	27%	
PM PEAK HR FACTOR		0.926			0.916			0.877			0.875		0.945
PM APP/DEPART	900	/	769	773	/	981	716	/	760	336	/	215	0

U-TURNS

	NB	SB	EB	WB	TTL
AM	2	1	0	2	5
PM	1	5	1	0	7

RTOR

	NRR X	SRR 0	ERR X	WRR 0
AM	0	10	0	48
AM PEAK HR	0	5	0	19
PM	0	13	0	83
PM PEAK HR	0	10	0	37



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	16
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	0	8	2	1	14	0	0	2	1	3	4	0	35
	7:15 AM	1	9	10	1	4	1	1	1	1	2	8	1	40
	7:30 AM	1	11	6	0	7	1	0	3	0	2	2	0	33
	7:45 AM	0	8	2	0	6	0	0	3	3	1	3	2	28
	8:00 AM	1	2	3	3	0	1	0	1	2	2	1	1	17
	8:15 AM	1	4	7	2	3	0	0	6	0	3	3	1	30
	8:30 AM	0	6	6	0	7	4	0	2	1	5	3	0	34
	8:45 AM	1	9	4	0	7	1	0	2	1	4	3	0	32
	VOLUMES	5	57	40	7	48	8	1	20	9	22	27	5	249
	APPROACH %	5%	56%	39%	11%	76%	13%	3%	67%	30%	41%	50%	9%	
	APP/DEPART	102	/	63	63	/	81	30	/	67	54	/	38	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	3	30	21	4	17	3	1	8	6	7	14	4	118
	APPROACH %	6%	56%	39%	17%	71%	13%	7%	53%	40%	28%	56%	16%	
	PEAK HR FACTOR		0.675			0.750			0.625			0.568		0.738
	APP/DEPART	54	/	35	24	/	30	15	/	33	25	/	20	0
PM	4:00 PM	1	8	8	1	6	2	0	2	0	1	1	1	31
	4:15 PM	0	12	3	1	5	0	0	4	3	2	6	2	38
	4:30 PM	2	6	4	0	6	1	1	6	5	4	0	0	35
	4:45 PM	2	10	0	0	4	1	2	4	3	1	3	1	31
	5:00 PM	2	7	2	1	4	0	0	7	1	4	1	2	31
	5:15 PM	2	7	2	0	1	0	1	8	1	4	1	0	27
	5:30 PM	0	5	3	1	6	0	0	3	1	1	0	0	20
	5:45 PM	0	4	0	1	7	0	1	2	1	3	1	0	20
	VOLUMES	9	59	22	5	39	4	5	36	15	20	13	6	233
	APPROACH %	10%	66%	24%	10%	81%	8%	9%	64%	27%	51%	33%	15%	
	APP/DEPART	90	/	69	48	/	74	56	/	63	39	/	27	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	8	30	8	1	15	2	4	25	10	13	5	3	124
	APPROACH %	17%	65%	17%	6%	83%	11%	10%	64%	26%	62%	24%	14%	
	PEAK HR FACTOR		0.958			0.643			0.813			0.750		0.886
	APP/DEPART	46	/	37	18	/	38	39	/	34	21	/	15	0

U-TURNS					RTOR			
NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
					X	0	X	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	0
1	0	0	0	1	0	0	0	0
0	0	0	0	0	0	2	0	0
1	0	0	0	1	0	0	0	0
2	0	0	0	2	0	4	0	0
					0	2	0	0
0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1
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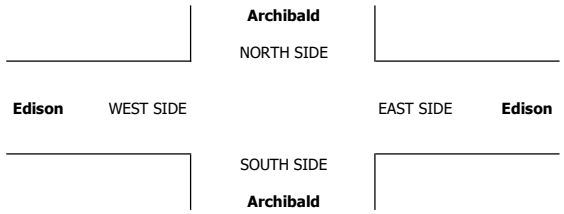
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	1	0	1	0	0	0	0
0	0	1	0	1	0	1	0	2
					0	0	0	2



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	16
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

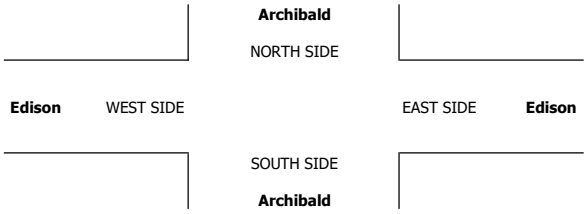
		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	1	2	1	0	2	0	1	2	1	3	3	0	16
	7:15 AM	1	6	1	0	3	0	1	2	0	6	5	2	27
	7:30 AM	0	5	1	0	3	1	2	2	0	2	2	0	18
	7:45 AM	1	2	1	0	4	0	0	1	2	3	1	0	15
	8:00 AM	0	2	6	1	3	2	0	1	0	3	1	0	19
	8:15 AM	0	2	7	1	3	0	1	0	1	1	5	0	21
	8:30 AM	1	1	11	1	3	0	1	3	0	1	2	0	24
	8:45 AM	0	1	10	1	1	1	1	1	2	3	0	0	21
	VOLUMES	4	21	38	4	22	4	7	12	6	22	19	2	161
	APPROACH %	6%	33%	60%	13%	73%	13%	28%	48%	24%	51%	44%	5%	
	APP/DEPART	63	/	30	30	/	50	25	/	54	43	/	27	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	2	15	9	1	13	3	3	6	2	14	9	2	79
	APPROACH %	8%	58%	35%	6%	76%	18%	27%	55%	18%	56%	36%	8%	
	PEAK HR FACTOR		0.813			0.708			0.688			0.481		0.731
	APP/DEPART	26	/	20	17	/	29	11	/	16	25	/	14	0
PM	4:00 PM	0	5	3	0	3	0	1	2	0	1	1	1	17
	4:15 PM	0	7	2	1	2	0	0	1	0	2	1	0	16
	4:30 PM	1	3	2	0	2	0	1	2	1	0	1	1	14
	4:45 PM	0	2	2	0	4	0	0	0	0	3	2	0	13
	5:00 PM	1	6	6	0	1	1	1	0	0	0	0	0	16
	5:15 PM	0	1	2	0	4	0	0	1	0	3	1	0	12
	5:30 PM	0	2	2	0	0	0	0	0	0	1	0	0	5
	5:45 PM	0	1	5	0	3	0	0	0	1	2	1	0	13
	VOLUMES	2	27	24	1	19	1	3	6	2	12	7	2	106
	APPROACH %	4%	51%	45%	5%	90%	5%	27%	55%	18%	57%	33%	10%	
	APP/DEPART	53	/	32	21	/	33	11	/	31	21	/	10	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	2	12	12	0	11	1	2	3	1	6	4	1	55
	APPROACH %	8%	46%	46%	0%	92%	8%	33%	50%	17%	55%	36%	9%	
	PEAK HR FACTOR		0.500			0.750			0.375			0.550		0.859
	APP/DEPART	26	/	15	12	/	18	6	/	15	11	/	7	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	1
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	1
0	1	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	1
0	1	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	16
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Edison			WESTBOUND Edison			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
7:00 AM	3	7	4	1	4	0	3	8	0	8	2	1	41
7:15 AM	0	3	11	1	4	0	0	1	0	6	5	0	31
7:30 AM	0	9	6	3	5	2	2	1	0	8	8	1	45
7:45 AM	1	12	9	1	6	3	1	5	0	5	4	1	48
8:00 AM	1	15	5	1	8	1	2	3	0	5	2	0	43
8:15 AM	1	14	5	0	6	4	2	4	1	7	6	2	52
8:30 AM	0	9	6	1	10	1	2	3	0	11	5	2	50
8:45 AM	1	8	3	0	11	0	0	4	1	5	3	0	36
AM VOLUMES	7	77	49	8	54	11	12	29	2	55	35	7	346
AM APPROACH %	5%	58%	37%	11%	74%	15%	28%	67%	5%	57%	36%	7%	
AM APP/DEPART	133	/	96	73	/	112	43	/	86	97	/	52	0
BEGIN PEAK HR	7:15 AM												
AM VOLUMES	1	39	31	6	23	6	5	10	0	24	19	2	167
AM APPROACH %	1%	54%	43%	17%	66%	17%	33%	67%	0%	53%	42%	4%	
AM PEAK HR FACTOR	0.818			0.875			0.625			0.662			0.870
AM APP/DEPART	72	/	46	35	/	48	15	/	47	45	/	26	0
4:00 PM	1	9	7	0	7	7	0	7	0	9	6	0	53
4:15 PM	0	6	7	0	3	1	1	4	0	6	10	0	38
4:30 PM	0	6	3	3	10	3	1	6	0	6	3	0	41
4:45 PM	0	5	7	0	9	1	4	4	1	3	3	1	38
5:00 PM	1	4	3	0	6	6	0	4	2	12	5	0	43
5:15 PM	0	7	1	0	7	0	2	3	0	6	4	1	31
5:30 PM	1	5	8	1	6	5	1	6	0	4	1	0	38
5:45 PM	0	12	1	0	5	3	0	4	1	12	6	1	45
PM VOLUMES	3	54	37	4	53	26	9	38	4	58	38	3	327
PM APPROACH %	3%	57%	39%	5%	64%	31%	18%	75%	8%	59%	38%	3%	
PM APP/DEPART	94	/	66	83	/	115	51	/	79	99	/	67	0
BEGIN PEAK HR	4:30 PM												
PM VOLUMES	1	22	14	3	32	10	7	17	3	27	15	2	153
PM APPROACH %	3%	59%	38%	7%	71%	22%	26%	63%	11%	61%	34%	5%	
PM PEAK HR FACTOR	0.771			0.703			0.750			0.647			0.890
PM APP/DEPART	37	/	31	45	/	62	27	/	34	44	/	26	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	1
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	1
0	2	0	1
0	2	0	0
0	1	0	0
0	3	0	0
0	0	0	0
0	4	0	0
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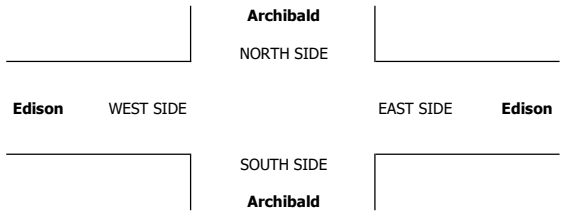
0	1	0	0
0	0	0	1
0	11	0	1
0	7	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	16
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	0	0	0	0	0	0	1	0	2
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
	APP/DEPART	1	/	1	0	/	0	0	/	0	1	/	1	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	1	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250
	APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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0	0	0	0
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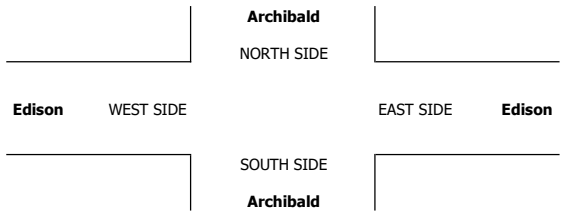
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Archibald	LOCATION #:	16
WEDNESDAY	EAST & WEST:	Edison	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Archibald			SOUTHBOUND Archibald			EASTBOUND Edison			WESTBOUND Edison			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	1	0	1	0	1	0	0	0	1	0	4
	7:15 AM	0	3	0	0	1	0	0	0	0	1	0	0	5
	7:30 AM	0	0	1	0	2	0	0	0	1	0	0	1	5
	7:45 AM	0	1	0	0	1	0	0	1	0	0	0	0	3
	8:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
	8:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	VOLUMES	0	6	2	1	5	0	1	1	1	1	1	2	21
	APPROACH %	0%	75%	25%	17%	83%	0%	33%	33%	33%	25%	25%	50%	
	APP/DEPART	8	/	9	6	/	7	3	/	4	4	/	1	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	4	1	1	4	0	0	1	1	1	0	1	14
	APPROACH %	0%	80%	20%	20%	80%	0%	0%	50%	50%	50%	0%	50%	
	PEAK HR FACTOR		0.417			0.625			0.500			0.500		0.700
	APP/DEPART	5	/	5	5	/	6	2	/	3	2	/	0	0
PM	4:00 PM	0	0	1	0	0	0	0	0	0	0	0	1	2
	4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	1	0	0	0	0	0	0	0	2	4
	APPROACH %	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	1	/	2	1	/	0	0	/	2	2	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	1	1
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250
	APP/DEPART	0	/	1	0	/	0	0	/	0	1	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1

Archibald

NORTH SIDE

Edison WEST SIDE EAST SIDE **Edison**

SOUTH SIDE

Archibald

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Turner	LOCATION #: 1
	EAST & WEST:	Riverside	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

	NORTHBOUND Turner			SOUTHBOUND Turner			EASTBOUND Riverside			WESTBOUND Riverside				U-TURNS					RTOR			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR 0	SRR 0	ERR 0	WRR 0
AM 7:00 AM	45	9	35	6	4	8	5	47	9	11	78	12	269	0	0	0	0	0	12	3	1	3
AM 7:15 AM	51	41	36	12	14	23	28	75	13	15	99	20	427	0	0	0	0	0	5	7	5	6
AM 7:30 AM	50	104	53	42	78	29	52	73	28	30	102	72	713	0	0	0	0	0	3	1	10	23
AM 7:45 AM	77	48	66	34	56	30	22	85	35	18	107	29	607	0	0	0	0	0	6	4	16	10
AM 8:00 AM	58	14	63	22	11	27	12	107	33	20	122	7	496	0	0	1	0	1	13	5	17	7
AM 8:15 AM	39	10	42	10	3	12	7	85	24	27	120	10	389	0	0	0	0	0	6	2	12	3
AM 8:30 AM	31	4	26	3	7	15	9	62	15	12	108	12	304	0	0	0	0	0	4	2	5	4
AM 8:45 AM	31	7	16	6	3	9	13	56	16	16	70	6	249	0	0	0	0	0	4	1	7	0
AM VOLUMES	382	237	337	135	176	153	148	590	173	149	806	168	3,454	0	0	1	0	1	53	25	73	56
AM APPROACH %	40%	25%	35%	29%	38%	33%	16%	65%	19%	13%	72%	15%										
AM APP/DEPART	956	/	552	464	/	498	911	/	1,062	1,123	/	1,342	0									
BEGIN PEAK HR		7:15 AM																				
VOLUMES	236	207	218	110	159	109	114	340	109	83	430	128	2,243						27	17	48	46
APPROACH %	36%	31%	33%	29%	42%	29%	20%	60%	19%	13%	67%	20%										
PEAK HR FACTOR		0.798			0.634			0.920			0.786		0.786									
APP/DEPART	661	/	448	378	/	351	563	/	668	641	/	776	0									
PM 4:00 PM	38	18	29	4	11	21	15	111	50	14	117	10	438	0	0	0	0	0	7	3	23	6
PM 4:15 PM	28	10	26	5	6	17	17	126	39	22	102	14	412	0	0	0	0	0	10	3	22	4
PM 4:30 PM	24	11	32	6	11	12	21	110	42	25	115	8	417	0	0	0	0	0	8	2	12	1
PM 4:45 PM	26	12	40	8	7	17	17	109	50	30	113	4	433	0	0	0	0	0	7	6	18	1
PM 5:00 PM	38	19	30	6	7	12	23	102	43	10	136	11	437	0	0	0	0	0	8	0	12	4
PM 5:15 PM	36	6	35	5	9	13	22	119	47	28	146	8	474	0	0	1	0	1	5	1	18	2
PM 5:30 PM	31	5	30	5	8	12	25	114	42	40	149	3	464	0	0	0	0	0	5	4	13	1
PM 5:45 PM	28	14	33	5	12	16	16	123	50	35	115	12	459	0	0	0	0	0	6	3	11	6
PM VOLUMES	249	95	255	44	71	120	156	914	363	204	993	70	3,534	0	0	1	0	1	56	22	129	25
PM APPROACH %	42%	16%	43%	19%	30%	51%	11%	64%	25%	16%	78%	6%										
PM APP/DEPART	599	/	320	235	/	638	1,433	/	1,213	1,267	/	1,363	0									
BEGIN PEAK HR		5:00 PM																				
VOLUMES	133	44	128	21	36	53	86	458	182	113	546	34	1,834						24	8	54	13
APPROACH %	44%	14%	42%	19%	33%	48%	12%	63%	25%	16%	79%	5%										
PEAK HR FACTOR		0.876			0.833			0.960			0.902		0.967									
APP/DEPART	305	/	163	110	/	331	726	/	607	693	/	733	0									

Turner

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

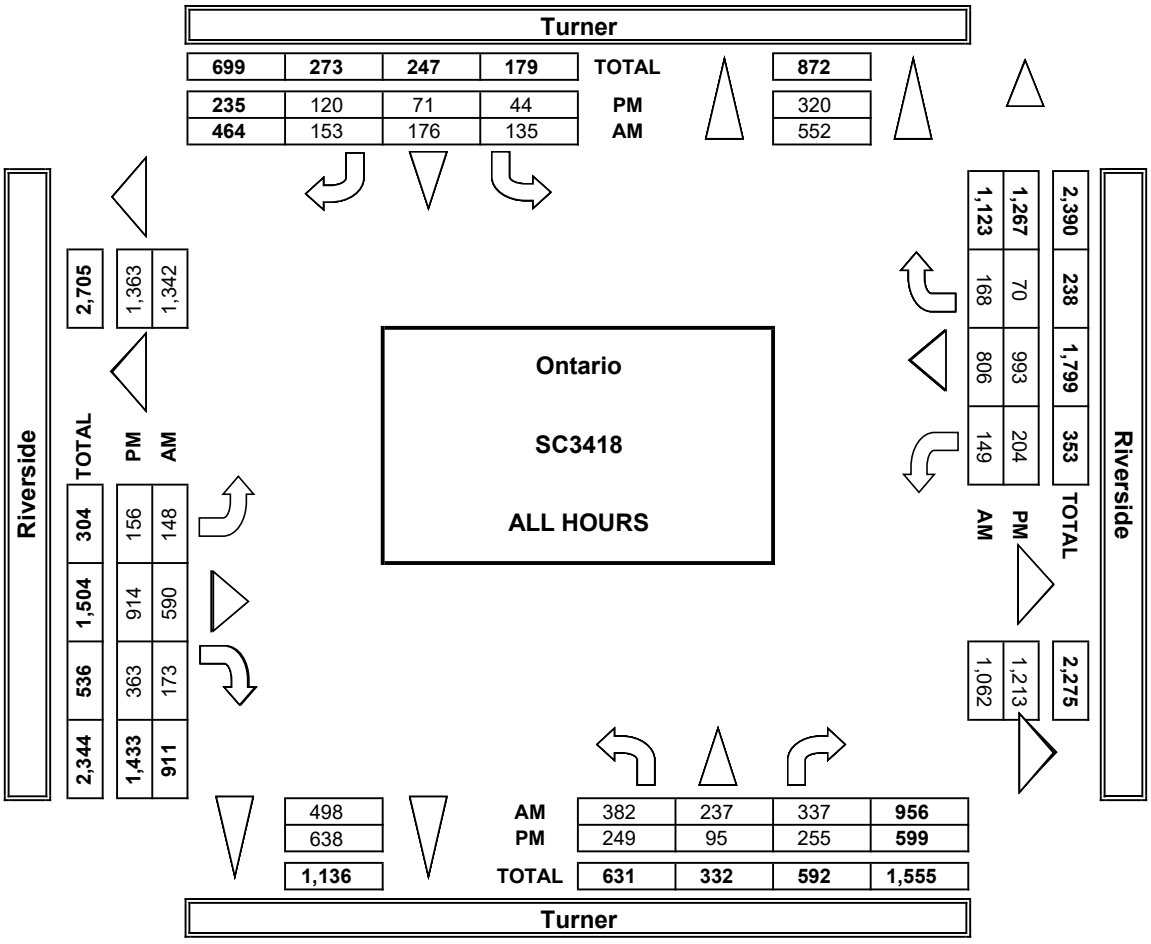
SOUTH SIDE

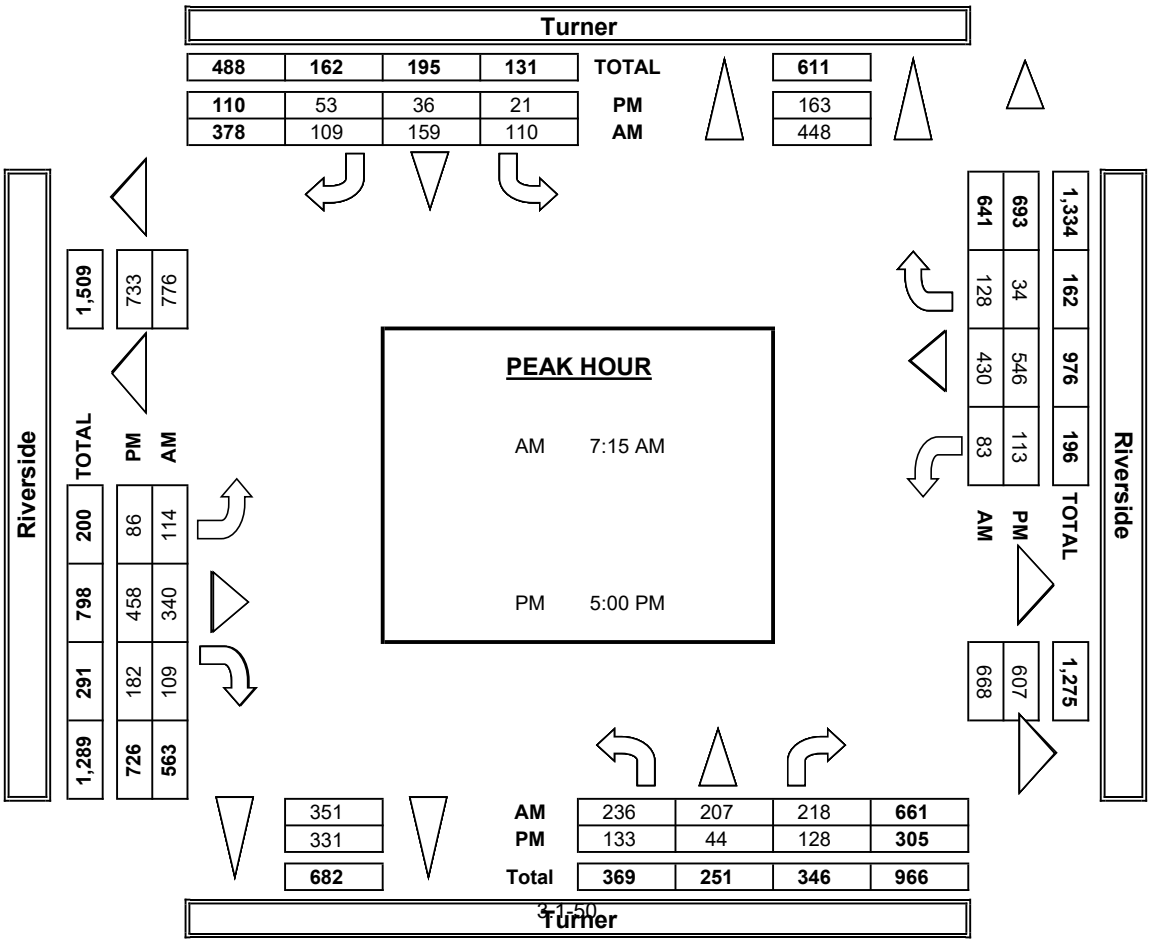
Turner

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM 7:00 AM	2	0	3	2	7	2	0	3	2	7	0	0	0	0	0
AM 7:15 AM	7	0	4	0	11	5	0	4	0	9	2	0	0	0	2
AM 7:30 AM	13	6	6	5	30	7	6	5	5	23	6	0	1	0	7
AM 7:45 AM	2	5	8	6	21	1	5	5	6	17	1	0	3	0	4
AM 8:00 AM	1	0	5	1	7	1	0	4	1	6	0	0	1	0	1
AM 8:15 AM	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1
AM 8:30 AM	2	0	1	3	6	2	0	1	1	4	0	0	0	2	2
AM 8:45 AM	2	0	4	1	7	1	0	3	1	5	1	0	1	0	2
AM TOTAL	29	11	31	20	91	19	11	25	17	72	10	0	6	3	19
PM 4:00 PM	1	8	4	7	20	1	8	4	7	20	0	0	0	0	0
PM 4:15 PM	2	3	2	4	11	2	3	2	3	10	0	0	0	1	1
PM 4:30 PM	2	0	1	1	4	2	0	0	0	2	0	0	1	1	2
PM 4:45 PM	2	1	0	1	4	2	1	0	1	4	0	0	0	0	0
PM 5:00 PM	1	1	8	1	11	1	0	8	0	9	0	1	0	1	2
PM 5:15 PM	0	1	1	1	3	0	0	0	0	0	0	1	1	1	3
PM 5:30 PM	2	1	3	1	7	2	0	1	0	3	0	1	2	1	4
PM 5:45 PM	2	2	3	3	10	2	1	1	2	6	0	1	2	1	4
TOTAL	12	17	22	19	70	12	13	16	13	54	0	4	6	6	16

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	1
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

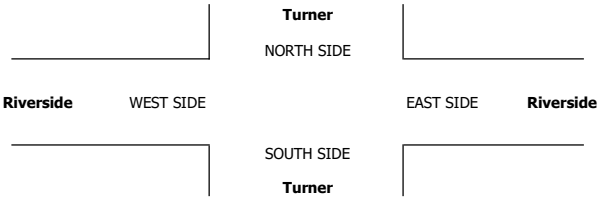
		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	43	9	35	6	4	8	5	45	9	11	73	11	259
	7:15 AM	51	39	36	12	14	22	26	70	13	14	90	20	407
	7:30 AM	47	103	52	41	75	28	49	70	27	30	92	70	684
	7:45 AM	77	48	65	33	56	30	19	82	32	17	102	29	590
	8:00 AM	58	14	61	21	11	26	12	97	32	19	110	6	467
	8:15 AM	37	10	42	10	3	12	6	80	22	27	116	10	375
	8:30 AM	30	3	25	3	6	15	5	59	13	12	103	11	285
	8:45 AM	31	6	16	5	3	7	12	50	15	16	61	6	228
	VOLUMES	374	232	332	131	172	148	134	553	163	146	747	163	3,295
	APPROACH %	40%	25%	35%	29%	38%	33%	16%	65%	19%	14%	71%	15%	
	APP/DEPART	938	/	528	451	/	481	850	/	1,016	1,056	/	1,270	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	233	204	214	107	156	106	105	319	104	80	394	125	2,148
	APPROACH %	36%	31%	33%	29%	42%	29%	20%	60%	20%	13%	66%	21%	
	PEAK HR FACTOR		0.806			0.641			0.906			0.780		0.785
	APP/DEPART	651	/	434	369	/	340	529	/	640	599	/	734	0
PM	4:00 PM	38	18	26	4	11	21	14	109	48	14	108	10	421
	4:15 PM	27	10	24	5	6	16	15	121	37	22	99	14	396
	4:30 PM	17	11	30	6	11	12	21	106	40	24	108	8	394
	4:45 PM	24	12	39	7	7	17	17	106	49	30	111	4	423
	5:00 PM	37	18	30	6	6	12	22	100	40	9	132	10	422
	5:15 PM	36	5	32	4	6	13	22	117	47	27	142	8	459
	5:30 PM	31	5	28	5	8	12	25	105	42	40	143	3	447
	5:45 PM	28	14	32	5	11	16	16	119	49	33	110	12	445
	VOLUMES	238	93	241	42	66	119	152	883	352	199	953	69	3,407
	APPROACH %	42%	16%	42%	19%	29%	52%	11%	64%	25%	16%	78%	6%	
	APP/DEPART	572	/	313	227	/	617	1,387	/	1,166	1,221	/	1,311	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	132	42	122	20	31	53	84	441	178	109	527	33	1,773
	APPROACH %	45%	14%	41%	19%	30%	51%	12%	63%	25%	16%	79%	5%	
	PEAK HR FACTOR		0.871			0.813			0.946			0.899		0.966
	APP/DEPART	296	/	159	104	/	318	704	/	583	669	/	713	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
12	3	1	3
5	7	5	6
3	1	10	22
6	4	15	10
13	5	17	6
6	2	11	3
4	2	5	4
4	1	6	0
53	25	70	54
27	17	47	44
7	3	23	6
9	3	22	4
8	2	12	1
7	6	18	1
8	0	10	3
5	1	18	2
5	4	13	1
6	3	11	6
55	22	127	24
24	8	52	12



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	1
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	2	0	0	0	0	0	0	1	0	0	3	1	7
	7:15 AM	0	0	0	0	0	1	0	4	0	1	7	0	13
	7:30 AM	1	1	0	0	1	0	1	1	0	0	5	2	12
	7:45 AM	0	0	0	0	0	0	1	2	3	1	3	0	10
	8:00 AM	0	0	2	1	0	0	0	8	1	1	9	0	22
	8:15 AM	2	0	0	0	0	0	1	4	1	0	3	0	11
	8:30 AM	1	1	0	0	1	0	3	2	2	0	5	1	16
	8:45 AM	0	1	0	0	0	2	0	3	1	0	7	0	14
	VOLUMES	6	3	2	1	2	3	6	25	8	3	42	4	105
	APPROACH %	55%	27%	18%	17%	33%	50%	15%	64%	21%	6%	86%	8%	
	APP/DEPART	11	/	13	6	/	13	39	/	28	49	/	51	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	1	1	2	1	1	1	2	15	4	3	24	2	57
	APPROACH %	25%	25%	50%	33%	33%	33%	10%	71%	19%	10%	83%	7%	
	PEAK HR FACTOR		0.500			0.750			0.583			0.725		0.648
	APP/DEPART	4	/	5	3	/	8	21	/	18	29	/	26	0
PM	4:00 PM	0	0	3	0	0	0	0	1	2	0	6	0	12
	4:15 PM	1	0	2	0	0	1	1	5	1	0	1	0	12
	4:30 PM	6	0	2	0	0	0	0	1	2	1	5	0	17
	4:45 PM	2	0	1	1	0	0	0	2	1	0	0	0	7
	5:00 PM	1	1	0	0	1	0	1	1	2	1	2	1	11
	5:15 PM	0	1	3	0	1	0	0	2	0	1	4	0	12
	5:30 PM	0	0	2	0	0	0	0	9	0	0	5	0	16
	5:45 PM	0	0	1	0	1	0	0	4	1	2	2	0	11
	VOLUMES	10	2	14	1	3	1	2	25	9	5	25	1	98
	APPROACH %	38%	8%	54%	20%	60%	20%	6%	69%	25%	16%	81%	3%	
	APP/DEPART	26	/	5	5	/	17	36	/	40	31	/	36	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	1	2	6	0	3	0	1	16	3	4	13	1	50
	APPROACH %	11%	22%	67%	0%	100%	0%	5%	80%	15%	22%	72%	6%	
	PEAK HR FACTOR		0.563			0.750			0.556			0.900		0.781
	APP/DEPART	9	/	4	3	/	10	20	/	22	18	/	14	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	1
0	0	1	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	1	0
0	0	3	1
0	0	1	1
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	1	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	1	1
0	0	1	1

Turner

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Turner

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	1
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
	7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	2
	VOLUMES	0	0	1	0	1	0	1	2	0	0	3	0	8
	APPROACH %	0%	0%	100%	0%	100%	0%	33%	67%	0%	0%	100%	0%	
	APP/DEPART	1	/	1	1	/	1	3	/	3	3	/	3	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	1	0	0	0	0	0	2	0	3
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.000			0.500		0.375
	APP/DEPART	0	/	0	1	/	1	0	/	0	2	/	2	0
PM	4:00 PM	0	0	0	0	0	0	1	1	0	0	3	0	5
	4:15 PM	0	0	0	0	0	0	0	0	1	0	1	0	2
	4:30 PM	1	0	0	0	0	0	0	0	0	0	1	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
	5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	VOLUMES	1	0	0	0	2	0	1	1	1	0	10	0	16
	APPROACH %	100%	0%	0%	0%	100%	0%	33%	33%	33%	0%	100%	0%	
	APP/DEPART	1	/	1	2	/	3	3	/	1	10	/	11	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	2	0	0	0	0	0	3	0	5
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.000			0.750		0.625
	APP/DEPART	0	/	0	2	/	2	0	/	0	3	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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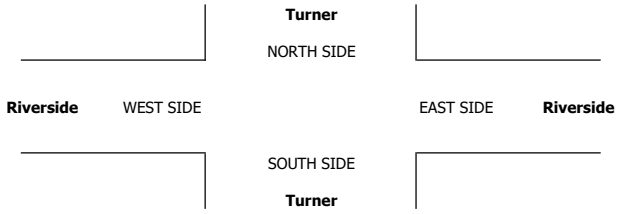

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	1
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	7:30 AM	0	0	0	0	0	0	1	1	1	0	3	0	6
	7:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
	8:00 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
	8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
	VOLUMES	0	0	0	0	0	0	2	4	1	0	9	0	16
	APPROACH %	0%	0%	0%	0%	0%	0%	29%	57%	14%	0%	100%	0%	
	APP/DEPART	0	/	2	0	/	1	7	/	4	9	/	9	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	2	4	1	0	6	0	13
	APPROACH %	0%	0%	0%	0%	0%	0%	29%	57%	14%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.583			0.500		0.542
	APP/DEPART	0	/	2	0	/	1	7	/	4	6	/	6	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:30 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	1	1	0	1	0	3
	5:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	VOLUMES	0	0	0	1	0	0	0	5	1	0	5	0	12
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	83%	17%	0%	100%	0%	
	APP/DEPART	0	/	0	1	/	1	6	/	6	5	/	5	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	1	0	0	0	1	1	0	3	0	6
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	50%	50%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.250			0.375		0.500
	APP/DEPART	0	/	0	1	/	1	2	/	2	3	/	3	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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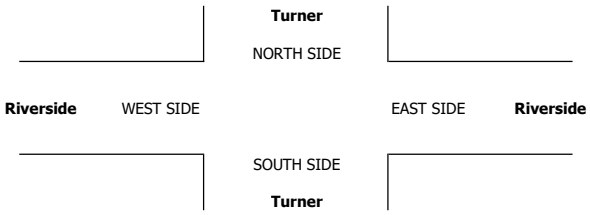

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	1
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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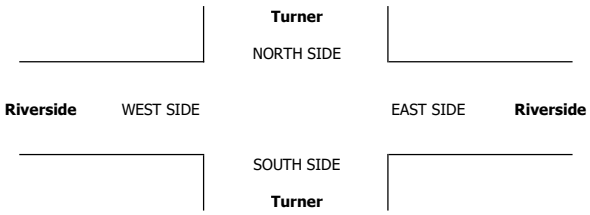

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	1
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	7:15 AM	0	2	0	0	0	0	2	0	0	0	1	0	5
	7:30 AM	2	0	1	1	1	1	1	1	0	0	1	0	9
	7:45 AM	0	0	1	1	0	0	1	1	0	0	1	0	5
	8:00 AM	0	0	0	0	0	1	0	0	0	0	1	1	3
	8:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
	8:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	2
	8:45 AM	0	0	0	1	0	0	0	2	0	0	0	0	3
	VOLUMES	2	2	2	3	1	2	5	6	1	0	5	1	30
	APPROACH %	33%	33%	33%	50%	17%	33%	42%	50%	8%	0%	83%	17%	
	APP/DEPART	6	/	8	6	/	2	12	/	11	6	/	9	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	2	2	2	2	1	2	4	2	0	0	4	1	22
	APPROACH %	33%	33%	33%	40%	20%	40%	67%	33%	0%	0%	80%	20%	
	PEAK HR FACTOR		0.500			0.417			0.750			0.625		0.611
	APP/DEPART	6	/	7	5	/	1	6	/	6	5	/	8	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	1	0	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	1	0	/	0	1	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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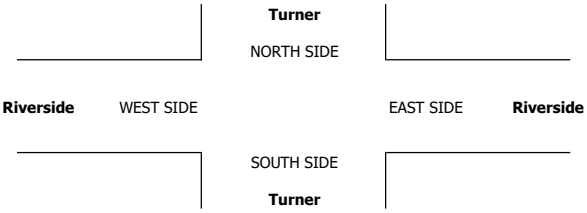
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Turner	LOCATION #: 2
	EAST & WEST:	Chino	CONTROL: STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Turner			SOUTHBOUND Turner			EASTBOUND Chino			WESTBOUND Chino			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	13	44	1	4	10	4	10	7	4	0	14	7	118
	7:15 AM	21	81	4	8	18	11	16	9	11	4	21	14	218
	7:30 AM	48	128	2	10	47	33	30	9	15	2	33	28	385
	7:45 AM	50	125	3	8	68	21	32	19	45	2	30	21	424
	8:00 AM	10	62	6	7	49	8	18	21	25	3	12	12	233
	8:15 AM	5	38	2	3	28	9	12	6	8	4	14	9	138
	8:30 AM	9	33	3	6	20	6	4	4	5	4	16	6	116
	8:45 AM	4	25	0	0	17	7	4	8	0	2	9	7	83
	VOLUMES	160	536	21	46	257	99	126	83	113	21	149	104	1,715
	APPROACH %	22%	75%	3%	11%	64%	25%	39%	26%	35%	8%	54%	38%	
	APP/DEPART	717	/ 766		402	/ 391		322	/ 150		274	/ 408		0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	129	396	15	33	182	73	96	58	96	11	96	75	1,260
	APPROACH %	24%	73%	3%	11%	63%	25%	38%	23%	38%	6%	53%	41%	
	PEAK HR FACTOR		0.758			0.742			0.651			0.722		0.743
	APP/DEPART	540	/ 567		288	/ 289		250	/ 106		182	/ 298		0
PM	4:00 PM	4	27	1	7	35	7	23	16	7	0	16	10	153
	4:15 PM	5	28	2	3	36	4	22	9	6	6	19	7	147
	4:30 PM	3	30	4	4	48	9	19	14	7	0	16	6	160
	4:45 PM	5	23	1	9	40	15	33	25	12	3	14	10	190
	5:00 PM	5	38	2	3	29	12	34	20	15	5	12	8	183
	5:15 PM	7	24	3	3	43	10	24	16	8	2	14	8	162
	5:30 PM	2	29	1	3	55	10	15	21	13	1	9	4	163
	5:45 PM	4	28	2	4	57	9	19	32	17	3	6	9	190
	VOLUMES	35	227	16	36	343	76	189	153	85	20	106	62	1,348
	APPROACH %	13%	82%	6%	8%	75%	17%	44%	36%	20%	11%	56%	33%	
	APP/DEPART	278	/ 478		455	/ 448		427	/ 205		188	/ 217		0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	18	119	8	13	184	41	92	89	53	11	41	29	698
	APPROACH %	12%	82%	6%	5%	77%	17%	39%	38%	23%	14%	51%	36%	
	PEAK HR FACTOR		0.806			0.850			0.836			0.750		0.918
	APP/DEPART	145	/ 240		238	/ 248		234	/ 110		81	/ 100		0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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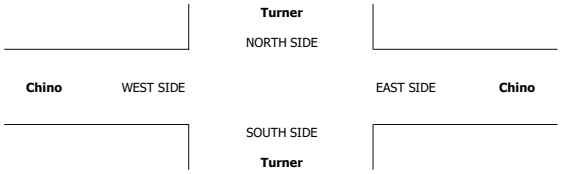
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



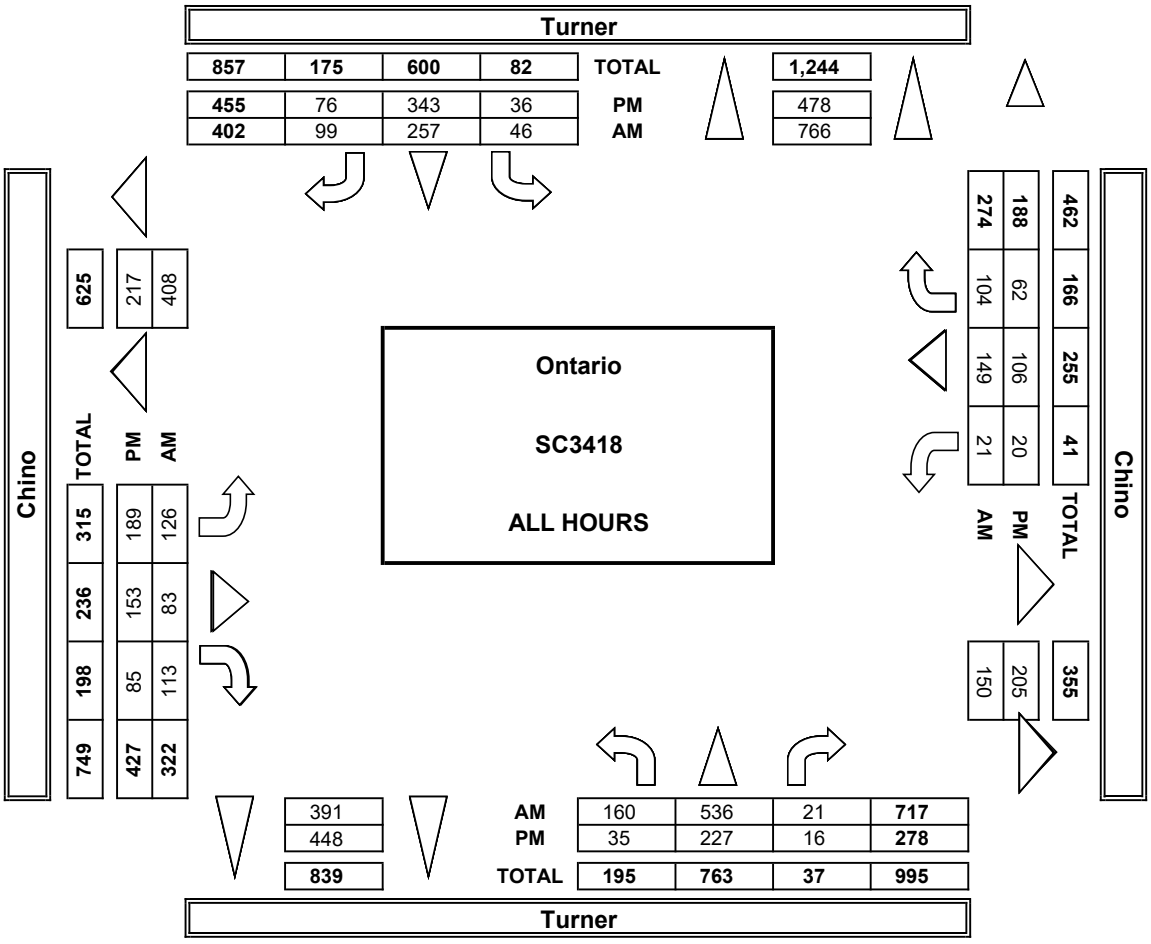
		ALL PED AND BIKE				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM	7:00 AM	0	0	0	0	0
	7:15 AM	6	1	0	2	9
	7:30 AM	3	1	3	3	10
	7:45 AM	3	1	3	2	9
	8:00 AM	2	0	0	0	2
	8:15 AM	2	0	0	0	2
	8:30 AM	1	0	0	0	1
	8:45 AM	2	1	2	1	6
	TOTAL	19	4	8	8	39
PM	4:00 PM	2	3	0	0	5
	4:15 PM	2	0	0	0	2
	4:30 PM	2	1	1	0	4
	4:45 PM	5	0	0	0	5
	5:00 PM	3	0	0	0	3
	5:15 PM	4	0	0	0	4
	5:30 PM	4	0	0	0	4
	5:45 PM	3	1	0	0	4
	TOTAL	25	5	1	0	31

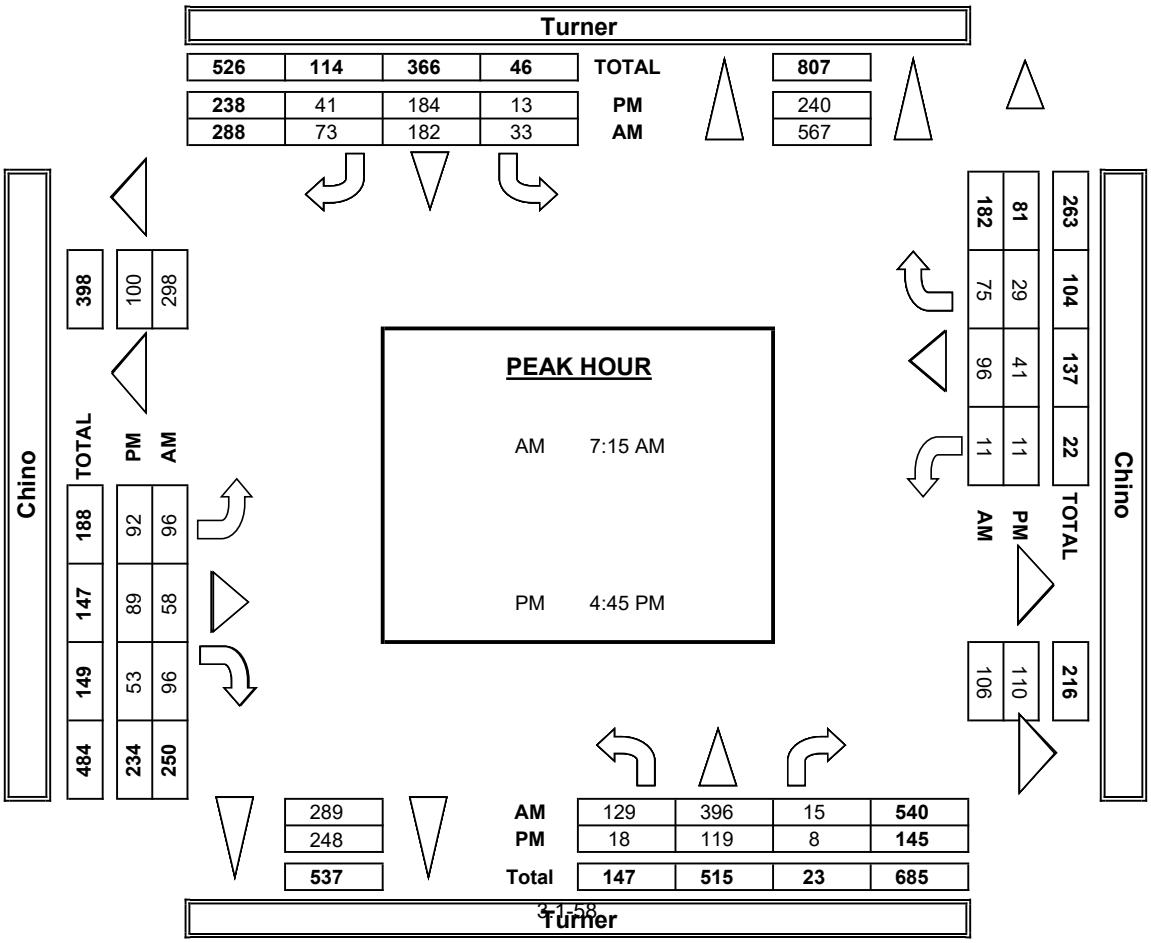
		PEDESTRIAN CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
AM	7:00 AM	0	0	0	0	0
	7:15 AM	2	0	0	1	3
	7:30 AM	0	1	3	3	7
	7:45 AM	2	1	3	1	7
	8:00 AM	1	0	0	0	1
	8:15 AM	1	0	0	0	1
	8:30 AM	0	0	0	0	0
	8:45 AM	2	0	2	0	4
	TOTAL	8	2	8	5	23
PM	4:00 PM	2	3	0	0	5
	4:15 PM	2	0	0	0	2
	4:30 PM	2	1	1	0	4
	4:45 PM	5	0	0	0	5
	5:00 PM	3	0	0	0	3
	5:15 PM	4	0	0	0	4
	5:30 PM	3	0	0	0	3
	5:45 PM	2	1	0	0	3
	TOTAL	23	5	1	0	29

		BICYCLE CROSSINGS				
		ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0
	7:15 AM	4	1	0	1	6
	7:30 AM	3	0	0	0	3
	7:45 AM	1	0	0	1	2
	8:00 AM	1	0	0	0	1
	8:15 AM	1	0	0	0	1
	8:30 AM	1	0	0	0	1
	8:45 AM	0	1	0	1	2
	TOTAL	11	2	0	3	16
PM	4:00 PM	0	0	0	0	0
	4:15 PM	0	0	0	0	0
	4:30 PM	0	0	0	0	0
	4:45 PM	0	0	0	0	0
	5:00 PM	0	0	0	0	0
	5:15 PM	0	0	0	0	0
	5:30 PM	1	0	0	0	1
	5:45 PM	1	0	0	0	1
	TOTAL	2	0	0	0	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	2
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP ALL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	13	43	1	4	10	4	10	5	3	0	12	7	112
	7:15 AM	21	80	4	7	17	11	15	9	9	4	20	13	210
	7:30 AM	48	126	2	10	44	33	28	9	15	2	32	28	377
	7:45 AM	50	124	2	7	67	21	32	17	45	2	28	21	416
	8:00 AM	10	62	6	7	49	6	18	21	25	3	11	12	230
	8:15 AM	5	38	2	3	27	9	12	4	8	4	12	8	132
	8:30 AM	9	32	3	6	19	6	4	4	5	4	14	6	112
	8:45 AM	3	25	0	0	15	7	4	6	0	1	8	6	75
	VOLUMES	159	530	20	44	248	97	123	75	110	20	137	101	1,664
	APPROACH %	22%	75%	3%	11%	64%	25%	40%	24%	36%	8%	53%	39%	
	APP/DEPART	709	/	754	389	/	378	308	/	139	258	/	393	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	129	392	14	31	177	71	93	56	94	11	91	74	1,233
	APPROACH %	24%	73%	3%	11%	63%	25%	38%	23%	39%	6%	52%	42%	
	PEAK HR FACTOR		0.760			0.734			0.646			0.710		0.741
	APP/DEPART	535	/	559	279	/	282	243	/	101	176	/	291	0
PM	4:00 PM	4	24	1	7	35	7	21	14	7	0	16	10	146
	4:15 PM	5	25	2	3	34	4	22	7	5	6	18	6	137
	4:30 PM	3	26	4	4	47	9	18	14	7	0	14	6	152
	4:45 PM	4	22	1	9	40	15	32	24	12	3	11	10	183
	5:00 PM	5	38	2	3	28	11	33	18	14	5	11	7	175
	5:15 PM	7	24	3	3	42	9	23	16	8	1	12	7	155
	5:30 PM	2	28	1	3	55	10	15	21	13	1	7	4	160
	5:45 PM	4	28	1	4	56	8	19	29	16	2	6	9	182
	VOLUMES	34	215	15	36	337	73	183	143	82	18	95	59	1,290
	APPROACH %	13%	81%	6%	8%	76%	16%	45%	35%	20%	10%	55%	34%	
	APP/DEPART	264	/	457	446	/	437	408	/	194	172	/	202	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	18	112	7	18	165	45	103	79	47	10	41	28	673
	APPROACH %	13%	82%	5%	8%	72%	20%	45%	34%	21%	13%	52%	35%	
	PEAK HR FACTOR		0.761			0.838			0.842			0.823		0.919
	APP/DEPART	137	/	243	228	/	222	229	/	104	79	/	104	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
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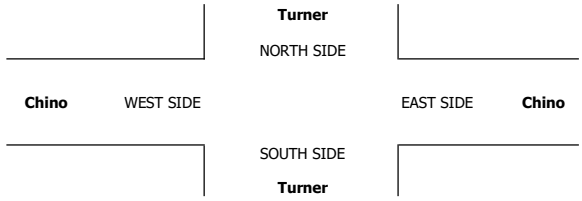
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	2
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP ALL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	0	0	0	0	1	0	1	0	3
	7:15 AM	0	0	0	1	1	0	0	0	1	0	0	1	4
	7:30 AM	0	0	0	0	1	0	2	0	0	0	0	0	3
	7:45 AM	0	0	1	1	1	0	0	1	0	0	1	0	5
	8:00 AM	0	0	0	0	0	2	0	0	0	0	1	0	3
	8:15 AM	0	0	0	0	0	0	0	1	0	0	1	1	3
	8:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
	8:45 AM	0	0	0	0	2	0	0	2	0	1	0	1	6
	VOLUMES	0	1	1	2	6	2	2	4	2	1	5	3	29
	APPROACH %	0%	50%	50%	20%	60%	20%	25%	50%	25%	11%	56%	33%	
	APP/DEPART	2	/	6	10	/	9	8	/	7	9	/	7	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	1	2	3	2	2	1	1	0	2	1	15
	APPROACH %	0%	0%	100%	29%	43%	29%	50%	25%	25%	0%	67%	33%	
	PEAK HR FACTOR		0.250			0.875			0.500			0.750		0.750
	APP/DEPART	1	/	3	7	/	4	4	/	4	3	/	4	0
PM	4:00 PM	0	3	0	0	0	0	2	2	0	0	0	0	7
	4:15 PM	0	3	0	0	2	0	0	2	1	0	1	1	10
	4:30 PM	0	3	0	0	1	0	1	0	0	0	2	0	7
	4:45 PM	0	1	0	0	0	0	1	1	0	0	2	0	5
	5:00 PM	0	0	0	0	1	1	1	2	1	0	0	1	7
	5:15 PM	0	0	0	0	0	0	1	0	0	1	2	1	5
	5:30 PM	0	1	0	0	0	0	0	0	0	0	2	0	3
	5:45 PM	0	0	1	0	1	1	0	3	1	1	0	0	8
	VOLUMES	0	11	1	0	5	2	6	10	3	2	9	3	52
	APPROACH %	0%	92%	8%	0%	71%	29%	32%	53%	16%	14%	64%	21%	
	APP/DEPART	12	/	20	7	/	10	19	/	11	14	/	11	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	2	0	0	1	1	3	3	1	1	6	2	20
	APPROACH %	0%	100%	0%	0%	50%	50%	43%	43%	14%	11%	67%	22%	
	PEAK HR FACTOR		0.500			0.250			0.438			0.563		0.714
	APP/DEPART	2	/	7	2	/	3	7	/	3	9	/	7	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

RTOR			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Turner

NORTH SIDE

Chino WEST SIDE EAST SIDE **Chino**

SOUTH SIDE

Turner

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	2
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP ALL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:30 AM	0	1	0	0	0	0	0	0	0	0	1	0	2
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	2	0	0	2	0	0	2	0	7
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	1	/ 1		2	/ 2		2	/ 2		2	/ 2		0
	BEGIN PEAK HR	7:15 AM												
	VOLUMES	0	0	0	0	2	0	0	0	0	0	0	0	2
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR	0.000			0.250			0.000			0.000			0.250
	APP/DEPART	0	/ 0		2	/ 2		0	/ 0		0	/ 0		0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	1	1	0	0	0	0	0	0	2
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	1	1	0	0	0	0	0	0	3
	APPROACH %	0%	100%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	1	/ 1		2	/ 1		0	/ 0		0	/ 1		0
	BEGIN PEAK HR	4:45 PM												
	VOLUMES	0	0	0	0	1	1	0	0	0	0	0	0	2
	APPROACH %	0%	0%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR	0.000			0.250			0.000			0.000			0.250
	APP/DEPART	0	/ 0		2	/ 1		0	/ 0		0	/ 1		0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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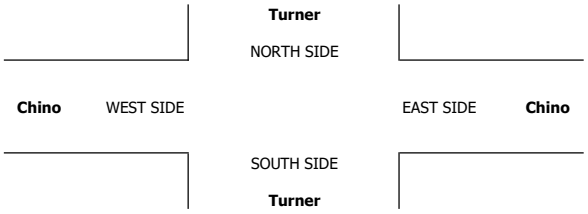
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	2
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP ALL

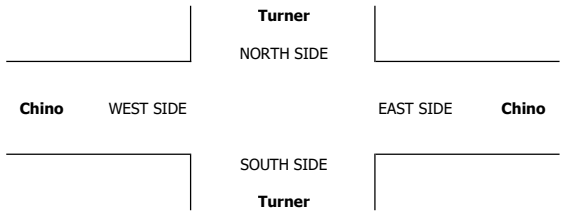
CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	VOLUMES	0	0	0	0	0	0	0	2	0	0	5	0	7
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	2	/	2	5	/	5	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	1	0	0	3	0	4
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.250			0.750		0.500
	APP/DEPART	0	/	0	0	/	0	1	/	1	3	/	3	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	2
	5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	0	0	0	0	0	0	0	2	0	3
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
	APP/DEPART	1	/	0	0	/	0	0	/	0	2	/	3	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	1	0	0	0	0	0	0	0	0	0	2	0	3
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.250			0.000			0.000			0.500		0.375
	APP/DEPART	1	/	0	0	/	0	0	/	0	2	/	3	0

U-TURNS					RTOR			
NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
					0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
					0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	2
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP ALL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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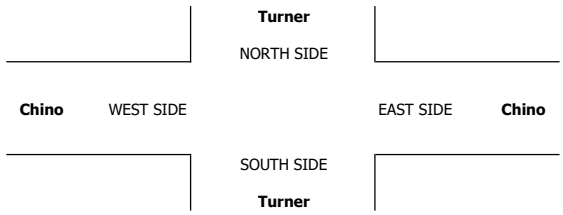
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	2
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP ALL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

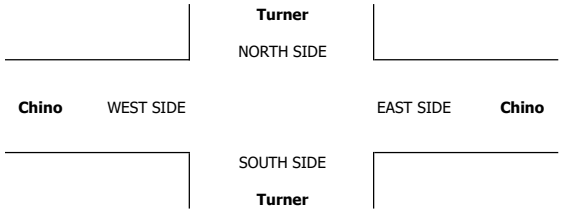
		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	1	0	0	0	0	1	0	1	0	0	0	3
	7:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
	7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	1	4	0	0	1	0	1	0	1	0	0	0	8
	APPROACH %	20%	80%	0%	0%	100%	0%	50%	0%	50%	0%	0%	0%	
	APP/DEPART	5	/	5	1	/	2	2	/	0	0	/	1	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	4	0	0	0	0	1	0	1	0	0	0	6
	APPROACH %	0%	100%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.000			0.250			0.000		0.500
	APP/DEPART	4	/	5	0	/	1	2	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Turner	LOCATION #: 4
	EAST & WEST:	Ontario Ranch	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

	NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)				U-TURNS					RTOR			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR 0	SRR 0	ERR 0	WRR 0
AM 7:00 AM	9	6	12	7	1	2	1	61	4	3	139	5	250	0	0	1	0	1	5	1	2	2
7:15 AM	12	26	7	8	3	4	7	75	3	3	142	6	296	0	0	0	0	0	0	2	2	4
7:30 AM	6	43	11	7	15	5	11	82	1	3	134	8	326	0	0	1	1	2	1	2	0	1
7:45 AM	8	46	8	18	14	8	6	80	7	20	139	7	361	0	0	1	0	1	3	4	2	1
8:00 AM	7	13	8	18	31	2	7	94	4	5	123	3	315	0	0	1	2	3	1	2	0	1
8:15 AM	11	4	4	6	6	5	5	101	7	9	103	5	266	0	0	0	0	0	1	0	4	0
8:30 AM	14	4	10	5	5	0	2	71	5	7	102	6	231	0	0	0	0	0	6	0	0	2
8:45 AM	8	2	7	8	3	1	1	87	5	6	129	4	261	0	0	0	1	1	5	0	0	0
VOLUMES	75	144	67	77	78	27	40	651	36	56	1,011	44	2,306	0	0	4	4	8	22	11	10	11
APPROACH %	26%	50%	23%	42%	43%	15%	6%	90%	5%	5%	91%	4%										
APP/DEPART	286	/	224	182	/	166	727	/	799	1,111	/	1,117	0									
BEGIN PEAK HR		7:15 AM																				
VOLUMES	33	128	34	51	63	19	31	331	15	31	538	24	1,298						5	10	4	7
APPROACH %	17%	66%	17%	38%	47%	14%	8%	88%	4%	5%	91%	4%										
PEAK HR FACTOR		0.786			0.652			0.898			0.893		0.899									
APP/DEPART	195	/	180	133	/	106	377	/	419	593	/	593	0									
PM 4:00 PM	8	4	8	13	6	3	4	175	10	9	92	8	340	0	0	1	1	2	5	1	2	2
4:15 PM	3	7	5	9	6	3	4	170	10	8	118	5	348	0	0	0	0	0	2	2	3	1
4:30 PM	3	4	9	6	4	2	3	156	11	4	95	8	305	0	0	1	1	2	7	1	1	1
4:45 PM	3	1	4	10	6	2	2	216	6	9	114	6	379	0	0	0	1	1	3	0	0	2
5:00 PM	3	3	10	11	4	1	6	188	10	17	121	9	383	0	0	0	1	1	3	1	0	1
5:15 PM	5	2	6	8	9	4	4	228	16	14	121	2	419	0	0	0	0	0	3	1	4	0
5:30 PM	5	5	7	12	6	1	4	177	11	14	120	7	369	0	0	0	1	1	2	0	1	0
5:45 PM	11	4	7	15	1	3	3	184	13	7	122	6	376	0	0	0	1	1	2	1	1	1
VOLUMES	41	30	56	84	42	19	30	1,494	87	82	903	51	2,919	0	0	2	6	8	27	7	12	8
APPROACH %	32%	24%	44%	58%	29%	13%	2%	93%	5%	8%	87%	5%										
APP/DEPART	127	/	109	145	/	205	1,611	/	1,640	1,036	/	965	0									
BEGIN PEAK HR		4:45 PM																				
VOLUMES	16	11	27	41	25	8	16	809	43	54	476	24	1,550						11	2	5	3
APPROACH %	30%	20%	50%	55%	34%	11%	2%	93%	5%	10%	86%	4%										
PEAK HR FACTOR		0.794			0.881			0.875			0.942		0.925									
APP/DEPART	54	/	51	74	/	119	868	/	880	554	/	500	0									

Turner

NORTH SIDE

Ontario Ranch WEST SIDE EAST SIDE **Ontario Ranch**

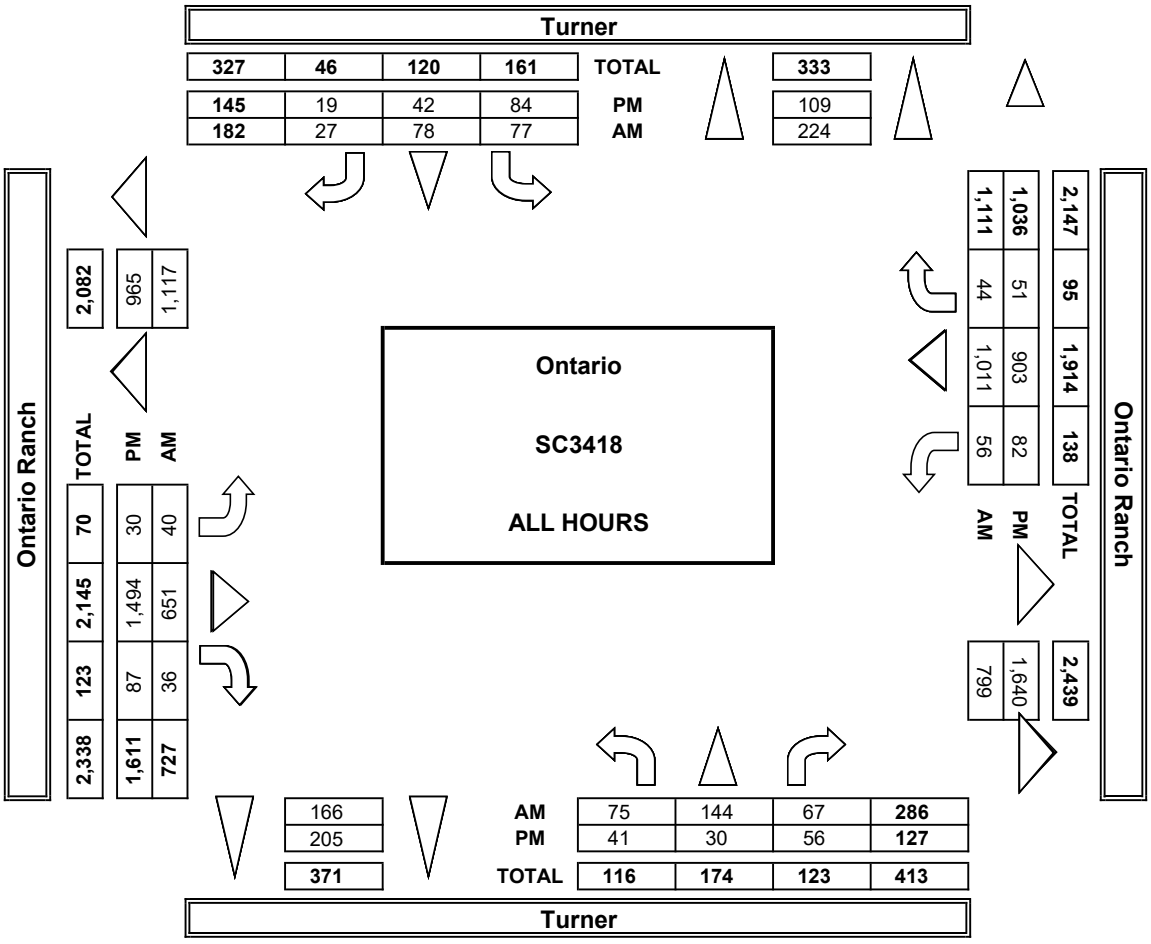
SOUTH SIDE

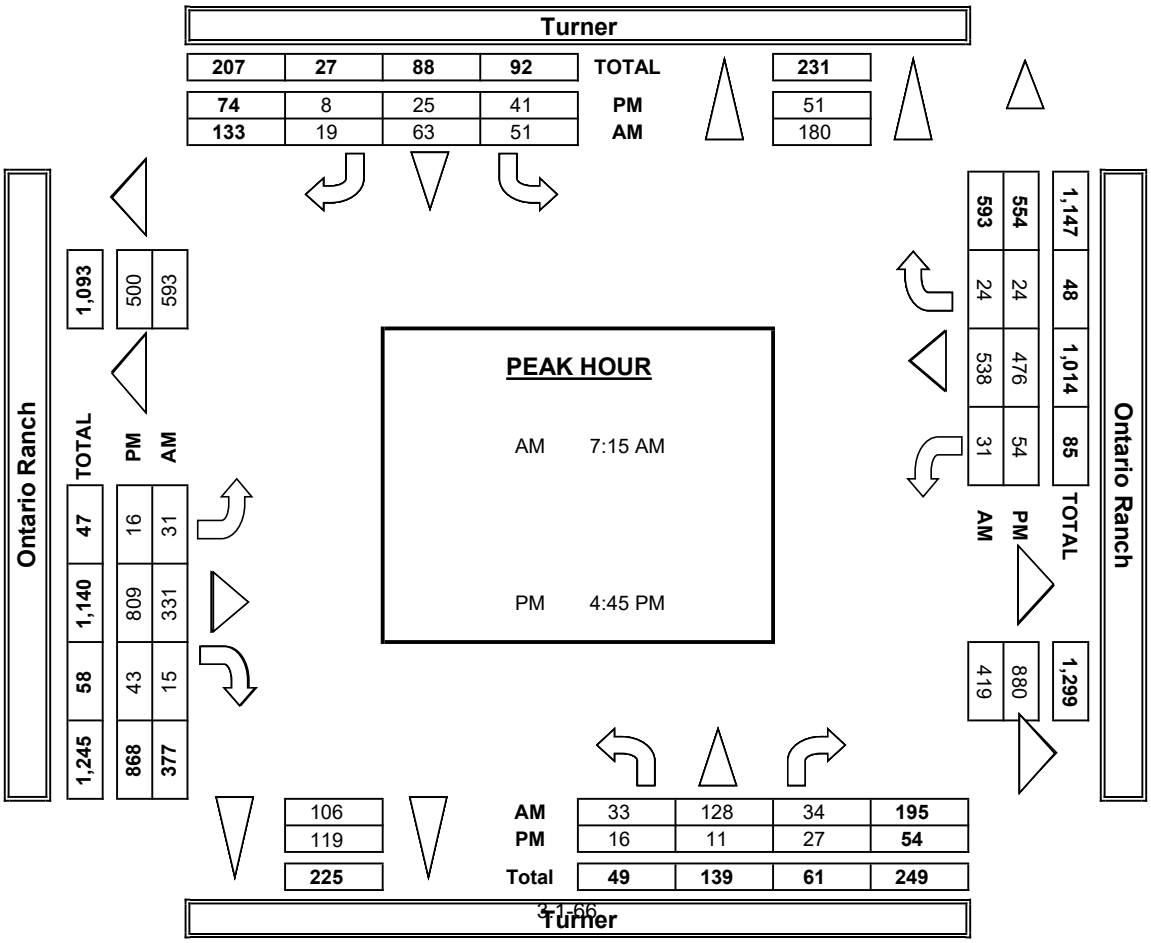
Turner

	ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	5	0	0	0	5	1	0	0	0	1	4	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	1	2	0	0	0	1	1	1	0	0	0	1
8:30 AM	3	0	0	1	4	3	0	0	1	4	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	9	0	0	2	11	4	0	0	2	6	5	0	0	0	5
PM 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
4:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
4:45 PM	1	0	0	1	2	1	0	0	0	1	0	0	0	1	1
5:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3	0	1	3	7	2	0	1	2	5	1	0	0	1	2

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	4
TUESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

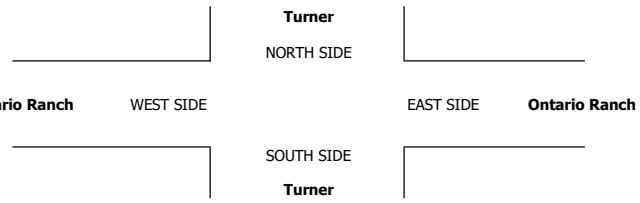
		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	9	6	12	7	1	2	0	47	3	2	113	5	207
	7:15 AM	10	23	7	7	3	4	6	50	3	2	124	6	245
	7:30 AM	5	42	11	6	14	5	10	58	1	2	103	8	265
	7:45 AM	8	46	8	17	14	8	5	59	7	9	104	7	292
	8:00 AM	6	13	8	18	31	2	5	65	4	4	97	3	256
	8:15 AM	11	4	4	6	5	5	5	71	7	9	87	5	219
	8:30 AM	14	4	9	5	4	0	2	54	5	6	71	4	178
	8:45 AM	7	2	7	7	3	1	1	63	5	6	85	4	191
	VOLUMES	70	140	66	73	75	27	34	467	35	40	784	42	1,853
	APPROACH %	25%	51%	24%	42%	43%	15%	6%	87%	7%	5%	91%	5%	
	APP/DEPART	276	/	216	175	/	146	536	/	610	866	/	881	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	29	124	34	48	62	19	26	232	15	14	428	24	1,058
	APPROACH %	16%	66%	18%	37%	48%	15%	10%	85%	5%	3%	91%	5%	
	PEAK HR FACTOR		0.754			0.632			0.922			0.888		0.906
	APP/DEPART	187	/	174	129	/	91	273	/	317	469	/	476	0
PM	4:00 PM	7	4	8	12	6	3	3	153	9	9	76	8	298
	4:15 PM	3	7	5	9	6	3	4	144	10	8	93	5	297
	4:30 PM	3	4	8	6	3	2	2	133	11	4	75	8	259
	4:45 PM	3	1	4	10	6	2	2	193	5	9	87	6	328
	5:00 PM	3	3	10	11	3	1	6	163	10	17	93	9	329
	5:15 PM	5	2	6	8	9	3	4	205	16	14	100	2	374
	5:30 PM	5	5	7	12	5	1	4	149	11	12	103	6	320
	5:45 PM	11	4	7	15	1	3	3	173	12	7	105	5	346
	VOLUMES	40	30	55	83	39	18	28	1,313	84	80	732	49	2,551
	APPROACH %	32%	24%	44%	59%	28%	13%	2%	92%	6%	9%	85%	6%	
	APP/DEPART	125	/	107	140	/	198	1,425	/	1,456	861	/	790	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	16	11	27	41	23	7	16	710	42	50	383	23	1,351
	APPROACH %	30%	20%	50%	58%	32%	10%	2%	92%	5%	11%	84%	5%	
	PEAK HR FACTOR		0.794			0.888			0.853			0.946		0.903
	APP/DEPART	54	/	50	71	/	115	768	/	780	458	/	406	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	4	4
0	0	0	1	1
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	5	5

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
5	1	2	2
0	2	2	4
1	2	0	1
3	4	2	1
1	2	0	1
1	0	4	0
5	0	0	1
5	0	0	0
21	11	10	10
5	10	4	7
5	1	1	2
2	2	3	1
6	1	1	1
3	0	0	2
3	1	0	1
3	0	4	0
2	0	1	0
2	1	0	1
26	6	10	8
11	1	5	3



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	4
TUESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

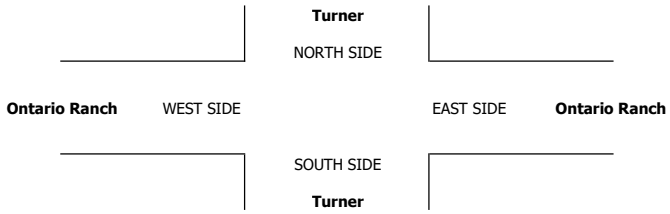
		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	1	4	0	0	7	0	12
	7:15 AM	0	1	0	1	0	0	0	6	0	0	1	0	9
	7:30 AM	1	1	0	0	1	0	0	7	0	1	11	0	22
	7:45 AM	0	0	0	1	0	0	0	4	0	1	9	0	15
	8:00 AM	0	0	0	0	0	0	1	4	0	0	12	0	17
	8:15 AM	0	0	0	0	0	0	0	4	0	0	2	0	6
	8:30 AM	0	0	0	0	1	0	0	6	0	0	12	1	20
	8:45 AM	0	0	0	1	0	0	0	11	0	0	14	0	26
	VOLUMES	1	2	0	3	2	0	2	46	0	2	68	1	127
	APPROACH %	33%	67%	0%	60%	40%	0%	4%	96%	0%	3%	96%	1%	
	APP/DEPART	3	/	4	5	/	4	48	/	49	71	/	70	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	1	2	0	2	1	0	1	21	0	2	33	0	63
	APPROACH %	33%	67%	0%	67%	33%	0%	5%	95%	0%	6%	94%	0%	
	PEAK HR FACTOR		0.375			0.750			0.786			0.729		0.716
	APP/DEPART	3	/	3	3	/	3	22	/	23	35	/	34	0
PM	4:00 PM	0	0	0	1	0	0	1	13	0	0	5	0	20
	4:15 PM	0	0	0	0	0	0	0	12	0	0	3	0	15
	4:30 PM	0	0	1	0	1	0	1	12	0	0	4	0	19
	4:45 PM	0	0	0	0	0	0	0	9	1	0	5	0	15
	5:00 PM	0	0	0	0	1	0	0	5	0	0	3	0	9
	5:15 PM	0	0	0	0	0	0	0	6	0	0	5	0	11
	5:30 PM	0	0	0	0	0	0	0	11	0	1	1	1	14
	5:45 PM	0	0	0	0	0	0	0	3	1	0	1	1	6
	VOLUMES	0	0	1	1	2	0	2	71	2	1	27	2	109
	APPROACH %	0%	0%	100%	33%	67%	0%	3%	95%	3%	3%	90%	7%	
	APP/DEPART	1	/	2	3	/	5	75	/	73	30	/	29	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	1	0	0	31	1	1	14	1	49
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	97%	3%	6%	88%	6%	
	PEAK HR FACTOR		0.000			0.250			0.727			0.800		0.817
	APP/DEPART	0	/	1	1	/	3	32	/	31	16	/	14	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	0	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	1
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
1	0	1	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	4
TUESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

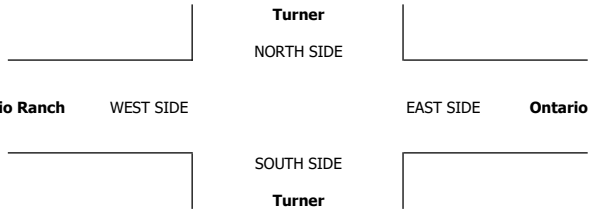
		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	2	0	0	7	0	9
	7:15 AM	0	0	0	0	0	0	0	7	0	0	4	0	11
	7:30 AM	0	0	0	1	0	0	1	7	0	0	8	0	17
	7:45 AM	0	0	0	0	0	0	0	3	0	0	6	0	9
	8:00 AM	0	0	0	0	0	0	1	6	0	0	3	0	10
	8:15 AM	0	0	0	0	0	0	0	4	0	0	7	0	11
	8:30 AM	0	0	0	0	0	0	0	4	0	0	7	0	11
	8:45 AM	0	0	0	0	0	0	0	5	0	0	9	0	14
	VOLUMES	0	0	0	1	0	0	2	38	0	0	51	0	92
	APPROACH %	0%	0%	0%	100%	0%	0%	5%	95%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	1	/	0	40	/	39	51	/	53	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	1	0	0	0	23	0	0	21	0	47
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	92%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.781			0.656		0.691
	APP/DEPART	0	/	0	1	/	0	25	/	24	21	/	23	0
PM	4:00 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
	4:15 PM	0	0	0	0	0	0	0	3	0	0	4	0	7
	4:30 PM	0	0	0	0	0	0	0	1	0	0	4	0	5
	4:45 PM	0	0	0	0	0	0	0	5	0	0	5	0	10
	5:00 PM	0	0	0	0	0	0	0	9	0	0	2	0	11
	5:15 PM	0	0	0	0	0	1	0	8	0	0	0	0	9
	5:30 PM	0	0	0	0	0	0	0	8	0	0	3	0	11
	5:45 PM	0	0	0	0	0	0	0	3	0	0	3	0	6
	VOLUMES	0	0	0	0	0	1	0	41	0	0	23	0	65
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	1	/	0	41	/	41	23	/	24	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	1	0	30	0	0	10	0	41
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.833			0.500		0.932
	APP/DEPART	0	/	0	1	/	0	30	/	30	10	/	11	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	1	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	4
TUESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

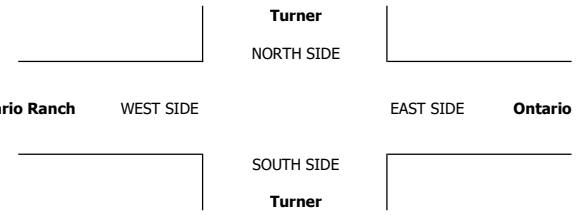
		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	7	0	0	11	0	18
	7:15 AM	0	0	0	0	0	0	0	12	0	0	13	0	25
	7:30 AM	0	0	0	0	0	0	0	10	0	0	11	0	21
	7:45 AM	0	0	0	0	0	0	1	13	0	10	20	0	44
	8:00 AM	0	0	0	0	0	0	0	18	0	0	11	0	29
	8:15 AM	0	0	0	0	0	0	0	22	0	0	6	0	28
	8:30 AM	0	0	0	0	0	0	0	7	0	1	12	1	21
	8:45 AM	1	0	0	0	0	0	0	8	0	0	20	0	29
	VOLUMES	1	0	0	0	0	0	1	97	0	11	104	1	215
	APPROACH %	100%	0%	0%	0%	0%	0%	1%	99%	0%	9%	90%	1%	
	APP/DEPART	1	/	1	0	/	11	98	/	97	116	/	106	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	53	0	10	55	0	119
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	98%	0%	15%	85%	0%	
	PEAK HR FACTOR		0.000			0.000			0.750			0.542		0.676
	APP/DEPART	0	/	0	0	/	10	54	/	53	65	/	56	0
PM	4:00 PM	0	0	0	0	0	0	0	5	0	0	9	0	14
	4:15 PM	0	0	0	0	0	0	0	10	0	0	18	0	28
	4:30 PM	0	0	0	0	0	0	0	10	0	0	11	0	21
	4:45 PM	0	0	0	0	0	0	0	9	0	0	17	0	26
	5:00 PM	0	0	0	0	0	0	0	11	0	0	23	0	34
	5:15 PM	0	0	0	0	0	0	0	8	0	0	16	0	24
	5:30 PM	0	0	0	0	1	0	0	9	0	0	12	0	22
	5:45 PM	0	0	0	0	0	0	0	5	0	0	13	0	18
	VOLUMES	0	0	0	0	1	0	0	67	0	0	119	0	187
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	1	/	1	67	/	67	119	/	119	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	1	0	0	37	0	0	68	0	106
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.841			0.739		0.779
	APP/DEPART	0	/	0	1	/	1	37	/	37	68	/	68	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	4
TUESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

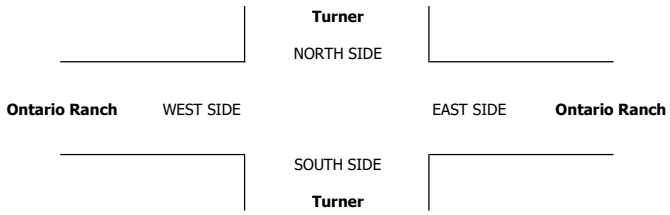
		NORTHBOUND (Turner)			SOUTHBOUND (Turner)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Turner	LOCATION #:	4
TUESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Turner			SOUTHBOUND Turner			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	1	1	1	0	4
	7:15 AM	2	2	0	0	0	0	1	0	0	1	0	0	6
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:00 AM	1	0	0	0	0	0	0	1	0	1	0	0	3
	8:15 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
	8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	VOLUMES	3	2	1	0	1	0	1	3	1	3	4	0	19
	APPROACH %	50%	33%	17%	0%	100%	0%	20%	60%	20%	43%	57%	0%	
	APP/DEPART	6	/	3	1	/	5	5	/	4	7	/	7	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	3	2	0	0	0	0	1	2	0	2	1	0	11
	APPROACH %	60%	40%	0%	0%	0%	0%	33%	67%	0%	67%	33%	0%	
	PEAK HR FACTOR		0.313			0.000			0.750			0.750		0.458
	APP/DEPART	5	/	3	0	/	2	3	/	2	3	/	4	0
PM	4:00 PM	1	0	0	0	0	0	0	0	1	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	0	0	0	0	0	2	1	0	2	0	6
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	67%	33%	0%	100%	0%	
	APP/DEPART	1	/	0	0	/	1	3	/	2	2	/	3	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	1	0	0	1	0	2
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.250			0.250		0.500
	APP/DEPART	0	/	0	0	/	0	1	/	1	1	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0

Turner

NORTH SIDE

Ontario Ranch WEST SIDE EAST SIDE **Ontario Ranch**

SOUTH SIDE

Turner

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Haven	LOCATION #: 5
	EAST & WEST:	SR-60 WB Ramps	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)			
	LANES:	NL 2	NT 3	NR X	SL X	ST 3	SR 1	EL X	ET X	ER X	WL 1.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	99	220	0	0	150	105	0	0	0	34	3	78	689
	7:15 AM	92	305	0	0	175	116	0	0	0	39	3	73	803
	7:30 AM	76	359	0	0	153	101	0	0	0	56	1	121	867
	7:45 AM	73	311	0	0	149	66	0	0	0	47	0	200	846
	8:00 AM	85	303	0	0	184	56	0	0	0	37	0	141	806
	8:15 AM	63	336	0	0	170	78	0	0	0	22	2	155	826
	8:30 AM	68	270	0	0	166	74	0	0	0	33	1	150	762
	8:45 AM	52	196	0	0	146	66	0	0	0	29	0	123	612
	VOLUMES	608	2,300	0	0	1,293	662	0	0	0	297	10	1,041	6,211
	APPROACH %	21%	79%	0%	0%	66%	34%	0%	0%	0%	22%	1%	77%	
	APP/DEPART	2,908	/	3,341	1,955	/	1,590	0	/	0	1,348	/	1,280	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	297	1,309	0	0	656	301	0	0	0	162	3	617	3,345
	APPROACH %	18%	82%	0%	0%	69%	31%	0%	0%	0%	21%	0%	79%	
	PEAK HR FACTOR		0.923			0.942			0.000			0.791		0.965
	APP/DEPART	1,606	/	1,926	957	/	818	0	/	0	782	/	601	0
PM	4:00 PM	44	202	0	0	266	138	0	0	0	55	2	110	817
	4:15 PM	38	179	0	0	274	138	0	0	0	66	3	139	837
	4:30 PM	43	182	0	0	345	156	0	0	0	51	1	139	917
	4:45 PM	27	179	0	0	281	139	0	0	0	73	4	117	820
	5:00 PM	39	178	0	0	335	149	0	0	0	72	1	113	887
	5:15 PM	32	179	0	0	353	150	0	0	0	61	3	122	900
	5:30 PM	40	199	0	0	307	142	0	0	0	78	4	109	879
	5:45 PM	40	150	0	0	315	101	0	0	0	69	4	87	766
	VOLUMES	303	1,448	0	0	2,476	1,113	0	0	0	525	22	936	6,823
	APPROACH %	17%	83%	0%	0%	69%	31%	0%	0%	0%	35%	1%	63%	
	APP/DEPART	1,751	/	2,384	3,589	/	3,001	0	/	0	1,483	/	1,438	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	141	718	0	0	1,314	594	0	0	0	257	9	491	3,524
	APPROACH %	16%	84%	0%	0%	69%	31%	0%	0%	0%	34%	1%	65%	
	PEAK HR FACTOR		0.954			0.948			0.000			0.976		0.961
	APP/DEPART	859	/	1,209	1,908	/	1,571	0	/	0	757	/	744	0

U-TURNS

NB 0	SB 0	EB 0	WB 0	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	36	0	15
0	21	0	9
0	18	0	6
0	15	0	20
0	5	0	20
0	19	0	19
0	17	0	16
0	13	0	19
0	144	0	124
0	57	0	65
0	29	0	13
0	29	0	18
0	37	0	14
0	43	0	13
0	26	0	9
0	36	0	13
0	28	0	8
0	18	0	13
0	246	0	101
0	142	0	49

Haven

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Haven

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	1	0	0	1
7:30 AM	0	0	0	0	0
7:45 AM	3	0	0	0	3
8:00 AM	0	1	0	0	1
8:15 AM	0	1	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	3	3	0	0	6
4:00 PM	0	0	0	0	0
4:15 PM	0	1	0	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	1	0	0	1
5:15 PM	0	1	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1
TOTAL	0	4	0	0	4

PEDESTRIAN CROSSINGS

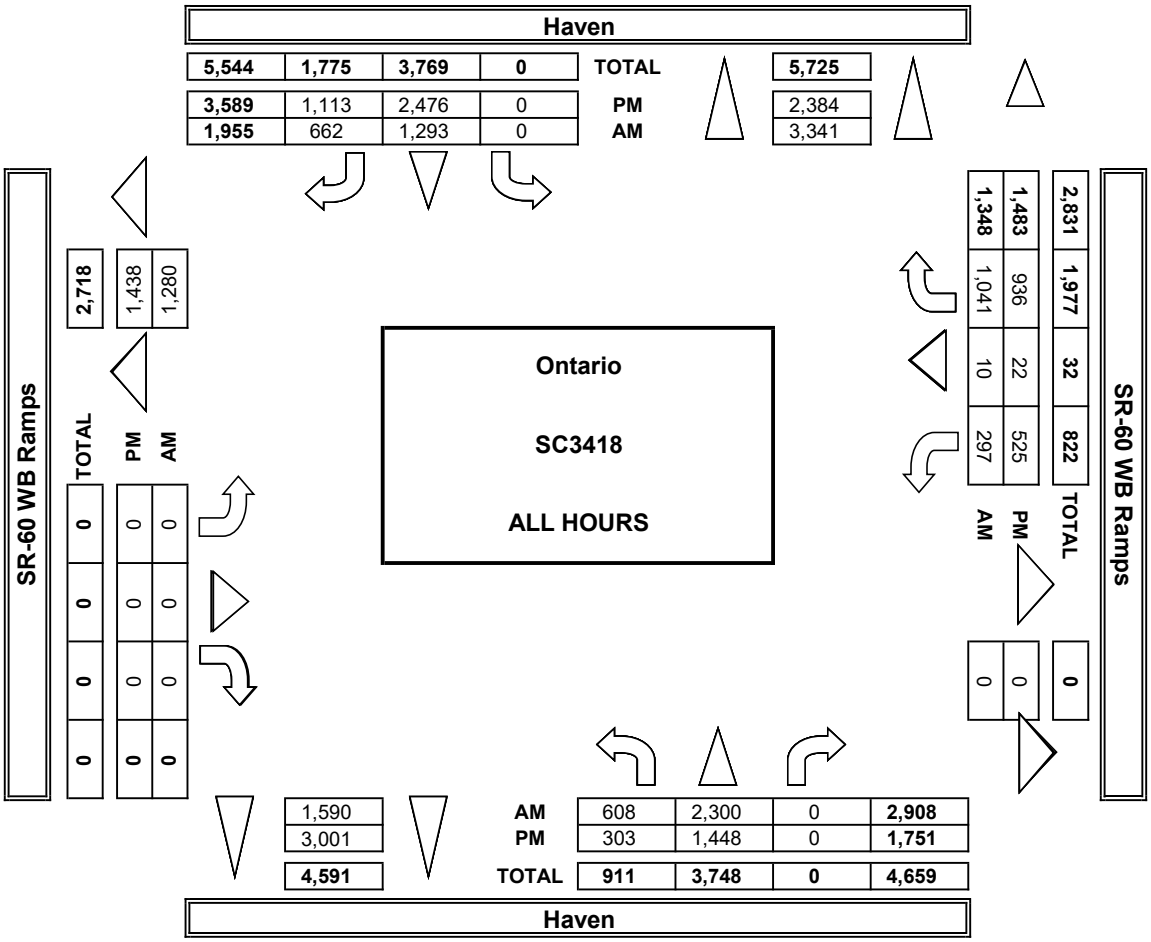
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

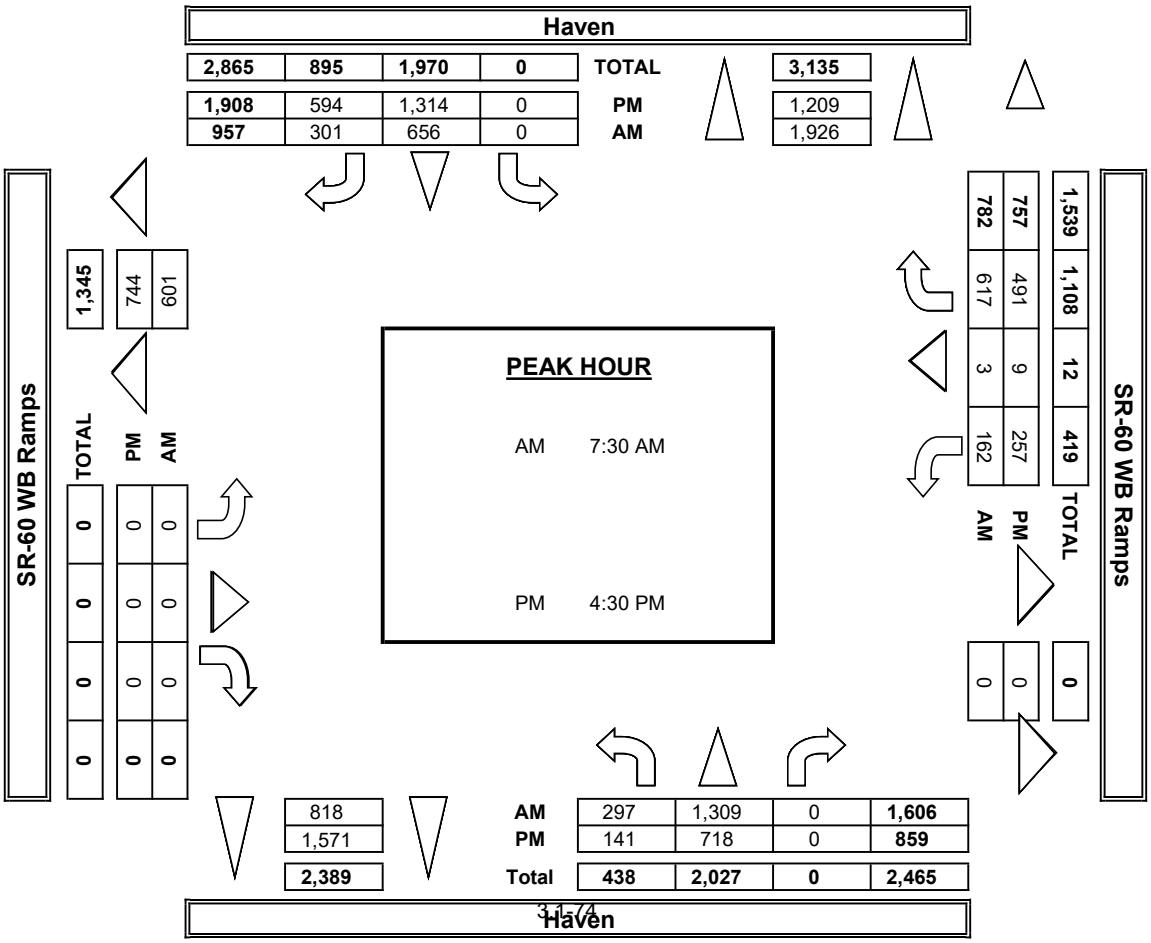
BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
2	2	0	0	4
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	3	0	0	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	5
TUESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

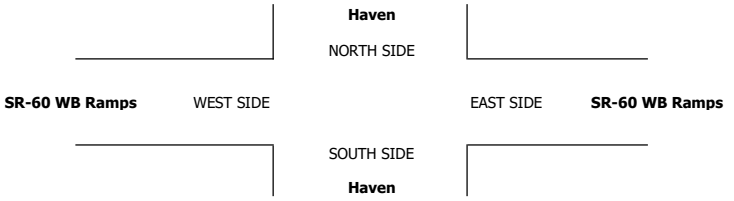
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)			
	LANES:	NL 2	NT 3	NR X	SL X	ST 3	SR 1	EL X	ET X	ER X	WL 1.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	91	196	0	0	130	84	0	0	0	29	3	66	599
	7:15 AM	91	287	0	0	159	82	0	0	0	30	2	60	711
	7:30 AM	76	336	0	0	137	75	0	0	0	46	1	103	774
	7:45 AM	72	287	0	0	129	53	0	0	0	40	0	172	753
	8:00 AM	82	272	0	0	166	39	0	0	0	34	0	124	717
	8:15 AM	57	307	0	0	154	59	0	0	0	18	1	139	735
	8:30 AM	68	240	0	0	107	43	0	0	0	25	0	126	609
	8:45 AM	49	184	0	0	113	40	0	0	0	21	0	106	513
	VOLUMES	586	2,109	0	0	1,095	475	0	0	0	243	7	896	5,411
	APPROACH %	22%	78%	0%	0%	70%	30%	0%	0%	0%	21%	1%	78%	
	APP/DEPART	2,695	/	3,005	1,570	/	1,338	0	/	0	1,146	/	1,068	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	287	1,202	0	0	586	226	0	0	0	138	2	538	2,979
	APPROACH %	19%	81%	0%	0%	72%	28%	0%	0%	0%	20%	0%	79%	
	PEAK HR FACTOR		0.904			0.953			0.000			0.800		0.962
	APP/DEPART	1,489	/	1,740	812	/	724	0	/	0	678	/	515	0
PM	4:00 PM	41	177	0	0	253	121	0	0	0	53	1	99	745
	4:15 PM	36	148	0	0	256	121	0	0	0	63	1	117	742
	4:30 PM	43	154	0	0	330	136	0	0	0	46	1	119	829
	4:45 PM	27	158	0	0	273	126	0	0	0	67	4	106	761
	5:00 PM	39	159	0	0	319	133	0	0	0	66	1	94	811
	5:15 PM	30	160	0	0	337	128	0	0	0	60	2	101	818
	5:30 PM	39	180	0	0	298	127	0	0	0	73	4	101	822
	5:45 PM	39	131	0	0	302	86	0	0	0	67	3	75	703
	VOLUMES	294	1,267	0	0	2,368	978	0	0	0	495	17	812	6,231
	APPROACH %	19%	81%	0%	0%	71%	29%	0%	0%	0%	37%	1%	61%	
	APP/DEPART	1,561	/	2,079	3,346	/	2,863	0	/	0	1,324	/	1,289	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	139	631	0	0	1,259	523	0	0	0	239	8	420	3,219
	APPROACH %	18%	82%	0%	0%	71%	29%	0%	0%	0%	36%	1%	63%	
	PEAK HR FACTOR		0.972			0.956			0.000			0.942		0.971
	APP/DEPART	770	/	1,051	1,782	/	1,498	0	/	0	667	/	670	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	30	0	12
0	15	0	9
0	15	0	5
0	12	0	17
0	5	0	19
0	14	0	17
0	9	0	14
0	6	0	16
0	106	0	109
0	46	0	58
0	22	0	12
0	24	0	15
0	33	0	13
0	37	0	13
0	21	0	9
0	32	0	11
0	28	0	7
0	16	0	13
0	213	0	93
0	123	0	46



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	5
TUESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

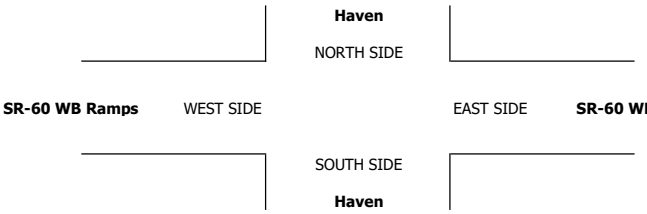
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 2	NT 3	NR X	SL X	ST 3	SR 1	EL X	ET X	ER X	WL 1.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	7	9	0	0	10	10	0	0	0	4	0	8	48
	7:15 AM	0	9	0	0	6	10	0	0	0	6	0	3	34
	7:30 AM	0	10	0	0	3	6	0	0	0	7	0	5	31
	7:45 AM	1	12	0	0	7	3	0	0	0	4	0	12	39
	8:00 AM	2	7	0	0	11	7	0	0	0	2	0	5	34
	8:15 AM	3	13	0	0	6	5	0	0	0	3	1	5	36
	8:30 AM	0	11	0	0	53	15	0	0	0	5	1	9	94
	8:45 AM	3	2	0	0	23	10	0	0	0	7	0	3	48
	VOLUMES	16	73	0	0	119	66	0	0	0	38	2	50	364
	APPROACH %	18%	82%	0%	0%	64%	36%	0%	0%	0%	42%	2%	56%	
	APP/DEPART	89	/	123	185	/	157	0	/	0	90	/	84	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	6	42	0	0	27	21	0	0	0	16	1	27	140
	APPROACH %	13%	88%	0%	0%	56%	44%	0%	0%	0%	36%	2%	61%	
	PEAK HR FACTOR		0.750			0.667			0.000			0.688		0.897
	APP/DEPART	48	/	69	48	/	43	0	/	0	44	/	28	0
PM	4:00 PM	3	13	0	0	11	5	0	0	0	2	1	3	38
	4:15 PM	1	9	0	0	12	2	0	0	0	2	0	11	37
	4:30 PM	0	15	0	0	11	5	0	0	0	2	0	14	47
	4:45 PM	0	7	0	0	2	3	0	0	0	5	0	3	20
	5:00 PM	0	7	0	0	10	5	0	0	0	3	0	13	38
	5:15 PM	2	5	0	0	12	5	0	0	0	1	1	13	39
	5:30 PM	1	11	0	0	3	1	0	0	0	3	0	5	24
	5:45 PM	1	5	0	0	6	4	0	0	0	2	1	6	25
	VOLUMES	8	72	0	0	67	30	0	0	0	20	3	68	268
	APPROACH %	10%	90%	0%	0%	69%	31%	0%	0%	0%	22%	3%	75%	
	APP/DEPART	80	/	140	97	/	87	0	/	0	91	/	41	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	2	34	0	0	35	18	0	0	0	11	1	43	144
	APPROACH %	6%	94%	0%	0%	66%	34%	0%	0%	0%	20%	2%	78%	
	PEAK HR FACTOR		0.600			0.779			0.000			0.859		0.766
	APP/DEPART	36	/	77	53	/	46	0	/	0	55	/	21	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	4	0	2
0	1	0	0
0	1	0	1
0	0	0	1
0	0	0	0
0	3	0	0
0	3	0	2
0	6	0	1
0	18	0	7
0	4	0	2
0	3	0	0
0	2	0	1
0	0	0	1
0	2	0	0
0	3	0	0
0	1	0	2
0	0	0	1
0	0	0	0
0	11	0	5
0	6	0	3



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	5
TUESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 2	NT 3	NR X	SL X	ST 3	SR 1	EL X	ET X	ER X	WL 1.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	1	3	0	0	4	0	0	0	0	0	0	2	10
	7:15 AM	0	0	0	0	4	3	0	0	0	0	1	2	10
	7:30 AM	0	1	0	0	3	7	0	0	0	0	0	7	18
	7:45 AM	0	1	0	0	3	2	0	0	0	0	0	4	10
	8:00 AM	0	5	0	0	0	1	0	0	0	0	0	3	9
	8:15 AM	1	0	0	0	2	1	0	0	0	0	0	3	7
	8:30 AM	0	2	0	0	2	8	0	0	0	2	0	2	16
	8:45 AM	0	1	0	0	5	3	0	0	0	0	0	2	11
	VOLUMES	2	13	0	0	23	25	0	0	0	2	1	25	91
	APPROACH %	13%	87%	0%	0%	48%	52%	0%	0%	0%	7%	4%	89%	
	APP/DEPART	15	/	38	48	/	25	0	/	0	28	/	28	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	7	0	0	8	11	0	0	0	0	0	17	44
	APPROACH %	13%	88%	0%	0%	42%	58%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.400			0.475			0.000			0.607		0.611
	APP/DEPART	8	/	24	19	/	8	0	/	0	17	/	12	0
PM	4:00 PM	0	3	0	0	1	5	0	0	0	0	0	3	12
	4:15 PM	0	5	0	0	2	6	0	0	0	1	0	4	18
	4:30 PM	0	2	0	0	2	3	0	0	0	2	0	1	10
	4:45 PM	0	2	0	0	1	4	0	0	0	0	0	1	8
	5:00 PM	0	1	0	0	2	2	0	0	0	1	0	1	7
	5:15 PM	0	5	0	0	0	5	0	0	0	0	0	2	12
	5:30 PM	0	1	0	0	2	1	0	0	0	0	0	1	5
	5:45 PM	0	1	0	0	5	3	0	0	0	0	0	2	11
	VOLUMES	0	20	0	0	15	29	0	0	0	4	0	15	83
	APPROACH %	0%	100%	0%	0%	34%	66%	0%	0%	0%	21%	0%	79%	
	APP/DEPART	20	/	35	44	/	19	0	/	0	19	/	29	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	10	0	0	5	14	0	0	0	3	0	5	37
	APPROACH %	0%	100%	0%	0%	26%	74%	0%	0%	0%	38%	0%	63%	
	PEAK HR FACTOR		0.500			0.950			0.000			0.667		0.771
	APP/DEPART	10	/	15	19	/	8	0	/	0	8	/	14	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	1
0	1	0	0
0	0	0	0
0	1	0	0
0	0	0	1
0	0	0	0
0	3	0	0
0	0	0	0
0	5	0	2
0	1	0	1
0	1	0	1
0	0	0	2
0	2	0	0
0	3	0	0
0	0	0	0
0	3	0	0
0	0	0	0
0	0	0	0
0	9	0	3
0	8	0	0

Haven

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	5
TUESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 2	NT 3	NR X	SL X	ST 3	SR 1	EL X	ET X	ER X	WL 1.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	11	0	0	4	11	0	0	0	1	0	2	29
	7:15 AM	1	9	0	0	6	20	0	0	0	3	0	8	47
	7:30 AM	0	12	0	0	8	13	0	0	0	3	0	6	42
	7:45 AM	0	11	0	0	6	8	0	0	0	3	0	12	40
	8:00 AM	1	16	0	0	7	8	0	0	0	1	0	9	42
	8:15 AM	0	15	0	0	7	13	0	0	0	1	0	7	43
	8:30 AM	0	17	0	0	4	8	0	0	0	1	0	13	43
	8:45 AM	0	8	0	0	5	13	0	0	0	1	0	12	39
	VOLUMES	2	99	0	0	47	94	0	0	0	14	0	69	325
	APPROACH %	2%	98%	0%	0%	33%	67%	0%	0%	0%	17%	0%	83%	
	APP/DEPART	101	/	168	141	/	61	0	/	0	83	/	96	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	54	0	0	28	42	0	0	0	8	0	34	167
	APPROACH %	2%	98%	0%	0%	40%	60%	0%	0%	0%	19%	0%	81%	
	PEAK HR FACTOR		0.809			0.833			0.000			0.700		0.971
	APP/DEPART	55	/	88	70	/	36	0	/	0	42	/	43	0
PM	4:00 PM	0	9	0	0	1	7	0	0	0	0	0	5	22
	4:15 PM	0	17	0	0	4	9	0	0	0	0	2	7	39
	4:30 PM	0	11	0	0	2	12	0	0	0	0	0	5	30
	4:45 PM	0	12	0	0	5	6	0	0	0	1	0	7	31
	5:00 PM	0	10	0	0	4	9	0	0	0	2	0	5	30
	5:15 PM	0	9	0	0	4	12	0	0	0	0	0	5	30
	5:30 PM	0	7	0	0	4	13	0	0	0	2	0	2	28
	5:45 PM	0	13	0	0	2	8	0	0	0	0	0	4	27
	VOLUMES	0	88	0	0	26	76	0	0	0	5	2	40	237
	APPROACH %	0%	100%	0%	0%	25%	75%	0%	0%	0%	11%	4%	85%	
	APP/DEPART	88	/	128	102	/	31	0	/	0	47	/	78	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	42	0	0	15	39	0	0	0	3	0	22	121
	APPROACH %	0%	100%	0%	0%	28%	72%	0%	0%	0%	12%	0%	88%	
	PEAK HR FACTOR		0.875			0.844			0.000			0.781		0.976
	APP/DEPART	42	/	64	54	/	18	0	/	0	25	/	39	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	2	0	0
0	4	0	0
0	2	0	0
0	2	0	2
0	0	0	0
0	2	0	2
0	2	0	0
0	1	0	2
0	15	0	6
0	6	0	4
0	3	0	0
0	3	0	0
0	2	0	0
0	1	0	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0
0	13	0	0
0	5	0	0

Haven

NORTH SIDE

SR-60 WB Ramps WEST SIDE EAST SIDE **SR-60 WB Ramps**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	5
TUESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

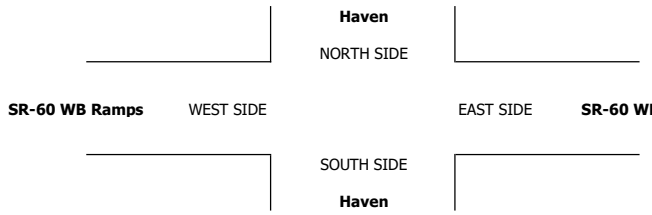
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (SR-60 WB Ramps)			WESTBOUND (SR-60 WB Ramps)			
	LANES:	NL 2	NT 3	NR X	SL X	ST 3	SR 1	EL X	ET X	ER X	WL 1.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
X	0	X	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	5
TUESDAY	EAST & WEST:	SR-60 WB Ramps	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

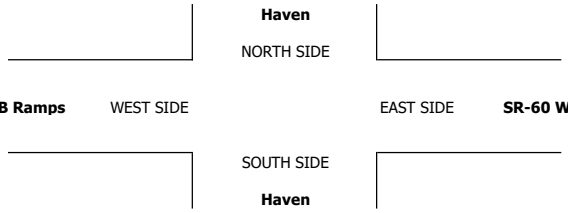
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND SR-60 WB Ramps			WESTBOUND SR-60 WB Ramps			
	LANES:	NL 2	NT 3	NR X	SL X	ST 3	SR 1	EL X	ET X	ER X	WL 1.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	3
	7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	7:45 AM	0	0	0	0	4	0	0	0	0	0	0	0	4
	8:00 AM	0	3	0	0	0	1	0	0	0	0	0	0	4
	8:15 AM	2	1	0	0	1	0	0	0	0	0	0	1	5
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	2	6	0	0	9	2	0	0	0	0	0	1	20
	APPROACH %	25%	75%	0%	0%	82%	18%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	8	/	7	11	/	9	0	/	0	1	/	4	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	2	4	0	0	7	1	0	0	0	0	0	1	15
	APPROACH %	33%	67%	0%	0%	88%	13%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.500			0.500			0.000			0.250		0.750
	APP/DEPART	6	/	5	8	/	7	0	/	0	1	/	3	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	1	0	0	0	0	0	0	0	1	0	1	4
	APPROACH %	50%	50%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	
	APP/DEPART	2	/	2	0	/	1	0	/	0	2	/	1	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	1	0	0	0	0	0	0	0	1	0	1	3
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.250			0.000			0.000			0.500		0.750
	APP/DEPART	1	/	2	0	/	1	0	/	0	2	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR X	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

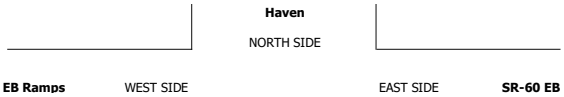
DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Haven	LOCATION #: 6
	EAST & WEST:	SR-60 EB Ramps	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

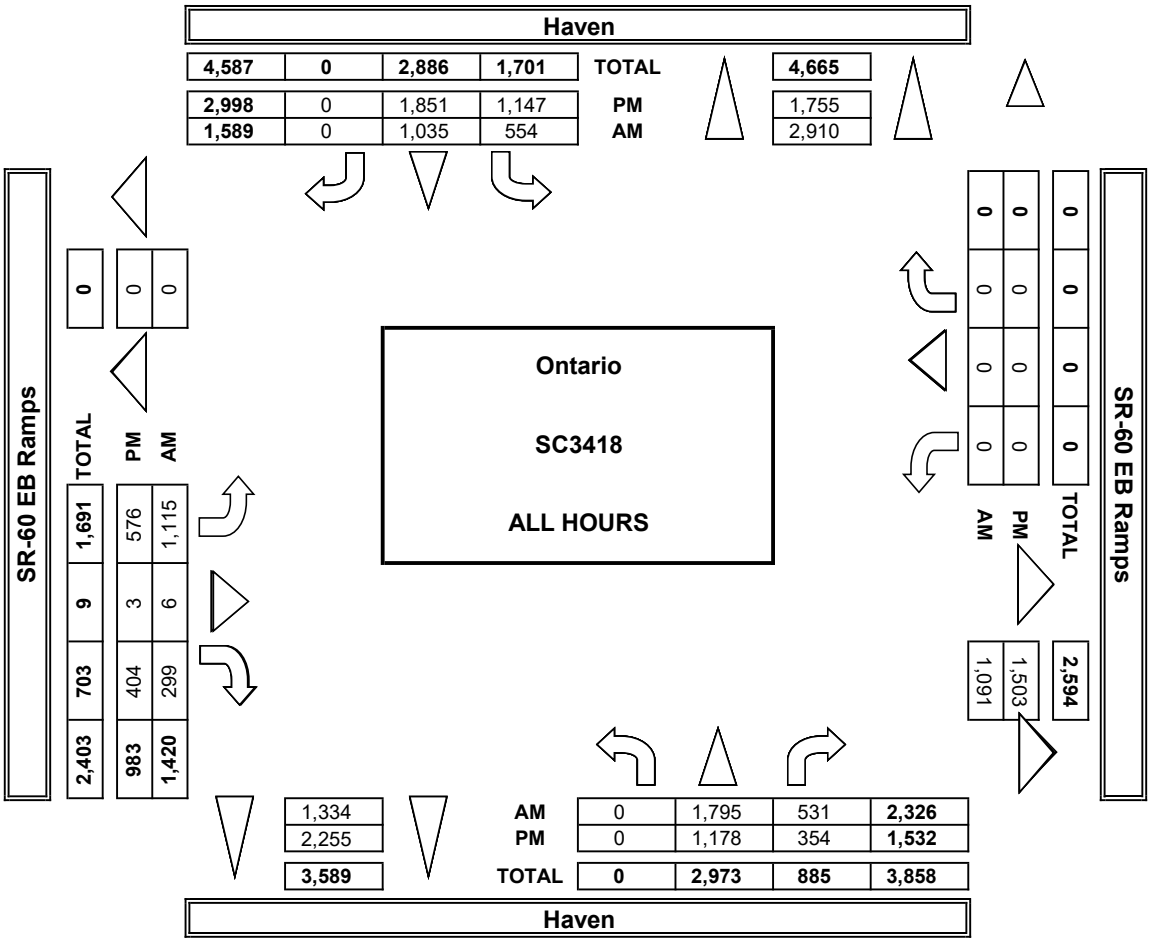
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)				U-TURNS					RTOR			
	LANES:	NL X	NT 3	NR 0	SL 2	ST 3	SR X	EL 1.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR 0	SRR X	ERR 0	WRR X
AM	7:00 AM	0	213	84	87	96	0	108	0	33	0	0	0	621	0	0	0	0	0	31	0	20	0
	7:15 AM	0	257	89	62	152	0	140	1	27	0	0	0	728	0	0	0	0	0	25	0	17	0
	7:30 AM	0	270	86	65	144	0	165	0	35	0	0	0	765	0	0	0	0	0	23	0	22	0
	7:45 AM	0	232	74	71	125	0	152	1	51	0	0	0	706	0	0	0	0	0	15	0	26	0
	8:00 AM	0	243	64	43	178	0	145	1	50	0	0	0	724	0	0	0	0	0	14	0	36	0
	8:15 AM	0	243	50	56	136	0	156	1	47	0	0	0	689	0	0	0	0	0	15	0	28	0
	8:30 AM	0	192	46	92	107	0	146	1	32	0	0	0	616	0	0	0	0	0	11	0	14	0
	8:45 AM	0	145	38	78	97	0	103	1	24	0	0	0	486	0	0	0	0	0	16	0	16	0
	VOLUMES	0	1,795	531	554	1,035	0	1,115	6	299	0	0	0	5,335	0	0	0	0	0	150	0	179	0
	APPROACH %	0%	77%	23%	35%	65%	0%	79%	0%	21%	0%	0%	0%										
	APP/DEPART	2,326	/	2,910	1,589	/	1,334	1,420	/	1,091	0	/	0	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	0	1,002	313	241	599	0	602	3	163	0	0	0	2,923						77	0	101	0
	APPROACH %	0%	76%	24%	29%	71%	0%	78%	0%	21%	0%	0%	0%										
	PEAK HR FACTOR		0.923			0.950			0.941			0.000		0.955									
	APP/DEPART	1,315	/	1,604	840	/	762	768	/	557	0	/	0	0									
PM	4:00 PM	0	157	33	146	172	0	89	0	47	0	0	0	644	0	0	0	0	0	5	0	33	0
	4:15 PM	0	131	46	138	202	0	86	1	50	0	0	0	654	0	0	0	0	0	7	0	23	0
	4:30 PM	0	152	52	171	225	0	73	1	51	0	0	0	725	0	0	0	0	0	9	0	31	0
	4:45 PM	0	138	48	132	222	0	68	0	47	0	0	0	655	0	0	0	0	0	13	0	26	0
	5:00 PM	0	155	37	173	234	0	61	0	39	0	0	0	699	0	1	0	0	1	12	0	27	0
	5:15 PM	0	142	58	137	277	0	69	0	54	0	0	0	737	0	0	0	0	0	20	0	26	0
	5:30 PM	0	171	35	129	256	0	68	1	59	0	0	0	719	0	0	0	0	0	8	0	27	0
	5:45 PM	0	132	45	121	263	0	62	0	57	0	0	0	680	0	0	0	0	0	16	0	29	0
	VOLUMES	0	1,178	354	1,147	1,851	0	576	3	404	0	0	0	5,513	0	1	0	0	1	90	0	222	0
	APPROACH %	0%	77%	23%	38%	62%	0%	59%	0%	41%	0%	0%	0%										
	APP/DEPART	1,532	/	1,755	2,998	/	2,255	983	/	1,503	0	/	0	0									
	BEGIN PEAK HR		5:00 PM																				
	VOLUMES	0	600	175	560	1,030	0	260	1	209	0	0	0	2,835						56	0	109	0
	APPROACH %	0%	77%	23%	35%	65%	0%	55%	0%	44%	0%	0%	0%										
	PEAK HR FACTOR		0.941			0.960			0.918			0.000		0.962									
	APP/DEPART	775	/	861	1,590	/	1,239	470	/	735	0	/	0	0									

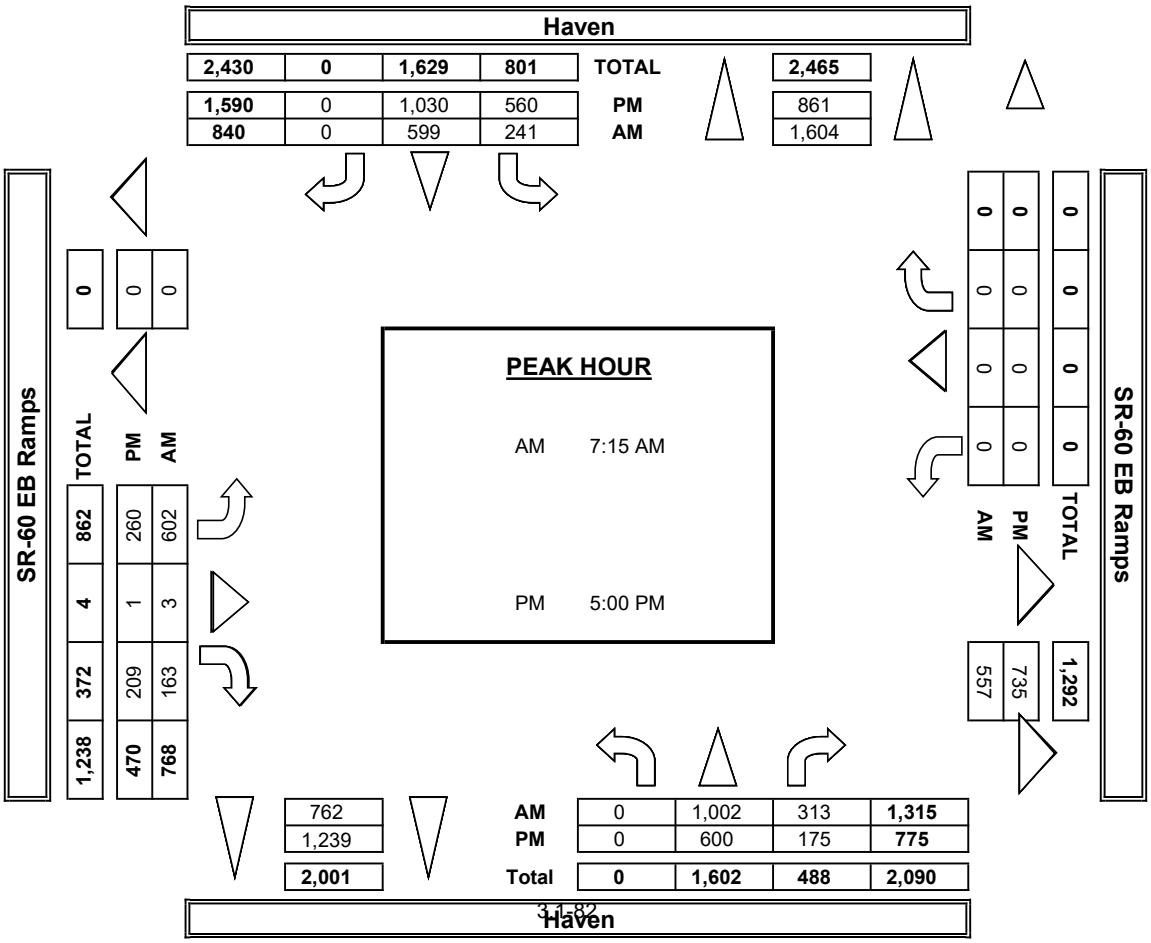


		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	7:30 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	7:45 AM	2	1	0	0	3	1	1	0	0	2	1	0	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	3	3	0	0	6	1	2	0	0	3	2	1	0	0	3
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:15 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2
	TOTAL	0	5	0	0	5	0	1	0	0	1	0	4	0	0	4

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	6
TUESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)			
	LANES:	NL X	NT 3	NR 0	SL 2	ST 3	SR X	EL 1.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	201	82	70	88	0	88	0	33	0	0	0	562
	7:15 AM	0	250	88	45	144	0	128	1	25	0	0	0	681
	7:30 AM	0	270	83	49	134	0	142	0	35	0	0	0	713
	7:45 AM	0	227	71	55	114	0	132	0	48	0	0	0	647
	8:00 AM	0	234	60	34	166	0	120	0	49	0	0	0	663
	8:15 AM	0	235	46	42	130	0	129	1	47	0	0	0	630
	8:30 AM	0	190	42	43	89	0	118	0	29	0	0	0	511
	8:45 AM	0	140	38	56	78	0	93	0	21	0	0	0	426
	VOLUMES	0	1,747	510	394	943	0	950	2	287	0	0	0	4,833
	APPROACH %	0%	77%	23%	29%	71%	0%	77%	0%	23%	0%	0%	0%	
	APP/DEPART	2,257	/	2,697	1,337	/	1,230	1,239	/	906	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	981	302	183	558	0	522	1	157	0	0	0	2,704
	APPROACH %	0%	76%	24%	25%	75%	0%	77%	0%	23%	0%	0%	0%	
	PEAK HR FACTOR		0.909			0.926			0.944			0.000		0.948
	APP/DEPART	1,283	/	1,503	741	/	715	680	/	486	0	/	0	0
PM	4:00 PM	0	148	30	133	170	0	70	0	44	0	0	0	595
	4:15 PM	0	118	44	124	195	0	66	1	47	0	0	0	595
	4:30 PM	0	147	50	162	214	0	50	0	49	0	0	0	672
	4:45 PM	0	134	47	124	216	0	51	0	44	0	0	0	616
	5:00 PM	0	151	37	158	227	0	46	0	37	0	0	0	656
	5:15 PM	0	137	54	129	268	0	53	0	53	0	0	0	694
	5:30 PM	0	162	31	121	250	0	57	0	58	0	0	0	679
	5:45 PM	0	127	45	111	258	0	47	0	55	0	0	0	643
	VOLUMES	0	1,124	338	1,062	1,798	0	440	1	387	0	0	0	5,150
	APPROACH %	0%	77%	23%	37%	63%	0%	53%	0%	47%	0%	0%	0%	
	APP/DEPART	1,462	/	1,565	2,860	/	2,185	828	/	1,400	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	577	167	518	1,003	0	203	0	203	0	0	0	2,672
	APPROACH %	0%	78%	22%	34%	66%	0%	50%	0%	50%	0%	0%	0%	
	PEAK HR FACTOR		0.964			0.958			0.883			0.000		0.963
	APP/DEPART	744	/	781	1,522	/	1,206	406	/	685	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

RTOR

NRR 0	SRR X	ERR 0	WRR X
30	0	20	0
24	0	16	0
22	0	22	0
15	0	24	0
14	0	36	0
13	0	28	0
9	0	13	0
16	0	14	0
143	0	173	0
75	0	98	0
5	0	30	0
7	0	21	0
9	0	30	0
13	0	24	0
12	0	25	0
19	0	26	0
8	0	27	0
16	0	28	0
89	0	211	0
55	0	106	0

Haven

NORTH SIDE

SR-60 EB Ramps WEST SIDE EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	6
TUESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼

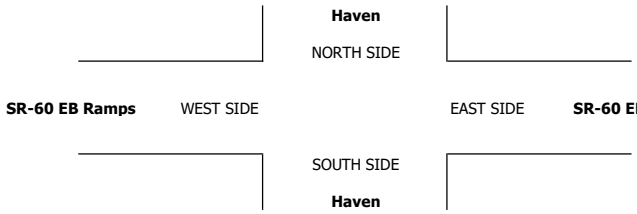
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 3	NR 0	SL 2	ST 3	SR X	EL 1.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	10	2	10	4	0	6	0	0	0	0	0	32
	7:15 AM	0	6	1	7	5	0	3	0	1	0	0	0	23
	7:30 AM	0	0	2	3	7	0	10	0	0	0	0	0	22
	7:45 AM	0	5	2	6	5	0	8	0	3	0	0	0	29
	8:00 AM	0	3	3	1	12	0	6	1	0	0	0	0	26
	8:15 AM	0	5	2	3	6	0	11	0	0	0	0	0	27
	8:30 AM	0	1	4	42	16	0	10	1	1	0	0	0	75
	8:45 AM	0	3	0	15	15	0	2	1	3	0	0	0	39
	VOLUMES	0	33	16	87	70	0	56	3	8	0	0	0	273
	APPROACH %	0%	67%	33%	55%	45%	0%	84%	4%	12%	0%	0%	0%	
	APP/DEPART	49	/	89	157	/	78	67	/	106	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	14	8	17	29	0	27	1	4	0	0	0	100
	APPROACH %	0%	64%	36%	37%	63%	0%	84%	3%	13%	0%	0%	0%	
	PEAK HR FACTOR		0.786			0.885			0.727			0.000		0.862
	APP/DEPART	22	/	41	46	/	33	32	/	26	0	/	0	0
PM	4:00 PM	0	9	3	11	2	0	7	0	3	0	0	0	35
	4:15 PM	0	7	2	8	6	0	3	0	1	0	0	0	27
	4:30 PM	0	5	2	6	7	0	10	1	1	0	0	0	32
	4:45 PM	0	3	1	2	5	0	4	0	3	0	0	0	18
	5:00 PM	0	3	0	8	5	0	4	0	2	0	0	0	22
	5:15 PM	0	4	4	4	9	0	3	0	1	0	0	0	25
	5:30 PM	0	8	4	2	4	0	4	1	1	0	0	0	24
	5:45 PM	0	4	0	5	3	0	2	0	2	0	0	0	16
	VOLUMES	0	43	16	46	41	0	37	2	14	0	0	0	199
	APPROACH %	0%	73%	27%	53%	47%	0%	70%	4%	26%	0%	0%	0%	
	APP/DEPART	59	/	80	87	/	55	53	/	64	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	19	8	19	21	0	13	1	6	0	0	0	87
	APPROACH %	0%	70%	30%	48%	53%	0%	65%	5%	30%	0%	0%	0%	
	PEAK HR FACTOR		0.563			0.769			0.833			0.000		0.870
	APP/DEPART	27	/	32	40	/	27	20	/	28	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	X	0	X
1	0	0	0
1	0	0	0
1	0	0	0
0	0	2	0
0	0	0	0
1	0	0	0
2	0	0	0
0	0	2	0
6	0	4	0
2	0	2	0
0	0	3	0
0	0	1	0
0	0	0	0
0	0	2	0
0	0	2	0
1	0	0	0
0	0	0	0
0	0	1	0
1	0	9	0
1	0	3	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	6
TUESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

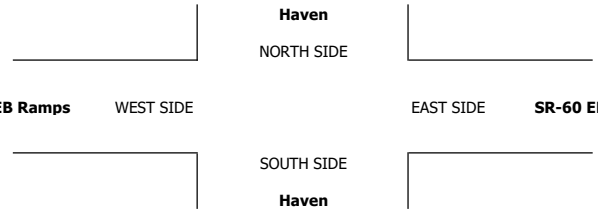
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 3	NR 0	SL 2	ST 3	SR X	EL 1.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	1	0	3	1	0	3	0	0	0	0	0	8
	7:15 AM	0	0	0	3	1	0	0	0	0	0	0	0	4
	7:30 AM	0	0	0	2	1	0	1	0	0	0	0	0	4
	7:45 AM	0	0	0	1	2	0	1	1	0	0	0	0	5
	8:00 AM	0	3	0	0	0	0	2	0	1	0	0	0	6
	8:15 AM	0	0	1	2	0	0	1	0	0	0	0	0	4
	8:30 AM	0	0	0	2	2	0	2	0	2	0	0	0	8
	8:45 AM	0	1	0	2	3	0	0	0	0	0	0	0	6
	VOLUMES	0	5	1	15	10	0	10	1	3	0	0	0	45
	APPROACH %	0%	83%	17%	60%	40%	0%	71%	7%	21%	0%	0%	0%	
	APP/DEPART	6	/	15	25	/	13	14	/	17	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	3	0	6	4	0	4	1	1	0	0	0	19
	APPROACH %	0%	100%	0%	60%	40%	0%	67%	17%	17%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.625			0.500			0.000		0.792
	APP/DEPART	3	/	7	10	/	5	6	/	7	0	/	0	0
PM	4:00 PM	0	0	0	1	0	0	3	0	0	0	0	0	4
	4:15 PM	0	4	0	2	1	0	1	0	1	0	0	0	9
	4:30 PM	0	0	0	1	3	0	2	0	1	0	0	0	7
	4:45 PM	0	1	0	0	1	0	1	0	0	0	0	0	3
	5:00 PM	0	0	0	1	2	0	1	0	0	0	0	0	4
	5:15 PM	0	1	0	0	0	0	4	0	0	0	0	0	5
	5:30 PM	0	0	0	1	1	0	1	0	0	0	0	0	3
	5:45 PM	0	1	0	3	2	0	0	0	0	0	0	0	6
	VOLUMES	0	7	0	9	10	0	13	0	2	0	0	0	41
	APPROACH %	0%	100%	0%	47%	53%	0%	87%	0%	13%	0%	0%	0%	
	APP/DEPART	7	/	20	19	/	12	15	/	9	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	2	0	5	5	0	6	0	0	0	0	0	18
	APPROACH %	0%	100%	0%	50%	50%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.500			0.375			0.000		0.750
	APP/DEPART	2	/	8	10	/	5	6	/	5	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	6
TUESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)			
	LANES:	NL X	NT 3	NR 0	SL 2	ST 3	SR X	EL 1.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	4	1	0	11	0	0	0	0	0	16
	7:15 AM	0	1	0	7	2	0	9	0	0	0	0	0	19
	7:30 AM	0	0	1	10	1	0	12	0	0	0	0	0	24
	7:45 AM	0	0	0	9	0	0	11	0	0	0	0	0	20
	8:00 AM	0	0	1	8	0	0	17	0	0	0	0	0	26
	8:15 AM	0	0	1	8	0	0	15	0	0	0	0	0	24
	8:30 AM	0	1	0	5	0	0	16	0	0	0	0	0	22
	8:45 AM	0	0	0	5	1	0	8	0	0	0	0	0	14
	VOLUMES	0	2	3	56	5	0	99	0	0	0	0	0	165
	APPROACH %	0%	40%	60%	92%	8%	0%	100%	0%	0%	0%	0%	0%	
	APP/DEPART	5	/	101	61	/	5	99	/	59	0	/	0	0
	BEGIN PEAK HR	7:15 AM												
	VOLUMES	0	1	2	34	3	0	49	0	0	0	0	0	89
	APPROACH %	0%	33%	67%	92%	8%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR	0.750			0.841			0.721			0.000			0.856
	APP/DEPART	3	/	50	37	/	3	49	/	36	0	/	0	0
PM	4:00 PM	0	0	0	1	0	0	9	0	0	0	0	0	10
	4:15 PM	0	1	0	4	0	0	16	0	0	0	0	0	21
	4:30 PM	0	0	0	2	0	0	11	0	0	0	0	0	13
	4:45 PM	0	0	0	6	0	0	12	0	0	0	0	0	18
	5:00 PM	0	0	0	6	0	0	10	0	0	0	0	0	16
	5:15 PM	0	0	0	4	0	0	9	0	0	0	0	0	13
	5:30 PM	0	1	0	5	1	0	6	0	0	0	0	0	13
	5:45 PM	0	0	0	2	0	0	13	0	0	0	0	0	15
	VOLUMES	0	2	0	30	1	0	86	0	0	0	0	0	119
	APPROACH %	0%	100%	0%	97%	3%	0%	100%	0%	0%	0%	0%	0%	
	APP/DEPART	2	/	88	31	/	1	86	/	30	0	/	0	0
	BEGIN PEAK HR	5:00 PM												
	VOLUMES	0	1	0	17	1	0	38	0	0	0	0	0	57
	APPROACH %	0%	100%	0%	94%	6%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR	0.250			0.750			0.731			0.000			0.891
	APP/DEPART	1	/	39	18	/	1	38	/	17	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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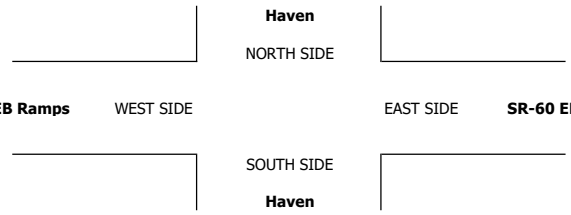
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	6
TUESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (SR-60 EB Ramps)			WESTBOUND (SR-60 EB Ramps)			
	LANES:	NL X	NT 3	NR 0	SL 2	ST 3	SR X	EL 1.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	X	0	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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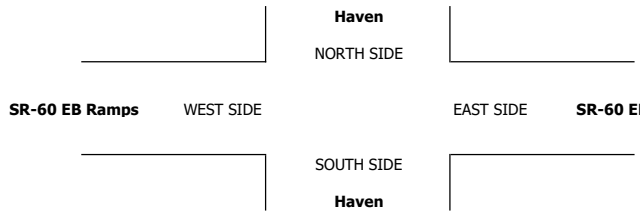
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	6
TUESDAY	EAST & WEST:	SR-60 EB Ramps	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND SR-60 EB Ramps			WESTBOUND SR-60 EB Ramps			
	LANES:	NL X	NT 3	NR 0	SL 2	ST 3	SR X	EL 1.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	3
	7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
	7:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	2
	7:45 AM	0	0	1	0	4	0	0	0	0	0	0	0	5
	8:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
	8:15 AM	0	3	0	1	0	0	0	0	0	0	0	0	4
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	0	8	1	2	7	0	0	0	1	0	0	0	19
	APPROACH %	0%	89%	11%	22%	78%	0%	0%	0%	100%	0%	0%	0%	
	APP/DEPART	9	/	8	9	/	8	1	/	3	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	3	1	1	5	0	0	0	1	0	0	0	11
	APPROACH %	0%	75%	25%	17%	83%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.333			0.375			0.250			0.000		0.550
	APP/DEPART	4	/	3	6	/	6	1	/	2	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
	4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	2	0	0	1	0	0	0	1	0	0	0	4
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	
	APP/DEPART	2	/	2	1	/	2	1	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	1	0	0	0	0	0	0	0	0	0	0	1
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.000			0.000		0.250
	APP/DEPART	1	/	1	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR X	ERR 0	WRR X
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Haven

NORTH SIDE

SR-60 EB Ramps WEST SIDE EAST SIDE **SR-60 EB Ramps**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Apr 13, 22	LOCATION:	Ontario	PROJECT #: SC3380
	NORTH & SOUTH:	Haven	LOCATION #: 19
	EAST & WEST:	Riverside	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

	NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Riverside			WESTBOUND Riverside			
LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	2	82	2	20	47	46	72	26	5	7	32	20	361
7:15 AM	1	100	9	36	23	66	64	43	6	13	62	29	452
7:30 AM	5	78	11	40	36	94	90	66	9	19	61	36	545
7:45 AM	4	77	16	64	47	50	88	130	7	19	83	35	620
8:00 AM	3	60	33	77	47	36	78	127	3	32	100	51	647
8:15 AM	5	68	29	79	44	43	55	110	6	29	92	53	613
8:30 AM	4	69	7	23	36	38	43	40	6	15	89	39	409
8:45 AM	7	87	9	21	42	49	49	25	6	8	28	14	345
VOLUMES	31	621	116	360	322	422	539	567	48	142	547	277	3,992
APPROACH %	4%	81%	15%	33%	29%	38%	47%	49%	4%	15%	57%	29%	
APP/DEPART	768	/	1,443	1,104	/	511	1,154	/	1,038	966	/	1,000	0
BEGIN PEAK HR		7:30 AM											
VOLUMES	17	283	89	260	174	223	311	433	25	99	336	175	2,425
APPROACH %	4%	73%	23%	40%	26%	34%	40%	56%	3%	16%	55%	29%	
PEAK HR FACTOR		0.953			0.966			0.854			0.833		0.937
APP/DEPART	389	/	773	657	/	297	769	/	779	610	/	576	0
4:00 PM	6	62	19	32	65	73	77	60	3	5	46	27	475
4:15 PM	7	66	14	41	70	68	83	79	11	6	53	24	522
4:30 PM	8	75	19	27	98	79	64	72	2	7	43	33	527
4:45 PM	5	54	10	26	93	87	73	56	11	7	63	26	511
5:00 PM	3	72	5	30	69	64	89	80	10	15	59	24	520
5:15 PM	9	76	11	23	86	95	67	74	7	12	64	15	539
5:30 PM	7	69	11	33	103	95	78	66	11	18	50	22	563
5:45 PM	9	78	23	33	80	76	42	70	18	6	87	16	538
VOLUMES	54	552	112	245	664	637	573	557	73	76	465	187	4,195
APPROACH %	8%	77%	16%	16%	43%	41%	48%	46%	6%	10%	64%	26%	
APP/DEPART	718	/	1,323	1,546	/	813	1,203	/	903	728	/	1,156	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	28	295	50	119	338	330	276	290	46	51	260	77	2,160
APPROACH %	8%	79%	13%	15%	43%	42%	45%	47%	8%	13%	67%	20%	
PEAK HR FACTOR		0.848			0.852			0.855			0.890		0.959
APP/DEPART	373	/	651	787	/	435	612	/	456	388	/	618	0

U-TURNS

	NB 0	SB 0	EB 0	WB 0	TTL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	1	0	0	1
7:45 AM	0	1	0	0	1
8:00 AM	0	1	0	1	2
8:15 AM	0	1	0	0	1
8:30 AM	0	1	0	0	1
8:45 AM	0	1	0	0	1
	0	6	0	1	7
4:00 PM	0	0	0	0	0
4:15 PM	0	5	0	0	5
4:30 PM	0	2	0	0	2
4:45 PM	0	1	0	0	1
5:00 PM	0	1	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	1	0	0	1
5:45 PM	0	1	0	0	1
	0	11	0	0	11

RTOR

	NRR 0	SRR 0	ERR 0	WRR 0
7:00 AM	1	26	2	6
7:15 AM	0	42	0	12
7:30 AM	2	64	1	3
7:45 AM	3	42	0	1
8:00 AM	6	24	1	22
8:15 AM	5	35	1	8
8:30 AM	1	33	1	3
8:45 AM	0	34	1	0
	18	300	7	55
	16	165	3	34
4:00 PM	3	57	0	11
4:15 PM	1	48	0	2
4:30 PM	2	40	0	15
4:45 PM	0	58	0	10
5:00 PM	0	40	0	5
5:15 PM	1	65	0	3
5:30 PM	0	59	1	9
5:45 PM	5	53	0	2
	12	420	1	57
	6	217	1	19

Haven

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Haven

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	1	0	2	2	5
7:15 AM	1	0	0	4	5
7:30 AM	0	0	5	2	7
7:45 AM	4	7	13	6	30
8:00 AM	5	1	8	12	26
8:15 AM	1	4	8	3	16
8:30 AM	1	0	2	2	5
8:45 AM	0	0	0	3	3
TOTAL	13	12	38	34	97
4:00 PM	0	0	0	0	0
4:15 PM	1	0	6	0	7
4:30 PM	3	2	5	3	13
4:45 PM	1	2	1	0	4
5:00 PM	0	0	1	3	4
5:15 PM	0	1	1	1	3
5:30 PM	0	1	2	1	4
5:45 PM	0	0	3	3	6
TOTAL	5	6	19	11	41

PEDESTRIAN CROSSINGS

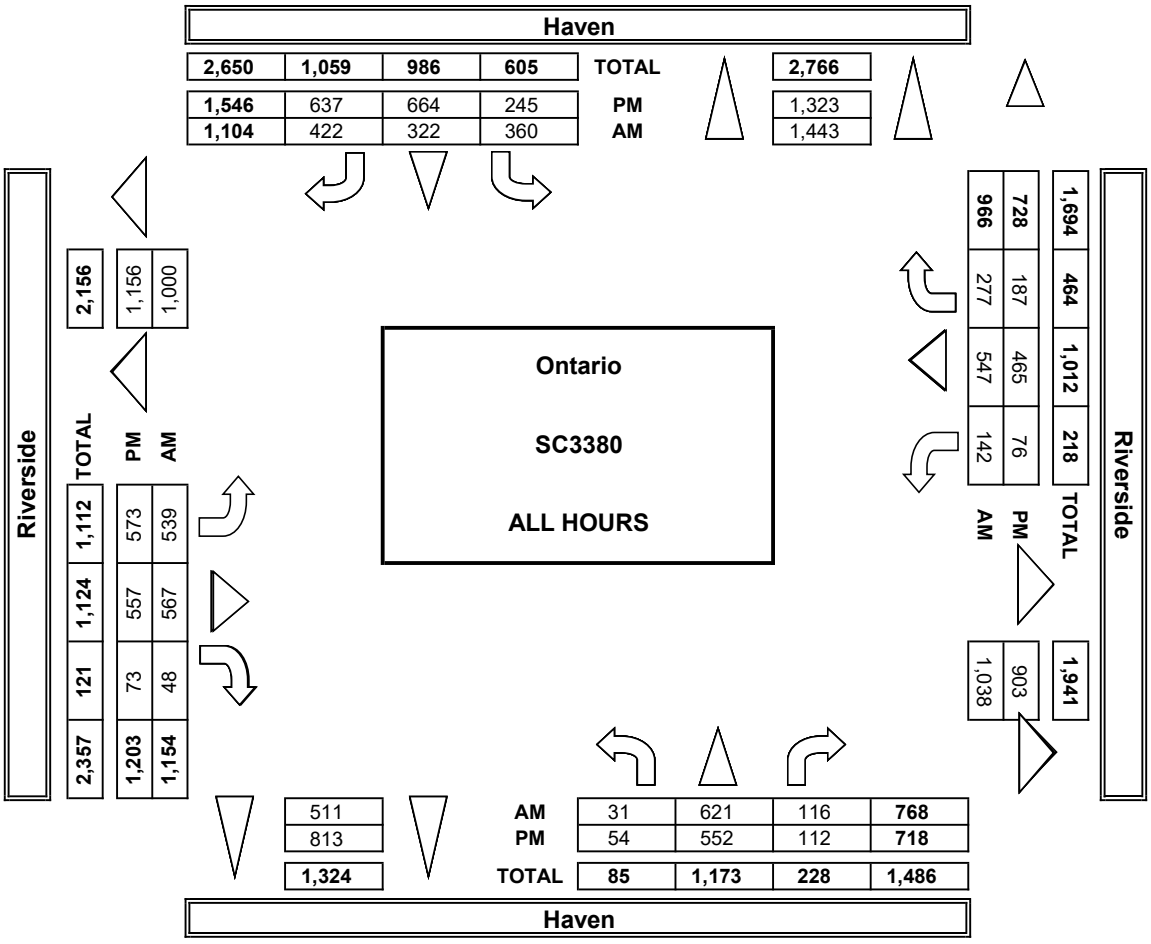
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	1	0	2	2	5
7:15 AM	1	0	0	3	4
7:30 AM	0	0	4	2	6
7:45 AM	4	7	10	6	27
8:00 AM	5	1	7	11	24
8:15 AM	1	4	7	3	15
8:30 AM	1	0	2	2	5
8:45 AM	0	0	0	3	3
TOTAL	13	12	32	32	89
4:00 PM	0	0	0	0	0
4:15 PM	1	0	6	0	7
4:30 PM	3	0	3	3	9
4:45 PM	1	2	1	0	4
5:00 PM	0	0	1	2	3
5:15 PM	0	1	0	1	2
5:30 PM	0	1	2	1	4
5:45 PM	0	0	1	2	3
TOTAL	5	4	14	9	32

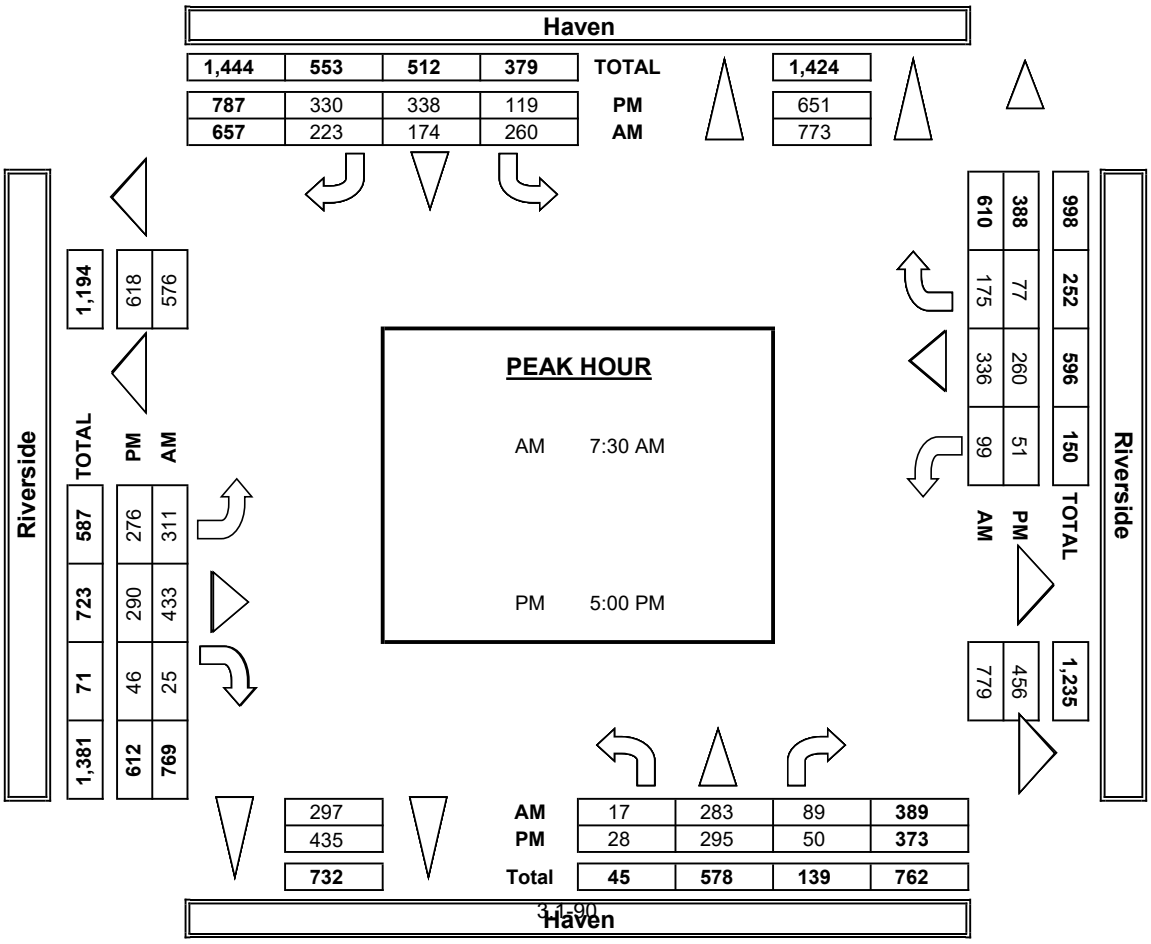
BICYCLE CROSSINGS

	ES	WS	SS	NS	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1
7:30 AM	0	0	1	0	1
7:45 AM	0	0	3	0	3
8:00 AM	0	0	1	1	2
8:15 AM	0	0	1	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	6	2	8
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	2	2	0	4
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	1	1
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	2	1	3
TOTAL	0	2	5	2	9

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	19
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

	NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	2	79	2	20	39	40	71	24	3	6	28	19	333
7:15 AM	1	96	8	36	23	58	63	43	3	12	60	29	432
7:30 AM	4	75	11	40	35	92	86	63	6	18	58	35	523
7:45 AM	4	73	15	58	40	46	86	123	5	19	77	34	580
8:00 AM	3	54	32	76	45	35	71	125	3	31	98	44	617
8:15 AM	4	67	27	77	40	42	51	105	5	29	90	53	590
8:30 AM	4	64	6	21	31	36	40	38	6	13	85	38	382
8:45 AM	6	80	9	18	31	45	45	21	4	8	22	11	300
AM VOLUMES	28	588	110	346	284	394	513	542	35	136	518	263	3,757
AM APPROACH %	4%	81%	15%	34%	28%	38%	47%	50%	3%	15%	56%	29%	
AM APP/DEPART	726	/	1,370	1,024	/	454	1,090	/	993	917	/	940	0
BEGIN PEAK HR		7:30 AM											
AM VOLUMES	15	269	85	247	160	215	294	416	19	96	323	166	2,310
AM APPROACH %	4%	73%	23%	39%	26%	34%	40%	57%	3%	16%	55%	28%	
AM PEAK HR FACTOR		0.941			0.937			0.852			0.847		0.936
AM APP/DEPART	369	/	733	626	/	275	729	/	749	586	/	553	0
4:00 PM	5	58	17	30	63	70	73	56	3	4	42	27	448
4:15 PM	6	61	13	41	67	67	79	78	11	6	50	22	501
4:30 PM	8	72	19	27	94	77	63	69	2	6	39	33	509
4:45 PM	5	47	10	24	89	84	72	50	11	7	60	24	483
5:00 PM	3	70	5	29	65	64	82	76	10	14	58	23	499
5:15 PM	8	71	11	23	82	94	64	68	7	11	61	15	515
5:30 PM	7	65	11	33	102	92	72	61	11	18	49	22	543
5:45 PM	9	73	21	30	78	73	42	69	17	6	82	15	515
PM VOLUMES	51	517	107	237	640	621	547	527	72	72	441	181	4,013
PM APPROACH %	8%	77%	16%	16%	43%	41%	48%	46%	6%	10%	64%	26%	
PM APP/DEPART	675	/	1,256	1,498	/	784	1,146	/	860	694	/	1,113	0
BEGIN PEAK HR		5:00 PM											
PM VOLUMES	27	279	48	112	327	323	260	274	45	49	250	75	2,072
PM APPROACH %	8%	79%	14%	15%	43%	42%	45%	47%	8%	13%	67%	20%	
PM PEAK HR FACTOR		0.859			0.843			0.862			0.908		0.954
PM APP/DEPART	354	/	617	765	/	421	579	/	434	374	/	600	0

U-TURNS

	NB	SB	EB	WB	TTL
AM	0	0	0	0	0
AM	0	0	0	0	0
AM	0	1	0	0	1
AM	0	1	0	0	1
AM	0	1	0	1	2
AM	0	1	0	0	1
AM	0	1	0	0	1
AM	0	1	0	0	1
AM	0	6	0	1	7
PM	0	0	0	0	0
PM	0	5	0	0	5
PM	0	2	0	0	2
PM	0	1	0	0	1
PM	0	1	0	0	1
PM	0	0	0	0	0
PM	0	1	0	0	1
PM	0	1	0	0	1
PM	0	11	0	0	11

RTOR

	NRR 0	SRR 0	ERR 0	WRR 0
AM	1	23	1	6
AM	0	36	0	12
AM	2	64	1	3
AM	3	38	0	1
AM	6	24	1	17
AM	4	34	1	8
AM	1	31	1	3
AM	0	31	1	0
AM	17	281	6	50
AM	15	160	3	29
PM	3	54	0	11
PM	1	48	0	2
PM	2	38	0	15
PM	0	56	0	10
PM	0	40	0	5
PM	1	65	0	3
PM	0	57	1	9
PM	5	51	0	2
PM	12	409	1	57
PM	6	213	1	19

Haven

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

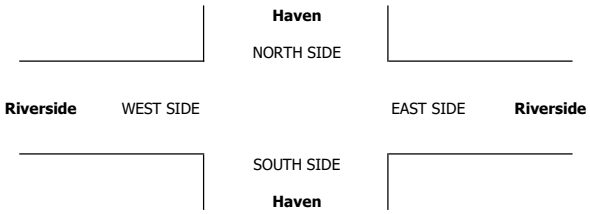
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	19
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	4	5	1	1	1	1	3	1	18
	7:15 AM	0	3	1	0	0	3	0	0	2	0	2	0	11
	7:30 AM	0	1	0	0	1	1	3	1	3	1	2	1	14
	7:45 AM	0	3	0	1	5	3	1	4	2	0	4	1	24
	8:00 AM	0	4	0	1	2	0	4	2	0	1	0	1	15
	8:15 AM	0	1	0	1	2	1	3	3	0	0	2	0	13
	8:30 AM	0	3	1	2	4	2	2	1	0	0	3	1	19
	8:45 AM	0	5	0	1	11	4	3	0	1	0	2	2	29
	VOLUMES	0	21	2	6	29	19	17	12	9	3	18	7	143
	APPROACH %	0%	91%	9%	11%	54%	35%	45%	32%	24%	11%	64%	25%	
	APP/DEPART	23	/	45	54	/	41	38	/	20	28	/	37	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	9	0	3	10	5	11	10	5	2	8	3	66
	APPROACH %	0%	100%	0%	17%	56%	28%	42%	38%	19%	15%	62%	23%	
	PEAK HR FACTOR		0.563			0.500			0.929			0.650		0.688
	APP/DEPART	9	/	23	18	/	17	26	/	13	13	/	13	0
PM	4:00 PM	1	4	2	1	2	1	2	4	0	1	4	0	22
	4:15 PM	1	5	0	0	2	1	2	0	0	0	3	2	16
	4:30 PM	0	2	0	0	4	1	1	1	0	1	3	0	13
	4:45 PM	0	6	0	0	3	2	1	4	0	0	3	2	21
	5:00 PM	0	1	0	0	2	0	3	3	0	1	0	0	10
	5:15 PM	1	4	0	0	4	1	3	5	0	0	3	0	21
	5:30 PM	0	3	0	0	1	3	4	4	0	0	1	0	16
	5:45 PM	0	4	1	1	2	3	0	0	1	0	5	1	18
	VOLUMES	3	29	3	2	20	12	16	21	1	3	22	5	137
	APPROACH %	9%	83%	9%	6%	59%	35%	42%	55%	3%	10%	73%	17%	
	APP/DEPART	35	/	50	34	/	24	38	/	26	30	/	37	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	1	12	1	1	9	7	10	12	1	1	9	1	65
	APPROACH %	7%	86%	7%	6%	53%	41%	43%	52%	4%	9%	82%	9%	
	PEAK HR FACTOR		0.700			0.708			0.719			0.458		0.774
	APP/DEPART	14	/	23	17	/	11	23	/	14	11	/	17	0

U-TURNS					RTOR			
NB	SB	EB	WB	TTL	NRR	SRR	ERR	WRR
0	0	0	0	0	0	2	0	0
0	0	0	0	0	0	2	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	3	0	0
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	2	0	0
0	0	0	0	0	0	3	0	0
0	0	0	0	0	0	13	0	1
					0	4	0	1
0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	2	0	0
0	0	0	0	0	0	2	0	0
0	0	0	0	0	0	7	0	0
					0	4	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	19
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

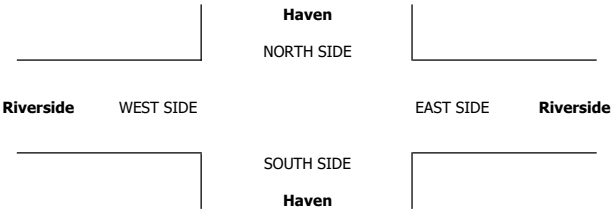
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	7:15 AM	0	0	0	0	0	1	0	0	1	0	0	0	2
	7:30 AM	1	0	0	0	0	1	1	0	0	0	0	0	3
	7:45 AM	0	0	1	0	0	0	0	1	0	0	0	0	2
	8:00 AM	0	1	0	0	0	0	1	0	0	0	1	0	3
	8:15 AM	0	0	1	0	1	0	0	1	0	0	0	0	3
	8:30 AM	0	1	0	0	0	0	0	0	0	2	1	0	4
	8:45 AM	1	1	0	1	0	0	1	0	0	0	4	1	9
	VOLUMES	2	4	2	1	2	2	3	2	1	2	6	1	28
	APPROACH %	25%	50%	25%	20%	40%	40%	50%	33%	17%	22%	67%	11%	
	APP/DEPART	8	/	8	5	/	5	6	/	5	9	/	10	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	1	2	0	1	1	2	2	0	0	1	0	11
	APPROACH %	25%	25%	50%	0%	50%	50%	50%	50%	0%	0%	100%	0%	
	PEAK HR FACTOR		1.000			0.500			1.000			0.250		0.917
	APP/DEPART	4	/	3	2	/	1	4	/	4	1	/	3	0
PM	4:00 PM	0	0	0	1	0	1	1	0	0	0	0	0	3
	4:15 PM	0	0	0	0	1	0	2	0	0	0	0	0	3
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:00 PM	0	1	0	1	1	0	1	1	0	0	0	1	6
	5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	5:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	2
	5:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
	VOLUMES	0	2	0	2	2	1	5	4	0	1	1	1	19
	APPROACH %	0%	100%	0%	40%	40%	20%	56%	44%	0%	33%	33%	33%	
	APP/DEPART	2	/	8	5	/	3	9	/	6	3	/	2	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	2	0	1	1	0	2	3	0	1	0	1	11
	APPROACH %	0%	100%	0%	50%	50%	0%	40%	60%	0%	50%	0%	50%	
	PEAK HR FACTOR		0.500			0.250			0.625			0.500		0.458
	APP/DEPART	2	/	5	2	/	2	5	/	4	2	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	19
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

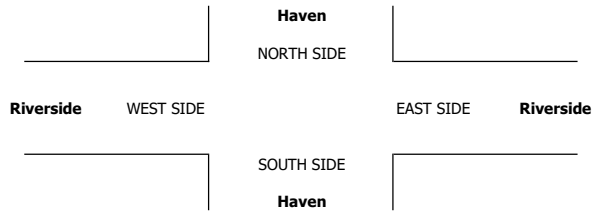
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	1	0	0	2	0	0	1	0	0	0	0	4
	7:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	2
	7:30 AM	0	2	0	0	0	0	0	0	0	0	1	0	3
	7:45 AM	0	1	0	0	1	1	0	1	0	0	0	0	4
	8:00 AM	0	1	0	0	0	0	1	0	0	0	0	0	2
	8:15 AM	1	0	0	0	1	0	1	0	1	0	0	0	4
	8:30 AM	0	1	0	0	1	0	1	0	0	0	0	0	3
	8:45 AM	0	1	0	0	0	0	0	1	1	0	0	0	3
	VOLUMES	1	8	0	0	5	2	3	3	2	0	1	0	25
	APPROACH %	11%	89%	0%	0%	71%	29%	38%	38%	25%	0%	100%	0%	
	APP/DEPART	9	/	11	7	/	7	8	/	3	1	/	4	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	4	0	0	2	1	2	1	1	0	1	0	13
	APPROACH %	20%	80%	0%	0%	67%	33%	50%	25%	25%	0%	100%	0%	
	PEAK HR FACTOR		0.625			0.375			0.500			0.250		0.813
	APP/DEPART	5	/	6	3	/	3	4	/	1	1	/	3	0
PM	4:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	2
	4:15 PM	0	0	1	0	0	0	0	1	0	0	0	0	2
	4:30 PM	0	1	0	0	0	1	0	2	0	0	0	0	4
	4:45 PM	0	1	0	0	1	0	0	1	0	0	0	0	3
	5:00 PM	0	0	0	0	1	0	3	0	0	0	1	0	5
	5:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
	5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
	5:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	2
	VOLUMES	0	3	2	1	2	2	5	5	0	0	1	0	21
	APPROACH %	0%	60%	40%	20%	40%	40%	50%	50%	0%	0%	100%	0%	
	APP/DEPART	5	/	8	5	/	2	10	/	8	1	/	3	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	1	1	1	1	0	4	1	0	0	1	0	10
	APPROACH %	0%	50%	50%	50%	50%	0%	80%	20%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.500			0.500			0.417			0.250		0.500
	APP/DEPART	2	/	5	2	/	1	5	/	3	1	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	19
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	1	0	0	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	1	/	0	0	/	0	0	/	1	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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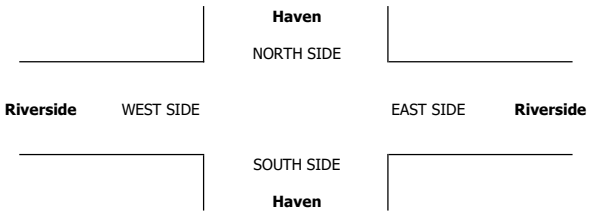
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	19
WEDNESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	1	1	0	0	1	0	1	0	4
	7:15 AM	0	0	0	0	0	3	1	0	0	1	0	0	5
	7:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
	7:45 AM	0	0	0	5	1	0	1	1	0	0	2	0	10
	8:00 AM	0	0	1	0	0	1	1	0	0	0	1	6	10
	8:15 AM	0	0	1	1	0	0	0	1	0	0	0	0	3
	8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:45 AM	0	0	0	1	0	0	0	3	0	0	0	0	4
	VOLUMES	0	0	2	7	2	5	3	8	1	1	4	6	39
	APPROACH %	0%	0%	100%	50%	14%	36%	25%	67%	8%	9%	36%	55%	
	APP/DEPART	2	/	9	14	/	4	12	/	17	11	/	9	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	2	6	1	1	2	4	0	0	3	6	25
	APPROACH %	0%	0%	100%	75%	13%	13%	33%	67%	0%	0%	33%	67%	
	PEAK HR FACTOR		0.500			0.333			0.750			0.321		0.625
	APP/DEPART	2	/	8	8	/	1	6	/	12	9	/	4	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	VOLUMES	0	1	0	3	0	0	0	0	0	0	0	0	4
	APPROACH %	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	1	/	1	3	/	0	0	/	3	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	1	0	1	0	0	0	0	0	0	0	0	2
	APPROACH %	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.250			0.000			0.000		0.500
	APP/DEPART	1	/	1	1	/	0	0	/	1	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	1	1	0
0	2	0	0
0	0	0	0
0	0	0	0
0	0	0	4
1	0	0	0
0	0	0	0
0	0	0	0
1	3	1	4
1	0	0	4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Haven

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Haven	LOCATION #: 8
	EAST & WEST:	Chino	CONTROL: STOP E

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	15	85	0	0	38	3	8	0	12	0	0	0	161
	7:15 AM	34	105	0	0	39	9	9	0	16	0	0	0	212
	7:30 AM	55	107	0	0	37	11	7	0	11	0	0	0	228
	7:45 AM	36	75	0	0	53	10	11	0	17	0	0	0	202
	8:00 AM	18	77	0	0	68	7	22	0	20	0	0	0	212
	8:15 AM	15	90	0	0	71	16	3	0	9	0	0	0	204
	8:30 AM	18	70	0	0	49	13	6	0	10	0	0	0	166
	8:45 AM	14	67	0	0	47	9	4	0	7	0	0	0	148
	VOLUMES	205	676	0	0	402	78	70	0	102	0	0	0	1,533
	APPROACH %	23%	77%	0%	0%	84%	16%	41%	0%	59%	0%	0%	0%	
	APP/DEPART	881	/ 746		480	/ 504		172	/ 0		0	/ 283		0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	143	364	0	0	197	37	49	0	64	0	0	0	854
	APPROACH %	28%	72%	0%	0%	84%	16%	43%	0%	57%	0%	0%	0%	
	PEAK HR FACTOR		0.782			0.780			0.673			0.000		0.936
	APP/DEPART	507	/ 413		234	/ 261		113	/ 0		0	/ 180		0
PM	4:00 PM	24	69	0	0	74	6	4	0	20	0	0	0	197
	4:15 PM	23	88	0	0	86	10	6	0	8	0	0	0	221
	4:30 PM	22	67	0	0	85	7	7	0	13	0	0	0	201
	4:45 PM	21	84	0	0	90	7	9	0	22	0	0	0	233
	5:00 PM	16	67	0	0	96	10	6	0	15	0	0	0	210
	5:15 PM	22	85	0	0	98	9	15	0	13	0	0	0	242
	5:30 PM	13	84	0	0	111	4	8	0	14	0	0	0	234
	5:45 PM	17	69	0	0	114	4	9	0	25	0	0	0	238
	VOLUMES	158	613	0	0	754	57	64	0	130	0	0	0	1,776
	APPROACH %	20%	80%	0%	0%	93%	7%	33%	0%	67%	0%	0%	0%	
	APP/DEPART	771	/ 677		811	/ 884		194	/ 0		0	/ 215		0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	68	305	0	0	419	27	38	0	67	0	0	0	924
	APPROACH %	18%	82%	0%	0%	94%	6%	36%	0%	64%	0%	0%	0%	
	PEAK HR FACTOR		0.871			0.945			0.772			0.000		0.955
	APP/DEPART	373	/ 343		446	/ 486		105	/ 0		0	/ 95		0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Haven

NORTH SIDE

Chino WEST SIDE — EAST SIDE **Chino**

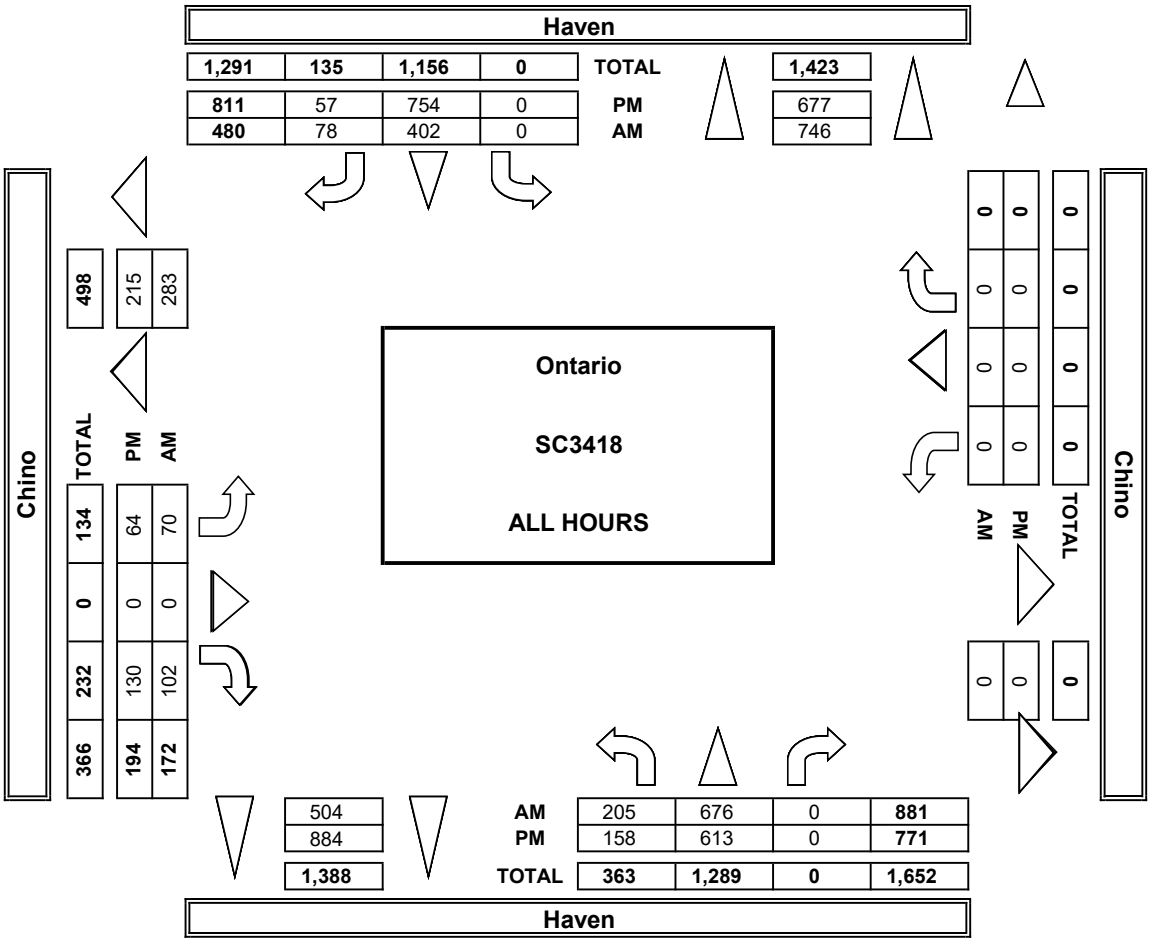
SOUTH SIDE

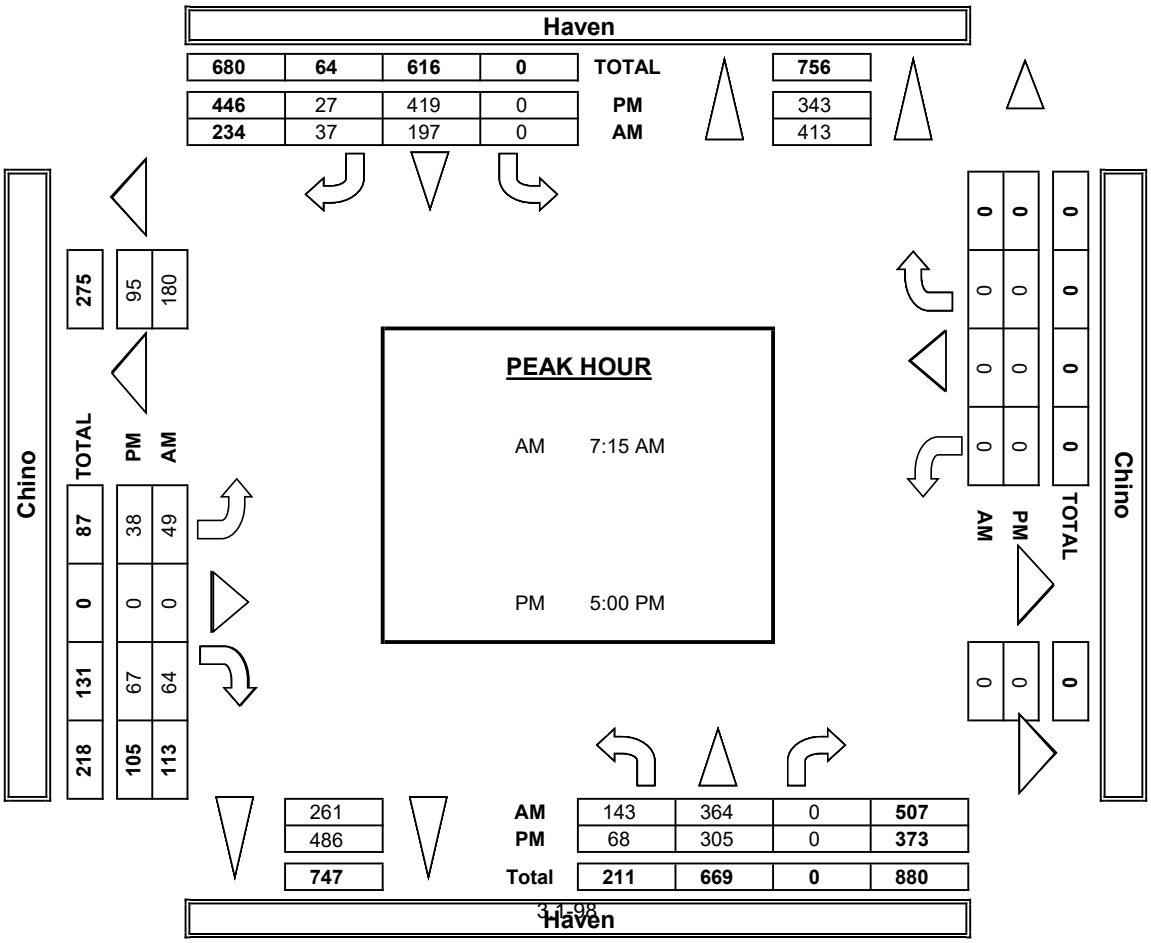
Haven

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	8
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP E

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

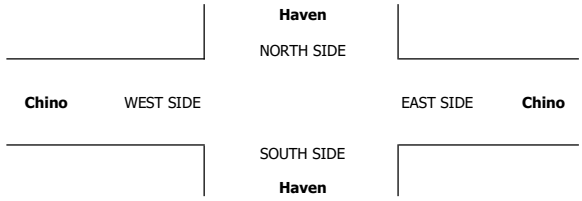
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	15	78	0	0	34	1	6	0	12	0	0	0	146
	7:15 AM	33	103	0	0	31	8	9	0	15	0	0	0	199
	7:30 AM	55	106	0	0	37	10	6	0	10	0	0	0	224
	7:45 AM	36	71	0	0	50	8	9	0	15	0	0	0	189
	8:00 AM	18	73	0	0	61	5	22	0	20	0	0	0	199
	8:15 AM	13	83	0	0	70	15	3	0	9	0	0	0	193
	8:30 AM	16	70	0	0	43	13	6	0	10	0	0	0	158
	8:45 AM	10	65	0	0	41	6	4	0	6	0	0	0	132
	VOLUMES	196	649	0	0	367	66	65	0	97	0	0	0	1,440
	APPROACH %	23%	77%	0%	0%	85%	15%	40%	0%	60%	0%	0%	0%	
	APP/DEPART	845	/	714	433	/	464	162	/	0	0	/	262	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	142	353	0	0	179	31	46	0	60	0	0	0	811
	APPROACH %	29%	71%	0%	0%	85%	15%	43%	0%	57%	0%	0%	0%	
	PEAK HR FACTOR		0.769			0.795			0.631			0.000		0.905
	APP/DEPART	495	/	399	210	/	239	106	/	0	0	/	173	0
PM	4:00 PM	24	64	0	0	73	6	2	0	20	0	0	0	189
	4:15 PM	21	75	0	0	80	10	3	0	8	0	0	0	197
	4:30 PM	21	63	0	0	83	6	7	0	13	0	0	0	193
	4:45 PM	21	83	0	0	86	5	9	0	21	0	0	0	225
	5:00 PM	14	63	0	0	93	10	5	0	14	0	0	0	199
	5:15 PM	21	82	0	0	92	8	15	0	12	0	0	0	230
	5:30 PM	11	79	0	0	108	3	7	0	13	0	0	0	221
	5:45 PM	16	66	0	0	111	4	7	0	24	0	0	0	228
	VOLUMES	149	575	0	0	726	52	55	0	125	0	0	0	1,682
	APPROACH %	21%	79%	0%	0%	93%	7%	31%	0%	69%	0%	0%	0%	
	APP/DEPART	724	/	630	778	/	851	180	/	0	0	/	201	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	62	290	0	0	404	25	34	0	63	0	0	0	878
	APPROACH %	18%	82%	0%	0%	94%	6%	35%	0%	65%	0%	0%	0%	
	PEAK HR FACTOR		0.854			0.933			0.782			0.000		0.954
	APP/DEPART	352	/	324	429	/	467	97	/	0	0	/	87	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	8
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP E

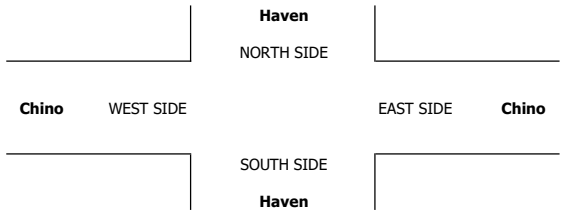
CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Chino			WESTBOUND Chino			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	7	0	0	3	1	0	0	0	0	0	0	11
	7:15 AM	1	2	0	0	5	0	0	0	1	0	0	0	9
	7:30 AM	0	1	0	0	0	0	0	0	1	0	0	0	2
	7:45 AM	0	3	0	0	3	1	2	0	1	0	0	0	10
	8:00 AM	0	2	0	0	3	2	0	0	0	0	0	0	7
	8:15 AM	1	4	0	0	1	0	0	0	0	0	0	0	6
	8:30 AM	1	0	0	0	5	0	0	0	0	0	0	0	6
	8:45 AM	2	2	0	0	5	2	0	0	1	0	0	0	12
	VOLUMES	5	21	0	0	25	6	2	0	4	0	0	0	63
	APPROACH %	19%	81%	0%	0%	81%	19%	33%	0%	67%	0%	0%	0%	
	APP/DEPART	26	/	23	31	/	29	6	/	0	0	/	11	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	1	8	0	0	11	3	2	0	3	0	0	0	28
	APPROACH %	11%	89%	0%	0%	79%	21%	40%	0%	60%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.700			0.417			0.000		0.700
	APP/DEPART	9	/	10	14	/	14	5	/	0	0	/	4	0
PM	4:00 PM	0	4	0	0	1	0	2	0	0	0	0	0	7
	4:15 PM	1	9	0	0	6	0	3	0	0	0	0	0	19
	4:30 PM	1	4	0	0	2	1	0	0	0	0	0	0	8
	4:45 PM	0	0	0	0	3	1	0	0	1	0	0	0	5
	5:00 PM	1	4	0	0	3	0	1	0	1	0	0	0	10
	5:15 PM	1	3	0	0	6	1	0	0	1	0	0	0	12
	5:30 PM	1	5	0	0	2	1	1	0	1	0	0	0	11
	5:45 PM	1	2	0	0	3	0	2	0	1	0	0	0	9
	VOLUMES	6	31	0	0	26	4	9	0	5	0	0	0	81
	APPROACH %	16%	84%	0%	0%	87%	13%	64%	0%	36%	0%	0%	0%	
	APP/DEPART	37	/	40	30	/	31	14	/	0	0	/	10	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	4	14	0	0	14	2	4	0	4	0	0	0	42
	APPROACH %	22%	78%	0%	0%	88%	13%	50%	0%	50%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.571			0.667			0.000		0.875
	APP/DEPART	18	/	18	16	/	18	8	/	0	0	/	6	0

U-TURNS					RTOR			
NB	SB	EB	WB	TTL	NRR X	SRR X	ERR X	WRR X
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
					0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
					0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	8
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP E

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	2
	7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	8:15 AM	1	1	0	0	0	0	0	0	0	0	0	0	2
	8:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	2
	8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	VOLUMES	2	1	0	0	4	1	1	0	0	0	0	0	9
	APPROACH %	67%	33%	0%	0%	80%	20%	100%	0%	0%	0%	0%	0%	
	APP/DEPART	3	/	2	5	/	4	1	/	0	0	/	3	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	2	0	0	0	0	0	0	0	2
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.500			0.000			0.000		0.500
	APP/DEPART	0	/	0	2	/	2	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	0	0	0	0	0	0	0	0	1
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	1	/	1	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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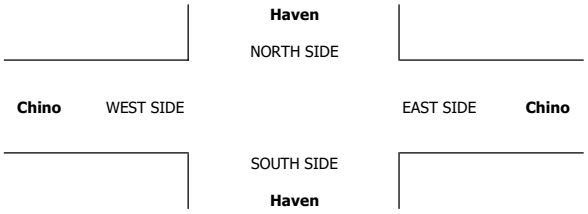
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	8
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP E

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
	7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	1	1	0	0	0	0	0	2
	7:45 AM	0	1	0	0	0	1	0	0	1	0	0	0	3
	8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	8:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	2
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	2	0	0	0	0	1	0	0	0	0	0	0	3
	VOLUMES	2	2	0	0	1	5	2	0	1	0	0	0	13
	APPROACH %	50%	50%	0%	0%	17%	83%	67%	0%	33%	0%	0%	0%	
	APP/DEPART	4	/	4	6	/	2	3	/	0	0	/	7	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	1	0	0	1	3	1	0	1	0	0	0	7
	APPROACH %	0%	100%	0%	0%	25%	75%	50%	0%	50%	0%	0%	0%	
	PEAK HR FACTOR		0.250			1.000			0.500			0.000		0.583
	APP/DEPART	1	/	2	4	/	2	2	/	0	0	/	3	0
PM	4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	4:15 PM	1	3	0	0	0	0	0	0	0	0	0	0	4
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	1	0	0	1	1	0	0	0	0	0	0	3
	5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	2
	5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	3	6	0	0	2	1	0	0	0	0	0	0	12
	APPROACH %	33%	67%	0%	0%	67%	33%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	9	/	6	3	/	2	0	/	0	0	/	4	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	2	1	0	0	1	0	0	0	0	0	0	0	4
	APPROACH %	67%	33%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.750			0.250			0.000			0.000		0.500
	APP/DEPART	3	/	1	1	/	1	0	/	0	0	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Haven

NORTH SIDE

Chino WEST SIDE EAST SIDE **Chino**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	8
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP E

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

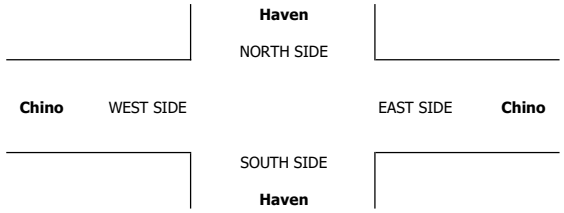
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Chino)			WESTBOUND (Chino)			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	8
TUESDAY	EAST & WEST:	Chino	CONTROL:	STOP E

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

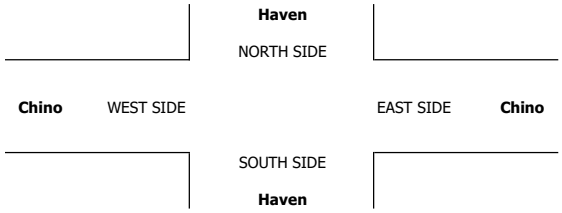
	NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Chino			WESTBOUND Chino			
LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM 7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	4
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	3	0	0	5	0	0	0	0	0	0	0	8
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	3	/ 3		5	/ 5		0	/ 0		0	/ 0		0
BEGIN PEAK HR		7:15 AM											
VOLUMES	0	2	0	0	4	0	0	0	0	0	0	0	6
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.250			0.500			0.000			0.000		0.375
APP/DEPART	2	/ 2		4	/ 4		0	/ 0		0	/ 0		0
PM 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/ 0		0	/ 0		0	/ 0		0	/ 0		0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
APP/DEPART	0	/ 0		0	/ 0		0	/ 0		0	/ 0		0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Haven	LOCATION #: 9
	EAST & WEST:	Schaefer	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)				U-TURNS					RTOR			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR 0	ERR 0	WRR X
AM	7:00 AM	16	103	0	0	51	2	11	0	8	0	0	0	191	3	0	0	0	3	0	0	4	0
	7:15 AM	20	120	0	0	60	1	15	0	13	0	0	0	229	3	0	0	0	3	0	0	10	0
	7:30 AM	30	142	0	0	43	5	11	0	21	0	0	0	252	2	0	0	0	2	0	0	11	0
	7:45 AM	29	85	0	0	74	10	5	0	23	0	0	0	226	5	0	0	0	5	0	1	18	0
	8:00 AM	16	93	0	0	82	5	7	0	17	0	0	0	220	5	0	0	0	5	0	2	11	0
	8:15 AM	22	93	0	0	77	7	6	0	7	0	0	0	212	4	0	0	0	4	0	1	6	0
	8:30 AM	20	81	0	0	56	4	8	0	14	0	0	0	183	6	0	0	0	6	0	0	11	0
	8:45 AM	17	86	0	0	52	2	9	0	8	0	0	0	174	6	0	0	0	6	0	0	5	0
	VOLUMES	170	803	0	0	495	36	72	0	111	0	0	0	1,687	34	0	0	0	34	0	4	76	0
	APPROACH %	17%	83%	0%	0%	93%	7%	39%	0%	61%	0%	0%	0%										
	APP/DEPART	973	/	875	531	/	640	183	/	0	0	/	172	0									
	BEGIN PEAK HR		7:15 AM																				
	VOLUMES	95	440	0	0	259	21	38	0	74	0	0	0	927						0	3	50	0
	APPROACH %	18%	82%	0%	0%	93%	8%	34%	0%	66%	0%	0%	0%										
	PEAK HR FACTOR		0.778			0.805			0.875			0.000		0.920									
	APP/DEPART	535	/	478	280	/	348	112	/	0	0	/	101	0									
PM	4:00 PM	20	78	0	0	92	5	5	0	18	0	0	0	218	3	0	0	0	3	0	0	12	0
	4:15 PM	34	102	0	0	87	2	6	0	10	0	0	0	241	6	0	0	0	6	0	0	9	0
	4:30 PM	20	92	0	0	103	0	5	0	18	0	0	0	238	5	0	0	0	5	0	0	15	0
	4:45 PM	26	97	0	0	114	2	7	0	27	0	0	0	273	4	0	0	0	4	0	0	21	0
	5:00 PM	22	81	0	0	96	6	5	0	16	0	0	0	226	4	0	0	0	4	0	0	14	0
	5:15 PM	26	95	0	0	112	6	6	0	11	0	0	0	256	4	0	0	0	4	0	0	8	0
	5:30 PM	29	87	0	0	118	5	5	0	18	0	0	0	262	2	0	0	0	2	0	0	13	0
	5:45 PM	37	91	0	0	136	3	5	0	31	0	0	0	303	5	0	0	0	5	0	0	24	0
	VOLUMES	214	723	0	0	858	29	44	0	149	0	0	0	2,017	33	0	0	0	33	0	0	116	0
	APPROACH %	23%	77%	0%	0%	97%	3%	23%	0%	77%	0%	0%	0%										
	APP/DEPART	937	/	767	887	/	1,040	193	/	0	0	/	210	0									
	BEGIN PEAK HR		5:00 PM																				
	VOLUMES	114	354	0	0	462	20	21	0	76	0	0	0	1,047						0	0	59	0
	APPROACH %	24%	76%	0%	0%	96%	4%	22%	0%	78%	0%	0%	0%										
	PEAK HR FACTOR		0.914			0.867			0.674			0.000		0.864									
	APP/DEPART	468	/	375	482	/	553	97	/	0	0	/	119	0									

Haven

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

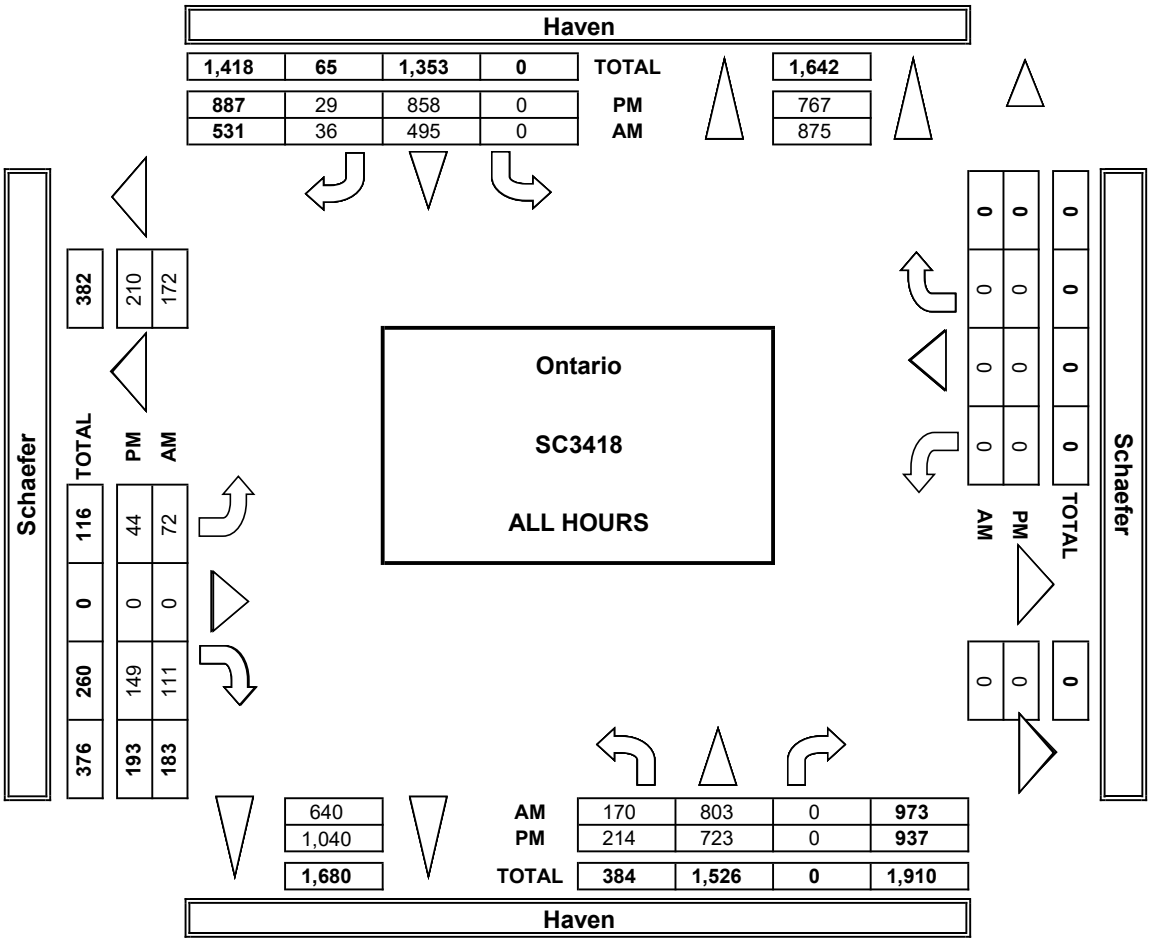
SOUTH SIDE

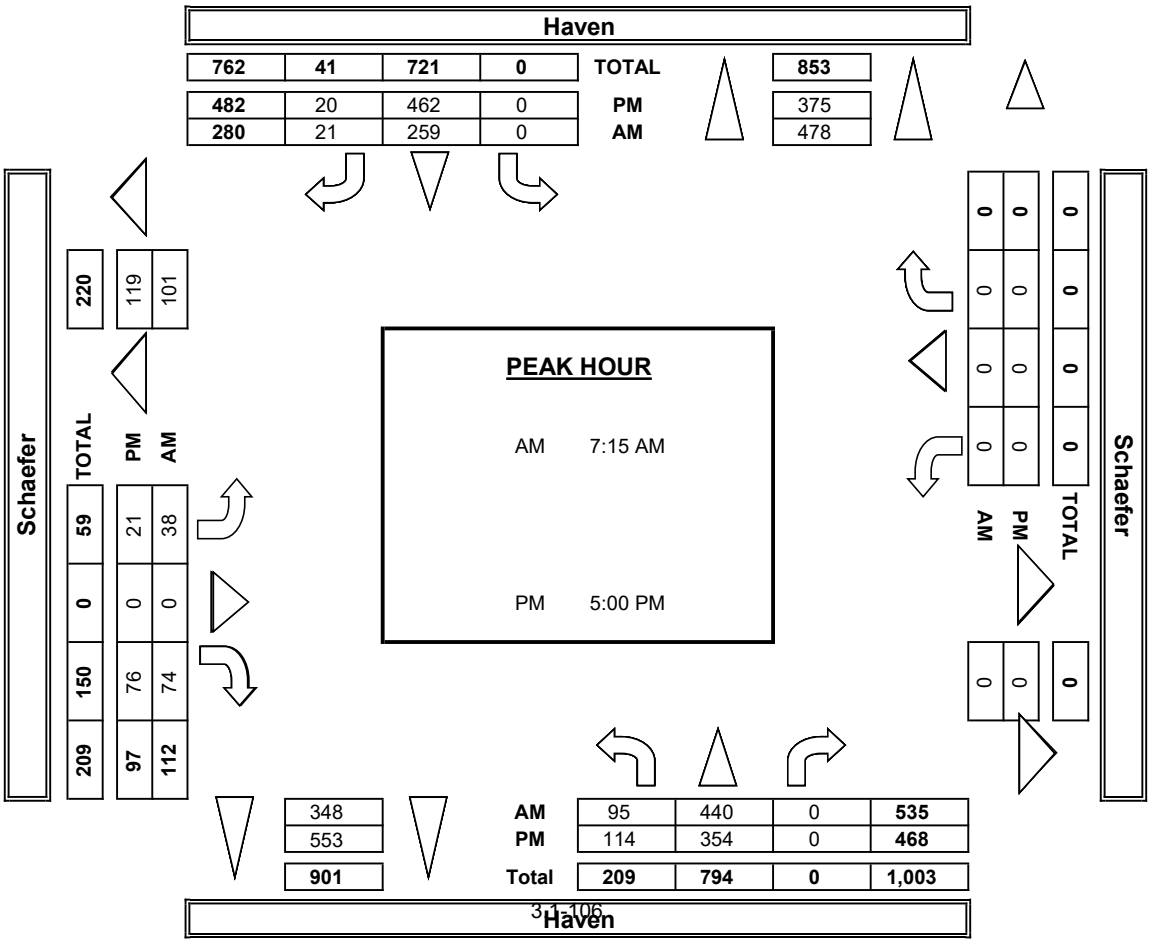
Haven

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	7:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	7:45 AM	0	2	1	2	5	0	0	1	0	1	0	2	0	2	4
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1	5	1	2	9	0	3	1	0	4	1	2	0	2	5
PM	4:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	9
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

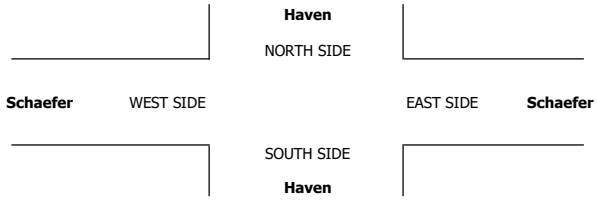
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	13	97	0	0	47	2	11	0	7	0	0	0	177
	7:15 AM	19	119	0	0	53	1	14	0	12	0	0	0	218
	7:30 AM	28	141	0	0	40	5	11	0	18	0	0	0	243
	7:45 AM	28	82	0	0	69	9	5	0	22	0	0	0	215
	8:00 AM	16	83	0	0	77	4	7	0	17	0	0	0	204
	8:15 AM	22	85	0	0	74	7	6	0	7	0	0	0	201
	8:30 AM	17	79	0	0	49	3	7	0	14	0	0	0	169
	8:45 AM	17	79	0	0	45	2	9	0	8	0	0	0	160
	VOLUMES	160	765	0	0	454	33	70	0	105	0	0	0	1,587
	APPROACH %	17%	83%	0%	0%	93%	7%	40%	0%	60%	0%	0%	0%	
	APP/DEPART	925	/	835	487	/	592	175	/	0	0	/	160	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	76	425	0	0	239	19	37	0	69	0	0	0	880
	APPROACH %	15%	82%	0%	0%	93%	7%	35%	0%	65%	0%	0%	0%	
	PEAK HR FACTOR		0.763			0.796			0.914			0.000		0.905
	APP/DEPART	516	/	462	258	/	323	106	/	0	0	/	95	0
PM	4:00 PM	20	75	0	0	89	4	5	0	17	0	0	0	210
	4:15 PM	31	88	0	0	84	2	5	0	9	0	0	0	219
	4:30 PM	19	86	0	0	99	0	4	0	17	0	0	0	225
	4:45 PM	23	96	0	0	110	2	7	0	25	0	0	0	263
	5:00 PM	21	77	0	0	94	6	4	0	16	0	0	0	218
	5:15 PM	23	88	0	0	105	6	6	0	11	0	0	0	239
	5:30 PM	28	82	0	0	115	5	5	0	18	0	0	0	253
	5:45 PM	37	89	0	0	132	3	4	0	31	0	0	0	296
	VOLUMES	202	681	0	0	828	28	40	0	144	0	0	0	1,923
	APPROACH %	23%	77%	0%	0%	97%	3%	22%	0%	78%	0%	0%	0%	
	APP/DEPART	883	/	721	856	/	1,003	184	/	0	0	/	199	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	95	336	0	0	446	20	19	0	76	0	0	0	1,006
	APPROACH %	21%	76%	0%	0%	96%	4%	20%	0%	80%	0%	0%	0%	
	PEAK HR FACTOR		0.883			0.863			0.679			0.000		0.850
	APP/DEPART	445	/	355	466	/	536	95	/	0	0	/	115	0

U-TURNS

	NB	SB	EB	WB	TTL
AM	3	0	0	0	3
	3	0	0	0	3
	2	0	0	0	2
	5	0	0	0	5
	5	0	0	0	5
	4	0	0	0	4
	5	0	0	0	5
	6	0	0	0	6
	33	0	0	0	33
PM	3	0	0	0	3
	6	0	0	0	6
	4	0	0	0	4
	4	0	0	0	4
	3	0	0	0	3
	4	0	0	0	4
	2	0	0	0	2
	5	0	0	0	5
	31	0	0	0	31

RTOR

	NRR X	SRR 0	ERR 0	WRR X
AM	0	0	4	0
	0	0	9	0
	0	0	10	0
	0	1	17	0
	0	2	11	0
	0	1	6	0
	0	0	11	0
	0	0	5	0
	0	4	73	0
	0	3	47	0
PM	0	0	11	0
	0	0	8	0
	0	0	14	0
	0	0	20	0
	0	0	14	0
	0	0	8	0
	0	0	13	0
	0	0	24	0
	0	0	112	0
	0	0	59	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	9
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

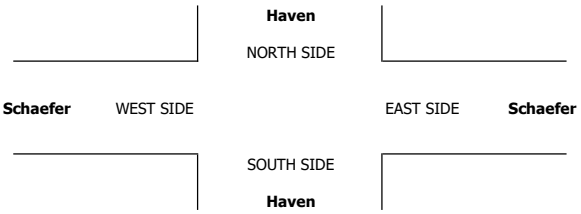
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	1	6	0	0	1	0	0	0	0	0	0	0	8
	7:15 AM	1	1	0	0	4	0	1	0	1	0	0	0	8
	7:30 AM	2	1	0	0	2	0	0	0	2	0	0	0	7
	7:45 AM	1	2	0	0	4	1	0	0	1	0	0	0	9
	8:00 AM	0	5	0	0	3	0	0	0	0	0	0	0	8
	8:15 AM	0	4	0	0	1	0	0	0	0	0	0	0	5
	8:30 AM	2	2	0	0	5	1	1	0	0	0	0	0	11
	8:45 AM	0	5	0	0	6	0	0	0	0	0	0	0	11
	VOLUMES	7	26	0	0	26	2	2	0	4	0	0	0	67
	APPROACH %	21%	79%	0%	0%	93%	7%	33%	0%	67%	0%	0%	0%	
	APP/DEPART	33	/	28	28	/	31	6	/	0	0	/	8	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	4	9	0	0	13	1	1	0	4	0	0	0	32
	APPROACH %	31%	69%	0%	0%	93%	7%	20%	0%	80%	0%	0%	0%	
	PEAK HR FACTOR		0.650			0.700			0.625			0.000		0.889
	APP/DEPART	13	/	10	14	/	17	5	/	0	0	/	5	0
PM	4:00 PM	0	2	0	0	2	1	0	0	0	0	0	0	5
	4:15 PM	2	10	0	0	3	0	0	0	1	0	0	0	16
	4:30 PM	0	6	0	0	4	0	1	0	1	0	0	0	12
	4:45 PM	1	0	0	0	3	0	0	0	2	0	0	0	6
	5:00 PM	1	3	0	0	2	0	1	0	0	0	0	0	7
	5:15 PM	3	7	0	0	7	0	0	0	0	0	0	0	17
	5:30 PM	1	4	0	0	2	0	0	0	0	0	0	0	7
	5:45 PM	0	1	0	0	4	0	1	0	0	0	0	0	6
	VOLUMES	8	33	0	0	27	1	3	0	4	0	0	0	76
	APPROACH %	20%	80%	0%	0%	96%	4%	43%	0%	57%	0%	0%	0%	
	APP/DEPART	41	/	36	28	/	32	7	/	0	0	/	8	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	4	15	0	0	15	0	2	0	0	0	0	0	37
	APPROACH %	20%	75%	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.536			0.500			0.000		0.544
	APP/DEPART	20	/	17	15	/	16	2	/	0	0	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	0	0	0
0	0	1	0
0	0	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	3	0
0	0	3	0
0	0	0	0
0	0	1	0
0	0	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	3	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	9
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	2	0	0	0	2	0	0	0	1	0	0	0	5
	7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
	8:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	4
	8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	2	5	0	0	6	0	0	0	1	0	0	0	14
	APPROACH %	29%	71%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	
	APP/DEPART	7	/	5	6	/	7	1	/	0	0	/	2	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	2	0	0	1	0	0	0	0	0	0	0	3
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.250			0.000			0.000		0.375
	APP/DEPART	2	/	2	1	/	1	0	/	0	0	/	0	0
PM	4:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
	4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	VOLUMES	1	2	0	0	0	0	1	0	1	0	0	0	5
	APPROACH %	33%	67%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	
	APP/DEPART	3	/	3	0	/	1	2	/	0	0	/	1	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	1	0	0	0	0	0	0	0	0	0	0	1
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.000			0.000		0.250
	APP/DEPART	1	/	1	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Haven

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	9
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

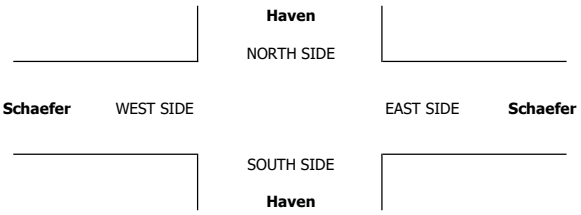
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Schaefer)			WESTBOUND (Schaefer)			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
	7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	VOLUMES	0	4	0	0	5	0	0	0	1	0	0	0	10
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	
	APP/DEPART	4	/	4	5	/	6	1	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	2	0	0	3	0	0	0	1	0	0	0	6
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.750			0.250			0.000		0.750
	APP/DEPART	2	/	2	3	/	4	1	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	4:15 PM	1	4	0	0	0	0	0	0	0	0	0	0	5
	4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	4:45 PM	1	1	0	0	1	0	0	0	0	0	0	0	3
	5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	7	0	0	3	0	0	0	0	0	0	0	13
	APPROACH %	30%	70%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	10	/	7	3	/	4	0	/	0	0	/	2	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	2	0	0	1	0	0	0	0	0	0	0	3
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.250			0.000			0.000		0.375
	APP/DEPART	2	/	2	1	/	1	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	9
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

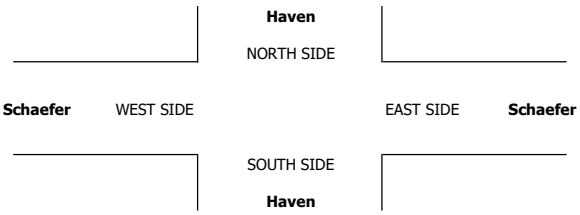
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Haven	LOCATION #:	9
TUESDAY	EAST & WEST:	Schaefer	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Schaefer			WESTBOUND Schaefer			
	LANES:	NL 1	NT 1	NR X	SL X	ST 1	SR 0	EL 1	ET X	ER 1	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	2	0	0	1	1	0	0	0	0	0	0	4
	8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	3	0	0	4	1	0	0	0	0	0	0	9
	APPROACH %	25%	75%	0%	0%	80%	20%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	4	/	3	5	/	4	0	/	0	0	/	2	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	2	0	0	3	1	0	0	0	0	0	0	6
	APPROACH %	0%	100%	0%	0%	75%	25%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.500			0.000			0.000		0.375
	APP/DEPART	2	/	2	4	/	3	0	/	0	0	/	1	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR X	SRR 0	ERR 0	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Haven

NORTH SIDE

Schaefer WEST SIDE EAST SIDE **Schaefer**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Apr 13, 22	LOCATION:	Ontario	PROJECT #: SC3380
	NORTH & SOUTH:	Haven	LOCATION #: 20
	EAST & WEST:	Ontario Ranch	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 2	WT 4	WR 1	TOTAL
AM	7:00 AM	4	49	26	35	26	9	26	97	3	18	122	32	447
	7:15 AM	13	64	34	32	43	15	17	118	3	21	94	42	496
	7:30 AM	7	100	26	39	31	10	20	111	5	17	118	45	529
	7:45 AM	8	52	25	53	41	12	27	93	5	13	76	29	434
	8:00 AM	3	59	24	63	61	11	35	110	4	18	108	22	518
	8:15 AM	5	49	23	35	56	12	19	109	6	21	93	31	459
	8:30 AM	5	53	13	26	36	10	12	104	6	28	81	26	400
	8:45 AM	8	59	9	30	37	15	19	85	5	22	78	28	395
	VOLUMES	53	485	180	313	331	94	175	827	37	158	770	255	3,678
	APPROACH %	7%	68%	25%	42%	45%	13%	17%	80%	4%	13%	65%	22%	
	APP/DEPART	718	/	944	738	/	522	1,039	/	1,295	1,183	/	917	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	31	275	109	187	176	48	99	432	17	69	396	138	1,977
	APPROACH %	7%	66%	26%	45%	43%	12%	18%	79%	3%	11%	66%	23%	
	PEAK HR FACTOR		0.780			0.761			0.919			0.838		0.934
	APP/DEPART	415	/	532	411	/	262	548	/	709	603	/	474	0
PM	4:00 PM	5	30	18	48	49	7	27	163	8	39	114	37	545
	4:15 PM	2	43	14	35	68	8	45	181	11	42	100	53	602
	4:30 PM	8	36	21	62	70	11	37	167	8	37	107	54	618
	4:45 PM	2	32	21	38	63	9	23	186	7	48	124	45	598
	5:00 PM	2	42	16	41	74	5	35	186	8	51	119	39	618
	5:15 PM	3	47	13	49	71	17	26	176	9	60	97	50	618
	5:30 PM	6	35	14	54	91	13	34	172	11	59	144	53	686
	5:45 PM	6	52	22	48	66	11	46	151	6	46	134	46	634
	VOLUMES	34	317	139	375	552	81	273	1,382	68	382	939	377	4,919
	APPROACH %	7%	65%	28%	37%	55%	8%	16%	80%	4%	22%	55%	22%	
	APP/DEPART	490	/	980	1,008	/	996	1,723	/	1,873	1,698	/	1,070	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	17	176	65	192	302	46	141	685	34	216	494	188	2,556
	APPROACH %	7%	68%	25%	36%	56%	9%	16%	80%	4%	24%	55%	21%	
	PEAK HR FACTOR		0.806			0.854			0.939			0.877		0.931
	APP/DEPART	258	/	514	540	/	546	860	/	930	898	/	566	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
0	2	1	3	6
0	5	0	1	6
0	4	0	0	4
1	1	0	0	2
0	10	0	0	10
0	5	1	0	6
0	0	0	2	2
1	4	0	0	5
2	31	2	6	41
0	2	2	0	4
0	2	2	0	4
1	6	2	0	9
0	2	2	1	5
0	5	0	0	5
0	3	2	2	7
0	3	4	1	8
0	7	3	3	13
1	30	17	7	55

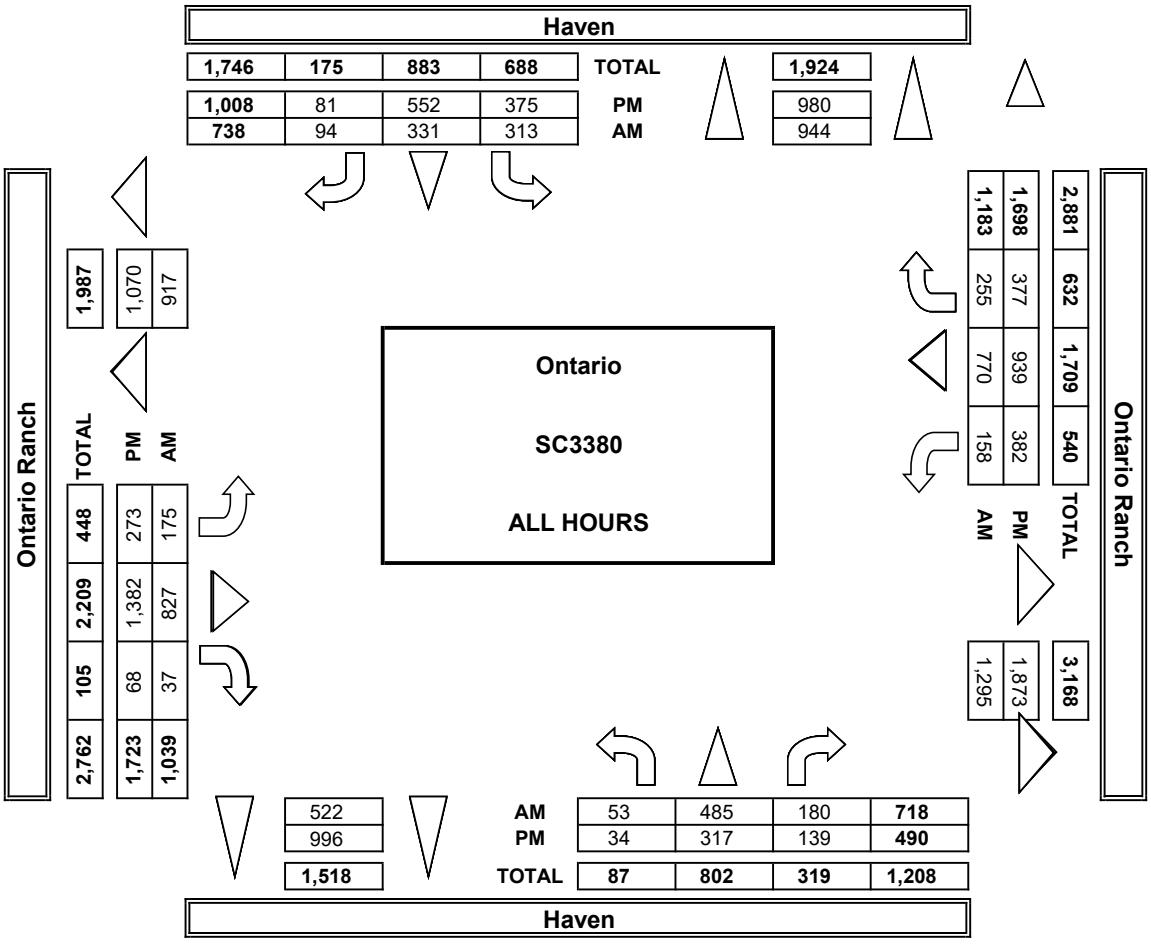
RTOR

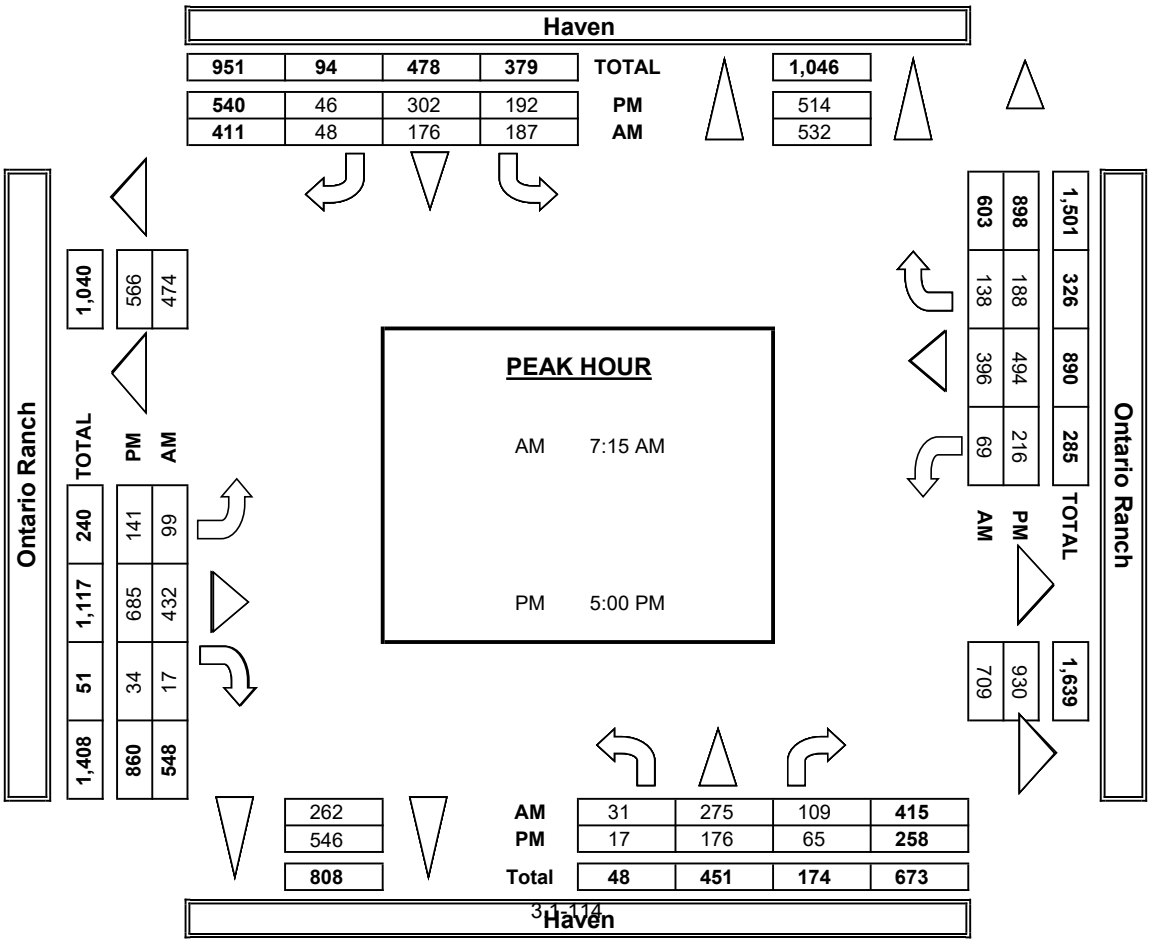
NRR	SRR	ERR	WRR
0	0	0	0
16	3	1	4
9	7	2	17
13	4	3	13
10	6	2	14
15	4	3	4
14	9	3	12
8	4	4	14
4	8	1	17
89	45	19	95
47	21	10	48
8	2	1	13
6	3	4	25
6	4	4	16
12	5	3	16
9	2	1	12
9	8	5	18
6	9	5	24
8	3	3	9
64	36	26	133
32	22	14	63

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	7:15 AM	1	2	1	0	4	1	2	1	0	4	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0
	8:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	3	0	2	5	0	2	0	1	3	0	1	0	1	2
	8:45 AM	2	1	2	0	5	2	1	2	0	5	0	0	0	0	0
	TOTAL	3	9	4	2	18	3	8	3	1	15	0	1	1	1	3
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:15 PM	0	3	0	4	7	0	3	0	4	7	0	0	0	0	0
	5:30 PM	0	1	0	2	3	0	1	0	2	3	0	0	0	0	0
	5:45 PM	0	1	0	2	3	0	1	0	2	3	0	0	0	0	0
	TOTAL	1	6	0	8	15	1	6	0	8	15	0	0	0	0	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	20
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

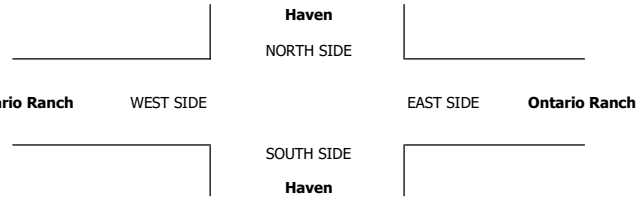
		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 2	WT 4	WR 1	TOTAL
AM	7:00 AM	2	48	23	33	24	7	24	78	1	13	88	29	370
	7:15 AM	9	58	33	31	39	12	14	97	3	18	72	36	422
	7:30 AM	7	96	23	37	30	10	16	88	5	14	90	39	455
	7:45 AM	7	48	25	48	37	11	23	72	5	12	61	27	376
	8:00 AM	3	54	24	63	58	8	29	87	4	17	90	21	458
	8:15 AM	3	48	22	33	52	12	17	76	5	21	66	23	378
	8:30 AM	5	52	13	23	30	7	11	69	6	24	57	19	316
	8:45 AM	7	58	9	27	30	12	19	58	5	21	62	22	330
	VOLUMES	43	462	172	295	300	79	153	625	34	140	586	216	3,105
	APPROACH %	6%	68%	25%	44%	45%	12%	19%	77%	4%	15%	62%	23%	
	APP/DEPART	677	/	860	674	/	474	812	/	1,064	942	/	707	0
	BEGIN PEAK HR	**NOTES:**												
	VOLUMES	25	256	105	159	164	41	82	344	17	61	313	123	1,711
	APPROACH %	6%	66%	27%	41%	43%	11%	19%	78%	4%	12%	63%	25%	
	PEAK HR FACTOR		0.768			0.744			0.923			0.869		0.934
	APP/DEPART	387	/	481	384	/	243	443	/	608	497	/	379	0
PM	4:00 PM	3	28	15	46	49	6	23	136	8	37	84	36	471
	4:15 PM	1	42	14	34	67	6	43	153	11	41	84	50	546
	4:30 PM	8	32	19	60	67	10	35	141	8	35	93	51	559
	4:45 PM	2	30	19	37	60	9	20	172	7	46	101	43	546
	5:00 PM	2	42	15	39	72	5	33	164	8	50	95	39	564
	5:15 PM	3	45	13	47	69	17	24	161	9	55	81	49	573
	5:30 PM	5	34	12	52	90	12	33	146	10	57	125	50	626
	5:45 PM	6	50	19	47	65	11	44	136	6	45	116	42	587
	VOLUMES	30	303	126	362	539	76	255	1,209	67	366	779	360	4,472
	APPROACH %	7%	66%	27%	37%	55%	8%	17%	79%	4%	24%	52%	24%	
	APP/DEPART	459	/	939	977	/	969	1,531	/	1,671	1,505	/	893	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	16	171	59	167	296	45	129	607	33	204	417	180	2,350
	APPROACH %	7%	70%	24%	32%	56%	9%	17%	78%	4%	25%	52%	22%	
	PEAK HR FACTOR		0.820			0.854			0.944			0.866		0.938
	APP/DEPART	246	/	498	526	/	533	774	/	836	804	/	483	0

U-TURNS

NB	SB	EB	WB	TTL
0	2	0	1	3
0	5	0	0	5
0	4	0	0	4
1	1	0	0	2
0	10	0	0	10
0	4	1	0	5
0	0	0	1	1
1	4	0	0	5
2	30	1	2	35
0	2	0	0	2
0	2	1	0	3
1	6	1	0	8
0	2	2	1	5
0	5	0	0	5
0	3	0	0	3
0	3	3	1	7
0	7	2	2	11
1	30	9	4	44

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
14	2	0	3
9	4	2	16
12	4	3	11
10	6	2	14
15	3	3	4
13	9	3	10
8	3	4	10
4	5	1	13
85	36	18	81
46	17	10	45
6	1	1	13
6	2	4	23
6	4	4	16
12	5	3	15
9	2	1	12
9	8	5	18
5	8	5	23
6	3	3	8
59	33	26	128
29	21	14	61



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	20
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

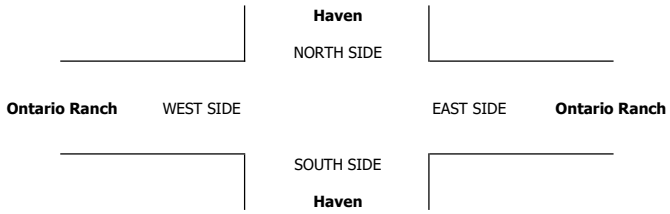
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 2	WT 4	WR 1	TOTAL
AM	7:00 AM	1	1	3	2	2	0	1	4	1	2	10	1	28
	7:15 AM	1	6	1	0	2	1	3	5	0	2	4	4	29
	7:30 AM	0	3	1	1	1	0	3	5	0	3	6	4	27
	7:45 AM	1	3	0	4	4	0	3	6	0	0	5	0	26
	8:00 AM	0	4	0	0	3	3	2	9	0	1	4	0	26
	8:15 AM	2	0	1	2	2	0	2	12	1	0	7	5	34
	8:30 AM	0	0	0	0	5	2	1	10	0	1	3	6	28
	8:45 AM	0	1	0	2	7	3	0	7	0	1	5	3	29
	VOLUMES	5	18	6	11	26	9	15	58	2	10	44	23	227
	APPROACH %	17%	62%	21%	24%	57%	20%	20%	77%	3%	13%	57%	30%	
	APP/DEPART	29	/	57	46	/	37	75	/	75	77	/	58	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	2	16	2	5	10	4	11	25	0	6	19	8	108
	APPROACH %	10%	80%	10%	26%	53%	21%	31%	69%	0%	18%	58%	24%	
	PEAK HR FACTOR		0.625			0.594			0.818			0.635		0.931
	APP/DEPART	20	/	35	19	/	16	36	/	32	33	/	25	0
PM	4:00 PM	1	2	2	1	0	1	2	7	0	1	8	1	26
	4:15 PM	0	1	0	1	1	2	1	12	0	1	5	3	27
	4:30 PM	0	3	2	2	2	1	1	10	0	2	2	3	28
	4:45 PM	0	1	1	1	3	0	2	5	0	2	7	2	24
	5:00 PM	0	0	1	2	1	0	1	6	0	1	7	0	19
	5:15 PM	0	2	0	1	2	0	0	8	0	2	4	1	20
	5:30 PM	1	0	2	2	1	1	0	6	1	2	6	3	25
	5:45 PM	0	2	3	1	1	0	1	6	0	0	2	4	20
	VOLUMES	2	11	11	11	11	5	8	60	1	11	41	17	189
	APPROACH %	8%	46%	46%	41%	41%	19%	12%	87%	1%	16%	59%	25%	
	APP/DEPART	24	/	36	27	/	23	69	/	82	69	/	48	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	1	4	6	6	5	1	2	26	1	5	19	8	84
	APPROACH %	9%	36%	55%	50%	42%	8%	7%	90%	3%	16%	59%	25%	
	PEAK HR FACTOR		0.550			0.750			0.906			0.727		0.840
	APP/DEPART	11	/	14	12	/	11	29	/	38	32	/	21	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	1	1
0	0	0	0	0
0	1	0	1	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
2	0	1	1
0	1	0	1
0	0	0	2
0	0	0	0
0	1	0	0
1	0	0	0
0	1	0	3
0	3	0	2
3	6	1	9
0	2	0	3
2	1	0	0
0	1	0	2
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
1	1	0	1
2	0	0	1
5	3	0	5
3	1	0	2



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	20
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

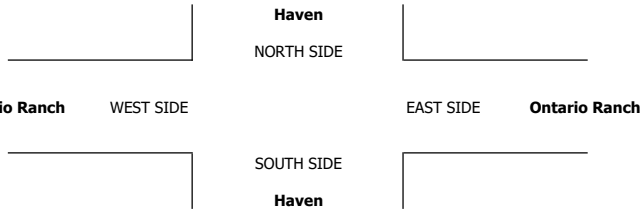
		NORTHBOUND Haven			SOUTHBOUND Haven			EASTBOUND Ontario Ranch			WESTBOUND Ontario Ranch			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 2	WT 4	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	1	0	2	0	1	8	1	13
	7:15 AM	2	0	0	1	1	1	0	5	0	0	8	1	19
	7:30 AM	0	1	1	0	0	0	0	6	0	0	6	2	16
	7:45 AM	0	0	0	0	0	1	0	1	0	0	2	1	5
	8:00 AM	0	0	0	0	0	0	0	5	0	0	6	1	12
	8:15 AM	0	1	0	0	1	0	0	11	0	0	5	3	21
	8:30 AM	0	1	0	2	1	0	0	16	0	0	3	1	24
	8:45 AM	0	0	0	0	0	0	0	10	0	0	5	3	18
	VOLUMES	2	3	1	3	3	3	0	56	0	1	43	13	128
	APPROACH %	33%	50%	17%	33%	33%	33%	0%	100%	0%	2%	75%	23%	
	APP/DEPART	6	/	16	9	/	4	56	/	60	57	/	48	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	2	1	1	1	1	2	0	17	0	0	22	5	52
	APPROACH %	50%	25%	25%	25%	25%	50%	0%	100%	0%	0%	81%	19%	
	PEAK HR FACTOR		0.500			0.333			0.708			0.750		0.684
	APP/DEPART	4	/	6	4	/	1	17	/	19	27	/	26	0
PM	4:00 PM	1	0	0	0	0	0	0	4	0	0	2	0	7
	4:15 PM	0	0	0	0	0	0	0	5	0	0	2	0	7
	4:30 PM	0	0	0	0	1	0	0	5	0	0	3	0	9
	4:45 PM	0	1	0	0	0	0	0	2	0	0	5	0	8
	5:00 PM	0	0	0	0	1	0	1	5	0	0	2	0	9
	5:15 PM	0	0	0	1	0	0	0	3	0	0	1	0	5
	5:30 PM	0	1	0	0	0	0	0	4	0	0	2	0	7
	5:45 PM	0	0	0	0	0	0	0	3	0	1	4	0	8
	VOLUMES	1	2	0	1	2	0	1	31	0	1	21	0	60
	APPROACH %	33%	67%	0%	33%	67%	0%	3%	97%	0%	5%	95%	0%	
	APP/DEPART	3	/	3	3	/	2	32	/	33	22	/	22	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	1	0	1	1	0	1	15	0	0	9	0	29
	APPROACH %	0%	100%	0%	50%	50%	0%	6%	94%	0%	0%	90%	0%	
	PEAK HR FACTOR		0.250			0.500			0.667			0.500		0.806
	APP/DEPART	1	/	2	2	/	1	16	/	17	10	/	9	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	1	1

RTOR

NRR	SRR	ERR	WRR
0	1	0	0
0	1	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	2
0	0	0	1
0	0	0	2
1	2	0	5
1	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	20
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 2	WT 4	WR 1	TOTAL
AM	7:00 AM	1	0	0	0	0	0	0	13	1	0	16	1	32
	7:15 AM	1	0	0	0	1	0	0	11	0	0	10	1	24
	7:30 AM	0	0	1	1	0	0	1	12	0	0	16	0	31
	7:45 AM	0	1	0	1	0	0	1	13	0	1	8	1	26
	8:00 AM	0	1	0	0	0	0	2	9	0	0	8	0	20
	8:15 AM	0	0	0	0	1	0	0	10	0	0	15	0	26
	8:30 AM	0	0	0	1	0	1	0	8	0	3	18	0	31
	8:45 AM	1	0	0	1	0	0	0	10	0	0	5	0	17
	VOLUMES	3	2	1	4	2	1	4	86	1	4	96	3	207
	APPROACH %	50%	33%	17%	57%	29%	14%	4%	95%	1%	4%	93%	3%	
	APP/DEPART	6	/	9	7	/	7	91	/	91	103	/	100	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	1	2	1	2	1	0	4	45	0	1	42	2	101
	APPROACH %	25%	50%	25%	67%	33%	0%	8%	92%	0%	2%	93%	4%	
	PEAK HR FACTOR		1.000			0.750			0.875			0.703		0.815
	APP/DEPART	4	/	8	3	/	2	49	/	48	45	/	43	0
PM	4:00 PM	0	0	1	1	0	0	0	16	0	1	20	0	39
	4:15 PM	1	0	0	0	0	0	0	10	0	0	9	0	20
	4:30 PM	0	1	0	0	0	0	0	11	0	0	9	0	21
	4:45 PM	0	0	1	0	0	0	1	7	0	0	10	0	19
	5:00 PM	0	0	0	0	0	0	0	11	0	0	15	0	26
	5:15 PM	0	0	0	0	0	0	0	4	0	1	11	0	16
	5:30 PM	0	0	0	0	0	0	0	16	0	0	11	0	27
	5:45 PM	0	0	0	0	0	0	1	6	0	0	12	0	19
	VOLUMES	1	1	2	1	0	0	2	81	0	2	97	0	187
	APPROACH %	25%	25%	50%	100%	0%	0%	2%	98%	0%	2%	98%	0%	
	APP/DEPART	4	/	2	1	/	2	83	/	84	99	/	99	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	37	0	1	49	0	88
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	97%	0%	2%	98%	0%	
	PEAK HR FACTOR		0.000			0.000			0.594			0.833		0.815
	APP/DEPART	0	/	0	0	/	1	38	/	37	50	/	50	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	0	1

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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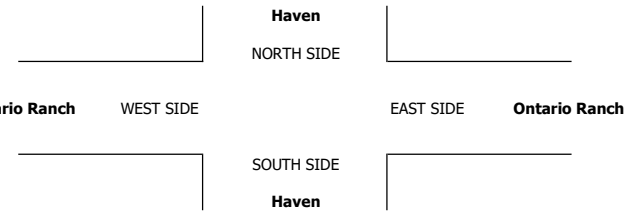
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	20
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 2	WT 4	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
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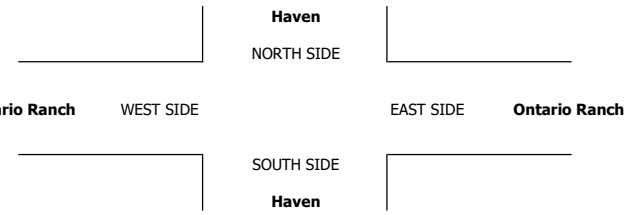
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3380
4/13/22	NORTH & SOUTH:	Haven	LOCATION #:	20
WEDNESDAY	EAST & WEST:	Ontario Ranch	CONTROL:	SIGNAL

CLASS 6:	NOTES:	AM / PM / MD / OTHER / OTHER
BUSES		▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Haven)			SOUTHBOUND (Haven)			EASTBOUND (Ontario Ranch)			WESTBOUND (Ontario Ranch)			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 2	WT 4	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
	7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	2
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	VOLUMES	0	0	0	0	0	2	2	2	0	0	1	0	7
	APPROACH %	0%	0%	0%	0%	0%	100%	50%	50%	0%	0%	100%	0%	
	APP/DEPART	0	/	2	2	/	0	4	/	2	1	/	3	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	1	2	1	0	0	0	0	4
	APPROACH %	0%	0%	0%	0%	0%	100%	67%	33%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.250			0.375			0.000		0.500
	APP/DEPART	0	/	2	1	/	0	3	/	1	0	/	1	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	1	0	0	1	0	2
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	1	/	1	1	/	1	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0

RTOR			
NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Haven

NORTH SIDE

Ontario Ranch WEST SIDE EAST SIDE **Ontario Ranch**

SOUTH SIDE

Haven

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Mill Creek	LOCATION #: 11
	EAST & WEST:	Riverside	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

	NORTHBOUND Mill Creek			SOUTHBOUND Mill Creek			EASTBOUND Riverside			WESTBOUND Riverside			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	16	1	4	8	4	12	2	20	11	7	59	9	153
7:15 AM	48	16	8	18	27	9	24	22	47	21	50	29	319
7:30 AM	41	10	6	16	13	18	54	38	38	6	66	20	326
7:45 AM	29	9	13	40	23	31	65	34	51	14	39	47	395
8:00 AM	52	15	24	18	43	13	86	35	69	34	33	11	433
8:15 AM	66	41	28	8	76	7	92	54	73	44	39	11	539
8:30 AM	56	32	13	5	23	12	46	31	25	16	41	5	305
8:45 AM	10	0	2	11	3	5	9	30	13	1	24	12	120
VOLUMES	318	124	98	124	212	107	378	264	327	143	351	144	2,590
APPROACH %	59%	23%	18%	28%	48%	24%	39%	27%	34%	22%	55%	23%	
APP/DEPART	540	/ 374		443	/ 684		969	/ 486		638	/ 1,046		0
BEGIN PEAK HR		7:30 AM											
VOLUMES	188	75	71	82	155	69	297	161	231	98	177	89	1,693
APPROACH %	56%	22%	21%	27%	51%	23%	43%	23%	34%	27%	49%	24%	
PEAK HR FACTOR		0.619			0.814			0.787			0.910		0.785
APP/DEPART	334	/ 246		306	/ 486		689	/ 314		364	/ 647		0
4:00 PM	26	9	10	9	0	12	29	71	25	9	48	17	265
4:15 PM	12	2	2	9	1	8	31	82	18	2	54	22	243
4:30 PM	13	5	4	11	2	16	16	64	18	4	59	23	235
4:45 PM	9	2	1	11	2	12	23	77	13	3	51	20	224
5:00 PM	15	10	4	13	7	12	29	52	24	3	71	30	270
5:15 PM	19	5	11	21	1	9	21	78	20	3	59	29	276
5:30 PM	13	2	3	15	4	11	19	69	22	4	68	24	254
5:45 PM	11	1	3	8	2	11	18	53	32	3	65	28	235
VOLUMES	118	36	38	97	19	91	186	546	172	31	475	193	2,002
APPROACH %	61%	19%	20%	47%	9%	44%	21%	60%	19%	4%	68%	28%	
APP/DEPART	192	/ 353		207	/ 222		904	/ 681		699	/ 746		0
BEGIN PEAK HR		5:00 PM											
VOLUMES	58	18	21	57	14	43	87	252	98	13	263	111	1,035
APPROACH %	60%	19%	22%	50%	12%	38%	20%	58%	22%	3%	68%	29%	
PEAK HR FACTOR		0.693			0.891			0.918			0.930		0.938
APP/DEPART	97	/ 192		114	/ 125		437	/ 330		387	/ 388		0

U-TURNS

	NB 0	SB 0	EB 0	WB 0	TTL
7:00 AM	0	0	2	0	2
7:15 AM	0	0	13	0	13
7:30 AM	0	0	34	0	34
7:45 AM	0	0	30	0	30
8:00 AM	2	0	74	0	76
8:15 AM	0	0	77	0	77
8:30 AM	0	0	36	0	36
8:45 AM	0	0	6	0	6
	2	0	272	0	274
4:00 PM	0	0	16	0	16
4:15 PM	0	0	11	0	11
4:30 PM	0	0	4	0	4
4:45 PM	0	0	7	0	7
5:00 PM	0	0	5	0	5
5:15 PM	0	0	8	0	8
5:30 PM	0	0	6	0	6
5:45 PM	0	0	5	0	5
	0	0	62	0	62

RTOR

	NRR 0	SRR 0	ERR 0	WRR 0
7:00 AM	1	3	5	2
7:15 AM	2	2	19	11
7:30 AM	5	5	11	6
7:45 AM	5	5	13	10
8:00 AM	13	3	16	1
8:15 AM	13	0	21	6
8:30 AM	8	3	4	1
8:45 AM	1	2	1	3
	48	23	90	40
	36	13	61	23
4:00 PM	3	6	7	6
4:15 PM	2	3	6	7
4:30 PM	1	9	2	3
4:45 PM	0	9	1	3
5:00 PM	1	4	2	5
5:15 PM	6	2	6	12
5:30 PM	3	7	4	8
5:45 PM	2	6	7	2
	18	46	35	46
	12	19	19	27

Mill Creek

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Mill Creek

ALL PED AND BIKE

	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	1	3	1	1	6
7:15 AM	0	2	0	0	2
7:30 AM	0	10	1	0	11
7:45 AM	2	12	1	0	15
8:00 AM	1	13	1	1	16
8:15 AM	1	40	3	6	50
8:30 AM	0	9	1	0	10
8:45 AM	0	8	0	0	8
TOTAL	5	97	8	8	118
4:00 PM	0	2	0	0	2
4:15 PM	4	2	0	0	6
4:30 PM	4	2	1	0	7
4:45 PM	0	1	0	0	1
5:00 PM	0	1	0	0	1
5:15 PM	0	4	2	0	6
5:30 PM	0	0	1	0	1
5:45 PM	1	3	0	0	4
TOTAL	9	15	4	0	28

PEDESTRIAN CROSSINGS

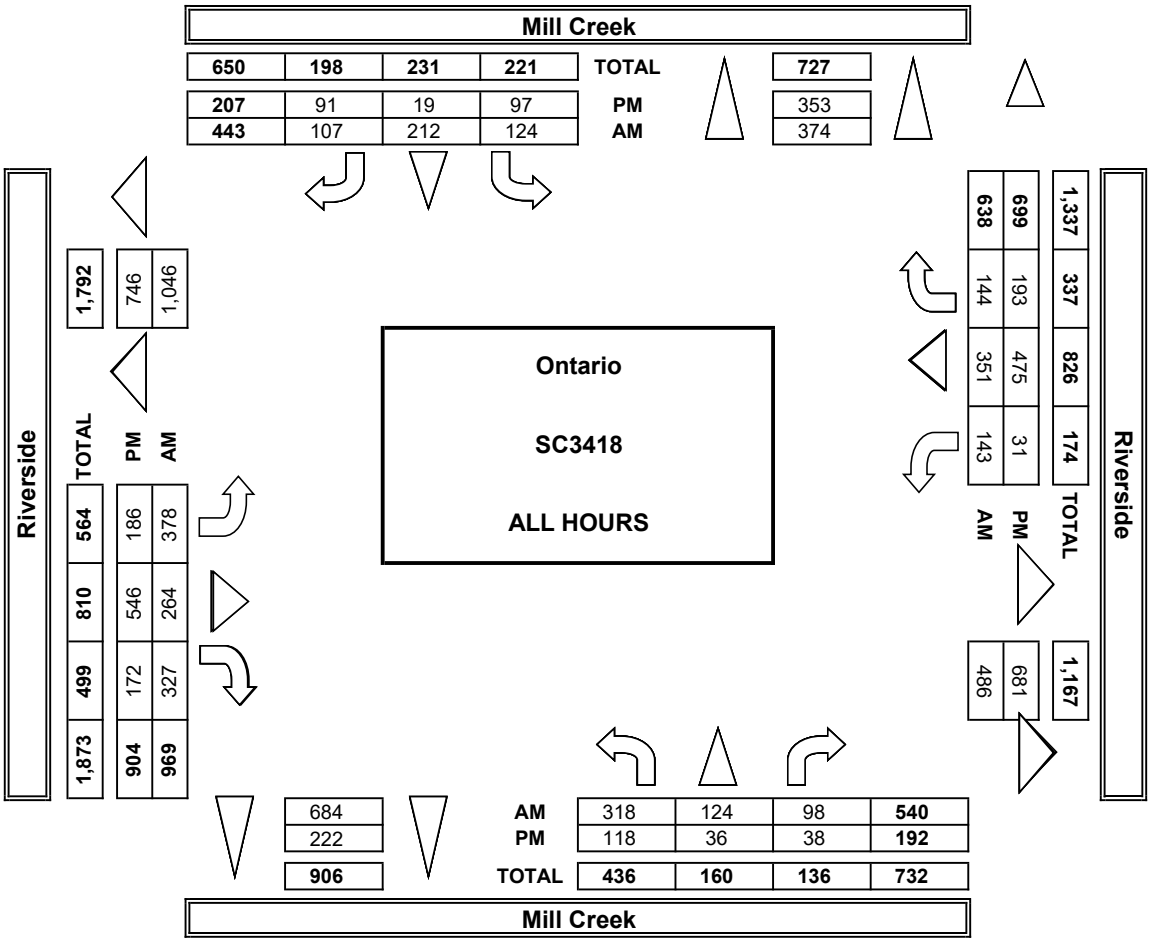
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	1	3	1	1	6
7:15 AM	0	2	0	0	2
7:30 AM	0	10	1	0	11
7:45 AM	2	11	1	0	14
8:00 AM	1	13	1	1	16
8:15 AM	1	39	3	6	49
8:30 AM	0	8	0	0	8
8:45 AM	0	6	0	0	6
	5	92	7	8	112
4:00 PM	0	2	0	0	2
4:15 PM	4	1	0	0	5
4:30 PM	4	2	1	0	7
4:45 PM	0	1	0	0	1
5:00 PM	0	1	0	0	1
5:15 PM	0	3	2	0	5
5:30 PM	0	0	1	0	1
5:45 PM	1	2	0	0	3
	9	12	4	0	25

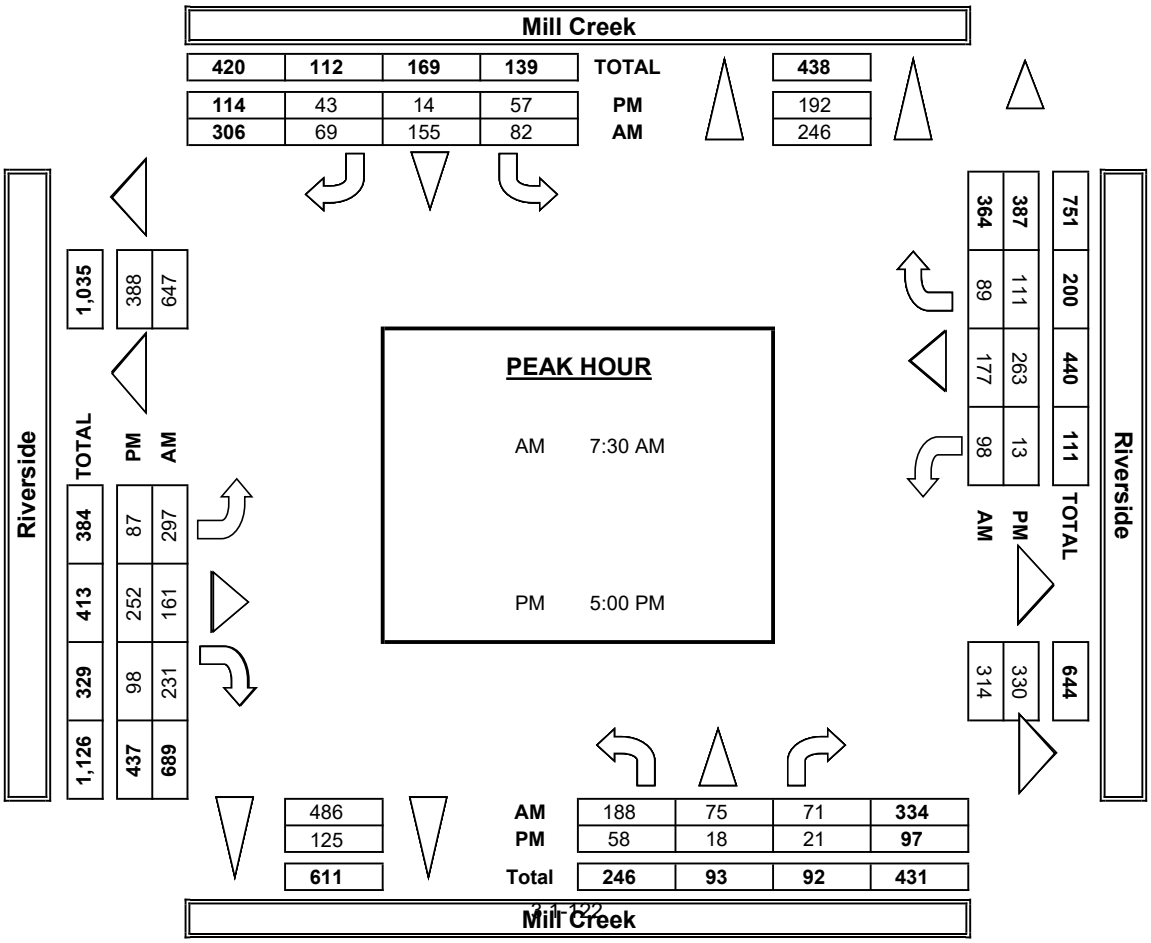
BICYCLE CROSSINGS

	ES	WS	SS	NS	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	1	0	0	1
8:00 AM	0	0	0	0	0
8:15 AM	0	1	0	0	1
8:30 AM	0	1	1	0	2
8:45 AM	0	2	0	0	2
	0	5	1	0	6
4:00 PM	0	0	0	0	0
4:15 PM	0	1	0	0	1
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	1	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1
	0	3	0	0	3

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Mill Creek	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

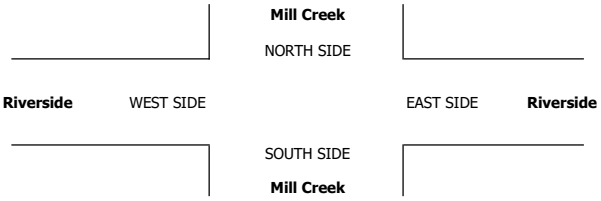
	NORTHBOUND (Mill Creek)			SOUTHBOUND (Mill Creek)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	16	1	4	8	4	12	2	18	11	7	52	9	144
7:15 AM	48	16	8	18	27	7	16	21	47	21	46	29	304
7:30 AM	41	10	6	16	13	17	49	34	36	6	58	20	306
7:45 AM	27	9	12	40	23	30	57	33	50	13	36	46	376
8:00 AM	49	15	24	18	43	12	66	33	69	34	29	11	403
8:15 AM	64	41	28	7	76	7	66	50	72	44	36	11	502
8:30 AM	56	32	13	5	23	12	38	27	24	16	38	5	289
8:45 AM	10	0	2	11	3	5	9	26	12	1	22	10	111
AM VOLUMES	311	124	97	123	212	102	303	242	321	142	317	141	2,435
AM APPROACH %	58%	23%	18%	28%	49%	23%	35%	28%	37%	24%	53%	24%	
AM APP/DEPART	532	/	367	437	/	677	866	/	462	600	/	929	0
BEGIN PEAK HR		7:30 AM											
AM VOLUMES	179	75	70	81	155	66	80	150	227	97	159	88	1,587
AM APPROACH %	55%	23%	21%	27%	51%	22%	13%	24%	37%	28%	46%	26%	
AM PEAK HR FACTOR		0.613			0.812			0.818			0.905		0.790
AM APP/DEPART	326	/	243	302	/	481	615	/	301	344	/	562	0
4:00 PM	25	8	10	8	0	12	23	68	25	8	45	17	249
4:15 PM	12	2	2	9	1	7	29	75	18	2	54	20	231
4:30 PM	13	5	4	11	2	15	15	56	18	4	54	23	220
4:45 PM	9	2	1	10	2	12	23	75	13	3	50	20	220
5:00 PM	15	10	4	13	7	12	25	49	24	3	70	29	261
5:15 PM	19	5	11	20	1	9	21	73	20	3	59	29	270
5:30 PM	13	2	3	15	4	10	19	68	22	4	65	23	248
5:45 PM	11	1	3	8	2	10	18	50	30	3	63	27	226
PM VOLUMES	117	35	38	94	19	87	173	514	170	30	460	188	1,925
PM APPROACH %	62%	18%	20%	47%	10%	44%	20%	60%	20%	4%	68%	28%	
PM APP/DEPART	190	/	344	200	/	219	857	/	646	678	/	716	0
BEGIN PEAK HR		5:00 PM											
PM VOLUMES	58	18	21	56	14	41	61	240	96	13	257	108	1,005
PM APPROACH %	60%	19%	22%	50%	13%	37%	15%	57%	23%	3%	68%	29%	
PM PEAK HR FACTOR		0.693			0.867			0.919			0.926		0.931
PM APP/DEPART	97	/	187	111	/	123	419	/	317	378	/	378	0

U-TURNS

	NB	SB	EB	WB	TTL
AM	2	0	201	0	203
PM	0	0	52	0	52

RTOR

	NRR 0	SRR 0	ERR 0	WRR 0
AM	48	22	90	39
AM BEGIN PEAK HR	36	12	61	22
PM	18	44	34	46
PM BEGIN PEAK HR	12	18	18	27



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Mill Creek	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Mill Creek			SOUTHBOUND Mill Creek			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	5
	7:15 AM	0	0	0	0	0	1	1	0	0	0	4	0	6
	7:30 AM	0	0	0	0	0	0	0	2	1	0	3	0	6
	7:45 AM	1	0	0	0	0	1	0	1	1	1	2	0	7
	8:00 AM	0	0	0	0	0	0	1	1	0	0	3	0	5
	8:15 AM	0	0	0	1	0	0	0	1	1	0	2	0	5
	8:30 AM	0	0	0	0	0	0	0	2	1	0	3	0	6
	8:45 AM	0	0	0	0	0	0	0	4	1	0	1	2	8
	VOLUMES	1	0	0	1	0	2	2	11	5	1	23	2	48
	APPROACH %	100%	0%	0%	33%	0%	67%	11%	61%	28%	4%	88%	8%	
	APP/DEPART	1	/	3	3	/	6	18	/	12	26	/	27	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	0	1	0	1	0	5	3	1	10	0	23
	APPROACH %	100%	0%	0%	50%	0%	50%	0%	56%	33%	9%	91%	0%	
	PEAK HR FACTOR		0.250			0.500			0.750			0.917		0.821
	APP/DEPART	1	/	0	2	/	4	9	/	6	11	/	13	0
PM	4:00 PM	1	1	0	1	0	0	1	1	0	1	2	0	8
	4:15 PM	0	0	0	0	0	1	1	6	0	0	0	2	10
	4:30 PM	0	0	0	0	0	1	0	5	0	0	4	0	10
	4:45 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
	5:00 PM	0	0	0	0	0	0	2	3	0	0	1	1	7
	5:15 PM	0	0	0	1	0	0	0	4	0	0	0	0	5
	5:30 PM	0	0	0	0	0	1	0	1	0	0	1	1	4
	5:45 PM	0	0	0	0	0	1	0	2	1	0	1	1	6
	VOLUMES	1	1	0	3	0	4	4	23	1	1	9	5	52
	APPROACH %	50%	50%	0%	43%	0%	57%	14%	82%	4%	7%	60%	33%	
	APP/DEPART	2	/	8	7	/	2	28	/	26	15	/	16	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	1	0	2	1	10	1	0	3	3	22
	APPROACH %	0%	0%	0%	33%	0%	67%	8%	77%	8%	0%	50%	50%	
	PEAK HR FACTOR		0.000			0.750			0.650			0.750		0.786
	APP/DEPART	0	/	4	3	/	1	13	/	11	6	/	6	0

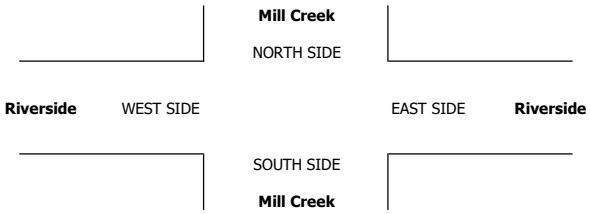
U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0

0	0	0	0
0	1	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Mill Creek	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

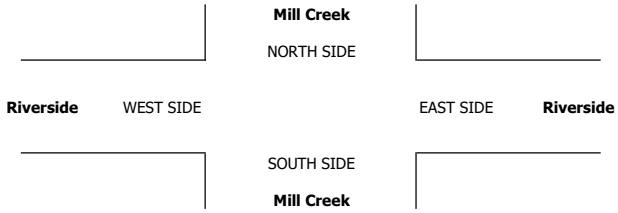
		NORTHBOUND Mill Creek			SOUTHBOUND Mill Creek			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	2	0	0	3	1	6
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	75%	25%	
	APP/DEPART	0	/	1	0	/	0	2	/	2	4	/	3	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	1	0	0	2	1	4
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	67%	33%	
	PEAK HR FACTOR		0.000			0.000			0.250			0.375		0.500
	APP/DEPART	0	/	1	0	/	0	1	/	1	3	/	2	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	VOLUMES	0	0	0	0	0	0	0	1	1	0	3	0	5
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	1	2	/	1	3	/	3	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	1	1	0	1	0	3
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.500			0.250		0.750
	APP/DEPART	0	/	0	0	/	1	2	/	1	1	/	1	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	1	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Mill Creek	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Mill Creek			SOUTHBOUND Mill Creek			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
	7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:30 AM	0	0	0	0	0	0	0	1	1	0	3	0	5
	7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	8:00 AM	1	0	0	0	0	0	0	1	0	0	1	0	3
	8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	VOLUMES	1	0	1	0	0	0	0	6	1	0	7	0	16
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	86%	14%	0%	100%	0%	
	APP/DEPART	2	/	0	0	/	1	7	/	7	7	/	8	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	0	1	0	0	0	0	2	1	0	5	0	10
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	67%	33%	0%	100%	0%	
	PEAK HR FACTOR		0.500			0.000			0.375			0.417		0.500
	APP/DEPART	2	/	0	0	/	1	3	/	3	5	/	6	0
PM	4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	VOLUMES	0	0	0	0	0	0	0	7	0	0	3	0	10
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	0	/	0	7	/	7	3	/	3	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	1	0	0	2	0	3
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.000			0.250			0.500		0.375
	APP/DEPART	0	/	0	0	/	0	1	/	1	2	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Mill Creek

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Mill Creek

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Mill Creek	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

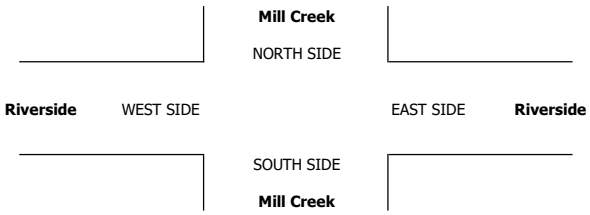
		NORTHBOUND Mill Creek			SOUTHBOUND Mill Creek			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	1	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	1	/	1	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Mill Creek	LOCATION #:	11
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Mill Creek			SOUTHBOUND Mill Creek			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	1	1	1	0	0	1	0	4
	7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	8:00 AM	2	0	0	0	0	1	0	0	0	0	0	0	3
	8:15 AM	2	0	0	0	0	0	1	2	0	0	0	0	5
	8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	5	0	0	0	0	3	3	3	0	0	1	0	15
	APPROACH %	100%	0%	0%	0%	0%	100%	50%	50%	0%	0%	100%	0%	
	APP/DEPART	5	/	3	3	/	0	6	/	3	1	/	9	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	5	0	0	0	0	2	2	3	0	0	1	0	13
	APPROACH %	100%	0%	0%	0%	0%	100%	40%	60%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.625			0.500			0.417			0.250		0.650
	APP/DEPART	5	/	2	2	/	0	5	/	3	1	/	8	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	1	0	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	1	0	/	0	1	/	0	0	/	0	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	0	0	0	1	0	0	0	0	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.250			0.000		0.250
	APP/DEPART	0	/	1	0	/	0	1	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Mill Creek

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Mill Creek

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Mill Creek Boulevard
E/W: Chino Avenue
Weather: Clear

File Name : 03_ONT_MC_Chino AM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	1	1	2	0	0	0	1	0	1	3
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	1	1	0	0	0	0	0	0	1
08:45 AM	1	1	2	0	0	0	0	0	0	2
Total	2	2	4	0	0	0	0	0	0	4
Grand Total	3	3	6	0	0	0	1	0	1	7
Apprch %	50	50		0	0		100	0		
Total %	42.9	42.9	85.7	0	0	0	14.3	0	14.3	
Passenger Vehicles	2	2	4	0	0	0	1	0	1	5
% Passenger Vehicles	66.7	66.7	66.7	0	0	0	100	0	100	71.4
Large 2 Axle Vehicles	1	1	2	0	0	0	0	0	0	2
% Large 2 Axle Vehicles	33.3	33.3	33.3	0	0	0	0	0	0	28.6
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	**1**	0	1	0	0	0	0	0	0	1
08:30 AM	0	**1**	1	0	0	0	0	0	0	1
08:45 AM	1	1	**2**	0	0	0	0	0	0	**2**
Total Volume	2	2	4	0	0	0	0	0	0	4
% App. Total	50	50		0	0		0	0		
PHF	.500	.500	.500	.000	.000	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
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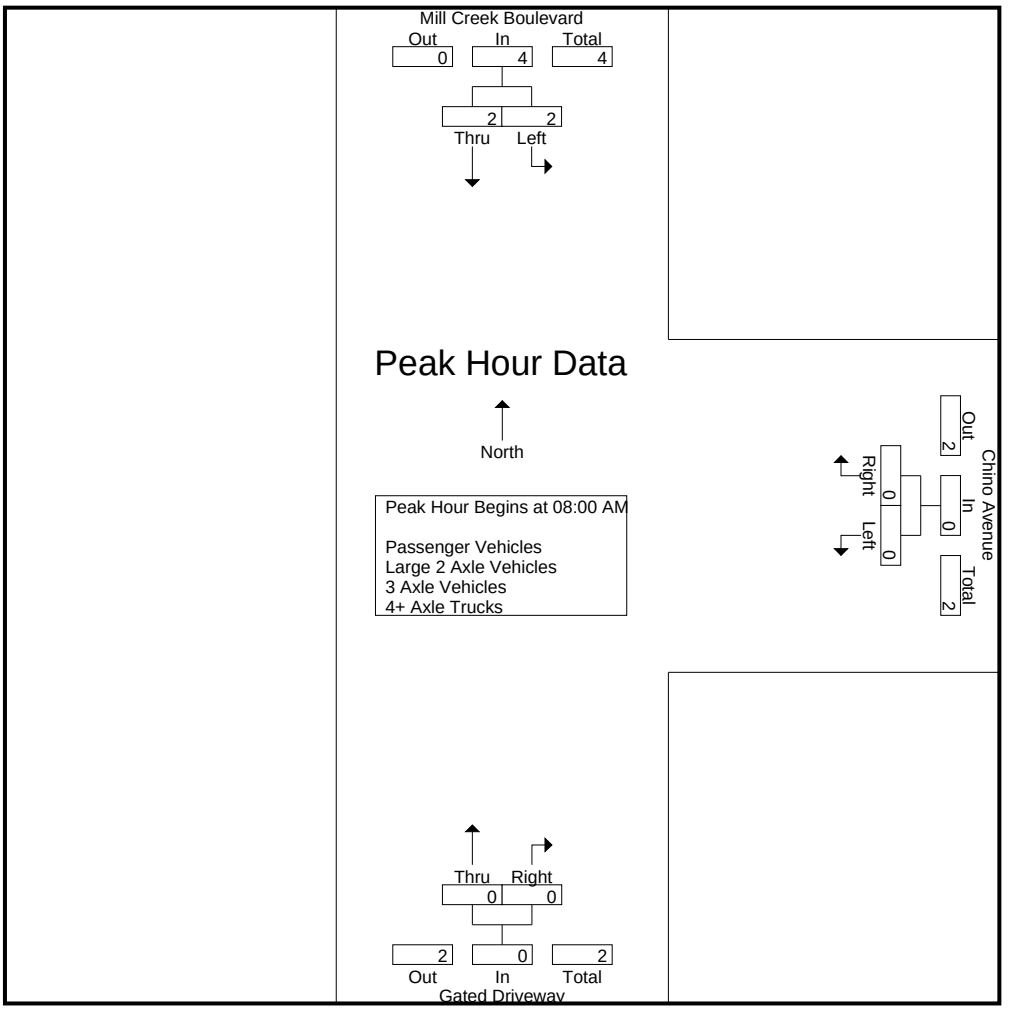
City of Ontario
N/S: Mill Creek Boulevard
E/W: Chino Avenue
Weather: Clear

File Name : 03_ONT_MC_Chino AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	**1**	0	**1**
+15 mins.	**1**	0	1	0	0	0	0	0	0
+30 mins.	0	**1**	1	0	0	0	0	0	0
+45 mins.	1	1	**2**	0	0	0	0	0	0
Total Volume	2	2	4	0	0	0	1	0	1
% App. Total	50	50		0	0		100	0	
PHF	.500	.500	.500	.000	.000	.000	.250	.000	.250

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City of Ontario
N/S: Mill Creek Boulevard
E/W: Chino Avenue
Weather: Clear

File Name : 03_ONT_MC_Chino AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	1	0	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	1	0	0	0	0	0	0	1
08:30 AM	0	1	1	0	0	0	0	0	0	1
08:45 AM	1	0	1	0	0	0	0	0	0	1
Total	2	1	3	0	0	0	0	0	0	3
Grand Total	2	2	4	0	0	0	1	0	1	5
Apprch %	50	50		0	0		100	0		
Total %	40	40	80	0	0	0	20	0	20	

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	**1**	0	**1**	0	0	0	0	0	0	**1**
08:30 AM	0	**1**	1	0	0	0	0	0	0	1
08:45 AM	1	0	1	0	0	0	0	0	0	1
Total Volume	2	1	3	0	0	0	0	0	0	3
% App. Total	66.7	33.3		0	0		0	0		
PHF	.500	.250	.750	.000	.000	.000	.000	.000	.000	.750

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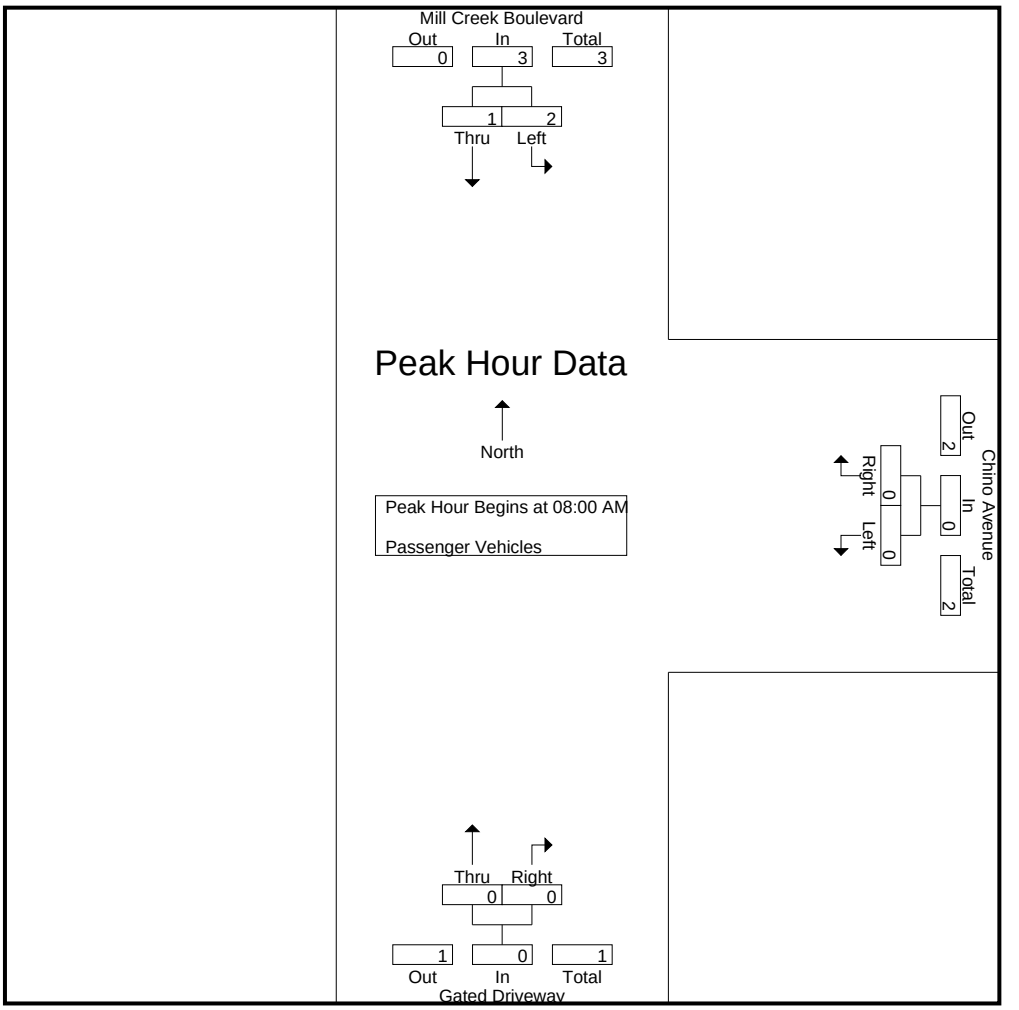
City of Ontario
N/S: Mill Creek Boulevard
E/W: Chino Avenue
Weather: Clear

File Name : 03_ONT_MC_Chino AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	**1**	0	**1**	0	0	0	0	0	0
+30 mins.	0	**1**	1	0	0	0	0	0	0
+45 mins.	1	0	1	0	0	0	0	0	0
Total Volume	2	1	3	0	0	0	0	0	0
% App. Total	66.7	33.3		0	0		0	0	
PHF	.500	.250	.750	.000	.000	.000	.000	.000	.000

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City of Ontario
N/S: Mill Creek Boulevard
E/W: Chino Avenue
Weather: Clear

File Name : 03_ONT_MC_Chino AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	1	0	0	0	0	0	0	1
Total	0	1	1	0	0	0	0	0	0	1
Grand Total	1	1	2	0	0	0	0	0	0	2
Apprch %	50	50		0	0		0	0		
Total %	50	50	100	0	0	0	0	0	0	

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	**1**	**1**	0	0	0	0	0	0	**1**
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

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E/W: Chino Avenue
Weather: Clear

File Name : 03_ONT_MC_Chino AM
Site Code : 05122421
Start Date : 5/10/2022
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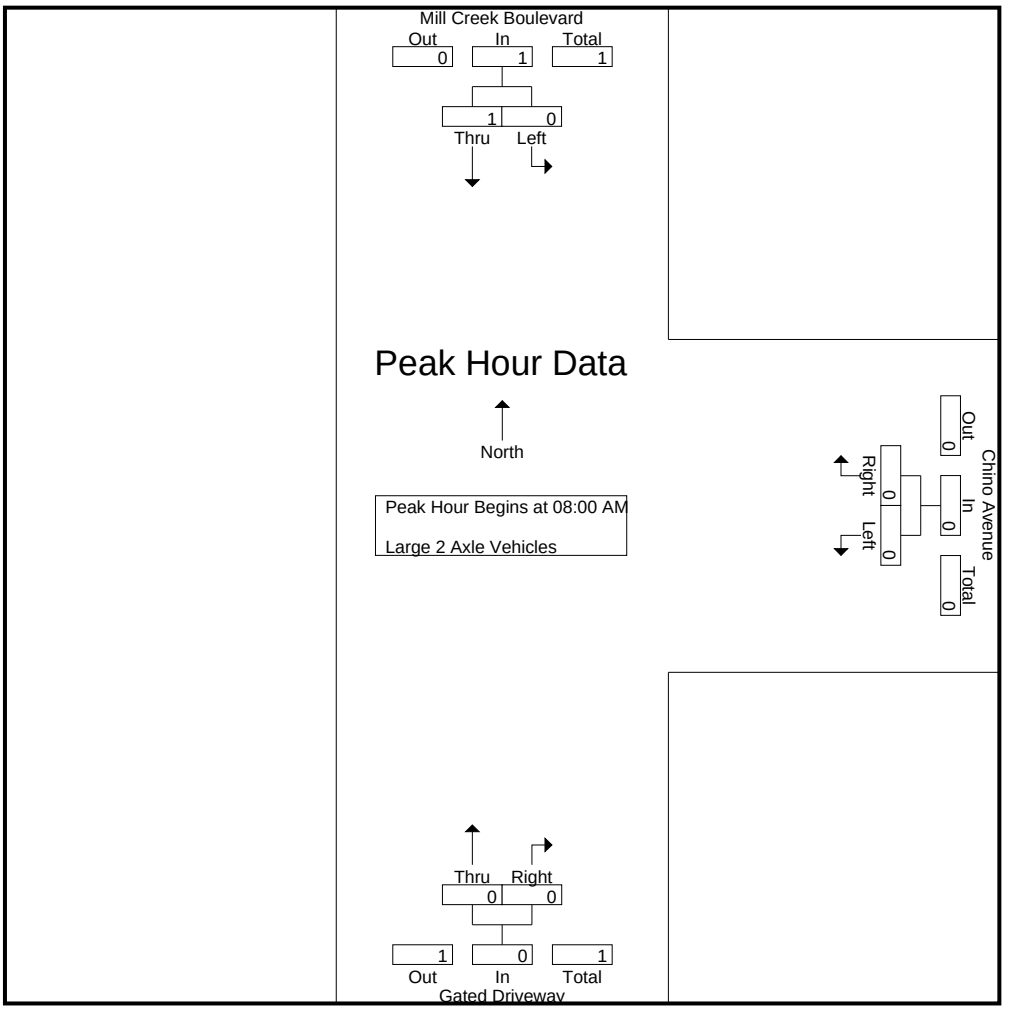

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	**1**	**1**	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000

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Weather: Clear

File Name : 03_ONT_MC_Chino AM
Site Code : 05122421
Start Date : 5/10/2022
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Groups Printed- 3 Axle Vehicles

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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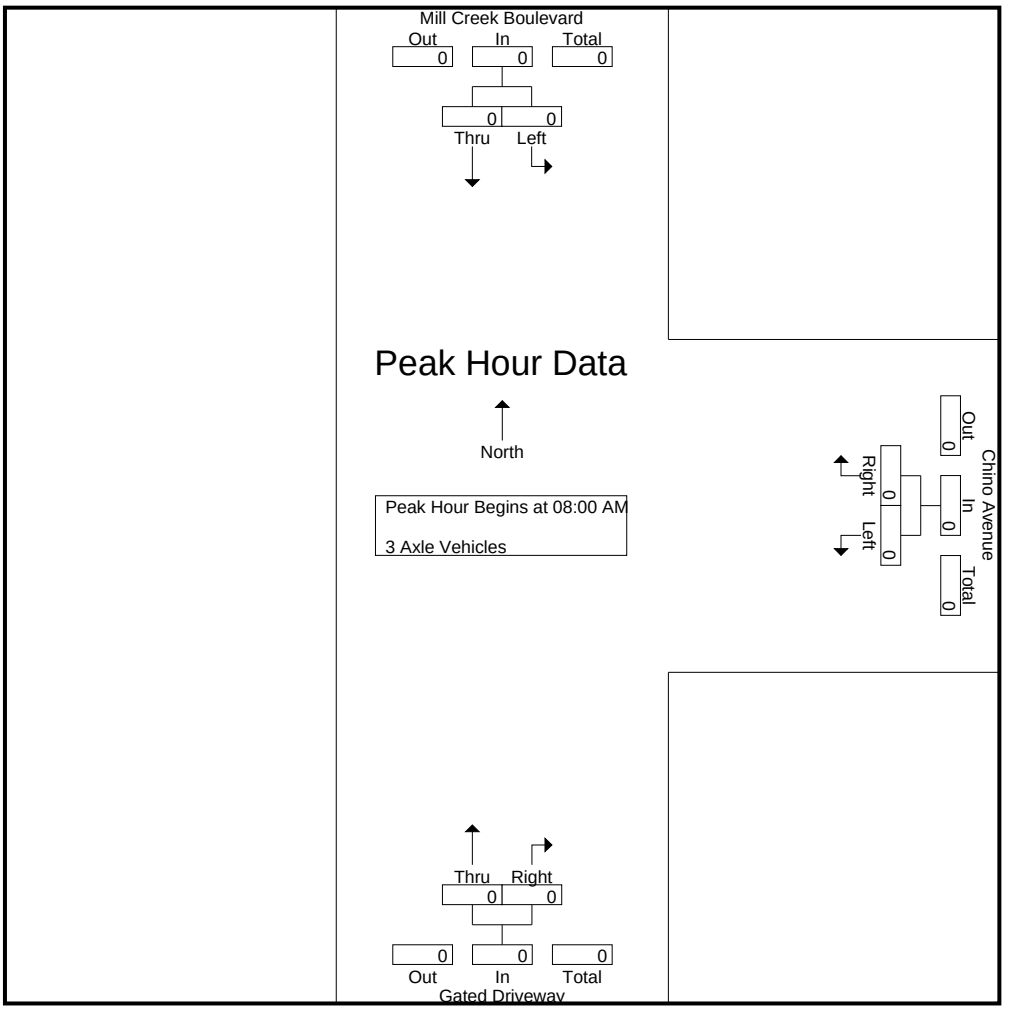

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

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Groups Printed- 4+ Axle Trucks

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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File Name : 03_ONT_MC_Chino AM
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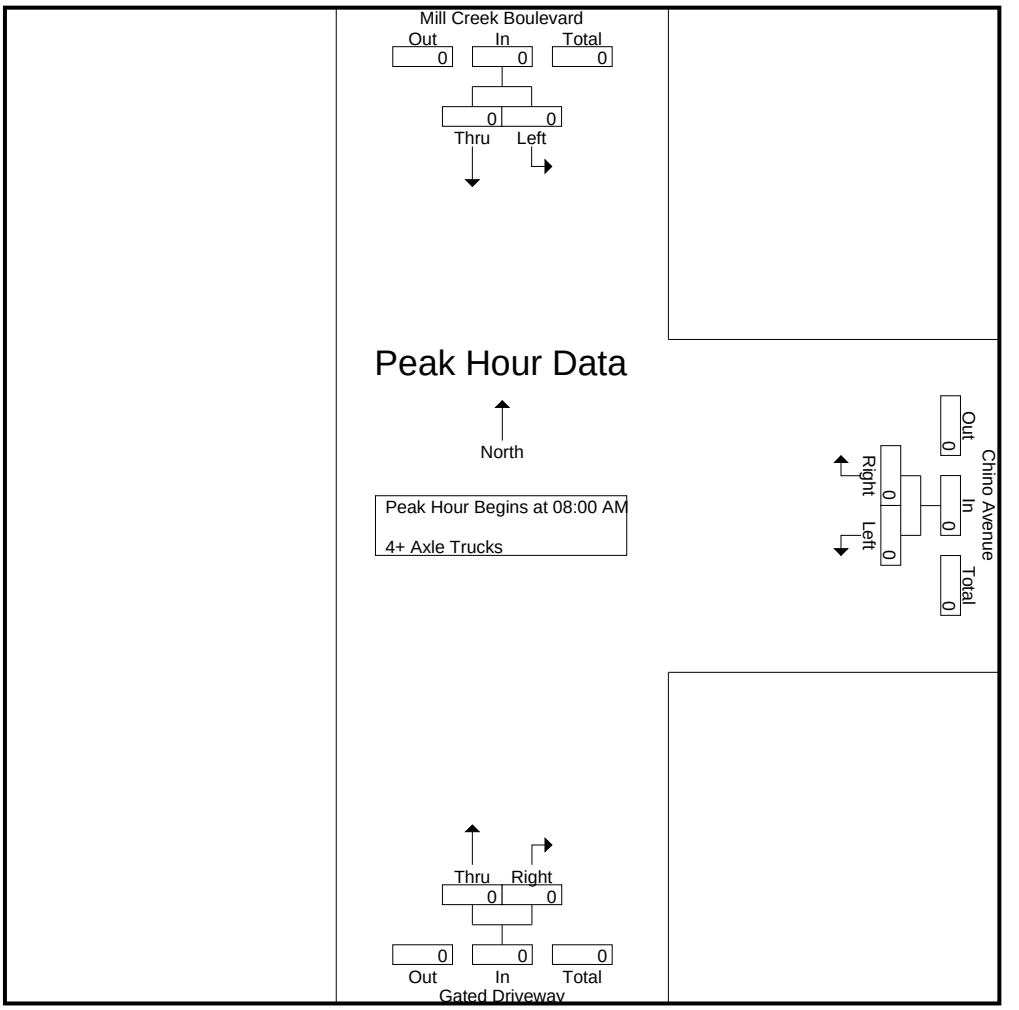

Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

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File Name : 03_ONT_MC_Chino PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	1	0	1	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
Grand Total	1	0	1	0	1	1	0	0	0	2
Apprch %	100	0		0	100		0	0		
Total %	50	0	50	0	50	50	0	0	0	
Passenger Vehicles	1	0	1	0	1	1	0	0	0	2
% Passenger Vehicles	100	0	100	0	100	100	0	0	0	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	**1**	0	**1**	0	0	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	0	0	1
% App. Total	100	0		0	0		0	0		
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250

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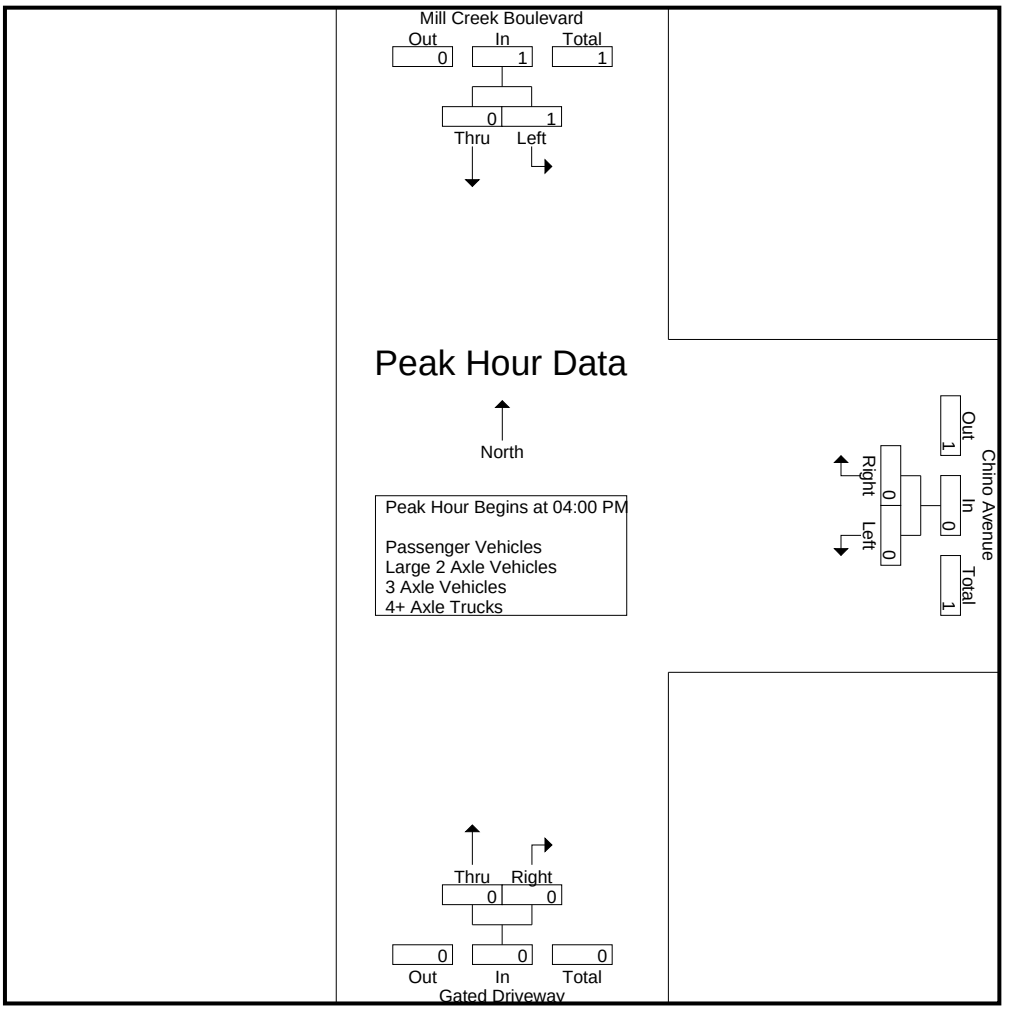
File Name : 03_ONT_MC_Chino PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:30 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	**1**	0	**1**	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	**1**	**1**	0	0	0
Total Volume	1	0	1	0	1	1	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.250	.000	.250	.000	.250	.250	.000	.000	.000

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File Name : 03_ONT_MC_Chino PM
Site Code : 05122421
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Page No : 1

Groups Printed- Passenger Vehicles

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	1	0	1	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	0	1
Grand Total	1	0	1	0	1	1	0	0	0	2
Apprch %	100	0		0	100		0	0		
Total %	50	0	50	0	50	50	0	0	0	

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	**1**	0	**1**	0	0	0	0	0	0	**1**
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	0	0	1
% App. Total	100	0		0	0		0	0		
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250

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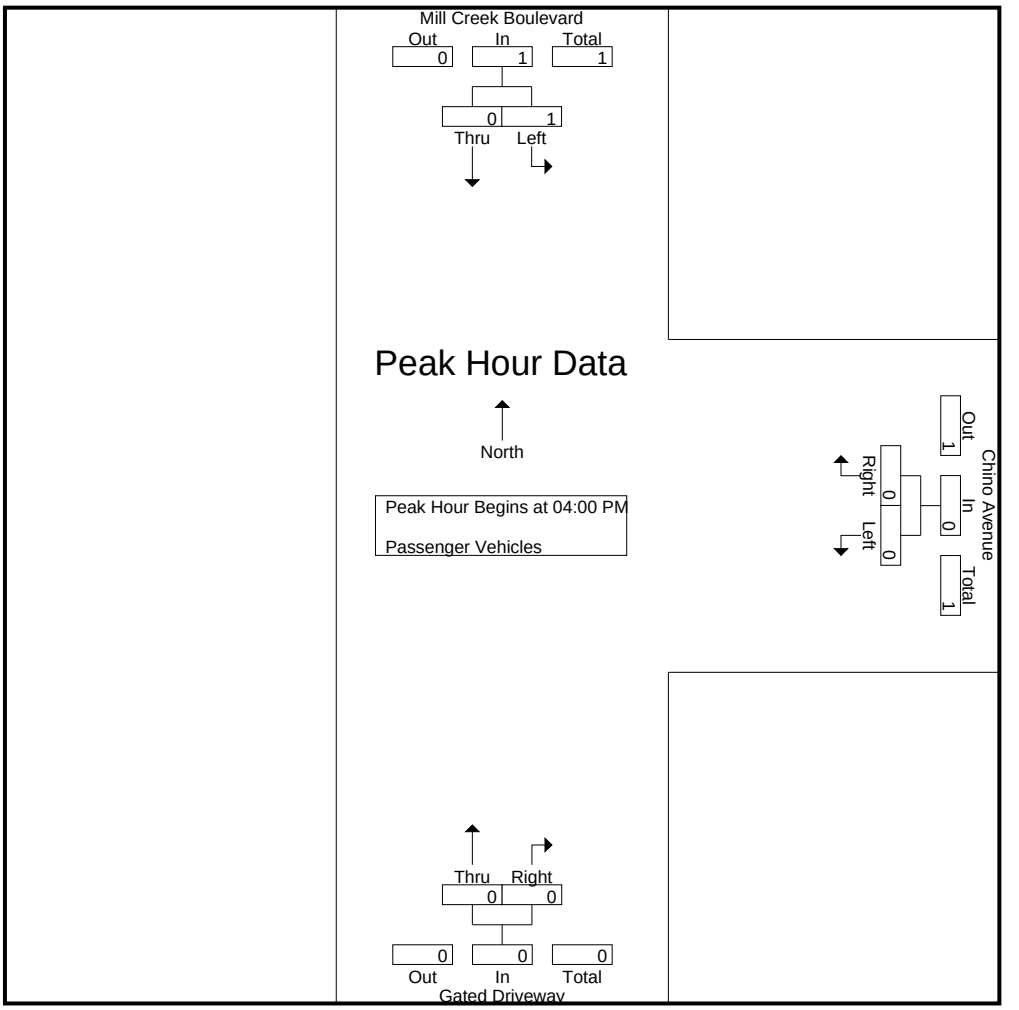

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	**1**	0	**1**	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	0	0
% App. Total	100	0		0	0		0	0	
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000

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File Name : 03_ONT_MC_Chino PM
Site Code : 05122421
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Groups Printed- Large 2 Axle Vehicles

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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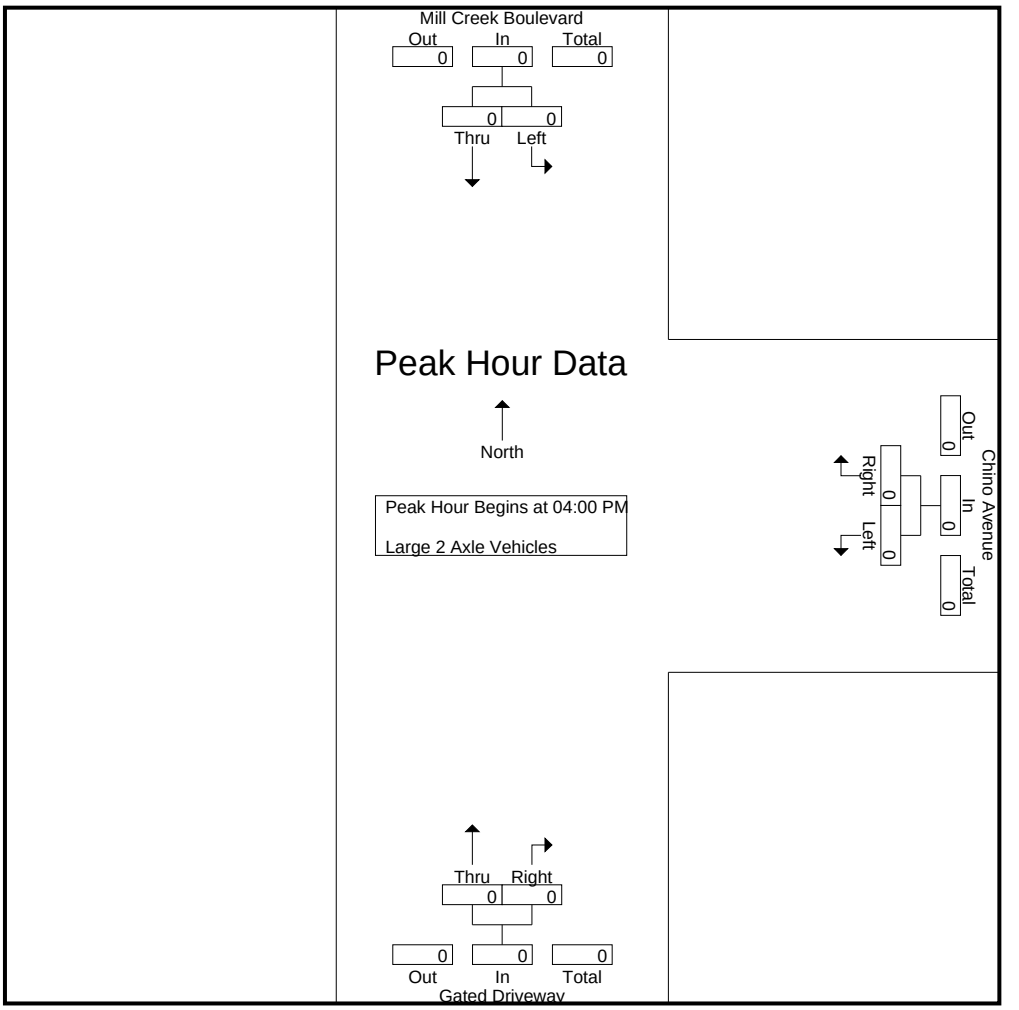

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

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Groups Printed- 3 Axle Vehicles

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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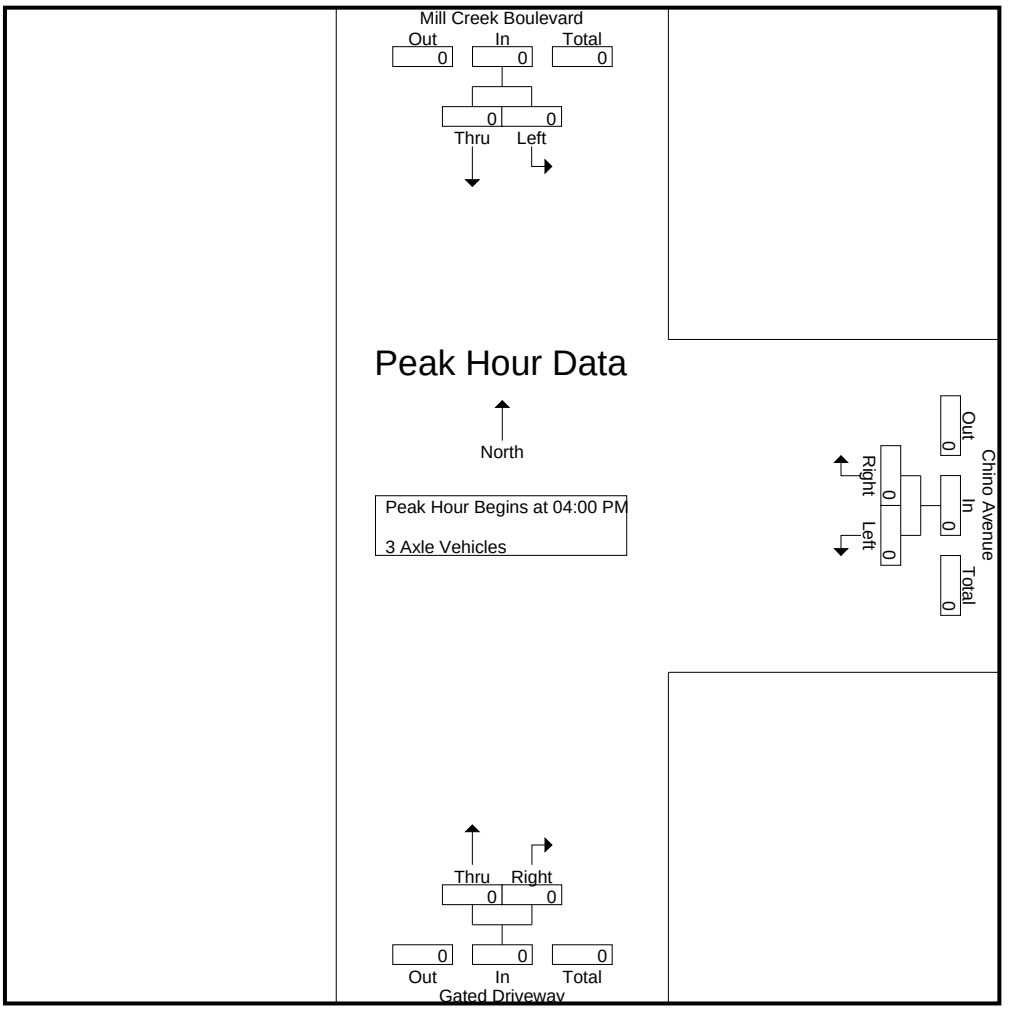

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

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City of Ontario
N/S: Mill Creek Boulevard
E/W: Chino Avenue
Weather: Clear

File Name : 03_ONT_MC_Chino PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

	Mill Creek Boulevard Southbound			Chino Avenue Westbound			Gated Driveway Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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City of Ontario
N/S: Mill Creek Boulevard
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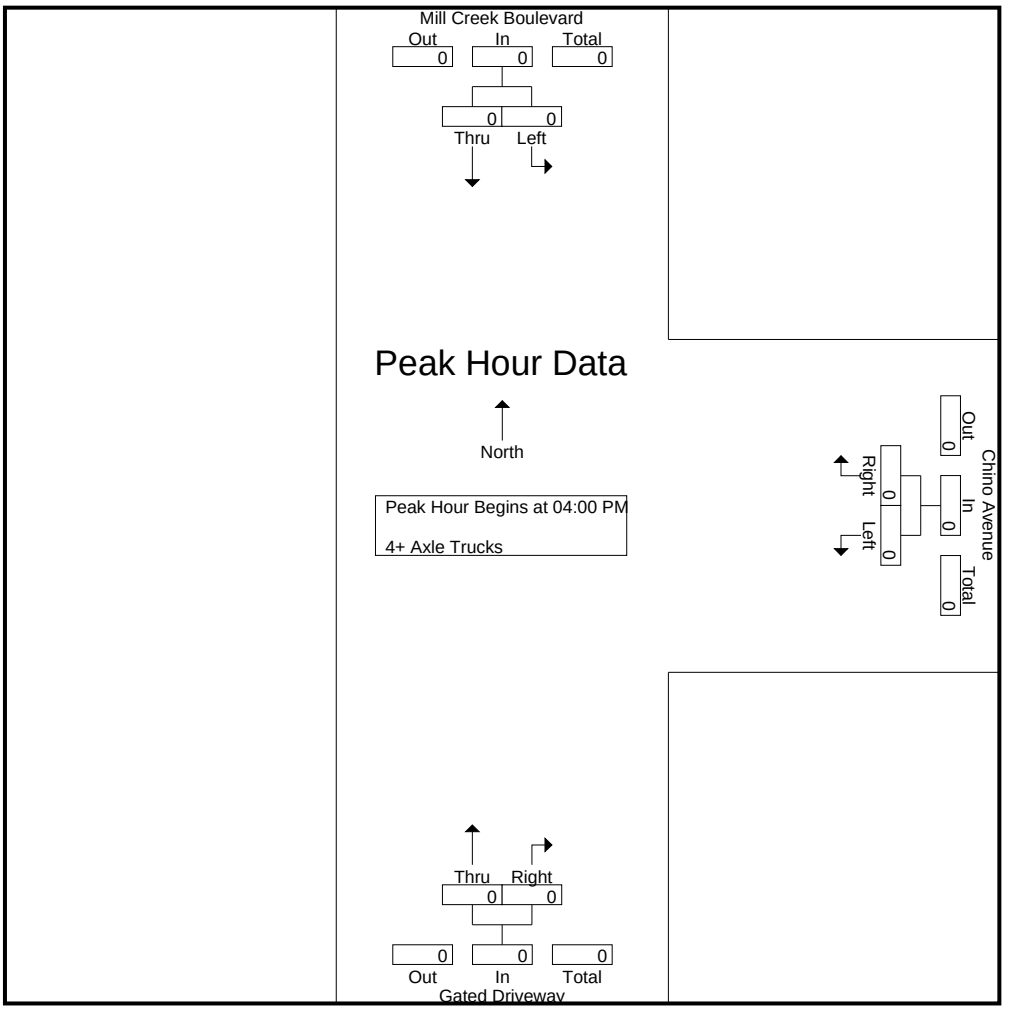
Weather: Clear

File Name : 03_ONT_MC_Chino PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

Location: Ontario
N/S: Mill Creek Boulevard
E/W: Chino Avenue

Date: 5/10/2022
Day: Tuesday

PEDESTRIANS

	North Leg Mill Creek Boulevard	East Leg Chino Avenue	South Leg Gated Driveway	West Leg Dead End	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Mill Creek Boulevard	East Leg Chino Avenue	South Leg Gated Driveway	West Leg Dead End	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	2	0	0	2
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	2	0	0	2

Location: Ontario
N/S: Mill Creek Boulevard
E/W: Chino Avenue

Date: 5/10/2022
Day: Tuesday

BICYCLES

	Southbound Mill Creek Boulevard			Westbound Chino Avenue			Northbound Gated Driveway			Eastbound Dead End			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	1	0	0	0	0	0	0	1

	Southbound Mill Creek Boulevard			Westbound Chino Avenue			Northbound Gated Driveway			Eastbound Dead End			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	0	0	0	0	0	0	0	0	0	0	0	1

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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	65	37	12	102	28	1	111	52	140	49	147	0	0	196	0	0	0	0	0	64	438	502
07:15 AM	0	63	31	8	94	33	1	128	67	162	75	195	0	0	270	0	0	0	0	0	75	526	601
07:30 AM	0	52	34	10	86	31	1	131	31	163	51	238	0	0	289	0	0	0	0	0	41	538	579
07:45 AM	0	70	32	10	102	24	0	121	38	145	55	249	0	0	304	0	0	0	0	0	48	551	599
Total	0	250	134	40	384	116	3	491	188	610	230	829	0	0	1059	0	0	0	0	0	228	2053	2281
08:00 AM	0	80	31	10	111	25	0	94	31	119	76	239	0	0	315	0	0	0	0	0	41	545	586
08:15 AM	0	51	40	15	91	19	0	72	33	91	84	219	0	0	303	0	0	0	0	0	48	485	533
08:30 AM	0	63	33	8	96	22	0	72	29	94	76	207	0	0	283	0	0	0	0	0	37	473	510
08:45 AM	0	55	41	16	96	15	1	89	43	105	57	202	0	0	259	0	0	0	0	0	59	460	519
Total	0	249	145	49	394	81	1	327	136	409	293	867	0	0	1160	0	0	0	0	0	185	1963	2148
Grand Total	0	499	279	89	778	197	4	818	324	1019	523	1696	0	0	2219	0	0	0	0	0	413	4016	4429
Apprch %	0	64.1	35.9			19.3	0.4	80.3			23.6	76.4	0			0	0	0					
Total %	0	12.4	6.9		19.4	4.9	0.1	20.4		25.4	13	42.2	0		55.3	0	0	0		0	9.3	90.7	
Passenger Vehicles	0	368	114		519	177	3	752		1234	386	1452	0		1838	0	0	0		0	0	0	3591
% Passenger Vehicles	0	73.7	40.9	41.6	59.9	89.8	75	91.9	93.2	91.9	73.8	85.6	0	0	82.8	0	0	0	0	0	0	0	81.1
Large 2 Axle Vehicles	0	23	15		45	9	0	12		27	24	51	0		75	0	0	0		0	0	0	147
% Large 2 Axle Vehicles	0	4.6	5.4	7.9	5.2	4.6	0	1.5	1.9	2	4.6	3	0	0	3.4	0	0	0	0	0	0	0	3.3
3 Axle Vehicles	0	30	26		61	1	0	12		19	17	22	0		39	0	0	0		0	0	0	119
% 3 Axle Vehicles	0	6	9.3	5.6	7	0.5	0	1.5	1.9	1.4	3.3	1.3	0	0	1.8	0	0	0	0	0	0	0	2.7
4+ Axle Trucks	0	78	124		242	10	1	42		63	96	171	0		267	0	0	0		0	0	0	572
% 4+ Axle Trucks	0	15.6	44.4	44.9	27.9	5.1	25	5.1	3.1	4.7	18.4	10.1	0	0	12	0	0	0	0	0	0	0	12.9

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	63	31	94	**33**	**1**	128	162	75	195	0	270	0	0	0	0	526
07:30 AM	0	52	**34**	86	31	1	**131**	**163**	51	238	0	289	0	0	0	0	538
07:45 AM	0	70	32	102	24	0	121	145	55	**249**	0	304	0	0	0	0	**551**
08:00 AM	0	**80**	31	**111**	25	0	94	119	**76**	239	0	**315**	0	0	0	0	545
Total Volume	0	265	128	393	113	2	474	589	257	921	0	1178	0	0	0	0	2160
% App. Total	0	67.4	32.6		19.2	0.3	80.5		21.8	78.2	0		0	0	0		
PHF	.000	.828	.941	.885	.856	.500	.905	.903	.845	.925	.000	.935	.000	.000	.000	.000	.980

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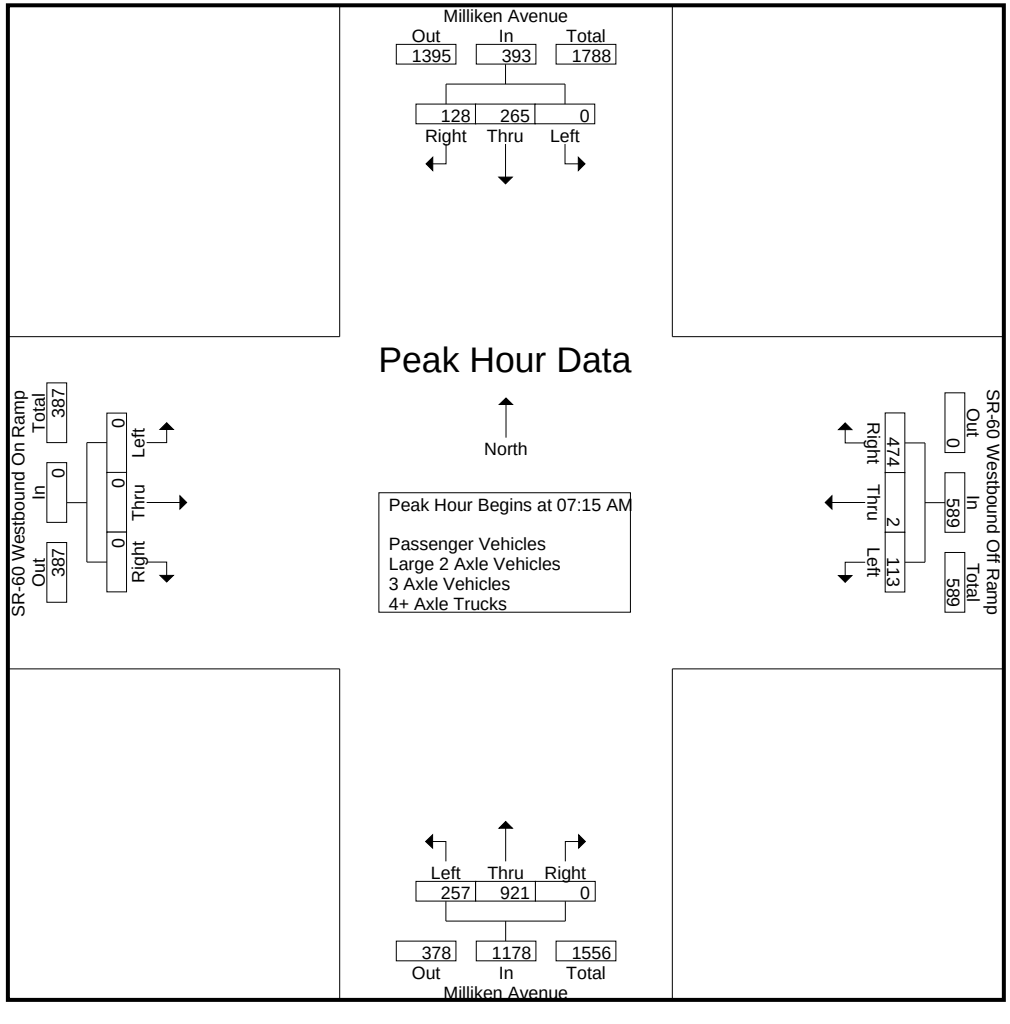
City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:45 AM				07:00 AM				07:30 AM				07:00 AM				
+0 mins.	0	70	32	102	28	**1**	111	140	51	238	0	289	0	0	0	0	
+15 mins.	0	**80**	31	**111**	**33**	1	128	162	55	**249**	0	304	0	0	0	0	
+30 mins.	0	51	**40**	91	31	1	**131**	**163**	76	239	0	**315**	0	0	0	0	
+45 mins.	0	63	33	96	24	0	121	145	**84**	219	0	303	0	0	0	0	
Total Volume	0	264	136	400	116	3	491	610	266	945	0	1211	0	0	0	0	
% App. Total	0	66	34		19	0.5	80.5		22	78	0		0	0	0		
PHF	.000	.825	.850	.901	.879	.750	.937	.936	.792	.949	.000	.961	.000	.000	.000	.000	

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Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	47	21	6	68	26	1	105	48	132	41	124	0	0	165	0	0	0	0	0	54	365	419
07:15 AM	0	47	13	3	60	32	0	122	63	154	49	162	0	0	211	0	0	0	0	0	66	425	491
07:30 AM	0	38	16	3	54	28	1	120	29	149	37	214	0	0	251	0	0	0	0	0	32	454	486
07:45 AM	0	52	10	2	62	20	0	114	36	134	36	221	0	0	257	0	0	0	0	0	38	453	491
Total	0	184	60	14	244	106	2	461	176	569	163	721	0	0	884	0	0	0	0	0	190	1697	1887
08:00 AM	0	57	12	6	69	23	0	85	30	108	62	209	0	0	271	0	0	0	0	0	36	448	484
08:15 AM	0	39	15	6	54	17	0	64	30	81	60	182	0	0	242	0	0	0	0	0	36	377	413
08:30 AM	0	50	14	5	64	16	0	64	26	80	55	175	0	0	230	0	0	0	0	0	31	374	405
08:45 AM	0	38	13	6	51	15	1	78	40	94	46	165	0	0	211	0	0	0	0	0	46	356	402
Total	0	184	54	23	238	71	1	291	126	363	223	731	0	0	954	0	0	0	0	0	149	1555	1704
Grand Total	0	368	114	37	482	177	3	752	302	932	386	1452	0	0	1838	0	0	0	0	0	339	3252	3591
Apprch %	0	76.3	23.7			19	0.3	80.7			21	79	0			0	0	0					
Total %	0	11.3	3.5		14.8	5.4	0.1	23.1		28.7	11.9	44.6	0		56.5	0	0	0		0	9.4	90.6	

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	47	13	60	**32**	0	**122**	**154**	49	162	0	211	0	0	0	0	425
07:30 AM	0	38	**16**	54	28	**1**	120	149	37	214	0	251	0	0	0	0	**454**
07:45 AM	0	52	10	62	20	0	114	134	36	**221**	0	257	0	0	0	0	453
08:00 AM	0	**57**	12	**69**	23	0	85	108	**62**	209	0	**271**	0	0	0	0	448
Total Volume	0	194	51	245	103	1	441	545	184	806	0	990	0	0	0	0	1780
% App. Total	0	79.2	20.8		18.9	0.2	80.9		18.6	81.4	0		0	0	0		
PHF	.000	.851	.797	.888	.805	.250	.904	.885	.742	.912	.000	.913	.000	.000	.000	.000	.980

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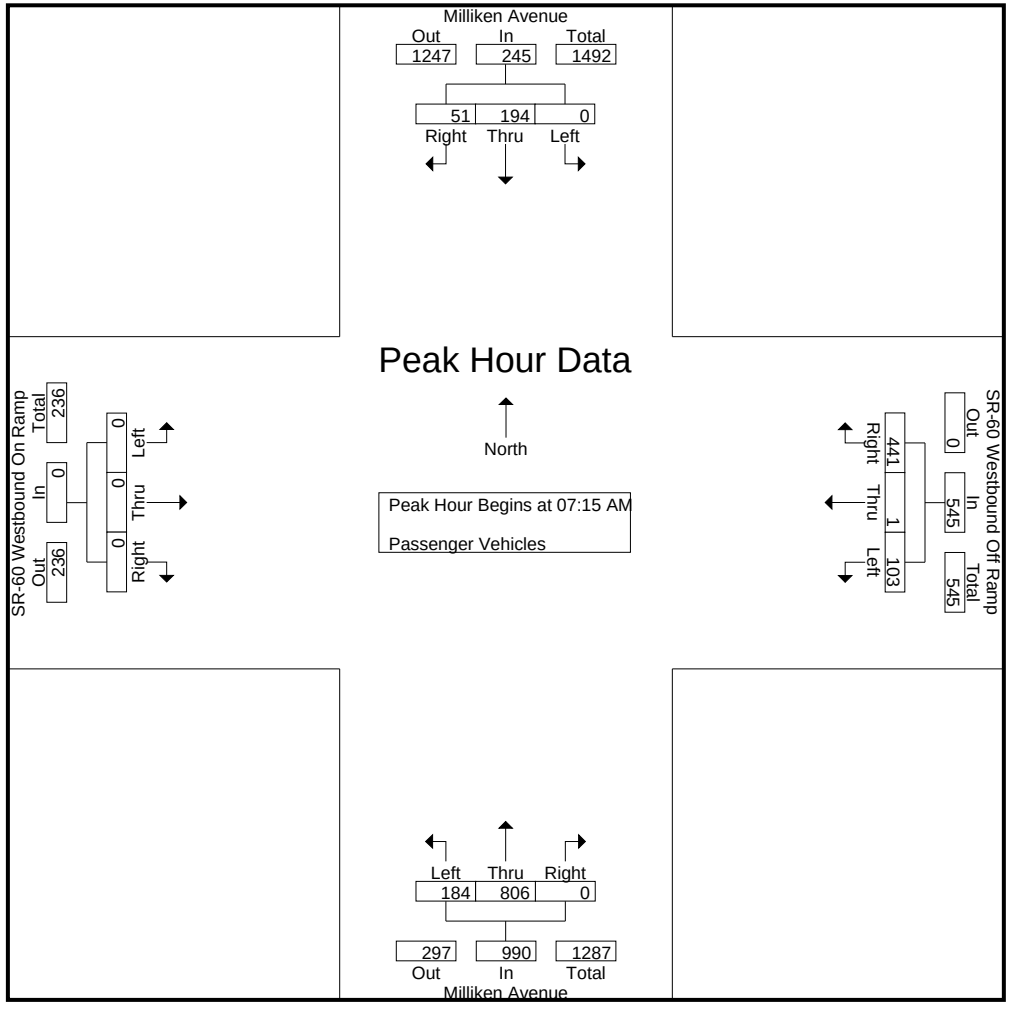
City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
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File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:15 AM				07:15 AM				07:15 AM				
+0 mins.	0	47	13	60	**32**	0	**122**	**154**	49	162	0	211	0	0	0	0	
+15 mins.	0	38	**16**	54	28	**1**	120	149	37	214	0	251	0	0	0	0	
+30 mins.	0	52	10	62	20	0	114	134	36	**221**	0	257	0	0	0	0	
+45 mins.	0	**57**	12	**69**	23	0	85	108	**62**	209	0	**271**	0	0	0	0	
Total Volume	0	194	51	245	103	1	441	545	184	806	0	990	0	0	0	0	
% App. Total	0	79.2	20.8		18.9	0.2	80.9		18.6	81.4	0		0	0	0		
PHF	.000	.851	.797	.888	.805	.250	.904	.885	.742	.912	.000	.913	.000	.000	.000	.000	

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File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	7	3	1	10	1	0	2	2	3	3	3	0	0	6	0	0	0	0	0	3	19	22
07:15 AM	0	1	4	2	5	0	0	2	1	2	5	9	0	0	14	0	0	0	0	0	3	21	24
07:30 AM	0	0	0	0	0	2	0	2	0	4	1	4	0	0	5	0	0	0	0	0	0	9	9
07:45 AM	0	6	0	0	6	3	0	2	1	5	4	6	0	0	10	0	0	0	0	0	1	21	22
Total	0	14	7	3	21	6	0	8	4	14	13	22	0	0	35	0	0	0	0	0	7	70	77
08:00 AM	0	3	1	0	4	1	0	1	0	2	2	4	0	0	6	0	0	0	0	0	0	12	12
08:15 AM	0	1	3	3	4	0	0	1	1	1	6	8	0	0	14	0	0	0	0	0	4	19	23
08:30 AM	0	4	2	0	6	2	0	2	1	4	2	7	0	0	9	0	0	0	0	0	1	19	20
08:45 AM	0	1	2	1	3	0	0	0	0	0	1	10	0	0	11	0	0	0	0	0	1	14	15
Total	0	9	8	4	17	3	0	4	2	7	11	29	0	0	40	0	0	0	0	0	6	64	70
Grand Total	0	23	15	7	38	9	0	12	6	21	24	51	0	0	75	0	0	0	0	0	13	134	147
Apprch %	0	60.5	39.5			42.9	0	57.1			32	68	0			0	0	0					
Total %	0	17.2	11.2		28.4	6.7	0	9		15.7	17.9	38.1	0		56	0	0	0		0	8.8	91.2	

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	1	**4**	5	0	0	**2**	2	**5**	**9**	0	**14**	0	0	0	0	**21**
07:30 AM	0	0	0	0	2	0	2	4	1	4	0	5	0	0	0	0	9
07:45 AM	0	**6**	0	**6**	**3**	0	2	**5**	4	6	0	10	0	0	0	0	21
08:00 AM	0	3	1	4	1	0	1	2	2	4	0	6	0	0	0	0	12
Total Volume	0	10	5	15	6	0	7	13	12	23	0	35	0	0	0	0	63
% App. Total	0	66.7	33.3		46.2	0	53.8		34.3	65.7	0		0	0	0		
PHF	.000	.417	.313	.625	.500	.000	.875	.650	.600	.639	.000	.625	.000	.000	.000	.000	.750

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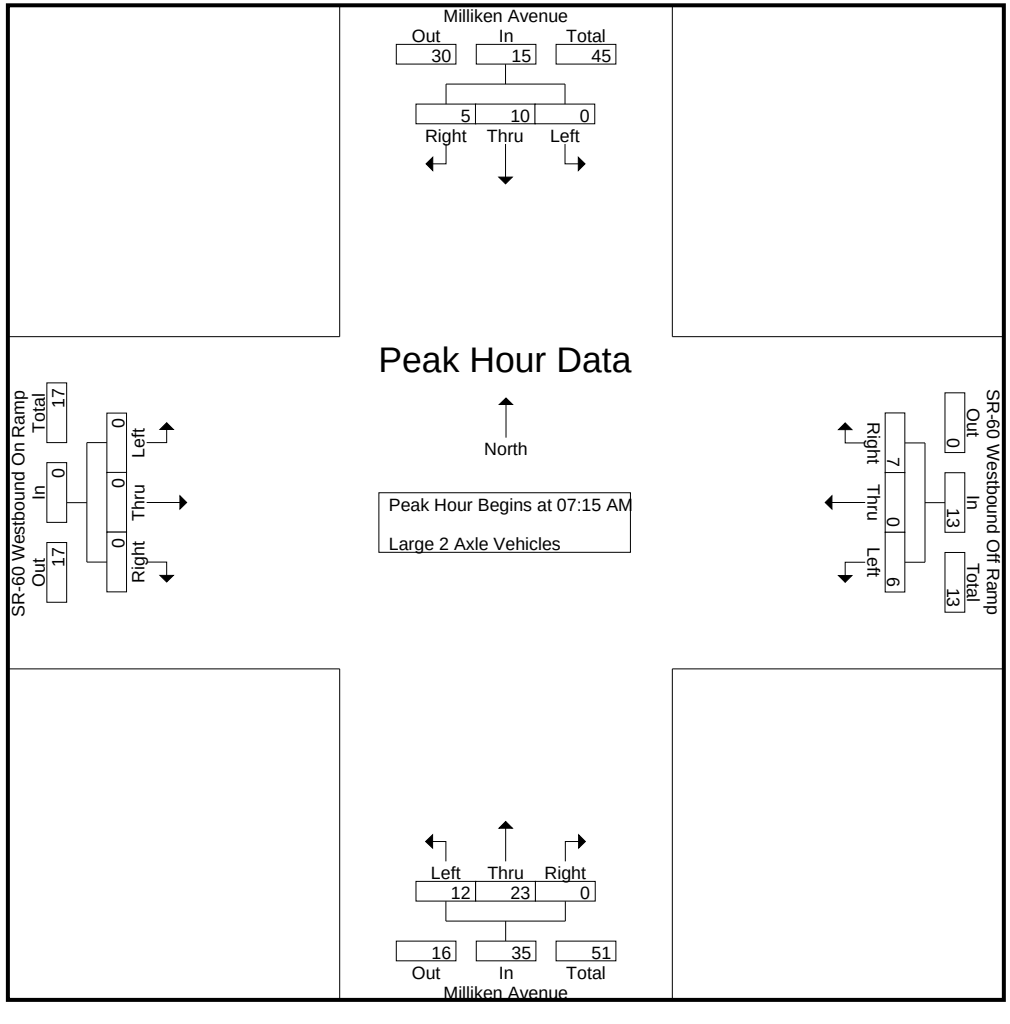
City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:15 AM				07:15 AM				07:15 AM				
+0 mins.	0	1	**4**	5	0	0	**2**	2	**5**	**9**	0	**14**	0	0	0	0	
+15 mins.	0	0	0	0	2	0	2	4	1	4	0	5	0	0	0	0	
+30 mins.	0	**6**	0	**6**	**3**	0	2	**5**	4	6	0	10	0	0	0	0	
+45 mins.	0	3	1	4	1	0	1	2	2	4	0	6	0	0	0	0	
Total Volume	0	10	5	15	6	0	7	13	12	23	0	35	0	0	0	0	
% App. Total	0	66.7	33.3		46.2	0	53.8		34.3	65.7	0		0	0	0		
PHF	.000	.417	.313	.625	.500	.000	.875	.650	.600	.639	.000	.625	.000	.000	.000	.000	

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City of Ontario
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File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	4	0	0	4	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	0	7	7
07:15 AM	0	3	3	0	6	1	0	1	1	2	5	5	0	0	10	0	0	0	0	0	1	18	19
07:30 AM	0	5	0	0	5	0	0	2	0	2	1	2	0	0	3	0	0	0	0	0	0	10	10
07:45 AM	0	4	6	0	10	0	0	1	1	1	2	3	0	0	5	0	0	0	0	0	1	16	17
Total	0	16	9	0	25	1	0	5	2	6	9	11	0	0	20	0	0	0	0	0	2	51	53
08:00 AM	0	3	4	0	7	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	9	9
08:15 AM	0	4	4	1	8	0	0	2	1	2	4	1	0	0	5	0	0	0	0	0	2	15	17
08:30 AM	0	3	4	1	7	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	1	11	12
08:45 AM	0	4	5	3	9	0	0	4	3	4	2	7	0	0	9	0	0	0	0	0	6	22	28
Total	0	14	17	5	31	0	0	7	4	7	8	11	0	0	19	0	0	0	0	0	9	57	66
Grand Total	0	30	26	5	56	1	0	12	6	13	17	22	0	0	39	0	0	0	0	0	11	108	119
Apprch %	0	53.6	46.4			7.7	0	92.3			43.6	56.4	0			0	0	0					
Total %	0	27.8	24.1		51.9	0.9	0	11.1		12	15.7	20.4	0		36.1	0	0	0		0	9.2	90.8	

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	3	3	6	**1**	0	1	**2**	**5**	**5**	0	**10**	0	0	0	0	**18**
07:30 AM	0	**5**	0	5	0	0	**2**	2	1	2	0	3	0	0	0	0	10
07:45 AM	0	4	**6**	**10**	0	0	1	1	2	3	0	5	0	0	0	0	16
08:00 AM	0	3	4	7	0	0	0	0	1	1	0	2	0	0	0	0	9
Total Volume	0	15	13	28	1	0	4	5	9	11	0	20	0	0	0	0	53
% App. Total	0	53.6	46.4		20	0	80		45	55	0		0	0	0		
PHF	.000	.750	.542	.700	.250	.000	.500	.625	.450	.550	.000	.500	.000	.000	.000	.000	.736

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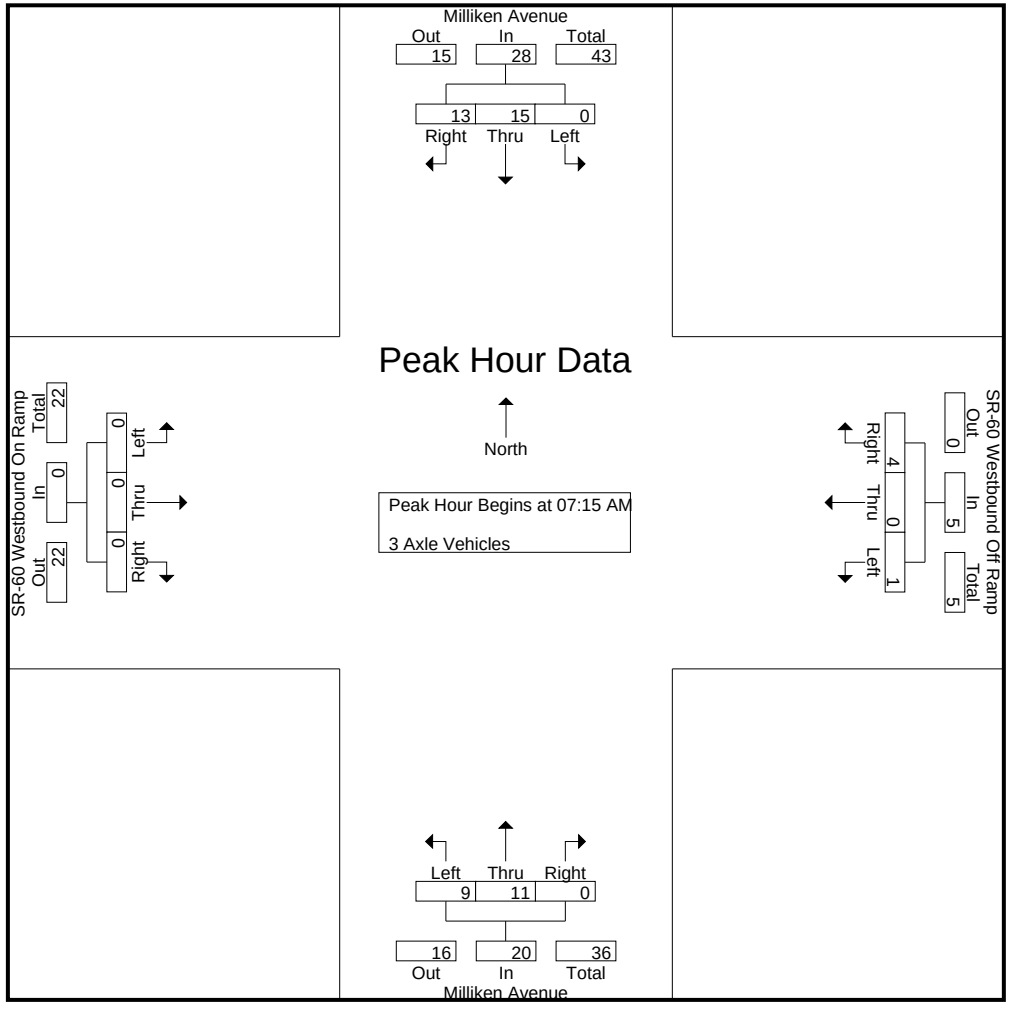
City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:15 AM				07:15 AM				07:15 AM				
+0 mins.	0	3	3	6	**1**	0	1	**2**	**5**	**5**	0	**10**	0	0	0	0	
+15 mins.	0	**5**	0	5	0	0	**2**	2	1	2	0	3	0	0	0	0	
+30 mins.	0	4	**6**	**10**	0	0	1	1	2	3	0	5	0	0	0	0	
+45 mins.	0	3	4	7	0	0	0	0	1	1	0	2	0	0	0	0	
Total Volume	0	15	13	28	1	0	4	5	9	11	0	20	0	0	0	0	
% App. Total	0	53.6	46.4		20	0	80		45	55	0		0	0	0		
PHF	.000	.750	.542	.700	.250	.000	.500	.625	.450	.550	.000	.500	.000	.000	.000	.000	

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File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
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Groups Printed- 4+ Axle Trucks

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	7	13	5	20	1	0	3	2	4	4	19	0	0	23	0	0	0	0	0	7	47	54
07:15 AM	0	12	11	3	23	0	1	3	2	4	16	19	0	0	35	0	0	0	0	0	5	62	67
07:30 AM	0	9	18	7	27	1	0	7	2	8	12	18	0	0	30	0	0	0	0	0	9	65	74
07:45 AM	0	8	16	8	24	1	0	4	0	5	13	19	0	0	32	0	0	0	0	0	8	61	69
Total	0	36	58	23	94	3	1	17	6	21	45	75	0	0	120	0	0	0	0	0	29	235	264
08:00 AM	0	17	14	4	31	1	0	8	1	9	11	25	0	0	36	0	0	0	0	0	5	76	81
08:15 AM	0	7	18	5	25	2	0	5	1	7	14	28	0	0	42	0	0	0	0	0	6	74	80
08:30 AM	0	6	13	2	19	4	0	5	2	9	18	23	0	0	41	0	0	0	0	0	4	69	73
08:45 AM	0	12	21	6	33	0	0	7	0	7	8	20	0	0	28	0	0	0	0	0	6	68	74
Total	0	42	66	17	108	7	0	25	4	32	51	96	0	0	147	0	0	0	0	0	21	287	308
Grand Total	0	78	124	40	202	10	1	42	10	53	96	171	0	0	267	0	0	0	0	0	50	522	572
Apprch %	0	38.6	61.4			18.9	1.9	79.2			36	64	0			0	0	0					
Total %	0	14.9	23.8		38.7	1.9	0.2	8		10.2	18.4	32.8	0		51.1	0	0	0		0	8.7	91.3	

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	12	11	23	0	**1**	3	4	**16**	19	0	35	0	0	0	0	62
07:30 AM	0	9	**18**	27	**1**	0	7	8	12	18	0	30	0	0	0	0	65
07:45 AM	0	8	16	24	1	0	4	5	13	19	0	32	0	0	0	0	61
08:00 AM	0	**17**	14	**31**	1	0	**8**	**9**	11	**25**	0	**36**	0	0	0	0	**76**
Total Volume	0	46	59	105	3	1	22	26	52	81	0	133	0	0	0	0	264
% App. Total	0	43.8	56.2		11.5	3.8	84.6		39.1	60.9	0		0	0	0		
PHF	.000	.676	.819	.847	.750	.250	.688	.722	.813	.810	.000	.924	.000	.000	.000	.000	.868

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City of Ontario
N/S: Milliken Avenue
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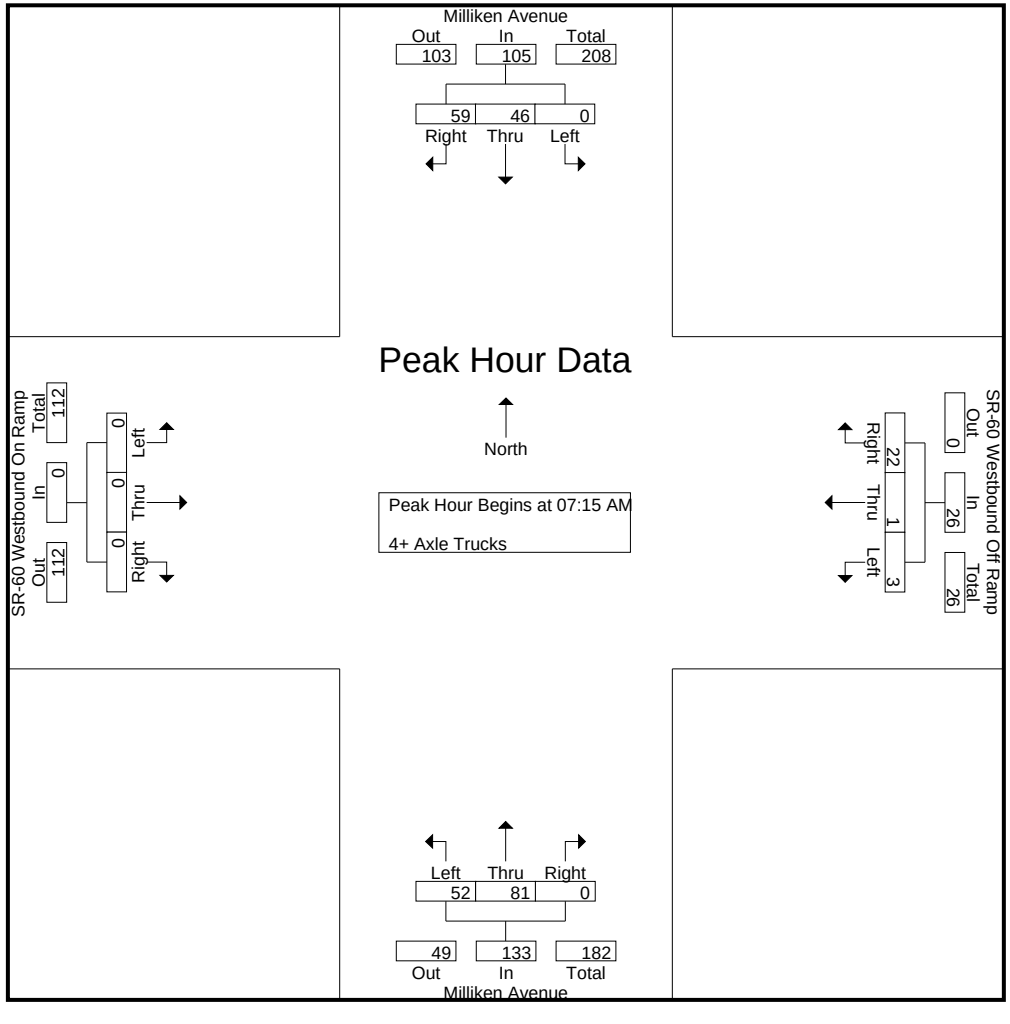
Weather: Clear

File Name : 01_ONT_Mil_60W AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:15 AM				07:15 AM				07:15 AM				
+0 mins.	0	12	11	23	0	**1**	3	4	**16**	19	0	35	0	0	0	0	
+15 mins.	0	9	**18**	27	**1**	0	7	8	12	18	0	30	0	0	0	0	
+30 mins.	0	8	16	24	1	0	4	5	13	19	0	32	0	0	0	0	
+45 mins.	0	**17**	14	**31**	1	0	**8**	**9**	11	**25**	0	**36**	0	0	0	0	
Total Volume	0	46	59	105	3	1	22	26	52	81	0	133	0	0	0	0	
% App. Total	0	43.8	56.2		11.5	3.8	84.6		39.1	60.9	0		0	0	0		
PHF	.000	.676	.819	.847	.750	.250	.688	.722	.813	.810	.000	.924	.000	.000	.000	.000	

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	166	111	25	277	18	0	61	37	79	80	140	0	0	220	0	0	0	0	0	62	576	638
04:15 PM	0	147	91	20	238	12	0	60	43	72	54	124	0	0	178	0	0	0	0	0	63	488	551
04:30 PM	0	184	113	24	297	14	0	64	47	78	76	134	0	0	210	0	0	0	0	0	71	585	656
04:45 PM	0	204	102	20	306	22	1	59	37	82	50	123	0	0	173	0	0	0	0	0	57	561	618
Total	0	701	417	89	1118	66	1	244	164	311	260	521	0	0	781	0	0	0	0	0	253	2210	2463
05:00 PM	0	192	84	17	276	15	0	65	36	80	50	123	0	0	173	0	0	0	0	0	53	529	582
05:15 PM	0	238	101	20	339	16	1	74	49	91	36	125	0	0	161	0	0	0	0	0	69	591	660
05:30 PM	0	197	73	10	270	16	0	73	32	89	44	131	0	0	175	0	0	0	0	0	42	534	576
05:45 PM	0	180	68	17	248	20	0	50	28	70	57	110	0	0	167	0	0	0	0	0	45	485	530
Total	0	807	326	64	1133	67	1	262	145	330	187	489	0	0	676	0	0	0	0	0	209	2139	2348
Grand Total	0	1508	743	153	2251	133	2	506	309	641	447	1010	0	0	1457	0	0	0	0	0	462	4349	4811
Apprch %	0	67	33			20.7	0.3	78.9			30.7	69.3	0			0	0	0					
Total %	0	34.7	17.1		51.8	3.1	0	11.6		14.7	10.3	23.2	0		33.5	0	0	0		0	9.6	90.4	
Passenger Vehicles	0	1408	620		2152	115	1	430		818	369	758	0		1127	0	0	0		0	0	0	4097
% Passenger Vehicles	0	93.4	83.4	81	89.5	86.5	50	85	88	86.1	82.6	75	0	0	77.4	0	0	0	0	0	0	0	85.2
Large 2 Axle Vehicles	0	15	10		29	3	0	19		32	10	42	0		52	0	0	0		0	0	0	113
% Large 2 Axle Vehicles	0	1	1.3	2.6	1.2	2.3	0	3.8	3.2	3.4	2.2	4.2	0	0	3.6	0	0	0	0	0	0	0	2.3
3 Axle Vehicles	0	21	12		34	7	0	10		21	7	44	0		51	0	0	0		0	0	0	106
% 3 Axle Vehicles	0	1.4	1.6	0.7	1.4	5.3	0	2	1.3	2.2	1.6	4.4	0	0	3.5	0	0	0	0	0	0	0	2.2
4+ Axle Trucks	0	64	101		189	8	1	47		79	61	166	0		227	0	0	0		0	0	0	495
% 4+ Axle Trucks	0	4.2	13.6	15.7	7.9	6	50	9.3	7.4	8.3	13.6	16.4	0	0	15.6	0	0	0	0	0	0	0	10.3

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	184	**113**	297	14	0	64	78	**76**	**134**	0	**210**	0	0	0	0	585
04:45 PM	0	204	102	306	**22**	**1**	59	82	50	123	0	173	0	0	0	0	561
05:00 PM	0	192	84	276	15	0	65	80	50	123	0	173	0	0	0	0	529
05:15 PM	0	**238**	101	**339**	16	1	**74**	**91**	36	125	0	161	0	0	0	0	**591**
Total Volume	0	818	400	1218	67	2	262	331	212	505	0	717	0	0	0	0	2266
% App. Total	0	67.2	32.8		20.2	0.6	79.2		29.6	70.4	0		0	0	0		
PHF	.000	.859	.885	.898	.761	.500	.885	.909	.697	.942	.000	.854	.000	.000	.000	.000	.959

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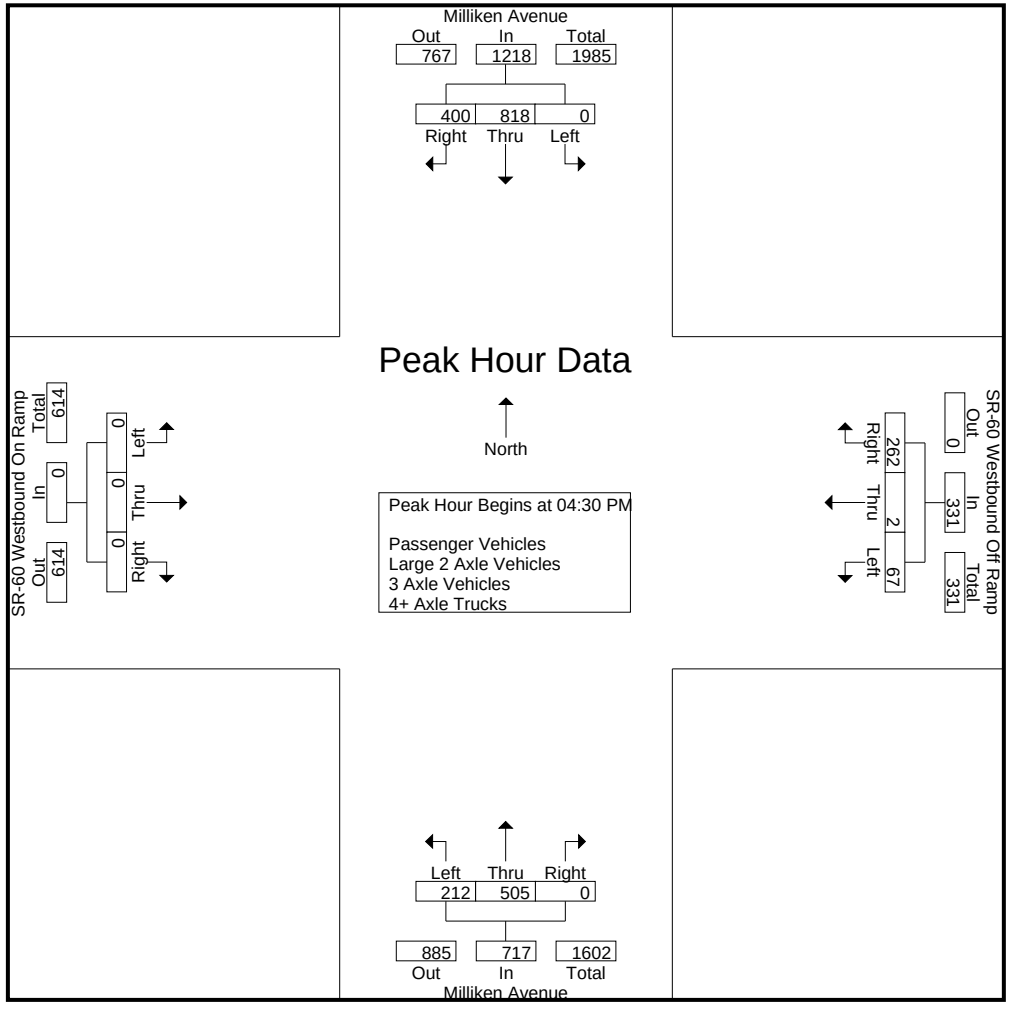

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N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:45 PM				04:00 PM				04:00 PM				
+0 mins.	0	184	**113**	297	**22**	**1**	59	82	**80**	**140**	0	**220**	0	0	0	0	
+15 mins.	0	204	102	306	15	0	65	80	54	124	0	178	0	0	0	0	
+30 mins.	0	192	84	276	16	1	**74**	**91**	76	134	0	210	0	0	0	0	
+45 mins.	0	**238**	101	**339**	16	0	73	89	50	123	0	173	0	0	0	0	
Total Volume	0	818	400	1218	69	2	271	342	260	521	0	781	0	0	0	0	
% App. Total	0	67.2	32.8		20.2	0.6	79.2		33.3	66.7	0		0	0	0		
PHF	.000	.859	.885	.898	.784	.500	.916	.940	.813	.930	.000	.888	.000	.000	.000	.000	

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	152	100	23	252	15	0	46	29	61	65	104	0	0	169	0	0	0	0	0	52	482	534
04:15 PM	0	138	73	12	211	10	0	50	36	60	48	88	0	0	136	0	0	0	0	0	48	407	455
04:30 PM	0	169	91	19	260	12	0	52	38	64	64	100	0	0	164	0	0	0	0	0	57	488	545
04:45 PM	0	187	86	15	273	17	1	54	35	72	42	88	0	0	130	0	0	0	0	0	50	475	525
Total	0	646	350	69	996	54	1	202	138	257	219	380	0	0	599	0	0	0	0	0	207	1852	2059
05:00 PM	0	183	72	15	255	15	0	57	35	72	41	97	0	0	138	0	0	0	0	0	50	465	515
05:15 PM	0	229	85	19	314	14	0	61	43	75	26	95	0	0	121	0	0	0	0	0	62	510	572
05:30 PM	0	186	59	8	245	14	0	65	29	79	38	96	0	0	134	0	0	0	0	0	37	458	495
05:45 PM	0	164	54	13	218	18	0	45	27	63	45	90	0	0	135	0	0	0	0	0	40	416	456
Total	0	762	270	55	1032	61	0	228	134	289	150	378	0	0	528	0	0	0	0	0	189	1849	2038
Grand Total	0	1408	620	124	2028	115	1	430	272	546	369	758	0	0	1127	0	0	0	0	0	396	3701	4097
Apprch %	0	69.4	30.6			21.1	0.2	78.8			32.7	67.3	0			0	0	0					
Total %	0	38	16.8		54.8	3.1	0	11.6		14.8	10	20.5	0		30.5	0	0	0		0	9.7	90.3	

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	169	**91**	260	12	0	52	64	**64**	**100**	0	**164**	0	0	0	0	488
04:45 PM	0	187	86	273	**17**	**1**	54	72	42	88	0	130	0	0	0	0	475
05:00 PM	0	183	72	255	15	0	57	72	41	97	0	138	0	0	0	0	465
05:15 PM	0	**229**	85	**314**	14	0	**61**	**75**	26	95	0	121	0	0	0	0	**510**
Total Volume	0	768	334	1102	58	1	224	283	173	380	0	553	0	0	0	0	1938
% App. Total	0	69.7	30.3		20.5	0.4	79.2		31.3	68.7	0		0	0	0		
PHF	.000	.838	.918	.877	.853	.250	.918	.943	.676	.950	.000	.843	.000	.000	.000	.000	.950

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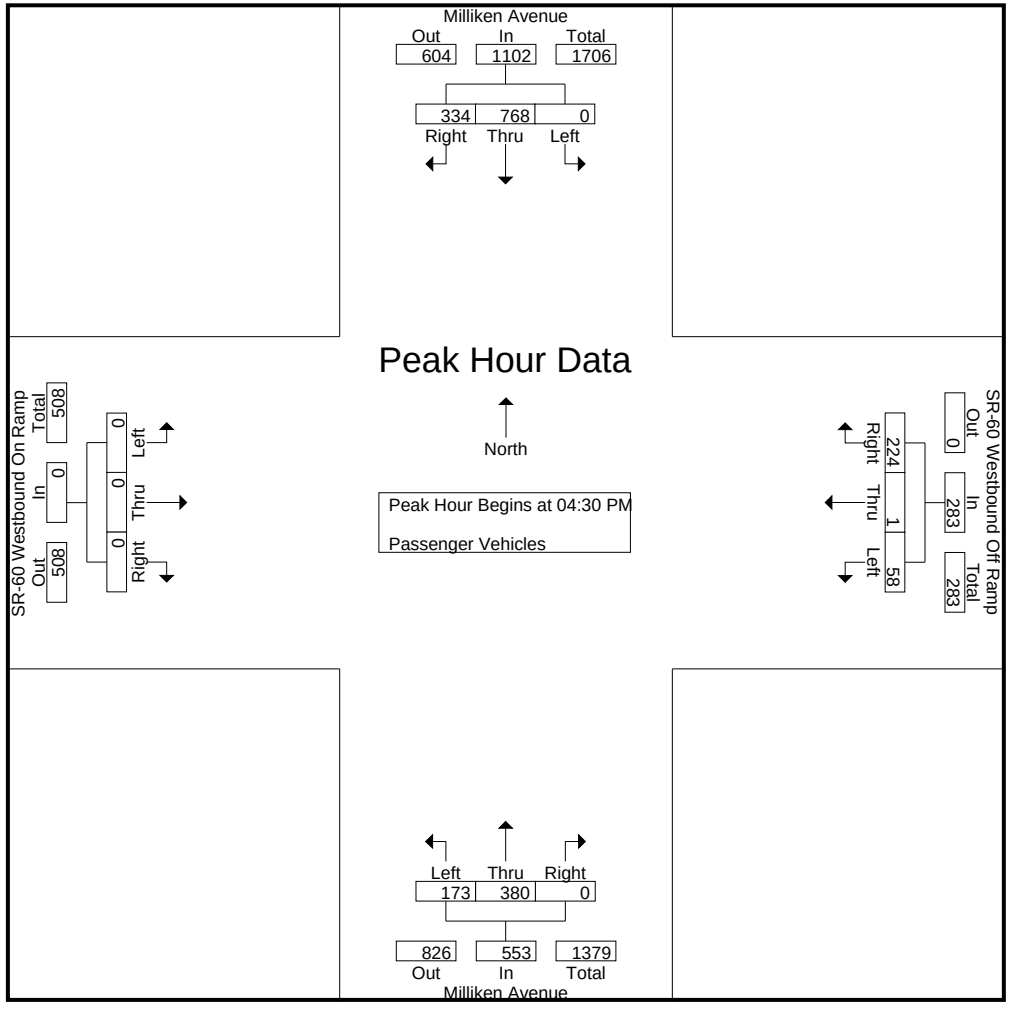
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	169	**91**	260	12	0	52	64	**64**	**100**	0	**164**	0	0	0	0	
+15 mins.	0	187	86	273	**17**	**1**	54	72	42	88	0	130	0	0	0	0	
+30 mins.	0	183	72	255	15	0	57	72	41	97	0	138	0	0	0	0	
+45 mins.	0	**229**	85	**314**	14	0	**61**	**75**	26	95	0	121	0	0	0	0	
Total Volume	0	768	334	1102	58	1	224	283	173	380	0	553	0	0	0	0	
% App. Total	0	69.7	30.3		20.5	0.4	79.2		31.3	68.7	0		0	0	0		
PHF	.000	.838	.918	.877	.853	.250	.918	.943	.676	.950	.000	.843	.000	.000	.000	.000	

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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

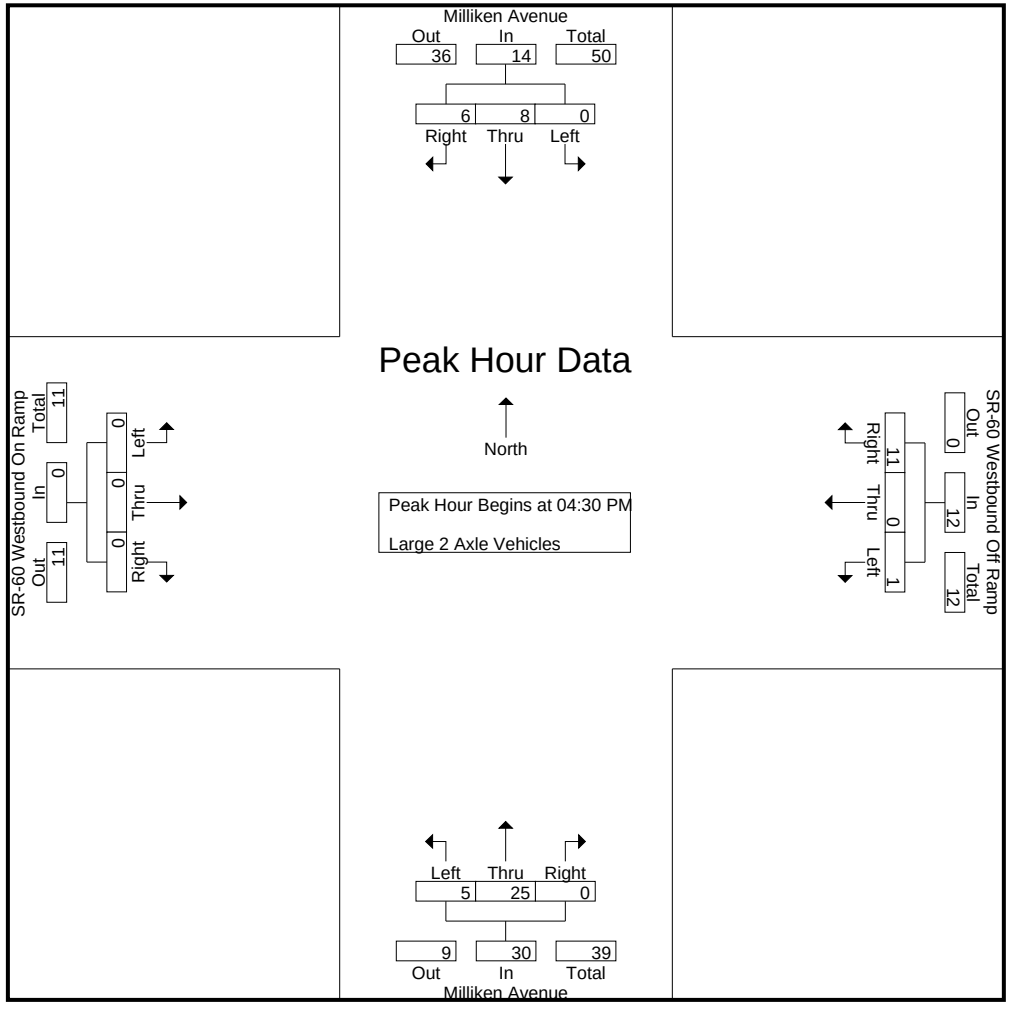
	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	3	1	0	4	1	0	3	3	4	2	5	0	0	7	0	0	0	0	0	3	15	18
04:15 PM	0	3	1	1	4	1	0	3	2	4	0	4	0	0	4	0	0	0	0	0	3	12	15
04:30 PM	0	3	2	0	5	1	0	4	3	5	2	7	0	0	9	0	0	0	0	0	3	19	22
04:45 PM	0	2	2	1	4	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	1	13	14
Total	0	11	6	2	17	3	0	10	8	13	4	25	0	0	29	0	0	0	0	0	10	59	69
05:00 PM	0	3	1	0	4	0	0	4	1	4	2	1	0	0	3	0	0	0	0	0	1	11	12
05:15 PM	0	0	1	1	1	0	0	3	1	3	1	8	0	0	9	0	0	0	0	0	2	13	15
05:30 PM	0	0	1	1	1	0	0	1	0	1	1	3	0	0	4	0	0	0	0	0	1	6	7
05:45 PM	0	1	1	0	2	0	0	1	0	1	2	5	0	0	7	0	0	0	0	0	0	10	10
Total	0	4	4	2	8	0	0	9	2	9	6	17	0	0	23	0	0	0	0	0	4	40	44
Grand Total	0	15	10	4	25	3	0	19	10	22	10	42	0	0	52	0	0	0	0	0	14	99	113
Apprch %	0	60	40			13.6	0	86.4			19.2	80.8	0			0	0	0					
Total %	0	15.2	10.1		25.3	3	0	19.2		22.2	10.1	42.4	0		52.5	0	0	0		0	12.4	87.6	

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**3**	**2**	**5**	**1**	0	**4**	**5**	**2**	7	0	**9**	0	0	0	0	**19**
04:45 PM	0	2	2	4	0	0	0	0	0	**9**	0	9	0	0	0	0	13
05:00 PM	0	3	1	4	0	0	4	4	2	1	0	3	0	0	0	0	11
05:15 PM	0	0	1	1	0	0	3	3	1	8	0	9	0	0	0	0	13
Total Volume	0	8	6	14	1	0	11	12	5	25	0	30	0	0	0	0	56
% App. Total	0	57.1	42.9		8.3	0	91.7		16.7	83.3	0		0	0	0		
PHF	.000	.667	.750	.700	.250	.000	.688	.600	.625	.694	.000	.833	.000	.000	.000	.000	.737

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	**3**	**2**	**5**	**1**	0	**4**	**5**	**2**	7	0	**9**	0	0	0	0	
+15 mins.	0	2	2	4	0	0	0	0	0	**9**	0	9	0	0	0	0	
+30 mins.	0	3	1	4	0	0	4	4	2	1	0	3	0	0	0	0	
+45 mins.	0	0	1	1	0	0	3	3	1	8	0	9	0	0	0	0	
Total Volume	0	8	6	14	1	0	11	12	5	25	0	30	0	0	0	0	
% App. Total	0	57.1	42.9		8.3	0	91.7		16.7	83.3	0		0	0	0		
PHF	.000	.667	.750	.700	.250	.000	.688	.600	.625	.694	.000	.833	.000	.000	.000	.000	

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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	2	2	0	4	1	0	3	1	4	3	4	0	0	7	0	0	0	0	0	1	15	16
04:15 PM	0	3	2	0	5	0	0	1	1	1	0	4	0	0	4	0	0	0	0	0	1	10	11
04:30 PM	0	3	1	0	4	1	0	1	1	2	1	6	0	0	7	0	0	0	0	0	1	13	14
04:45 PM	0	3	1	0	4	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	0	12	12
Total	0	11	6	0	17	6	0	5	3	11	4	18	0	0	22	0	0	0	0	0	3	50	53
05:00 PM	0	1	1	1	2	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	1	8	9
05:15 PM	0	1	2	0	3	0	0	1	0	1	2	9	0	0	11	0	0	0	0	0	0	15	15
05:30 PM	0	3	1	0	4	1	0	1	1	2	0	8	0	0	8	0	0	0	0	0	1	14	15
05:45 PM	0	5	2	0	7	0	0	2	0	2	1	4	0	0	5	0	0	0	0	0	0	14	14
Total	0	10	6	1	16	1	0	5	1	6	3	26	0	0	29	0	0	0	0	0	2	51	53
Grand Total	0	21	12	1	33	7	0	10	4	17	7	44	0	0	51	0	0	0	0	0	5	101	106
Apprch %	0	63.6	36.4			41.2	0	58.8			13.7	86.3	0			0	0	0					
Total %	0	20.8	11.9		32.7	6.9	0	9.9		16.8	6.9	43.6	0		50.5	0	0	0		0	4.7	95.3	

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**3**	1	**4**	1	0	**1**	2	1	6	0	7	0	0	0	0	13
04:45 PM	0	3	1	4	**4**	0	0	**4**	0	4	0	4	0	0	0	0	12
05:00 PM	0	1	1	2	0	0	1	1	0	5	0	5	0	0	0	0	8
05:15 PM	0	1	**2**	3	0	0	1	1	**2**	**9**	0	**11**	0	0	0	0	**15**
Total Volume	0	8	5	13	5	0	3	8	3	24	0	27	0	0	0	0	48
% App. Total	0	61.5	38.5		62.5	0	37.5		11.1	88.9	0		0	0	0		
PHF	.000	.667	.625	.813	.313	.000	.750	.500	.375	.667	.000	.614	.000	.000	.000	.000	.800

Counts Unlimited, Inc.
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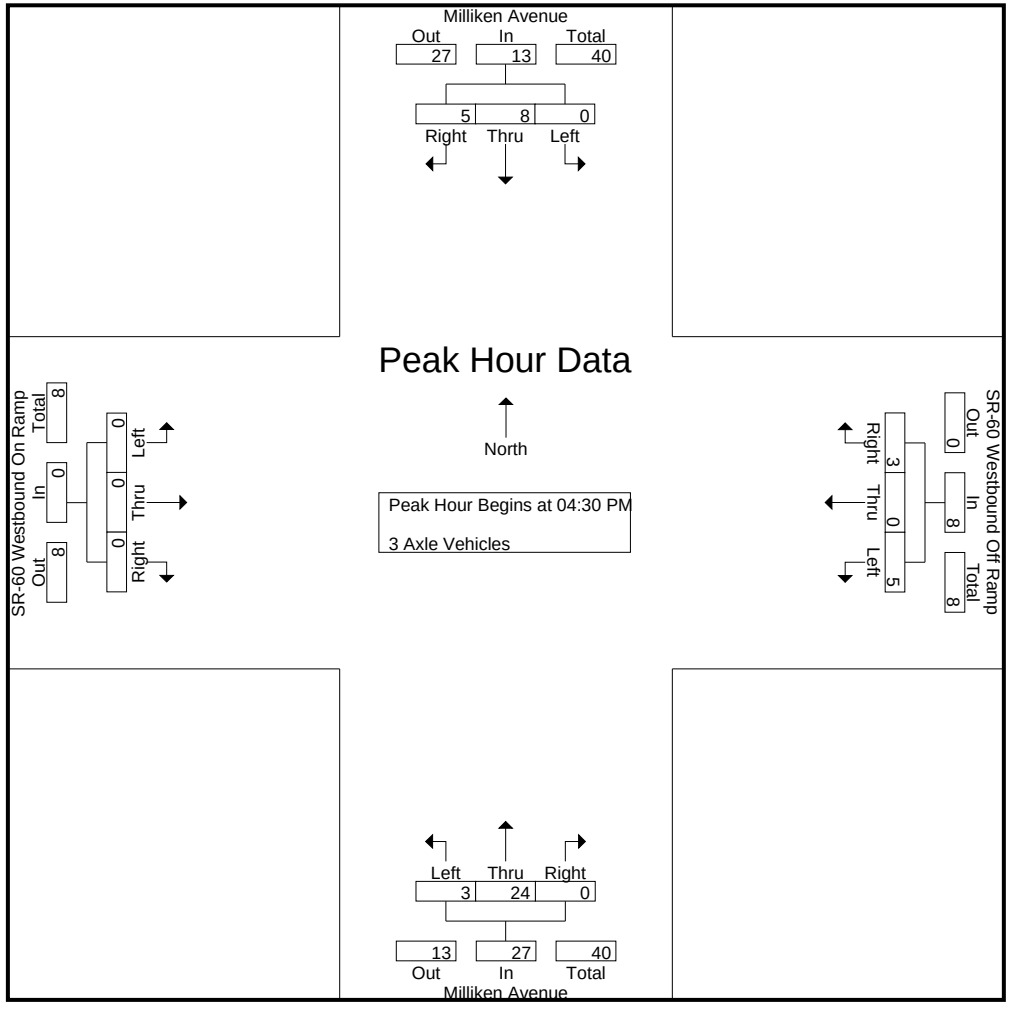
City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	**3**	1	**4**	1	0	**1**	2	1	6	0	7	0	0	0	0	
+15 mins.	0	3	1	4	**4**	0	0	**4**	0	4	0	4	0	0	0	0	
+30 mins.	0	1	1	2	0	0	1	1	0	5	0	5	0	0	0	0	
+45 mins.	0	1	**2**	3	0	0	1	1	**2**	**9**	0	**11**	0	0	0	0	
Total Volume	0	8	5	13	5	0	3	8	3	24	0	27	0	0	0	0	
% App. Total	0	61.5	38.5		62.5	0	37.5		11.1	88.9	0		0	0	0		
PHF	.000	.667	.625	.813	.313	.000	.750	.500	.375	.667	.000	.614	.000	.000	.000	.000	

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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	Milliken Avenue Southbound					SR-60 Westbound Off Ramp Westbound					Milliken Avenue Northbound					SR-60 Westbound On Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	9	8	2	17	1	0	9	4	10	10	27	0	0	37	0	0	0	0	0	6	64	70
04:15 PM	0	3	15	7	18	1	0	6	4	7	6	28	0	0	34	0	0	0	0	0	11	59	70
04:30 PM	0	9	19	5	28	0	0	7	5	7	9	21	0	0	30	0	0	0	0	0	10	65	75
04:45 PM	0	12	13	4	25	1	0	5	2	6	8	22	0	0	30	0	0	0	0	0	6	61	67
Total	0	33	55	18	88	3	0	27	15	30	33	98	0	0	131	0	0	0	0	0	33	249	282
05:00 PM	0	5	10	1	15	0	0	3	0	3	7	20	0	0	27	0	0	0	0	0	1	45	46
05:15 PM	0	8	13	0	21	2	1	9	5	12	7	13	0	0	20	0	0	0	0	0	5	53	58
05:30 PM	0	8	12	1	20	1	0	6	2	7	5	24	0	0	29	0	0	0	0	0	3	56	59
05:45 PM	0	10	11	4	21	2	0	2	1	4	9	11	0	0	20	0	0	0	0	0	5	45	50
Total	0	31	46	6	77	5	1	20	8	26	28	68	0	0	96	0	0	0	0	0	14	199	213
Grand Total	0	64	101	24	165	8	1	47	23	56	61	166	0	0	227	0	0	0	0	0	47	448	495
Apprch %	0	38.8	61.2			14.3	1.8	83.9			26.9	73.1	0			0	0	0					
Total %	0	14.3	22.5		36.8	1.8	0.2	10.5		12.5	13.6	37.1	0		50.7	0	0	0		0	9.5	90.5	

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	9	**19**	**28**	0	0	7	7	**9**	21	0	**30**	0	0	0	0	**65**
04:45 PM	0	**12**	13	25	1	0	5	6	8	**22**	0	30	0	0	0	0	61
05:00 PM	0	5	10	15	0	0	3	3	7	20	0	27	0	0	0	0	45
05:15 PM	0	8	13	21	**2**	**1**	**9**	**12**	7	13	0	20	0	0	0	0	53
Total Volume	0	34	55	89	3	1	24	28	31	76	0	107	0	0	0	0	224
% App. Total	0	38.2	61.8		10.7	3.6	85.7		29	71	0		0	0	0		
PHF	.000	.708	.724	.795	.375	.250	.667	.583	.861	.864	.000	.892	.000	.000	.000	.000	.862

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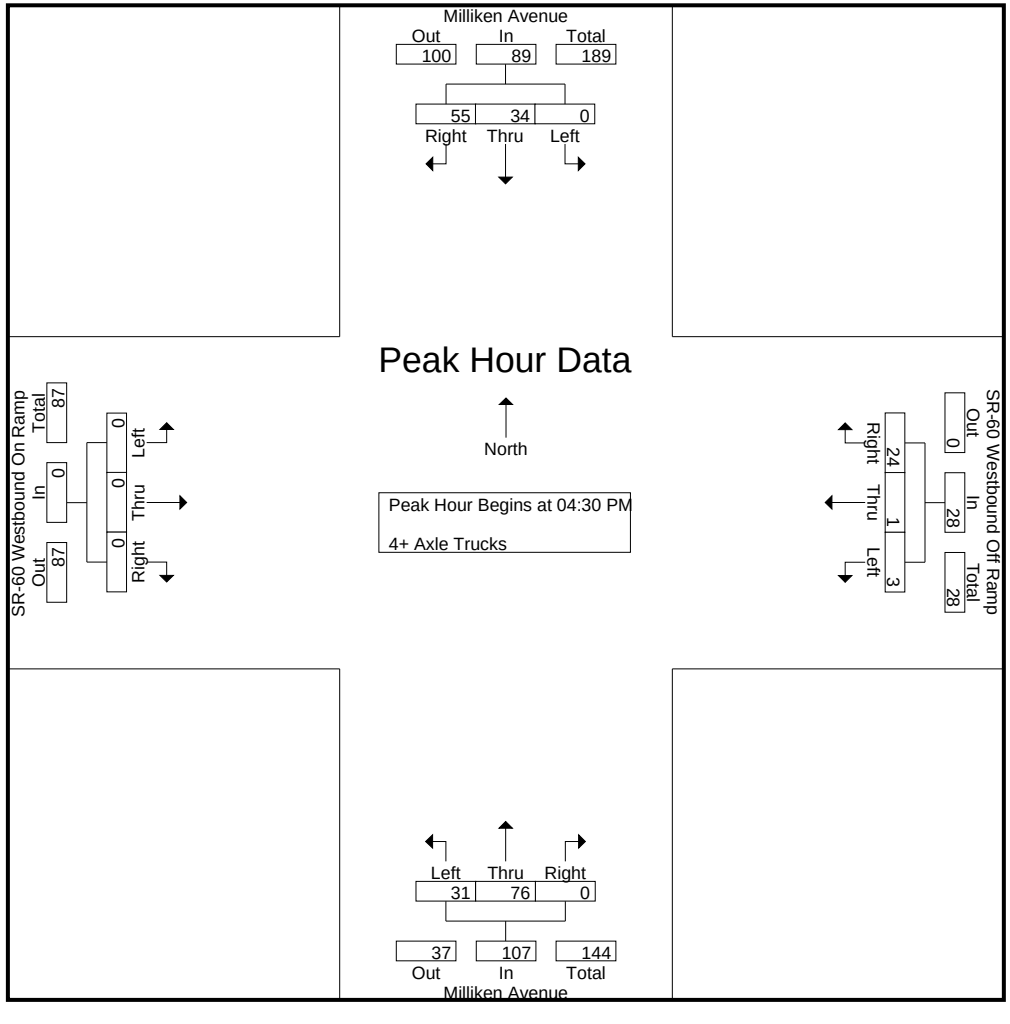
City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Westbound Ramps
Weather: Clear

File Name : 01_ONT_Mil_60W PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Westbound Off Ramp Westbound				Milliken Avenue Northbound				SR-60 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	9	**19**	**28**	0	0	7	7	**9**	21	0	**30**	0	0	0	0	
+15 mins.	0	**12**	13	25	1	0	5	6	8	**22**	0	30	0	0	0	0	
+30 mins.	0	5	10	15	0	0	3	3	7	20	0	27	0	0	0	0	
+45 mins.	0	8	13	21	**2**	**1**	**9**	**12**	7	13	0	20	0	0	0	0	
Total Volume	0	34	55	89	3	1	24	28	31	76	0	107	0	0	0	0	
% App. Total	0	38.2	61.8		10.7	3.6	85.7		29	71	0		0	0	0		
PHF	.000	.708	.724	.795	.375	.250	.667	.583	.861	.864	.000	.892	.000	.000	.000	.000	

Location: Ontario
N/S: Milliken Avenue
E/W: SR-60 WB Ramps

Date: 5/10/2022
Day: Tuesday

PEDESTRIANS

	North Leg Milliken Avenue	East Leg SR-60 WB Ramps	South Leg Milliken Avenue	West Leg SR-60 WB Ramps	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Milliken Avenue	East Leg SR-60 WB Ramps	South Leg Milliken Avenue	West Leg SR-60 WB Ramps	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	0	1
TOTAL VOLUMES:	0	2	0	0	2

Location: Ontario
N/S: Milliken Avenue
E/W: SR-60 WB Ramps

Date: 5/10/2022
Day: Tuesday

BICYCLES

	Southbound Milliken Avenue			Westbound SR-60 WB Ramps			Northbound Milliken Avenue			Eastbound SR-60 WB Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southbound Milliken Avenue			Westbound SR-60 WB Ramps			Northbound Milliken Avenue			Eastbound SR-60 WB Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	3	0	0	0	0	0	0	0	0	0	0	3

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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	9	82	0	0	91	0	0	0	0	0	0	148	26	12	174	49	0	53	10	102	22	367	389
07:15 AM	9	86	0	0	95	0	0	0	0	0	0	202	33	10	235	58	1	50	13	109	23	439	462
07:30 AM	10	82	0	0	92	0	0	0	0	0	0	227	19	5	246	72	1	32	15	105	20	443	463
07:45 AM	16	81	0	0	97	0	0	0	0	0	0	234	38	4	272	67	0	46	18	113	22	482	504
Total	44	331	0	0	375	0	0	0	0	0	0	811	116	31	927	246	2	181	56	429	87	1731	1818
08:00 AM	14	85	0	0	99	0	0	0	0	0	0	238	33	10	271	74	0	37	6	111	16	481	497
08:15 AM	8	69	0	0	77	0	0	0	0	0	0	215	19	4	234	89	0	61	21	150	25	461	486
08:30 AM	19	71	0	0	90	0	0	0	0	0	0	191	20	3	211	81	0	50	12	131	15	432	447
08:45 AM	12	58	0	0	70	0	0	0	0	0	0	170	22	3	192	82	0	50	19	132	22	394	416
Total	53	283	0	0	336	0	0	0	0	0	0	814	94	20	908	326	0	198	58	524	78	1768	1846
Grand Total	97	614	0	0	711	0	0	0	0	0	0	1625	210	51	1835	572	2	379	114	953	165	3499	3664
Apprch %	13.6	86.4	0			0	0	0			0	88.6	11.4			60	0.2	39.8					
Total %	2.8	17.5	0		20.3	0	0	0		0	0	46.4	6		52.4	16.3	0.1	10.8		27.2	4.5	95.5	
Passenger Vehicles	53	499	0		552	0	0	0		0	0	1388	181		1616	426	1	252		750	0	0	2918
% Passenger Vehicles	54.6	81.3	0	0	77.6	0	0	0	0	0	0	85.4	86.2	92.2	85.7	74.5	50	66.5	62.3	70.3	0	0	79.6
Large 2 Axle Vehicles	12	32	0		44	0	0	0		0	0	59	7		66	23	0	16		43	0	0	153
% Large 2 Axle Vehicles	12.4	5.2	0	0	6.2	0	0	0	0	0	0	3.6	3.3	0	3.5	4	0	4.2	3.5	4	0	0	4.2
3 Axle Vehicles	10	20	0		30	0	0	0		0	0	28	2		30	11	0	11		27	0	0	87
% 3 Axle Vehicles	10.3	3.3	0	0	4.2	0	0	0	0	0	0	1.7	1	0	1.6	1.9	0	2.9	4.4	2.5	0	0	2.4
4+ Axle Trucks	22	63	0		85	0	0	0		0	0	150	20		174	112	1	100		247	0	0	506
% 4+ Axle Trucks	22.7	10.3	0	0	12	0	0	0	0	0	0	9.2	9.5	7.8	9.2	19.6	50	26.4	29.8	23.1	0	0	13.8

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	10	82	0	92	0	0	0	0	0	227	19	246	72	**1**	32	105	443
07:45 AM	**16**	81	0	97	0	0	0	0	0	234	**38**	**272**	67	0	46	113	**482**
08:00 AM	14	**85**	0	**99**	0	0	0	0	0	**238**	33	271	74	0	37	111	481
08:15 AM	8	69	0	77	0	0	0	0	0	215	19	234	**89**	0	**61**	**150**	461
Total Volume	48	317	0	365	0	0	0	0	0	914	109	1023	302	1	176	479	1867
% App. Total	13.2	86.8	0		0	0	0		0	89.3	10.7		63	0.2	36.7		
PHF	.750	.932	.000	.922	.000	.000	.000	.000	.000	.960	.717	.940	.848	.250	.721	.798	.968

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City of Ontario
N/S: Milliken Avenue
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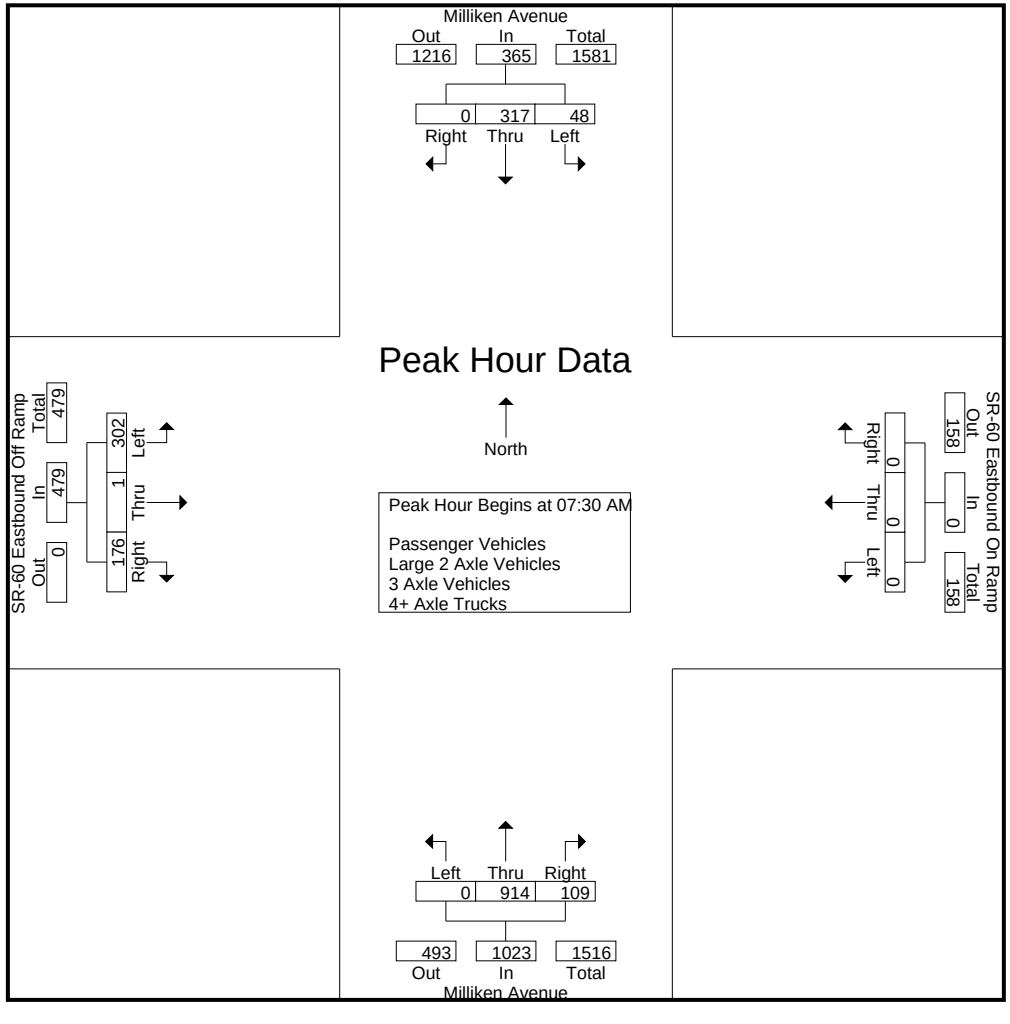
File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:00 AM				07:15 AM				08:00 AM				
+0 mins.	9	**86**	0	95	0	0	0	0	0	202	33	235	74	0	37	111	
+15 mins.	10	82	0	92	0	0	0	0	0	227	19	246	**89**	0	**61**	**150**	
+30 mins.	**16**	81	0	97	0	0	0	0	0	234	**38**	**272**	81	0	50	131	
+45 mins.	14	85	0	**99**	0	0	0	0	0	**238**	33	271	82	0	50	132	
Total Volume	49	334	0	383	0	0	0	0	0	901	123	1024	326	0	198	524	
% App. Total	12.8	87.2	0		0	0	0		0	88	12		62.2	0	37.8		
PHF	.766	.971	.000	.967	.000	.000	.000	.000	.000	.946	.809	.941	.916	.000	.811	.873	

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Site Code : 05122421
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Page No : 1

Groups Printed- Passenger Vehicles

	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	2	68	0	0	70	0	0	0	0	0	0	132	23	12	155	32	0	39	8	71	20	296	316
07:15 AM	6	75	0	0	81	0	0	0	0	0	0	162	25	10	187	40	1	34	8	75	18	343	361
07:30 AM	3	67	0	0	70	0	0	0	0	0	0	203	14	4	217	57	0	22	10	79	14	366	380
07:45 AM	10	66	0	0	76	0	0	0	0	0	0	203	36	4	239	50	0	32	12	82	16	397	413
Total	21	276	0	0	297	0	0	0	0	0	0	700	98	30	798	179	1	127	38	307	68	1402	1470
08:00 AM	4	70	0	0	74	0	0	0	0	0	0	216	30	9	246	52	0	24	4	76	13	396	409
08:15 AM	5	58	0	0	63	0	0	0	0	0	0	171	18	4	189	67	0	37	11	104	15	356	371
08:30 AM	15	53	0	0	68	0	0	0	0	0	0	162	18	3	180	62	0	36	9	98	12	346	358
08:45 AM	8	42	0	0	50	0	0	0	0	0	0	139	17	1	156	66	0	28	9	94	10	300	310
Total	32	223	0	0	255	0	0	0	0	0	0	688	83	17	771	247	0	125	33	372	50	1398	1448
Grand Total	53	499	0	0	552	0	0	0	0	0	0	1388	181	47	1569	426	1	252	71	679	118	2800	2918
Apprch %	9.6	90.4	0			0	0	0			0	88.5	11.5			62.7	0.1	37.1					
Total %	1.9	17.8	0		19.7	0	0	0		0	0	49.6	6.5		56	15.2	0	9		24.2	4	96	

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	3	67	0	70	0	0	0	0	0	203	14	217	57	0	22	79	366
07:45 AM	**10**	66	0	**76**	0	0	0	0	0	203	**36**	239	50	0	32	82	**397**
08:00 AM	4	**70**	0	74	0	0	0	0	0	**216**	30	**246**	52	0	24	76	396
08:15 AM	5	58	0	63	0	0	0	0	0	171	18	189	**67**	0	**37**	**104**	356
Total Volume	22	261	0	283	0	0	0	0	0	793	98	891	226	0	115	341	1515
% App. Total	7.8	92.2	0		0	0	0		0	89	11		66.3	0	33.7		
PHF	.550	.932	.000	.931	.000	.000	.000	.000	.000	.918	.681	.905	.843	.000	.777	.820	.954

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File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
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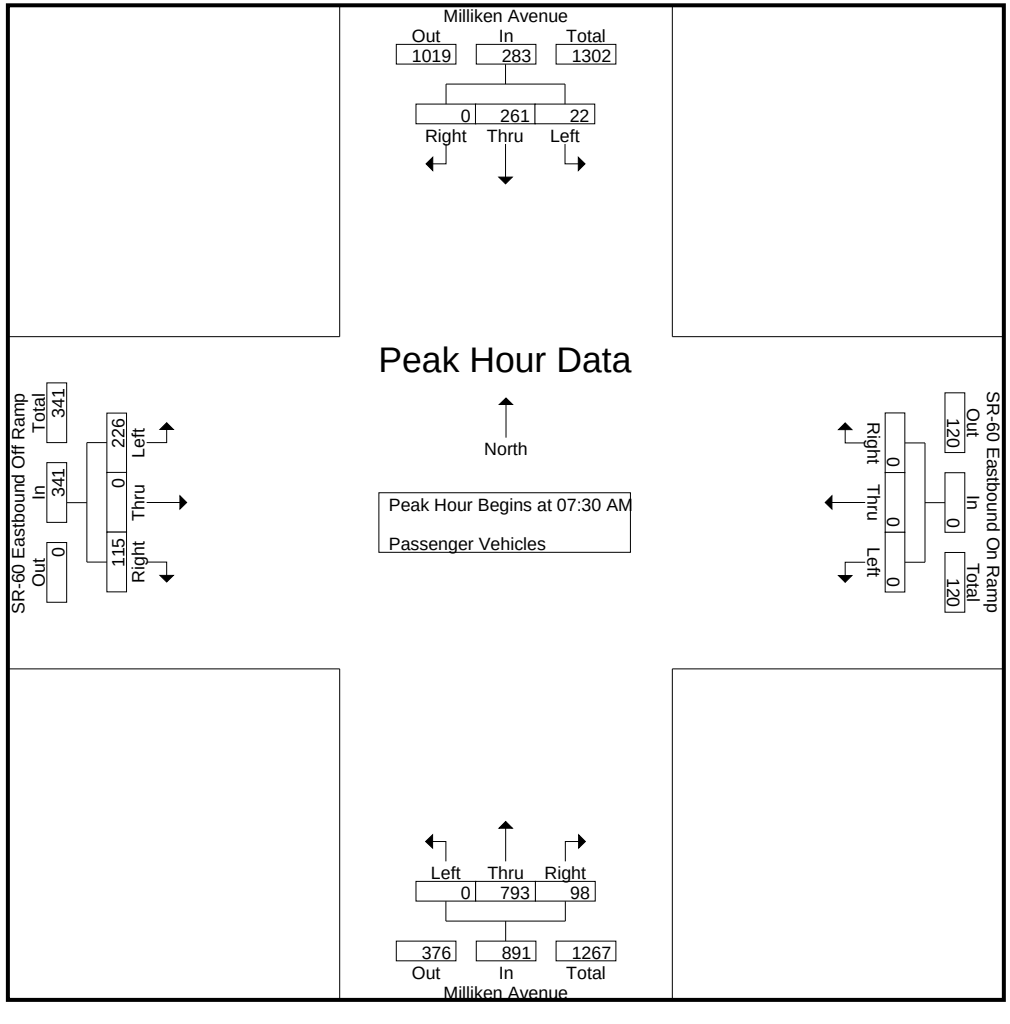

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File Name : 02_ONT_Mil_60E AM
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Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	3	67	0	70	0	0	0	0	0	203	14	217	57	0	22	79	
+15 mins.	**10**	66	0	**76**	0	0	0	0	0	203	**36**	239	50	0	32	82	
+30 mins.	4	**70**	0	74	0	0	0	0	0	**216**	30	**246**	52	0	24	76	
+45 mins.	5	58	0	63	0	0	0	0	0	171	18	189	**67**	0	**37**	**104**	
Total Volume	22	261	0	283	0	0	0	0	0	793	98	891	226	0	115	341	
% App. Total	7.8	92.2	0		0	0	0		0	89	11		66.3	0	33.7		
PHF	.550	.932	.000	.931	.000	.000	.000	.000	.000	.918	.681	.905	.843	.000	.777	.820	

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Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	3	6	0	0	9	0	0	0	0	0	0	6	2	0	8	2	0	2	0	4	0	21	21
07:15 AM	0	1	0	0	1	0	0	0	0	0	0	12	1	0	13	3	0	5	1	8	1	22	23
07:30 AM	0	4	0	0	4	0	0	0	0	0	0	3	1	0	4	2	0	0	0	2	0	10	10
07:45 AM	3	7	0	0	10	0	0	0	0	0	0	7	0	0	7	3	0	2	1	5	1	22	23
Total	6	18	0	0	24	0	0	0	0	0	0	28	4	0	32	10	0	9	2	19	2	75	77
08:00 AM	3	3	0	0	6	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	0	14	14
08:15 AM	1	2	0	0	3	0	0	0	0	0	0	12	1	0	13	4	0	2	1	6	1	22	23
08:30 AM	2	5	0	0	7	0	0	0	0	0	0	6	1	0	7	3	0	4	0	7	0	21	21
08:45 AM	0	4	0	0	4	0	0	0	0	0	0	7	0	0	7	5	0	1	1	6	1	17	18
Total	6	14	0	0	20	0	0	0	0	0	0	31	3	0	34	13	0	7	2	20	2	74	76
Grand Total	12	32	0	0	44	0	0	0	0	0	0	59	7	0	66	23	0	16	4	39	4	149	153
Apprch %	27.3	72.7	0			0	0	0			0	89.4	10.6			59	0	41					
Total %	8.1	21.5	0		29.5	0	0	0		0	0	39.6	4.7		44.3	15.4	0	10.7		26.2	2.6	97.4	

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	4	0	4	0	0	0	0	0	3	**1**	4	2	0	0	2	10
07:45 AM	**3**	**7**	0	**10**	0	0	0	0	0	7	0	7	3	0	**2**	5	**22**
08:00 AM	3	3	0	6	0	0	0	0	0	6	1	7	1	0	0	1	14
08:15 AM	1	2	0	3	0	0	0	0	0	**12**	1	**13**	**4**	0	2	**6**	22
Total Volume	7	16	0	23	0	0	0	0	0	28	3	31	10	0	4	14	68
% App. Total	30.4	69.6	0		0	0	0		0	90.3	9.7		71.4	0	28.6		
PHF	.583	.571	.000	.575	.000	.000	.000	.000	.000	.583	.750	.596	.625	.000	.500	.583	.773

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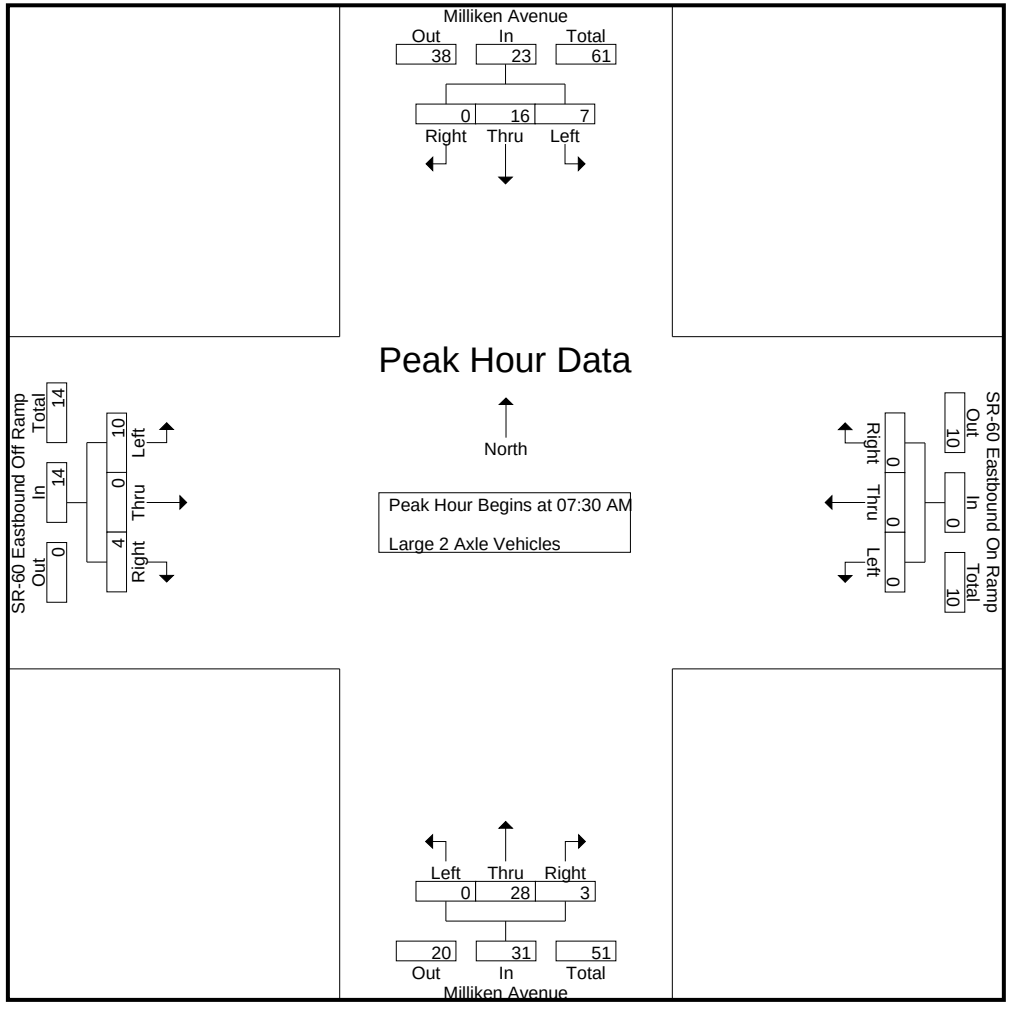
City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	0	4	0	4	0	0	0	0	0	3	**1**	4	2	0	0	2	
+15 mins.	**3**	**7**	0	**10**	0	0	0	0	0	7	0	7	3	0	**2**	5	
+30 mins.	3	3	0	6	0	0	0	0	0	6	1	7	1	0	0	1	
+45 mins.	1	2	0	3	0	0	0	0	0	**12**	1	**13**	**4**	0	2	**6**	
Total Volume	7	16	0	23	0	0	0	0	0	28	3	31	10	0	4	14	
% App. Total	30.4	69.6	0		0	0	0		0	90.3	9.7		71.4	0	28.6		
PHF	.583	.571	.000	.575	.000	.000	.000	.000	.000	.583	.750	.596	.625	.000	.500	.583	

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City of Ontario
N/S: Milliken Avenue
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File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	2	2	0	0	4	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	6	6
07:15 AM	1	2	0	0	3	0	0	0	0	0	0	7	2	0	9	3	0	0	0	3	0	15	15
07:30 AM	3	4	0	0	7	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	10	10
07:45 AM	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	1	0	2	1	3	1	10	11
Total	7	10	0	0	17	0	0	0	0	0	0	14	2	0	16	6	0	2	1	8	1	41	42
08:00 AM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	3	1	3	1	8	9
08:15 AM	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	1	0	1	1	2	1	9	10
08:30 AM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	7	7
08:45 AM	2	2	0	0	4	0	0	0	0	0	0	5	0	0	5	4	0	4	2	8	2	17	19
Total	3	10	0	0	13	0	0	0	0	0	0	14	0	0	14	5	0	9	4	14	4	41	45
Grand Total	10	20	0	0	30	0	0	0	0	0	0	28	2	0	30	11	0	11	5	22	5	82	87
Apprch %	33.3	66.7	0			0	0	0			0	93.3	6.7			50	0	50					
Total %	12.2	24.4	0		36.6	0	0	0		0	0	34.1	2.4		36.6	13.4	0	13.4		26.8	5.7	94.3	

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**3**	**4**	0	**7**	0	0	0	0	0	2	0	2	**1**	0	0	1	**10**
07:45 AM	1	2	0	3	0	0	0	0	0	**4**	0	**4**	1	0	2	**3**	10
08:00 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	**3**	3	8
08:15 AM	1	2	0	3	0	0	0	0	0	4	0	4	1	0	1	2	9
Total Volume	5	11	0	16	0	0	0	0	0	12	0	12	3	0	6	9	37
% App. Total	31.2	68.8	0		0	0	0		0	100	0		33.3	0	66.7		
PHF	.417	.688	.000	.571	.000	.000	.000	.000	.000	.750	.000	.750	.750	.000	.500	.750	.925

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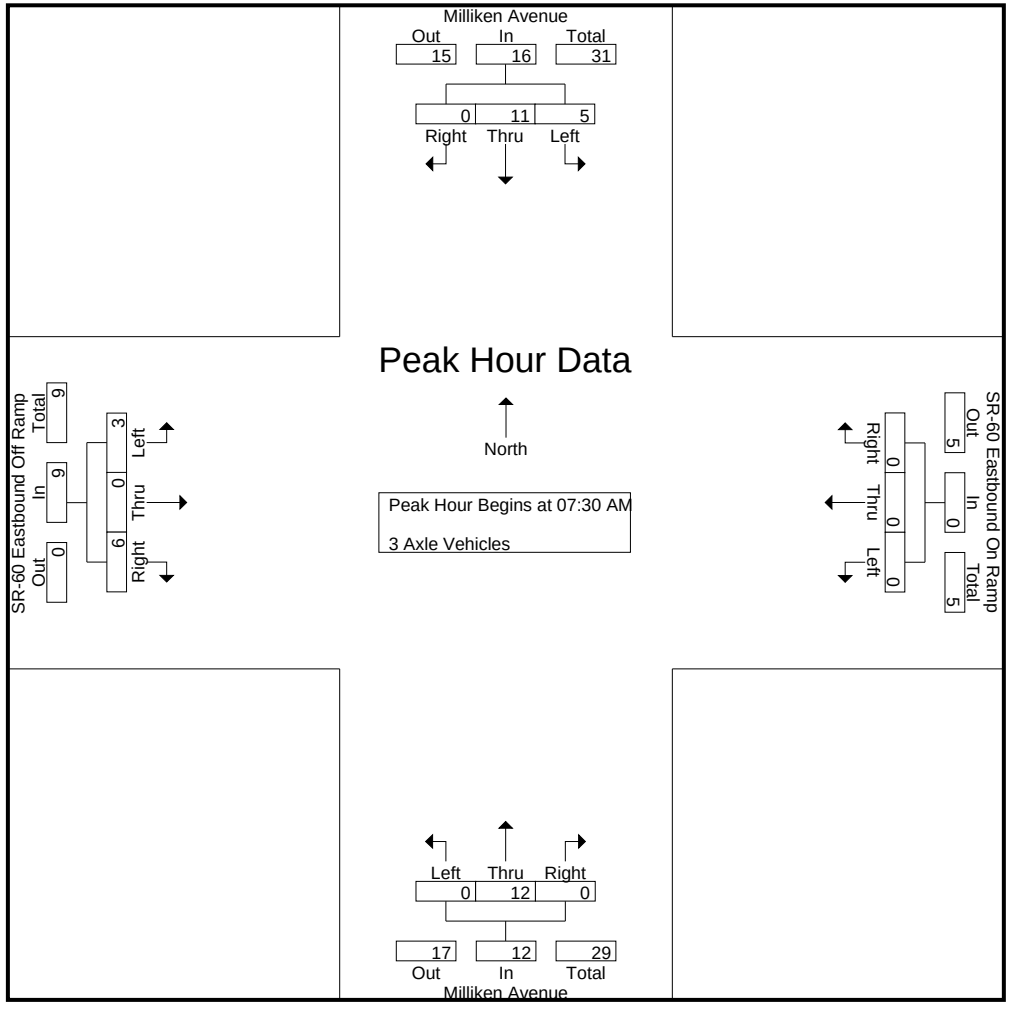
City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	**3**	**4**	0	**7**	0	0	0	0	0	2	0	2	**1**	0	0	1	
+15 mins.	1	2	0	3	0	0	0	0	0	**4**	0	**4**	1	0	2	**3**	
+30 mins.	0	3	0	3	0	0	0	0	0	2	0	2	0	0	**3**	3	
+45 mins.	1	2	0	3	0	0	0	0	0	4	0	4	1	0	1	2	
Total Volume	5	11	0	16	0	0	0	0	0	12	0	12	3	0	6	9	
% App. Total	31.2	68.8	0		0	0	0		0	100	0		33.3	0	66.7		
PHF	.417	.688	.000	.571	.000	.000	.000	.000	.000	.750	.000	.750	.750	.000	.500	.750	

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File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
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Groups Printed- 4+ Axle Trucks

	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	2	6	0	0	8	0	0	0	0	0	0	9	1	0	10	14	0	12	2	26	2	44	46
07:15 AM	2	8	0	0	10	0	0	0	0	0	0	21	5	0	26	12	0	11	4	23	4	59	63
07:30 AM	4	7	0	0	11	0	0	0	0	0	0	19	4	1	23	12	1	10	5	23	6	57	63
07:45 AM	2	6	0	0	8	0	0	0	0	0	0	20	2	0	22	13	0	10	4	23	4	53	57
Total	10	27	0	0	37	0	0	0	0	0	0	69	12	1	81	51	1	43	15	95	16	213	229
08:00 AM	7	9	0	0	16	0	0	0	0	0	0	14	2	1	16	21	0	10	1	31	2	63	65
08:15 AM	1	7	0	0	8	0	0	0	0	0	0	28	0	0	28	17	0	21	8	38	8	74	82
08:30 AM	2	10	0	0	12	0	0	0	0	0	0	20	1	0	21	16	0	9	3	25	3	58	61
08:45 AM	2	10	0	0	12	0	0	0	0	0	0	19	5	2	24	7	0	17	7	24	9	60	69
Total	12	36	0	0	48	0	0	0	0	0	0	81	8	3	89	61	0	57	19	118	22	255	277
Grand Total	22	63	0	0	85	0	0	0	0	0	0	150	20	4	170	112	1	100	34	213	38	468	506
Apprch %	25.9	74.1	0			0	0	0			0	88.2	11.8			52.6	0.5	46.9					
Total %	4.7	13.5	0		18.2	0	0	0		0	0	32.1	4.3		36.3	23.9	0.2	21.4		45.5	7.5	92.5	

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	4	7	0	11	0	0	0	0	0	19	**4**	23	12	**1**	10	23	57
07:45 AM	2	6	0	8	0	0	0	0	0	20	2	22	13	0	10	23	53
08:00 AM	**7**	**9**	0	**16**	0	0	0	0	0	14	2	16	**21**	0	10	31	63
08:15 AM	1	7	0	8	0	0	0	0	0	**28**	0	**28**	17	0	**21**	**38**	**74**
Total Volume	14	29	0	43	0	0	0	0	0	81	8	89	63	1	51	115	247
% App. Total	32.6	67.4	0		0	0	0		0	91	9		54.8	0.9	44.3		
PHF	.500	.806	.000	.672	.000	.000	.000	.000	.000	.723	.500	.795	.750	.250	.607	.757	.834

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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E AM
Site Code : 05122421
Start Date : 5/10/2022
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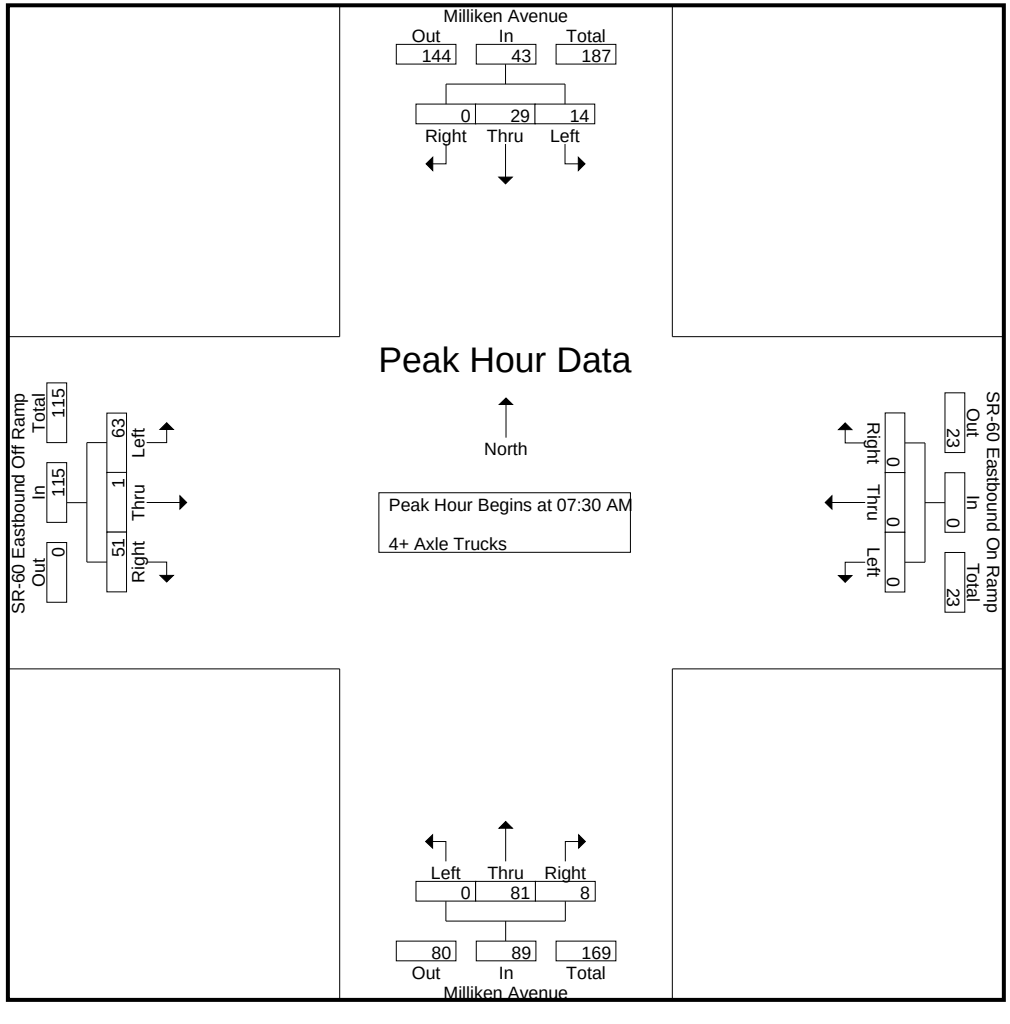

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	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	4	7	0	11	0	0	0	0	0	19	**4**	23	12	**1**	10	23	
+15 mins.	2	6	0	8	0	0	0	0	0	20	2	22	13	0	10	23	
+30 mins.	**7**	**9**	0	**16**	0	0	0	0	0	14	2	16	**21**	0	10	31	
+45 mins.	1	7	0	8	0	0	0	0	0	**28**	0	**28**	17	0	**21**	**38**	
Total Volume	14	29	0	43	0	0	0	0	0	81	8	89	63	1	51	115	
% App. Total	32.6	67.4	0		0	0	0		0	91	9		54.8	0.9	44.3		
PHF	.500	.806	.000	.672	.000	.000	.000	.000	.000	.723	.500	.795	.750	.250	.607	.757	

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	46	135	0	0	181	0	0	0	0	0	0	177	39	11	216	41	0	33	4	74	15	471	486
04:15 PM	38	122	0	0	160	0	0	0	0	0	0	139	27	2	166	36	1	46	14	83	16	409	425
04:30 PM	51	149	0	0	200	0	0	0	0	0	0	170	33	10	203	38	1	50	22	89	32	492	524
04:45 PM	32	189	0	0	221	0	0	0	0	0	0	131	25	6	156	39	0	65	18	104	24	481	505
Total	167	595	0	0	762	0	0	0	0	0	0	617	124	29	741	154	2	194	58	350	87	1853	1940
05:00 PM	62	155	0	0	217	0	0	0	0	0	0	137	38	7	175	33	0	50	22	83	29	475	504
05:15 PM	57	188	0	0	245	0	0	0	0	0	0	126	21	5	147	35	1	43	8	79	13	471	484
05:30 PM	44	179	0	0	223	0	0	0	0	0	0	135	32	9	167	41	0	52	10	93	19	483	502
05:45 PM	33	168	0	0	201	0	0	0	0	0	0	124	23	2	147	40	0	60	18	100	20	448	468
Total	196	690	0	0	886	0	0	0	0	0	0	522	114	23	636	149	1	205	58	355	81	1877	1958
Grand Total	363	1285	0	0	1648	0	0	0	0	0	0	1139	238	52	1377	303	3	399	116	705	168	3730	3898
Apprch %	22	78	0			0	0	0			0	82.7	17.3			43	0.4	56.6					
Total %	9.7	34.5	0		44.2	0	0	0		0	0	30.5	6.4		36.9	8.1	0.1	10.7		18.9	4.3	95.7	
Passenger Vehicles	338	1190	0		1528	0	0	0		0	0	960	223		1231	151	2	294		538	0	0	3297
% Passenger Vehicles	93.1	92.6	0	0	92.7	0	0	0	0	0	0	84.3	93.7	92.3	86.1	49.8	66.7	73.7	78.4	65.5	0	0	84.6
Large 2 Axle Vehicles	4	18	0		22	0	0	0		0	0	28	8		39	23	0	14		37	0	0	98
% Large 2 Axle Vehicles	1.1	1.4	0	0	1.3	0	0	0	0	0	0	2.5	3.4	5.8	2.7	7.6	0	3.5	0	4.5	0	0	2.5
3 Axle Vehicles	5	21	0		26	0	0	0		0	0	33	2		35	16	0	8		24	0	0	85
% 3 Axle Vehicles	1.4	1.6	0	0	1.6	0	0	0	0	0	0	2.9	0.8	0	2.4	5.3	0	2	0	2.9	0	0	2.2
4+ Axle Trucks	16	56	0		72	0	0	0		0	0	118	5		124	113	1	83		222	0	0	418
% 4+ Axle Trucks	4.4	4.4	0	0	4.4	0	0	0	0	0	0	10.4	2.1	1.9	8.7	37.3	33.3	20.8	21.6	27	0	0	10.7

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	51	149	0	200	0	0	0	0	0	**170**	33	**203**	38	**1**	50	89	**492**
04:45 PM	32	**189**	0	221	0	0	0	0	0	131	25	156	**39**	0	**65**	**104**	481
05:00 PM	**62**	155	0	217	0	0	0	0	0	137	**38**	175	33	0	50	83	475
05:15 PM	57	188	0	**245**	0	0	0	0	0	126	21	147	35	1	43	79	471
Total Volume	202	681	0	883	0	0	0	0	0	564	117	681	145	2	208	355	1919
% App. Total	22.9	77.1	0		0	0	0		0	82.8	17.2		40.8	0.6	58.6		
PHF	.815	.901	.000	.901	.000	.000	.000	.000	.000	.829	.770	.839	.929	.500	.800	.853	.975

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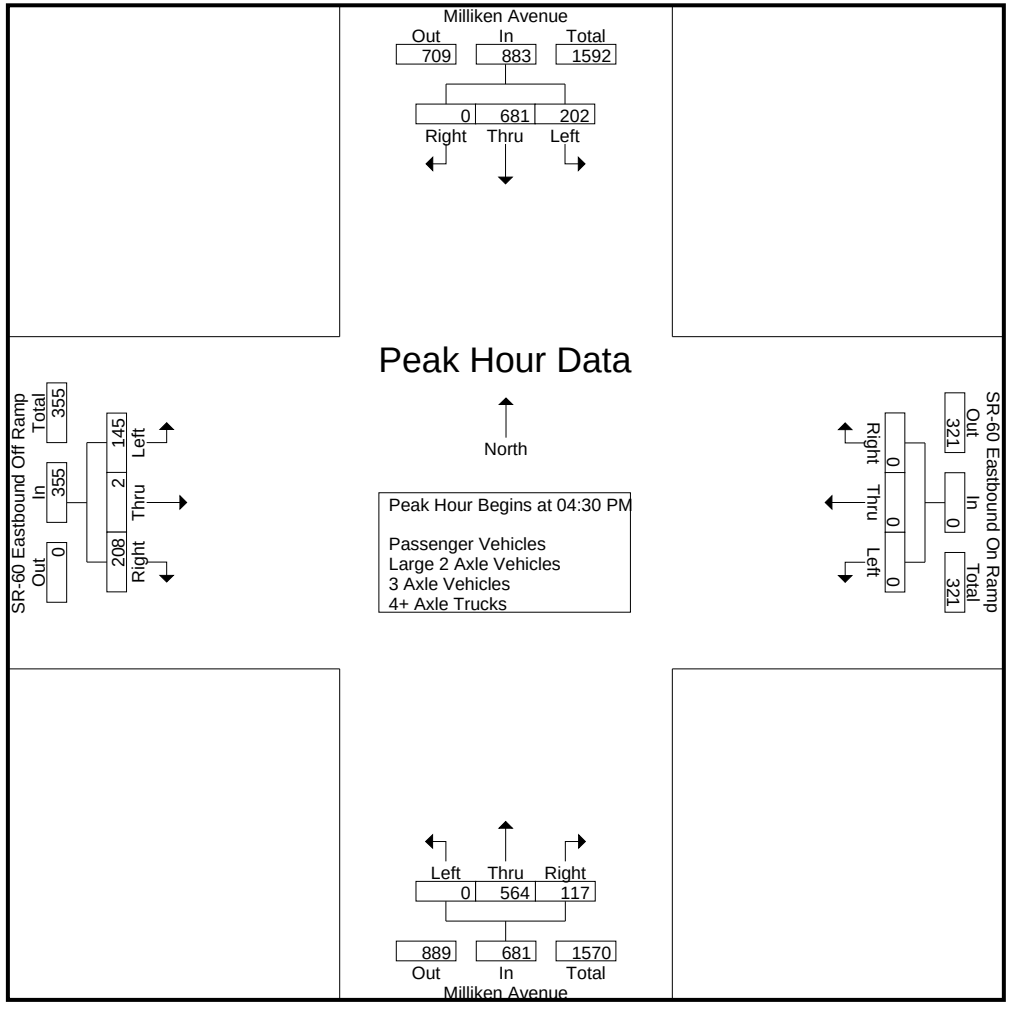
Start Date : 5/10/2022
Page No : 2



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	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:45 PM				04:00 PM				04:00 PM				04:15 PM				
+0 mins.	32	**189**	0	221	0	0	0	0	0	**177**	**39**	**216**	36	**1**	46	83	
+15 mins.	**62**	155	0	217	0	0	0	0	0	139	27	166	38	1	50	89	
+30 mins.	57	188	0	**245**	0	0	0	0	0	170	33	203	**39**	0	**65**	**104**	
+45 mins.	44	179	0	223	0	0	0	0	0	131	25	156	33	0	50	83	
Total Volume	195	711	0	906	0	0	0	0	0	617	124	741	146	2	211	359	
% App. Total	21.5	78.5	0		0	0	0		0	83.3	16.7		40.7	0.6	58.8		
PHF	.786	.940	.000	.924	.000	.000	.000	.000	.000	.871	.795	.858	.936	.500	.812	.863	

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Passenger Vehicles

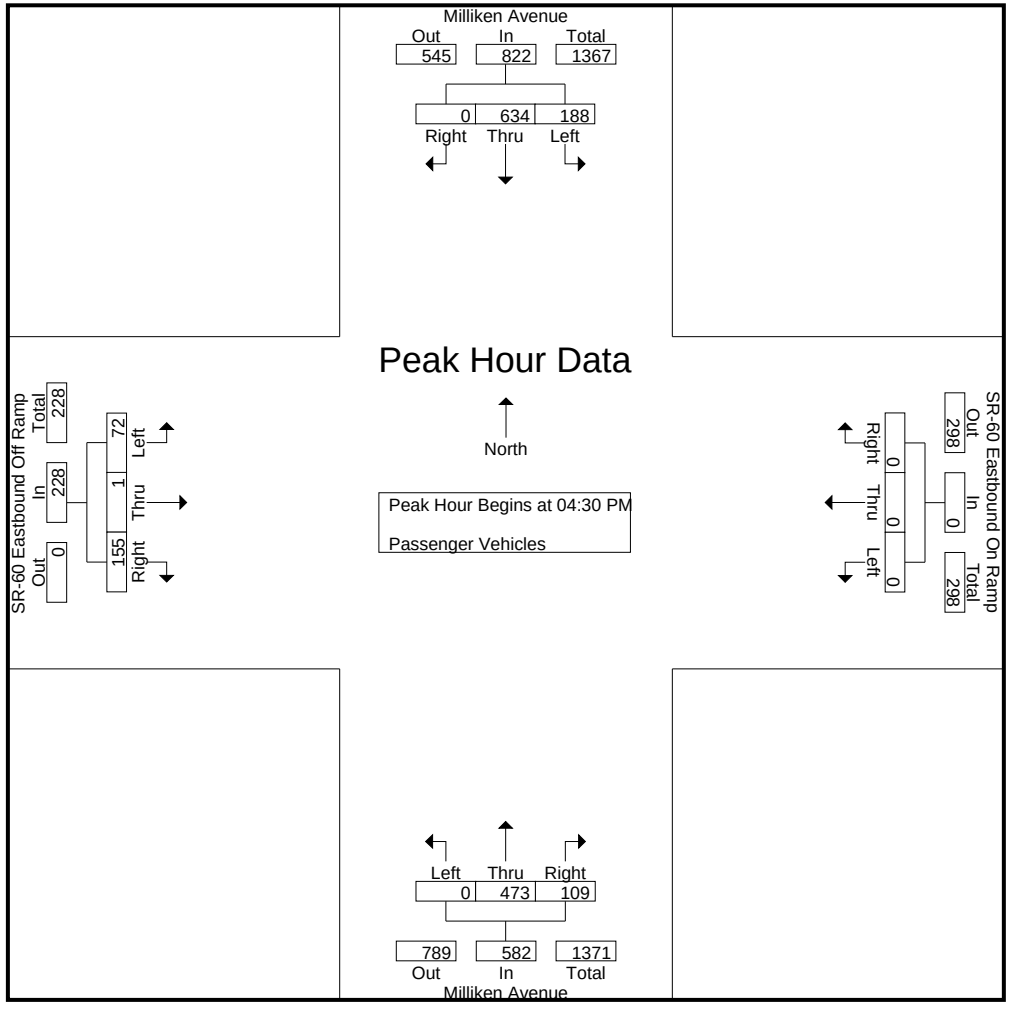
	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	42	124	0	0	166	0	0	0	0	0	0	151	35	9	186	19	0	25	4	44	13	396	409
04:15 PM	35	115	0	0	150	0	0	0	0	0	0	115	25	2	140	15	1	32	9	48	11	338	349
04:30 PM	43	136	0	0	179	0	0	0	0	0	0	146	31	10	177	17	1	38	16	56	26	412	438
04:45 PM	31	169	0	0	200	0	0	0	0	0	0	110	24	5	134	15	0	48	15	63	20	397	417
Total	151	544	0	0	695	0	0	0	0	0	0	522	115	26	637	66	2	143	44	211	70	1543	1613
05:00 PM	58	148	0	0	206	0	0	0	0	0	0	118	34	6	152	20	0	37	19	57	25	415	440
05:15 PM	56	181	0	0	237	0	0	0	0	0	0	99	20	5	119	20	0	32	7	52	12	408	420
05:30 PM	42	165	0	0	207	0	0	0	0	0	0	113	31	9	144	21	0	38	7	59	16	410	426
05:45 PM	31	152	0	0	183	0	0	0	0	0	0	108	23	2	131	24	0	44	14	68	16	382	398
Total	187	646	0	0	833	0	0	0	0	0	0	438	108	22	546	85	0	151	47	236	69	1615	1684
Grand Total	338	1190	0	0	1528	0	0	0	0	0	0	960	223	48	1183	151	2	294	91	447	139	3158	3297
Apprch %	22.1	77.9	0			0	0	0			0	81.1	18.9			33.8	0.4	65.8					
Total %	10.7	37.7	0		48.4	0	0	0		0	0	30.4	7.1		37.5	4.8	0.1	9.3		14.2	4.2	95.8	

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	43	136	0	179	0	0	0	0	0	**146**	31	**177**	17	**1**	38	56	412
04:45 PM	31	169	0	200	0	0	0	0	0	110	24	134	15	0	**48**	**63**	397
05:00 PM	**58**	148	0	206	0	0	0	0	0	118	**34**	152	**20**	0	37	57	**415**
05:15 PM	56	**181**	0	**237**	0	0	0	0	0	99	20	119	20	0	32	52	408
Total Volume	188	634	0	822	0	0	0	0	0	473	109	582	72	1	155	228	1632
% App. Total	22.9	77.1	0		0	0	0		0	81.3	18.7		31.6	0.4	68		
PHF	.810	.876	.000	.867	.000	.000	.000	.000	.000	.810	.801	.822	.900	.250	.807	.905	.983

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	43	136	0	179	0	0	0	0	0	**146**	31	**177**	17	**1**	38	56	
+15 mins.	31	169	0	200	0	0	0	0	0	110	24	134	15	0	**48**	**63**	
+30 mins.	**58**	148	0	206	0	0	0	0	0	118	**34**	152	**20**	0	37	57	
+45 mins.	56	**181**	0	**237**	0	0	0	0	0	99	20	119	20	0	32	52	
Total Volume	188	634	0	822	0	0	0	0	0	473	109	582	72	1	155	228	
% App. Total	22.9	77.1	0		0	0	0		0	81.3	18.7		31.6	0.4	68		
PHF	.810	.876	.000	.867	.000	.000	.000	.000	.000	.810	.801	.822	.900	.250	.807	.905	

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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

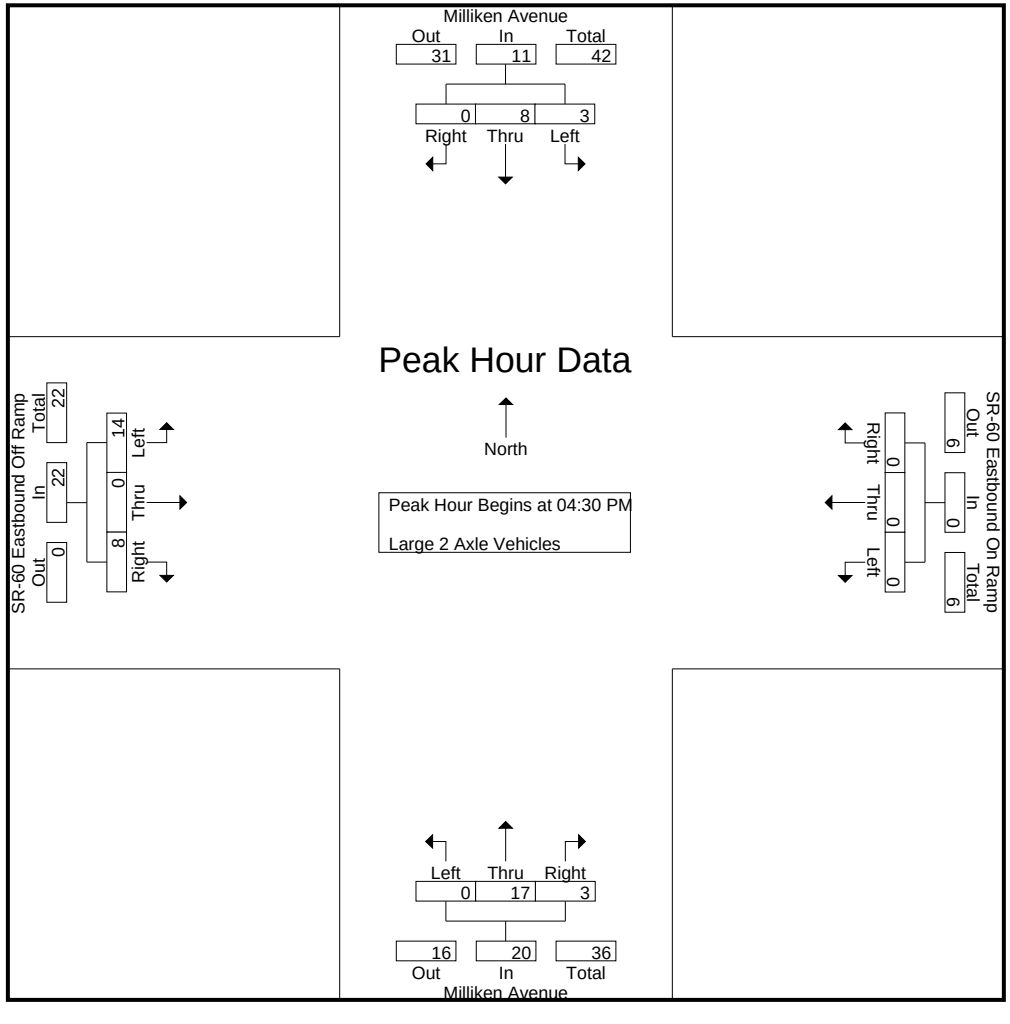
	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	3	0	0	3	0	0	0	0	0	0	2	3	2	5	1	0	1	0	2	2	10	12
04:15 PM	1	4	0	0	5	0	0	0	0	0	0	3	1	0	4	2	0	1	0	3	0	12	12
04:30 PM	2	3	0	0	5	0	0	0	0	0	0	7	1	0	8	3	0	2	0	5	0	18	18
04:45 PM	0	3	0	0	3	0	0	0	0	0	0	2	1	1	3	7	0	3	0	10	1	16	17
Total	3	13	0	0	16	0	0	0	0	0	0	14	6	3	20	13	0	7	0	20	3	56	59
05:00 PM	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	0	7	7
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	3	0	1	0	4	0	12	12
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	4	1	0	5	1	0	2	0	3	0	9	9
05:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	5	0	2	0	7	0	11	11
Total	1	5	0	0	6	0	0	0	0	0	0	14	2	0	16	10	0	7	0	17	0	39	39
Grand Total	4	18	0	0	22	0	0	0	0	0	0	28	8	3	36	23	0	14	0	37	3	95	98
Apprch %	18.2	81.8	0			0	0	0			0	77.8	22.2			62.2	0	37.8					
Total %	4.2	18.9	0		23.2	0	0	0		0	0	29.5	8.4		37.9	24.2	0	14.7		38.9	3.1	96.9	

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**2**	**3**	0	**5**	0	0	0	0	0	**7**	**1**	**8**	3	0	2	5	**18**
04:45 PM	0	3	0	3	0	0	0	0	0	2	1	3	**7**	0	**3**	**10**	16
05:00 PM	1	2	0	3	0	0	0	0	0	1	0	1	1	0	2	3	7
05:15 PM	0	0	0	0	0	0	0	0	0	7	1	8	3	0	1	4	12
Total Volume	3	8	0	11	0	0	0	0	0	17	3	20	14	0	8	22	53
% App. Total	27.3	72.7	0		0	0	0		0	85	15		63.6	0	36.4		
PHF	.375	.667	.000	.550	.000	.000	.000	.000	.000	.607	.750	.625	.500	.000	.667	.550	.736

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	**2**	**3**	0	**5**	0	0	0	0	0	**7**	**1**	**8**	3	0	2	5	
+15 mins.	0	3	0	3	0	0	0	0	0	2	1	3	**7**	0	**3**	**10**	
+30 mins.	1	2	0	3	0	0	0	0	0	1	0	1	1	0	2	3	
+45 mins.	0	0	0	0	0	0	0	0	0	7	1	8	3	0	1	4	
Total Volume	3	8	0	11	0	0	0	0	0	17	3	20	14	0	8	22	
% App. Total	27.3	72.7	0		0	0	0		0	85	15		63.6	0	36.4		
PHF	.375	.667	.000	.550	.000	.000	.000	.000	.000	.607	.750	.625	.500	.000	.667	.550	

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- 3 Axle Vehicles

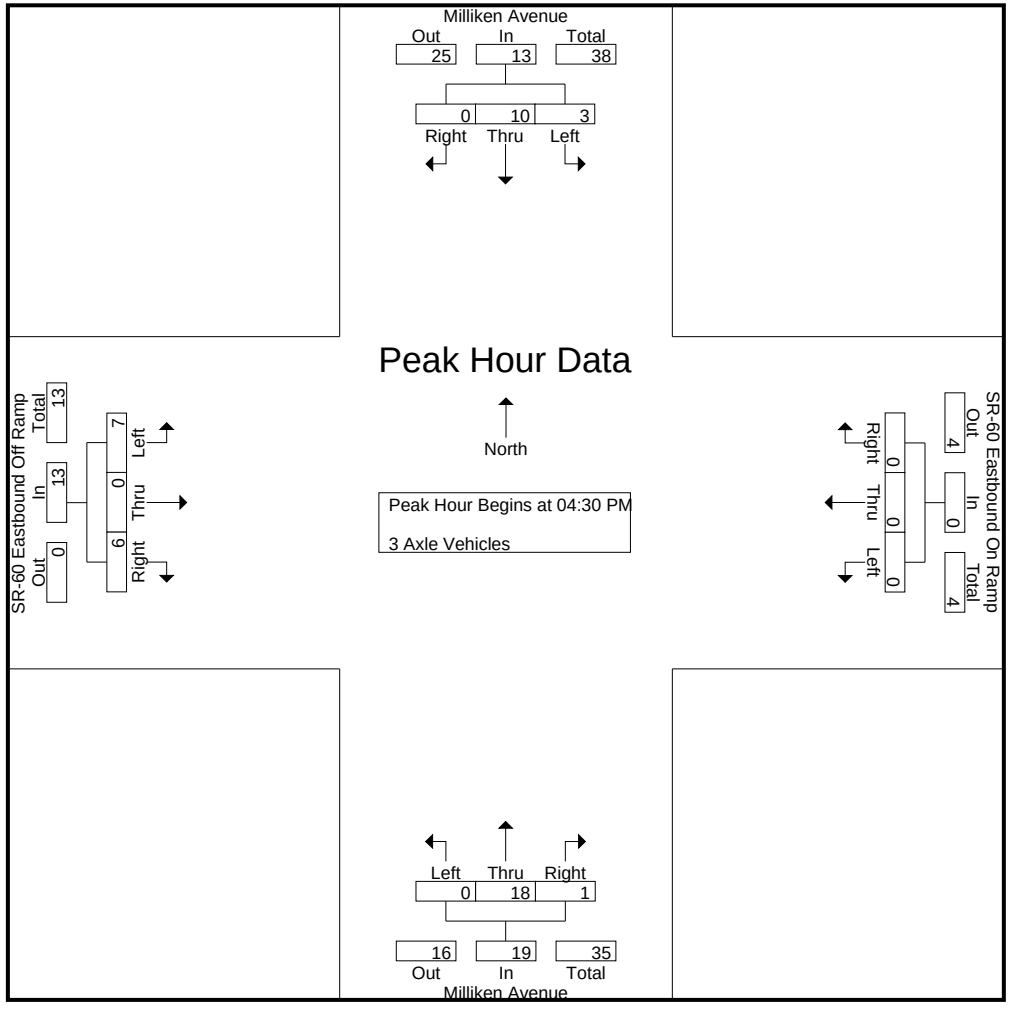
	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	2	0	0	3	0	0	0	0	0	0	7	1	0	8	1	0	1	0	2	0	13	13
04:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	0	0	0	3	0	6	6
04:30 PM	2	3	0	0	5	0	0	0	0	0	0	4	0	0	4	3	0	0	0	3	0	12	12
04:45 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	2	0	0	0	2	0	9	9
Total	3	12	0	0	15	0	0	0	0	0	0	14	1	0	15	9	0	1	0	10	0	40	40
05:00 PM	1	1	0	0	2	0	0	0	0	0	0	5	1	0	6	0	0	3	0	3	0	11	11
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	7	0	0	7	2	0	3	0	5	0	13	13
05:30 PM	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	2	0	0	0	2	0	11	11
05:45 PM	1	4	0	0	5	0	0	0	0	0	0	1	0	0	1	3	0	1	0	4	0	10	10
Total	2	9	0	0	11	0	0	0	0	0	0	19	1	0	20	7	0	7	0	14	0	45	45
Grand Total	5	21	0	0	26	0	0	0	0	0	0	33	2	0	35	16	0	8	0	24	0	85	85
Apprch %	19.2	80.8	0			0	0	0			0	94.3	5.7			66.7	0	33.3					
Total %	5.9	24.7	0		30.6	0	0	0		0	0	38.8	2.4		41.2	18.8	0	9.4		28.2	0	100	

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**2**	3	0	**5**	0	0	0	0	0	4	0	4	**3**	0	0	3	12
04:45 PM	0	**5**	0	5	0	0	0	0	0	2	0	2	2	0	0	2	9
05:00 PM	1	1	0	2	0	0	0	0	0	5	**1**	6	0	0	**3**	3	11
05:15 PM	0	1	0	1	0	0	0	0	0	**7**	0	**7**	2	0	3	**5**	**13**
Total Volume	3	10	0	13	0	0	0	0	0	18	1	19	7	0	6	13	45
% App. Total	23.1	76.9	0		0	0	0		0	94.7	5.3		53.8	0	46.2		
PHF	.375	.500	.000	.650	.000	.000	.000	.000	.000	.643	.250	.679	.583	.000	.500	.650	.865

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	**2**	3	0	**5**	0	0	0	0	0	4	0	4	**3**	0	0	3	
+15 mins.	0	**5**	0	5	0	0	0	0	0	2	0	2	2	0	0	2	
+30 mins.	1	1	0	2	0	0	0	0	0	5	**1**	6	0	0	**3**	3	
+45 mins.	0	1	0	1	0	0	0	0	0	**7**	0	**7**	2	0	3	**5**	
Total Volume	3	10	0	13	0	0	0	0	0	18	1	19	7	0	6	13	
% App. Total	23.1	76.9	0		0	0	0		0	94.7	5.3		53.8	0	46.2		
PHF	.375	.500	.000	.650	.000	.000	.000	.000	.000	.643	.250	.679	.583	.000	.500	.650	

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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

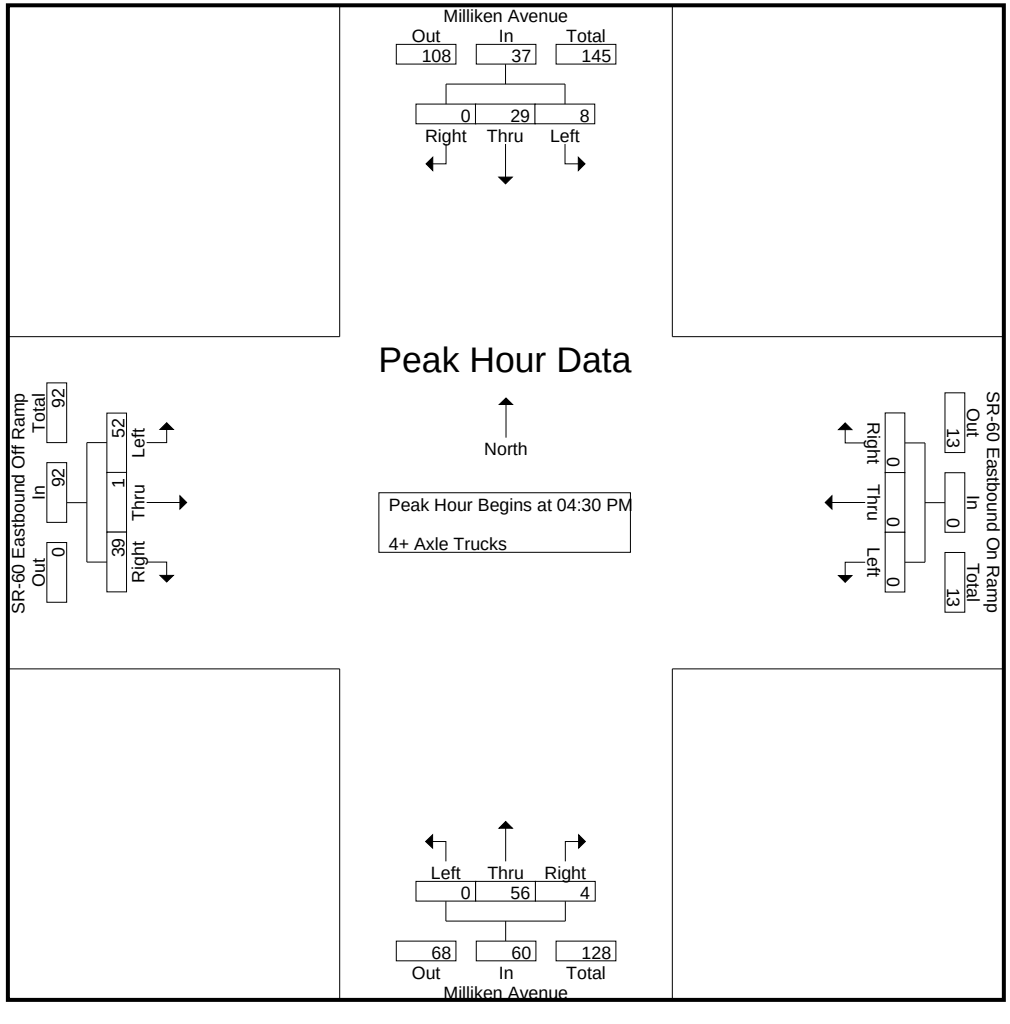
	Milliken Avenue Southbound					SR-60 Eastbound On Ramp Westbound					Milliken Avenue Northbound					SR-60 Eastbound Off Ramp Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	3	6	0	0	9	0	0	0	0	0	0	17	0	0	17	20	0	6	0	26	0	52	52
04:15 PM	2	1	0	0	3	0	0	0	0	0	0	20	1	0	21	16	0	13	5	29	5	53	58
04:30 PM	4	7	0	0	11	0	0	0	0	0	0	13	1	0	14	15	0	10	6	25	6	50	56
04:45 PM	1	12	0	0	13	0	0	0	0	0	0	17	0	0	17	15	0	14	3	29	3	59	62
Total	10	26	0	0	36	0	0	0	0	0	0	67	2	0	69	66	0	43	14	109	14	214	228
05:00 PM	2	4	0	0	6	0	0	0	0	0	0	13	3	1	16	12	0	8	3	20	4	42	46
05:15 PM	1	6	0	0	7	0	0	0	0	0	0	13	0	0	13	10	1	7	1	18	1	38	39
05:30 PM	2	10	0	0	12	0	0	0	0	0	0	12	0	0	12	17	0	12	3	29	3	53	56
05:45 PM	1	10	0	0	11	0	0	0	0	0	0	13	0	0	13	8	0	13	4	21	4	45	49
Total	6	30	0	0	36	0	0	0	0	0	0	51	3	1	54	47	1	40	11	88	12	178	190
Grand Total	16	56	0	0	72	0	0	0	0	0	0	118	5	1	123	113	1	83	25	197	26	392	418
Apprch %	22.2	77.8	0			0	0	0			0	95.9	4.1			57.4	0.5	42.1					
Total %	4.1	14.3	0		18.4	0	0	0		0	0	30.1	1.3		31.4	28.8	0.3	21.2		50.3	6.2	93.8	

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**4**	7	0	11	0	0	0	0	0	13	1	14	**15**	0	10	25	50
04:45 PM	1	**12**	0	**13**	0	0	0	0	0	**17**	0	**17**	15	0	**14**	**29**	**59**
05:00 PM	2	4	0	6	0	0	0	0	0	13	**3**	16	12	0	8	20	42
05:15 PM	1	6	0	7	0	0	0	0	0	13	0	13	10	**1**	7	18	38
Total Volume	8	29	0	37	0	0	0	0	0	56	4	60	52	1	39	92	189
% App. Total	21.6	78.4	0		0	0	0		0	93.3	6.7		56.5	1.1	42.4		
PHF	.500	.604	.000	.712	.000	.000	.000	.000	.000	.824	.333	.882	.867	.250	.696	.793	.801

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Counts Unlimited, Inc.
PO Box 1178
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City of Ontario
N/S: Milliken Avenue
E/W: SR-60 Eastbound Ramps
Weather: Clear

File Name : 02_ONT_Mil_60E PM
Site Code : 05122421
Start Date : 5/10/2022

	Milliken Avenue Southbound				SR-60 Eastbound On Ramp Westbound				Milliken Avenue Northbound				SR-60 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	**4**	7	0	11	0	0	0	0	0	13	1	14	**15**	0	10	25	
+15 mins.	1	**12**	0	**13**	0	0	0	0	0	**17**	0	**17**	15	0	**14**	**29**	
+30 mins.	2	4	0	6	0	0	0	0	0	13	**3**	16	12	0	8	20	
+45 mins.	1	6	0	7	0	0	0	0	0	13	0	13	10	**1**	7	18	
Total Volume	8	29	0	37	0	0	0	0	0	56	4	60	52	1	39	92	
% App. Total	21.6	78.4	0		0	0	0		0	93.3	6.7		56.5	1.1	42.4		
PHF	.500	.604	.000	.712	.000	.000	.000	.000	.000	.824	.333	.882	.867	.250	.696	.793	

Location: Ontario
N/S: Milliken Avenue
E/W: SR-60 EB Ramps

Date: 5/10/2022
Day: Tuesday

PEDESTRIANS

	North Leg Milliken Avenue	East Leg SR-60 EB Ramps	South Leg Milliken Avenue	West Leg SR-60 EB Ramps	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg Milliken Avenue	East Leg SR-60 EB Ramps	South Leg Milliken Avenue	West Leg SR-60 EB Ramps	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	1	0	2	3
TOTAL VOLUMES:	0	2	0	2	4

Location: Ontario
N/S: Milliken Avenue
E/W: SR-60 EB Ramps

Date: 5/10/2022
Day: Tuesday

BICYCLES

	Southbound Milliken Avenue			Westbound SR-60 EB Ramps			Northbound Milliken Avenue			Eastbound SR-60 EB Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	1	0	0	0	0	1

	Southbound Milliken Avenue			Westbound SR-60 EB Ramps			Northbound Milliken Avenue			Eastbound SR-60 EB Ramps			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	3	0	0	0	0	0	0	0	0	0	0	3

INTERSECTION TURNING MOVEMENT COUNTS

T42321

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 10, 22	LOCATION:	Ontario	PROJECT #: SC3418
	NORTH & SOUTH:	Milliken	LOCATION #: 12
	EAST & WEST:	Riverside	CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Milliken - Hamner			SOUTHBOUND Milliken - Hamner			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	20	145	6	33	90	26	17	1	22	4	17	20	401
AM	7:15 AM	26	164	3	35	52	37	27	11	18	6	16	31	426
AM	7:30 AM	24	181	2	25	55	26	32	14	22	4	17	28	430
AM	7:45 AM	48	218	12	40	61	35	25	14	40	6	13	32	544
AM	8:00 AM	31	172	7	27	54	26	33	14	38	5	14	21	442
AM	8:15 AM	37	162	12	33	66	30	37	13	38	1	19	29	477
AM	8:30 AM	17	169	4	36	62	16	22	5	24	10	17	34	416
AM	8:45 AM	25	115	12	31	59	8	12	8	22	9	7	24	332
AM	VOLUMES	228	1,326	58	260	499	204	205	80	224	45	120	219	3,468
AM	APPROACH %	14%	82%	4%	27%	52%	21%	40%	16%	44%	12%	31%	57%	
AM	APP/DEPART	1,612	/ 1,750		963	/ 768		509	/ 398		384	/ 552		0
AM	BEGIN PEAK HR		7:30 AM											
AM	VOLUMES	140	733	33	125	236	117	127	55	138	16	63	110	1,893
AM	APPROACH %	15%	81%	4%	26%	49%	24%	40%	17%	43%	8%	33%	58%	
AM	PEAK HR FACTOR		0.815			0.879			0.909			0.926		0.870
AM	APP/DEPART	906	/ 970		478	/ 390		320	/ 213		189	/ 320		0
PM	4:00 PM	35	152	5	23	123	24	24	21	44	13	10	44	518
PM	4:15 PM	37	97	8	25	105	33	22	28	37	13	15	33	453
PM	4:30 PM	34	125	7	36	134	34	25	22	30	11	21	33	512
PM	4:45 PM	35	109	12	44	166	36	26	19	33	9	18	21	528
PM	5:00 PM	32	96	6	26	147	37	29	18	18	24	25	30	488
PM	5:15 PM	39	90	6	20	164	43	32	25	46	9	15	22	511
PM	5:30 PM	39	118	2	26	161	48	21	20	48	19	19	23	544
PM	5:45 PM	46	106	8	36	154	48	18	22	32	6	16	22	514
PM	VOLUMES	297	893	54	236	1,154	303	197	175	288	104	139	228	4,068
PM	APPROACH %	24%	72%	4%	14%	68%	18%	30%	27%	44%	22%	30%	48%	
PM	APP/DEPART	1,244	/ 1,319		1,693	/ 1,547		660	/ 464		471	/ 738		0
PM	BEGIN PEAK HR		4:45 PM											
PM	VOLUMES	145	413	26	116	638	164	108	82	145	61	77	96	2,071
PM	APPROACH %	25%	71%	4%	13%	69%	18%	32%	24%	43%	26%	33%	41%	
PM	PEAK HR FACTOR		0.918			0.933			0.813			0.741		0.952
PM	APP/DEPART	584	/ 618		918	/ 844		335	/ 223		234	/ 386		0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
3	6	11	6
3	5	12	4
1	4	9	5
2	2	13	12
2	4	10	6
5	9	14	7
0	0	14	13
0	1	12	4
16	31	95	57
10	19	46	30
2	5	20	8
1	2	13	13
1	5	10	9
2	3	14	9
0	2	5	8
3	4	10	10
0	4	10	9
0	8	10	12
9	33	92	78
5	13	39	36

Milliken

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

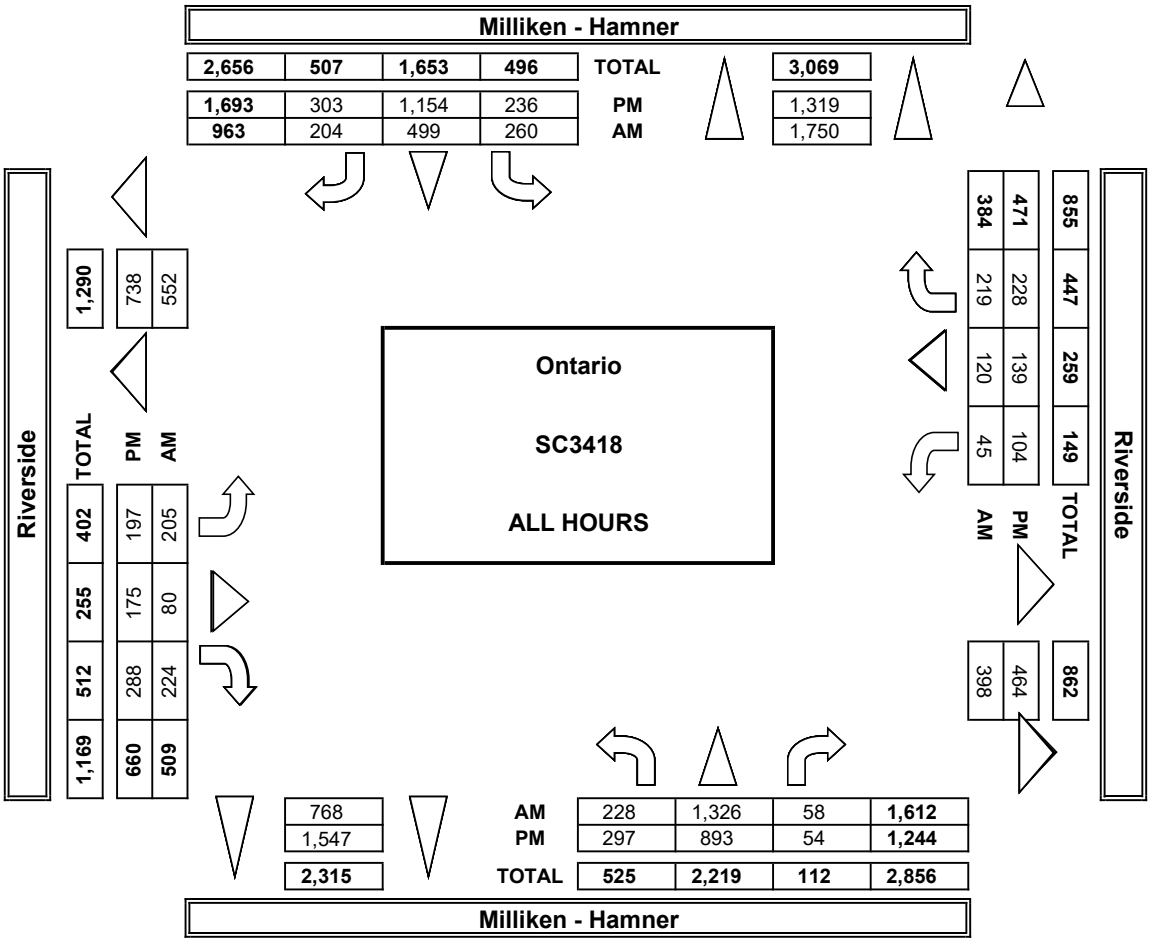
SOUTH SIDE

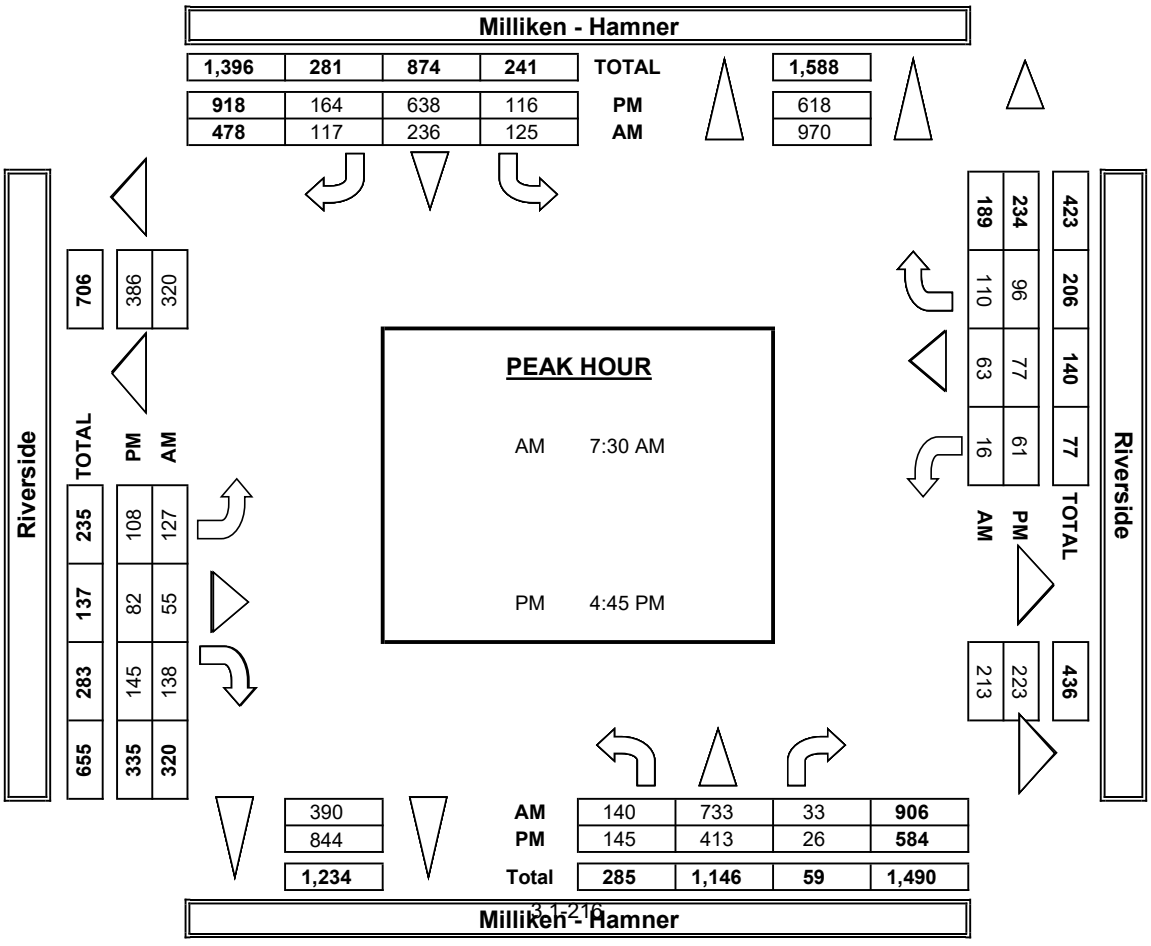
Milliken

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL	ES	WS	SS	NS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
AM	8:45 AM	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0
AM	TOTAL	3	0	1	0	4	2	0	0	0	2	1	0	1	0	2
PM	4:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
PM	4:15 PM	1	0	1	0	2	1	0	1	0	2	0	0	0	0	0
PM	4:30 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
PM	4:45 PM	0	0	5	0	5	0	0	5	0	5	0	0	0	0	0
PM	5:00 PM	0	0	4	0	4	0	0	4	0	4	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
PM	5:45 PM	1	1	2	0	4	1	1	2	0	4	0	0	0	0	0
	TOTAL	4	1	13	0	18	3	1	13	0	17	1	0	0	0	1

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Milliken	LOCATION #:	12
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Milliken)			SOUTHBOUND (Milliken)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	19	130	4	14	71	24	16	1	22	2	15	6	324
	7:15 AM	25	140	3	19	39	35	27	10	16	4	14	6	338
	7:30 AM	23	166	1	11	46	22	30	13	22	1	15	12	362
	7:45 AM	44	205	7	21	47	33	25	14	38	4	13	8	459
	8:00 AM	31	150	2	12	38	25	32	12	37	4	14	8	365
	8:15 AM	36	145	9	13	46	30	33	12	35	1	15	5	380
	8:30 AM	16	152	2	23	39	14	21	5	23	5	16	9	325
	8:45 AM	23	93	7	15	34	7	11	6	20	2	5	11	234
	VOLUMES	217	1,181	35	128	360	190	195	73	213	23	107	65	2,787
	APPROACH %	15%	82%	2%	19%	53%	28%	41%	15%	44%	12%	55%	33%	
	APP/DEPART	1,433	/	1,441	678	/	596	481	/	236	195	/	514	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	134	666	19	57	177	110	120	51	132	10	57	33	1,566
	APPROACH %	16%	81%	2%	17%	51%	32%	40%	17%	44%	10%	57%	33%	
	PEAK HR FACTOR		0.800			0.851			0.935			0.893		0.853
	APP/DEPART	819	/	819	344	/	319	303	/	127	100	/	301	0
PM	4:00 PM	33	129	4	12	107	24	23	17	42	11	9	27	438
	4:15 PM	37	81	2	13	98	33	18	23	37	11	15	19	387
	4:30 PM	33	109	2	20	123	32	23	18	27	7	17	25	436
	4:45 PM	35	93	6	20	153	36	25	18	31	6	18	15	456
	5:00 PM	31	82	2	13	138	37	27	18	18	20	25	14	425
	5:15 PM	38	77	2	11	155	43	29	25	45	7	15	15	462
	5:30 PM	37	101	2	14	150	45	20	19	48	15	18	16	485
	5:45 PM	46	97	3	20	137	45	17	20	31	5	16	11	448
	VOLUMES	290	769	23	123	1,061	295	182	158	279	82	133	142	3,537
	APPROACH %	27%	71%	2%	8%	72%	20%	29%	26%	45%	23%	37%	40%	
	APP/DEPART	1,082	/	1,094	1,479	/	1,423	619	/	303	357	/	717	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	141	353	12	57	596	161	101	80	142	48	76	60	1,828
	APPROACH %	28%	70%	2%	7%	73%	20%	31%	25%	44%	26%	41%	33%	
	PEAK HR FACTOR		0.904			0.975			0.816			0.780		0.942
	APP/DEPART	506	/	515	815	/	786	323	/	149	184	/	378	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	1	0	0	2

NRR	SRR	ERR	WRR
0	0	0	0
2	5	11	2
3	5	10	0
1	4	9	2
1	2	12	3
0	4	9	4
4	9	12	2
0	0	13	2
0	1	11	1
11	30	87	16
6	19	42	11
2	5	19	7
1	2	13	8
0	4	8	8
2	3	13	8
0	2	5	4
0	4	10	7
0	3	10	6
0	8	10	6
5	31	88	54
2	12	38	25

Milliken

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Milliken

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Milliken	LOCATION #:	12
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

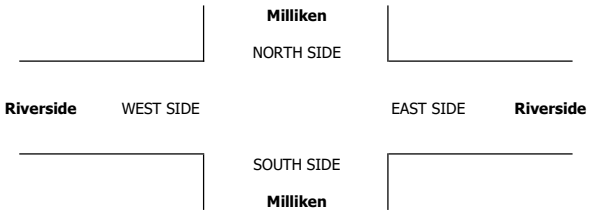
		NORTHBOUND Milliken			SOUTHBOUND Milliken			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	1	9	0	5	5	2	0	0	0	1	0	4	27
	7:15 AM	1	14	0	5	5	2	0	0	2	1	1	3	34
	7:30 AM	1	6	0	0	3	3	1	1	0	0	1	2	18
	7:45 AM	3	7	1	3	5	2	0	0	1	0	0	4	26
	8:00 AM	0	12	1	1	5	0	1	2	0	0	0	1	23
	8:15 AM	1	10	0	2	4	0	2	1	1	0	2	3	26
	8:30 AM	1	4	0	2	9	2	1	0	0	2	1	2	24
	8:45 AM	1	11	2	2	4	1	1	2	2	3	2	3	34
	VOLUMES	9	73	4	20	40	12	6	6	6	7	7	22	212
	APPROACH %	10%	85%	5%	28%	56%	17%	33%	33%	33%	19%	19%	61%	
	APP/DEPART	86	/	101	72	/	53	18	/	30	36	/	28	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	5	35	2	6	17	5	4	4	2	0	3	10	93
	APPROACH %	12%	83%	5%	21%	61%	18%	40%	40%	20%	0%	23%	77%	
	PEAK HR FACTOR		0.808			0.700			0.625			0.650		0.894
	APP/DEPART	42	/	49	28	/	19	10	/	12	13	/	13	0
PM	4:00 PM	2	11	0	1	8	0	1	2	2	0	0	2	29
	4:15 PM	0	9	0	0	3	0	4	5	0	0	0	0	21
	4:30 PM	1	8	0	1	7	2	2	2	2	0	2	0	27
	4:45 PM	0	5	1	4	5	0	1	1	1	1	0	0	19
	5:00 PM	1	4	0	0	5	0	2	0	0	2	0	0	14
	5:15 PM	1	8	2	0	1	0	2	0	1	0	0	0	15
	5:30 PM	1	6	0	4	2	0	1	1	0	1	1	1	18
	5:45 PM	0	7	0	1	5	2	1	1	1	0	0	0	18
	VOLUMES	6	58	3	11	36	4	14	12	7	4	3	3	161
	APPROACH %	9%	87%	4%	22%	71%	8%	42%	36%	21%	40%	30%	30%	
	APP/DEPART	67	/	75	51	/	47	33	/	26	10	/	13	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	3	23	3	8	13	0	6	2	2	4	1	1	66
	APPROACH %	10%	79%	10%	38%	62%	0%	60%	20%	20%	67%	17%	17%	
	PEAK HR FACTOR		0.659			0.583			0.833			0.500		0.868
	APP/DEPART	29	/	30	21	/	19	10	/	13	6	/	4	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	1	0	1
0	0	2	0
0	0	0	0
0	0	1	0
0	0	0	1
0	0	1	1
0	0	0	1
0	0	1	1
0	1	5	5
0	0	2	2
0	0	1	0
0	0	0	0
0	1	1	0
0	0	1	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
1	1	3	0
1	0	1	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Milliken	LOCATION #:	12
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

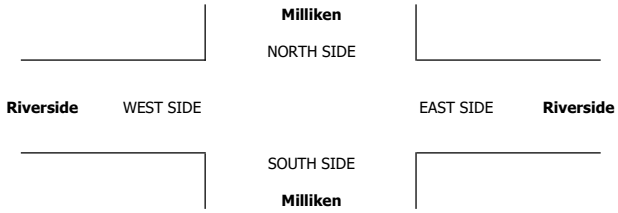
		NORTHBOUND (Milliken)			SOUTHBOUND (Milliken)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	0	2	0	0	4	0	1	0	0	0	2	0	9
	7:15 AM	0	4	0	0	2	0	0	0	0	0	0	4	10
	7:30 AM	0	2	0	0	2	0	0	0	0	0	0	1	5
	7:45 AM	1	0	0	4	2	0	0	0	0	0	0	1	8
	8:00 AM	0	2	0	4	3	0	0	0	0	0	0	1	10
	8:15 AM	0	0	0	0	4	0	1	0	1	0	1	3	10
	8:30 AM	0	3	0	1	3	0	0	0	0	1	0	6	14
	8:45 AM	0	2	1	0	5	0	0	0	0	1	0	0	9
	VOLUMES	1	15	1	9	25	0	2	0	1	2	3	16	75
	APPROACH %	6%	88%	6%	26%	74%	0%	67%	0%	33%	10%	14%	76%	
	APP/DEPART	17	/	33	34	/	28	3	/	10	21	/	4	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	1	4	0	8	11	0	1	0	1	0	1	6	33
	APPROACH %	20%	80%	0%	42%	58%	0%	50%	0%	50%	0%	14%	86%	
	PEAK HR FACTOR		0.625			0.679			0.250			0.438		0.825
	APP/DEPART	5	/	11	19	/	12	2	/	8	7	/	2	0
PM	4:00 PM	0	5	0	1	2	0	0	1	0	0	1	1	11
	4:15 PM	0	3	0	2	1	0	0	0	0	1	0	1	8
	4:30 PM	0	1	2	2	0	0	0	0	0	1	1	1	8
	4:45 PM	0	3	0	2	2	0	0	0	0	1	0	1	9
	5:00 PM	0	4	0	4	0	0	0	0	0	0	0	3	11
	5:15 PM	0	3	1	2	3	0	0	0	0	0	0	2	11
	5:30 PM	0	5	0	0	0	2	0	0	0	0	0	1	8
	5:45 PM	0	0	0	2	2	0	0	0	0	1	0	0	5
	VOLUMES	0	24	3	15	10	2	0	1	0	4	2	10	71
	APPROACH %	0%	89%	11%	56%	37%	7%	0%	100%	0%	25%	13%	63%	
	APP/DEPART	27	/	34	27	/	14	1	/	19	16	/	4	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	15	1	8	5	2	0	0	0	1	0	7	39
	APPROACH %	0%	94%	6%	53%	33%	13%	0%	0%	0%	13%	0%	88%	
	PEAK HR FACTOR		0.800			0.750			0.000			0.667		0.886
	APP/DEPART	16	/	22	15	/	6	0	/	9	8	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	3
0	0	0	2
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	1	0	0
0	0	0	0
1	1	0	0
1	1	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Milliken	LOCATION #:	12
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Milliken			SOUTHBOUND Milliken			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	0	4	2	14	10	0	0	0	0	1	0	10	41
	7:15 AM	0	6	0	11	6	0	0	1	0	1	1	18	44
	7:30 AM	0	7	1	14	4	1	1	0	0	3	1	13	45
	7:45 AM	0	6	4	12	7	0	0	0	1	2	0	19	51
	8:00 AM	0	8	4	10	8	1	0	0	1	1	0	11	44
	8:15 AM	0	7	3	18	12	0	0	0	0	0	1	18	59
	8:30 AM	0	9	2	10	11	0	0	0	1	2	0	17	52
	8:45 AM	1	9	2	14	16	0	0	0	0	3	0	10	55
	VOLUMES	1	56	18	103	74	2	1	1	3	13	3	116	391
	APPROACH %	1%	75%	24%	58%	41%	1%	20%	20%	60%	10%	2%	88%	
	APP/DEPART	75	/	173	179	/	90	5	/	122	132	/	6	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	28	12	54	31	2	1	0	2	6	2	61	199
	APPROACH %	0%	70%	30%	62%	36%	2%	33%	0%	67%	9%	3%	88%	
	PEAK HR FACTOR		0.833			0.725			0.750			0.821		0.843
	APP/DEPART	40	/	90	87	/	39	3	/	66	69	/	4	0
PM	4:00 PM	0	7	1	9	6	0	0	1	0	2	0	14	40
	4:15 PM	0	4	6	10	3	0	0	0	0	1	0	13	37
	4:30 PM	0	7	3	13	4	0	0	2	1	3	1	7	41
	4:45 PM	0	8	5	18	6	0	0	0	1	1	0	5	44
	5:00 PM	0	6	4	9	4	0	0	0	0	2	0	13	38
	5:15 PM	0	2	1	7	5	0	1	0	0	2	0	5	23
	5:30 PM	1	6	0	8	9	1	0	0	0	3	0	5	33
	5:45 PM	0	2	5	13	10	1	0	1	0	0	0	11	43
	VOLUMES	1	42	25	87	47	2	1	4	2	14	1	73	299
	APPROACH %	1%	62%	37%	64%	35%	1%	14%	57%	29%	16%	1%	83%	
	APP/DEPART	68	/	116	136	/	63	7	/	116	88	/	4	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	1	22	10	42	24	1	1	0	1	8	0	28	138
	APPROACH %	3%	67%	30%	63%	36%	1%	50%	0%	50%	22%	0%	78%	
	PEAK HR FACTOR		0.635			0.698			0.500			0.600		0.784
	APP/DEPART	33	/	51	67	/	33	2	/	52	36	/	2	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
1	0	0	3
0	0	0	4
0	0	0	3
1	0	0	8
2	0	1	0
1	0	0	4
0	0	1	9
0	0	0	2
5	0	2	33
4	0	1	15
0	0	0	1
0	0	0	5
1	0	1	1
0	0	0	1
0	0	0	4
1	0	0	3
0	0	0	3
0	0	0	6
2	0	1	24
1	0	0	11

Milliken

NORTH SIDE

Riverside WEST SIDE EAST SIDE **Riverside**

SOUTH SIDE

Milliken

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Milliken	LOCATION #:	12
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

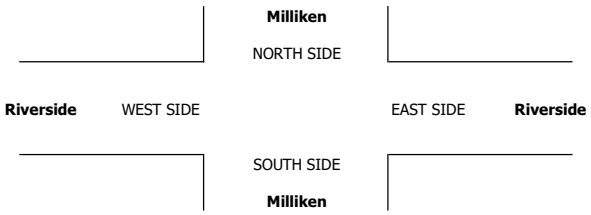
		NORTHBOUND Milliken			SOUTHBOUND Milliken			EASTBOUND Riverside			WESTBOUND Riverside			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	0	0	0	0	0	0	0	0	1
	APPROACH %	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	1	/	1	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR 0	SRR 0	ERR 0	WRR 0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Ontario	PROJECT #:	SC3418
5/10/22	NORTH & SOUTH:	Milliken	LOCATION #:	12
TUESDAY	EAST & WEST:	Riverside	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Milliken)			SOUTHBOUND (Milliken)			EASTBOUND (Riverside)			WESTBOUND (Riverside)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	2
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	1	0	1	0	0	0	2
	APPROACH %	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	
	APP/DEPART	0	/	1	0	/	1	2	/	0	0	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	0	0	0	0	0	1	0	1	0	0	0	2
	APPROACH %	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.250			0.000		0.250
	APP/DEPART	0	/	1	0	/	1	2	/	0	0	/	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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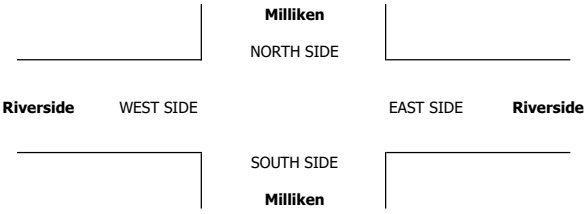
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



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City of Ontario
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Weather: Clear

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	110	0	110	1	169	170	1	0	1	281
07:15 AM	75	0	75	1	195	196	1	0	1	272
07:30 AM	82	2	84	0	231	231	0	0	0	315
07:45 AM	94	0	94	0	276	276	3	1	4	374
Total	361	2	363	2	871	873	5	1	6	1242
08:00 AM	102	0	102	0	219	219	1	0	1	322
08:15 AM	88	0	88	0	220	220	0	0	0	308
08:30 AM	101	0	101	0	210	210	0	0	0	311
08:45 AM	88	0	88	0	146	146	0	0	0	234
Total	379	0	379	0	795	795	1	0	1	1175
Grand Total	740	2	742	2	1666	1668	6	1	7	2417
Apprch %	99.7	0.3		0.1	99.9		85.7	14.3		
Total %	30.6	0.1	30.7	0.1	68.9	69	0.2	0	0.3	
Passenger Vehicles	624	1	625	2	1559	1561	4	0	4	2190
% Passenger Vehicles	84.3	50	84.2	100	93.6	93.6	66.7	0	57.1	90.6
Large 2 Axle Vehicles	27	1	28	0	38	38	1	1	2	68
% Large 2 Axle Vehicles	3.6	50	3.8	0	2.3	2.3	16.7	100	28.6	2.8
3 Axle Vehicles	23	0	23	0	18	18	1	0	1	42
% 3 Axle Vehicles	3.1	0	3.1	0	1.1	1.1	16.7	0	14.3	1.7
4+ Axle Trucks	66	0	66	0	51	51	0	0	0	117
% 4+ Axle Trucks	8.9	0	8.9	0	3.1	3.1	0	0	0	4.8

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	82	**2**	84	0	231	231	0	0	0	315
07:45 AM	94	0	94	0	**276**	**276**	**3**	**1**	**4**	**374**
08:00 AM	**102**	0	**102**	0	219	219	1	0	1	322
08:15 AM	88	0	88	0	220	220	0	0	0	308
Total Volume	366	2	368	0	946	946	4	1	5	1319
% App. Total	99.5	0.5		0	100		80	20		
PHF	.897	.250	.902	.000	.857	.857	.333	.250	.313	.882

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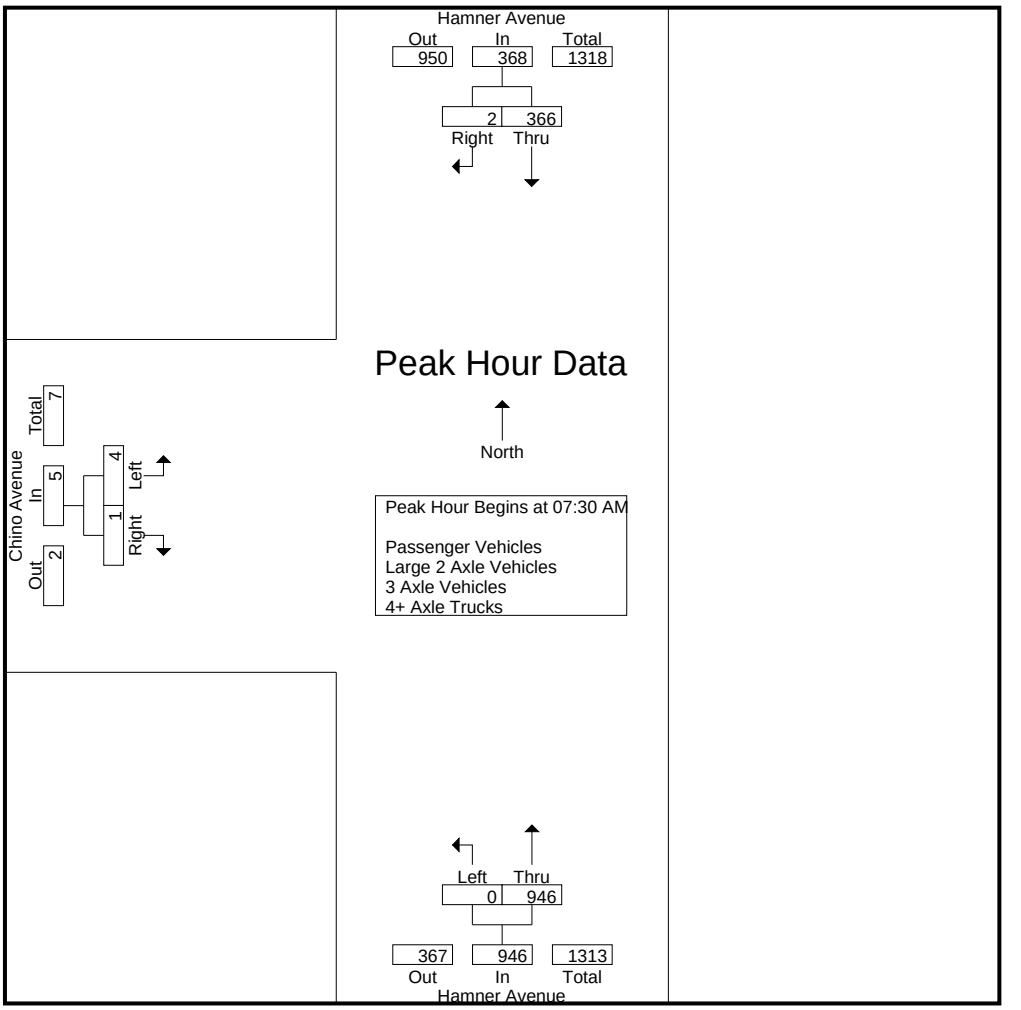

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			07:30 AM			07:00 AM		
+0 mins.	94	0	94	0	231	231	1	0	1
+15 mins.	**102**	0	**102**	0	**276**	**276**	1	0	1
+30 mins.	88	0	88	0	219	219	0	0	0
+45 mins.	101	0	101	0	220	220	**3**	**1**	**4**
Total Volume	385	0	385	0	946	946	5	1	6
% App. Total	100	0		0	100		83.3	16.7	
PHF	.944	.000	.944	.000	.857	.857	.417	.250	.375

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Groups Printed- Passenger Vehicles

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	97	0	97	1	158	159	1	0	1	257
07:15 AM	64	0	64	1	182	183	0	0	0	247
07:30 AM	73	1	74	0	219	219	0	0	0	293
07:45 AM	77	0	77	0	265	265	3	0	3	345
Total	311	1	312	2	824	826	4	0	4	1142
08:00 AM	90	0	90	0	204	204	0	0	0	294
08:15 AM	72	0	72	0	200	200	0	0	0	272
08:30 AM	86	0	86	0	194	194	0	0	0	280
08:45 AM	65	0	65	0	137	137	0	0	0	202
Total	313	0	313	0	735	735	0	0	0	1048
Grand Total	624	1	625	2	1559	1561	4	0	4	2190
Apprch %	99.8	0.2		0.1	99.9		100	0		
Total %	28.5	0	28.5	0.1	71.2	71.3	0.2	0	0.2	

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	73	**1**	74	0	219	219	0	0	0	293
07:45 AM	77	0	77	0	**265**	**265**	**3**	0	**3**	**345**
08:00 AM	**90**	0	**90**	0	204	204	0	0	0	294
08:15 AM	72	0	72	0	200	200	0	0	0	272
Total Volume	312	1	313	0	888	888	3	0	3	1204
% App. Total	99.7	0.3		0	100		100	0		
PHF	.867	.250	.869	.000	.838	.838	.250	.000	.250	.872

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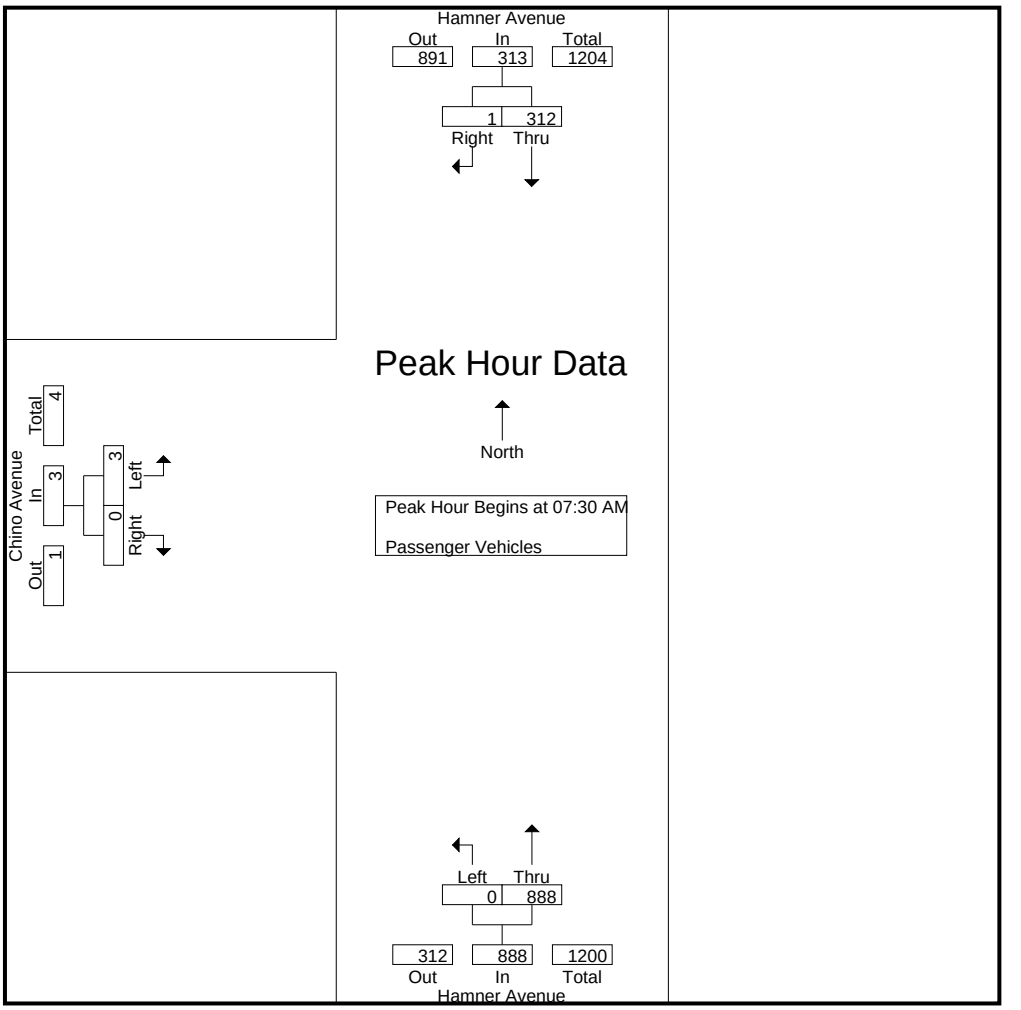

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	73	**1**	74	0	219	219	0	0	0
+15 mins.	77	0	77	0	**265**	**265**	**3**	0	**3**
+30 mins.	**90**	0	**90**	0	204	204	0	0	0
+45 mins.	72	0	72	0	200	200	0	0	0
Total Volume	312	1	313	0	888	888	3	0	3
% App. Total	99.7	0.3		0	100		100	0	
PHF	.867	.250	.869	.000	.838	.838	.250	.000	.250

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Groups Printed- Large 2 Axle Vehicles

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	3	0	3	0	4	4	0	0	0	7
07:15 AM	3	0	3	0	9	9	0	0	0	12
07:30 AM	1	1	2	0	2	2	0	0	0	4
07:45 AM	5	0	5	0	7	7	0	1	1	13
Total	12	1	13	0	22	22	0	1	1	36
08:00 AM	1	0	1	0	4	4	1	0	1	6
08:15 AM	4	0	4	0	7	7	0	0	0	11
08:30 AM	4	0	4	0	3	3	0	0	0	7
08:45 AM	6	0	6	0	2	2	0	0	0	8
Total	15	0	15	0	16	16	1	0	1	32
Grand Total	27	1	28	0	38	38	1	1	2	68
Apprch %	96.4	3.6		0	100		50	50		
Total %	39.7	1.5	41.2	0	55.9	55.9	1.5	1.5	2.9	

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	1	**1**	2	0	2	2	0	0	0	4
07:45 AM	**5**	0	**5**	0	**7**	**7**	0	**1**	**1**	**13**
08:00 AM	1	0	1	0	4	4	**1**	0	1	6
08:15 AM	4	0	4	0	7	7	0	0	0	11
Total Volume	11	1	12	0	20	20	1	1	2	34
% App. Total	91.7	8.3		0	100		50	50		
PHF	.550	.250	.600	.000	.714	.714	.250	.250	.500	.654

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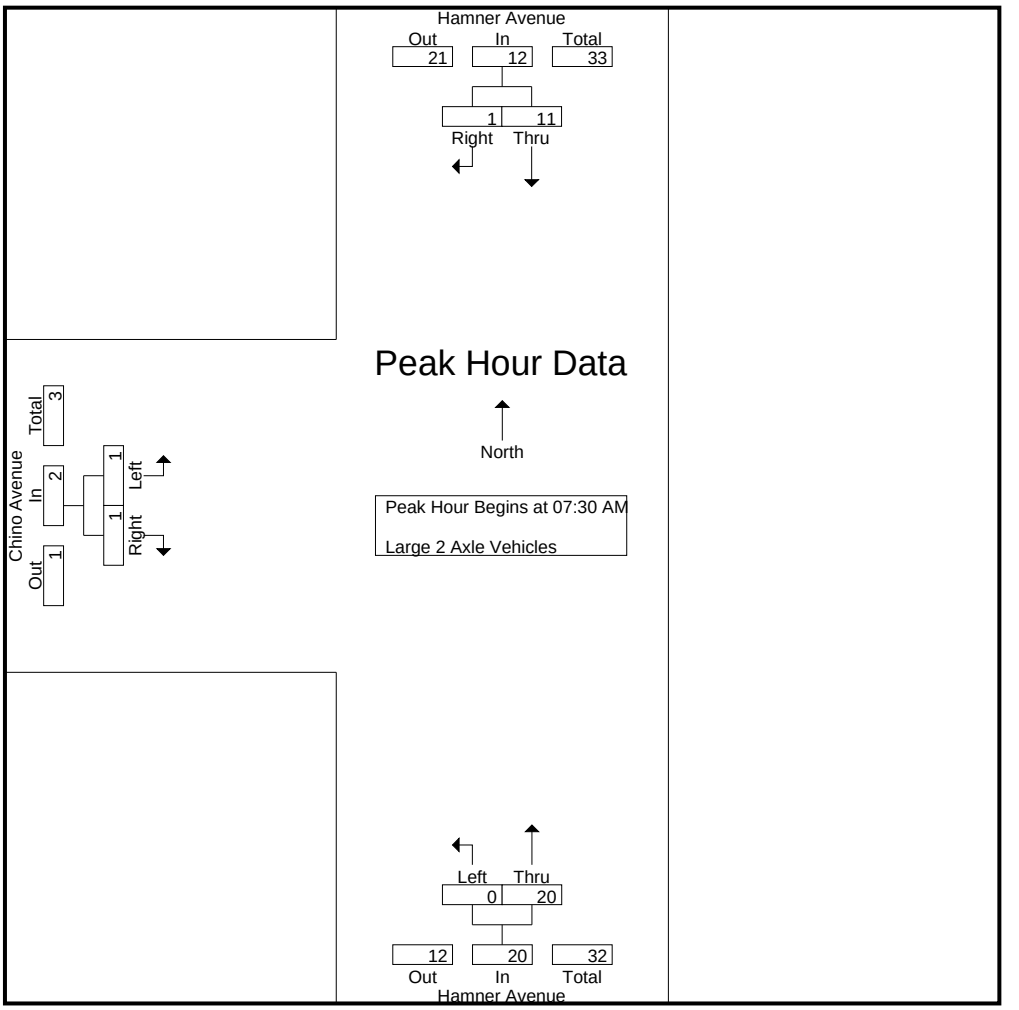

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	1	**1**	2	0	2	2	0	0	0
+15 mins.	**5**	0	**5**	0	**7**	**7**	0	**1**	**1**
+30 mins.	1	0	1	0	4	4	**1**	0	1
+45 mins.	4	0	4	0	7	7	0	0	0
Total Volume	11	1	12	0	20	20	1	1	2
% App. Total	91.7	8.3		0	100		50	50	
PHF	.550	.250	.600	.000	.714	.714	.250	.250	.500

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Groups Printed- 3 Axle Vehicles

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	2	0	2	0	2	2	0	0	0	4
07:15 AM	1	0	1	0	3	3	1	0	1	5
07:30 AM	2	0	2	0	2	2	0	0	0	4
07:45 AM	2	0	2	0	0	0	0	0	0	2
Total	7	0	7	0	7	7	1	0	1	15
08:00 AM	4	0	4	0	2	2	0	0	0	6
08:15 AM	4	0	4	0	3	3	0	0	0	7
08:30 AM	3	0	3	0	4	4	0	0	0	7
08:45 AM	5	0	5	0	2	2	0	0	0	7
Total	16	0	16	0	11	11	0	0	0	27
Grand Total	23	0	23	0	18	18	1	0	1	42
Apprch %	100	0		0	100		100	0		
Total %	54.8	0	54.8	0	42.9	42.9	2.4	0	2.4	

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	2	0	2	0	2	2	0	0	0	4
07:45 AM	2	0	2	0	0	0	0	0	0	2
08:00 AM	**4**	0	**4**	0	2	2	0	0	0	6
08:15 AM	4	0	4	0	**3**	**3**	0	0	0	**7**
Total Volume	12	0	12	0	7	7	0	0	0	19
% App. Total	100	0		0	100		0	0		
PHF	.750	.000	.750	.000	.583	.583	.000	.000	.000	.679

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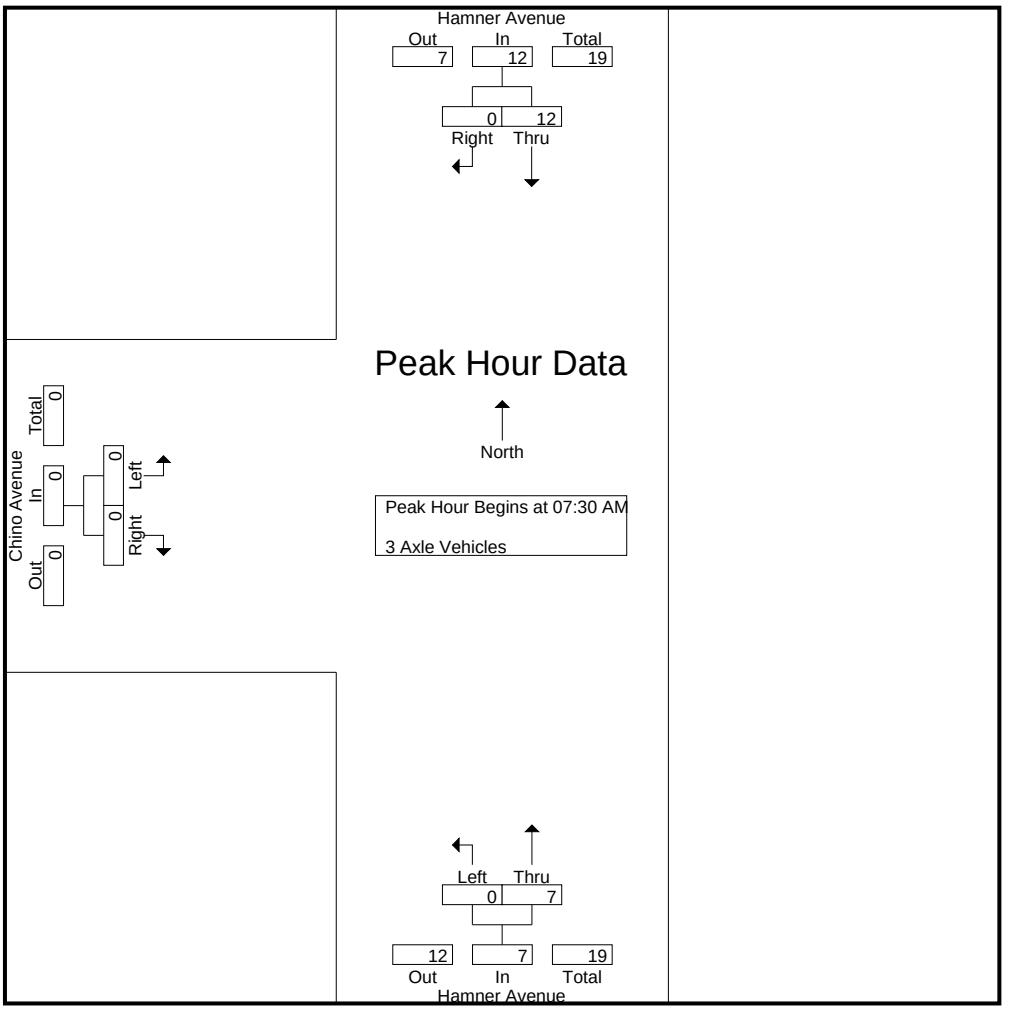

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	2	0	2	0	2	2	0	0	0
+15 mins.	2	0	2	0	0	0	0	0	0
+30 mins.	**4**	0	**4**	0	2	2	0	0	0
+45 mins.	4	0	4	0	**3**	**3**	0	0	0
Total Volume	12	0	12	0	7	7	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.750	.000	.750	.000	.583	.583	.000	.000	.000

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Groups Printed- 4+ Axle Trucks

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	8	0	8	0	5	5	0	0	0	13
07:15 AM	7	0	7	0	1	1	0	0	0	8
07:30 AM	6	0	6	0	8	8	0	0	0	14
07:45 AM	10	0	10	0	4	4	0	0	0	14
Total	31	0	31	0	18	18	0	0	0	49
08:00 AM	7	0	7	0	9	9	0	0	0	16
08:15 AM	8	0	8	0	10	10	0	0	0	18
08:30 AM	8	0	8	0	9	9	0	0	0	17
08:45 AM	12	0	12	0	5	5	0	0	0	17
Total	35	0	35	0	33	33	0	0	0	68
Grand Total	66	0	66	0	51	51	0	0	0	117
Apprch %	100	0		0	100		0	0		
Total %	56.4	0	56.4	0	43.6	43.6	0	0	0	

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	6	0	6	0	8	8	0	0	0	14
07:45 AM	**10**	0	**10**	0	4	4	0	0	0	14
08:00 AM	7	0	7	0	9	9	0	0	0	16
08:15 AM	8	0	8	0	**10**	**10**	0	0	0	**18**
Total Volume	31	0	31	0	31	31	0	0	0	62
% App. Total	100	0		0	100		0	0		
PHF	.775	.000	.775	.000	.775	.775	.000	.000	.000	.861

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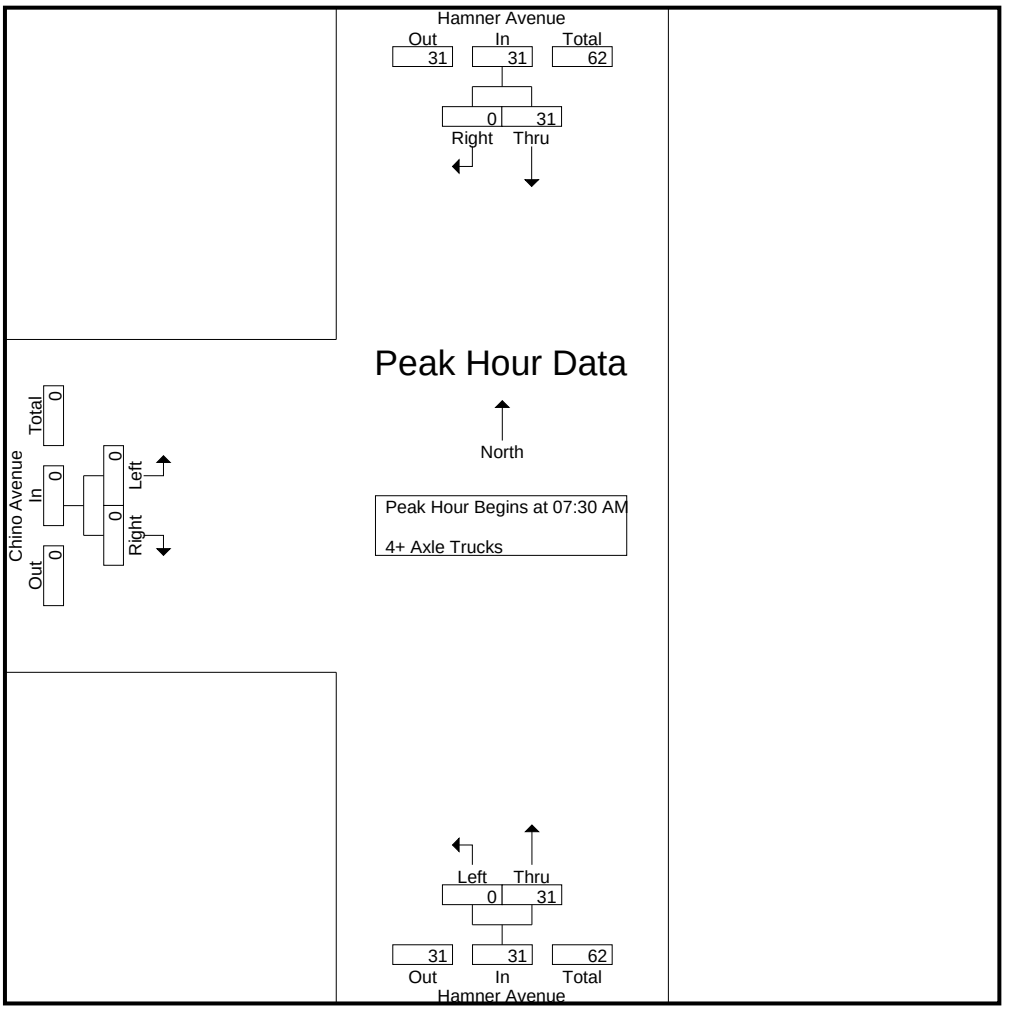

Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	6	0	6	0	8	8	0	0	0
+15 mins.	**10**	0	**10**	0	4	4	0	0	0
+30 mins.	7	0	7	0	9	9	0	0	0
+45 mins.	8	0	8	0	**10**	**10**	0	0	0
Total Volume	31	0	31	0	31	31	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.775	.000	.775	.000	.775	.775	.000	.000	.000

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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	165	1	166	1	180	181	3	2	5	352
04:15 PM	163	0	163	0	139	139	0	1	1	303
04:30 PM	178	1	179	0	174	174	1	1	2	355
04:45 PM	189	0	189	0	139	139	0	0	0	328
Total	695	2	697	1	632	633	4	4	8	1338
05:00 PM	199	1	200	0	139	139	0	0	0	339
05:15 PM	218	1	219	0	137	137	1	0	1	357
05:30 PM	214	0	214	0	180	180	0	1	1	395
05:45 PM	206	0	206	0	141	141	0	0	0	347
Total	837	2	839	0	597	597	1	1	2	1438
Grand Total	1532	4	1536	1	1229	1230	5	5	10	2776
Apprch %	99.7	0.3		0.1	99.9		50	50		
Total %	55.2	0.1	55.3	0	44.3	44.3	0.2	0.2	0.4	
Passenger Vehicles	1451	4	1455	1	1123	1124	5	5	10	2589
% Passenger Vehicles	94.7	100	94.7	100	91.4	91.4	100	100	100	93.3
Large 2 Axle Vehicles	22	0	22	0	26	26	0	0	0	48
% Large 2 Axle Vehicles	1.4	0	1.4	0	2.1	2.1	0	0	0	1.7
3 Axle Vehicles	11	0	11	0	27	27	0	0	0	38
% 3 Axle Vehicles	0.7	0	0.7	0	2.2	2.2	0	0	0	1.4
4+ Axle Trucks	48	0	48	0	53	53	0	0	0	101
% 4+ Axle Trucks	3.1	0	3.1	0	4.3	4.3	0	0	0	3.6

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	199	**1**	200	0	139	139	0	0	0	339
05:15 PM	**218**	1	**219**	0	137	137	**1**	0	**1**	357
05:30 PM	214	0	214	0	**180**	**180**	0	**1**	1	**395**
05:45 PM	206	0	206	0	141	141	0	0	0	347
Total Volume	837	2	839	0	597	597	1	1	2	1438
% App. Total	99.8	0.2		0	100		50	50		
PHF	.960	.500	.958	.000	.829	.829	.250	.250	.500	.910

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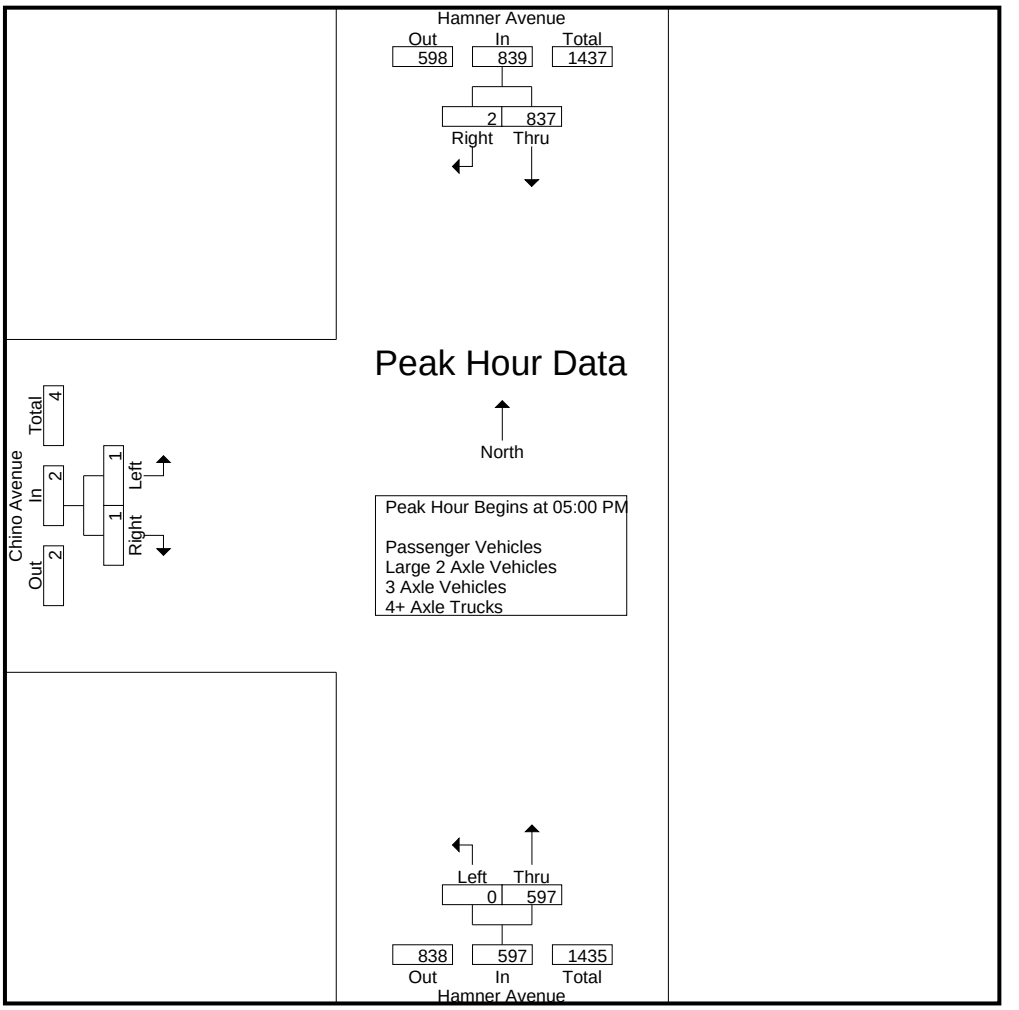

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			04:00 PM			04:00 PM		
+0 mins.	199	**1**	200	**1**	**180**	**181**	**3**	**2**	**5**
+15 mins.	**218**	1	**219**	0	139	139	0	1	1
+30 mins.	214	0	214	0	174	174	1	1	2
+45 mins.	206	0	206	0	139	139	0	0	0
Total Volume	837	2	839	1	632	633	4	4	8
% App. Total	99.8	0.2		0.2	99.8		50	50	
PHF	.960	.500	.958	.250	.878	.874	.333	.500	.400

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City of Ontario
N/S: Hamner Avenue
E/W: Chino Avenue
Weather: Clear

File Name : 04_ONT_Ham_Chino PM
Site Code : 05122421
Start Date : 5/10/2022
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Groups Printed- Passenger Vehicles

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	153	1	154	1	167	168	3	2	5	327
04:15 PM	157	0	157	0	125	125	0	1	1	283
04:30 PM	170	1	171	0	158	158	1	1	2	331
04:45 PM	178	0	178	0	126	126	0	0	0	304
Total	658	2	660	1	576	577	4	4	8	1245
05:00 PM	189	1	190	0	123	123	0	0	0	313
05:15 PM	209	1	210	0	125	125	1	0	1	336
05:30 PM	202	0	202	0	168	168	0	1	1	371
05:45 PM	193	0	193	0	131	131	0	0	0	324
Total	793	2	795	0	547	547	1	1	2	1344
Grand Total	1451	4	1455	1	1123	1124	5	5	10	2589
Apprch %	99.7	0.3		0.1	99.9		50	50		
Total %	56	0.2	56.2	0	43.4	43.4	0.2	0.2	0.4	

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	189	**1**	190	0	123	123	0	0	0	313
05:15 PM	**209**	1	**210**	0	125	125	**1**	0	**1**	336
05:30 PM	202	0	202	0	**168**	**168**	0	**1**	1	**371**
05:45 PM	193	0	193	0	131	131	0	0	0	324
Total Volume	793	2	795	0	547	547	1	1	2	1344
% App. Total	99.7	0.3		0	100		50	50		
PHF	.949	.500	.946	.000	.814	.814	.250	.250	.500	.906

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File Name : 04_ONT_Ham_Chino PM
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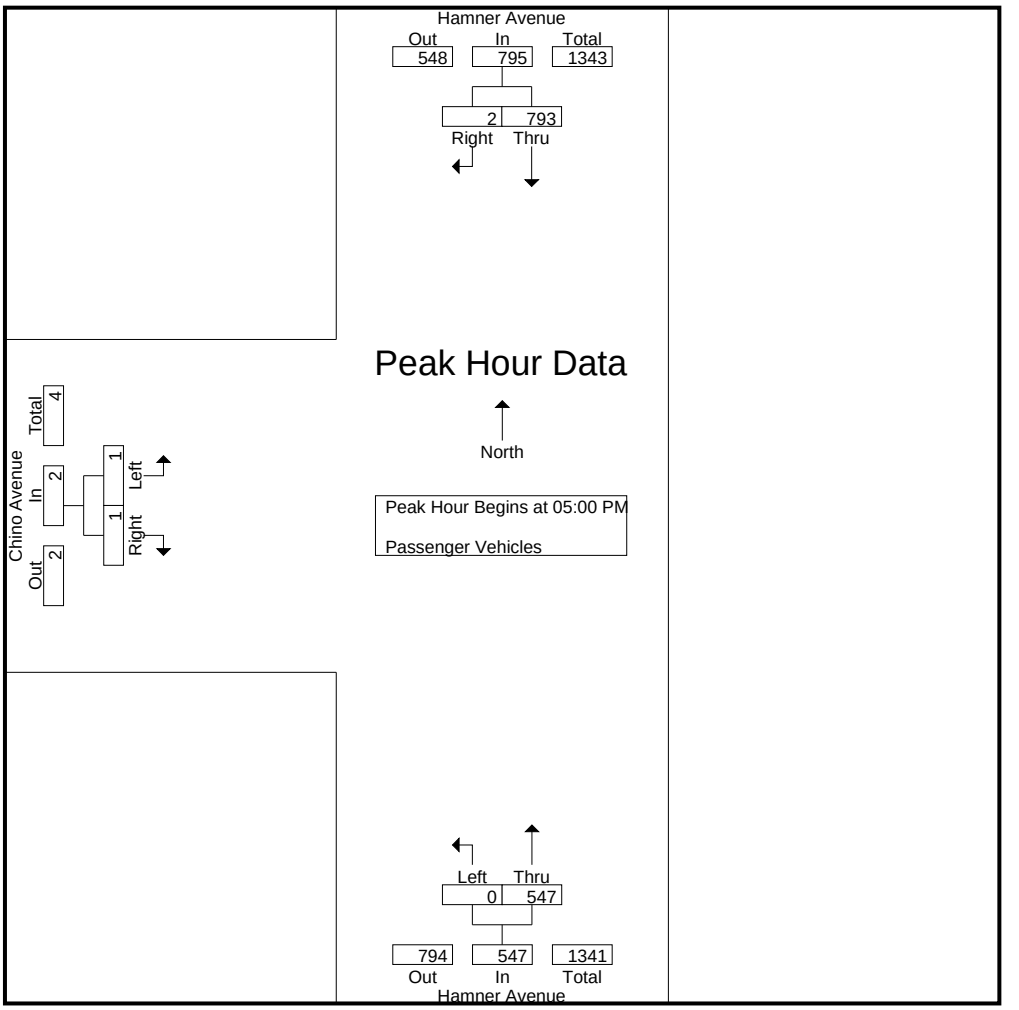

Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			05:00 PM		
+0 mins.	189	**1**	190	0	123	123	0	0	0
+15 mins.	**209**	1	**210**	0	125	125	**1**	0	**1**
+30 mins.	202	0	202	0	**168**	**168**	0	**1**	1
+45 mins.	193	0	193	0	131	131	0	0	0
Total Volume	793	2	795	0	547	547	1	1	2
% App. Total	99.7	0.3		0	100		50	50	
PHF	.949	.500	.946	.000	.814	.814	.250	.250	.500

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City of Ontario
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Weather: Clear

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Site Code : 05122421
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Groups Printed- Large 2 Axle Vehicles

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	4	0	4	0	3	3	0	0	0	7
04:15 PM	2	0	2	0	4	4	0	0	0	6
04:30 PM	2	0	2	0	5	5	0	0	0	7
04:45 PM	4	0	4	0	2	2	0	0	0	6
Total	12	0	12	0	14	14	0	0	0	26
05:00 PM	4	0	4	0	1	1	0	0	0	5
05:15 PM	1	0	1	0	4	4	0	0	0	5
05:30 PM	3	0	3	0	4	4	0	0	0	7
05:45 PM	2	0	2	0	3	3	0	0	0	5
Total	10	0	10	0	12	12	0	0	0	22
Grand Total	22	0	22	0	26	26	0	0	0	48
Apprch %	100	0		0	100		0	0		
Total %	45.8	0	45.8	0	54.2	54.2	0	0	0	

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**4**	0	**4**	0	1	1	0	0	0	5
05:15 PM	1	0	1	0	**4**	**4**	0	0	0	5
05:30 PM	3	0	3	0	4	4	0	0	0	**7**
05:45 PM	2	0	2	0	3	3	0	0	0	5
Total Volume	10	0	10	0	12	12	0	0	0	22
% App. Total	100	0		0	100		0	0		
PHF	.625	.000	.625	.000	.750	.750	.000	.000	.000	.786

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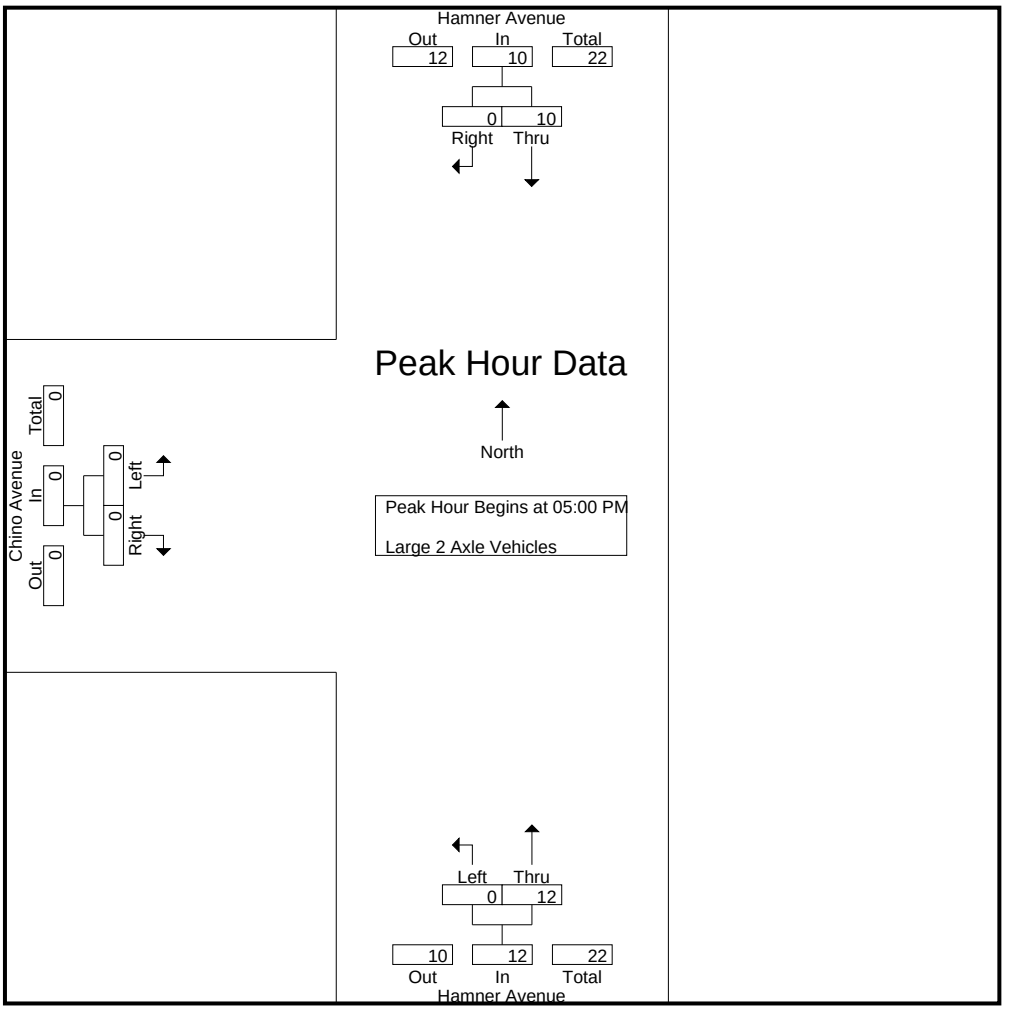

Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			05:00 PM		
+0 mins.	**4**	0	**4**	0	1	1	0	0	0
+15 mins.	1	0	1	0	**4**	**4**	0	0	0
+30 mins.	3	0	3	0	4	4	0	0	0
+45 mins.	2	0	2	0	3	3	0	0	0
Total Volume	10	0	10	0	12	12	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.625	.000	.625	.000	.750	.750	.000	.000	.000

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Groups Printed- 3 Axle Vehicles

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	1	0	1	0	5	5	0	0	0	6
04:15 PM	2	0	2	0	1	1	0	0	0	3
04:30 PM	2	0	2	0	4	4	0	0	0	6
04:45 PM	2	0	2	0	1	1	0	0	0	3
Total	7	0	7	0	11	11	0	0	0	18
05:00 PM	0	0	0	0	5	5	0	0	0	5
05:15 PM	2	0	2	0	5	5	0	0	0	7
05:30 PM	0	0	0	0	4	4	0	0	0	4
05:45 PM	2	0	2	0	2	2	0	0	0	4
Total	4	0	4	0	16	16	0	0	0	20
Grand Total	11	0	11	0	27	27	0	0	0	38
Apprch %	100	0		0	100		0	0		
Total %	28.9	0	28.9	0	71.1	71.1	0	0	0	

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	0	0	0	0	**5**	**5**	0	0	0	5
05:15 PM	**2**	0	**2**	0	5	5	0	0	0	**7**
05:30 PM	0	0	0	0	4	4	0	0	0	4
05:45 PM	2	0	2	0	2	2	0	0	0	4
Total Volume	4	0	4	0	16	16	0	0	0	20
% App. Total	100	0		0	100		0	0		
PHF	.500	.000	.500	.000	.800	.800	.000	.000	.000	.714

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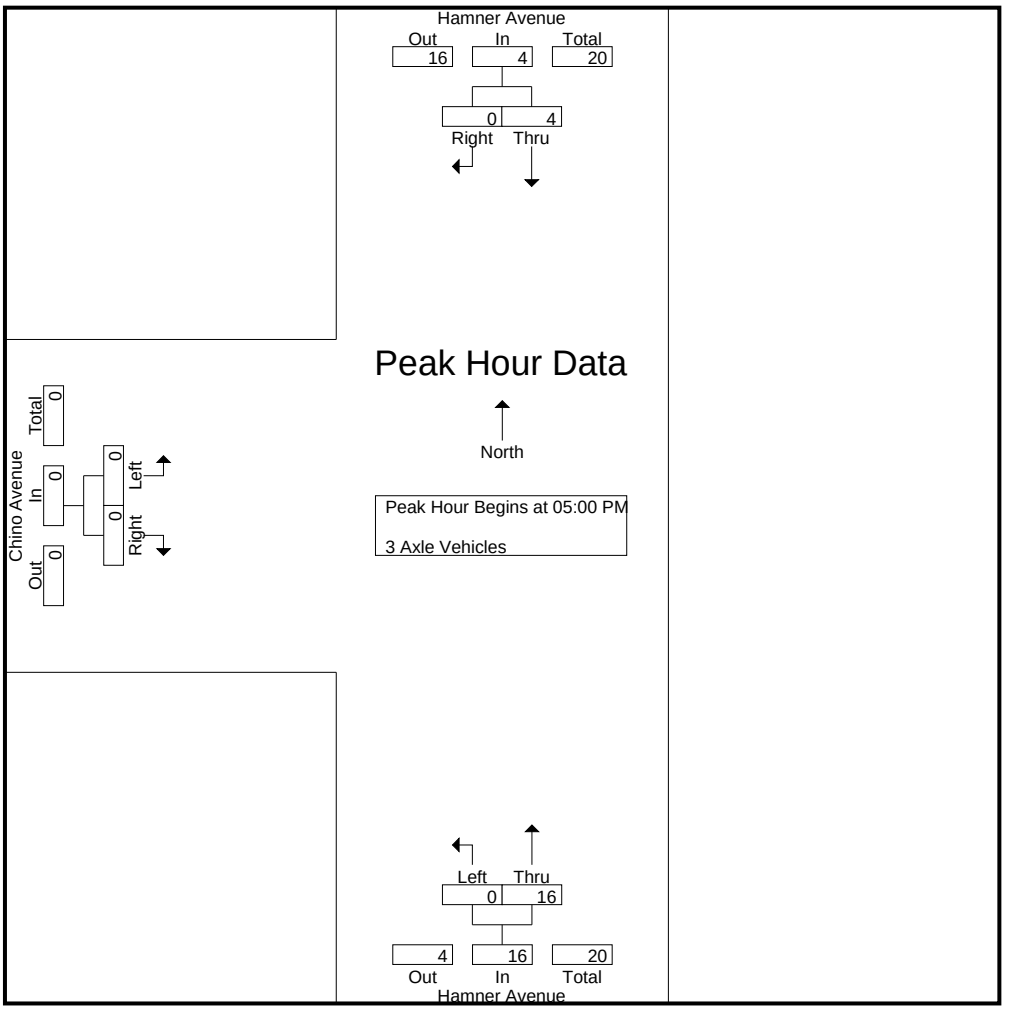

Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			05:00 PM		
+0 mins.	0	0	0	0	**5**	**5**	0	0	0
+15 mins.	**2**	0	**2**	0	5	5	0	0	0
+30 mins.	0	0	0	0	4	4	0	0	0
+45 mins.	2	0	2	0	2	2	0	0	0
Total Volume	4	0	4	0	16	16	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.500	.000	.500	.000	.800	.800	.000	.000	.000

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Groups Printed- 4+ Axle Trucks

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	7	0	7	0	5	5	0	0	0	12
04:15 PM	2	0	2	0	9	9	0	0	0	11
04:30 PM	4	0	4	0	7	7	0	0	0	11
04:45 PM	5	0	5	0	10	10	0	0	0	15
Total	18	0	18	0	31	31	0	0	0	49
05:00 PM	6	0	6	0	10	10	0	0	0	16
05:15 PM	6	0	6	0	3	3	0	0	0	9
05:30 PM	9	0	9	0	4	4	0	0	0	13
05:45 PM	9	0	9	0	5	5	0	0	0	14
Total	30	0	30	0	22	22	0	0	0	52
Grand Total	48	0	48	0	53	53	0	0	0	101
Apprch %	100	0		0	100		0	0		
Total %	47.5	0	47.5	0	52.5	52.5	0	0	0	

	Hamner Avenue Southbound			Hamner Avenue Northbound			Chino Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	6	0	6	0	**10**	**10**	0	0	0	**16**
05:15 PM	6	0	6	0	3	3	0	0	0	9
05:30 PM	**9**	0	**9**	0	4	4	0	0	0	13
05:45 PM	9	0	9	0	5	5	0	0	0	14
Total Volume	30	0	30	0	22	22	0	0	0	52
% App. Total	100	0		0	100		0	0		
PHF	.833	.000	.833	.000	.550	.550	.000	.000	.000	.813

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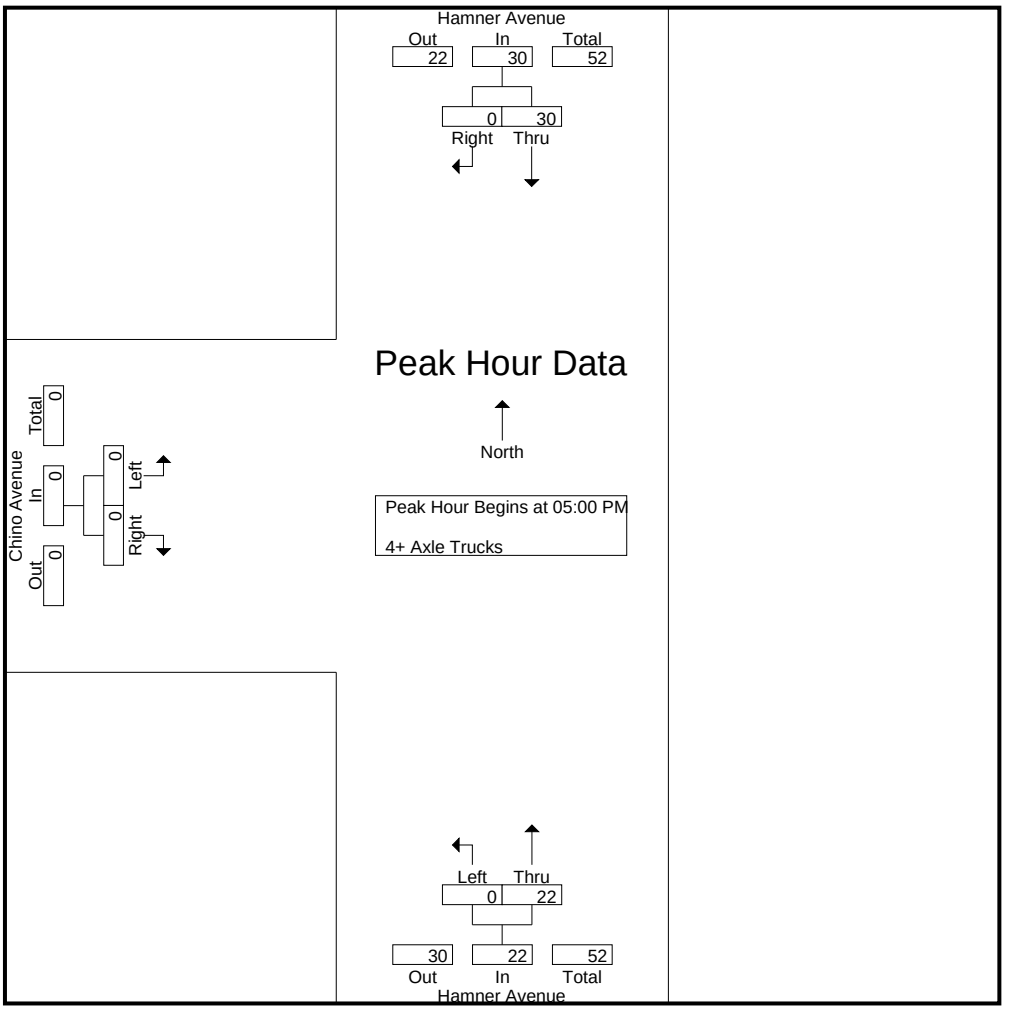

Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			05:00 PM		
+0 mins.	6	0	6	0	**10**	**10**	0	0	0
+15 mins.	6	0	6	0	3	3	0	0	0
+30 mins.	**9**	0	**9**	0	4	4	0	0	0
+45 mins.	9	0	9	0	5	5	0	0	0
Total Volume	30	0	30	0	22	22	0	0	0
% App. Total	100	0		0	100		0	0	
PHF	.833	.000	.833	.000	.550	.550	.000	.000	.000

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City of Ontario
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Weather: Clear

File Name : 05_ONT_Ham_CGR AM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	42	65	14	5	121	53	146	48	21	247	34	134	80	33	248	15	106	14	2	135	61	751	812
07:15 AM	41	27	5	3	73	53	129	59	13	241	22	114	67	23	203	19	134	17	1	170	40	687	727
07:30 AM	24	42	10	7	76	57	143	45	10	245	43	152	84	35	279	53	110	14	7	177	59	777	836
07:45 AM	26	40	13	1	79	58	122	60	24	240	34	172	66	27	272	40	120	23	2	183	54	774	828
Total	133	174	42	16	349	221	540	212	68	973	133	572	297	118	1002	127	470	68	12	665	214	2989	3203
08:00 AM	25	69	7	0	101	73	93	60	30	226	35	157	47	18	239	34	105	36	9	175	57	741	798
08:15 AM	22	48	9	7	79	59	131	66	23	256	29	131	51	24	211	39	96	14	1	149	55	695	750
08:30 AM	31	51	15	6	97	56	115	58	15	229	38	155	67	27	260	28	87	29	8	144	56	730	786
08:45 AM	13	44	10	5	67	68	97	54	16	219	39	95	58	21	192	19	61	24	6	104	48	582	630
Total	91	212	41	18	344	256	436	238	84	930	141	538	223	90	902	120	349	103	24	572	216	2748	2964
Grand Total	224	386	83	34	693	477	976	450	152	1903	274	1110	520	208	1904	247	819	171	36	1237	430	5737	6167
Apprch %	32.3	55.7	12			25.1	51.3	23.6			14.4	58.3	27.3			20	66.2	13.8					
Total %	3.9	6.7	1.4		12.1	8.3	17	7.8		33.2	4.8	19.3	9.1		33.2	4.3	14.3	3		21.6	7	93	
Passenger Vehicles	182	357	51		609	434	802	394		1765	256	1073	504		2035	224	674	164		1098	0	0	5507
% Passenger Vehicles	81.2	92.5	61.4	55.9	83.8	91	82.2	87.6	88.8	85.9	93.4	96.7	96.9	97.1	96.4	90.7	82.3	95.9	100	86.3	0	0	89.3
Large 2 Axle Vehicles	6	14	7		33	24	55	12		97	7	19	3		31	7	25	5		37	0	0	198
% Large 2 Axle Vehicles	2.7	3.6	8.4	17.6	4.5	5	5.6	2.7	3.9	4.7	2.6	1.7	0.6	1	1.5	2.8	3.1	2.9	0	2.9	0	0	3.2
3 Axle Vehicles	8	9	6		28	12	42	6		61	2	10	6		20	3	31	1		35	0	0	144
% 3 Axle Vehicles	3.6	2.3	7.2	14.7	3.9	2.5	4.3	1.3	0.7	3	0.7	0.9	1.2	1	0.9	1.2	3.8	0.6	0	2.7	0	0	2.3
4+ Axle Trucks	28	6	19		57	7	77	38		132	9	8	7		26	13	89	1		103	0	0	318
% 4+ Axle Trucks	12.5	1.6	22.9	11.8	7.8	1.5	7.9	8.4	6.6	6.4	3.3	0.7	1.3	1	1.2	5.3	10.9	0.6	0	8.1	0	0	5.2

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**42**	**65**	**14**	**121**	53	**146**	48	**247**	34	134	80	248	15	106	14	135	751
07:15 AM	41	27	5	73	53	129	59	241	22	114	67	203	19	**134**	17	170	687
07:30 AM	24	42	10	76	57	143	45	245	**43**	152	**84**	**279**	**53**	110	14	177	**777**
07:45 AM	26	40	13	79	**58**	122	**60**	240	34	**172**	66	272	40	120	**23**	**183**	774
Total Volume	133	174	42	349	221	540	212	973	133	572	297	1002	127	470	68	665	2989
% App. Total	38.1	49.9	12		22.7	55.5	21.8		13.3	57.1	29.6		19.1	70.7	10.2		
PHF	.792	.669	.750	.721	.953	.925	.883	.985	.773	.831	.884	.898	.599	.877	.739	.908	.962

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File Name : 05_ONT_Ham_CGR AM
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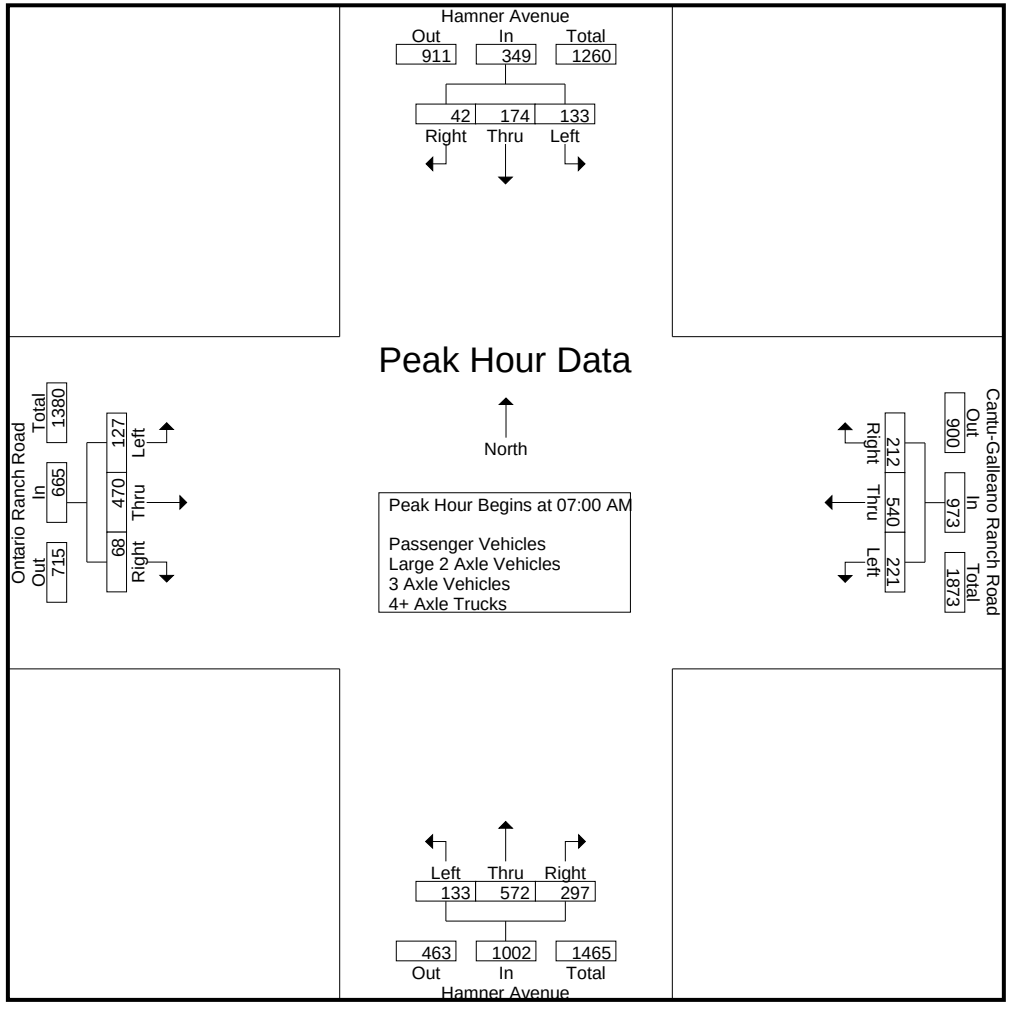

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City of Ontario
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E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:45 AM				07:00 AM				07:00 AM				07:15 AM				
+0 mins.	26	40	13	79	53	**146**	48	**247**	34	134	80	248	19	**134**	17	170	
+15 mins.	25	**69**	7	**101**	53	129	59	241	22	114	67	203	**53**	110	14	177	
+30 mins.	22	48	9	79	57	143	45	245	**43**	152	**84**	**279**	40	120	23	**183**	
+45 mins.	**31**	51	**15**	97	**58**	122	**60**	240	34	**172**	66	272	34	105	**36**	175	
Total Volume	104	208	44	356	221	540	212	973	133	572	297	1002	146	469	90	705	
% App. Total	29.2	58.4	12.4		22.7	55.5	21.8		13.3	57.1	29.6		20.7	66.5	12.8		
PHF	.839	.754	.733	.881	.953	.925	.883	.985	.773	.831	.884	.898	.689	.875	.625	.963	

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(951)268-6268

City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	32	62	10	3	104	45	128	43	19	216	33	128	79	33	240	13	94	13	2	120	57	680	737
07:15 AM	35	25	2	1	62	44	110	53	10	207	21	112	65	23	198	18	110	16	1	144	35	611	646
07:30 AM	22	40	5	3	67	55	121	39	7	215	41	148	81	34	270	49	89	13	7	151	51	703	754
07:45 AM	20	36	6	0	62	56	99	54	22	209	22	170	64	27	256	39	103	22	2	164	51	691	742
Total	109	163	23	7	295	200	458	189	58	847	117	558	289	117	964	119	396	64	12	579	194	2685	2879
08:00 AM	22	66	6	0	94	65	75	51	28	191	35	152	46	18	233	30	88	35	9	153	55	671	726
08:15 AM	17	42	7	6	66	56	111	57	21	224	29	123	48	22	200	34	70	14	1	118	50	608	658
08:30 AM	22	47	11	4	80	51	83	50	13	184	37	151	65	25	253	26	71	28	8	125	50	642	692
08:45 AM	12	39	4	2	55	62	75	47	15	184	38	89	56	20	183	15	49	23	6	87	43	509	552
Total	73	194	28	12	295	234	344	205	77	783	139	515	215	85	869	105	278	100	24	483	198	2430	2628
Grand Total	182	357	51	19	590	434	802	394	135	1630	256	1073	504	202	1833	224	674	164	36	1062	392	5115	5507
Apprch %	30.8	60.5	8.6			26.6	49.2	24.2			14	58.5	27.5			21.1	63.5	15.4					
Total %	3.6	7	1		11.5	8.5	15.7	7.7		31.9	5	21	9.9		35.8	4.4	13.2	3.2		20.8	7.1	92.9	

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	32	**62**	**10**	**104**	45	**128**	43	**216**	33	128	79	240	13	94	13	120	680
07:15 AM	**35**	25	2	62	44	110	53	207	21	112	65	198	18	**110**	16	144	611
07:30 AM	22	40	5	67	55	121	39	215	**41**	148	**81**	**270**	**49**	89	13	151	**703**
07:45 AM	20	36	6	62	**56**	99	**54**	209	22	**170**	64	256	39	103	**22**	**164**	691
Total Volume	109	163	23	295	200	458	189	847	117	558	289	964	119	396	64	579	2685
% App. Total	36.9	55.3	7.8		23.6	54.1	22.3		12.1	57.9	30		20.6	68.4	11.1		
PHF	.779	.657	.575	.709	.893	.895	.875	.980	.713	.821	.892	.893	.607	.900	.727	.883	.955

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PO Box 1178
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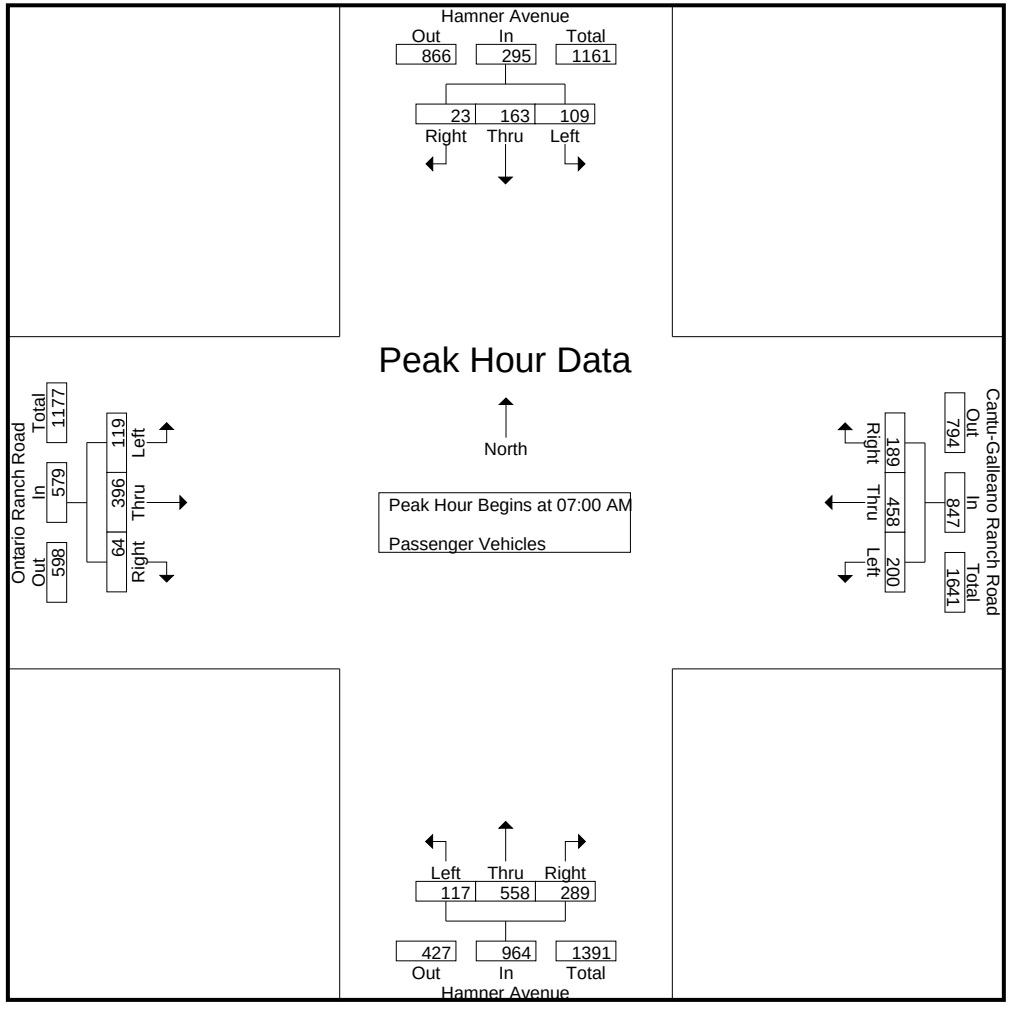
City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	32	**62**	**10**	**104**	45	**128**	43	**216**	33	128	79	240	13	94	13	120	
+15 mins.	**35**	25	2	62	44	110	53	207	21	112	65	198	18	**110**	16	144	
+30 mins.	22	40	5	67	55	121	39	215	**41**	148	**81**	**270**	**49**	89	13	151	
+45 mins.	20	36	6	62	**56**	99	**54**	209	22	**170**	64	256	39	103	**22**	**164**	
Total Volume	109	163	23	295	200	458	189	847	117	558	289	964	119	396	64	579	
% App. Total	36.9	55.3	7.8		23.6	54.1	22.3		12.1	57.9	30		20.6	68.4	11.1		
PHF	.779	.657	.575	.709	.893	.895	.875	.980	.713	.821	.892	.893	.607	.900	.727	.883	

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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	1	2	1	1	4	6	5	2	2	13	0	4	0	0	4	0	0	1	0	1	3	22	25
07:15 AM	0	1	0	0	1	2	4	4	2	10	1	1	0	0	2	1	7	1	0	9	2	22	24
07:30 AM	0	2	0	0	2	2	8	0	0	10	2	1	0	0	3	1	5	1	0	7	0	22	22
07:45 AM	3	3	1	1	7	2	8	2	0	12	2	1	0	0	3	1	3	0	0	4	1	26	27
Total	4	8	2	2	14	12	25	8	4	45	5	7	0	0	12	3	15	3	0	21	6	92	98
08:00 AM	0	1	0	0	1	4	7	1	0	12	0	4	1	0	5	1	2	0	0	3	0	21	21
08:15 AM	0	2	0	0	2	1	8	2	1	11	0	3	0	0	3	1	1	0	0	2	1	18	19
08:30 AM	2	2	1	1	5	2	8	1	1	11	1	2	1	1	4	0	4	1	0	5	3	25	28
08:45 AM	0	1	4	3	5	5	7	0	0	12	1	3	1	1	5	2	3	1	0	6	4	28	32
Total	2	6	5	4	13	12	30	4	2	46	2	12	3	2	17	4	10	2	0	16	8	92	100
Grand Total	6	14	7	6	27	24	55	12	6	91	7	19	3	2	29	7	25	5	0	37	14	184	198
Apprch %	22.2	51.9	25.9			26.4	60.4	13.2			24.1	65.5	10.3			18.9	67.6	13.5					
Total %	3.3	7.6	3.8		14.7	13	29.9	6.5		49.5	3.8	10.3	1.6		15.8	3.8	13.6	2.7		20.1	7.1	92.9	

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	2	**1**	4	**6**	5	2	**13**	0	**4**	0	**4**	0	0	**1**	1	22
07:15 AM	0	1	0	1	2	4	**4**	10	1	1	0	2	**1**	**7**	1	**9**	22
07:30 AM	0	2	0	2	2	**8**	0	10	**2**	1	0	3	1	5	1	7	22
07:45 AM	**3**	**3**	1	**7**	2	8	2	12	2	1	0	3	1	3	0	4	**26**
Total Volume	4	8	2	14	12	25	8	45	5	7	0	12	3	15	3	21	92
% App. Total	28.6	57.1	14.3		26.7	55.6	17.8		41.7	58.3	0		14.3	71.4	14.3		
PHF	.333	.667	.500	.500	.500	.781	.500	.865	.625	.438	.000	.750	.750	.536	.750	.583	.885

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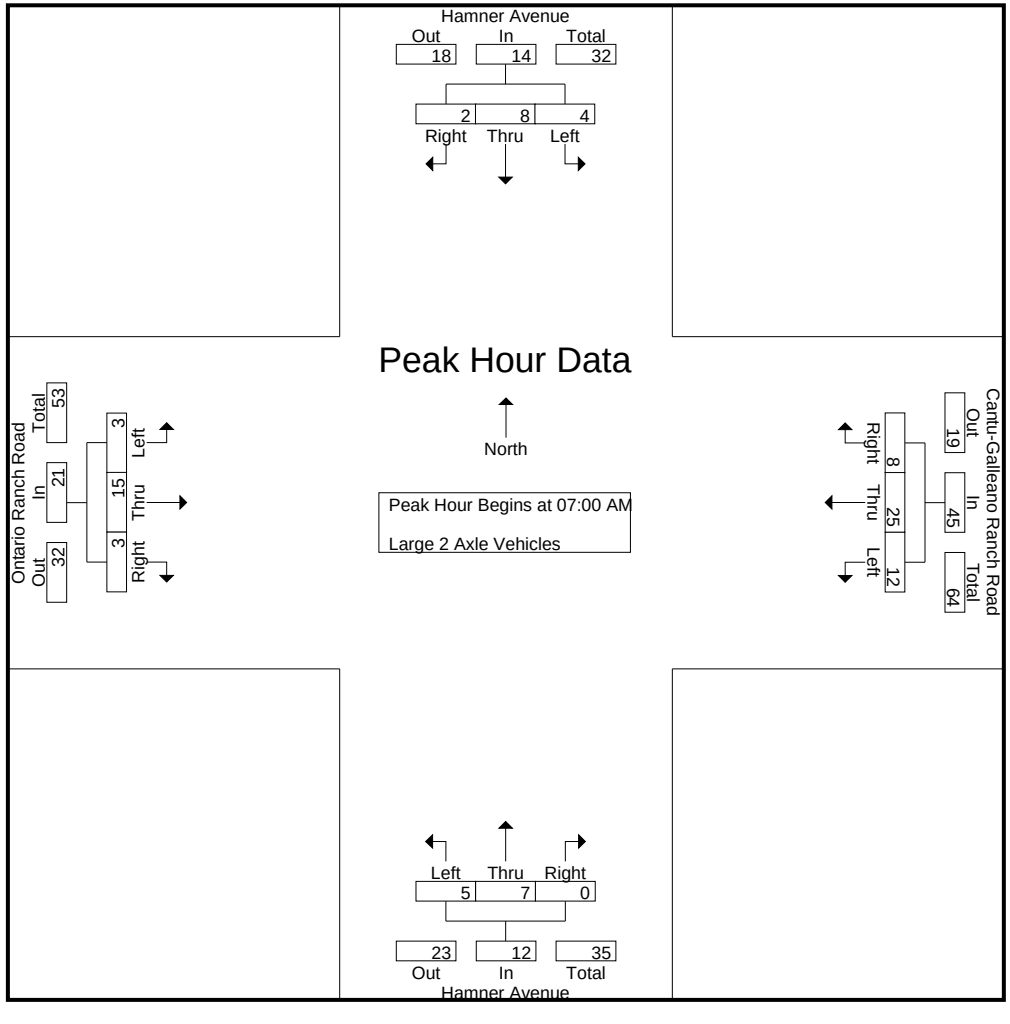
City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	1	2	**1**	4	**6**	5	2	**13**	0	**4**	0	**4**	0	0	**1**	1	
+15 mins.	0	1	0	1	2	4	**4**	10	1	1	0	2	**1**	**7**	1	**9**	
+30 mins.	0	2	0	2	2	**8**	0	10	**2**	1	0	3	1	5	1	7	
+45 mins.	**3**	**3**	1	**7**	2	8	2	12	2	1	0	3	1	3	0	4	
Total Volume	4	8	2	14	12	25	8	45	5	7	0	12	3	15	3	21	
% App. Total	28.6	57.1	14.3		26.7	55.6	17.8		41.7	58.3	0		14.3	71.4	14.3		
PHF	.333	.667	.500	.500	.500	.781	.500	.865	.625	.438	.000	.750	.750	.536	.750	.583	

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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	5	1	1	1	7	1	8	0	0	9	1	2	1	0	4	0	4	0	0	4	1	24	25
07:15 AM	1	0	0	0	1	4	2	1	0	7	0	1	0	0	1	0	5	0	0	5	0	14	14
07:30 AM	0	0	2	2	2	0	3	1	1	4	0	1	0	0	1	1	5	0	0	6	3	13	16
07:45 AM	0	1	1	0	2	0	8	0	0	8	1	0	2	0	3	0	4	0	0	4	0	17	17
Total	6	2	4	3	12	5	21	2	1	28	2	4	3	0	9	1	18	0	0	19	4	68	72
08:00 AM	0	1	0	0	1	3	4	1	0	8	0	1	0	0	1	0	2	1	0	3	0	13	13
08:15 AM	0	3	1	1	4	1	4	2	0	7	0	3	1	1	4	0	6	0	0	6	2	21	23
08:30 AM	2	0	1	1	3	3	9	0	0	12	0	0	1	1	1	1	3	0	0	4	2	20	22
08:45 AM	0	3	0	0	3	0	4	1	0	5	0	2	1	0	3	1	2	0	0	3	0	14	14
Total	2	7	2	2	11	7	21	4	0	32	0	6	3	2	9	2	13	1	0	16	4	68	72
Grand Total	8	9	6	5	23	12	42	6	1	60	2	10	6	2	18	3	31	1	0	35	8	136	144
Apprch %	34.8	39.1	26.1			20	70	10			11.1	55.6	33.3			8.6	88.6	2.9					
Total %	5.9	6.6	4.4		16.9	8.8	30.9	4.4		44.1	1.5	7.4	4.4		13.2	2.2	22.8	0.7		25.7	5.6	94.4	

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**5**	**1**	1	**7**	1	**8**	0	**9**	**1**	**2**	1	**4**	0	4	0	4	**24**
07:15 AM	1	0	0	1	**4**	2	**1**	7	0	1	0	1	0	**5**	0	5	14
07:30 AM	0	0	**2**	2	0	3	1	4	0	1	0	1	**1**	5	0	**6**	13
07:45 AM	0	1	1	2	0	8	0	8	1	0	**2**	3	0	4	0	4	17
Total Volume	6	2	4	12	5	21	2	28	2	4	3	9	1	18	0	19	68
% App. Total	50	16.7	33.3		17.9	75	7.1		22.2	44.4	33.3		5.3	94.7	0		
PHF	.300	.500	.500	.429	.313	.656	.500	.778	.500	.500	.375	.563	.250	.900	.000	.792	.708

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City of Ontario
N/S: Hamner Avenue
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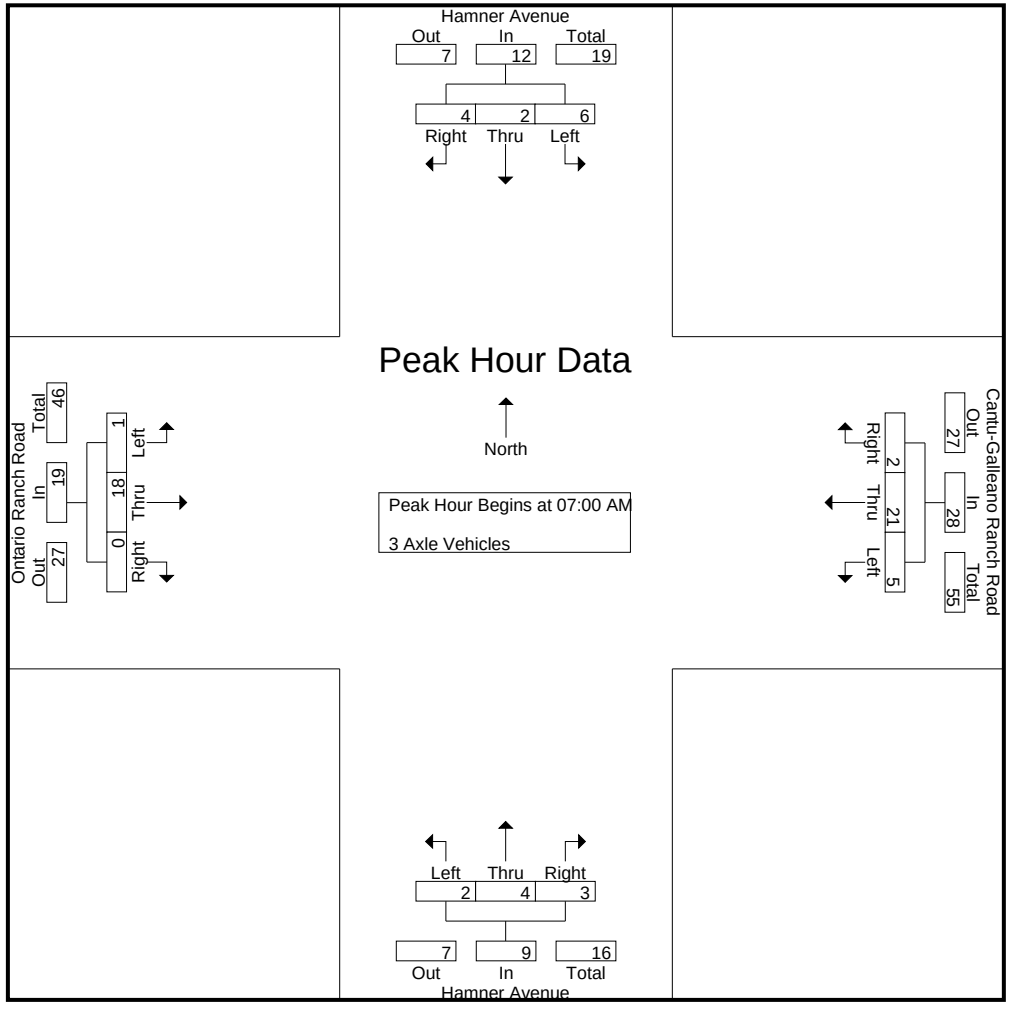
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	**5**	**1**	1	**7**	1	**8**	0	**9**	**1**	**2**	1	**4**	0	4	0	4	
+15 mins.	1	0	0	1	**4**	2	**1**	7	0	1	0	1	0	**5**	0	5	
+30 mins.	0	0	**2**	2	0	3	1	4	0	1	0	1	**1**	5	0	**6**	
+45 mins.	0	1	1	2	0	8	0	8	1	0	**2**	3	0	4	0	4	
Total Volume	6	2	4	12	5	21	2	28	2	4	3	9	1	18	0	19	
% App. Total	50	16.7	33.3		17.9	75	7.1		22.2	44.4	33.3		5.3	94.7	0		
PHF	.300	.500	.500	.429	.313	.656	.500	.778	.500	.500	.375	.563	.250	.900	.000	.792	

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Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	4	0	2	0	6	1	5	3	0	9	0	0	0	0	0	2	8	0	0	10	0	25	25
07:15 AM	5	1	3	2	9	3	13	1	1	17	0	0	2	0	2	0	12	0	0	12	3	40	43
07:30 AM	2	0	3	2	5	0	11	5	2	16	0	2	3	1	5	2	11	0	0	13	5	39	44
07:45 AM	3	0	5	0	8	0	7	4	2	11	9	1	0	0	10	0	10	1	0	11	2	40	42
Total	14	1	13	4	28	4	36	13	5	53	9	3	5	1	17	4	41	1	0	46	10	144	154
08:00 AM	3	1	1	0	5	1	7	7	2	15	0	0	0	0	0	3	13	0	0	16	2	36	38
08:15 AM	5	1	1	0	7	1	8	5	1	14	0	2	2	1	4	4	19	0	0	23	2	48	50
08:30 AM	5	2	2	0	9	0	15	7	1	22	0	2	0	0	2	1	9	0	0	10	1	43	44
08:45 AM	1	1	2	0	4	1	11	6	1	18	0	1	0	0	1	1	7	0	0	8	1	31	32
Total	14	5	6	0	25	3	41	25	5	69	0	5	2	1	7	9	48	0	0	57	6	158	164
Grand Total	28	6	19	4	53	7	77	38	10	122	9	8	7	2	24	13	89	1	0	103	16	302	318
Apprch %	52.8	11.3	35.8			5.7	63.1	31.1			37.5	33.3	29.2			12.6	86.4	1					
Total %	9.3	2	6.3		17.5	2.3	25.5	12.6		40.4	3	2.6	2.3		7.9	4.3	29.5	0.3		34.1	5	95	

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	4	0	2	6	1	5	3	9	0	0	0	0	**2**	8	0	10	25
07:15 AM	**5**	**1**	3	**9**	**3**	**13**	1	**17**	0	0	2	2	0	**12**	0	12	**40**
07:30 AM	2	0	3	5	0	11	**5**	16	0	**2**	**3**	5	2	11	0	**13**	39
07:45 AM	3	0	**5**	8	0	7	4	11	**9**	1	0	**10**	0	10	**1**	11	40
Total Volume	14	1	13	28	4	36	13	53	9	3	5	17	4	41	1	46	144
% App. Total	50	3.6	46.4		7.5	67.9	24.5		52.9	17.6	29.4		8.7	89.1	2.2		
PHF	.700	.250	.650	.778	.333	.692	.650	.779	.250	.375	.417	.425	.500	.854	.250	.885	.900

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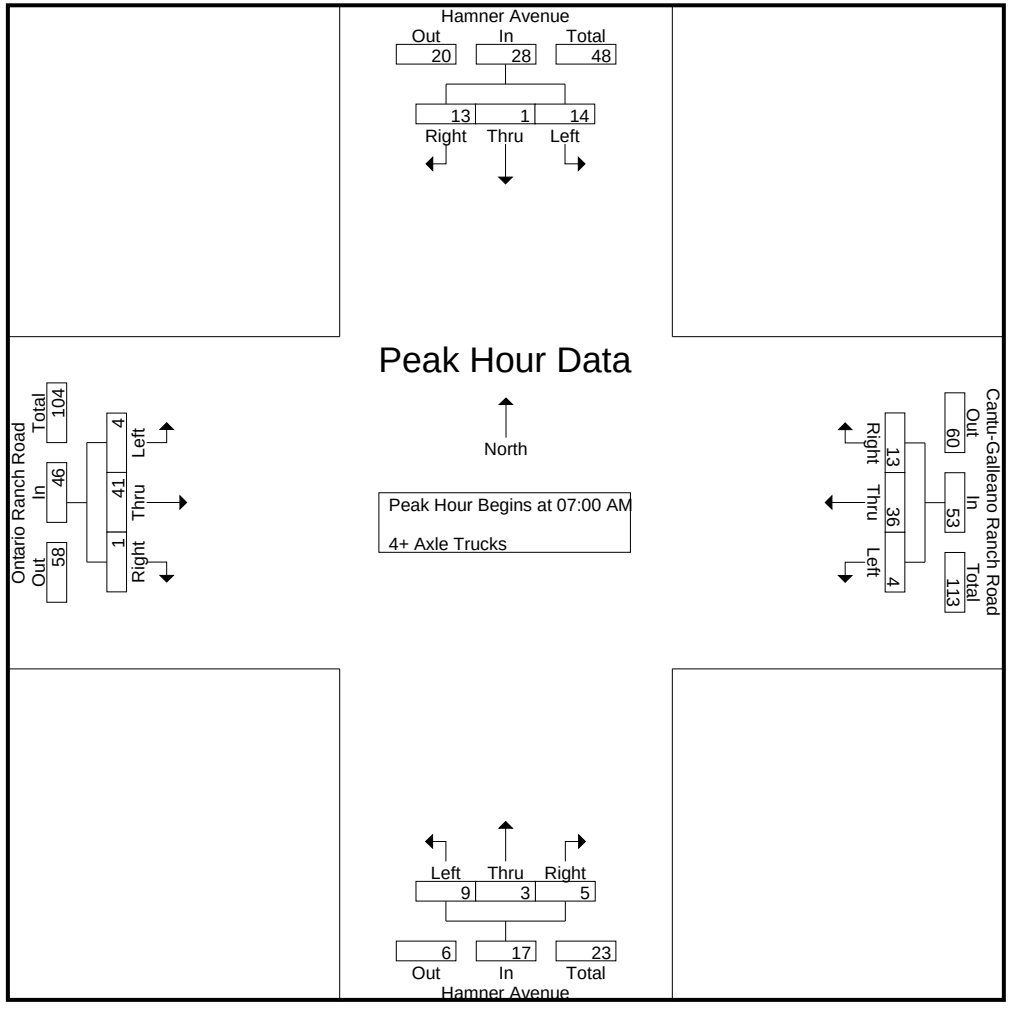
City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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File Name : 05_ONT_Ham_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	4	0	2	6	1	5	3	9	0	0	0	0	**2**	8	0	10	
+15 mins.	**5**	**1**	3	**9**	**3**	**13**	1	**17**	0	0	2	2	0	**12**	0	12	
+30 mins.	2	0	3	5	0	11	**5**	16	0	**2**	**3**	5	2	11	0	**13**	
+45 mins.	3	0	**5**	8	0	7	4	11	**9**	1	0	**10**	0	10	**1**	11	
Total Volume	14	1	13	28	4	36	13	53	9	3	5	17	4	41	1	46	
% App. Total	50	3.6	46.4		7.5	67.9	24.5		52.9	17.6	29.4		8.7	89.1	2.2		
PHF	.700	.250	.650	.778	.333	.692	.650	.779	.250	.375	.417	.425	.500	.854	.250	.885	

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File Name : 05_ONT_Ham_CGR PM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	55	96	14	0	165	72	82	40	18	194	64	123	53	21	240	19	172	43	3	234	42	833	875
04:15 PM	40	102	8	2	150	103	111	32	17	246	64	84	62	13	210	16	128	55	7	199	39	805	844
04:30 PM	57	124	14	4	195	87	90	33	12	210	72	119	68	17	259	21	119	41	9	181	42	845	887
04:45 PM	62	107	14	4	183	94	147	35	13	276	82	91	83	21	256	21	156	78	22	255	60	970	1030
Total	214	429	50	10	693	356	430	140	60	926	282	417	266	72	965	77	575	217	41	869	183	3453	3636
05:00 PM	46	120	27	10	193	78	140	29	14	247	60	62	77	25	199	28	147	51	10	226	59	865	924
05:15 PM	56	158	20	11	234	100	134	17	8	251	84	93	72	15	249	13	133	57	9	203	43	937	980
05:30 PM	58	111	16	14	185	94	144	43	28	281	70	99	57	19	226	24	153	65	13	242	74	934	1008
05:45 PM	57	156	36	11	249	100	149	20	5	269	54	98	54	22	206	14	146	72	15	232	53	956	1009
Total	217	545	99	46	861	372	567	109	55	1048	268	352	260	81	880	79	579	245	47	903	229	3692	3921
Grand Total	431	974	149	56	1554	728	997	249	115	1974	550	769	526	153	1845	156	1154	462	88	1772	412	7145	7557
Apprch %	27.7	62.7	9.6			36.9	50.5	12.6			29.8	41.7	28.5			8.8	65.1	26.1					
Total %	6	13.6	2.1		21.7	10.2	14	3.5		27.6	7.7	10.8	7.4		25.8	2.2	16.2	6.5		24.8	5.5	94.5	
Passenger Vehicles	402	963	129		1541	715	875	211		1902	543	750	514		1957	102	1070	456		1715	0	0	7115
% Passenger Vehicles	93.3	98.9	86.6	83.9	95.7	98.2	87.8	84.7	87.8	91	98.7	97.5	97.7	98	97.9	65.4	92.7	98.7	98.9	92.2	0	0	94.2
Large 2 Axle Vehicles	8	8	6		24	7	18	10		39	5	11	5		22	9	25	5		40	0	0	125
% Large 2 Axle Vehicles	1.9	0.8	4	3.6	1.5	1	1.8	4	3.5	1.9	0.9	1.4	1	0.7	1.1	5.8	2.2	1.1	1.1	2.2	0	0	1.7
3 Axle Vehicles	5	1	1		7	2	13	7		23	1	3	3		9	13	24	0		37	0	0	76
% 3 Axle Vehicles	1.2	0.1	0.7	0	0.4	0.3	1.3	2.8	0.9	1.1	0.2	0.4	0.6	1.3	0.5	8.3	2.1	0	0	2	0	0	1
4+ Axle Trucks	16	2	13		38	4	91	21		125	1	5	4		10	32	35	1		68	0	0	241
% 4+ Axle Trucks	3.7	0.2	8.7	12.5	2.4	0.5	9.1	8.4	7.8	6	0.2	0.7	0.8	0	0.5	20.5	3	0.2	0	3.7	0	0	3.2

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**62**	107	14	183	94	**147**	35	276	82	91	**83**	**256**	21	**156**	**78**	**255**	**970**
05:00 PM	46	120	**27**	193	78	140	29	247	60	62	77	199	**28**	147	51	226	865
05:15 PM	56	**158**	20	**234**	**100**	134	17	251	**84**	93	72	249	13	133	57	203	937
05:30 PM	58	111	16	185	94	144	**43**	**281**	70	**99**	57	226	24	153	65	242	934
Total Volume	222	496	77	795	366	565	124	1055	296	345	289	930	86	589	251	926	3706
% App. Total	27.9	62.4	9.7		34.7	53.6	11.8		31.8	37.1	31.1		9.3	63.6	27.1		
PHF	.895	.785	.713	.849	.915	.961	.721	.939	.881	.871	.870	.908	.768	.944	.804	.908	.955

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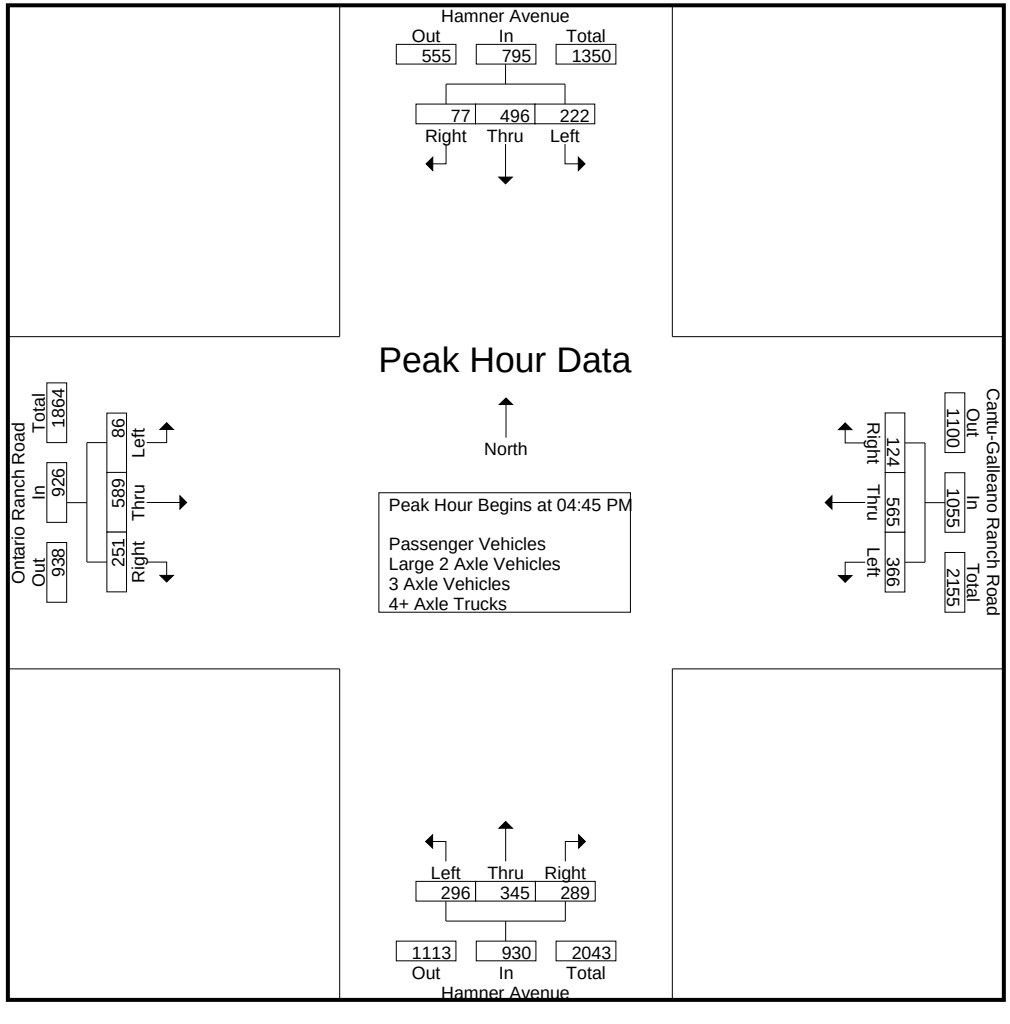

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	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				04:45 PM				04:00 PM				04:45 PM				
+0 mins.	46	120	27	193	94	**147**	35	276	64	**123**	53	240	21	**156**	**78**	**255**	
+15 mins.	56	**158**	20	234	78	140	29	247	64	84	62	210	**28**	147	51	226	
+30 mins.	**58**	111	16	185	**100**	134	17	251	72	119	68	**259**	13	133	57	203	
+45 mins.	57	156	**36**	**249**	94	144	**43**	**281**	**82**	91	**83**	256	24	153	65	242	
Total Volume	217	545	99	861	366	565	124	1055	282	417	266	965	86	589	251	926	
% App. Total	25.2	63.3	11.5		34.7	53.6	11.8		29.2	43.2	27.6		9.3	63.6	27.1		
PHF	.935	.862	.688	.864	.915	.961	.721	.939	.860	.848	.801	.931	.768	.944	.804	.908	

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Page No : 1

Groups Printed- Passenger Vehicles

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	51	94	11	0	156	72	70	33	17	175	62	121	53	21	236	14	162	43	3	219	41	786	827
04:15 PM	38	100	6	1	144	100	93	27	13	220	63	83	56	12	202	8	120	54	7	182	33	748	781
04:30 PM	53	124	12	3	189	84	77	29	11	190	72	115	67	16	254	13	107	40	9	160	39	793	832
04:45 PM	57	105	12	3	174	92	123	32	12	247	81	90	83	21	254	13	147	77	21	237	57	912	969
Total	199	423	41	7	663	348	363	121	53	832	278	409	259	70	946	48	536	214	40	798	170	3239	3409
05:00 PM	45	119	23	7	187	78	127	19	11	224	60	59	75	24	194	21	133	51	10	205	52	810	862
05:15 PM	52	156	19	10	227	99	118	15	7	232	82	91	72	15	245	8	120	55	9	183	41	887	928
05:30 PM	53	111	15	13	179	92	128	39	26	259	70	96	56	19	222	16	142	65	13	223	71	883	954
05:45 PM	53	154	31	10	238	98	139	17	4	254	53	95	52	22	200	9	139	71	15	219	51	911	962
Total	203	540	88	40	831	367	512	90	48	969	265	341	255	80	861	54	534	242	47	830	215	3491	3706
Grand Total	402	963	129	47	1494	715	875	211	101	1801	543	750	514	150	1807	102	1070	456	87	1628	385	6730	7115
Apprch %	26.9	64.5	8.6			39.7	48.6	11.7			30	41.5	28.4			6.3	65.7	28					
Total %	6	14.3	1.9		22.2	10.6	13	3.1		26.8	8.1	11.1	7.6		26.8	1.5	15.9	6.8		24.2	5.4	94.6	

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**57**	105	12	174	92	123	32	247	81	90	**83**	**254**	13	**147**	**77**	**237**	**912**
05:00 PM	45	119	**23**	187	78	127	19	224	60	59	75	194	**21**	133	51	205	810
05:15 PM	52	**156**	19	**227**	**99**	118	15	232	**82**	91	72	245	8	120	55	183	887
05:30 PM	53	111	15	179	92	**128**	**39**	**259**	70	**96**	56	222	16	142	65	223	883
Total Volume	207	491	69	767	361	496	105	962	293	336	286	915	58	542	248	848	3492
% App. Total	27	64	9		37.5	51.6	10.9		32	36.7	31.3		6.8	63.9	29.2		
PHF	.908	.787	.750	.845	.912	.969	.673	.929	.893	.875	.861	.901	.690	.922	.805	.895	.957

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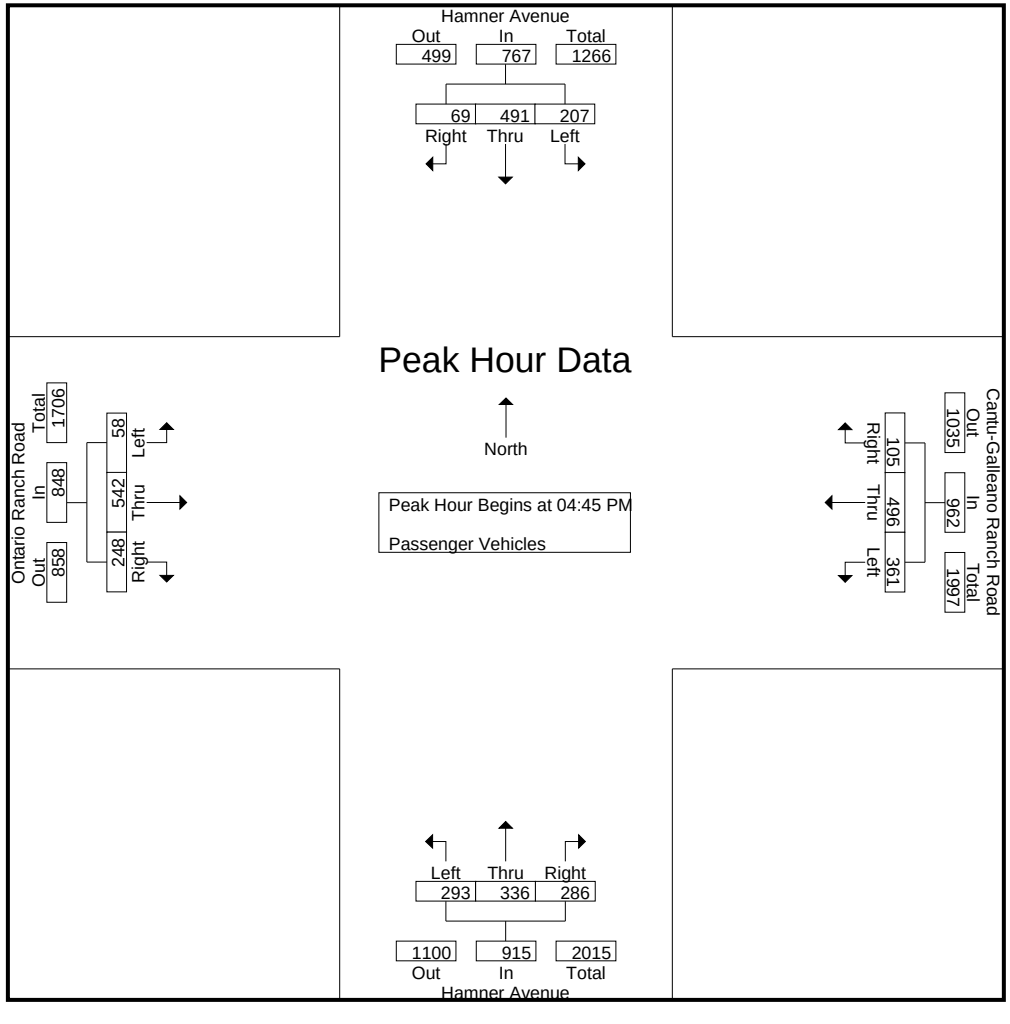

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	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:45 PM				04:45 PM				04:45 PM				04:45 PM				
+0 mins.	**57**	105	12	174	92	123	32	247	81	90	**83**	**254**	13	**147**	**77**	**237**	
+15 mins.	45	119	**23**	187	78	127	19	224	60	59	75	194	**21**	133	51	205	
+30 mins.	52	**156**	19	**227**	**99**	118	15	232	**82**	91	72	245	8	120	55	183	
+45 mins.	53	111	15	179	92	**128**	**39**	**259**	70	**96**	56	222	16	142	65	223	
Total Volume	207	491	69	767	361	496	105	962	293	336	286	915	58	542	248	848	
% App. Total	27	64	9		37.5	51.6	10.9		32	36.7	31.3		6.8	63.9	29.2		
PHF	.908	.787	.750	.845	.912	.969	.673	.929	.893	.875	.861	.901	.690	.922	.805	.895	

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Groups Printed- Large 2 Axle Vehicles

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	1	1	0	2	0	2	0	0	2	2	1	0	0	3	2	6	0	0	8	0	15	15
04:15 PM	0	2	1	1	3	3	3	2	2	8	1	1	3	0	5	1	2	1	0	4	3	20	23
04:30 PM	1	0	1	0	2	1	3	2	0	6	0	3	1	1	4	1	7	1	0	9	1	21	22
04:45 PM	2	2	1	0	5	1	2	1	0	4	1	0	0	0	1	0	3	1	1	4	1	14	15
Total	3	5	4	1	12	5	10	5	2	20	4	5	4	1	13	4	18	3	1	25	5	70	75
05:00 PM	1	1	1	1	3	0	2	2	1	4	0	1	0	0	1	2	2	0	0	4	2	12	14
05:15 PM	0	1	0	0	1	1	3	1	1	5	1	1	0	0	2	1	1	1	0	3	1	11	12
05:30 PM	3	0	0	0	3	0	2	1	0	3	0	2	0	0	2	1	2	0	0	3	0	11	11
05:45 PM	1	1	1	0	3	1	1	1	0	3	0	2	1	0	3	1	2	1	0	4	0	13	13
Total	5	3	2	1	10	2	8	5	2	15	1	6	1	0	8	5	7	2	0	14	3	47	50
Grand Total	8	8	6	2	22	7	18	10	4	35	5	11	5	1	21	9	25	5	1	39	8	117	125
Apprch %	36.4	36.4	27.3			20	51.4	28.6			23.8	52.4	23.8			23.1	64.1	12.8					
Total %	6.8	6.8	5.1		18.8	6	15.4	8.5		29.9	4.3	9.4	4.3		17.9	7.7	21.4	4.3		33.3	6.4	93.6	

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	**2**	**1**	**5**	**1**	2	1	4	**1**	0	0	1	0	**3**	**1**	**4**	**14**
05:00 PM	1	1	1	3	0	2	**2**	4	0	1	0	1	**2**	2	0	4	12
05:15 PM	0	1	0	1	1	**3**	1	**5**	1	1	0	**2**	1	1	1	3	11
05:30 PM	**3**	0	0	3	0	2	1	3	0	**2**	0	2	1	2	0	3	11
Total Volume	6	4	2	12	2	9	5	16	2	4	0	6	4	8	2	14	48
% App. Total	50	33.3	16.7		12.5	56.2	31.2		33.3	66.7	0		28.6	57.1	14.3		
PHF	.500	.500	.500	.600	.500	.750	.625	.800	.500	.500	.000	.750	.500	.667	.500	.875	.857

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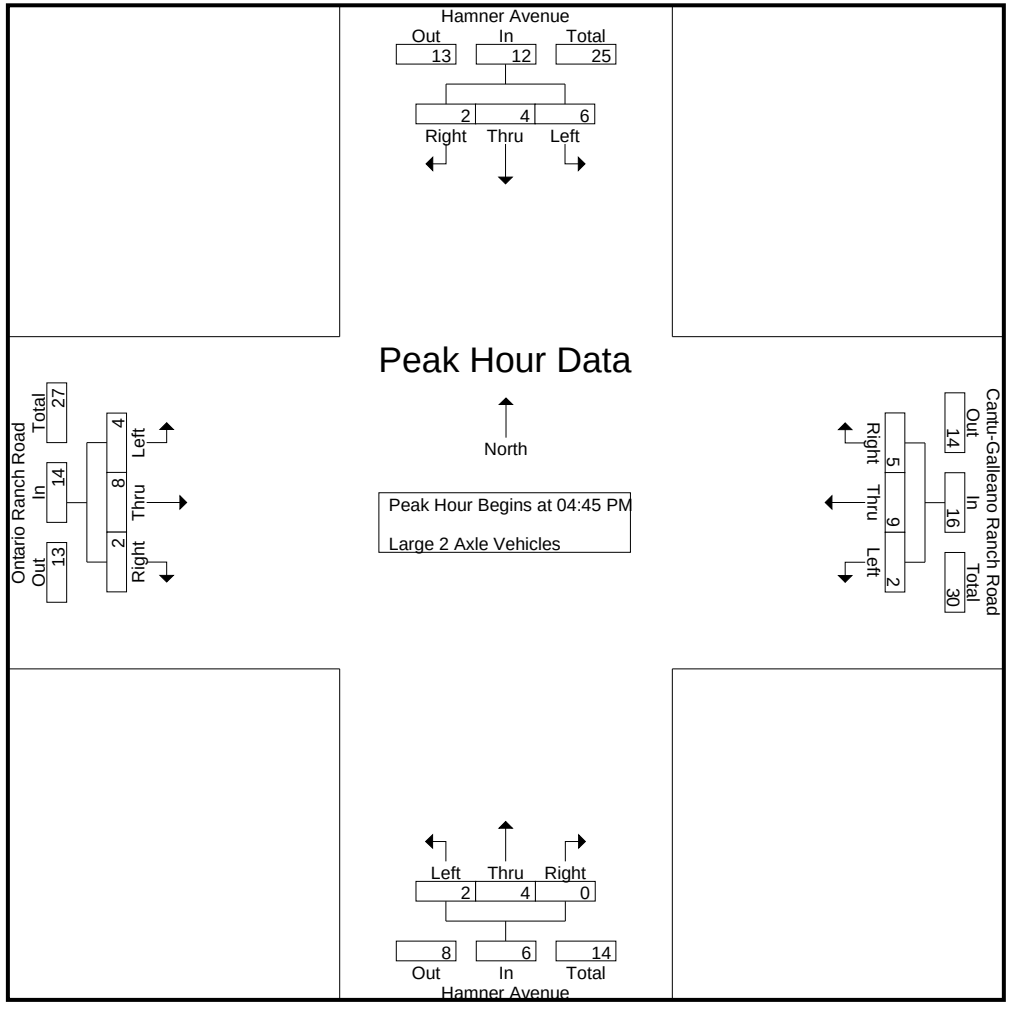

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File Name : 05_ONT_Ham_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:45 PM				04:45 PM				04:45 PM				04:45 PM				
+0 mins.	2	**2**	**1**	**5**	**1**	2	1	4	**1**	0	0	1	0	**3**	**1**	**4**	
+15 mins.	1	1	1	3	0	2	**2**	4	0	1	0	1	**2**	2	0	4	
+30 mins.	0	1	0	1	1	**3**	1	**5**	1	1	0	**2**	1	1	1	3	
+45 mins.	**3**	0	0	3	0	2	1	3	0	**2**	0	2	1	2	0	3	
Total Volume	6	4	2	12	2	9	5	16	2	4	0	6	4	8	2	14	
% App. Total	50	33.3	16.7		12.5	56.2	31.2		33.3	66.7	0		28.6	57.1	14.3		
PHF	.500	.500	.500	.600	.500	.750	.625	.800	.500	.500	.000	.750	.500	.667	.500	.875	

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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	0	0	0	1	0	1	3	0	4	0	0	0	0	0	2	2	0	0	4	0	9	9
04:15 PM	0	0	1	0	1	0	2	0	0	2	0	0	1	1	1	0	2	0	0	2	1	6	7
04:30 PM	1	0	0	0	1	0	2	0	0	2	0	1	0	0	1	1	2	0	0	3	0	7	7
04:45 PM	2	0	0	0	2	0	2	0	0	2	0	0	0	0	0	2	2	0	0	4	0	8	8
Total	4	0	1	0	5	0	7	3	0	10	0	1	1	1	2	5	8	0	0	13	1	30	31
05:00 PM	0	0	0	0	0	0	1	3	0	4	0	1	2	1	3	2	4	0	0	6	1	13	14
05:15 PM	1	1	0	0	2	0	0	0	0	0	1	0	0	0	1	3	4	0	0	7	0	10	10
05:30 PM	0	0	0	0	0	2	3	1	1	6	0	0	0	0	0	3	6	0	0	9	1	15	16
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	0	2	0	0	2	0	5	5
Total	1	1	0	0	2	2	6	4	1	12	1	2	2	1	5	8	16	0	0	24	2	43	45
Grand Total	5	1	1	0	7	2	13	7	1	22	1	3	3	2	7	13	24	0	0	37	3	73	76
Apprch %	71.4	14.3	14.3			9.1	59.1	31.8			14.3	42.9	42.9			35.1	64.9	0					
Total %	6.8	1.4	1.4		9.6	2.7	17.8	9.6		30.1	1.4	4.1	4.1		9.6	17.8	32.9	0		50.7	3.9	96.1	

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**2**	0	0	**2**	0	2	0	2	0	0	0	0	2	2	0	4	8
05:00 PM	0	0	0	0	0	1	**3**	4	0	**1**	**2**	**3**	2	4	0	6	13
05:15 PM	1	**1**	0	2	0	0	0	0	**1**	0	0	1	**3**	4	0	7	10
05:30 PM	0	0	0	0	**2**	**3**	1	**6**	0	0	0	0	3	**6**	0	**9**	**15**
Total Volume	3	1	0	4	2	6	4	12	1	1	2	4	10	16	0	26	46
% App. Total	75	25	0		16.7	50	33.3		25	25	50		38.5	61.5	0		
PHF	.375	.250	.000	.500	.250	.500	.333	.500	.250	.250	.250	.333	.833	.667	.000	.722	.767

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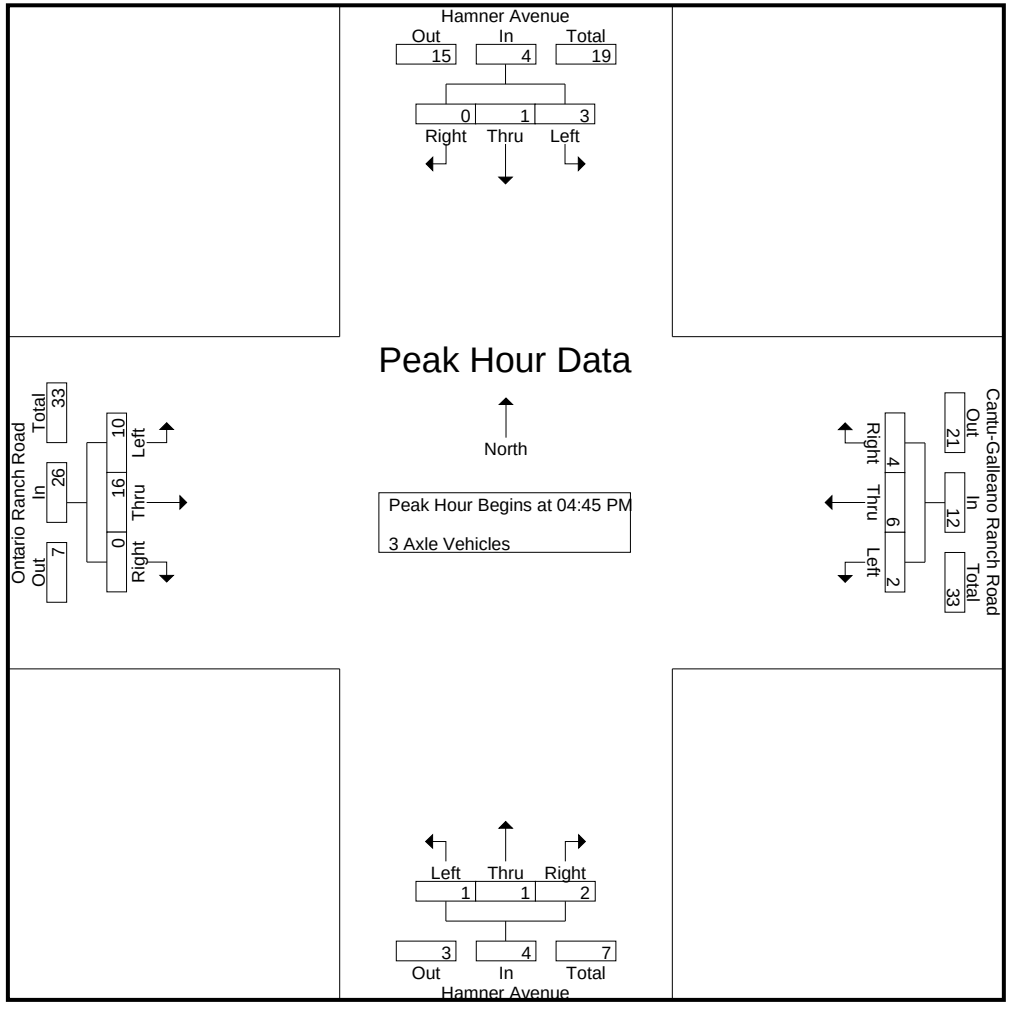
City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:45 PM				04:45 PM				04:45 PM				04:45 PM				
+0 mins.	**2**	0	0	**2**	0	2	0	2	0	0	0	0	2	2	0	4	
+15 mins.	0	0	0	0	0	1	**3**	4	0	**1**	**2**	**3**	2	4	0	6	
+30 mins.	1	**1**	0	2	0	0	0	0	**1**	0	0	1	**3**	4	0	7	
+45 mins.	0	0	0	0	**2**	**3**	1	**6**	0	0	0	0	3	**6**	0	**9**	
Total Volume	3	1	0	4	2	6	4	12	1	1	2	4	10	16	0	26	
% App. Total	75	25	0		16.7	50	33.3		25	25	50		38.5	61.5	0		
PHF	.375	.250	.000	.500	.250	.500	.333	.500	.250	.250	.250	.333	.833	.667	.000	.722	

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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	Hamner Avenue Southbound					Cantu-Galleano Ranch Road Westbound					Hamner Avenue Northbound					Ontario Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	3	1	2	0	6	0	9	4	1	13	0	1	0	0	1	1	2	0	0	3	1	23	24
04:15 PM	2	0	0	0	2	0	13	3	2	16	0	0	2	0	2	7	4	0	0	11	2	31	33
04:30 PM	2	0	1	1	3	2	8	2	1	12	0	0	0	0	0	6	3	0	0	9	2	24	26
04:45 PM	1	0	1	1	2	1	20	2	1	23	0	1	0	0	1	6	4	0	0	10	2	36	38
Total	8	1	4	2	13	3	50	11	5	64	0	2	2	0	4	20	13	0	0	33	7	114	121
05:00 PM	0	0	3	2	3	0	10	5	2	15	0	1	0	0	1	3	8	0	0	11	4	30	34
05:15 PM	3	0	1	1	4	0	13	1	0	14	0	1	0	0	1	1	8	1	0	10	1	29	30
05:30 PM	2	0	1	1	3	0	11	2	1	13	0	1	1	0	2	4	3	0	0	7	2	25	27
05:45 PM	3	1	4	1	8	1	7	2	1	10	1	0	1	0	2	4	3	0	0	7	2	27	29
Total	8	1	9	5	18	1	41	10	4	52	1	3	2	0	6	12	22	1	0	35	9	111	120
Grand Total	16	2	13	7	31	4	91	21	9	116	1	5	4	0	10	32	35	1	0	68	16	225	241
Apprch %	51.6	6.5	41.9			3.4	78.4	18.1			10	50	40			47.1	51.5	1.5					
Total %	7.1	0.9	5.8		13.8	1.8	40.4	9.3		51.6	0.4	2.2	1.8		4.4	14.2	15.6	0.4		30.2	6.6	93.4	

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	0	1	2	**1**	**20**	2	**23**	0	**1**	0	1	**6**	4	0	10	**36**
05:00 PM	0	0	**3**	3	0	10	**5**	15	0	1	0	1	3	**8**	0	**11**	30
05:15 PM	**3**	0	1	**4**	0	13	1	14	0	1	0	1	1	8	**1**	10	29
05:30 PM	2	0	1	3	0	11	2	13	0	1	**1**	**2**	4	3	0	7	25
Total Volume	6	0	6	12	1	54	10	65	0	4	1	5	14	23	1	38	120
% App. Total	50	0	50		1.5	83.1	15.4		0	80	20		36.8	60.5	2.6		
PHF	.500	.000	.500	.750	.250	.675	.500	.707	.000	1.00	.250	.625	.583	.719	.250	.864	.833

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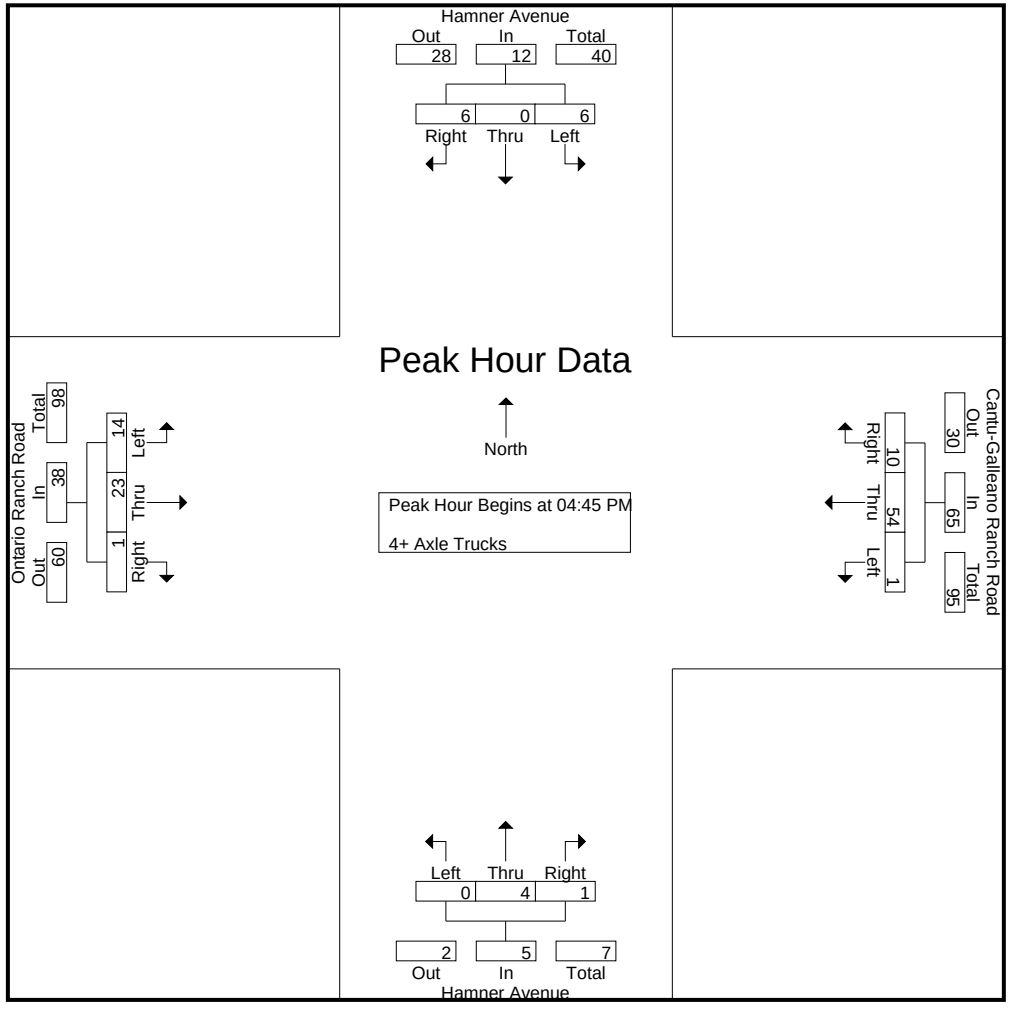
City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Hamner Avenue
E/W: Ontario Rnch Rd/Cantu-Galleano Rnch
Weather: Clear

File Name : 05_ONT_Ham_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	Hamner Avenue Southbound				Cantu-Galleano Ranch Road Westbound				Hamner Avenue Northbound				Ontario Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:45 PM				04:45 PM				04:45 PM				04:45 PM				
+0 mins.	1	0	1	2	**1**	**20**	2	**23**	0	**1**	0	1	**6**	4	0	10	
+15 mins.	0	0	**3**	3	0	10	**5**	15	0	1	0	1	3	**8**	0	**11**	
+30 mins.	**3**	0	1	**4**	0	13	1	14	0	1	0	1	1	8	**1**	10	
+45 mins.	2	0	1	3	0	11	2	13	0	1	**1**	**2**	4	3	0	7	
Total Volume	6	0	6	12	1	54	10	65	0	4	1	5	14	23	1	38	
% App. Total	50	0	50		1.5	83.1	15.4		0	80	20		36.8	60.5	2.6		
PHF	.500	.000	.500	.750	.250	.675	.500	.707	.000	1.000	.250	.625	.583	.719	.250	.864	

Location: Ontario
N/S: Hamner Avenue
E/W: Cantu-Galleano Ranch Rd

Date: 5/10/2022
Day: Tuesday

PEDESTRIANS

	North Leg Hamner Avenue	East Leg Cantu-Galleano Ranch Rd	South Leg Hamner Avenue	West Leg Ontario Ranch Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	1	0	0	1
TOTAL VOLUMES:	0	1	0	0	1

	North Leg Hamner Avenue	East Leg Cantu-Galleano Ranch Rd	South Leg Hamner Avenue	West Leg Ontario Ranch Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

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Location: Ontario
N/S: Hamner Avenue
E/W: Cantu-Galleano Ranch Rd

Date: 5/10/2022
Day: Tuesday

BICYCLES

	Southbound Hamner Avenue			Westbound Cantu-Galleano Ranch Rd			Northbound Hamner Avenue			Eastbound Ontario Ranch Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES:	0	0	1	0	0	0	0	2	0	0	0	0	3

	Southbound Hamner Avenue			Westbound Cantu-Galleano Ranch Rd			Northbound Hamner Avenue			Eastbound Ontario Ranch Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

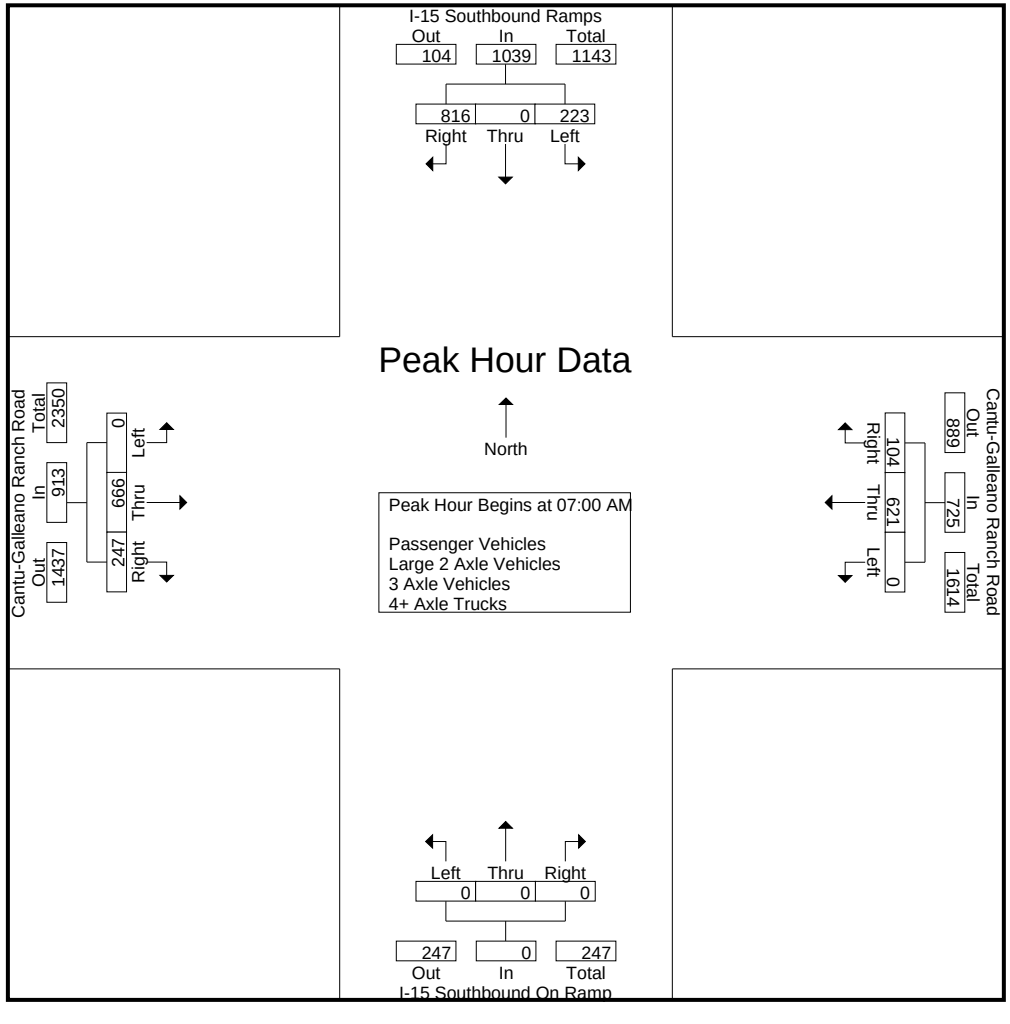
	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	49	0	244	72	293	0	179	27	0	206	0	0	0	0	0	0	159	52	0	211	72	710	782
07:15 AM	54	0	238	65	292	0	158	34	0	192	0	0	0	0	0	0	171	79	0	250	65	734	799
07:30 AM	49	0	174	61	223	0	127	22	0	149	0	0	0	0	0	0	186	51	0	237	61	609	670
07:45 AM	71	0	160	51	231	0	157	21	0	178	0	0	0	0	0	0	150	65	0	215	51	624	675
Total	223	0	816	249	1039	0	621	104	0	725	0	0	0	0	0	0	666	247	0	913	249	2677	2926
08:00 AM	80	0	203	73	283	0	125	22	0	147	0	0	0	0	0	0	131	56	0	187	73	617	690
08:15 AM	62	0	164	65	226	0	128	24	0	152	0	0	0	0	0	0	140	59	0	199	65	577	642
08:30 AM	47	0	204	71	251	0	109	22	0	131	0	0	0	0	0	0	132	54	0	186	71	568	639
08:45 AM	55	0	166	45	221	0	95	15	0	110	0	0	0	0	0	0	113	46	0	159	45	490	535
Total	244	0	737	254	981	0	457	83	0	540	0	0	0	0	0	0	516	215	0	731	254	2252	2506
Grand Total	467	0	1553	503	2020	0	1078	187	0	1265	0	0	0	0	0	0	1182	462	0	1644	503	4929	5432
Apprch %	23.1	0	76.9			0	85.2	14.8			0	0	0			0	71.9	28.1					
Total %	9.5	0	31.5		41	0	21.9	3.8		25.7	0	0	0		0	0	24	9.4		33.4	9.3	90.7	
Passenger Vehicles	414	0	1356		2222	0	981	113		1094	0	0	0		0	0	1028	369		1397	0	0	4713
% Passenger Vehicles	88.7	0	87.3	89.9	88.1	0	91	60.4	0	86.5	0	0	0	0	0	0	87	79.9	0	85	0	0	86.8
Large 2 Axle Vehicles	17	0	44		76	0	24	11		35	0	0	0		0	0	29	25		54	0	0	165
% Large 2 Axle Vehicles	3.6	0	2.8	3	3	0	2.2	5.9	0	2.8	0	0	0	0	0	0	2.5	5.4	0	3.3	0	0	3
3 Axle Vehicles	7	0	50		71	0	16	10		26	0	0	0		0	0	42	20		62	0	0	159
% 3 Axle Vehicles	1.5	0	3.2	2.8	2.8	0	1.5	5.3	0	2.1	0	0	0	0	0	0	3.6	4.3	0	3.8	0	0	2.9
4+ Axle Trucks	29	0	103		154	0	57	53		110	0	0	0		0	0	83	48		131	0	0	395
% 4+ Axle Trucks	6.2	0	6.6	4.4	6.1	0	5.3	28.3	0	8.7	0	0	0	0	0	0	7	10.4	0	8	0	0	7.3

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	49	0	**244**	**293**	0	**179**	27	**206**	0	0	0	0	0	159	52	211	710
07:15 AM	54	0	238	292	0	158	**34**	192	0	0	0	0	0	171	**79**	**250**	**734**
07:30 AM	49	0	174	223	0	127	22	149	0	0	0	0	0	**186**	51	237	609
07:45 AM	**71**	0	160	231	0	157	21	178	0	0	0	0	0	150	65	215	624
Total Volume	223	0	816	1039	0	621	104	725	0	0	0	0	0	666	247	913	2677
% App. Total	21.5	0	78.5		0	85.7	14.3		0	0	0		0	72.9	27.1		
PHF	.785	.000	.836	.887	.000	.867	.765	.880	.000	.000	.000	.000	.000	.895	.782	.913	.912

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	49	0	**244**	**293**	0	**179**	27	**206**	0	0	0	0	0	159	52	211	
+15 mins.	54	0	238	292	0	158	**34**	192	0	0	0	0	0	171	**79**	**250**	
+30 mins.	49	0	174	223	0	127	22	149	0	0	0	0	0	**186**	51	237	
+45 mins.	**71**	0	160	231	0	157	21	178	0	0	0	0	0	150	65	215	
Total Volume	223	0	816	1039	0	621	104	725	0	0	0	0	0	666	247	913	
% App. Total	21.5	0	78.5		0	85.7	14.3		0	0	0		0	72.9	27.1		
PHF	.785	.000	.836	.887	.000	.867	.765	.880	.000	.000	.000	.000	.000	.895	.782	.913	

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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Passenger Vehicles

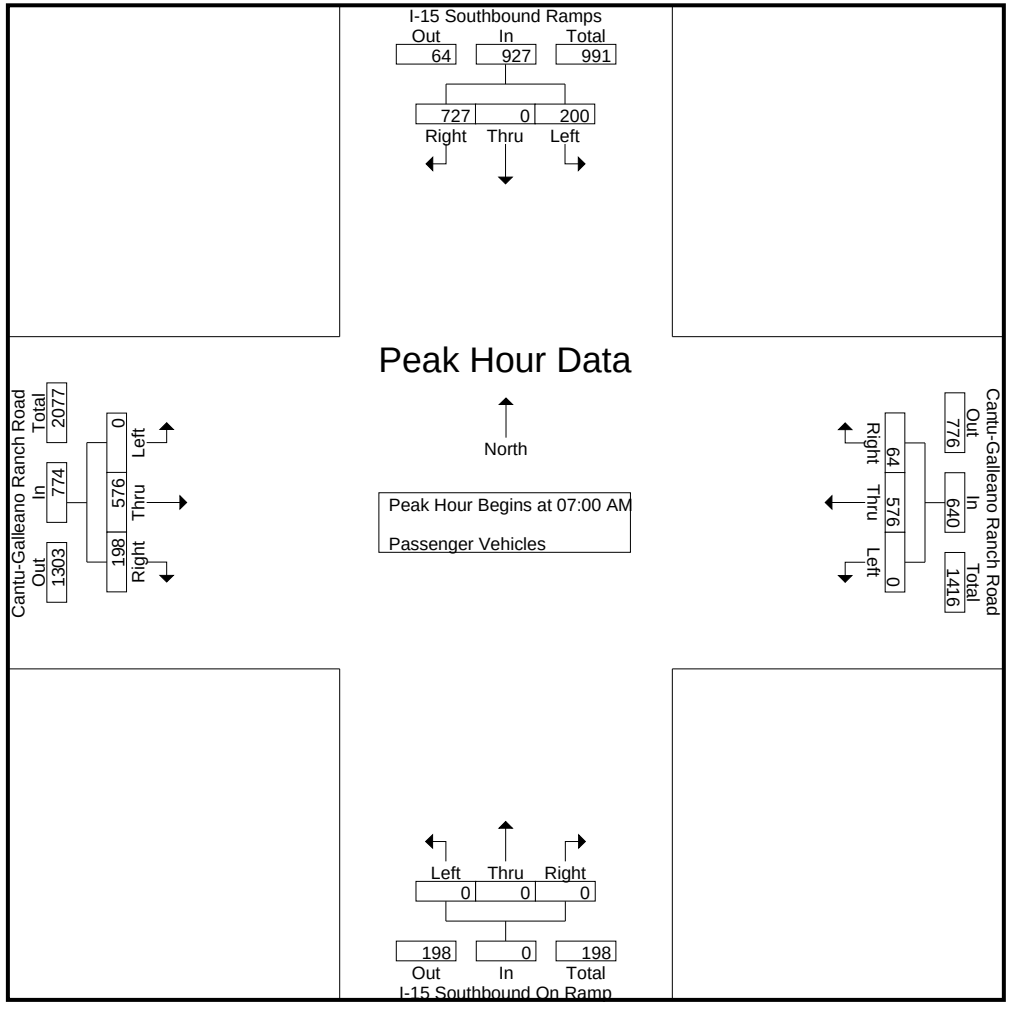
	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	44	0	222	67	266	0	168	17	0	185	0	0	0	0	0	0	137	39	0	176	67	627	694
07:15 AM	46	0	211	58	257	0	150	24	0	174	0	0	0	0	0	0	143	63	0	206	58	637	695
07:30 AM	43	0	151	54	194	0	116	11	0	127	0	0	0	0	0	0	164	42	0	206	54	527	581
07:45 AM	67	0	143	47	210	0	142	12	0	154	0	0	0	0	0	0	132	54	0	186	47	550	597
Total	200	0	727	226	927	0	576	64	0	640	0	0	0	0	0	0	576	198	0	774	226	2341	2567
08:00 AM	77	0	175	64	252	0	110	12	0	122	0	0	0	0	0	0	116	47	0	163	64	537	601
08:15 AM	51	0	141	58	192	0	119	16	0	135	0	0	0	0	0	0	120	43	0	163	58	490	548
08:30 AM	38	0	174	63	212	0	90	14	0	104	0	0	0	0	0	0	111	44	0	155	63	471	534
08:45 AM	48	0	139	41	187	0	86	7	0	93	0	0	0	0	0	0	105	37	0	142	41	422	463
Total	214	0	629	226	843	0	405	49	0	454	0	0	0	0	0	0	452	171	0	623	226	1920	2146
Grand Total	414	0	1356	452	1770	0	981	113	0	1094	0	0	0	0	0	0	1028	369	0	1397	452	4261	4713
Apprch %	23.4	0	76.6			0	89.7	10.3			0	0	0			0	73.6	26.4					
Total %	9.7	0	31.8		41.5	0	23	2.7		25.7	0	0	0		0	0	24.1	8.7		32.8	9.6	90.4	

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	44	0	**222**	**266**	0	**168**	17	**185**	0	0	0	0	0	137	39	176	627
07:15 AM	46	0	211	257	0	150	**24**	174	0	0	0	0	0	143	**63**	**206**	**637**
07:30 AM	43	0	151	194	0	116	11	127	0	0	0	0	0	**164**	42	206	527
07:45 AM	**67**	0	143	210	0	142	12	154	0	0	0	0	0	132	54	186	550
Total Volume	200	0	727	927	0	576	64	640	0	0	0	0	0	576	198	774	2341
% App. Total	21.6	0	78.4		0	90	10		0	0	0		0	74.4	25.6		
PHF	.746	.000	.819	.871	.000	.857	.667	.865	.000	.000	.000	.000	.000	.878	.786	.939	.919

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	44	0	**222**	**266**	0	**168**	17	**185**	0	0	0	0	0	137	39	176	
+15 mins.	46	0	211	257	0	150	**24**	174	0	0	0	0	0	143	**63**	**206**	
+30 mins.	43	0	151	194	0	116	11	127	0	0	0	0	0	**164**	42	206	
+45 mins.	**67**	0	143	210	0	142	12	154	0	0	0	0	0	132	54	186	
Total Volume	200	0	727	927	0	576	64	640	0	0	0	0	0	576	198	774	
% App. Total	21.6	0	78.4		0	90	10		0	0	0		0	74.4	25.6		
PHF	.746	.000	.819	.871	.000	.857	.667	.865	.000	.000	.000	.000	.000	.878	.786	.939	

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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

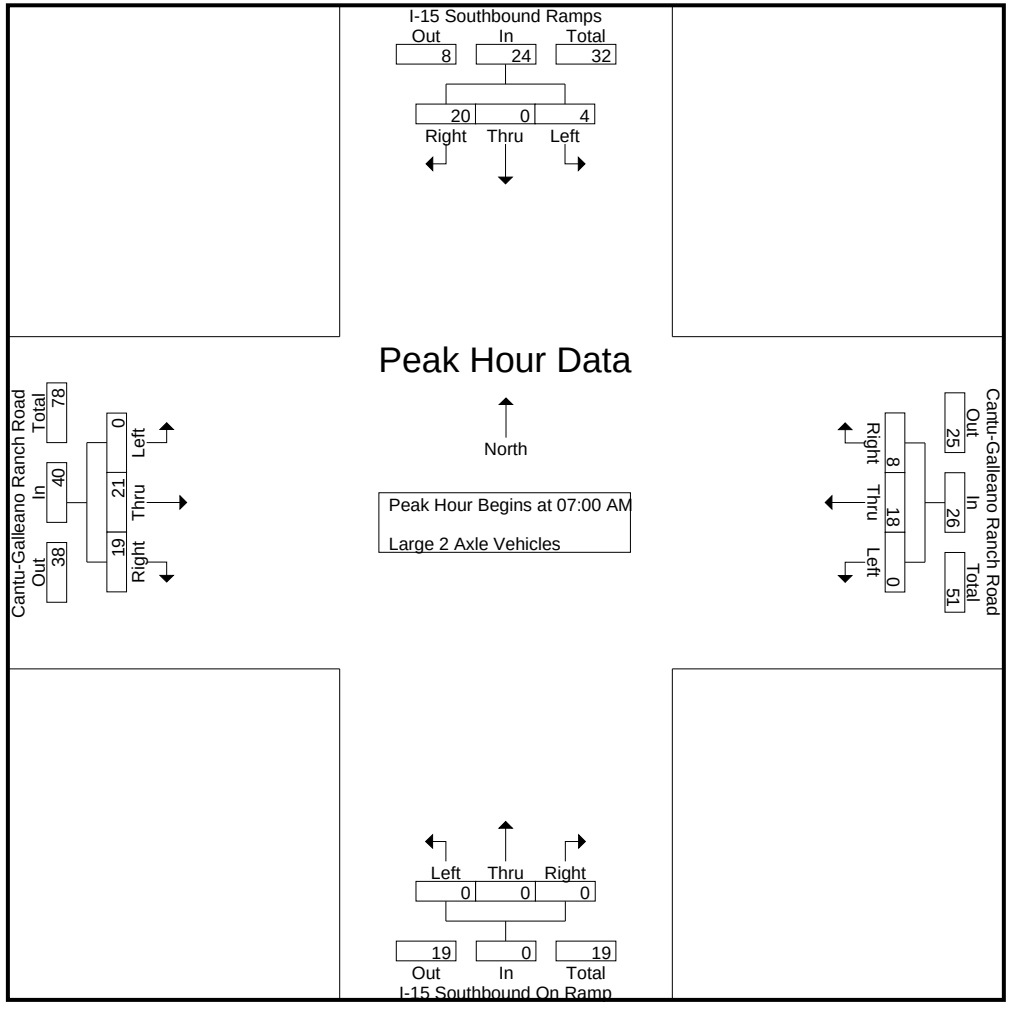
	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	1	0	7	3	8	0	5	3	0	8	0	0	0	0	0	0	6	5	0	11	3	27	30
07:15 AM	1	0	5	2	6	0	4	1	0	5	0	0	0	0	0	0	7	6	0	13	2	24	26
07:30 AM	1	0	4	1	5	0	5	2	0	7	0	0	0	0	0	0	5	4	0	9	1	21	22
07:45 AM	1	0	4	1	5	0	4	2	0	6	0	0	0	0	0	0	3	4	0	7	1	18	19
Total	4	0	20	7	24	0	18	8	0	26	0	0	0	0	0	0	21	19	0	40	7	90	97
08:00 AM	2	0	7	2	9	0	2	1	0	3	0	0	0	0	0	0	2	1	0	3	2	15	17
08:15 AM	3	0	6	2	9	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	11	13
08:30 AM	7	0	6	4	13	0	2	1	0	3	0	0	0	0	0	0	3	2	0	5	4	21	25
08:45 AM	1	0	5	0	6	0	1	1	0	2	0	0	0	0	0	0	2	3	0	5	0	13	13
Total	13	0	24	8	37	0	6	3	0	9	0	0	0	0	0	0	8	6	0	14	8	60	68
Grand Total	17	0	44	15	61	0	24	11	0	35	0	0	0	0	0	0	29	25	0	54	15	150	165
Apprch %	27.9	0	72.1			0	68.6	31.4			0	0	0			0	53.7	46.3					
Total %	11.3	0	29.3		40.7	0	16	7.3		23.3	0	0	0		0	0	19.3	16.7		36	9.1	90.9	

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**1**	0	**7**	**8**	0	**5**	**3**	**8**	0	0	0	0	0	6	5	11	**27**
07:15 AM	1	0	5	6	0	4	1	5	0	0	0	0	0	**7**	**6**	**13**	24
07:30 AM	1	0	4	5	0	5	2	7	0	0	0	0	0	5	4	9	21
07:45 AM	1	0	4	5	0	4	2	6	0	0	0	0	0	3	4	7	18
Total Volume	4	0	20	24	0	18	8	26	0	0	0	0	0	21	19	40	90
% App. Total	16.7	0	83.3		0	69.2	30.8		0	0	0		0	52.5	47.5		
PHF	1.00	.000	.714	.750	.000	.900	.667	.813	.000	.000	.000	.000	.000	.750	.792	.769	.833

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	**1**	0	**7**	**8**	0	**5**	**3**	**8**	0	0	0	0	0	6	5	11	
+15 mins.	1	0	5	6	0	4	1	5	0	0	0	0	0	**7**	**6**	**13**	
+30 mins.	1	0	4	5	0	5	2	7	0	0	0	0	0	5	4	9	
+45 mins.	1	0	4	5	0	4	2	6	0	0	0	0	0	3	4	7	
Total Volume	4	0	20	24	0	18	8	26	0	0	0	0	0	21	19	40	
% App. Total	16.7	0	83.3		0	69.2	30.8		0	0	0		0	52.5	47.5		
PHF	1.000	.000	.714	.750	.000	.900	.667	.813	.000	.000	.000	.000	.000	.750	.792	.769	

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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	1	0	7	1	8	0	0	1	0	1	0	0	0	0	0	0	7	5	0	12	1	21	22
07:15 AM	2	0	6	1	8	0	0	0	0	0	0	0	0	0	0	0	9	3	0	12	1	20	21
07:30 AM	1	0	4	1	5	0	1	1	0	2	0	0	0	0	0	0	6	1	0	7	1	14	15
07:45 AM	1	0	3	3	4	0	6	2	0	8	0	0	0	0	0	0	6	0	0	6	3	18	21
Total	5	0	20	6	25	0	7	4	0	11	0	0	0	0	0	0	28	9	0	37	6	73	79
08:00 AM	0	0	7	5	7	0	4	0	0	4	0	0	0	0	0	0	2	2	0	4	5	15	20
08:15 AM	1	0	8	1	9	0	1	3	0	4	0	0	0	0	0	0	4	2	0	6	1	19	20
08:30 AM	0	0	11	2	11	0	3	3	0	6	0	0	0	0	0	0	7	3	0	10	2	27	29
08:45 AM	1	0	4	0	5	0	1	0	0	1	0	0	0	0	0	0	1	4	0	5	0	11	11
Total	2	0	30	8	32	0	9	6	0	15	0	0	0	0	0	0	14	11	0	25	8	72	80
Grand Total	7	0	50	14	57	0	16	10	0	26	0	0	0	0	0	0	42	20	0	62	14	145	159
Apprch %	12.3	0	87.7			0	61.5	38.5			0	0	0			0	67.7	32.3					
Total %	4.8	0	34.5		39.3	0	11	6.9		17.9	0	0	0		0	0	29	13.8		42.8	8.8	91.2	

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	0	**7**	**8**	0	0	1	1	0	0	0	0	0	7	**5**	**12**	**21**
07:15 AM	**2**	0	6	8	0	0	0	0	0	0	0	0	0	**9**	3	12	20
07:30 AM	1	0	4	5	0	1	1	2	0	0	0	0	0	6	1	7	14
07:45 AM	1	0	3	4	0	**6**	**2**	**8**	0	0	0	0	0	6	0	6	18
Total Volume	5	0	20	25	0	7	4	11	0	0	0	0	0	28	9	37	73
% App. Total	20	0	80		0	63.6	36.4		0	0	0		0	75.7	24.3		
PHF	.625	.000	.714	.781	.000	.292	.500	.344	.000	.000	.000	.000	.000	.778	.450	.771	.869

Counts Unlimited, Inc.
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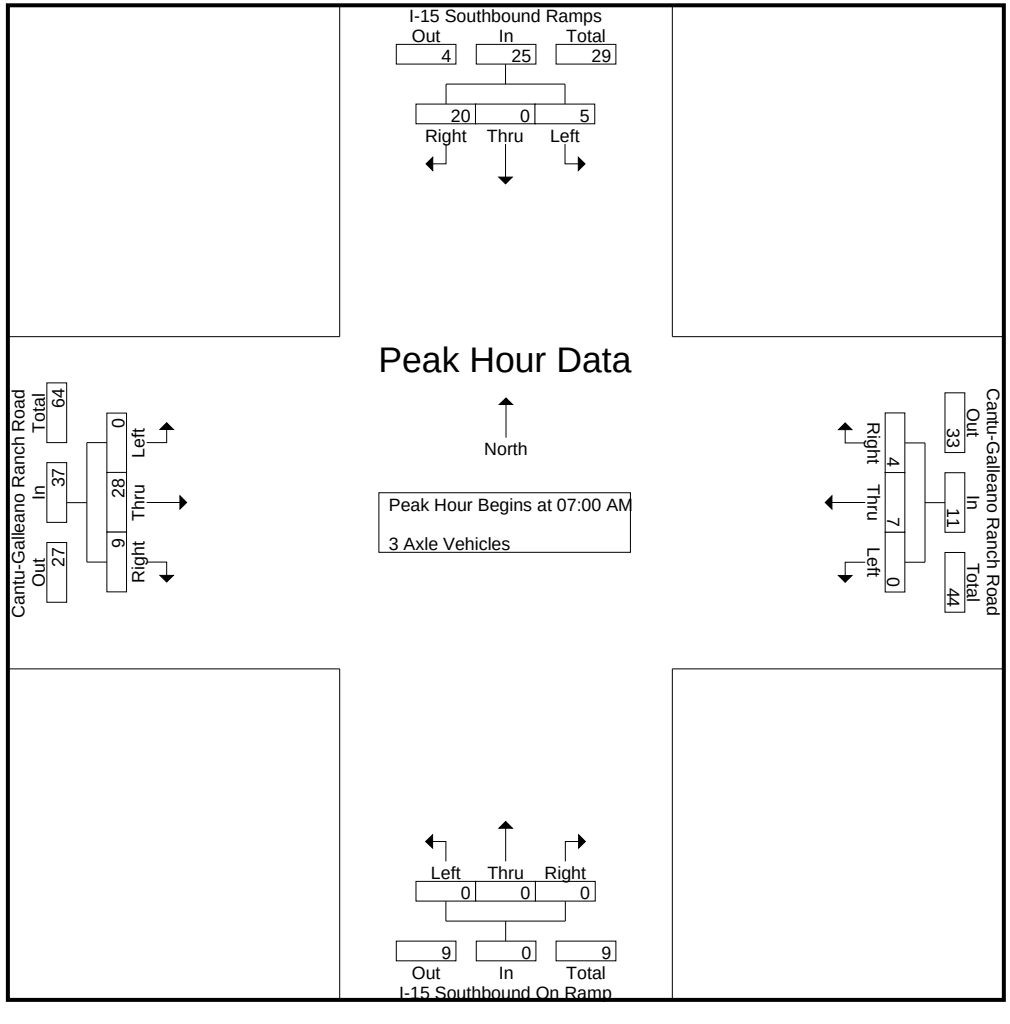
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	1	0	**7**	**8**	0	0	1	1	0	0	0	0	0	7	**5**	**12**	
+15 mins.	**2**	0	6	8	0	0	0	0	0	0	0	0	0	**9**	3	12	
+30 mins.	1	0	4	5	0	1	1	2	0	0	0	0	0	6	1	7	
+45 mins.	1	0	3	4	0	**6**	**2**	**8**	0	0	0	0	0	6	0	6	
Total Volume	5	0	20	25	0	7	4	11	0	0	0	0	0	28	9	37	
% App. Total	20	0	80		0	63.6	36.4		0	0	0		0	75.7	24.3		
PHF	.625	.000	.714	.781	.000	.292	.500	.344	.000	.000	.000	.000	.000	.778	.450	.771	

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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	3	0	8	1	11	0	6	6	0	12	0	0	0	0	0	0	9	3	0	12	1	35	36
07:15 AM	5	0	16	4	21	0	4	9	0	13	0	0	0	0	0	0	12	7	0	19	4	53	57
07:30 AM	4	0	15	5	19	0	5	8	0	13	0	0	0	0	0	0	11	4	0	15	5	47	52
07:45 AM	2	0	10	0	12	0	5	5	0	10	0	0	0	0	0	0	9	7	0	16	0	38	38
Total	14	0	49	10	63	0	20	28	0	48	0	0	0	0	0	0	41	21	0	62	10	173	183
08:00 AM	1	0	14	2	15	0	9	9	0	18	0	0	0	0	0	0	11	6	0	17	2	50	52
08:15 AM	7	0	9	4	16	0	7	5	0	12	0	0	0	0	0	0	15	14	0	29	4	57	61
08:30 AM	2	0	13	2	15	0	14	4	0	18	0	0	0	0	0	0	11	5	0	16	2	49	51
08:45 AM	5	0	18	4	23	0	7	7	0	14	0	0	0	0	0	0	5	2	0	7	4	44	48
Total	15	0	54	12	69	0	37	25	0	62	0	0	0	0	0	0	42	27	0	69	12	200	212
Grand Total	29	0	103	22	132	0	57	53	0	110	0	0	0	0	0	0	83	48	0	131	22	373	395
Apprch %	22	0	78			0	51.8	48.2			0	0	0			0	63.4	36.6					
Total %	7.8	0	27.6		35.4	0	15.3	14.2		29.5	0	0	0		0	0	22.3	12.9		35.1	5.6	94.4	

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	3	0	8	11	0	**6**	6	12	0	0	0	0	0	9	3	12	35
07:15 AM	**5**	0	**16**	**21**	0	4	**9**	**13**	0	0	0	0	0	**12**	**7**	**19**	**53**
07:30 AM	4	0	15	19	0	5	8	13	0	0	0	0	0	11	4	15	47
07:45 AM	2	0	10	12	0	5	5	10	0	0	0	0	0	9	7	16	38
Total Volume	14	0	49	63	0	20	28	48	0	0	0	0	0	41	21	62	173
% App. Total	22.2	0	77.8		0	41.7	58.3		0	0	0		0	66.1	33.9		
PHF	.700	.000	.766	.750	.000	.833	.778	.923	.000	.000	.000	.000	.000	.854	.750	.816	.816

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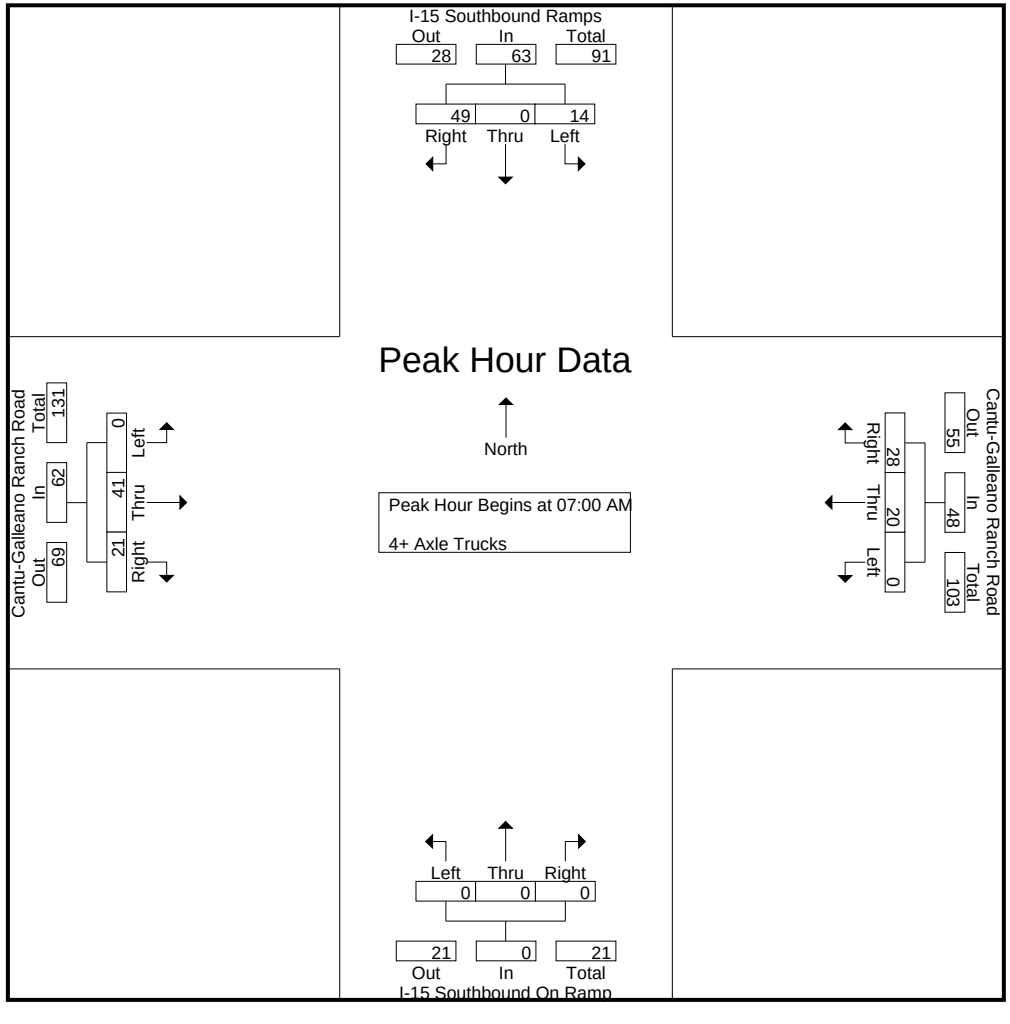
City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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File Name : 06_ONT_15S_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	3	0	8	11	0	**6**	6	12	0	0	0	0	0	9	3	12	
+15 mins.	**5**	0	**16**	**21**	0	4	**9**	**13**	0	0	0	0	0	**12**	**7**	**19**	
+30 mins.	4	0	15	19	0	5	8	13	0	0	0	0	0	11	4	15	
+45 mins.	2	0	10	12	0	5	5	10	0	0	0	0	0	9	7	16	
Total Volume	14	0	49	63	0	20	28	48	0	0	0	0	0	41	21	62	
% App. Total	22.2	0	77.8		0	41.7	58.3		0	0	0		0	66.1	33.9		
PHF	.700	.000	.766	.750	.000	.833	.778	.923	.000	.000	.000	.000	.000	.854	.750	.816	

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City of Ontario
N/S: I-15 Southbound Ramps
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Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	62	0	159	46	221	0	113	26	0	139	0	0	0	0	0	0	238	83	0	321	46	681	727
04:15 PM	80	0	212	64	292	0	83	23	0	106	0	0	0	0	0	0	202	54	0	256	64	654	718
04:30 PM	84	0	191	64	275	0	125	32	0	157	0	0	0	0	0	0	227	88	0	315	64	747	811
04:45 PM	77	0	257	75	334	0	118	19	0	137	0	0	0	0	0	0	249	43	0	292	75	763	838
Total	303	0	819	249	1122	0	439	100	0	539	0	0	0	0	0	0	916	268	0	1184	249	2845	3094
05:00 PM	58	0	231	49	289	0	126	45	0	171	0	0	0	0	0	0	243	72	0	315	49	775	824
05:15 PM	80	1	242	86	323	0	148	34	0	182	0	0	0	0	0	0	257	57	0	314	86	819	905
05:30 PM	55	0	286	72	341	0	143	22	0	165	0	0	0	0	0	0	253	119	0	372	72	878	950
05:45 PM	70	0	296	86	366	0	133	10	0	143	0	0	0	0	0	0	246	73	0	319	86	828	914
Total	263	1	1055	293	1319	0	550	111	0	661	0	0	0	0	0	0	999	321	0	1320	293	3300	3593
Grand Total	566	1	1874	542	2441	0	989	211	0	1200	0	0	0	0	0	0	1915	589	0	2504	542	6145	6687
Apprch %	23.2	0	76.8			0	82.4	17.6			0	0	0			0	76.5	23.5					
Total %	9.2	0	30.5		39.7	0	16.1	3.4		19.5	0	0	0		0	0	31.2	9.6		40.7	8.1	91.9	
Passenger Vehicles	518	1	1716		2749	0	924	176		1100	0	0	0		0	0	1785	576		2361	0	0	6210
% Passenger Vehicles	91.5	100	91.6	94.8	92.2	0	93.4	83.4	0	91.7	0	0	0	0	0	0	93.2	97.8	0	94.3	0	0	92.9
Large 2 Axle Vehicles	13	0	28		50	0	18	6		24	0	0	0		0	0	24	8		32	0	0	106
% Large 2 Axle Vehicles	2.3	0	1.5	1.7	1.7	0	1.8	2.8	0	2	0	0	0	0	0	0	1.3	1.4	0	1.3	0	0	1.6
3 Axle Vehicles	5	0	30		39	0	12	1		13	0	0	0		0	0	45	0		45	0	0	97
% 3 Axle Vehicles	0.9	0	1.6	0.7	1.3	0	1.2	0.5	0	1.1	0	0	0	0	0	0	2.3	0	0	1.8	0	0	1.5
4+ Axle Trucks	30	0	100		145	0	35	28		63	0	0	0		0	0	61	5		66	0	0	274
% 4+ Axle Trucks	5.3	0	5.3	2.8	4.9	0	3.5	13.3	0	5.2	0	0	0	0	0	0	3.2	0.8	0	2.6	0	0	4.1

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	58	0	231	289	0	126	**45**	171	0	0	0	0	0	243	72	315	775
05:15 PM	**80**	**1**	242	323	0	**148**	34	**182**	0	0	0	0	0	**257**	57	314	819
05:30 PM	55	0	286	341	0	143	22	165	0	0	0	0	0	253	**119**	**372**	**878**
05:45 PM	70	0	**296**	**366**	0	133	10	143	0	0	0	0	0	246	73	319	828
Total Volume	263	1	1055	1319	0	550	111	661	0	0	0	0	0	999	321	1320	3300
% App. Total	19.9	0.1	80		0	83.2	16.8		0	0	0		0	75.7	24.3		
PHF	.822	.250	.891	.901	.000	.929	.617	.908	.000	.000	.000	.000	.000	.972	.674	.887	.940

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City of Ontario
N/S: I-15 Southbound Ramps
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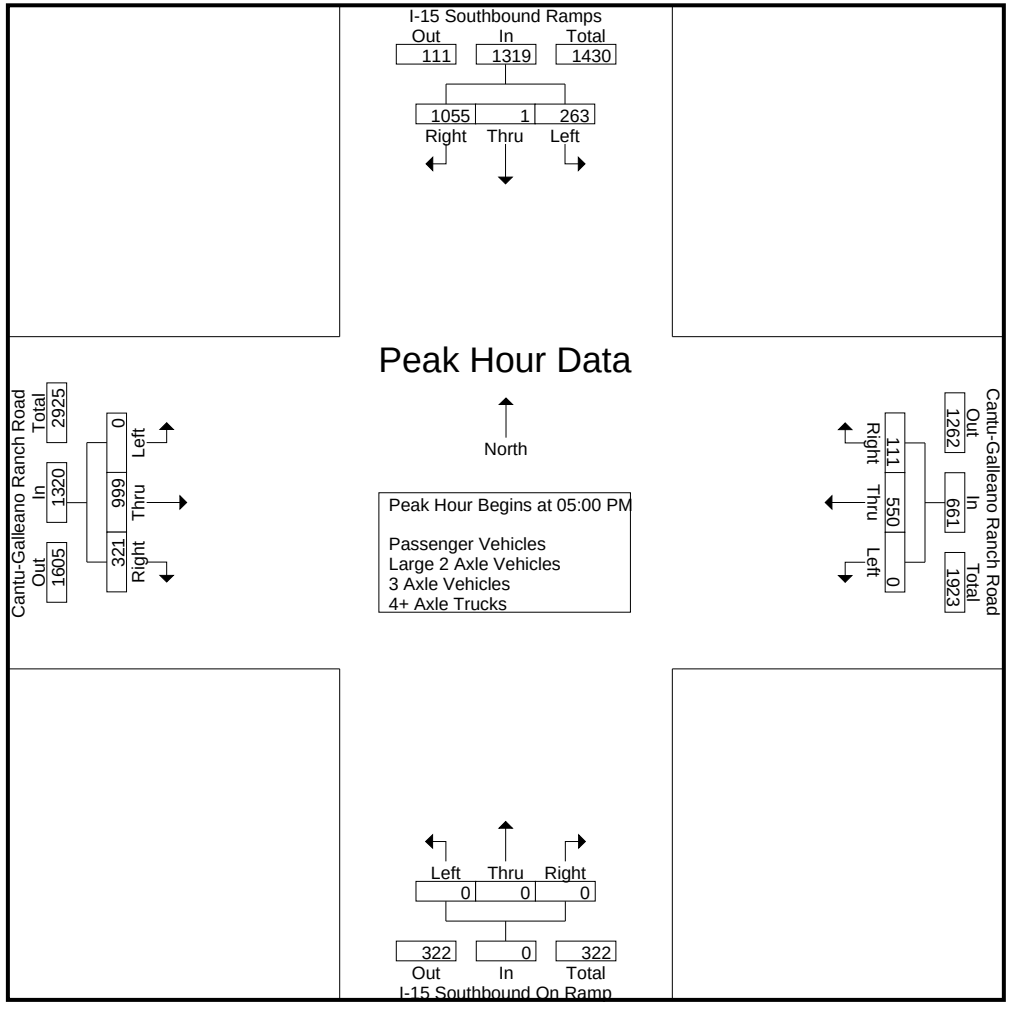
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				04:00 PM				05:00 PM				
+0 mins.	58	0	231	289	0	126	**45**	171	0	0	0	0	0	243	72	315	
+15 mins.	**80**	**1**	242	323	0	**148**	34	**182**	0	0	0	0	0	**257**	57	314	
+30 mins.	55	0	286	341	0	143	22	165	0	0	0	0	0	253	**119**	**372**	
+45 mins.	70	0	**296**	**366**	0	133	10	143	0	0	0	0	0	246	73	319	
Total Volume	263	1	1055	1319	0	550	111	661	0	0	0	0	0	999	321	1320	
% App. Total	19.9	0.1	80		0	83.2	16.8		0	0	0		0	75.7	24.3		
PHF	.822	.250	.891	.901	.000	.929	.617	.908	.000	.000	.000	.000	.000	.972	.674	.887	

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File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
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Groups Printed- Passenger Vehicles

	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	56	0	135	44	191	0	106	20	0	126	0	0	0	0	0	0	221	82	0	303	44	620	664
04:15 PM	73	0	199	62	272	0	74	15	0	89	0	0	0	0	0	0	185	53	0	238	62	599	661
04:30 PM	76	0	172	61	248	0	116	28	0	144	0	0	0	0	0	0	208	86	0	294	61	686	747
04:45 PM	70	0	230	70	300	0	112	18	0	130	0	0	0	0	0	0	237	41	0	278	70	708	778
Total	275	0	736	237	1011	0	408	81	0	489	0	0	0	0	0	0	851	262	0	1113	237	2613	2850
05:00 PM	55	0	213	42	268	0	113	41	0	154	0	0	0	0	0	0	230	71	0	301	42	723	765
05:15 PM	72	1	228	84	301	0	140	30	0	170	0	0	0	0	0	0	238	55	0	293	84	764	848
05:30 PM	52	0	258	68	310	0	139	17	0	156	0	0	0	0	0	0	237	115	0	352	68	818	886
05:45 PM	64	0	281	83	345	0	124	7	0	131	0	0	0	0	0	0	229	73	0	302	83	778	861
Total	243	1	980	277	1224	0	516	95	0	611	0	0	0	0	0	0	934	314	0	1248	277	3083	3360
Grand Total	518	1	1716	514	2235	0	924	176	0	1100	0	0	0	0	0	0	1785	576	0	2361	514	5696	6210
Apprch %	23.2	0	76.8			0	84	16			0	0	0			0	75.6	24.4					
Total %	9.1	0	30.1		39.2	0	16.2	3.1		19.3	0	0	0		0	0	31.3	10.1		41.5	8.3	91.7	

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	55	0	213	268	0	113	**41**	154	0	0	0	0	0	230	71	301	723
05:15 PM	**72**	**1**	228	301	0	**140**	30	**170**	0	0	0	0	0	**238**	55	293	764
05:30 PM	52	0	258	310	0	139	17	156	0	0	0	0	0	237	**115**	**352**	**818**
05:45 PM	64	0	**281**	**345**	0	124	7	131	0	0	0	0	0	229	73	302	778
Total Volume	243	1	980	1224	0	516	95	611	0	0	0	0	0	934	314	1248	3083
% App. Total	19.9	0.1	80.1		0	84.5	15.5		0	0	0		0	74.8	25.2		
PHF	.844	.250	.872	.887	.000	.921	.579	.899	.000	.000	.000	.000	.000	.981	.683	.886	.942

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City of Ontario
N/S: I-15 Southbound Ramps
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Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
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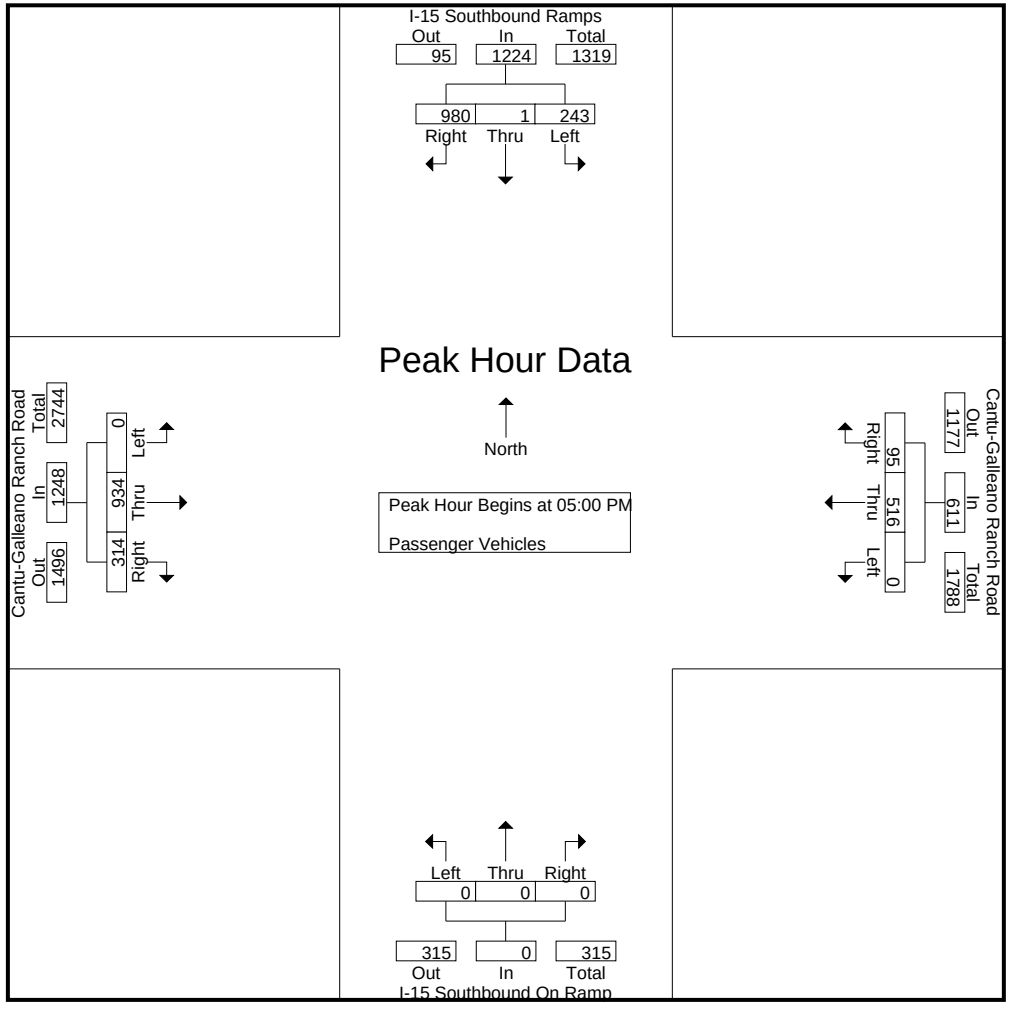

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	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	55	0	213	268	0	113	**41**	154	0	0	0	0	0	230	71	301	
+15 mins.	**72**	**1**	228	301	0	**140**	30	**170**	0	0	0	0	0	**238**	55	293	
+30 mins.	52	0	258	310	0	139	17	156	0	0	0	0	0	237	**115**	**352**	
+45 mins.	64	0	**281**	**345**	0	124	7	131	0	0	0	0	0	229	73	302	
Total Volume	243	1	980	1224	0	516	95	611	0	0	0	0	0	934	314	1248	
% App. Total	19.9	0.1	80.1		0	84.5	15.5		0	0	0		0	74.8	25.2		
PHF	.844	.250	.872	.887	.000	.921	.579	.899	.000	.000	.000	.000	.000	.981	.683	.886	

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File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
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Groups Printed- Large 2 Axle Vehicles

	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	4	0	4	0	2	1	0	3	0	0	0	0	0	0	3	0	0	3	0	10	10
04:15 PM	2	0	4	1	6	0	4	1	0	5	0	0	0	0	0	0	2	1	0	3	1	14	15
04:30 PM	2	0	4	2	6	0	3	0	0	3	0	0	0	0	0	0	6	2	0	8	2	17	19
04:45 PM	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	4	1	0	5	0	8	8
Total	6	0	13	3	19	0	9	2	0	11	0	0	0	0	0	0	15	4	0	19	3	49	52
05:00 PM	1	0	2	2	3	0	3	3	0	6	0	0	0	0	0	0	1	0	0	1	2	10	12
05:15 PM	2	0	4	1	6	0	3	1	0	4	0	0	0	0	0	0	1	1	0	2	1	12	13
05:30 PM	3	0	5	1	8	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5	1	13	14
05:45 PM	1	0	4	2	5	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	2	13	15
Total	7	0	15	6	22	0	9	4	0	13	0	0	0	0	0	0	9	4	0	13	6	48	54
Grand Total	13	0	28	9	41	0	18	6	0	24	0	0	0	0	0	0	24	8	0	32	9	97	106
Apprch %	31.7	0	68.3			0	75	25			0	0	0			0	75	25					
Total %	13.4	0	28.9		42.3	0	18.6	6.2		24.7	0	0	0		0	0	24.7	8.2		33	8.5	91.5	

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	2	3	0	**3**	**3**	**6**	0	0	0	0	0	1	0	1	10
05:15 PM	2	0	4	6	0	3	1	4	0	0	0	0	0	1	1	2	12
05:30 PM	**3**	0	**5**	**8**	0	0	0	0	0	0	0	0	0	2	**3**	**5**	**13**
05:45 PM	1	0	4	5	0	3	0	3	0	0	0	0	0	**5**	0	5	13
Total Volume	7	0	15	22	0	9	4	13	0	0	0	0	0	9	4	13	48
% App. Total	31.8	0	68.2		0	69.2	30.8		0	0	0		0	69.2	30.8		
PHF	.583	.000	.750	.688	.000	.750	.333	.542	.000	.000	.000	.000	.000	.450	.333	.650	.923

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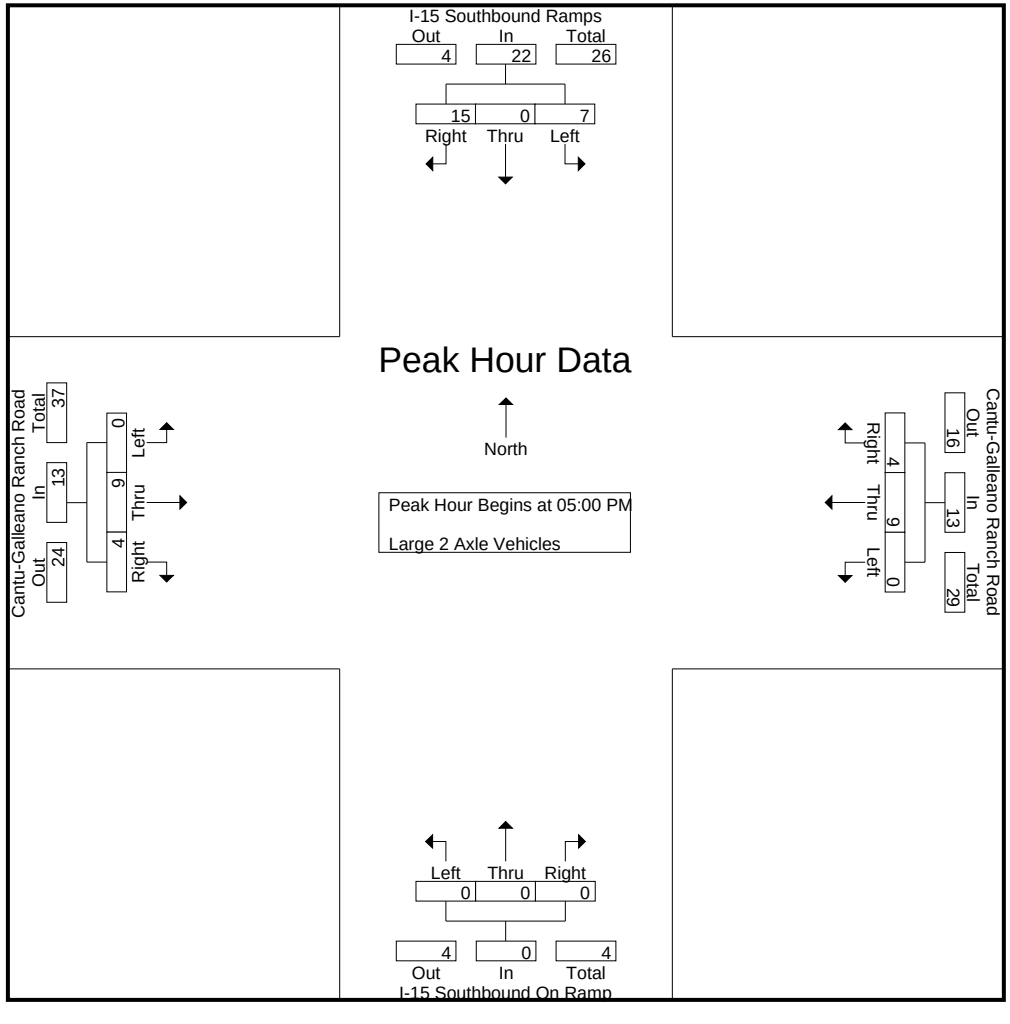
(951)268-6268

City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	1	0	2	3	0	**3**	**3**	**6**	0	0	0	0	0	1	0	1	
+15 mins.	2	0	4	6	0	3	1	4	0	0	0	0	0	1	1	2	
+30 mins.	**3**	0	**5**	**8**	0	0	0	0	0	0	0	0	0	2	**3**	**5**	
+45 mins.	1	0	4	5	0	3	0	3	0	0	0	0	0	**5**	0	5	
Total Volume	7	0	15	22	0	9	4	13	0	0	0	0	0	9	4	13	
% App. Total	31.8	0	68.2		0	69.2	30.8		0	0	0		0	69.2	30.8		
PHF	.583	.000	.750	.688	.000	.750	.333	.542	.000	.000	.000	.000	.000	.450	.333	.650	

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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	0	4	0	5	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	0	13	13
04:15 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	5	0	0	5	0	7	7
04:30 PM	1	0	5	1	6	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	1	14	15
04:45 PM	0	0	8	1	8	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	1	13	14
Total	2	0	17	2	19	0	6	1	0	7	0	0	0	0	0	0	21	0	0	21	2	47	49
05:00 PM	0	0	4	2	4	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	2	9	11
05:15 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	0	10	10
05:30 PM	0	0	6	0	6	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	15	15
05:45 PM	1	0	3	0	4	0	1	0	0	1	0	0	0	0	0	0	7	0	0	7	0	12	12
Total	3	0	13	2	16	0	6	0	0	6	0	0	0	0	0	0	24	0	0	24	2	46	48
Grand Total	5	0	30	4	35	0	12	1	0	13	0	0	0	0	0	0	45	0	0	45	4	93	97
Apprch %	14.3	0	85.7			0	92.3	7.7			0	0	0			0	100	0					
Total %	5.4	0	32.3		37.6	0	12.9	1.1		14	0	0	0		0	0	48.4	0		48.4	4.1	95.9	

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	4	4	0	2	0	2	0	0	0	0	0	3	0	3	9
05:15 PM	**2**	0	0	2	0	0	0	0	0	0	0	0	0	**8**	0	**8**	10
05:30 PM	0	0	**6**	**6**	0	**3**	0	**3**	0	0	0	0	0	6	0	6	**15**
05:45 PM	1	0	3	4	0	1	0	1	0	0	0	0	0	7	0	7	12
Total Volume	3	0	13	16	0	6	0	6	0	0	0	0	0	24	0	24	46
% App. Total	18.8	0	81.2		0	100	0		0	0	0		0	100	0		
PHF	.375	.000	.542	.667	.000	.500	.000	.500	.000	.000	.000	.000	.000	.750	.000	.750	.767

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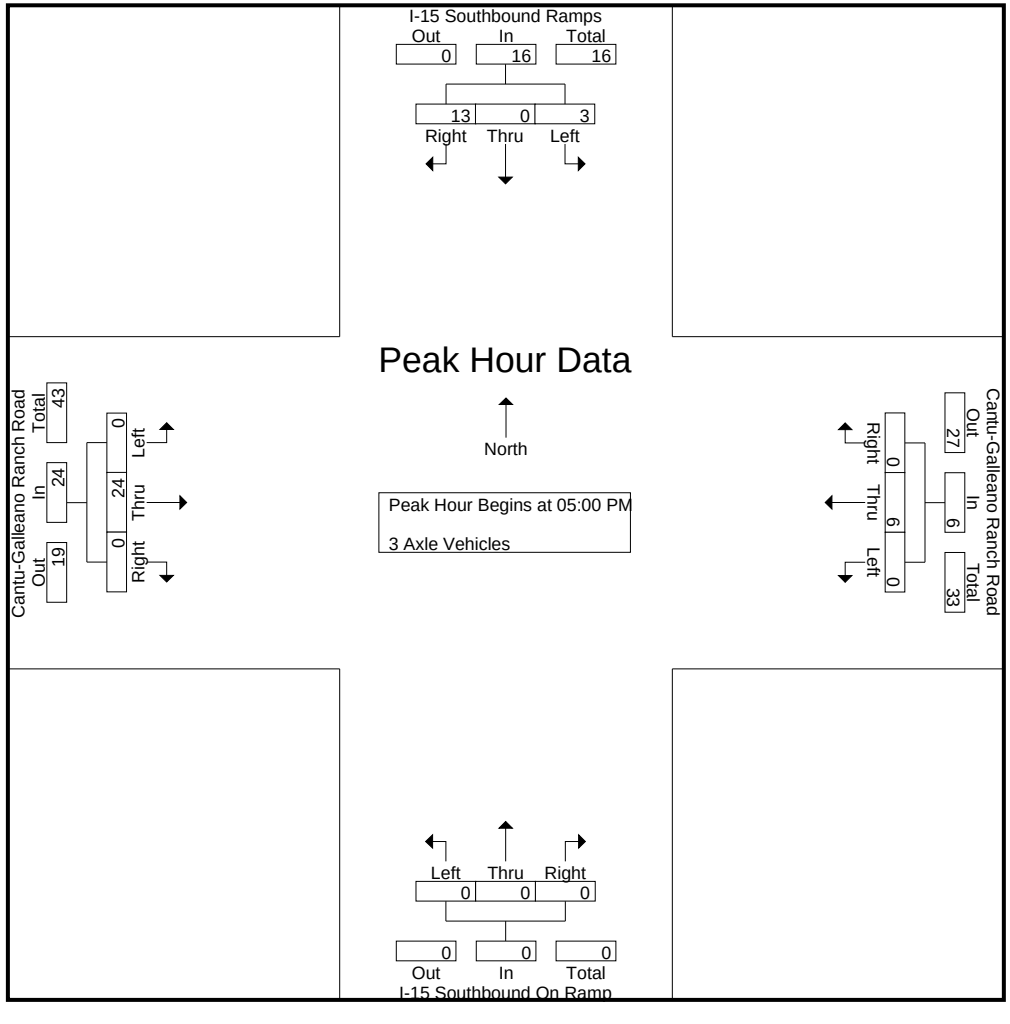
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	0	0	4	4	0	2	0	2	0	0	0	0	0	3	0	3	
+15 mins.	**2**	0	0	2	0	0	0	0	0	0	0	0	0	**8**	0	**8**	
+30 mins.	0	0	**6**	**6**	0	**3**	0	**3**	0	0	0	0	0	6	0	6	
+45 mins.	1	0	3	4	0	1	0	1	0	0	0	0	0	7	0	7	
Total Volume	3	0	13	16	0	6	0	6	0	0	0	0	0	24	0	24	
% App. Total	18.8	0	81.2		0	100	0		0	0	0		0	100	0		
PHF	.375	.000	.542	.667	.000	.500	.000	.500	.000	.000	.000	.000	.000	.750	.000	.750	

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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	I-15 Southbound Ramps Southbound					Cantu-Galleano Ranch Road Westbound					I-15 Southbound On Ramp Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	5	0	16	2	21	0	3	5	0	8	0	0	0	0	0	0	8	1	0	9	2	38	40
04:15 PM	5	0	9	1	14	0	4	6	0	10	0	0	0	0	0	0	10	0	0	10	1	34	35
04:30 PM	5	0	10	0	15	0	3	4	0	7	0	0	0	0	0	0	8	0	0	8	0	30	30
04:45 PM	5	0	18	4	23	0	6	1	0	7	0	0	0	0	0	0	3	1	0	4	4	34	38
Total	20	0	53	7	73	0	16	16	0	32	0	0	0	0	0	0	29	2	0	31	7	136	143
05:00 PM	2	0	12	3	14	0	8	1	0	9	0	0	0	0	0	0	9	1	0	10	3	33	36
05:15 PM	4	0	10	1	14	0	5	3	0	8	0	0	0	0	0	0	10	1	0	11	1	33	34
05:30 PM	0	0	17	3	17	0	1	5	0	6	0	0	0	0	0	0	8	1	0	9	3	32	35
05:45 PM	4	0	8	1	12	0	5	3	0	8	0	0	0	0	0	0	5	0	0	5	1	25	26
Total	10	0	47	8	57	0	19	12	0	31	0	0	0	0	0	0	32	3	0	35	8	123	131
Grand Total	30	0	100	15	130	0	35	28	0	63	0	0	0	0	0	0	61	5	0	66	15	259	274
Apprch %	23.1	0	76.9			0	55.6	44.4			0	0	0			0	92.4	7.6					
Total %	11.6	0	38.6		50.2	0	13.5	10.8		24.3	0	0	0		0	0	23.6	1.9		25.5	5.5	94.5	

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	2	0	12	14	0	**8**	1	**9**	0	0	0	0	0	9	**1**	10	**33**
05:15 PM	**4**	0	10	14	0	5	3	8	0	0	0	0	0	**10**	1	**11**	33
05:30 PM	0	0	**17**	**17**	0	1	**5**	6	0	0	0	0	0	8	1	9	32
05:45 PM	4	0	8	12	0	5	3	8	0	0	0	0	0	5	0	5	25
Total Volume	10	0	47	57	0	19	12	31	0	0	0	0	0	32	3	35	123
% App. Total	17.5	0	82.5		0	61.3	38.7		0	0	0		0	91.4	8.6		
PHF	.625	.000	.691	.838	.000	.594	.600	.861	.000	.000	.000	.000	.000	.800	.750	.795	.932

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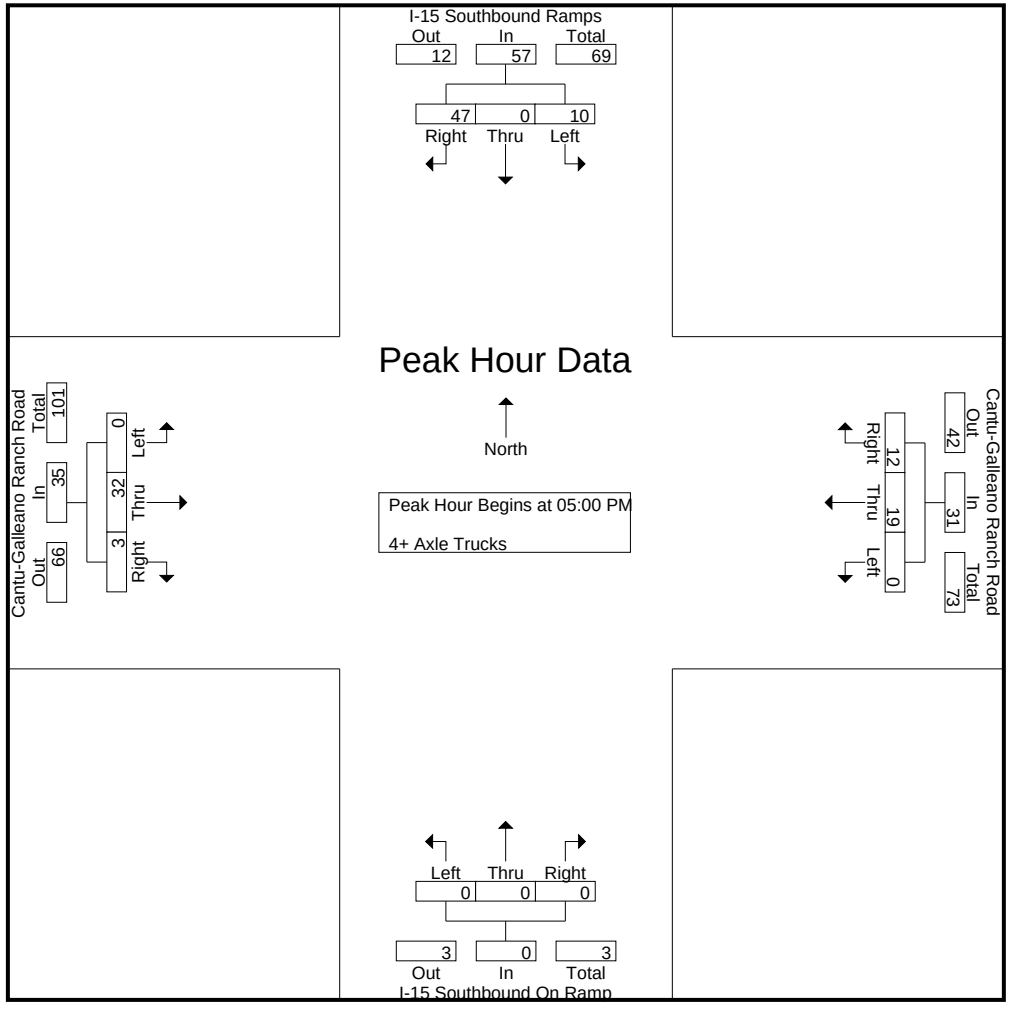
City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: I-15 Southbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 06_ONT_15S_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	I-15 Southbound Ramps Southbound				Cantu-Galleano Ranch Road Westbound				I-15 Southbound On Ramp Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				05:00 PM				05:00 PM				05:00 PM				
+0 mins.	2	0	12	14	0	**8**	1	**9**	0	0	0	0	0	9	**1**	10	
+15 mins.	**4**	0	10	14	0	5	3	8	0	0	0	0	0	**10**	1	**11**	
+30 mins.	0	0	**17**	**17**	0	1	**5**	6	0	0	0	0	0	8	1	9	
+45 mins.	4	0	8	12	0	5	3	8	0	0	0	0	0	5	0	5	
Total Volume	10	0	47	57	0	19	12	31	0	0	0	0	0	32	3	35	
% App. Total	17.5	0	82.5		0	61.3	38.7		0	0	0		0	91.4	8.6		
PHF	.625	.000	.691	.838	.000	.594	.600	.861	.000	.000	.000	.000	.000	.800	.750	.795	

Location: Ontario
N/S: I-15 SB Ramps
E/W: Cantu-Galleano Ranch Rd

Date: 5/10/2022
Day: Tuesday

PEDESTRIANS

	North Leg I-15 SB Ramps	East Leg Cantu-Galleano Ranch Rd	South Leg I-15 SB Ramps	West Leg Cantu-Galleano Ranch Rd	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

	North Leg I-15 SB Ramps	East Leg Cantu-Galleano Ranch Rd	South Leg I-15 SB Ramps	West Leg Cantu-Galleano Ranch Rd	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

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951-268-6268

Location: Ontario
N/S: I-15 SB Ramps
E/W: Cantu-Galleano Ranch Rd

Date: 5/10/2022
Day: Tuesday

BICYCLES

	Southbound I-15 SB Ramps			Westbound Cantu-Galleano Ranch Rd			Northbound I-15 SB Ramps			Eastbound Cantu-Galleano Ranch Rd			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	2	0	2

	Southbound I-15 SB Ramps			Westbound Cantu-Galleano Ranch Rd			Northbound I-15 SB Ramps			Eastbound Cantu-Galleano Ranch Rd			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	1	0	2

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	43	81	0	124	121	54	27	175	69	144	69	213	96	512	608
07:15 AM	42	81	0	123	119	64	31	183	72	156	93	228	124	534	658
07:30 AM	46	63	0	109	88	93	54	181	91	157	70	248	124	538	662
07:45 AM	31	86	0	117	82	107	43	189	122	107	55	229	98	535	633
Total	162	311	0	473	410	318	155	728	354	564	287	918	442	2119	2561
08:00 AM	37	63	0	100	81	100	54	181	112	99	25	211	79	492	571
08:15 AM	32	79	0	111	77	85	44	162	105	101	35	206	79	479	558
08:30 AM	39	62	0	101	65	61	31	126	78	105	32	183	63	410	473
08:45 AM	35	66	0	101	54	30	21	84	80	93	31	173	52	358	410
Total	143	270	0	413	277	276	150	553	375	398	123	773	273	1739	2012
Grand Total	305	581	0	886	687	594	305	1281	729	962	410	1691	715	3858	4573
Apprch %	34.4	65.6			53.6	46.4			43.1	56.9					
Total %	7.9	15.1		23	17.8	15.4		33.2	18.9	24.9		43.8	15.6	84.4	
Passenger Vehicles	262	467		729	619	512		1412	650	822		1836	0	0	3977
% Passenger Vehicles	85.9	80.4	0	82.3	90.1	86.2	92.1	89	89.2	85.4	88.8	87.4	0	0	87
Large 2 Axle Vehicles	12	25		37	22	14		43	23	34		70	0	0	150
% Large 2 Axle Vehicles	3.9	4.3	0	4.2	3.2	2.4	2.3	2.7	3.2	3.5	3.2	3.3	0	0	3.3
3 Axle Vehicles	2	14		16	11	8		19	16	34		57	0	0	92
% 3 Axle Vehicles	0.7	2.4	0	1.8	1.6	1.3	0	1.2	2.2	3.5	1.7	2.7	0	0	2
4+ Axle Trucks	29	75		104	35	60		112	40	72		138	0	0	354
% 4+ Axle Trucks	9.5	12.9	0	11.7	5.1	10.1	5.6	7.1	5.5	7.5	6.3	6.6	0	0	7.7

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	43	81	**124**	**121**	54	175	69	144	213	512
07:15 AM	42	81	123	119	64	183	72	156	228	534
07:30 AM	**46**	63	109	88	93	181	91	**157**	**248**	**538**
07:45 AM	31	**86**	117	82	**107**	**189**	**122**	107	229	535
Total Volume	162	311	473	410	318	728	354	564	918	2119
% App. Total	34.2	65.8		56.3	43.7		38.6	61.4		
PHF	.880	.904	.954	.847	.743	.963	.725	.898	.925	.985

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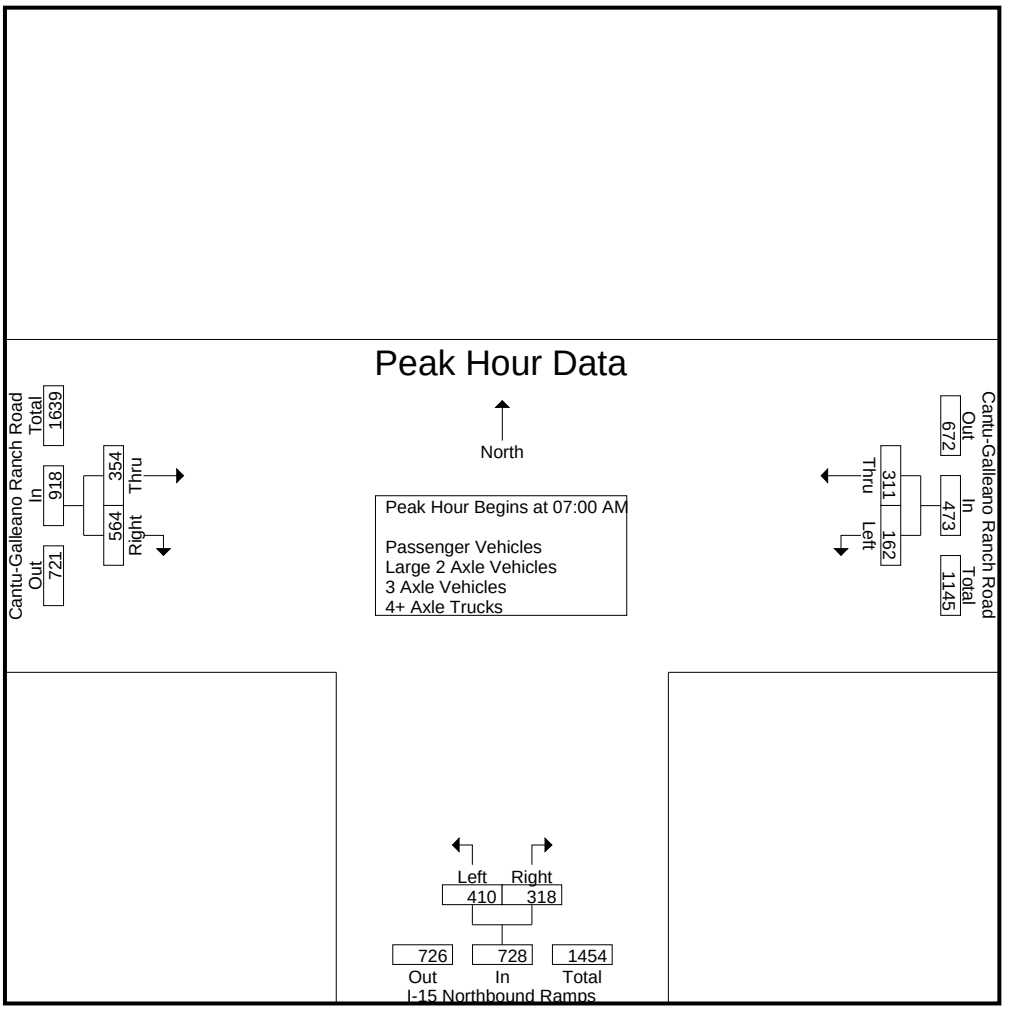
City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:15 AM			07:00 AM		
+0 mins.	43	81	**124**	**119**	64	183	69	144	213
+15 mins.	42	81	123	88	93	181	72	156	228
+30 mins.	**46**	63	109	82	**107**	**189**	91	**157**	**248**
+45 mins.	31	**86**	117	81	100	181	**122**	107	229
Total Volume	162	311	473	370	364	734	354	564	918
% App. Total	34.2	65.8		50.4	49.6		38.6	61.4	
PHF	.880	.904	.954	.777	.850	.971	.725	.898	.925

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	38	68	0	106	113	45	23	158	62	123	66	185	89	449	538
07:15 AM	38	67	0	105	114	55	29	169	59	134	84	193	113	467	580
07:30 AM	39	45	0	84	80	84	52	164	81	133	62	214	114	462	576
07:45 AM	27	70	0	97	74	97	42	171	116	89	46	205	88	473	561
Total	142	250	0	392	381	281	146	662	318	479	258	797	404	1851	2255
08:00 AM	29	48	0	77	71	96	52	167	107	89	23	196	75	440	515
08:15 AM	29	65	0	94	68	67	38	135	89	84	29	173	67	402	469
08:30 AM	31	51	0	82	52	44	27	96	61	91	29	152	56	330	386
08:45 AM	31	53	0	84	47	24	18	71	75	79	25	154	43	309	352
Total	120	217	0	337	238	231	135	469	332	343	106	675	241	1481	1722
Grand Total	262	467	0	729	619	512	281	1131	650	822	364	1472	645	3332	3977
Apprch %	35.9	64.1			54.7	45.3			44.2	55.8					
Total %	7.9	14		21.9	18.6	15.4		33.9	19.5	24.7		44.2	16.2	83.8	

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	38	68	**106**	113	45	158	62	123	185	449
07:15 AM	38	67	105	**114**	55	169	59	**134**	193	467
07:30 AM	**39**	45	84	80	84	164	81	133	**214**	462
07:45 AM	27	**70**	97	74	**97**	**171**	**116**	89	205	**473**
Total Volume	142	250	392	381	281	662	318	479	797	1851
% App. Total	36.2	63.8		57.6	42.4		39.9	60.1		
PHF	.910	.893	.925	.836	.724	.968	.685	.894	.931	.978

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
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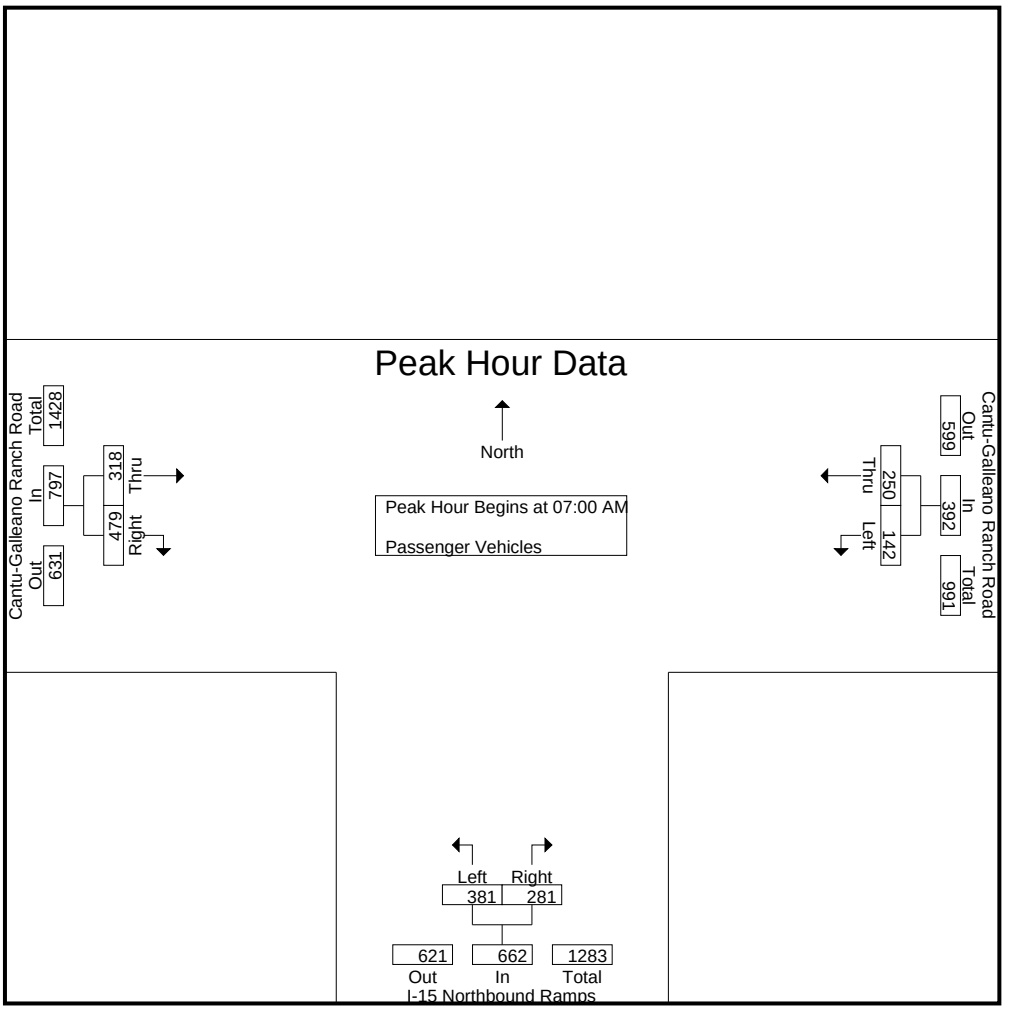

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	38	68	**106**	113	45	158	62	123	185
+15 mins.	38	67	105	**114**	55	169	59	**134**	193
+30 mins.	**39**	45	84	80	84	164	81	133	**214**
+45 mins.	27	**70**	97	74	**97**	**171**	**116**	89	205
Total Volume	142	250	392	381	281	662	318	479	797
% App. Total	36.2	63.8		57.6	42.4		39.9	60.1	
PHF	.910	.893	.925	.836	.724	.968	.685	.894	.931

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	3	4	0	7	4	3	2	7	2	6	3	8	5	22	27
07:15 AM	0	5	0	5	2	1	0	3	6	6	2	12	2	20	22
07:30 AM	2	7	0	9	3	3	0	6	2	5	1	7	1	22	23
07:45 AM	0	2	0	2	4	1	1	5	2	4	3	6	4	13	17
Total	5	18	0	23	13	8	3	21	12	21	9	33	12	77	89
08:00 AM	2	2	0	4	3	0	0	3	3	1	0	4	0	11	11
08:15 AM	1	3	0	4	1	5	4	6	1	2	2	3	6	13	19
08:30 AM	2	0	0	2	4	1	0	5	7	4	0	11	0	18	18
08:45 AM	2	2	0	4	1	0	0	1	0	6	2	6	2	11	13
Total	7	7	0	14	9	6	4	15	11	13	4	24	8	53	61
Grand Total	12	25	0	37	22	14	7	36	23	34	13	57	20	130	150
Apprch %	32.4	67.6			61.1	38.9			40.4	59.6					
Total %	9.2	19.2		28.5	16.9	10.8		27.7	17.7	26.2		43.8	13.3	86.7	

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	**3**	4	7	**4**	**3**	**7**	2	**6**	8	**22**
07:15 AM	0	5	5	2	1	3	**6**	6	**12**	20
07:30 AM	2	**7**	**9**	3	3	6	2	5	7	22
07:45 AM	0	2	2	4	1	5	2	4	6	13
Total Volume	5	18	23	13	8	21	12	21	33	77
% App. Total	21.7	78.3		61.9	38.1		36.4	63.6		
PHF	.417	.643	.639	.813	.667	.750	.500	.875	.688	.875

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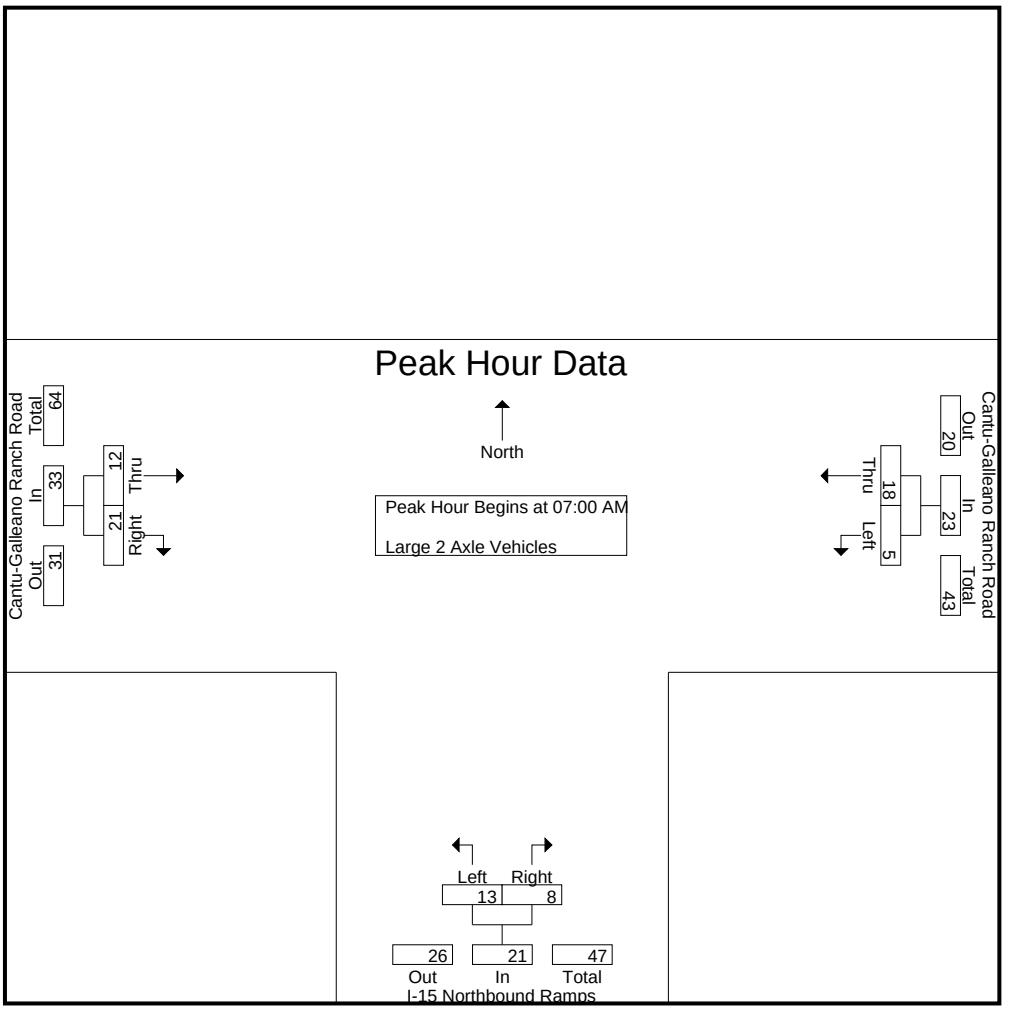
City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	**3**	4	7	**4**	**3**	**7**	2	**6**	8
+15 mins.	0	5	5	2	1	3	**6**	6	**12**
+30 mins.	2	**7**	**9**	3	3	6	2	5	7
+45 mins.	0	2	2	4	1	5	2	4	6
Total Volume	5	18	23	13	8	21	12	21	33
% App. Total	21.7	78.3		61.9	38.1		36.4	63.6	
PHF	.417	.643	.639	.813	.667	.750	.500	.875	.688

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	1	0	1	0	1	0	1	2	6	0	8	0	10	10
07:15 AM	0	0	0	0	0	0	0	0	2	6	1	8	1	8	9
07:30 AM	1	1	0	2	1	0	0	1	4	6	2	10	2	13	15
07:45 AM	0	5	0	5	2	2	0	4	1	6	2	7	2	16	18
Total	1	7	0	8	3	3	0	6	9	24	5	33	5	47	52
08:00 AM	1	1	0	2	3	0	0	3	0	2	1	2	1	7	8
08:15 AM	0	3	0	3	1	1	0	2	2	3	0	5	0	10	10
08:30 AM	0	3	0	3	2	4	0	6	5	3	1	8	1	17	18
08:45 AM	0	0	0	0	2	0	0	2	0	2	0	2	0	4	4
Total	1	7	0	8	8	5	0	13	7	10	2	17	2	38	40
Grand Total	2	14	0	16	11	8	0	19	16	34	7	50	7	85	92
Apprch %	12.5	87.5			57.9	42.1			32	68					
Total %	2.4	16.5		18.8	12.9	9.4		22.4	18.8	40		58.8	7.6	92.4	

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	1	1	0	1	1	2	**6**	8	10
07:15 AM	0	0	0	0	0	0	2	6	8	8
07:30 AM	**1**	1	2	1	0	1	**4**	6	**10**	13
07:45 AM	0	**5**	**5**	**2**	**2**	**4**	1	6	7	**16**
Total Volume	1	7	8	3	3	6	9	24	33	47
% App. Total	12.5	87.5		50	50		27.3	72.7		
PHF	.250	.350	.400	.375	.375	.375	.563	1.00	.825	.734

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
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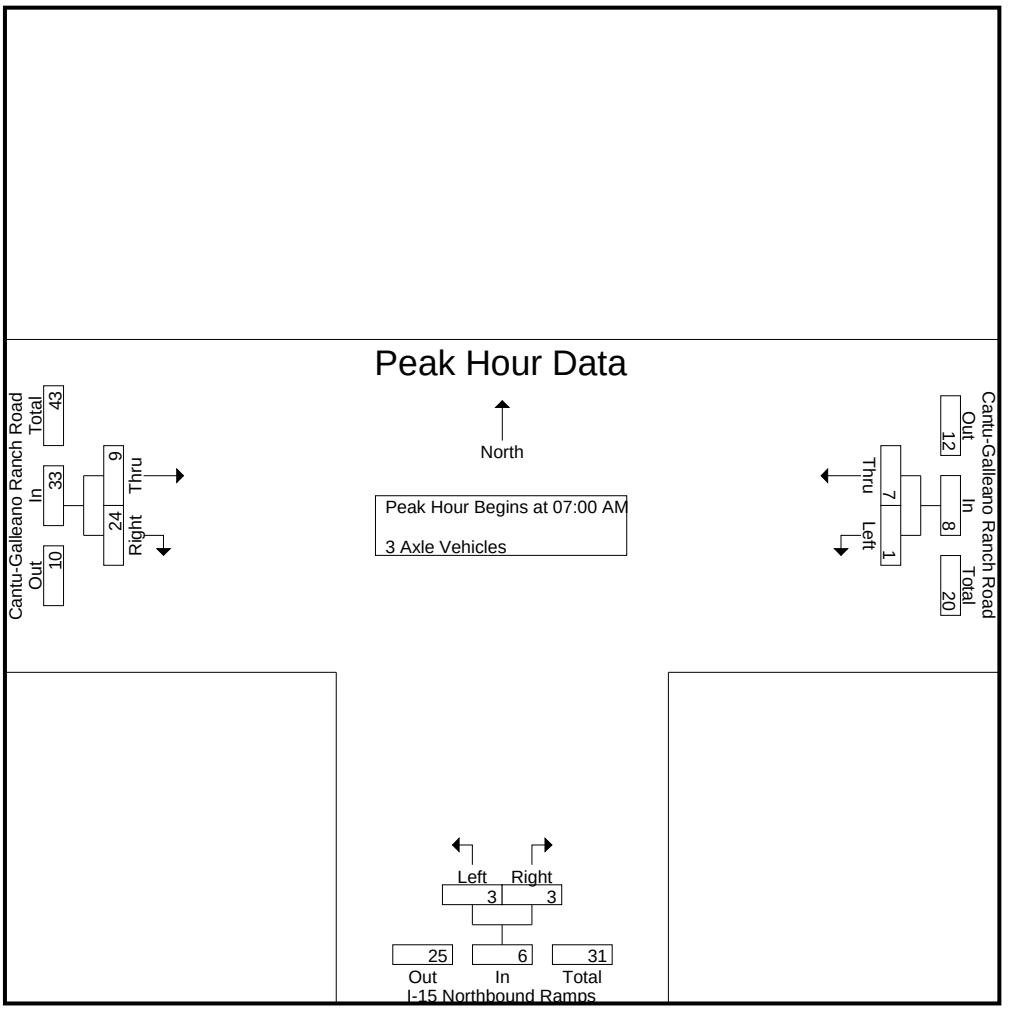

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	1	1	0	1	1	2	**6**	8
+15 mins.	0	0	0	0	0	0	2	6	8
+30 mins.	**1**	1	2	1	0	1	**4**	6	**10**
+45 mins.	0	**5**	**5**	**2**	**2**	**4**	1	6	7
Total Volume	1	7	8	3	3	6	9	24	33
% App. Total	12.5	87.5		50	50		27.3	72.7	
PHF	.250	.350	.400	.375	.375	.375	.563	1.000	.825

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
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Groups Printed- 4+ Axle Trucks

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	2	8	0	10	4	5	2	9	3	9	0	12	2	31	33
07:15 AM	4	9	0	13	3	8	2	11	5	10	6	15	8	39	47
07:30 AM	4	10	0	14	4	6	2	10	4	13	5	17	7	41	48
07:45 AM	4	9	0	13	2	7	0	9	3	8	4	11	4	33	37
Total	14	36	0	50	13	26	6	39	15	40	15	55	21	144	165
08:00 AM	5	12	0	17	4	4	2	8	2	7	1	9	3	34	37
08:15 AM	2	8	0	10	7	12	2	19	13	12	4	25	6	54	60
08:30 AM	6	8	0	14	7	12	4	19	5	7	2	12	6	45	51
08:45 AM	2	11	0	13	4	6	3	10	5	6	4	11	7	34	41
Total	15	39	0	54	22	34	11	56	25	32	11	57	22	167	189
Grand Total	29	75	0	104	35	60	17	95	40	72	26	112	43	311	354
Apprch %	27.9	72.1			36.8	63.2			35.7	64.3					
Total %	9.3	24.1		33.4	11.3	19.3		30.5	12.9	23.2		36	12.1	87.9	

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	2	8	10	**4**	5	9	3	9	12	31
07:15 AM	**4**	9	13	3	**8**	**11**	**5**	10	15	39
07:30 AM	4	**10**	**14**	4	6	10	4	**13**	**17**	**41**
07:45 AM	4	9	13	2	7	9	3	8	11	33
Total Volume	14	36	50	13	26	39	15	40	55	144
% App. Total	28	72		33.3	66.7		27.3	72.7		
PHF	.875	.900	.893	.813	.813	.886	.750	.769	.809	.878

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR AM
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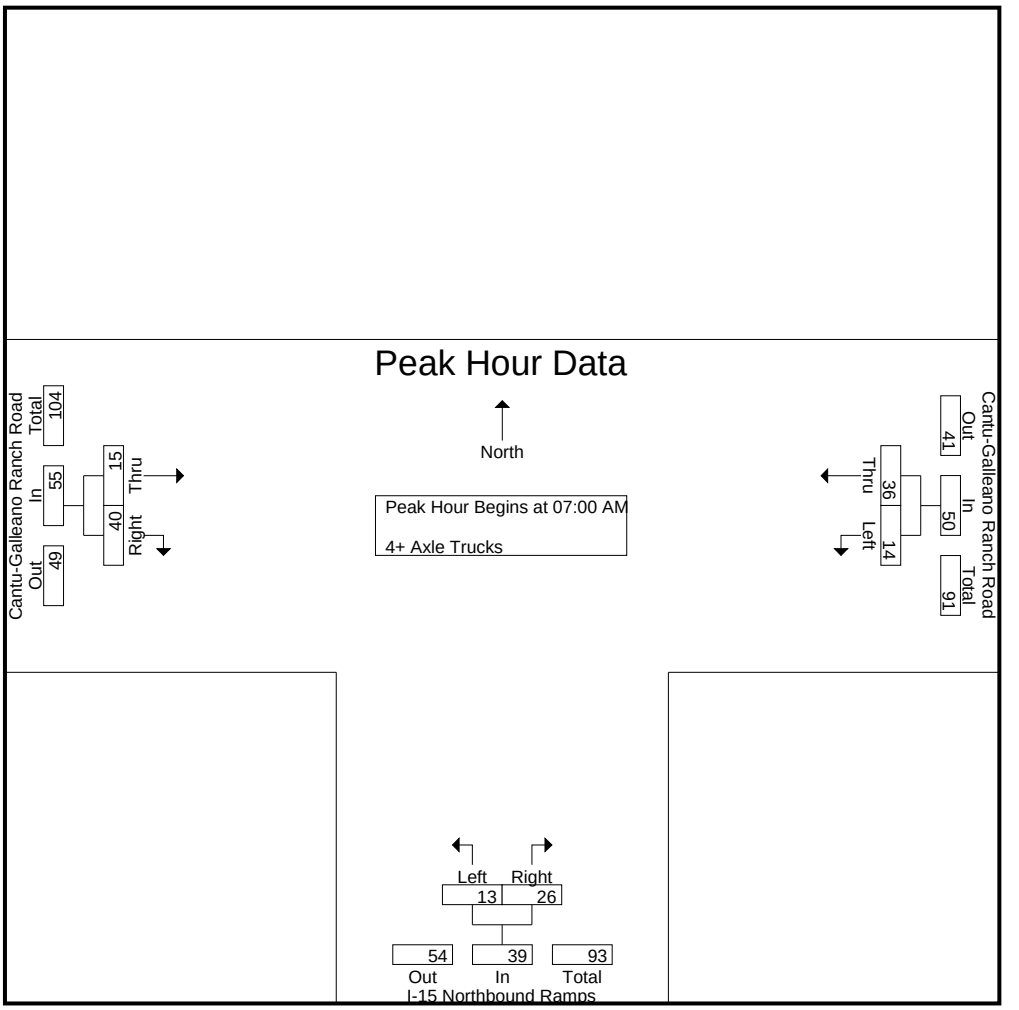

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	2	8	10	**4**	5	9	3	9	12
+15 mins.	**4**	9	13	3	**8**	**11**	**5**	10	15
+30 mins.	4	**10**	**14**	4	6	10	4	**13**	**17**
+45 mins.	4	9	13	2	7	9	3	8	11
Total Volume	14	36	50	13	26	39	15	40	55
% App. Total	28	72		33.3	66.7		27.3	72.7	
PHF	.875	.900	.893	.813	.813	.886	.750	.769	.809

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	55	82	0	137	75	41	22	116	143	163	68	306	90	559	649
04:15 PM	33	56	0	89	51	49	21	100	173	120	34	293	55	482	537
04:30 PM	44	89	0	133	64	35	15	99	159	163	64	322	79	554	633
04:45 PM	58	72	0	130	69	33	13	102	165	170	50	335	63	567	630
Total	190	299	0	489	259	158	71	417	640	616	216	1256	287	2162	2449
05:00 PM	49	94	0	143	71	22	12	93	144	162	61	306	73	542	615
05:15 PM	39	75	0	114	102	30	13	132	180	160	83	340	96	586	682
05:30 PM	51	63	0	114	89	18	11	107	155	164	76	319	87	540	627
05:45 PM	32	52	0	84	102	35	17	137	162	165	36	327	53	548	601
Total	171	284	0	455	364	105	53	469	641	651	256	1292	309	2216	2525
Grand Total	361	583	0	944	623	263	124	886	1281	1267	472	2548	596	4378	4974
Apprch %	38.2	61.8			70.3	29.7			50.3	49.7					
Total %	8.2	13.3		21.6	14.2	6		20.2	29.3	28.9		58.2	12	88	
Passenger Vehicles	329	509		838	584	209		900	1204	1154		2795	0	0	4533
% Passenger Vehicles	91.1	87.3	0	88.8	93.7	79.5	86.3	89.1	94	91.1	92.6	92.5	0	0	91.1
Large 2 Axle Vehicles	7	15		22	16	10		29	24	23		53	0	0	104
% Large 2 Axle Vehicles	1.9	2.6	0	2.3	2.6	3.8	2.4	2.9	1.9	1.8	1.3	1.8	0	0	2.1
3 Axle Vehicles	3	9		12	4	7		15	12	38		62	0	0	89
% 3 Axle Vehicles	0.8	1.5	0	1.3	0.6	2.7	3.2	1.5	0.9	3	2.5	2.1	0	0	1.8
4+ Axle Trucks	22	50		72	19	37		66	41	52		110	0	0	248
% 4+ Axle Trucks	6.1	8.6	0	7.6	3	14.1	8.1	6.5	3.2	4.1	3.6	3.6	0	0	5

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	44	89	133	64	**35**	99	159	163	322	554
04:45 PM	**58**	72	130	69	33	102	165	**170**	335	567
05:00 PM	49	**94**	**143**	71	22	93	144	162	306	542
05:15 PM	39	75	114	**102**	30	**132**	**180**	160	**340**	**586**
Total Volume	190	330	520	306	120	426	648	655	1303	2249
% App. Total	36.5	63.5		71.8	28.2		49.7	50.3		
PHF	.819	.878	.909	.750	.857	.807	.900	.963	.958	.959

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PO Box 1178
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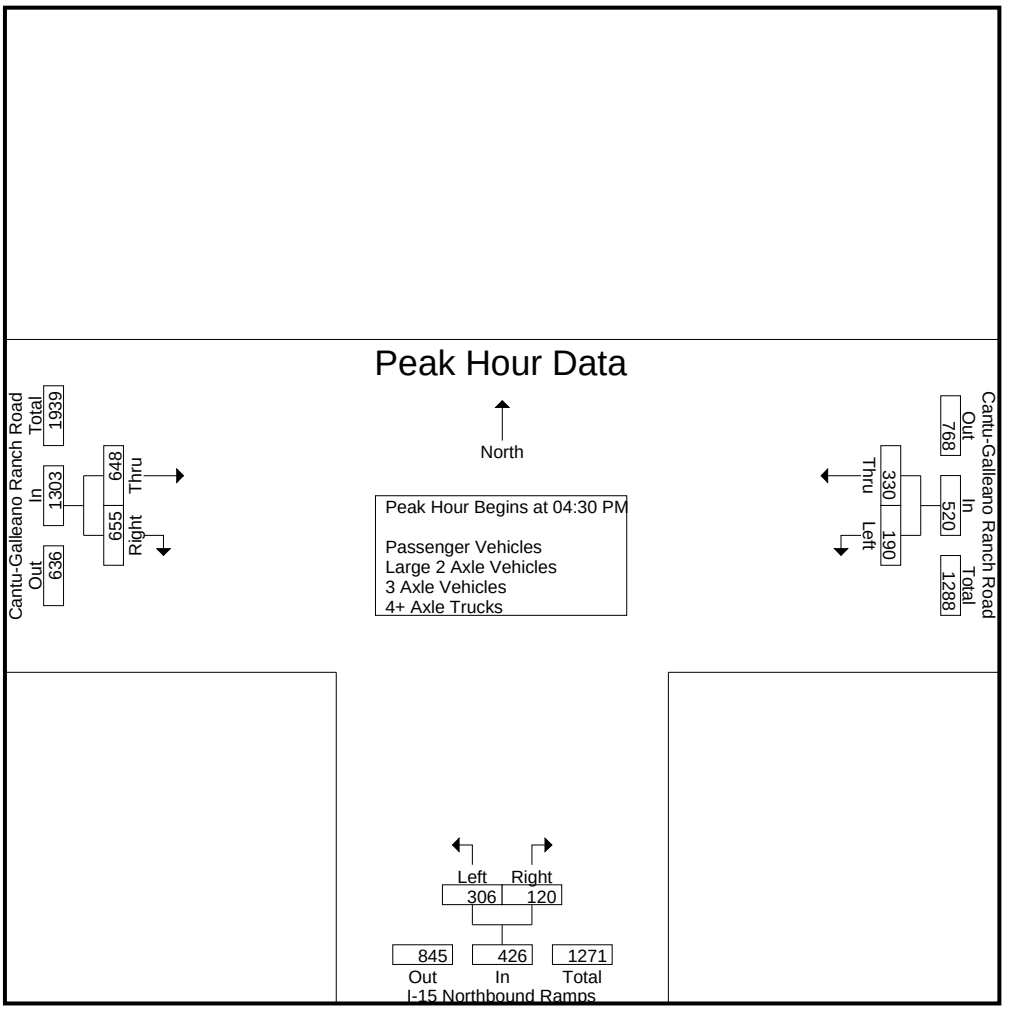
(951)268-6268

City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			05:00 PM			04:30 PM		
+0 mins.	44	89	133	71	22	93	159	163	322
+15 mins.	**58**	72	130	**102**	30	132	165	**170**	335
+30 mins.	49	**94**	**143**	89	18	107	144	162	306
+45 mins.	39	75	114	102	**35**	**137**	**180**	160	**340**
Total Volume	190	330	520	364	105	469	648	655	1303
% App. Total	36.5	63.5		77.6	22.4		49.7	50.3	
PHF	.819	.878	.909	.892	.750	.856	.900	.963	.958

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Passenger Vehicles

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	51	68	0	119	68	33	18	101	134	147	65	281	83	501	584
04:15 PM	30	43	0	73	46	34	17	80	161	103	29	264	46	417	463
04:30 PM	35	78	0	113	60	27	13	87	140	152	63	292	76	492	568
04:45 PM	55	67	0	122	65	25	11	90	155	159	47	314	58	526	584
Total	171	256	0	427	239	119	59	358	590	561	204	1151	263	1936	2199
05:00 PM	44	86	0	130	61	18	10	79	138	151	60	289	70	498	568
05:15 PM	37	67	0	104	98	29	12	127	171	147	76	318	88	549	637
05:30 PM	47	55	0	102	88	16	10	104	152	144	64	296	74	502	576
05:45 PM	30	45	0	75	98	27	16	125	153	151	33	304	49	504	553
Total	158	253	0	411	345	90	48	435	614	593	233	1207	281	2053	2334
Grand Total	329	509	0	838	584	209	107	793	1204	1154	437	2358	544	3989	4533
Apprch %	39.3	60.7			73.6	26.4			51.1	48.9					
Total %	8.2	12.8		21	14.6	5.2		19.9	30.2	28.9		59.1	12	88	

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	35	78	113	60	27	87	140	152	292	492
04:45 PM	**55**	67	122	65	25	90	155	**159**	314	526
05:00 PM	44	**86**	**130**	61	18	79	138	151	289	498
05:15 PM	37	67	104	**98**	**29**	**127**	**171**	147	**318**	**549**
Total Volume	171	298	469	284	99	383	604	609	1213	2065
% App. Total	36.5	63.5		74.2	25.8		49.8	50.2		
PHF	.777	.866	.902	.724	.853	.754	.883	.958	.954	.940

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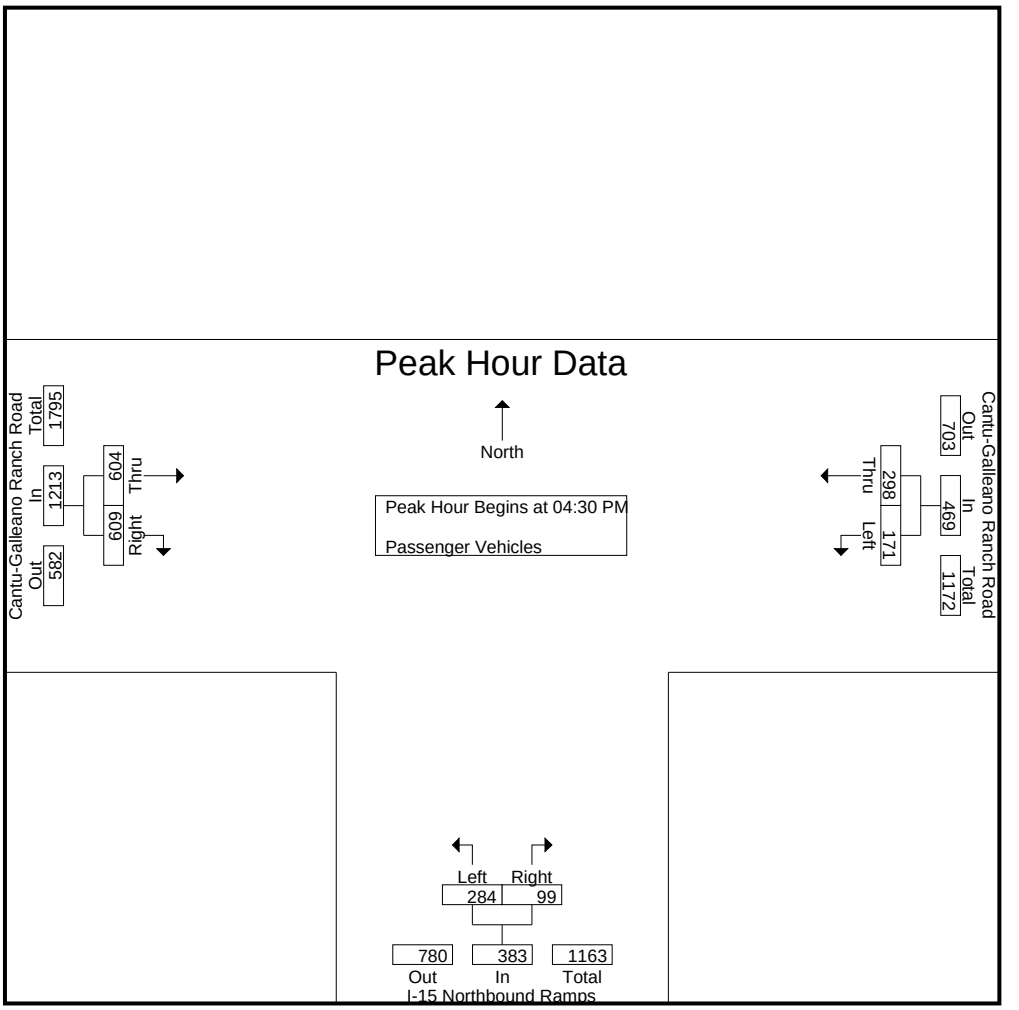
(951)268-6268

City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	35	78	113	60	27	87	140	152	292
+15 mins.	**55**	67	122	65	25	90	155	**159**	314
+30 mins.	44	**86**	**130**	61	18	79	138	151	289
+45 mins.	37	67	104	**98**	**29**	**127**	**171**	147	**318**
Total Volume	171	298	469	284	99	383	604	609	1213
% App. Total	36.5	63.5		74.2	25.8		49.8	50.2	
PHF	.777	.866	.902	.724	.853	.754	.883	.958	.954

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Large 2 Axle Vehicles

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	5	0	6	4	2	1	6	2	1	0	3	1	15	16
04:15 PM	0	2	0	2	3	4	2	7	5	4	1	9	3	18	21
04:30 PM	3	1	0	4	2	3	0	5	8	4	1	12	1	21	22
04:45 PM	0	1	0	1	0	0	0	0	3	5	1	8	1	9	10
Total	4	9	0	13	9	9	3	18	18	14	3	32	6	63	69
05:00 PM	1	3	0	4	4	0	0	4	1	1	0	2	0	10	10
05:15 PM	1	2	0	3	2	0	0	2	1	1	1	2	1	7	8
05:30 PM	1	0	0	1	0	0	0	0	2	3	1	5	1	6	7
05:45 PM	0	1	0	1	1	1	0	2	2	4	1	6	1	9	10
Total	3	6	0	9	7	1	0	8	6	9	3	15	3	32	35
Grand Total	7	15	0	22	16	10	3	26	24	23	6	47	9	95	104
Apprch %	31.8	68.2			61.5	38.5			51.1	48.9					
Total %	7.4	15.8		23.2	16.8	10.5		27.4	25.3	24.2		49.5	8.7	91.3	

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	**3**	1	**4**	2	**3**	**5**	**8**	4	**12**	**21**
04:45 PM	0	1	1	0	0	0	3	**5**	8	9
05:00 PM	1	**3**	4	**4**	0	4	1	1	2	10
05:15 PM	1	2	3	2	0	2	1	1	2	7
Total Volume	5	7	12	8	3	11	13	11	24	47
% App. Total	41.7	58.3		72.7	27.3		54.2	45.8		
PHF	.417	.583	.750	.500	.250	.550	.406	.550	.500	.560

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
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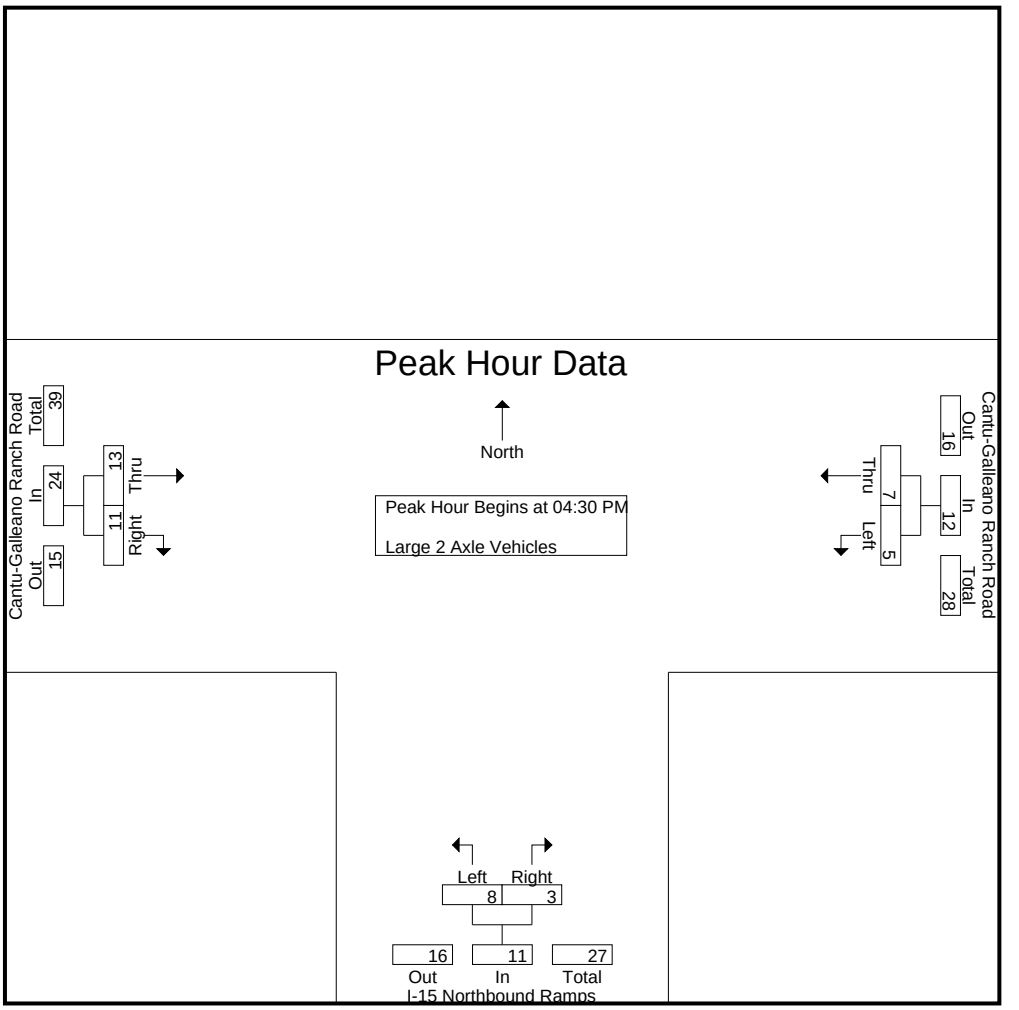

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	**3**	1	**4**	2	**3**	**5**	**8**	4	**12**
+15 mins.	0	1	1	0	0	0	3	**5**	8
+30 mins.	1	**3**	4	**4**	0	4	1	1	2
+45 mins.	1	2	3	2	0	2	1	1	2
Total Volume	5	7	12	8	3	11	13	11	24
% App. Total	41.7	58.3		72.7	27.3		54.2	45.8	
PHF	.417	.583	.750	.500	.250	.550	.406	.550	.500

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- 3 Axle Vehicles

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	0	0	1	1	1	0	2	0	6	1	6	1	9	10
04:15 PM	0	2	0	2	0	1	1	1	1	4	2	5	3	8	11
04:30 PM	0	3	0	3	1	1	1	2	3	4	0	7	1	12	13
04:45 PM	1	0	0	1	0	2	1	2	2	3	1	5	2	8	10
Total	2	5	0	7	2	5	3	7	6	17	4	23	7	37	44
05:00 PM	1	0	0	1	2	0	0	2	1	3	0	4	0	7	7
05:15 PM	0	0	0	0	0	1	1	1	3	3	1	6	2	7	9
05:30 PM	0	3	0	3	0	0	0	0	0	9	6	9	6	12	18
05:45 PM	0	1	0	1	0	1	0	1	2	6	1	8	1	10	11
Total	1	4	0	5	2	2	1	4	6	21	8	27	9	36	45
Grand Total	3	9	0	12	4	7	4	11	12	38	12	50	16	73	89
Apprch %	25	75			36.4	63.6			24	76					
Total %	4.1	12.3		16.4	5.5	9.6		15.1	16.4	52.1		68.5	18	82	

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	**3**	**3**	1	1	**2**	**3**	**4**	**7**	**12**
04:45 PM	**1**	0	1	0	**2**	2	2	3	5	8
05:00 PM	1	0	1	**2**	0	2	1	3	4	7
05:15 PM	0	0	0	0	1	1	3	3	6	7
Total Volume	2	3	5	3	4	7	9	13	22	34
% App. Total	40	60		42.9	57.1		40.9	59.1		
PHF	.500	.250	.417	.375	.500	.875	.750	.813	.786	.708

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
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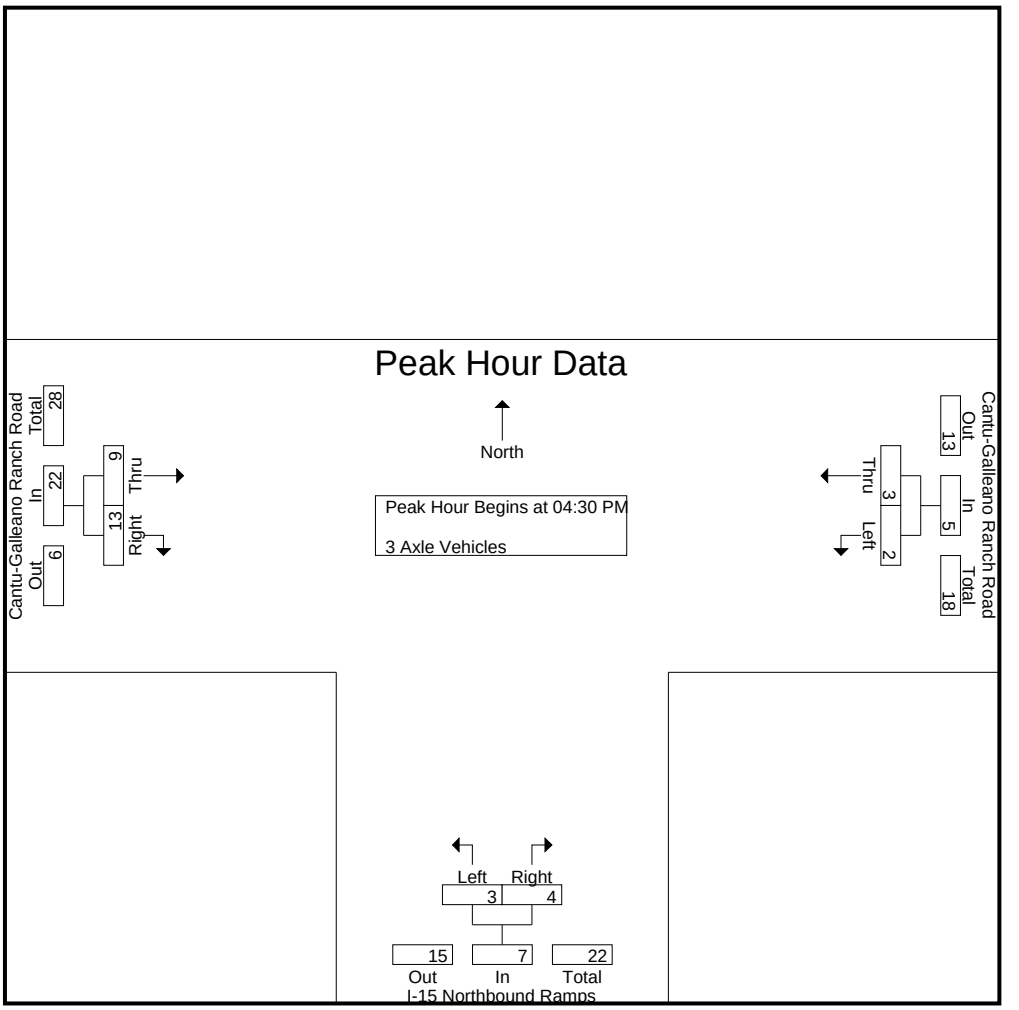

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	**3**	**3**	1	1	**2**	**3**	**4**	**7**
+15 mins.	**1**	0	1	0	**2**	2	2	3	5
+30 mins.	1	0	1	**2**	0	2	1	3	4
+45 mins.	0	0	0	0	1	1	3	3	6
Total Volume	2	3	5	3	4	7	9	13	22
% App. Total	40	60		42.9	57.1		40.9	59.1	
PHF	.500	.250	.417	.375	.500	.875	.750	.813	.786

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City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- 4+ Axle Trucks

	Cantu-Galleano Ranch Road Westbound				I-15 Northbound Ramps Northbound				Cantu-Galleano Ranch Road Eastbound						
Start Time	Left	Thru	RTOR	App. Total	Left	Right	RTOR	App. Total	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	2	9	0	11	2	5	3	7	7	9	2	16	5	34	39
04:15 PM	3	9	0	12	2	10	1	12	6	9	2	15	3	39	42
04:30 PM	6	7	0	13	1	4	1	5	8	3	0	11	1	29	30
04:45 PM	2	4	0	6	4	6	1	10	5	3	1	8	2	24	26
Total	13	29	0	42	9	25	6	34	26	24	5	50	11	126	137
05:00 PM	3	5	0	8	4	4	2	8	4	7	1	11	3	27	30
05:15 PM	1	6	0	7	2	0	0	2	5	9	5	14	5	23	28
05:30 PM	3	5	0	8	1	2	1	3	1	8	5	9	6	20	26
05:45 PM	2	5	0	7	3	6	1	9	5	4	1	9	2	25	27
Total	9	21	0	30	10	12	4	22	15	28	12	43	16	95	111
Grand Total	22	50	0	72	19	37	10	56	41	52	17	93	27	221	248
Apprch %	30.6	69.4			33.9	66.1			44.1	55.9					
Total %	10	22.6		32.6	8.6	16.7		25.3	18.6	23.5		42.1	10.9	89.1	

	Cantu-Galleano Ranch Road Westbound			I-15 Northbound Ramps Northbound			Cantu-Galleano Ranch Road Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	**6**	**7**	**13**	1	4	5	**8**	3	11	**29**
04:45 PM	2	4	6	**4**	**6**	**10**	5	3	8	24
05:00 PM	3	5	8	4	4	8	4	7	11	27
05:15 PM	1	6	7	2	0	2	5	**9**	**14**	23
Total Volume	12	22	34	11	14	25	22	22	44	103
% App. Total	35.3	64.7		44	56		50	50		
PHF	.500	.786	.654	.688	.583	.625	.688	.611	.786	.888

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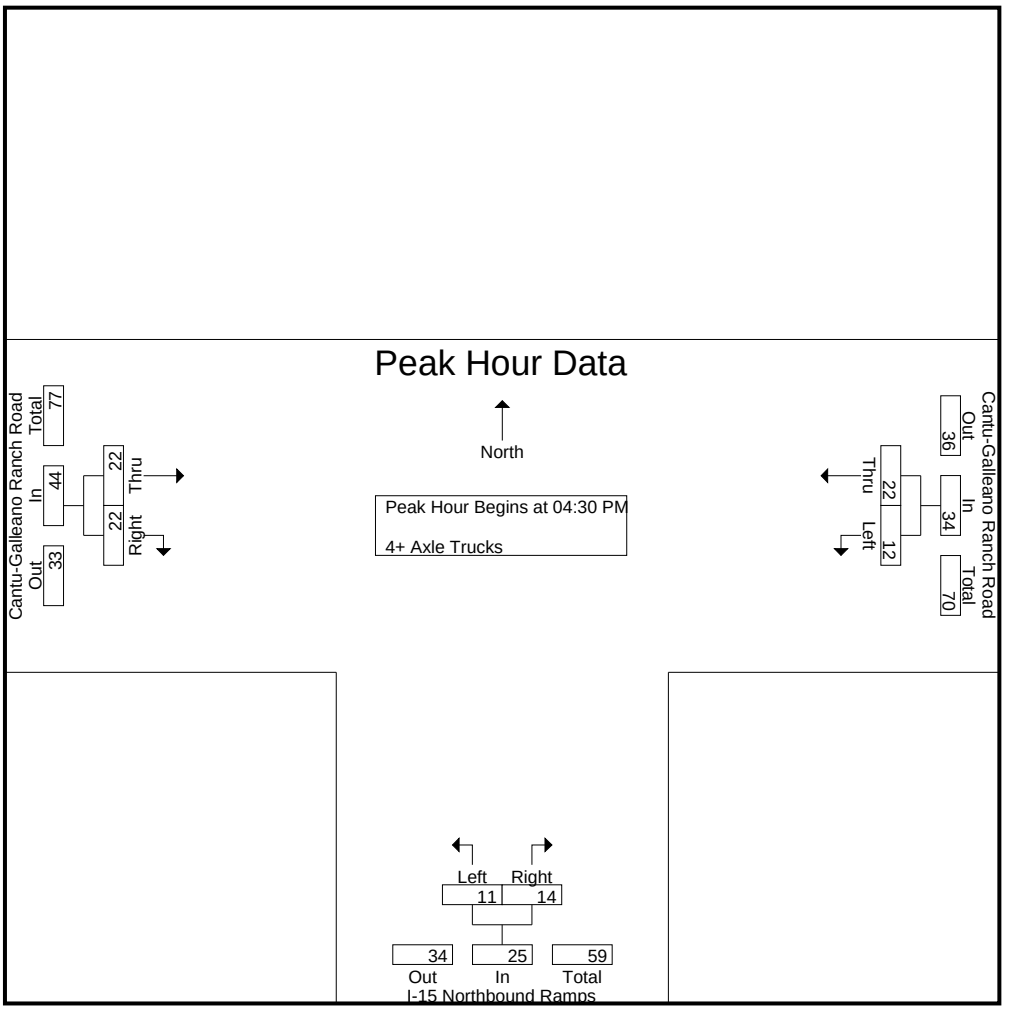
City of Ontario
N/S: I-15 Northbound Ramps
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 07_ONT_15N_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	**6**	**7**	**13**	1	4	5	**8**	3	11
+15 mins.	2	4	6	**4**	**6**	**10**	5	3	8
+30 mins.	3	5	8	4	4	8	4	7	11
+45 mins.	1	6	7	2	0	2	5	**9**	**14**
Total Volume	12	22	34	11	14	25	22	22	44
% App. Total	35.3	64.7		44	56		50	50	
PHF	.500	.786	.654	.688	.583	.625	.688	.611	.786

Location: Ontario
N/S: I-15 NB Ramps
E/W: Cantu-Galleano Ranch Rd

Date: 5/10/2022
Day: Tuesday

PEDESTRIANS

	North Leg I-15 NB Ramps	East Leg Cantu-Galleano Ranch Rd	South Leg I-15 NB Ramps	West Leg Cantu-Galleano Ranch Rd	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	1	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	1	0	1
TOTAL VOLUMES:	0	0	2	0	2

	North Leg I-15 NB Ramps	East Leg Cantu-Galleano Ranch Rd	South Leg I-15 NB Ramps	West Leg Cantu-Galleano Ranch Rd	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0

Location: Ontario
N/S: I-15 NB Ramps
E/W: Cantu-Galleano Ranch Rd

Date: 5/10/2022
Day: Tuesday

BICYCLES

	Southbound I-15 NB Ramps			Westbound Cantu-Galleano Ranch Rd			Northbound I-15 NB Ramps			Eastbound Cantu-Galleano Ranch Rd			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	2	0	2

	Southbound I-15 NB Ramps			Westbound Cantu-Galleano Ranch Rd			Northbound I-15 NB Ramps			Eastbound Cantu-Galleano Ranch Rd			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	1	0	2

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(951)268-6268

City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	1	4	8	8	13	4	54	15	3	73	53	55	7	2	115	38	48	23	10	109	23	310	333
07:15 AM	1	16	15	7	32	5	53	18	7	76	44	53	4	2	101	62	38	37	22	137	38	346	384
07:30 AM	5	11	8	3	24	5	45	11	7	61	60	67	4	2	131	74	41	47	9	162	21	378	399
07:45 AM	4	14	12	5	30	6	41	9	4	56	59	88	3	0	150	92	54	80	44	226	53	462	515
Total	11	45	43	23	99	20	193	53	21	266	216	263	18	6	497	266	181	187	85	634	135	1496	1631
08:00 AM	3	16	14	9	33	5	29	7	5	41	46	69	6	4	121	80	64	56	23	200	41	395	436
08:15 AM	3	11	14	8	28	3	40	11	2	54	54	50	3	3	107	62	67	49	25	178	38	367	405
08:30 AM	2	7	12	4	21	3	44	4	2	51	48	42	6	2	96	50	40	40	15	130	23	298	321
08:45 AM	0	7	12	2	19	2	39	6	3	47	37	22	3	0	62	24	33	45	17	102	22	230	252
Total	8	41	52	23	101	13	152	28	12	193	185	183	18	9	386	216	204	190	80	610	124	1290	1414
Grand Total	19	86	95	46	200	33	345	81	33	459	401	446	36	15	883	482	385	377	165	1244	259	2786	3045
Apprch %	9.5	43	47.5			7.2	75.2	17.6			45.4	50.5	4.1			38.7	30.9	30.3					
Total %	0.7	3.1	3.4		7.2	1.2	12.4	2.9		16.5	14.4	16	1.3		31.7	17.3	13.8	13.5		44.7	8.5	91.5	
Passenger Vehicles	16	79	29		142	27	300	72		431	378	436	31		859	419	337	348		1264	0	0	2696
% Passenger Vehicles	84.2	91.9	30.5	39.1	57.7	81.8	87	88.9	97	87.6	94.3	97.8	86.1	93.3	95.7	86.9	87.5	92.3	97	89.7	0	0	88.5
Large 2 Axle Vehicles	1	6	7		18	0	14	1		15	2	4	1		7	12	10	10		34	0	0	74
% Large 2 Axle Vehicles	5.3	7	7.4	8.7	7.3	0	4.1	1.2	0	3	0.5	0.9	2.8	0	0.8	2.5	2.6	2.7	1.2	2.4	0	0	2.4
3 Axle Vehicles	0	0	7		9	0	3	1		4	4	1	1		6	8	10	3		21	0	0	40
% 3 Axle Vehicles	0	0	7.4	4.3	3.7	0	0.9	1.2	0	0.8	1	0.2	2.8	0	0.7	1.7	2.6	0.8	0	1.5	0	0	1.3
4+ Axle Trucks	2	1	52		77	6	28	7		42	17	5	3		26	43	28	16		90	0	0	235
% 4+ Axle Trucks	10.5	1.2	54.7	47.8	31.3	18.2	8.1	8.6	3	8.5	4.2	1.1	8.3	6.7	2.9	8.9	7.3	4.2	1.8	6.4	0	0	7.7

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**5**	11	8	24	5	**45**	**11**	**61**	**60**	67	4	131	74	41	47	162	378
07:45 AM	4	14	12	30	**6**	41	9	56	59	**88**	3	**150**	**92**	54	**80**	**226**	**462**
08:00 AM	3	**16**	**14**	**33**	5	29	7	41	46	69	**6**	121	80	64	56	200	395
08:15 AM	3	11	14	28	3	40	11	54	54	50	3	107	62	**67**	49	178	367
Total Volume	15	52	48	115	19	155	38	212	219	274	16	509	308	226	232	766	1602
% App. Total	13	45.2	41.7		9	73.1	17.9		43	53.8	3.1		40.2	29.5	30.3		
PHF	.750	.813	.857	.871	.792	.861	.864	.869	.913	.778	.667	.848	.837	.843	.725	.847	.867

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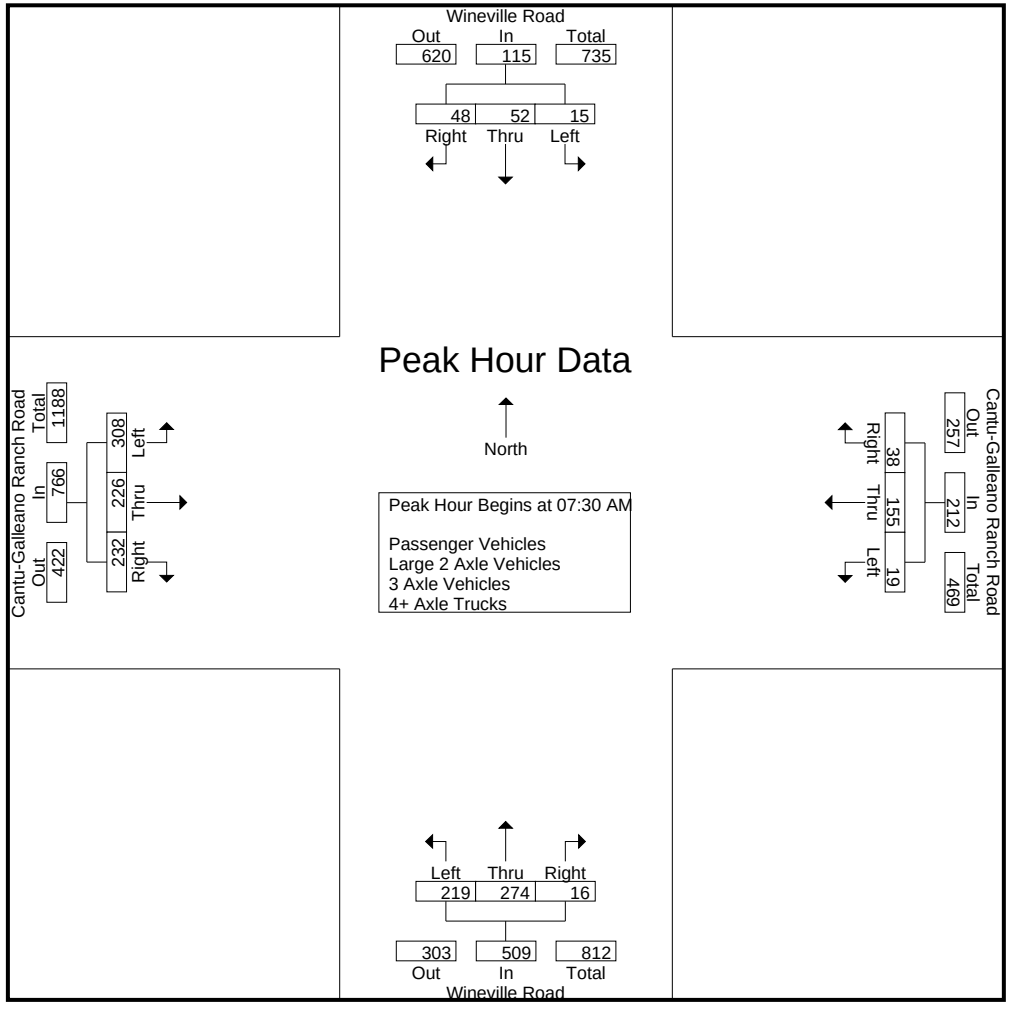
City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
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File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:15 AM				07:00 AM				07:30 AM				07:30 AM				
+0 mins.	1	**16**	**15**	32	4	**54**	15	73	**60**	67	4	131	74	41	47	162	
+15 mins.	**5**	11	8	24	5	53	**18**	**76**	59	**88**	3	**150**	**92**	54	**80**	**226**	
+30 mins.	4	14	12	30	5	45	11	61	46	69	**6**	121	80	64	56	200	
+45 mins.	3	16	14	**33**	**6**	41	9	56	54	50	3	107	62	**67**	49	178	
Total Volume	13	57	49	119	20	193	53	266	219	274	16	509	308	226	232	766	
% App. Total	10.9	47.9	41.2		7.5	72.6	19.9		43	53.8	3.1		40.2	29.5	30.3		
PHF	.650	.891	.817	.902	.833	.894	.736	.875	.913	.778	.667	.848	.837	.843	.725	.847	

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Weather: Clear

File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Passenger Vehicles

	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	1	4	4	4	9	3	53	13	3	69	47	55	6	1	108	32	41	22	9	95	17	281	298
07:15 AM	1	13	7	4	21	5	45	17	7	67	43	53	4	2	100	51	33	36	22	120	35	308	343
07:30 AM	4	9	2	1	15	5	36	11	7	52	57	66	4	2	127	68	33	45	7	146	17	340	357
07:45 AM	3	12	2	0	17	4	30	7	4	41	55	85	3	0	143	86	51	74	44	211	48	412	460
Total	9	38	15	9	62	17	164	48	21	229	202	259	17	5	478	237	158	177	82	572	117	1341	1458
08:00 AM	2	16	2	2	20	4	28	7	5	39	42	67	5	4	114	76	63	53	22	192	33	365	398
08:15 AM	3	11	5	4	19	2	36	11	2	49	52	47	3	3	102	47	58	43	25	148	34	318	352
08:30 AM	2	7	3	2	12	2	36	3	2	41	45	42	4	2	91	36	28	35	15	99	21	243	264
08:45 AM	0	7	4	1	11	2	36	3	2	41	37	21	2	0	60	23	30	40	16	93	19	205	224
Total	7	41	14	9	62	10	136	24	11	170	176	177	14	9	367	182	179	171	78	532	107	1131	1238
Grand Total	16	79	29	18	124	27	300	72	32	399	378	436	31	14	845	419	337	348	160	1104	224	2472	2696
Apprch %	12.9	63.7	23.4			6.8	75.2	18			44.7	51.6	3.7			38	30.5	31.5					
Total %	0.6	3.2	1.2		5	1.1	12.1	2.9		16.1	15.3	17.6	1.3		34.2	16.9	13.6	14.1		44.7	8.3	91.7	

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**4**	9	2	15	**5**	**36**	**11**	**52**	**57**	66	4	127	68	33	45	146	340
07:45 AM	3	12	2	17	4	30	7	41	55	**85**	3	**143**	**86**	51	**74**	**211**	**412**
08:00 AM	2	**16**	2	**20**	4	28	7	39	42	67	**5**	114	76	**63**	53	192	365
08:15 AM	3	11	**5**	19	2	36	11	49	52	47	3	102	47	58	43	148	318
Total Volume	12	48	11	71	15	130	36	181	206	265	15	486	277	205	215	697	1435
% App. Total	16.9	67.6	15.5		8.3	71.8	19.9		42.4	54.5	3.1		39.7	29.4	30.8		
PHF	.750	.750	.550	.888	.750	.903	.818	.870	.904	.779	.750	.850	.805	.813	.726	.826	.871

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City of Ontario
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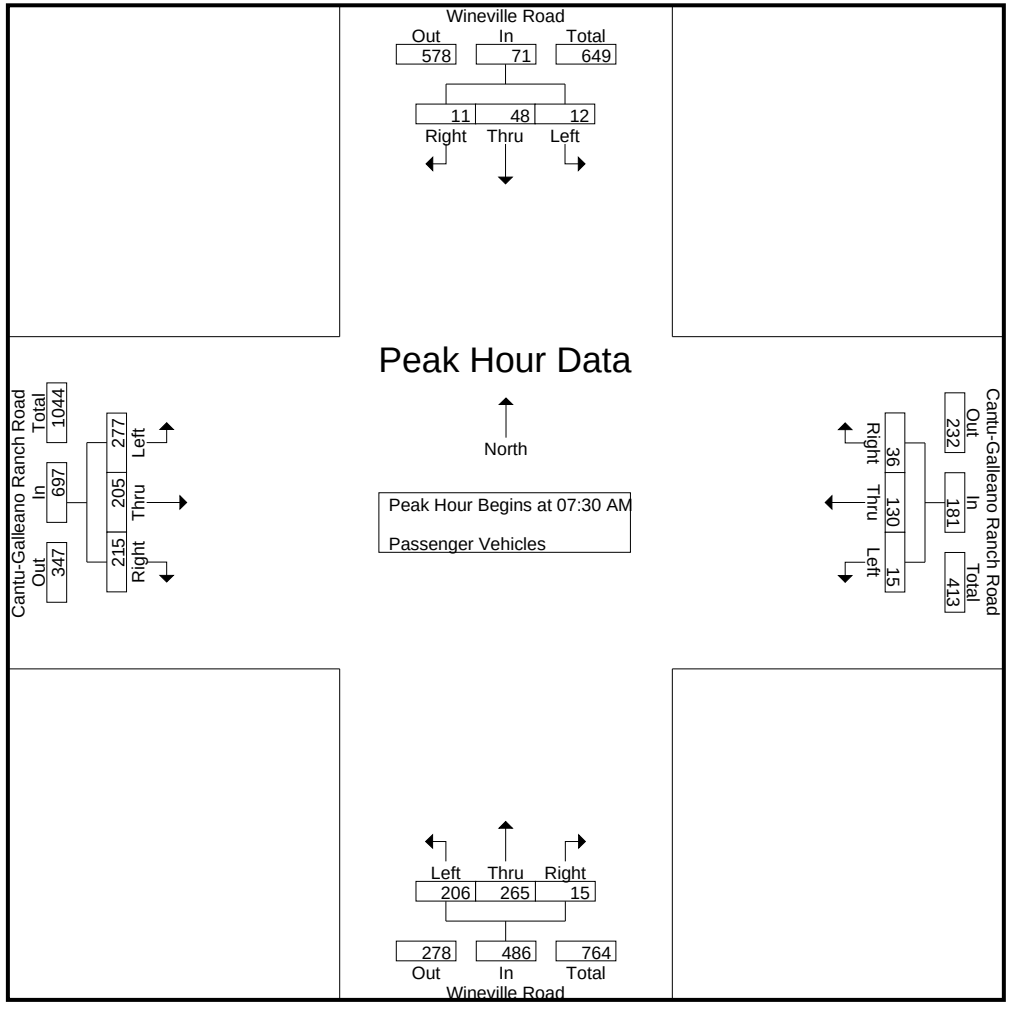
File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Wineville Road
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File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	**4**	9	2	15	**5**	**36**	**11**	**52**	**57**	66	4	127	68	33	45	146	
+15 mins.	3	12	2	17	4	30	7	41	55	**85**	3	**143**	**86**	51	**74**	**211**	
+30 mins.	2	**16**	2	**20**	4	28	7	39	42	67	**5**	114	76	**63**	53	192	
+45 mins.	3	11	**5**	19	2	36	11	49	52	47	3	102	47	58	43	148	
Total Volume	12	48	11	71	15	130	36	181	206	265	15	486	277	205	215	697	
% App. Total	16.9	67.6	15.5		8.3	71.8	19.9		42.4	54.5	3.1		39.7	29.4	30.8		
PHF	.750	.750	.550	.888	.750	.903	.818	.870	.904	.779	.750	.850	.805	.813	.726	.826	

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City of Ontario
N/S: Wineville Road
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Weather: Clear

File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	1	1	1	0	0	0	0	0	1	0	0	0	1	2	2	0	0	4	1	6	7
07:15 AM	0	3	0	0	3	0	5	0	0	5	0	0	0	0	0	2	3	1	0	6	0	14	14
07:30 AM	0	2	0	0	2	0	3	0	0	3	0	1	0	0	1	2	2	1	1	5	1	11	12
07:45 AM	0	1	1	0	2	0	3	0	0	3	0	2	0	0	2	1	0	1	0	2	0	9	9
Total	0	6	2	1	8	0	11	0	0	11	1	3	0	0	4	7	7	3	1	17	2	40	42
08:00 AM	1	0	2	2	3	0	0	0	0	0	0	1	1	0	2	0	0	2	1	2	3	7	10
08:15 AM	0	0	1	1	1	0	1	0	0	1	0	0	0	0	0	3	1	2	0	6	1	8	9
08:30 AM	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	2	2	3	0	7	0	10	10
08:45 AM	0	0	1	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	3
Total	1	0	5	3	6	0	3	1	0	4	1	1	1	0	3	5	3	7	1	15	4	28	32
Grand Total	1	6	7	4	14	0	14	1	0	15	2	4	1	0	7	12	10	10	2	32	6	68	74
Apprch %	7.1	42.9	50			0	93.3	6.7			28.6	57.1	14.3			37.5	31.2	31.2					
Total %	1.5	8.8	10.3		20.6	0	20.6	1.5		22.1	2.9	5.9	1.5		10.3	17.6	14.7	14.7		47.1	8.1	91.9	

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	**2**	0	2	0	**3**	0	**3**	0	1	0	1	2	**2**	1	5	**11**
07:45 AM	0	1	1	2	0	3	0	3	0	**2**	0	**2**	1	0	1	2	9
08:00 AM	**1**	0	**2**	**3**	0	0	0	0	0	1	**1**	2	0	0	**2**	2	7
08:15 AM	0	0	1	1	0	1	0	1	0	0	0	0	**3**	1	2	**6**	8
Total Volume	1	3	4	8	0	7	0	7	0	4	1	5	6	3	6	15	35
% App. Total	12.5	37.5	50		0	100	0		0	80	20		40	20	40		
PHF	.250	.375	.500	.667	.000	.583	.000	.583	.000	.500	.250	.625	.500	.375	.750	.625	.795

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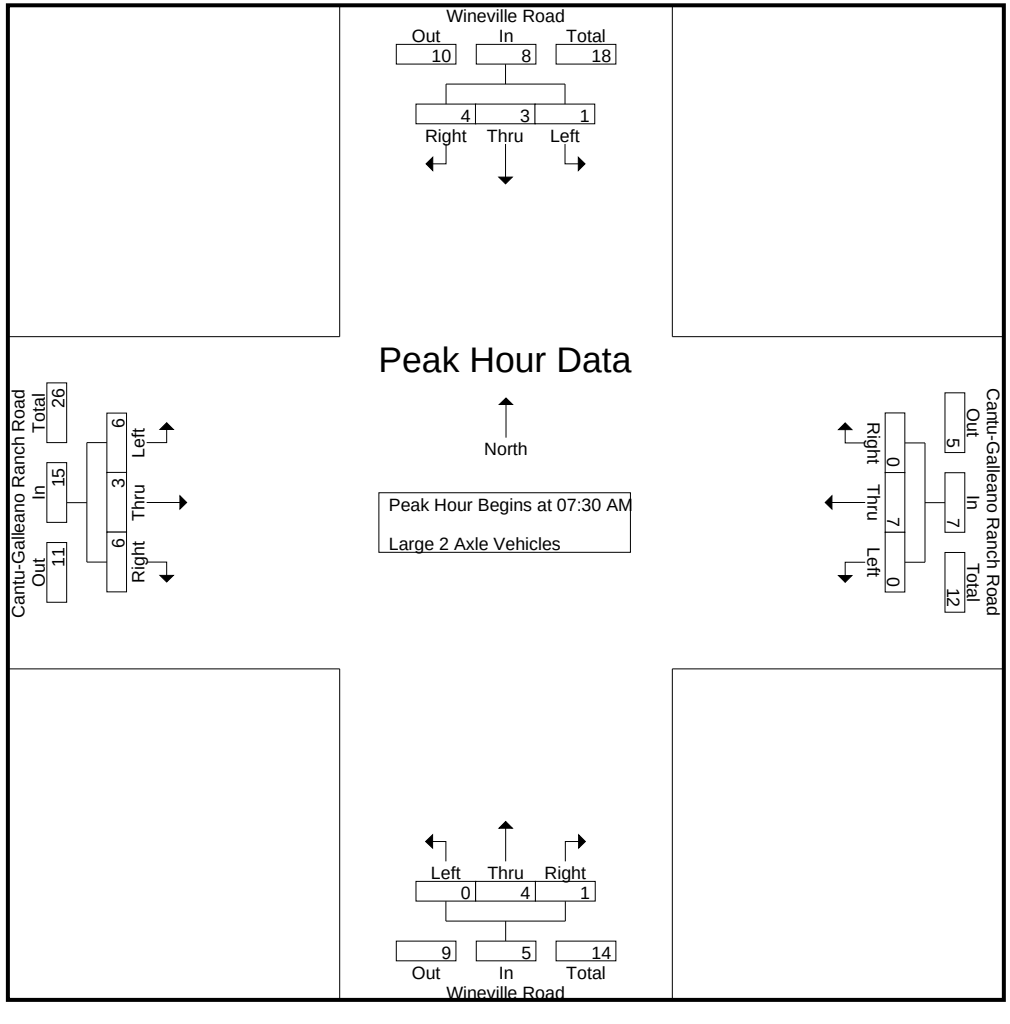

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	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	0	**2**	0	2	0	**3**	0	**3**	0	1	0	1	2	**2**	1	5	
+15 mins.	0	1	1	2	0	3	0	3	0	**2**	0	**2**	1	0	1	2	
+30 mins.	**1**	0	**2**	**3**	0	0	0	0	0	1	**1**	2	0	0	**2**	2	
+45 mins.	0	0	1	1	0	1	0	1	0	0	0	0	**3**	1	2	**6**	
Total Volume	1	3	4	8	0	7	0	7	0	4	1	5	6	3	6	15	
% App. Total	12.5	37.5	50		0	100	0		0	80	20		40	20	40		
PHF	.250	.375	.500	.667	.000	.583	.000	.583	.000	.500	.250	.625	.500	.375	.750	.625	

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File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	2	2
07:15 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	2	2
07:30 AM	0	0	1	1	1	0	1	0	0	1	1	0	0	0	1	0	3	0	0	3	1	6	7
07:45 AM	0	0	1	1	1	0	1	0	0	1	2	0	0	0	2	1	0	2	0	3	1	7	8
Total	0	0	2	2	2	0	2	1	0	3	3	0	0	0	3	3	4	2	0	9	2	17	19
08:00 AM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	2
08:15 AM	0	0	2	0	2	0	1	0	0	1	0	1	0	0	1	1	2	0	0	3	0	7	7
08:30 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	4	4	1	0	9	0	11	11
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1
Total	0	0	5	0	5	0	1	0	0	1	1	1	1	0	3	5	6	1	0	12	0	21	21
Grand Total	0	0	7	2	7	0	3	1	0	4	4	1	1	0	6	8	10	3	0	21	2	38	40
Apprch %	0	0	100			0	75	25			66.7	16.7	16.7			38.1	47.6	14.3					
Total %	0	0	18.4		18.4	0	7.9	2.6		10.5	10.5	2.6	2.6		15.8	21.1	26.3	7.9		55.3	5	95	

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	1	1	0	**1**	0	**1**	1	0	0	1	0	**3**	0	**3**	6
07:45 AM	0	0	1	1	0	1	0	1	**2**	0	0	**2**	**1**	0	**2**	3	**7**
08:00 AM	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	2
08:15 AM	0	0	**2**	**2**	0	1	0	1	0	**1**	0	1	1	2	0	3	7
Total Volume	0	0	5	5	0	3	0	3	4	1	0	5	2	5	2	9	22
% App. Total	0	0	100		0	100	0		80	20	0		22.2	55.6	22.2		
PHF	.000	.000	.625	.625	.000	.750	.000	.750	.500	.250	.000	.625	.500	.417	.250	.750	.786

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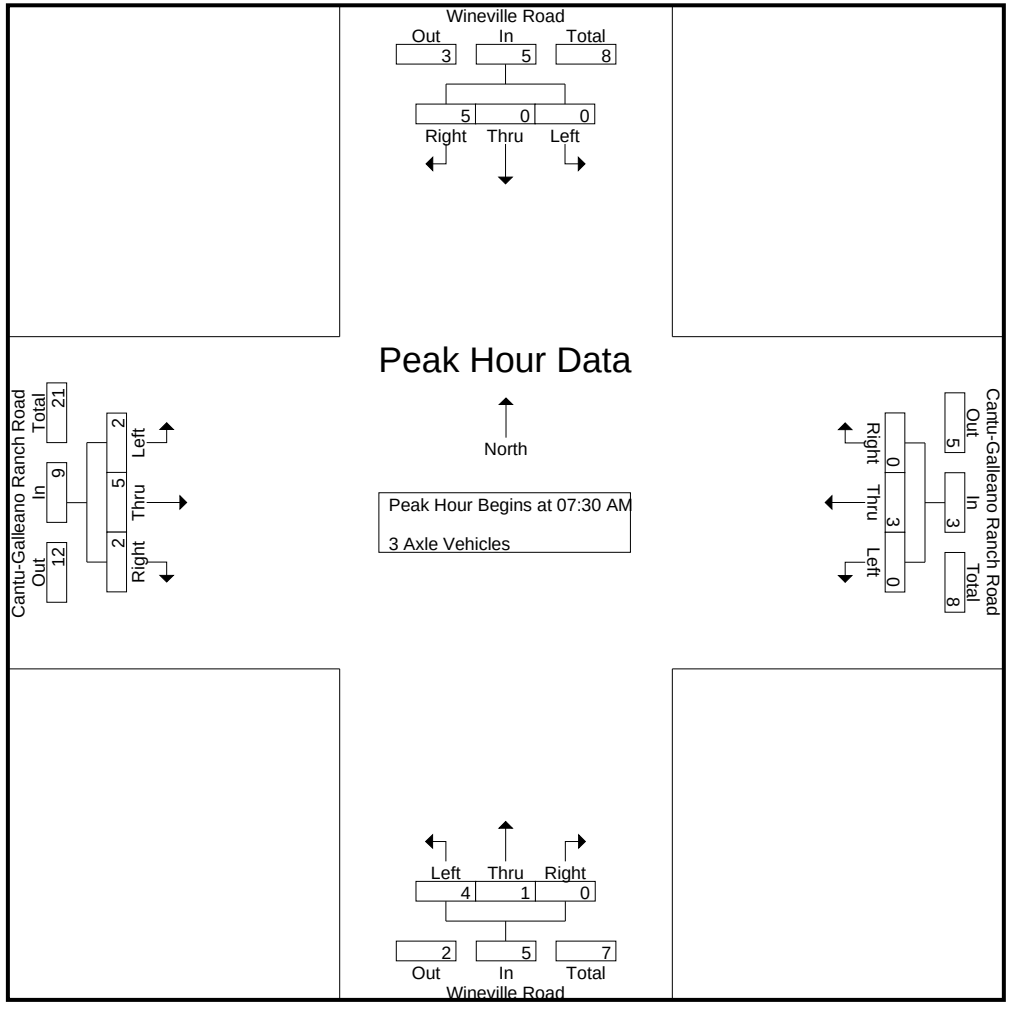
City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR AM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	0	0	1	1	0	**1**	0	**1**	1	0	0	1	0	**3**	0	**3**	
+15 mins.	0	0	1	1	0	1	0	1	**2**	0	0	**2**	**1**	0	**2**	3	
+30 mins.	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	
+45 mins.	0	0	**2**	**2**	0	1	0	1	0	**1**	0	1	1	2	0	3	
Total Volume	0	0	5	5	0	3	0	3	4	1	0	5	2	5	2	9	
% App. Total	0	0	100		0	100	0		80	20	0		22.2	55.6	22.2		
PHF	.000	.000	.625	.625	.000	.750	.000	.750	.500	.250	.000	.625	.500	.417	.250	.750	

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Groups Printed- 4+ Axle Trucks

	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	3	3	3	1	1	2	0	4	5	0	1	1	6	3	4	1	1	8	5	21	26
07:15 AM	0	0	8	3	8	0	3	0	0	3	1	0	0	0	1	8	2	0	0	10	3	22	25
07:30 AM	1	0	5	1	6	0	5	0	0	5	2	0	0	0	2	4	3	1	1	8	2	21	23
07:45 AM	1	1	8	4	10	2	7	2	0	11	2	1	0	0	3	4	3	3	0	10	4	34	38
Total	2	1	24	11	27	3	16	4	0	23	10	1	1	1	12	19	12	5	2	36	14	98	112
08:00 AM	0	0	9	5	9	1	1	0	0	2	3	1	0	0	4	4	1	1	0	6	5	21	26
08:15 AM	0	0	6	3	6	1	2	0	0	3	2	2	0	0	4	11	6	4	0	21	3	34	37
08:30 AM	0	0	6	2	6	1	7	1	0	9	2	0	2	0	4	8	6	1	0	15	2	34	36
08:45 AM	0	0	7	1	7	0	2	2	1	4	0	1	0	0	1	1	3	5	1	9	3	21	24
Total	0	0	28	11	28	3	12	3	1	18	7	4	2	0	13	24	16	11	1	51	13	110	123
Grand Total	2	1	52	22	55	6	28	7	1	41	17	5	3	1	25	43	28	16	3	87	27	208	235
Apprch %	3.6	1.8	94.5			14.6	68.3	17.1			68	20	12			49.4	32.2	18.4					
Total %	1	0.5	25		26.4	2.9	13.5	3.4		19.7	8.2	2.4	1.4		12	20.7	13.5	7.7		41.8	11.5	88.5	

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**1**	0	5	6	0	5	0	5	2	0	0	2	4	3	1	8	21
07:45 AM	1	**1**	8	**10**	**2**	**7**	**2**	**11**	2	1	0	3	4	3	3	10	**34**
08:00 AM	0	0	**9**	9	1	1	0	2	**3**	1	0	**4**	4	1	1	6	21
08:15 AM	0	0	6	6	1	2	0	3	2	**2**	0	4	**11**	**6**	**4**	**21**	34
Total Volume	2	1	28	31	4	15	2	21	9	4	0	13	23	13	9	45	110
% App. Total	6.5	3.2	90.3		19	71.4	9.5		69.2	30.8	0		51.1	28.9	20		
PHF	.500	.250	.778	.775	.500	.536	.250	.477	.750	.500	.000	.813	.523	.542	.563	.536	.809

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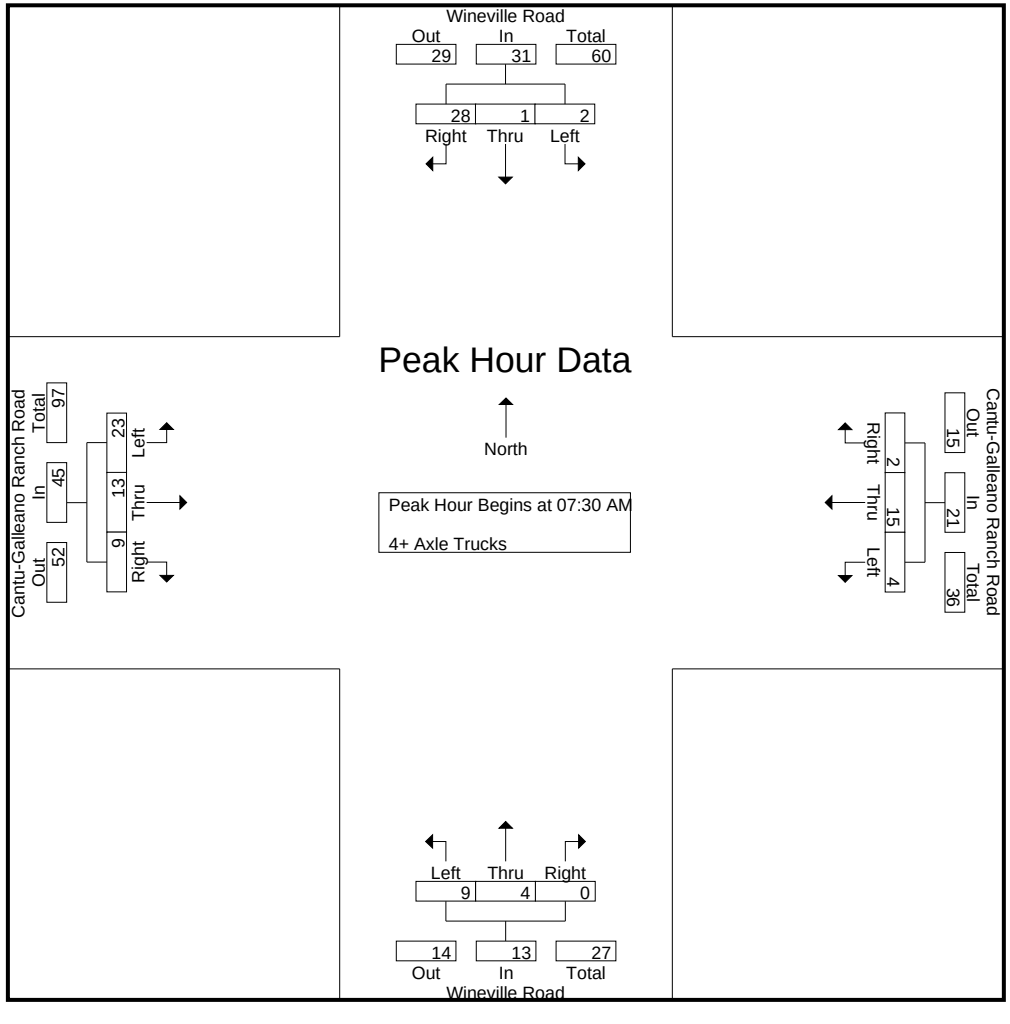

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	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:30 AM				07:30 AM				07:30 AM				07:30 AM				
+0 mins.	**1**	0	5	6	0	5	0	5	2	0	0	2	4	3	1	8	
+15 mins.	1	**1**	8	**10**	**2**	**7**	**2**	**11**	2	1	0	3	4	3	3	10	
+30 mins.	0	0	**9**	9	1	1	0	2	**3**	1	0	**4**	4	1	1	6	
+45 mins.	0	0	6	6	1	2	0	3	2	**2**	0	4	**11**	**6**	**4**	**21**	
Total Volume	2	1	28	31	4	15	2	21	9	4	0	13	23	13	9	45	
% App. Total	6.5	3.2	90.3		19	71.4	9.5		69.2	30.8	0		51.1	28.9	20		
PHF	.500	.250	.778	.775	.500	.536	.250	.477	.750	.500	.000	.813	.523	.542	.563	.536	

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Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	7	26	32	14	65	3	52	4	1	59	31	29	8	6	68	25	77	69	34	171	55	363	418
04:15 PM	3	39	17	6	59	6	43	5	1	54	32	7	4	2	43	22	79	94	24	195	33	351	384
04:30 PM	7	31	37	20	75	8	46	2	1	56	47	27	9	5	83	19	87	70	37	176	63	390	453
04:45 PM	3	46	21	9	70	5	49	8	4	62	55	17	14	9	86	17	84	71	25	172	47	390	437
Total	20	142	107	49	269	22	190	19	7	231	165	80	35	22	280	83	327	304	120	714	198	1494	1692
05:00 PM	4	31	31	16	66	5	58	5	2	68	42	22	7	4	71	14	67	71	31	152	53	357	410
05:15 PM	13	47	32	15	92	4	60	3	2	67	38	16	11	6	65	9	85	89	34	183	57	407	464
05:30 PM	7	41	25	15	73	6	49	3	0	58	31	20	8	5	59	6	74	72	46	152	66	342	408
05:45 PM	7	34	16	13	57	1	31	4	4	36	36	16	9	4	61	17	81	75	12	173	33	327	360
Total	31	153	104	59	288	16	198	15	8	229	147	74	35	19	256	46	307	307	123	660	209	1433	1642
Grand Total	51	295	211	108	557	38	388	34	15	460	312	154	70	41	536	129	634	611	243	1374	407	2927	3334
Apprch %	9.2	53	37.9			8.3	84.3	7.4			58.2	28.7	13.1			9.4	46.1	44.5					
Total %	1.7	10.1	7.2		19	1.3	13.3	1.2		15.7	10.7	5.3	2.4		18.3	4.4	21.7	20.9		46.9	12.2	87.8	
Passenger Vehicles	48	276	155		559	30	358	28		429	292	137	63		527	80	607	577		1492	0	0	3007
% Passenger Vehicles	94.1	93.6	73.5	74.1	84.1	78.9	92.3	82.4	86.7	90.3	93.6	89	90	85.4	91.3	62	95.7	94.4	93.8	92.3	0	0	90.2
Large 2 Axle Vehicles	2	8	6		22	3	6	3		12	6	7	3		18	7	9	10		29	0	0	81
% Large 2 Axle Vehicles	3.9	2.7	2.8	5.6	3.3	7.9	1.5	8.8	0	2.5	1.9	4.5	4.3	4.9	3.1	5.4	1.4	1.6	1.2	1.8	0	0	2.4
3 Axle Vehicles	0	6	4		14	4	10	0		14	0	3	2		7	7	5	6		21	0	0	56
% 3 Axle Vehicles	0	2	1.9	3.7	2.1	10.5	2.6	0	0	2.9	0	1.9	2.9	4.9	1.2	5.4	0.8	1	1.2	1.3	0	0	1.7
4+ Axle Trucks	1	5	46		70	1	14	3		20	14	7	2		25	35	13	18		75	0	0	190
% 4+ Axle Trucks	2	1.7	21.8	16.7	10.5	2.6	3.6	8.8	13.3	4.2	4.5	4.5	2.9	4.9	4.3	27.1	2.1	2.9	3.7	4.6	0	0	5.7

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	7	31	**37**	75	**8**	46	2	56	47	**27**	9	83	**19**	**87**	70	176	390
04:45 PM	3	46	21	70	5	49	**8**	62	**55**	17	**14**	**86**	17	84	71	172	390
05:00 PM	4	31	31	66	5	58	5	**68**	42	22	7	71	14	67	71	152	357
05:15 PM	**13**	**47**	32	**92**	4	**60**	3	67	38	16	11	65	9	85	**89**	**183**	**407**
Total Volume	27	155	121	303	22	213	18	253	182	82	41	305	59	323	301	683	1544
% App. Total	8.9	51.2	39.9		8.7	84.2	7.1		59.7	26.9	13.4		8.6	47.3	44.1		
PHF	.519	.824	.818	.823	.688	.888	.563	.930	.827	.759	.732	.887	.776	.928	.846	.933	.948

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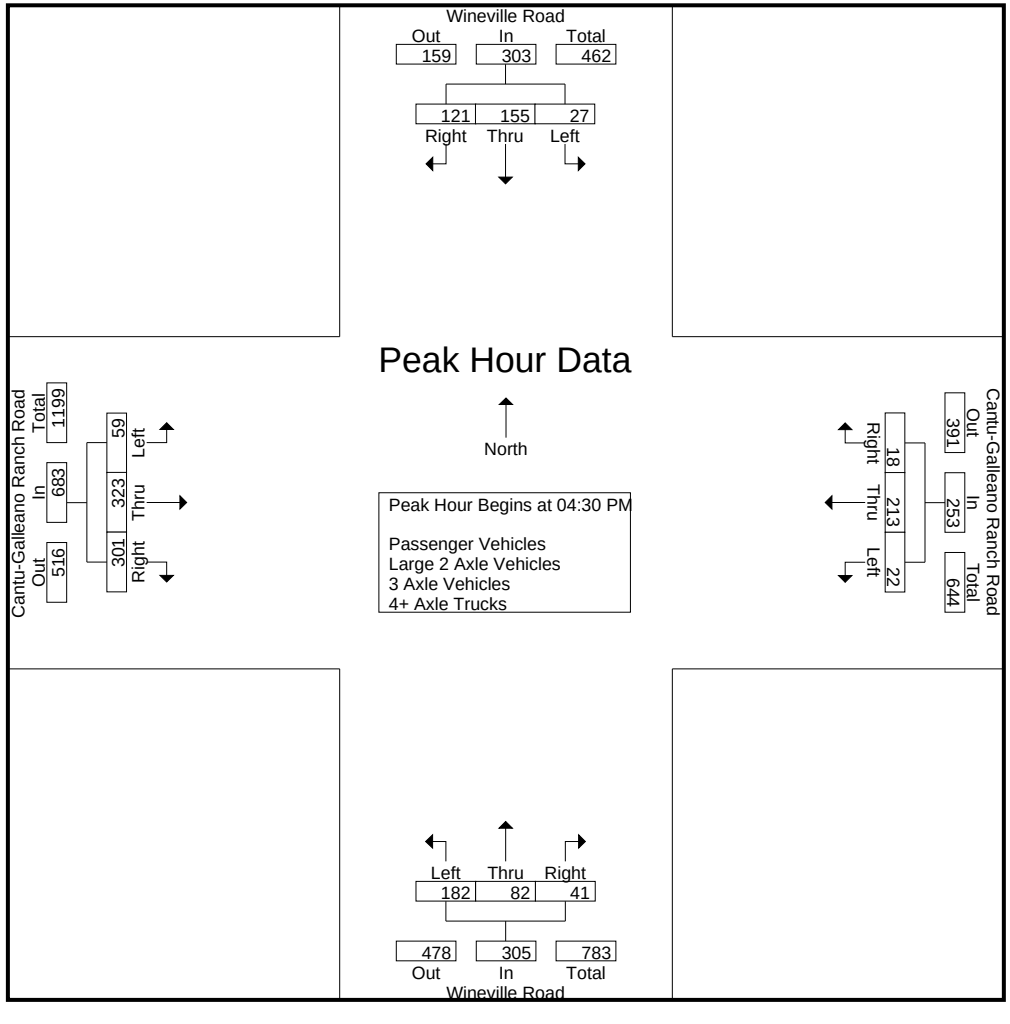

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	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:45 PM				04:30 PM				04:00 PM				
+0 mins.	7	31	**37**	75	5	49	**8**	62	47	**27**	9	83	**25**	77	69	171	
+15 mins.	3	46	21	70	5	58	5	**68**	**55**	17	**14**	**86**	22	79	**94**	**195**	
+30 mins.	4	31	31	66	4	**60**	3	67	42	22	7	71	19	**87**	70	176	
+45 mins.	**13**	**47**	32	**92**	**6**	49	3	58	38	16	11	65	17	84	71	172	
Total Volume	27	155	121	303	20	216	19	255	182	82	41	305	83	327	304	714	
% App. Total	8.9	51.2	39.9		7.8	84.7	7.5		59.7	26.9	13.4		11.6	45.8	42.6		
PHF	.519	.824	.818	.823	.833	.900	.594	.938	.827	.759	.732	.887	.830	.940	.809	.915	

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Groups Printed- Passenger Vehicles

	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	6	26	25	11	57	3	45	3	1	51	30	26	8	6	64	18	72	64	32	154	50	326	376
04:15 PM	3	37	11	4	51	5	39	3	1	47	25	6	4	2	35	13	76	85	19	174	26	307	333
04:30 PM	7	28	29	18	64	7	39	2	1	48	44	22	8	4	74	9	80	65	35	154	58	340	398
04:45 PM	3	42	14	6	59	2	48	6	3	56	55	15	12	7	82	9	82	69	24	160	40	357	397
Total	19	133	79	39	231	17	171	14	6	202	154	69	32	19	255	49	310	283	110	642	174	1330	1504
05:00 PM	3	29	27	15	59	5	55	5	2	65	38	21	6	3	65	9	65	68	29	142	49	331	380
05:15 PM	13	42	21	9	76	3	56	3	2	62	37	16	10	6	63	8	83	85	32	176	49	377	426
05:30 PM	7	39	16	8	62	4	47	3	0	54	31	18	6	3	55	5	72	70	45	147	56	318	374
05:45 PM	6	33	12	9	51	1	29	3	3	33	32	13	9	4	54	9	77	71	12	157	28	295	323
Total	29	143	76	41	248	13	187	14	7	214	138	68	31	16	237	31	297	294	118	622	182	1321	1503
Grand Total	48	276	155	80	479	30	358	28	13	416	292	137	63	35	492	80	607	577	228	1264	356	2651	3007
Apprch %	10	57.6	32.4			7.2	86.1	6.7			59.3	27.8	12.8			6.3	48	45.6					
Total %	1.8	10.4	5.8		18.1	1.1	13.5	1.1		15.7	11	5.2	2.4		18.6	3	22.9	21.8		47.7	11.8	88.2	

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	7	28	**29**	64	**7**	39	2	48	44	**22**	8	74	**9**	80	65	154	340
04:45 PM	3	**42**	14	59	2	48	**6**	56	**55**	15	**12**	**82**	9	82	69	160	357
05:00 PM	3	29	27	59	5	55	5	**65**	38	21	6	65	9	65	68	142	331
05:15 PM	**13**	42	21	**76**	3	**56**	3	62	37	16	10	63	8	**83**	**85**	**176**	**377**
Total Volume	26	141	91	258	17	198	16	231	174	74	36	284	35	310	287	632	1405
% App. Total	10.1	54.7	35.3		7.4	85.7	6.9		61.3	26.1	12.7		5.5	49.1	45.4		
PHF	.500	.839	.784	.849	.607	.884	.667	.888	.791	.841	.750	.866	.972	.934	.844	.898	.932

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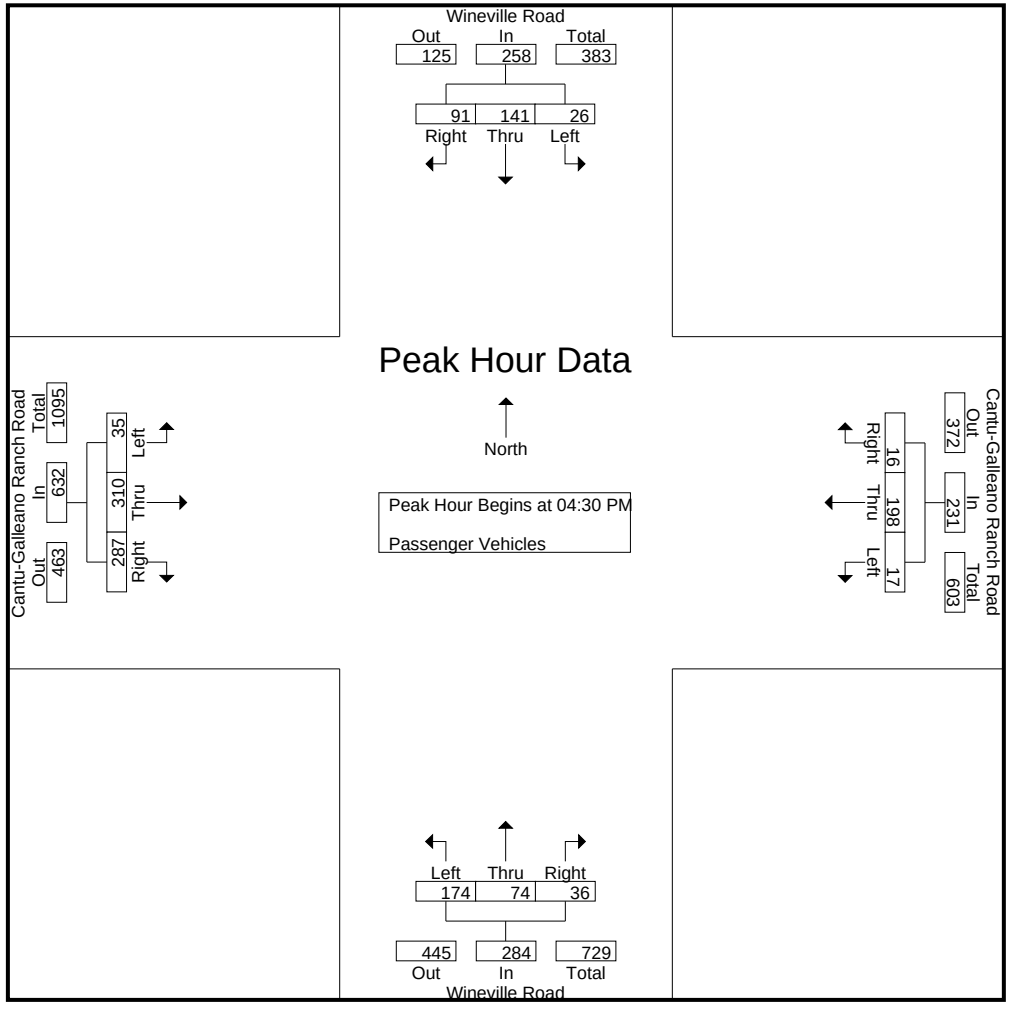
Page No : 2



Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	7	28	**29**	64	**7**	39	2	48	44	**22**	8	74	**9**	80	65	154	
+15 mins.	3	**42**	14	59	2	48	**6**	56	**55**	15	**12**	**82**	9	82	69	160	
+30 mins.	3	29	27	59	5	55	5	**65**	38	21	6	65	9	65	68	142	
+45 mins.	**13**	42	21	**76**	3	**56**	3	62	37	16	10	63	8	**83**	**85**	**176**	
Total Volume	26	141	91	258	17	198	16	231	174	74	36	284	35	310	287	632	
% App. Total	10.1	54.7	35.3		7.4	85.7	6.9		61.3	26.1	12.7		5.5	49.1	45.4		
PHF	.500	.839	.784	.849	.607	.884	.667	.888	.791	.841	.750	.866	.972	.934	.844	.898	

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City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

Groups Printed- Large 2 Axle Vehicles

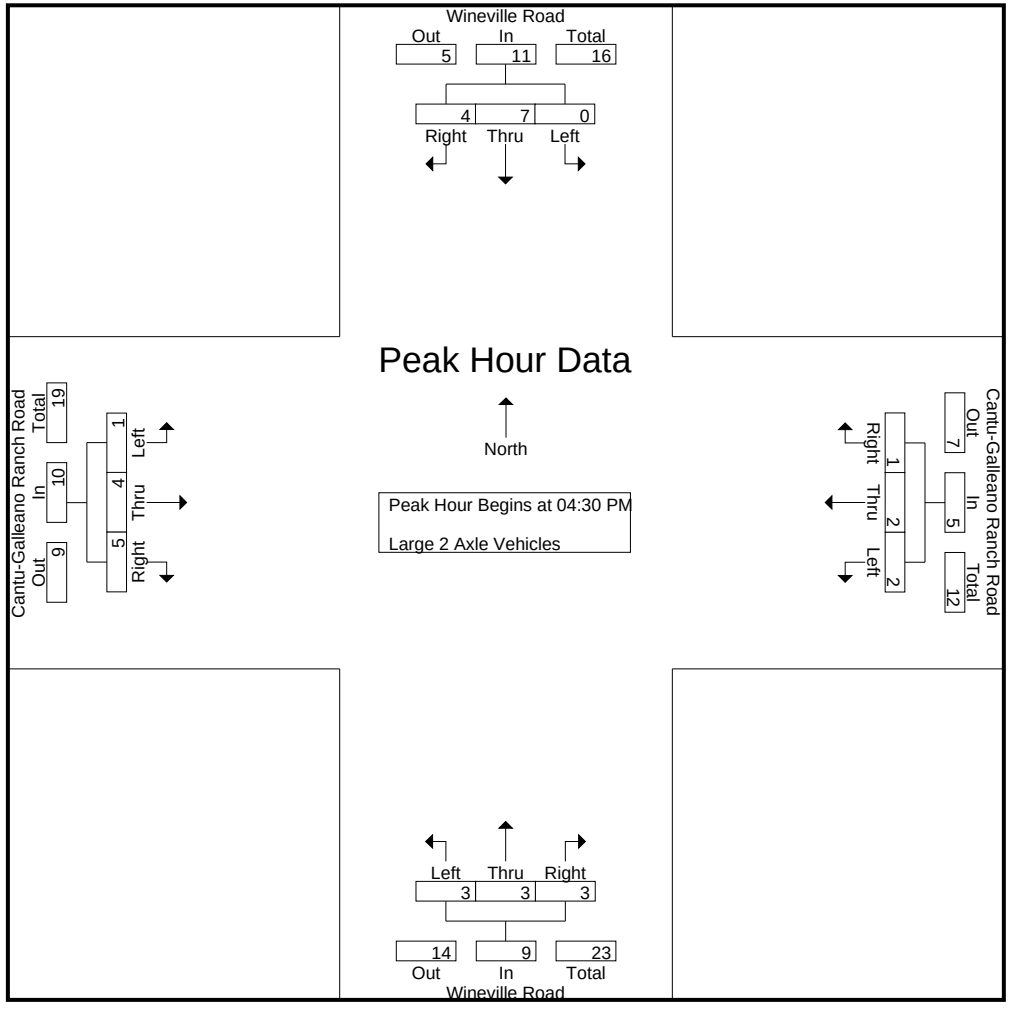
	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	2	1	1	0	4	0	9	9
04:15 PM	0	0	0	0	0	0	0	2	0	2	2	1	0	0	3	2	1	2	0	5	0	10	10
04:30 PM	0	1	1	1	2	0	1	0	0	1	1	3	0	0	4	1	3	3	1	7	2	14	16
04:45 PM	0	4	1	1	5	1	0	1	0	2	0	0	1	1	1	0	0	2	1	2	3	10	13
Total	1	5	2	2	8	1	5	3	0	9	3	4	1	1	8	5	5	8	2	18	5	43	48
05:00 PM	0	1	0	0	1	0	0	0	0	0	2	0	1	1	3	0	1	0	0	1	1	5	6
05:15 PM	0	1	2	2	3	1	1	0	0	2	0	0	1	0	1	0	0	0	0	0	2	6	8
05:30 PM	0	1	1	1	2	1	0	0	0	1	0	2	0	0	2	1	1	1	1	3	2	8	10
05:45 PM	1	0	1	1	2	0	0	0	0	0	1	1	0	0	2	1	2	1	0	4	1	8	9
Total	1	3	4	4	8	2	1	0	0	3	3	3	2	1	8	2	4	2	1	8	6	27	33
Grand Total	2	8	6	6	16	3	6	3	0	12	6	7	3	2	16	7	9	10	3	26	11	70	81
Apprch %	12.5	50	37.5			25	50	25			37.5	43.8	18.8			26.9	34.6	38.5					
Total %	2.9	11.4	8.6		22.9	4.3	8.6	4.3		17.1	8.6	10	4.3		22.9	10	12.9	14.3		37.1	13.6	86.4	

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	1	1	2	0	**1**	0	1	1	**3**	0	**4**	**1**	**3**	**3**	**7**	**14**
04:45 PM	0	**4**	1	**5**	**1**	0	**1**	**2**	0	0	**1**	1	0	0	2	2	10
05:00 PM	0	1	0	1	0	0	0	0	**2**	0	1	3	0	1	0	1	5
05:15 PM	0	1	**2**	3	1	1	0	2	0	0	1	1	0	0	0	0	6
Total Volume	0	7	4	11	2	2	1	5	3	3	3	9	1	4	5	10	35
% App. Total	0	63.6	36.4		40	40	20		33.3	33.3	33.3		10	40	50		
PHF	.000	.438	.500	.550	.500	.500	.250	.625	.375	.250	.750	.563	.250	.333	.417	.357	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	1	1	2	0	**1**	0	1	1	**3**	0	**4**	**1**	**3**	**3**	**7**	
+15 mins.	0	**4**	1	**5**	**1**	0	**1**	**2**	0	0	**1**	1	0	0	2	2	
+30 mins.	0	1	0	1	0	0	0	0	**2**	0	1	3	0	1	0	1	
+45 mins.	0	1	**2**	3	1	1	0	2	0	0	1	1	0	0	0	0	
Total Volume	0	7	4	11	2	2	1	5	3	3	3	9	1	4	5	10	
% App. Total	0	63.6	36.4		40	40	20		33.3	33.3	33.3		10	40	50		
PHF	.000	.438	.500	.550	.500	.500	.250	.625	.375	.250	.750	.563	.250	.333	.417	.357	

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City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 3 Axle Vehicles

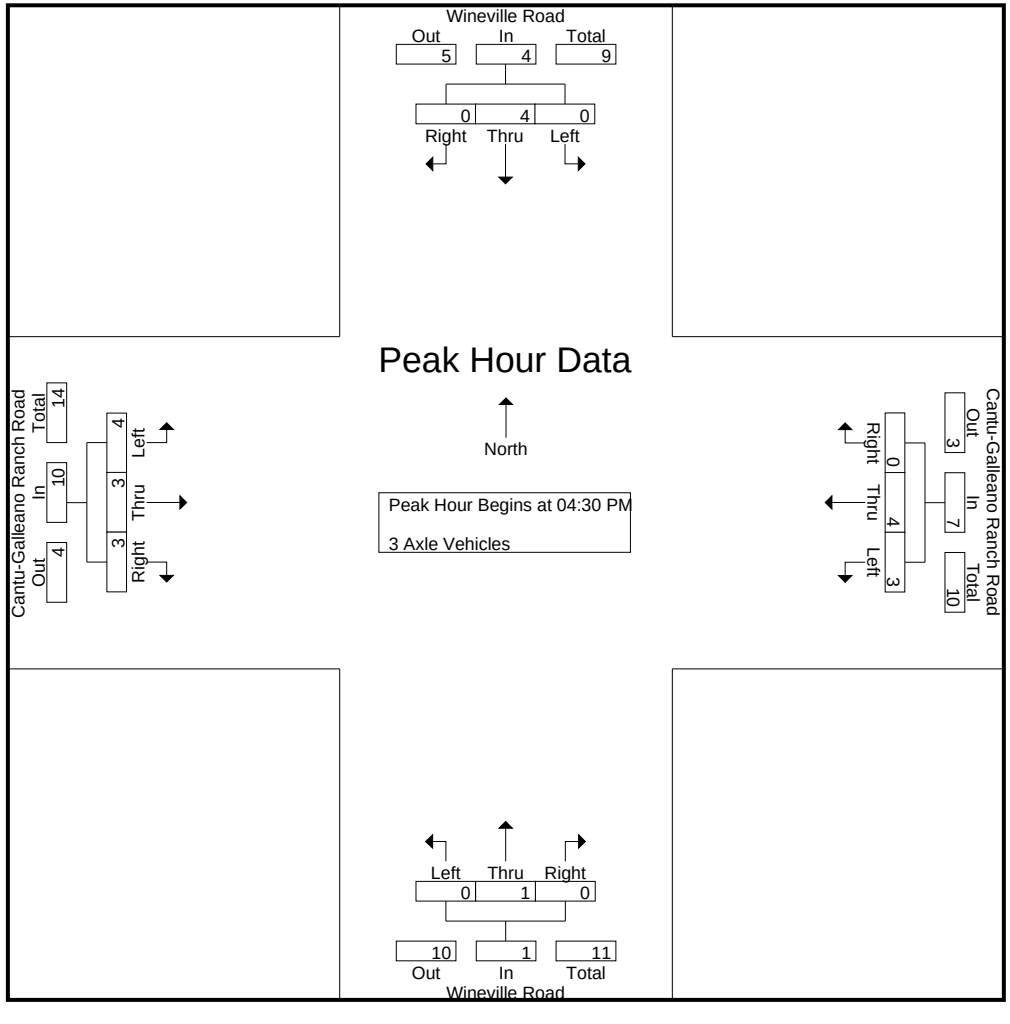
	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	1	0	0	2	0	4	4
04:15 PM	0	0	1	1	1	1	2	0	0	3	0	0	0	0	0	1	0	1	1	2	2	6	8
04:30 PM	0	1	0	0	1	1	2	0	0	3	0	1	0	0	1	1	0	1	1	2	1	7	8
04:45 PM	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	2	1	0	0	3	0	6	6
Total	0	1	1	1	2	4	7	0	0	11	0	1	0	0	1	5	2	2	2	9	3	23	26
05:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	3	3
05:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	2	1	4	1	6	7
05:30 PM	0	1	2	2	3	0	1	0	0	1	0	0	2	2	2	0	0	0	0	0	4	6	10
05:45 PM	0	1	1	1	2	0	1	0	0	1	0	2	0	0	2	1	1	2	0	4	1	9	10
Total	0	5	3	3	8	0	3	0	0	3	0	2	2	2	4	2	3	4	1	9	6	24	30
Grand Total	0	6	4	4	10	4	10	0	0	14	0	3	2	2	5	7	5	6	3	18	9	47	56
Apprch %	0	60	40			28.6	71.4	0			0	60	40			38.9	27.8	33.3					
Total %	0	12.8	8.5		21.3	8.5	21.3	0		29.8	0	6.4	4.3		10.6	14.9	10.6	12.8		38.3	16.1	83.9	

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	1	0	1	1	**2**	0	**3**	0	**1**	0	**1**	1	0	1	2	**7**
04:45 PM	0	0	0	0	**2**	1	0	3	0	0	0	0	**2**	**1**	0	3	6
05:00 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0	1	3
05:15 PM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	1	1	**2**	**4**	6
Total Volume	0	4	0	4	3	4	0	7	0	1	0	1	4	3	3	10	22
% App. Total	0	100	0		42.9	57.1	0		0	100	0		40	30	30		
PHF	.000	.500	.000	.500	.375	.500	.000	.583	.000	.250	.000	.250	.500	.750	.375	.625	.786

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	1	0	1	1	**2**	0	**3**	0	**1**	0	**1**	1	0	1	2	
+15 mins.	0	0	0	0	**2**	1	0	3	0	0	0	0	**2**	**1**	0	3	
+30 mins.	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0	1	
+45 mins.	0	**2**	0	**2**	0	0	0	0	0	0	0	0	1	1	**2**	**4**	
Total Volume	0	4	0	4	3	4	0	7	0	1	0	1	4	3	3	10	
% App. Total	0	100	0		42.9	57.1	0		0	100	0		40	30	30		
PHF	.000	.500	.000	.500	.375	.500	.000	.583	.000	.250	.000	.250	.500	.750	.375	.625	

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City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 1

Groups Printed- 4+ Axle Trucks

	Wineville Road Southbound					Cantu-Galleano Ranch Road Westbound					Wineville Road Northbound					Cantu-Galleano Ranch Road Eastbound							
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	7	3	7	0	1	1	0	2	1	3	0	0	4	4	3	4	2	11	5	24	29
04:15 PM	0	2	5	1	7	0	2	0	0	2	5	0	0	0	5	6	2	6	4	14	5	28	33
04:30 PM	0	1	7	1	8	0	4	0	0	4	2	1	1	1	4	8	4	1	0	13	2	29	31
04:45 PM	0	0	6	2	6	0	0	1	1	1	0	2	1	1	3	6	1	0	0	7	4	17	21
Total	0	3	25	7	28	0	7	2	1	9	8	6	2	2	16	24	10	11	6	45	16	98	114
05:00 PM	1	0	4	1	5	0	2	0	0	2	2	1	0	0	3	5	0	3	2	8	3	18	21
05:15 PM	0	2	9	4	11	0	3	0	0	3	1	0	0	0	1	0	1	2	1	3	5	18	23
05:30 PM	0	0	6	4	6	1	1	0	0	2	0	0	0	0	0	0	1	1	0	2	4	10	14
05:45 PM	0	0	2	2	2	0	1	1	1	2	3	0	0	0	3	6	1	1	0	8	3	15	18
Total	1	2	21	11	24	1	7	1	1	9	6	1	0	0	7	11	3	7	3	21	15	61	76
Grand Total	1	5	46	18	52	1	14	3	2	18	14	7	2	2	23	35	13	18	9	66	31	159	190
Apprch %	1.9	9.6	88.5			5.6	77.8	16.7			60.9	30.4	8.7			53	19.7	27.3					
Total %	0.6	3.1	28.9		32.7	0.6	8.8	1.9		11.3	8.8	4.4	1.3		14.5	22	8.2	11.3		41.5	16.3	83.7	

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	1	7	8	0	**4**	0	**4**	**2**	1	**1**	**4**	**8**	**4**	1	**13**	**29**
04:45 PM	0	0	6	6	0	0	**1**	1	0	**2**	1	3	6	1	0	7	17
05:00 PM	**1**	0	4	5	0	2	0	2	2	1	0	3	5	0	**3**	8	18
05:15 PM	0	**2**	**9**	**11**	0	3	0	3	1	0	0	1	0	1	2	3	18
Total Volume	1	3	26	30	0	9	1	10	5	4	2	11	19	6	6	31	82
% App. Total	3.3	10	86.7		0	90	10		45.5	36.4	18.2		61.3	19.4	19.4		
PHF	.250	.375	.722	.682	.000	.563	.250	.625	.625	.500	.500	.688	.594	.375	.500	.596	.707

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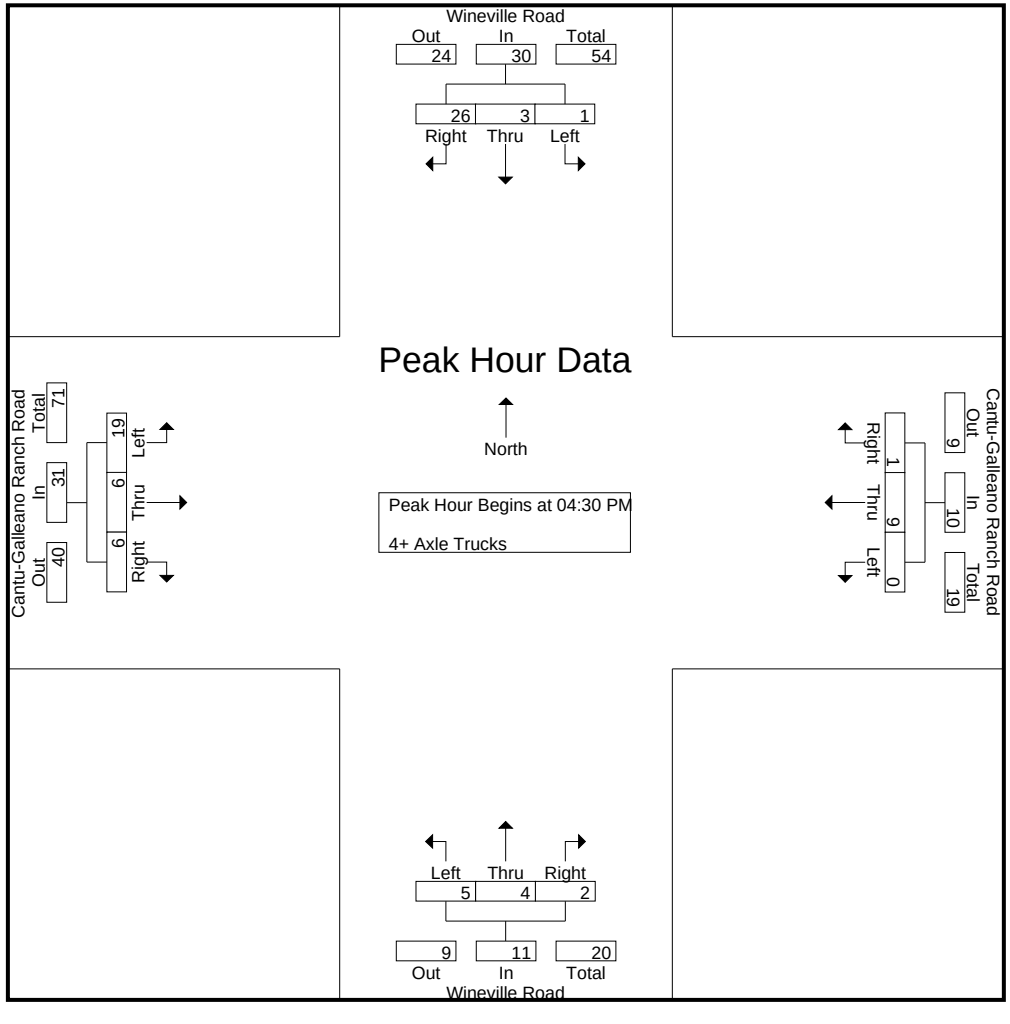
City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022
Page No : 2



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City of Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Road
Weather: Clear

File Name : 08_ONT_Wine_CGR PM
Site Code : 05122421
Start Date : 5/10/2022

	Wineville Road Southbound				Cantu-Galleano Ranch Road Westbound				Wineville Road Northbound				Cantu-Galleano Ranch Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	1	7	8	0	**4**	0	**4**	**2**	1	**1**	**4**	**8**	**4**	1	**13**	
+15 mins.	0	0	6	6	0	0	**1**	1	0	**2**	1	3	6	1	0	7	
+30 mins.	**1**	0	4	5	0	2	0	2	2	1	0	3	5	0	**3**	8	
+45 mins.	0	**2**	**9**	**11**	0	3	0	3	1	0	0	1	0	1	2	3	
Total Volume	1	3	26	30	0	9	1	10	5	4	2	11	19	6	6	31	
% App. Total	3.3	10	86.7		0	90	10		45.5	36.4	18.2		61.3	19.4	19.4		
PHF	.250	.375	.722	.682	.000	.563	.250	.625	.625	.500	.500	.688	.594	.375	.500	.596	

Location: Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Rd

Date: 5/10/2022
Day: Tuesday

PEDESTRIANS

	North Leg Wineville Road	East Leg Cantu-Galleano Ranch Rd	South Leg Wineville Road	West Leg Cantu-Galleano Ranch Rd	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	1	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	1	0	1

	North Leg Wineville Road	East Leg Cantu-Galleano Ranch Rd	South Leg Wineville Road	West Leg Cantu-Galleano Ranch Rd	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	4	0	0	4
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	4	0	0	4

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951-268-6268

Location: Ontario
N/S: Wineville Road
E/W: Cantu-Galleano Ranch Rd

Date: 5/10/2022
Day: Tuesday

BICYCLES

	Southbound Wineville Road			Westbound Cantu-Galleano Ranch Rd			Northbound Wineville Road			Eastbound Cantu-Galleano Ranch Rd			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	2
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	2	0	2	0	4

	Southbound Wineville Road			Westbound Cantu-Galleano Ranch Rd			Northbound Wineville Road			Eastbound Cantu-Galleano Ranch Rd			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	1	0	2

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

A42621

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 10, 2022 **CITY#** Ontario

JOB #: SC3418 CLASS1 Chino west of Haven

AM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
0:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
3:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
3:45	0	1	2	0	0	0	0	0	0	0	0	0	0	3
4:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:15	0	3	1	0	0	0	0	0	0	0	0	0	0	4
4:30	0	2	2	0	0	0	0	0	0	0	0	0	0	4
4:45	0	2	3	0	0	0	0	0	0	0	0	0	0	5
5:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
5:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
5:30	0	2	3	0	0	1	0	0	0	0	0	0	0	6
5:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
6:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
6:15	0	10	3	0	0	0	0	0	0	0	0	0	0	13
6:30	0	9	3	0	1	0	0	0	0	0	0	0	0	13
6:45	0	10	1	0	0	0	0	0	0	0	0	0	0	11
7:00	0	15	4	0	0	0	0	0	0	0	0	0	0	19
7:15	0	23	3	0	0	0	0	0	0	0	0	0	0	26
7:30	0	17	2	0	0	0	0	0	1	0	0	0	0	20
7:45	0	23	4	0	2	0	0	0	0	0	0	0	0	29
8:00	0	33	6	0	0	0	0	0	0	0	0	0	0	39
8:15	0	10	2	0	0	0	0	0	0	0	0	0	0	12
8:30	0	13	3	0	0	0	0	0	0	0	0	0	0	16
8:45	0	7	3	0	1	0	0	0	0	0	0	0	0	11
9:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
9:15	0	10	2	0	2	0	0	0	0	0	0	0	0	14
9:30	0	8	7	0	1	0	0	0	0	0	0	0	0	16
9:45	0	9	1	0	2	1	0	0	0	0	0	0	0	13
10:00	0	13	3	0	1	1	0	0	0	0	0	0	0	18
10:15	0	8	2	0	3	0	0	0	0	0	0	0	0	13
10:30	0	12	5	0	0	0	0	0	0	0	0	0	0	17
10:45	0	10	6	0	1	0	0	0	0	0	0	0	0	17
11:00	0	12	3	0	1	0	0	0	0	0	0	0	0	16
11:15	0	12	5	0	0	0	0	0	0	0	0	0	0	17
11:30	0	5	3	0	1	0	0	0	0	0	0	0	0	9
11:45	0	7	2	0	1	1	0	0	0	0	0	0	0	11
TOTAL	0	329	88	0	17	4	0	0	1	0	0	0	0	439

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	114

PM	EASTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	6	2	0	1	1	0	0	0	0	0	0	0	10
12:15	0	8	8	0	1	1	0	0	0	0	0	0	0	18
12:30	0	5	7	0	0	1	0	0	0	0	0	0	0	13
12:45	0	7	5	0	1	0	0	0	0	0	0	0	0	13
13:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
13:15	0	8	2	0	1	1	0	0	0	0	0	0	0	12
13:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
13:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
14:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
14:15	1	11	7	0	1	0	0	0	0	0	0	0	0	20
14:30	0	28	9	0	1	0	0	0	0	0	0	0	0	38
14:45	0	22	4	0	1	0	0	0	1	0	0	0	0	28
15:00	0	15	5	0	0	0	0	0	0	0	0	0	0	20
15:15	0	31	3	0	0	0	0	0	0	0	0	0	0	34
15:30	0	20	8	0	0	0	0	0	0	0	0	0	0	28
15:45	0	25	8	0	0	0	0	0	0	0	0	0	0	33
16:00	0	15	9	0	0	0	0	0	0	0	0	0	0	24
16:15	0	9	4	0	1	0	0	0	0	0	0	0	0	14
16:30	1	16	3	0	0	0	0	0	0	0	0	0	0	20
16:45	1	24	2	0	1	0	0	0	0	0	0	0	0	28
17:00	0	16	6	0	1	0	0	0	0	0	0	0	0	23
17:15	0	25	2	0	1	0	0	0	0	0	0	0	0	28
17:30	0	19	3	0	2	0	0	0	0	0	0	0	0	24
17:45	0	24	6	0	3	0	0	0	0	0	0	0	0	33
18:00	0	19	4	0	1	0	0	0	0	0	0	0	0	24
18:15	0	19	2	0	1	0	0	0	0	0	0	0	0	22
18:30	0	13	4	0	0	0	0	0	0	0	0	0	0	17
18:45	0	10	4	0	0	0	0	0	0	0	0	0	0	14
19:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
19:15	0	13	3	0	0	0	0	0	0	0	0	0	0	16
19:30	0	7	1	0	1	0	0	0	0	0	0	0	0	9
19:45	0	8	3	0	0	0	0	0	0	0	0	0	0	11
20:00	0	11	3	0	0	0	0	0	0	0	0	0	0	14
20:15	0	6	3	0	0	0	0	0	0	0	0	0	0	9
20:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
20:45	0	8	0	0	0	0	0	0	0	0	0	0	0	8
21:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
21:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
21:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
21:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
22:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
22:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
22:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
22:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	3	538	142	0	19	4	0	0	1	0	0	0	0	707

PM PEAK HOUR	2:30 PM
PM PEAK VOLUME	120

CLASS 1	Class 1 — Motorcycles	CLASS 8	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	CLASS 9	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	CLASS 10	6 or More Axles, Single Trailer
CLASS 4	Buses	CLASS 11	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	CLASS 12	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	CLASS 13	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: AM+PM	3	867	230	0	36	8	0	0	2	0	0	0	0	1,146
% OF TOTAL	0.3%	75.7%	20.1%	0.0%	3.1%	0.7%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	100.0%
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	
TOTAL: ALL	4	2,004	467	0	74	19	0	0	5	0	0	0	0	2,573
% OF TOTAL	0.2%	77.9%	18.2%	0.0%	2.9%	0.7%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 10, 2022
JOB #: SC3418

CITY# Ontario
CLASS1 Chino west of Haven

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
0:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
4:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
5:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
5:15	0	3	2	0	1	0	0	0	0	0	0	0	0	6
5:30	0	2	2	0	0	0	0	0	0	0	0	0	0	4
5:45	0	3	2	0	0	0	0	0	0	0	0	0	0	5
6:00	0	2	4	0	1	0	0	0	0	0	0	0	0	7
6:15	0	7	2	0	0	0	0	0	0	0	0	0	0	9
6:30	0	10	2	0	0	0	0	0	0	0	0	0	0	12
6:45	0	11	4	0	0	0	0	0	0	0	0	0	0	15
7:00	0	18	1	0	1	0	0	0	0	0	0	0	0	20
7:15	0	37	5	0	0	0	0	0	1	0	0	0	0	43
7:30	0	58	5	0	0	0	0	0	0	0	0	0	0	63
7:45	0	39	6	0	1	0	0	0	0	0	0	0	0	46
8:00	0	23	3	0	1	0	0	0	0	0	0	0	0	27
8:15	0	26	4	0	0	1	0	0	0	0	0	0	0	31
8:30	0	23	7	0	0	0	0	0	0	0	0	0	0	30
8:45	0	14	3	0	5	1	0	0	0	0	0	0	0	23
9:00	0	15	5	0	2	0	0	0	0	0	0	0	0	22
9:15	0	9	4	0	0	0	0	0	0	0	0	0	0	13
9:30	0	9	2	0	1	1	0	0	0	0	0	0	0	13
9:45	0	4	2	0	1	1	0	0	0	0	0	0	0	8
10:00	0	7	6	0	0	0	0	0	0	0	0	0	0	13
10:15	0	11	2	0	0	0	0	0	0	0	0	0	0	13
10:30	0	7	8	0	1	0	0	0	0	0	0	0	0	16
10:45	0	11	1	0	1	0	0	0	0	0	0	0	0	13
11:00	0	15	3	0	2	0	0	0	0	0	0	0	0	20
11:15	0	15	3	0	1	0	0	0	0	0	0	0	0	19
11:30	0	9	1	0	2	1	0	0	1	0	0	0	0	14
11:45	0	9	0	0	0	0	0	0	0	0	0	0	0	9
TOTAL	0	418	94	0	21	5	0	0	2	0	0	0	0	540

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	179

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	10	4	0	0	0	0	0	0	0	0	0	0	14
12:15	0	13	3	0	2	0	0	0	0	0	0	0	0	18
12:30	0	14	3	0	0	0	0	0	0	0	0	0	0	17
12:45	0	9	2	0	0	2	0	0	0	0	0	0	0	13
13:00	0	10	4	0	0	1	0	0	0	0	0	0	0	15
13:15	0	8	6	0	3	0	0	0	0	0	0	0	0	17
13:30	0	11	4	0	1	0	0	0	0	0	0	0	0	16
13:45	0	10	6	0	1	2	0	0	0	0	0	0	0	19
14:00	0	20	4	0	0	1	0	0	0	0	0	0	0	25
14:15	0	27	10	0	0	0	0	0	0	0	0	0	0	37
14:30	0	29	2	0	0	0	0	0	0	0	0	0	0	31
14:45	0	25	8	0	0	0	0	0	0	0	0	0	0	33
15:00	0	21	9	0	1	0	0	0	0	0	0	0	0	31
15:15	0	30	5	0	0	0	0	0	0	0	0	0	0	35
15:30	0	31	4	0	2	0	0	0	0	0	0	0	0	37
15:45	0	18	1	0	0	0	0	0	0	0	0	0	0	19
16:00	1	25	5	0	0	0	0	0	0	0	0	0	0	31
16:15	0	29	2	0	1	0	0	0	1	0	0	0	0	33
16:30	0	24	4	0	1	0	0	0	0	0	0	0	0	29
16:45	0	24	4	0	0	0	0	0	0	0	0	0	0	28
17:00	0	20	6	0	1	0	0	0	0	0	0	0	0	27
17:15	0	26	3	0	2	0	0	0	0	0	0	0	0	31
17:30	0	14	1	0	1	0	0	0	0	0	0	0	0	16
17:45	0	19	0	0	1	0	0	0	0	0	0	0	0	20
18:00	0	20	6	0	0	0	0	0	0	0	0	0	0	26
18:15	0	19	1	0	0	0	0	0	0	0	0	0	0	20
18:30	0	16	2	0	0	0	0	0	0	0	0	0	0	18
18:45	0	15	2	0	0	0	0	0	0	0	0	0	0	17
19:00	0	17	7	0	0	0	0	0	0	0	0	0	0	24
19:15	0	12	2	0	0	0	0	0	0	0	0	0	0	14
19:30	0	17	3	0	0	0	0	0	0	0	0	0	0	20
19:45	0	14	2	0	0	0	0	0	0	0	0	0	0	16
20:00	0	8	5	0	0	0	0	0	0	0	0	0	0	13
20:15	0	17	2	0	0	0	0	0	0	0	0	0	0	19
20:30	0	14	1	0	0	0	0	0	0	0	0	0	0	15
20:45	0	11	1	0	0	0	0	0	0	0	0	0	0	12
21:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
21:15	0	10	1	0	0	0	0	0	0	0	0	0	0	11
21:30	0	9	0	0	0	0	0	0	0	0	0	0	0	9
21:45	0	11	0	0	0	0	0	0	0	0	0	0	0	11
22:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
22:15	0	2	2	0	0	0	0	0	0	0	0	0	0	4
22:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
22:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:45	0	5	1	0	0	0	0	0	0	0	0	0	0	6
TOTAL	1	719	143	0	17	6	0	0	1	0	0	0	0	887

PM PEAK HOUR	2:45 PM
PM PEAK VOLUME	136

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	1	1,137	237	0	38	11	0	0	3	0	0	0	0	1,427
% OF TOTAL	0.1%	79.7%	16.6%	0.0%	2.7%	0.8%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**

A42621

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 10, 2022 **CITY#** Ontario

JOB #: SC3418 CLASS2 Haven north of Chino

AM	NORTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
0:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
0:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
0:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
1:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
1:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
2:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
3:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
3:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
3:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
4:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
4:15	0	12	6	0	0	0	0	0	0	0	0	0	0	18
4:30	0	18	3	0	0	0	0	0	0	0	0	0	0	21
4:45	0	22	5	0	0	0	0	0	0	0	0	0	0	27
5:00	0	35	2	0	0	0	0	0	0	0	0	0	0	37
5:15	0	27	7	0	0	0	0	0	0	0	0	0	0	34
5:30	0	41	7	0	0	1	0	0	0	0	0	0	0	49
5:45	0	57	9	0	1	0	0	0	0	0	0	0	0	67
6:00	0	59	7	0	0	0	0	0	0	0	0	0	0	66
6:15	0	51	6	0	1	0	0	0	0	0	0	0	0	58
6:30	0	86	15	0	1	0	0	0	0	0	0	0	0	102
6:45	0	94	12	0	1	1	0	0	0	0	0	0	0	108
7:00	0	78	15	0	4	0	0	0	0	0	0	0	0	97
7:15	0	99	6	0	1	0	0	0	0	0	0	0	0	106
7:30	0	93	16	0	0	0	0	0	1	0	0	0	0	110
7:45	0	79	11	0	1	0	0	0	0	0	0	0	0	91
8:00	0	87	5	2	2	0	0	0	0	0	0	0	0	96
8:15	0	83	13	1	1	1	0	0	0	0	0	0	0	99
8:30	0	73	5	0	0	0	0	0	0	0	0	0	0	78
8:45	0	62	5	0	2	0	0	0	0	0	0	0	0	69
9:00	0	78	10	0	0	1	0	0	0	0	0	0	0	89
9:15	0	45	12	0	5	0	0	0	0	0	0	0	0	62
9:30	0	58	12	0	3	0	0	0	0	0	0	0	0	73
9:45	0	58	7	0	2	1	0	0	0	0	0	0	0	68
10:00	0	61	12	0	2	1	0	0	0	0	0	0	0	76
10:15	0	43	6	0	3	1	0	0	0	0	0	0	0	53
10:30	0	65	10	0	1	1	0	0	0	0	0	0	0	77
10:45	0	60	12	0	3	1	0	0	0	0	0	0	0	76
11:00	0	52	9	0	2	1	0	0	0	0	0	0	0	64
11:15	0	54	14	1	2	1	0	0	0	0	0	0	0	72
11:30	0	54	7	0	3	0	0	0	1	0	0	0	0	65
11:45	0	59	5	0	1	0	0	0	0	0	0	0	0	65
TOTAL	0	1,917	277	4	42	11	0	0	2	0	0	0	0	2,253

AM PEAK HOUR	6:45 AM
AM PEAK VOLUME	421

PM	NORTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	70	12	0	6	0	0	0	0	0	0	0	0	88
12:15	0	51	15	0	3	0	0	0	0	0	0	0	0	69
12:30	0	54	14	0	2	1	0	0	0	0	0	0	0	71
12:45	0	64	7	0	1	1	0	0	0	0	0	0	0	73
13:00	0	49	6	0	2	0	0	0	1	0	0	0	0	58
13:15	0	67	6	0	4	0	0	0	0	0	0	0	0	77
13:30	0	74	8	0	2	0	0	0	0	0	0	0	0	84
13:45	0	44	12	1	1	0	0	0	0	0	0	0	0	58
14:00	0	84	20	0	8	1	0	0	0	0	0	0	0	113
14:15	0	78	13	1	4	0	0	0	0	0	0	0	0	96
14:30	0	68	16	0	4	0	0	0	0	0	0	0	0	88
14:45	1	75	18	1	3	0	0	0	1	0	0	0	0	99
15:00	0	76	10	0	2	0	0	0	0	0	0	0	0	88
15:15	0	90	15	0	1	0	0	0	0	0	0	0	0	106
15:30	1	74	18	0	5	0	0	0	0	0	0	0	0	98
15:45	0	62	15	0	2	0	0	0	0	0	0	0	0	79
16:00	0	59	11	0	2	0	0	0	0	0	0	0	0	72
16:15	1	71	10	0	7	1	0	0	1	0	0	0	0	91
16:30	0	64	7	0	3	0	0	0	0	0	0	0	0	74
16:45	3	86	7	0	0	0	0	0	0	0	0	0	0	96
17:00	0	62	7	0	4	0	0	0	0	0	0	0	0	73
17:15	1	84	10	0	2	0	0	0	0	0	0	0	0	97
17:30	0	76	13	0	3	0	0	0	0	0	0	0	0	92
17:45	0	69	9	0	4	0	0	0	0	0	0	0	0	82
18:00	0	65	4	0	1	0	0	0	0	0	0	0	0	70
18:15	0	68	1	0	1	0	0	0	0	0	0	0	0	70
18:30	0	73	4	0	0	0	0	0	0	0	0	0	0	77
18:45	0	47	2	0	0	0	0	0	0	0	0	0	0	49
19:00	0	58	5	0	1	0	0	0	0	0	0	0	0	64
19:15	0	56	4	1	2	0	0	0	0	0	0	0	0	63
19:30	0	42	3	0	1	0	0	0	0	0	0	0	0	46
19:45	1	21	2	0	0	0	0	0	0	0	0	0	0	24
20:00	0	35	1	0	1	0	0	0	0	0	0	0	0	37
20:15	0	38	2	0	0	0	0	0	0	0	0	0	0	40
20:30	0	21	5	0	0	0	0	0	0	0	0	0	0	26
20:45	0	38	1	0	1	0	0	0	0	0	0	0	0	40
21:00	0	24	4	0	1	0	0	0	0	0	0	0	0	29
21:15	0	39	4	0	1	0	0	0	0	0	0	0	0	44
21:30	0	19	4	0	0	0	0	0	0	0	0	0	0	23
21:45	0	16	2	0	0	0	0	0	0	0	0	0	0	18
22:00	0	19	0	0	0	0	0	0	0	0	0	0	0	19
22:15	0	18	3	0	0	0	0	0	0	0	0	0	0	21
22:30	0	16	1	0	0	0	0	0	0	0	0	0	0	17
22:45	0	9	1	0	0	1	0	0	0	0	0	0	0	11
23:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
23:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
23:30	0	9	0	0	0	0	0	0	0	0	0	0	0	9
23:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
TOTAL	8	2,406	333	4	85	5	0	0	3	0	0	0	0	2,844

PM PEAK HOUR	2:00 PM
PM PEAK VOLUME	396

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	8	4,323	610	8	127	16	0	0	5	0	0	0	0	5,097
% OF TOTAL	0.2%	84.8%	12.0%	0.2%	2.5%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	
TOTAL: ALL	18	8,404	1,165	20	227	31	0	1	9	0	0	0	0	9,875
% OF TOTAL	0.2%	85.1%	11.8%	0.2%	2.3%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 10, 2022
JOB #: SC3418

CITY# Ontario
CLASS2 Haven north of Chino

AM	SOUTHBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
0:15	0	11	0	0	0	0	0	0	0	0	0	0	0	11
0:30	0	11	0	0	0	0	0	0	0	0	0	0	0	11
0:45	0	20	0	0	0	0	0	0	0	0	0	0	0	20
1:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
1:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
1:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
2:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
2:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
2:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
3:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
3:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
3:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
4:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
4:15	0	3	0	0	1	0	0	0	0	0	0	0	0	4
4:30	0	9	0	0	0	0	0	0	0	0	0	0	0	9
4:45	0	6	4	0	0	0	0	0	0	0	0	0	0	10
5:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
5:15	0	13	1	0	1	0	0	0	0	0	0	0	0	15
5:30	0	16	3	0	0	0	0	0	0	0	0	0	0	19
5:45	1	20	9	0	2	0	0	0	0	0	0	0	0	32
6:00	0	13	7	0	2	1	0	0	0	0	0	0	0	23
6:15	0	23	9	0	1	0	0	0	0	0	0	0	0	33
6:30	0	23	10	0	1	1	0	0	0	0	0	0	0	35
6:45	0	27	9	0	1	1	0	0	0	0	0	0	0	38
7:00	0	31	6	1	4	0	0	0	0	0	0	0	0	42
7:15	0	36	7	2	2	0	0	0	1	0	0	0	0	48
7:30	0	37	9	0	0	0	0	0	0	0	0	0	0	46
7:45	0	53	10	0	2	0	0	0	0	0	0	0	0	65
8:00	0	62	7	2	3	0	0	0	0	0	0	0	0	74
8:15	0	81	5	0	1	0	0	0	0	0	0	0	0	87
8:30	0	51	7	0	3	0	0	0	0	0	0	0	0	61
8:45	0	40	9	0	6	2	0	0	0	0	0	0	0	57
9:00	0	36	6	0	3	0	0	0	0	0	0	0	0	45
9:15	0	32	8	0	0	1	0	0	0	0	0	0	0	41
9:30	0	22	5	1	3	0	0	0	0	0	0	0	0	31
9:45	0	38	6	0	1	1	0	0	0	0	0	0	0	46
10:00	0	37	11	0	1	0	0	0	0	0	0	0	0	49
10:15	0	36	8	0	1	1	0	0	0	0	0	0	0	46
10:30	0	42	11	0	2	1	0	0	0	0	0	0	0	56
10:45	0	35	9	0	2	0	0	0	0	0	0	0	0	46
11:00	0	41	10	0	4	0	0	0	0	0	0	0	0	55
11:15	0	62	6	0	1	0	0	1	0	0	0	0	0	70
11:30	0	46	11	0	1	0	0	0	0	0	0	0	0	58
11:45	0	54	10	1	3	1	0	0	0	0	0	0	0	69
TOTAL	1	1,152	217	7	52	10	0	1	1	0	0	0	0	1,441

AM PEAK HOUR	7:45 AM
AM PEAK VOLUME	287

PM	SOUTHBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	44	12	1	2	0	0	0	0	0	0	0	0	59
12:15	0	57	7	0	4	0	0	0	1	0	0	0	0	69
12:30	0	49	10	0	1	0	0	0	0	0	0	0	0	60
12:45	0	61	9	0	1	1	0	0	0	0	0	0	0	72
13:00	1	51	10	0	1	1	0	0	0	0	0	0	0	64
13:15	0	49	12	0	2	0	0	0	0	0	0	0	0	63
13:30	1	55	8	0	1	0	0	0	0	0	0	0	0	65
13:45	0	38	9	0	1	0	0	0	0	0	0	0	0	48
14:00	0	55	6	0	4	1	0	0	0	0	0	0	0	66
14:15	0	57	10	0	4	0	0	0	0	0	0	0	0	71
14:30	0	88	5	1	1	1	0	0	0	0	0	0	0	96
14:45	0	94	19	0	1	0	0	0	0	0	0	0	0	114
15:00	0	61	11	1	1	0	0	0	0	0	0	0	0	74
15:15	0	100	9	1	2	0	0	0	0	0	0	0	0	112
15:30	1	111	14	0	1	0	0	0	0	0	0	0	0	127
15:45	1	94	14	1	2	0	0	0	0	0	0	0	0	112
16:00	0	74	8	0	0	0	0	0	0	0	0	0	0	82
16:15	0	83	11	0	1	0	0	0	0	0	0	0	0	95
16:30	1	77	12	0	3	0	0	0	0	0	0	0	0	93
16:45	0	85	11	0	0	0	0	0	1	0	0	0	0	97
17:00	2	95	11	0	1	0	0	0	0	0	0	0	0	109
17:15	0	95	9	0	4	0	0	0	0	0	0	0	0	108
17:30	0	102	9	0	0	0	0	0	1	0	0	0	0	112
17:45	1	106	7	0	1	0	0	0	0	0	0	0	0	115
18:00	0	116	9	0	0	0	0	0	0	0	0	0	0	125
18:15	0	84	6	0	0	0	0	0	0	0	0	0	0	90
18:30	0	83	15	0	2	0	0	0	0	0	0	0	0	100
18:45	0	68	7	0	2	0	0	0	0	0	0	0	0	77
19:00	0	81	9	0	0	0	0	0	0	0	0	0	0	90
19:15	0	78	9	0	1	0	0	0	0	0	0	0	0	88
19:30	0	72	7	0	1	0	0	0	0	0	0	0	0	80
19:45	0	42	5	0	0	0	0	0	0	0	0	0	0	47
20:00	0	45	6	0	0	0	0	0	0	0	0	0	0	51
20:15	0	53	1	0	0	0	0	0	0	0	0	0	0	54
20:30	0	44	2	0	0	0	0	0	0	0	0	0	0	46
20:45	0	46	4	0	1	0	0	0	0	0	0	0	0	51
21:00	0	32	3	0	0	0	0	0	0	0	0	0	0	35
21:15	0	62	2	0	0	0	0	0	0	0	0	0	0	64
21:30	1	26	1	0	0	0	0	0	0	0	0	0	0	28
21:45	0	45	2	0	0	0	0	0	0	0	0	0	0	47
22:00	0	30	2	0	1	0	0	0	0	0	0	0	0	33
22:15	0	32	2	0	1	0	0	0	0	0	0	0	0	35
22:30	0	18	0	0	0	0	0	0	0	0	0	0	0	18
22:45	0	23	0	0	0	0	0	0	0	0	0	0	0	23
23:00	0	16	0	0	0	0	0	0	0	0	0	0	0	16
23:15	0	23	2	0	0	1	0	0	0	0	0	0	0	26
23:30	0	13	0	0	0	0	0	0	0	0	0	0	0	13
23:45	0	16	1	0	0	0	0	0	0	0	0	0	0	17
TOTAL	9	2,929	338	5	48	5	0	0	3	0	0	0	0	3,337

PM PEAK HOUR	5:15 PM
PM PEAK VOLUME	460

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	10	4,081	555	12	100	15	0	1	4	0	0	0	0	4,778
% OF TOTAL	0.2%	85.4%	11.6%	0.3%	2.1%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 10, 2022
JOB #: SC3418

CITY: Ontario
LOCATION: CLASS3 Schaefer west of Turner

AM	EASTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
5:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
6:00	0	4	1	0	1	0	0	0	0	0	0	0	0	6
6:15	0	2	1	0	1	0	0	0	0	0	0	0	0	4
6:30	0	5	2	0	0	0	0	0	0	0	0	0	0	7
6:45	0	7	2	0	0	0	0	0	0	0	0	0	0	9
7:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
7:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
7:30	0	10	2	0	1	0	0	0	0	0	0	0	0	13
7:45	0	18	1	1	0	0	0	0	0	0	0	0	0	20
8:00	0	12	0	1	1	0	0	0	0	0	0	0	0	14
8:15	0	8	0	0	0	0	0	0	0	0	0	0	0	8
8:30	0	6	3	0	0	0	0	0	0	0	0	0	0	9
8:45	0	8	1	0	0	0	0	0	0	0	0	0	0	9
9:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
9:15	0	6	2	0	0	0	0	0	0	0	0	0	0	8
9:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
9:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
10:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
10:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
10:30	0	6	2	0	0	0	0	0	0	0	0	0	0	8
10:45	0	2	1	0	1	0	0	0	0	0	0	0	0	4
11:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
11:15	0	2	2	0	0	0	0	0	0	0	0	0	0	4
11:30	0	4	1	0	1	0	0	0	0	0	0	0	0	6
11:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
TOTAL	0	153	34	2	6	0	0	0	0	0	0	0	0	195

AM PEAK HOUR	7:15 AM
AM PEAK VOLUME	57

PM	EASTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
12:15	0	5	4	0	0	0	0	0	0	0	0	0	0	9
12:30	0	6	0	0	1	0	0	0	0	0	0	0	0	7
12:45	0	12	0	0	0	0	0	0	1	0	0	0	0	13
13:00	0	8	3	0	1	0	0	0	0	0	0	0	0	12
13:15	0	9	0	0	1	0	0	0	0	0	0	0	0	10
13:30	0	10	0	0	0	0	0	0	0	0	0	0	0	10
13:45	0	7	0	0	1	0	0	0	0	0	0	0	0	8
14:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
14:15	0	7	4	0	1	0	0	0	0	0	0	0	0	12
14:30	0	18	0	0	0	0	0	0	0	0	0	0	0	18
14:45	0	17	4	0	2	0	0	0	0	0	0	0	0	23
15:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
15:15	0	10	1	0	0	0	0	0	0	0	0	0	0	11
15:30	0	11	3	0	0	0	0	0	0	0	0	0	0	14
15:45	0	9	3	0	0	0	0	0	0	0	0	0	0	12
16:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
16:15	0	7	1	0	0	1	0	0	0	0	0	0	0	9
16:30	0	14	3	0	1	0	0	0	0	0	0	0	0	18
16:45	0	15	2	0	0	0	0	0	0	0	0	0	0	17
17:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
17:15	0	14	1	0	0	0	0	0	0	0	0	0	0	15
17:30	0	15	1	0	0	0	0	0	0	0	0	0	0	16
17:45	0	16	1	0	0	0	0	0	0	0	0	0	0	17
18:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
18:15	0	8	1	0	0	0	0	0	0	0	0	0	0	9
18:30	0	12	0	0	1	0	0	0	0	0	0	0	0	13
18:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
19:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
19:15	0	8	1	0	0	0	0	0	0	0	0	0	0	9
19:30	0	8	1	0	0	0	0	0	0	0	0	0	0	9
19:45	0	9	0	0	0	0	0	0	0	0	0	0	0	9
20:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
20:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
20:30	0	6	3	0	0	0	0	0	0	0	0	0	0	9
20:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
21:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
21:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
21:30	0	4	1	0	1	0	0	0	0	0	0	0	0	6
21:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
22:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
22:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:15	0	3	2	0	0	0	0	0	0	0	0	0	0	5
23:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	380	56	0	10	1	0	0	1	0	0	0	0	448

PM PEAK HOUR	2:15 PM
PM PEAK VOLUME	63

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	0	533	90	2	16	1	0	0	1	0	0	0	0	643
% OF TOTAL	0.0%	82.9%	14.0%	0.3%	2.5%	0.2%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	
TOTAL: ALL	0	1,145	181	9	34	1	0	0	3	0	0	0	0	1,373
% OF TOTAL	0.0%	178.1%	28.1%	1.4%	5.3%	0.2%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tuesday, May 10, 2022
JOB #: SC3418

CITY: Ontario
LOCATION: CLASS3 Schaefer west of Turner

AM	WESTBOUND													
TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
0:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
0:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:30	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
4:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
5:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
5:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
5:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
6:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
6:15	0	13	0	0	0	0	0	0	0	0	0	0	0	13
6:30	0	9	0	0	0	0	0	0	0	0	0	0	0	9
6:45	0	15	1	1	0	0	0	0	0	0	0	0	0	17
7:00	0	16	3	0	0	0	0	0	0	0	0	0	0	19
7:15	0	27	1	0	2	0	0	0	0	0	0	0	0	30
7:30	0	20	5	0	1	0	0	0	0	0	0	0	0	26
7:45	0	28	5	0	0	0	0	0	0	0	0	0	0	33
8:00	0	12	2	1	1	0	0	0	0	0	0	0	0	16
8:15	0	14	1	1	0	0	0	0	0	0	0	0	0	16
8:30	0	4	1	0	1	0	0	0	0	0	0	0	0	6
8:45	0	10	4	0	0	0	0	0	0	0	0	0	0	14
9:00	0	11	3	0	1	0	0	0	0	0	0	0	0	15
9:15	0	10	0	0	1	0	0	0	0	0	0	0	0	11
9:30	0	2	2	0	0	0	0	0	0	0	0	0	0	4
9:45	0	6	1	0	0	0	0	0	0	0	0	0	0	7
10:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14
10:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
10:30	0	5	0	0	2	0	0	0	0	0	0	0	0	7
10:45	0	2	0	0	1	0	0	0	0	0	0	0	0	3
11:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
11:15	0	8	2	0	1	0	0	0	0	0	0	0	0	11
11:30	0	7	0	0	0	0	0	0	0	0	0	0	0	7
11:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
TOTAL	0	278	42	3	11	0	0	0	0	0	0	0	0	334

AM PEAK HOUR	7:00 AM
AM PEAK VOLUME	108

PM	WESTBOUND													
Time	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
12:00	0	1	3	1	1	0	0	0	0	0	0	0	0	6
12:15	0	13	1	0	1	0	0	0	0	0	0	0	0	15
12:30	0	10	2	0	0	0	0	0	0	0	0	0	0	12
12:45	0	9	0	0	0	0	0	0	0	0	0	0	0	9
13:00	0	9	0	0	1	0	0	0	0	0	0	0	0	10
13:15	0	10	0	0	0	0	0	0	1	0	0	0	0	11
13:30	0	6	2	1	0	0	0	0	0	0	0	0	0	9
13:45	0	5	2	0	0	0	0	0	0	0	0	0	0	7
14:00	0	14	3	0	0	0	0	0	0	0	0	0	0	17
14:15	0	8	1	0	0	0	0	0	0	0	0	0	0	9
14:30	0	10	2	1	1	0	0	0	0	0	0	0	0	14
14:45	0	14	4	0	2	0	0	0	0	0	0	0	0	20
15:00	0	6	0	1	0	0	0	0	0	0	0	0	0	7
15:15	0	11	0	0	0	0	0	0	0	0	0	0	0	11
15:30	0	6	2	0	0	0	0	0	0	0	0	0	0	8
15:45	0	8	1	0	0	0	0	0	0	0	0	0	0	9
16:00	0	8	4	0	1	0	0	0	0	0	0	0	0	13
16:15	0	12	0	0	0	0	0	0	1	0	0	0	0	13
16:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11
16:45	0	6	1	0	0	0	0	0	0	0	0	0	0	7
17:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
17:15	0	14	1	0	0	0	0	0	0	0	0	0	0	15
17:30	0	11	0	0	0	0	0	0	0	0	0	0	0	11
17:45	0	8	3	0	0	0	0	0	0	0	0	0	0	11
18:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
18:15	0	8	0	0	0	0	0	0	0	0	0	0	0	8
18:30	0	8	1	0	0	0	0	0	0	0	0	0	0	9
18:45	0	12	1	0	0	0	0	0	0	0	0	0	0	13
19:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
19:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
19:30	0	10	2	0	0	0	0	0	0	0	0	0	0	12
19:45	0	11	3	0	0	0	0	0	0	0	0	0	0	14
20:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
20:15	0	8	0	0	0	0	0	0	0	0	0	0	0	8
20:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
20:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
21:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
21:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
21:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
21:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
22:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
TOTAL	0	334	49	4	7	0	0	0	2	0	0	0	0	396

PM PEAK HOUR	2:00 PM
PM PEAK VOLUME	60

CLASS 1	Class 1 — Motorcycles	**CLASS 8**	3 to 4 Axles, Single Trailer
CLASS 2	Passenger Cars	**CLASS 9**	5 Axles, Single Trailer
CLASS 3	2 Axles, 4-Tire Single Units	**CLASS 10**	6 or More Axles, Single Trailer
CLASS 4	Buses	**CLASS 11**	5 or Less Axles, Multi-Trailers
CLASS 5	2 Axles, 6-Tire Single Units	**CLASS 12**	6 Axles, Multi-Trailers
CLASS 6	3 Axles, Single Unit	**CLASS 13**	7 or More Axles, Multi-Trailers
CLASS 7	4 or More Axles, Single Unit		

TOTAL: AM+PM	0	612	91	7	18	0	0	0	2	0	0	0	0	730
% OF TOTAL	0.0%	83.8%	12.5%	1.0%	2.5%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	100.0%

Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

City of Ontario
Chino Avenue
E/ Mill Creek Avenue
24 Hour Directional Classification Count

ONT001
Site Code: 051-22421

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	**1**	0	0	0	0	0	0	0	0	0	0	0	**1**
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	0	**1**	0	0	0	0	0	0	0	0	0	0	1
08:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PM	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	**2**
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
15:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	5	3	0	0	0	0	0	0	0	0	0	0	8
Percent	0.0%	62.5%	37.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		04:00	07:00											04:00
Vol.		1	1											1
PM Peak		12:00	12:00											12:00
Vol.		1	1											2
Grand Total	0	5	3	0	0	0	0	0	0	0	0	0	0	8
Percent	0.0%	62.5%	37.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Ontario
Chino Avenue
E/ Mill Creek Avenue
24 Hour Directional Classification Count

ONT001
Site Code: 051-22421

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	**1**	0	0	0	0	0	0	0	0	0	0	0	**1**
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PM	0	**1**	0	0	0	0	0	0	0	0	0	0	0	**1**
13:00	0	0	**1**	0	0	0	0	0	0	0	0	0	0	1
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	5	1	0	0	0	0	0	0	0	0	0	0	6
Percent	0.0%	83.3%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		04:00												04:00
Vol.		1												1
PM Peak		12:00	13:00											12:00
Vol.		1	1											1
Grand Total	0	5	1	0	0	0	0	0	0	0	0	0	0	6
Percent	0.0%	83.3%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Ontario
Chino Avenue
E/ Mill Creek Avenue
24 Hour Directional Classification Count

ONT001
Site Code: 051-22421

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	**2**	0	0	0	0	0	0	0	0	0	0	0	**2**
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	0	**1**	0	0	0	0	0	0	0	0	0	0	1
08:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
09:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PM	0	**2**	**1**	0	0	0	0	0	0	0	0	0	0	**3**
13:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
14:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
15:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	10	4	0	0	0	0	0	0	0	0	0	0	14
Percent	0.0%	71.4%	28.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		04:00	07:00											04:00
Vol.		2	1											2
PM Peak		12:00	12:00											12:00
Vol.		2	1											3
Grand Total	0	10	4	0	0	0	0	0	0	0	0	0	0	14
Percent	0.0%	71.4%	28.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Ontario
Hamner Avenue
N/ Ontario Ranch Road
24 Hour Directional Classification Count

ONT003
Site Code: 051-22421

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	0	42	0	0	0	3	0	0	5	0	**3**	0	0	53
01:00	0	48	8	0	1	3	0	0	2	0	1	0	0	63
02:00	0	45	12	0	0	1	0	0	4	0	3	0	0	65
03:00	1	118	17	0	0	1	0	0	3	0	0	0	0	140
04:00	2	276	33	0	3	4	0	0	11	**2**	0	0	0	331
05:00	2	345	61	0	13	7	2	0	8	2	0	0	0	440
06:00	**3**	407	66	0	14	5	0	0	12	1	2	0	0	510
07:00	2	**783**	**94**	0	12	4	**3**	2	19	0	0	0	0	**919**
08:00	1	732	94	0	**15**	10	3	2	34	1	0	**1**	0	893
09:00	0	385	61	0	13	9	0	4	**37**	0	0	0	0	509
10:00	0	312	58	**1**	9	**11**	1	**5**	27	0	0	0	0	424
11:00	0	329	68	0	13	8	3	5	30	1	0	0	0	457
12 PM	0	396	43	0	15	**15**	1	3	25	0	0	0	0	498
13:00	**2**	416	60	0	12	10	1	6	**26**	0	0	0	0	533
14:00	1	450	62	**1**	**20**	9	0	16	20	0	0	0	0	579
15:00	0	**530**	**101**	1	15	13	0	11	20	0	0	0	0	**691**
16:00	0	480	76	0	13	6	**2**	**17**	19	**1**	0	0	0	614
17:00	0	432	65	0	12	12	0	13	13	0	0	0	0	547
18:00	0	392	47	0	1	14	0	12	14	0	2	0	0	482
19:00	1	261	21	0	6	6	0	7	11	0	0	0	0	313
20:00	1	242	19	0	1	3	0	4	9	0	1	0	0	280
21:00	0	162	8	0	2	5	1	1	8	0	2	0	0	189
22:00	0	111	3	0	3	4	0	2	10	0	1	0	0	134
23:00	1	47	5	0	1	2	0	0	6	0	**3**	0	0	65
Total	17	7741	1082	3	194	165	17	110	373	8	18	1	0	9729
Percent	0.2%	79.6%	11.1%	0.0%	2.0%	1.7%	0.2%	1.1%	3.8%	0.1%	0.2%	0.0%	0.0%	
AM Peak	06:00	07:00	07:00	10:00	08:00	10:00	07:00	10:00	09:00	04:00	00:00	08:00		07:00
Vol.	3	783	94	1	15	11	3	5	37	2	3	1		919
PM Peak	13:00	15:00	15:00	14:00	14:00	12:00	16:00	16:00	13:00	16:00	23:00			15:00
Vol.	2	530	101	1	20	15	2	17	26	1	3			691
Grand Total	17	7741	1082	3	194	165	17	110	373	8	18	1	0	9729
Percent	0.2%	79.6%	11.1%	0.0%	2.0%	1.7%	0.2%	1.1%	3.8%	0.1%	0.2%	0.0%	0.0%	

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City of Ontario
Hamner Avenue
N/ Ontario Ranch Road
24 Hour Directional Classification Count

ONT003
Site Code: 051-22421

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	**1**	68	3	0	0	3	0	0	7	0	0	0	0	82
01:00	0	51	2	0	2	2	**2**	2	4	0	**4**	0	0	69
02:00	0	48	2	0	1	1	0	0	6	0	3	0	0	61
03:00	0	49	0	0	0	5	0	2	10	0	1	0	0	67
04:00	0	57	8	0	5	4	0	5	9	0	0	0	0	88
05:00	0	66	10	0	3	6	0	2	6	0	1	0	0	94
06:00	0	152	32	0	9	8	0	0	21	0	3	0	0	225
07:00	0	250	45	**1**	9	10	0	2	27	0	1	0	0	345
08:00	1	248	48	1	6	10	0	2	23	0	1	0	0	340
09:00	0	206	36	0	**21**	**12**	0	6	**29**	0	0	0	0	310
10:00	0	249	41	1	6	7	0	**9**	21	0	0	0	0	334
11:00	1	**267**	**56**	0	12	8	1	3	17	0	0	0	0	**365**
12 PM	1	365	73	0	**12**	**10**	0	5	13	0	0	0	0	479
13:00	0	338	77	0	7	5	0	7	16	0	0	0	0	450
14:00	**5**	430	98	0	6	8	0	**10**	17	0	0	0	0	574
15:00	4	617	**117**	0	11	9	0	6	**25**	0	0	0	0	789
16:00	3	573	92	0	9	7	0	3	10	0	0	0	0	697
17:00	2	**729**	108	0	4	2	0	4	14	0	0	0	0	**863**
18:00	1	550	80	0	8	6	0	4	11	0	0	0	0	660
19:00	0	357	48	0	1	7	0	4	13	0	0	0	0	430
20:00	1	265	18	0	1	6	0	4	7	0	0	0	0	302
21:00	0	226	19	0	0	4	0	2	7	0	0	0	0	258
22:00	0	157	2	0	1	2	0	1	8	0	**4**	0	0	175
23:00	1	86	4	0	0	2	0	1	9	0	1	0	0	104
Total	21	6404	1019	3	134	144	3	84	330	0	19	0	0	8161
Percent	0.3%	78.5%	12.5%	0.0%	1.6%	1.8%	0.0%	1.0%	4.0%	0.0%	0.2%	0.0%	0.0%	
AM Peak	00:00	11:00	11:00	07:00	09:00	09:00	01:00	10:00	09:00		01:00			11:00
Vol.	1	267	56	1	21	12	2	9	29		4			365
PM Peak	14:00	17:00	15:00		12:00	12:00		14:00	15:00		22:00			17:00
Vol.	5	729	117		12	10		10	25		4			863
Grand Total	21	6404	1019	3	134	144	3	84	330	0	19	0	0	8161
Percent	0.3%	78.5%	12.5%	0.0%	1.6%	1.8%	0.0%	1.0%	4.0%	0.0%	0.2%	0.0%	0.0%	

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City of Ontario
Hamner Avenue
N/ Ontario Ranch Road
24 Hour Directional Classification Count
Northbound, Southbound

ONT003
Site Code: 051-22421

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	1	110	3	0	0	6	0	0	12	0	3	0	0	135
01:00	0	99	10	0	3	5	2	2	6	0	5	0	0	132
02:00	0	93	14	0	1	2	0	0	10	0	**6**	0	0	126
03:00	1	167	17	0	0	6	0	2	13	0	1	0	0	207
04:00	2	333	41	0	8	8	0	5	20	**2**	0	0	0	419
05:00	2	411	71	0	16	13	2	2	14	2	1	0	0	534
06:00	**3**	559	98	0	23	13	0	0	33	1	5	0	0	735
07:00	2	**1033**	139	1	21	14	3	4	46	0	1	0	0	**1264**
08:00	2	980	**142**	1	21	20	3	4	57	1	1	**1**	0	1233
09:00	0	591	97	0	**34**	**21**	0	10	**66**	0	0	0	0	819
10:00	0	561	99	**2**	15	18	1	**14**	48	0	0	0	0	758
11:00	1	596	124	0	25	16	**4**	8	47	1	0	0	0	822
12 PM	1	761	116	0	**27**	**25**	1	8	38	0	0	0	0	977
13:00	2	754	137	0	19	15	1	13	42	0	0	0	0	983
14:00	**6**	880	160	**1**	26	17	0	**26**	37	0	0	0	0	1153
15:00	4	1147	**218**	1	26	22	0	17	**45**	0	0	0	0	**1480**
16:00	3	1053	168	0	22	13	**2**	20	29	**1**	0	0	0	1311
17:00	2	**1161**	173	0	16	14	0	17	27	0	0	0	0	1410
18:00	1	942	127	0	9	20	0	16	25	0	2	0	0	1142
19:00	1	618	69	0	7	13	0	11	24	0	0	0	0	743
20:00	2	507	37	0	2	9	0	8	16	0	1	0	0	582
21:00	0	388	27	0	2	9	1	3	15	0	2	0	0	447
22:00	0	268	5	0	4	6	0	3	18	0	**5**	0	0	309
23:00	2	133	9	0	1	4	0	1	15	0	4	0	0	169
Total	38	14145	2101	6	328	309	20	194	703	8	37	1	0	17890
Percent	0.2%	79.1%	11.7%	0.0%	1.8%	1.7%	0.1%	1.1%	3.9%	0.0%	0.2%	0.0%	0.0%	
AM Peak	06:00	07:00	08:00	10:00	09:00	09:00	11:00	10:00	09:00	04:00	02:00	08:00		07:00
Vol.	3	1033	142	2	34	21	4	14	66	2	6	1		1264
PM Peak	14:00	17:00	15:00	14:00	12:00	12:00	16:00	14:00	15:00	16:00	22:00			15:00
Vol.	6	1161	218	1	27	25	2	26	45	1	5			1480
Grand Total	38	14145	2101	6	328	309	20	194	703	8	37	1	0	17890
Percent	0.2%	79.1%	11.7%	0.0%	1.8%	1.7%	0.1%	1.1%	3.9%	0.0%	0.2%	0.0%	0.0%	

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City of Ontario
Ontario Ranch Road
W/ Hamner Avenue
24 Hour Directional Classification Count

ONT002
Site Code: 051-22421

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	0	47	3	0	0	3	0	2	6	0	0	0	0	61
01:00	0	34	4	0	2	2	0	0	10	0	1	0	0	53
02:00	0	28	1	0	1	5	0	1	6	1	3	0	0	46
03:00	0	55	3	0	1	5	0	**3**	9	0	2	0	0	78
04:00	0	104	8	0	2	4	0	0	19	1	7	0	0	145
05:00	1	177	29	0	7	11	1	1	34	2	7	0	0	270
06:00	0	268	55	1	9	12	**6**	1	39	3	5	0	0	399
07:00	3	**502**	58	1	10	17	2	1	41	1	2	0	0	**638**
08:00	0	425	50	0	15	11	4	2	38	3	**14**	2	**1**	565
09:00	**4**	396	58	1	14	18	2	2	39	1	5	1	0	541
10:00	0	381	**67**	1	**21**	19	3	1	43	0	10	2	0	548
11:00	1	362	67	**3**	12	**26**	1	3	**49**	**4**	13	**4**	0	545
12 PM	0	361	72	**1**	19	21	0	3	**48**	0	5	0	**1**	531
13:00	2	435	82	1	28	**25**	1	5	40	0	**8**	1	0	628
14:00	1	579	157	1	**33**	23	**2**	7	34	0	7	1	0	845
15:00	**3**	640	**193**	1	15	20	0	10	25	0	3	**2**	0	**912**
16:00	3	638	136	1	25	12	0	**13**	24	0	0	0	0	852
17:00	2	**706**	112	1	14	23	0	8	24	0	1	0	0	891
18:00	0	617	74	1	3	25	0	6	20	0	0	0	0	746
19:00	1	358	57	1	2	11	1	5	12	0	0	0	0	448
20:00	0	268	24	1	3	11	0	4	11	0	0	0	0	322
21:00	0	203	9	1	2	4	0	2	11	0	0	0	0	232
22:00	0	123	8	0	2	10	0	4	13	0	0	1	0	161
23:00	0	97	1	0	1	5	0	0	11	0	0	0	0	115
Total	21	7804	1328	17	241	323	23	84	606	16	93	14	2	10572
Percent	0.2%	73.8%	12.6%	0.2%	2.3%	3.1%	0.2%	0.8%	5.7%	0.2%	0.9%	0.1%	0.0%	
AM Peak	09:00	07:00	10:00	11:00	10:00	11:00	06:00	03:00	11:00	11:00	08:00	11:00	08:00	07:00
Vol.	4	502	67	3	21	26	6	3	49	4	14	4	1	638
PM Peak	15:00	17:00	15:00	12:00	14:00	13:00	14:00	16:00	12:00		13:00	15:00	12:00	15:00
Vol.	3	706	193	1	33	25	2	13	48		8	2	1	912
Grand Total	21	7804	1328	17	241	323	23	84	606	16	93	14	2	10572
Percent	0.2%	73.8%	12.6%	0.2%	2.3%	3.1%	0.2%	0.8%	5.7%	0.2%	0.9%	0.1%	0.0%	

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City of Ontario
Ontario Ranch Road
W/ Hamner Avenue
24 Hour Directional Classification Count

ONT002
Site Code: 051-22421

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	0	78	4	0	1	6	0	1	16	0	0	0	0	106
01:00	0	41	4	0	2	6	2	5	13	**1**	0	0	0	74
02:00	0	43	4	0	3	5	0	2	14	0	0	0	0	71
03:00	0	89	14	0	1	14	0	1	9	0	5	1	0	134
04:00	**4**	244	45	1	2	7	0	3	15	0	4	1	0	326
05:00	0	535	128	1	13	25	1	3	18	1	4	0	0	729
06:00	2	**561**	**241**	1	25	**40**	0	3	34	1	2	0	0	**910**
07:00	3	457	142	1	24	24	1	1	44	0	**14**	2	0	713
08:00	0	413	111	1	26	23	0	2	41	0	5	0	0	622
09:00	0	316	65	**3**	**30**	27	2	6	39	0	14	2	0	504
10:00	0	298	73	1	18	20	0	**11**	**48**	0	7	1	0	477
11:00	1	344	75	1	15	20	**3**	5	34	1	11	**3**	0	513
12 PM	1	422	68	**1**	**22**	17	3	8	52	0	10	**3**	0	607
13:00	1	407	79	1	10	**20**	**5**	4	48	3	3	1	0	582
14:00	2	432	81	1	21	11	2	11	**53**	0	**12**	0	0	626
15:00	2	564	82	0	17	15	0	**12**	49	4	2	0	0	747
16:00	**3**	578	**89**	1	12	10	0	4	43	7	0	0	0	747
17:00	2	**720**	88	1	9	7	0	2	39	**10**	0	0	0	**878**
18:00	2	615	60	1	9	12	0	7	26	2	1	0	0	735
19:00	2	448	59	1	4	12	0	4	17	0	0	0	0	547
20:00	0	482	40	1	1	7	0	6	17	0	0	0	0	554
21:00	0	326	17	1	1	8	0	3	9	0	0	0	0	365
22:00	0	195	3	1	1	10	0	1	19	0	1	0	0	231
23:00	0	126	5	0	0	3	0	2	16	0	0	0	0	152
Total	25	8734	1577	20	267	349	19	107	713	30	95	14	0	11950
Percent	0.2%	73.1%	13.2%	0.2%	2.2%	2.9%	0.2%	0.9%	6.0%	0.3%	0.8%	0.1%	0.0%	
AM Peak	04:00	06:00	06:00	09:00	09:00	06:00	11:00	10:00	10:00	01:00	07:00	11:00		06:00
Vol.	4	561	241	3	30	40	3	11	48	1	14	3		910
PM Peak	16:00	17:00	16:00	12:00	12:00	13:00	13:00	15:00	14:00	17:00	14:00	12:00		17:00
Vol.	3	720	89	1	22	20	5	12	53	10	12	3		878
Grand Total	25	8734	1577	20	267	349	19	107	713	30	95	14	0	11950
Percent	0.2%	73.1%	13.2%	0.2%	2.2%	2.9%	0.2%	0.9%	6.0%	0.3%	0.8%	0.1%	0.0%	

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24 Hour Directional Classification Count

ONT002
Site Code: 051-22421

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/10/22	0	125	7	0	1	9	0	3	22	0	0	0	0	167
01:00	0	75	8	0	4	8	2	5	23	1	1	0	0	127
02:00	0	71	5	0	4	10	0	3	20	1	3	0	0	117
03:00	0	144	17	0	2	19	0	4	18	0	7	1	0	212
04:00	4	348	53	1	4	11	0	3	34	1	11	1	0	471
05:00	1	712	157	1	20	36	2	4	52	3	11	0	0	999
06:00	2	829	**296**	2	34	**52**	**6**	4	73	4	7	0	0	1309
07:00	**6**	**959**	200	2	34	41	3	2	85	1	16	2	0	**1351**
08:00	0	838	161	1	41	34	4	4	79	3	19	2	**1**	1187
09:00	4	712	123	**4**	**44**	45	4	8	78	1	19	3	0	1045
10:00	0	679	140	2	39	39	3	**12**	**91**	0	17	3	0	1025
11:00	2	706	142	4	27	46	4	8	83	**5**	**24**	**7**	0	1058
12 PM	1	783	140	**2**	41	38	3	11	**100**	0	15	**3**	**1**	1138
13:00	3	842	161	2	38	**45**	**6**	9	88	3	11	2	0	1210
14:00	3	1011	238	2	**54**	34	4	18	87	0	**19**	1	0	1471
15:00	5	1204	**275**	1	32	35	0	**22**	74	4	5	2	0	1659
16:00	**6**	1216	225	2	37	22	0	17	67	7	0	0	0	1599
17:00	4	**1426**	200	2	23	30	0	10	63	**10**	1	0	0	**1769**
18:00	2	1232	134	2	12	37	0	13	46	2	1	0	0	1481
19:00	3	806	116	2	6	23	1	9	29	0	0	0	0	995
20:00	0	750	64	2	4	18	0	10	28	0	0	0	0	876
21:00	0	529	26	2	3	12	0	5	20	0	0	0	0	597
22:00	0	318	11	1	3	20	0	5	32	0	1	1	0	392
23:00	0	223	6	0	1	8	0	2	27	0	0	0	0	267
Total	46	16538	2905	37	508	672	42	191	1319	46	188	28	2	22522
Percent	0.2%	73.4%	12.9%	0.2%	2.3%	3.0%	0.2%	0.8%	5.9%	0.2%	0.8%	0.1%	0.0%	
AM Peak	07:00	07:00	06:00	09:00	09:00	06:00	06:00	10:00	10:00	11:00	11:00	11:00	08:00	07:00
Vol.	6	959	296	4	44	52	6	12	91	5	24	7	1	1351
PM Peak	16:00	17:00	15:00	12:00	14:00	13:00	13:00	15:00	12:00	17:00	14:00	12:00	12:00	17:00
Vol.	6	1426	275	2	54	45	6	22	100	10	19	3	1	1769
Grand Total	46	16538	2905	37	508	672	42	191	1319	46	188	28	2	22522
Percent	0.2%	73.4%	12.9%	0.2%	2.3%	3.0%	0.2%	0.8%	5.9%	0.2%	0.8%	0.1%	0.0%	

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APPENDIX 3.2: EXISTING (2022) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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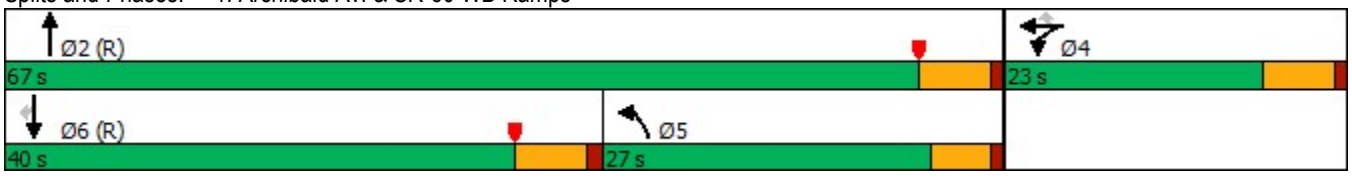
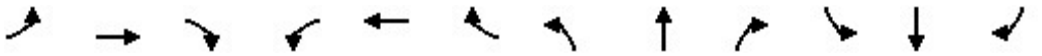
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	336	8	442	761	953	397	160
Future Volume (vph)	336	8	442	761	953	397	160
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	23.0	23.0	23.0	27.0	67.0	40.0	40.0
Total Split (%)	25.6%	25.6%	25.6%	30.0%	74.4%	44.4%	44.4%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	20.1	20.1	20.1	24.0	58.3	29.3	29.3
Actuated g/C Ratio	0.22	0.22	0.22	0.27	0.65	0.33	0.33
v/c Ratio	0.74	0.62	0.56	0.85	0.30	0.19	0.26
Control Delay	46.2	22.5	16.4	36.7	4.0	23.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	22.5	16.4	36.7	4.0	23.0	4.9
LOS	D	C	B	D	A	C	A
Approach Delay		28.8			18.5	17.8	
Approach LOS		C			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	336	8	442	761	953	0	0	397	160
Future Volume (veh/h)	0	0	0	336	8	442	761	953	0	0	397	160
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				488	0	268	777	972	0	0	405	66
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				673	0	299	1747	3484	0	0	722	178
Arrive On Green				0.19	0.00	0.19	1.00	1.00	0.00	0.00	0.11	0.11
Sat Flow, veh/h				3563	0	1583	3456	5274	0	0	6696	1585
Grp Volume(v), veh/h				488	0	268	777	972	0	0	405	66
Grp Sat Flow(s),veh/h/ln				1781	0	1583	1728	1702	0	0	1609	1585
Q Serve(g_s), s				11.6	0.0	14.9	0.0	0.0	0.0	0.0	5.4	3.5
Cycle Q Clear(g_c), s				11.6	0.0	14.9	0.0	0.0	0.0	0.0	5.4	3.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				673	0	299	1747	3484	0	0	722	178
V/C Ratio(X)				0.73	0.00	0.90	0.44	0.28	0.00	0.00	0.56	0.37
Avail Cap(c_a), veh/h				681	0	302	1747	3484	0	0	2445	602
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.86	0.86	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				34.3	0.0	35.6	0.0	0.0	0.0	0.0	37.8	37.0
Incr Delay (d2), s/veh				3.8	0.0	27.1	0.1	0.2	0.0	0.0	3.1	5.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	0.0	14.4	0.0	0.1	0.0	0.0	2.2	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.1	0.0	62.7	0.1	0.2	0.0	0.0	41.0	42.9
LnGrp LOS				D	A	E	A	A	A	A	D	D
Approach Vol, veh/h					756			1749			471	
Approach Delay, s/veh					46.8			0.1			41.2	
Approach LOS					D			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.2	22.8	51.3	15.9
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	61.2	17.2	22.0	* 34
Max Q Clear Time (g_c+I1), s	2.0	16.9	2.0	7.4
Green Ext Time (p_c), s	7.7	0.1	1.4	2.7

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

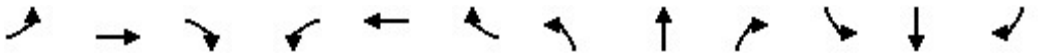
User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	350	5	425	1359	554	151	603
Future Volume (vph)	350	5	425	1359	554	151	603
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	34.0	34.0	34.0	44.0	44.0	12.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	48.9%	48.9%	13.3%	62.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	21.7	21.7	21.7	44.7	44.7	8.0	56.7
Actuated g/C Ratio	0.24	0.24	0.24	0.50	0.50	0.09	0.63
v/c Ratio	0.71	0.62	0.50	0.46	0.55	0.53	0.20
Control Delay	40.7	22.1	8.5	16.4	3.7	53.4	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	22.1	8.5	16.4	3.7	53.4	4.0
LOS	D	C	A	B	A	D	A
Approach Delay		24.2		12.7			13.9
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	5	425	0	0	0	0	1359	554	151	603	0
Future Volume (veh/h)	350	5	425	0	0	0	0	1359	554	151	603	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	454	0	164				0	1461	416	162	648	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	590	0	258				0	3826	922	230	3603	0
Arrive On Green	0.17	0.00	0.17				0.00	0.59	0.59	0.13	1.00	0.00
Sat Flow, veh/h	3563	0	1561				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	454	0	164				0	1461	416	162	648	0
Grp Sat Flow(s),veh/h/ln	1781	0	1561				0	1609	1551	1728	1702	0
Q Serve(g_s), s	11.0	0.0	8.8				0.0	10.7	13.4	4.0	0.0	0.0
Cycle Q Clear(g_c), s	11.0	0.0	8.8				0.0	10.7	13.4	4.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	590	0	258				0	3826	922	230	3603	0
V/C Ratio(X)	0.77	0.00	0.63				0.00	0.38	0.45	0.71	0.18	0.00
Avail Cap(c_a), veh/h	1116	0	489				0	3826	922	307	3603	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	35.9	0.0	35.0				0.0	9.6	10.1	38.2	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	2.6				0.0	0.3	1.6	2.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	3.4				0.0	3.1	4.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	0.0	37.6				0.0	9.9	11.7	40.4	0.1	0.0
LnGrp LOS	D	A	D				A	A	B	D	A	A
Approach Vol, veh/h		618						1877			810	
Approach Delay, s/veh		37.9						10.3			8.2	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	10.0	59.3				69.3		20.7				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	8.0	38.2				50.2		28.2				
Max Q Clear Time (g_c+I1), s	6.0	15.4				2.0		13.0				
Green Ext Time (p_c), s	0.0	12.2				4.4		1.9				

Intersection Summary			
HCM 6th Ctrl Delay			14.9
HCM 6th LOS			B

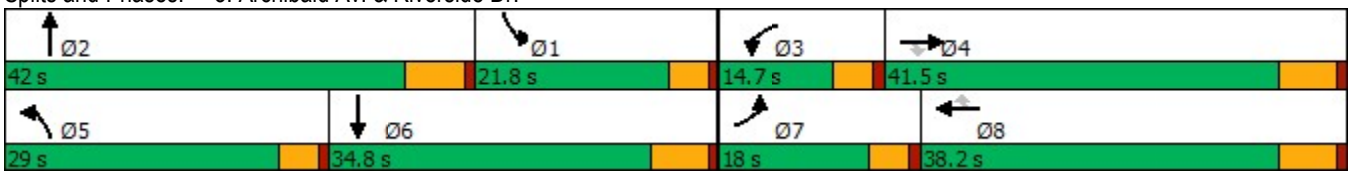
Notes

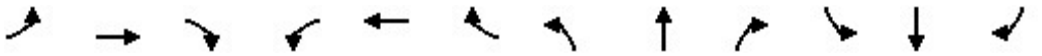
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	149	321	137	86	443	211	260	1267	173	513
Future Volume (vph)	149	321	137	86	443	211	260	1267	173	513
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	41.5	41.5	14.7	38.2	38.2	29.0	42.0	21.8	34.8
Total Split (%)	15.0%	34.6%	34.6%	12.3%	31.8%	31.8%	24.2%	35.0%	18.2%	29.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.9	25.4	25.4	9.1	21.5	21.5	21.5	35.7	15.2	29.3
Actuated g/C Ratio	0.12	0.24	0.24	0.08	0.20	0.20	0.20	0.33	0.14	0.27
v/c Ratio	0.82	0.42	0.30	0.67	0.68	0.47	0.85	0.88	0.80	0.54
Control Delay	79.4	36.5	4.6	74.5	45.3	8.1	66.8	42.2	71.7	33.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.4	36.5	4.6	74.5	45.3	8.1	66.8	42.2	71.7	33.1
LOS	E	D	A	E	D	A	E	D	E	C
Approach Delay		39.8			38.1			46.2		40.9
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 42.4	Intersection LOS: D
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	321	137	86	443	211	260	1267	78	173	513	174
Future Volume (veh/h)	149	321	137	86	443	211	260	1267	78	173	513	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	155	334	85	90	461	156	271	1320	78	180	534	141
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	790	346	111	639	279	300	1545	91	208	1107	284
Arrive On Green	0.11	0.23	0.23	0.07	0.19	0.19	0.19	0.33	0.33	0.13	0.29	0.29
Sat Flow, veh/h	1594	3367	1477	1594	3367	1471	1594	4666	276	1594	3822	982
Grp Volume(v), veh/h	155	334	85	90	461	156	271	912	486	180	448	227
Grp Sat Flow(s),veh/h/ln	1594	1683	1477	1594	1683	1471	1594	1612	1717	1594	1612	1579
Q Serve(g_s), s	9.5	8.4	4.6	5.5	12.7	6.5	16.5	26.2	26.2	11.0	11.4	11.8
Cycle Q Clear(g_c), s	9.5	8.4	4.6	5.5	12.7	6.5	16.5	26.2	26.2	11.0	11.4	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.62
Lane Grp Cap(c), veh/h	182	790	346	111	639	279	300	1068	568	208	934	457
V/C Ratio(X)	0.85	0.42	0.25	0.81	0.72	0.56	0.90	0.85	0.85	0.86	0.48	0.50
Avail Cap(c_a), veh/h	215	1198	526	162	1086	475	392	1164	620	276	934	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	32.3	30.8	45.5	37.7	17.0	39.4	30.9	30.9	42.2	29.1	29.2
Incr Delay (d2), s/veh	20.8	0.4	0.4	11.1	1.6	1.7	17.3	6.0	10.6	15.6	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	3.2	1.6	2.4	5.1	3.2	7.5	10.2	11.6	5.0	4.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	32.6	31.2	56.6	39.3	18.8	56.6	36.9	41.5	57.9	29.4	30.1
LnGrp LOS	E	C	C	E	D	B	E	D	D	E	C	C
Approach Vol, veh/h		574			707			1669			855	
Approach Delay, s/veh		40.9			36.9			41.5			35.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.2	39.0	11.5	29.5	23.3	34.9	15.9	25.0
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.2	* 36	10.1	35.3	24.4	28.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	13.0	28.2	7.5	10.4	18.5	13.8	11.5	14.7
Green Ext Time (p_c), s	0.1	4.7	0.0	2.1	0.2	3.4	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	39.2
HCM 6th LOS	D

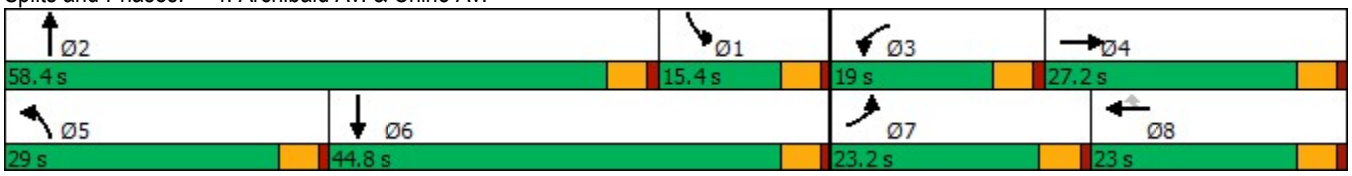
Notes

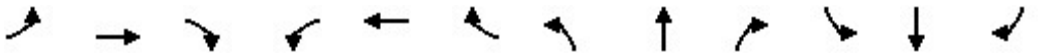
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	112	70	80	100	171	155	1210	51	587
Future Volume (vph)	112	70	80	100	171	155	1210	51	587
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	23.2	27.2	19.0	23.0	23.0	29.0	58.4	15.4	44.8
Total Split (%)	19.3%	22.7%	15.8%	19.2%	19.2%	24.2%	48.7%	12.8%	37.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.0	17.5	10.7	11.9	11.9	16.0	38.7	8.9	28.5
Actuated g/C Ratio	0.15	0.20	0.12	0.13	0.13	0.18	0.44	0.10	0.32
v/c Ratio	0.57	0.40	0.49	0.50	0.54	0.64	0.67	0.38	0.69
Control Delay	50.3	35.0	51.6	48.2	12.1	48.2	23.0	50.9	30.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	35.0	51.6	48.2	12.1	48.2	23.0	50.9	30.7
LOS	D	D	D	D	B	D	C	D	C
Approach Delay		42.5		31.4			25.7		32.2
Approach LOS		D		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 56.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	70	48	80	100	171	155	1210	86	51	587	71
Future Volume (veh/h)	112	70	48	80	100	171	155	1210	86	51	587	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	132	82	48	94	118	107	182	1424	93	60	691	76
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	144	84	118	188	160	227	2195	143	82	1109	122
Arrive On Green	0.10	0.14	0.14	0.07	0.11	0.11	0.14	0.45	0.45	0.05	0.35	0.35
Sat Flow, veh/h	1594	1048	613	1594	1772	1502	1594	4931	322	1594	3129	344
Grp Volume(v), veh/h	132	0	130	94	118	107	182	1023	494	60	391	376
Grp Sat Flow(s),veh/h/ln	1594	0	1661	1594	1772	1502	1594	1772	1709	1594	1772	1701
Q Serve(g_s), s	5.1	0.0	4.6	3.7	4.0	3.4	7.0	14.2	14.2	2.3	11.5	11.5
Cycle Q Clear(g_c), s	5.1	0.0	4.6	3.7	4.0	3.4	7.0	14.2	14.2	2.3	11.5	11.5
Prop In Lane	1.00		0.37	1.00		1.00	1.00		0.19	1.00		0.20
Lane Grp Cap(c), veh/h	167	0	228	118	188	160	227	1577	761	82	628	603
V/C Ratio(X)	0.79	0.00	0.57	0.80	0.63	0.67	0.80	0.65	0.65	0.73	0.62	0.62
Avail Cap(c_a), veh/h	471	0	596	365	518	439	618	3028	1461	273	1131	1086
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	25.4	28.7	26.9	16.4	26.1	13.6	13.6	29.4	16.8	16.8
Incr Delay (d2), s/veh	8.1	0.0	2.2	11.6	3.4	4.8	6.5	0.5	0.9	11.6	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.8	1.7	1.7	1.6	2.7	4.2	4.1	1.1	3.9	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	0.0	27.7	40.2	30.3	21.2	32.6	14.1	14.6	41.1	17.8	17.9
LnGrp LOS	D	A	C	D	C	C	C	B	B	D	B	B
Approach Vol, veh/h		262			319			1699			827	
Approach Delay, s/veh		31.7			30.2			16.2			19.6	
Approach LOS		C			C			B			B	

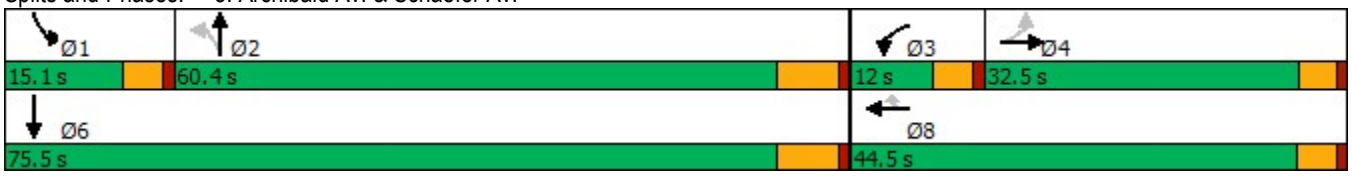
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	32.6	9.3	13.2	13.6	26.9	11.2	11.3
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	10.8	53.8	14.4	22.6	24.4	40.2	18.6	18.4
Max Q Clear Time (g_c+I1), s	4.3	16.2	5.7	6.6	9.0	13.5	7.1	6.0
Green Ext Time (p_c), s	0.0	11.8	0.1	0.5	0.4	4.4	0.2	0.7

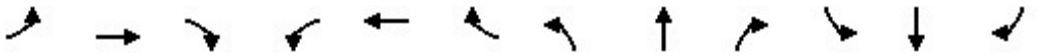
Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	28	62	1290	46	754	
Future Volume (vph)	28	62	1290	46	754	
Turn Type	Prot	Perm	NA	Prot	NA	
Protected Phases	3		2	1	6	4
Permitted Phases		8				
Detector Phase	3	8	2	1	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	32.6	37.5	9.6	23.5	32.5
Total Split (s)	12.0	44.5	60.4	15.1	75.5	32.5
Total Split (%)	10.0%	37.1%	50.3%	12.6%	62.9%	27%
Yellow Time (s)	3.6	3.6	5.5	3.6	5.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	4.6	6.5	4.6	6.5	
Lead/Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	9.9	10.2	35.6	8.6	41.9	
Actuated g/C Ratio	0.17	0.18	0.62	0.15	0.73	
v/c Ratio	0.12	0.18	0.52	0.23	0.37	
Control Delay	27.9	1.0	11.8	34.8	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	27.9	1.0	11.8	34.8	5.5	
LOS	C	A	B	C	A	
Approach Delay			11.8		7.2	
Approach LOS			B		A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 57.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 10.0	Intersection LOS: B
Intersection Capacity Utilization 63.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	28	0	62	0	1290	20	46	754	0
Future Volume (veh/h)	0	0	0	28	0	62	0	1290	20	46	754	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.93	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	0	0	0	33	0	74	0	1536	12	55	898	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	135	0	57	341	270	126	2384	19	81	2065	0
Arrive On Green	0.00	0.00	0.00	0.04	0.00	0.19	0.00	0.48	0.48	0.05	0.61	0.00
Sat Flow, veh/h	1186	1772	0	1594	1772	1403	555	4950	39	1594	3455	0
Grp Volume(v), veh/h	0	0	0	33	0	74	0	1001	547	55	898	0
Grp Sat Flow(s),veh/h/ln	1186	1772	0	1594	1772	1403	555	1612	1764	1594	1683	0
Q Serve(g_s), s	0.0	0.0	0.0	1.2	0.0	2.6	0.0	13.3	13.3	1.9	8.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.2	0.0	2.6	0.0	13.3	13.3	1.9	8.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	126	135	0	57	341	270	126	1553	850	81	2065	0
V/C Ratio(X)	0.00	0.00	0.00	0.58	0.00	0.27	0.00	0.64	0.64	0.68	0.43	0.00
Avail Cap(c_a), veh/h	618	870	0	207	1239	981	383	3047	1666	293	4072	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	27.1	0.0	19.7	0.0	11.1	11.1	26.6	5.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.4	0.0	0.5	0.0	0.5	0.8	3.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.4	0.0	0.8	0.0	3.1	3.5	0.7	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	30.5	0.0	20.2	0.0	11.6	11.9	30.2	6.0	0.0
LnGrp LOS	A	A	A	C	A	C	A	B	B	C	A	A
Approach Vol, veh/h		0			107			1548			953	
Approach Delay, s/veh		0.0			23.4			11.7			7.4	
Approach LOS					C			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	7.5	34.0	6.6	8.9		41.5		15.6				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	10.5	53.9	7.4	* 28		69.0		39.9				
Max Q Clear Time (g_c+I1), s	3.9	15.3	3.2	0.0		10.0		4.6				
Green Ext Time (p_c), s	0.0	12.1	0.0	0.0		6.4		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

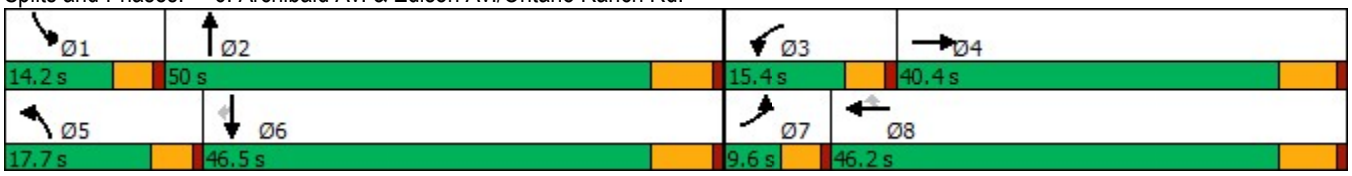
Notes

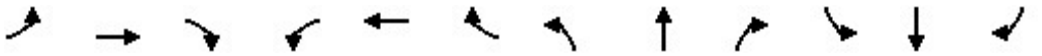
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	129	65	242	312	106	167	1045	280	90	499	62
Future Volume (vph)	35	129	65	242	312	106	167	1045	280	90	499	62
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	40.4		15.4	46.2	46.2	17.7	50.0		14.2	46.5	46.5
Total Split (%)	8.0%	33.7%		12.8%	38.5%	38.5%	14.8%	41.7%		11.8%	38.8%	38.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.1	18.5	98.8	11.1	29.2	29.2	13.4	37.5	98.8	9.2	33.3	33.3
Actuated g/C Ratio	0.05	0.19	1.00	0.11	0.30	0.30	0.14	0.38	1.00	0.09	0.34	0.34
v/c Ratio	0.25	0.21	0.05	0.80	0.66	0.22	0.86	0.86	0.21	0.67	0.46	0.11
Control Delay	55.1	34.7	0.1	64.1	39.3	6.6	79.4	36.7	0.3	70.3	27.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	34.7	0.1	64.1	39.3	6.6	79.4	36.7	0.3	70.3	27.8	0.4
LOS	E	C	A	E	D	A	E	D	A	E	C	A
Approach Delay		28.0			43.2			34.6			31.1	
Approach LOS		C			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 35.2	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	129	65	242	312	106	167	1045	280	90	499	62
Future Volume (veh/h)	35	129	65	242	312	106	167	1045	280	90	499	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	38	142	0	266	343	93	184	1148	0	99	548	57
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	554		333	412	344	216	1398		122	1191	493
Arrive On Green	0.04	0.16	0.00	0.11	0.23	0.23	0.14	0.39	0.00	0.08	0.34	0.34
Sat Flow, veh/h	3000	3544	1502	3000	1772	1482	1594	3544	1502	1594	3544	1468
Grp Volume(v), veh/h	38	142	0	266	343	93	184	1148	0	99	548	57
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1482	1594	1772	1502	1594	1772	1468
Q Serve(g_s), s	1.0	3.0	0.0	7.2	15.4	4.3	9.5	24.3	0.0	5.1	10.2	2.2
Cycle Q Clear(g_c), s	1.0	3.0	0.0	7.2	15.4	4.3	9.5	24.3	0.0	5.1	10.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	554		333	412	344	216	1398		122	1191	493
V/C Ratio(X)	0.36	0.26		0.80	0.83	0.27	0.85	0.82		0.81	0.46	0.12
Avail Cap(c_a), veh/h	179	1446		387	846	707	249	1839		183	1691	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	31.1	0.0	36.3	30.6	26.4	35.4	22.7	0.0	38.1	21.9	19.2
Incr Delay (d2), s/veh	0.8	0.2	0.0	8.3	4.5	0.4	19.5	2.4	0.0	8.9	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.2	0.0	2.8	6.5	1.4	4.5	9.0	0.0	2.1	3.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	31.3	0.0	44.7	35.1	26.8	54.9	25.1	0.0	47.0	22.1	19.3
LnGrp LOS	D	C		D	D	C	D	C		D	C	B
Approach Vol, veh/h		180	A		702			1332	A		704	
Approach Delay, s/veh		33.2			37.6			29.2			25.4	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	39.6	13.9	19.3	15.9	34.7	7.5	25.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	9.6	43.5	10.8	34.2	13.1	40.0	5.0	40.0
Max Q Clear Time (g_c+I1), s	7.1	26.3	9.2	5.0	11.5	12.2	3.0	17.4
Green Ext Time (p_c), s	0.0	6.8	0.1	0.7	0.0	3.4	0.0	2.0

Intersection Summary	
HCM 6th Ctrl Delay	30.6
HCM 6th LOS	C

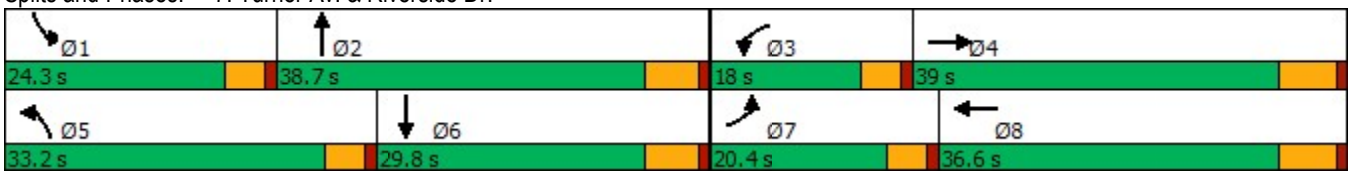
Notes

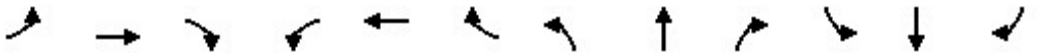
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	119	356	85	456	237	208	111	161
Future Volume (vph)	119	356	85	456	237	208	111	161
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	20.4	39.0	18.0	36.6	33.2	38.7	24.3	29.8
Total Split (%)	17.0%	32.5%	15.0%	30.5%	27.7%	32.3%	20.3%	24.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	13.3	29.6	10.6	27.0	22.9	23.8	13.3	14.2
Actuated g/C Ratio	0.13	0.30	0.11	0.27	0.23	0.24	0.13	0.14
v/c Ratio	0.72	0.61	0.64	0.83	0.82	0.61	0.67	0.62
Control Delay	63.7	32.6	63.8	43.1	56.9	23.5	59.2	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	32.6	63.8	43.1	56.9	23.5	59.2	31.8
LOS	E	C	E	D	E	C	E	C
Approach Delay		38.9		45.7		35.4		39.8
Approach LOS		D		D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 40.0	Intersection LOS: D
Intersection Capacity Utilization 69.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	356	113	85	456	129	237	208	219	111	161	110
Future Volume (veh/h)	119	356	113	85	456	129	237	208	219	111	161	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.94	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	151	451	82	108	577	105	300	263	243	141	204	117
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	797	144	133	713	129	336	461	388	172	357	195
Arrive On Green	0.11	0.28	0.28	0.08	0.25	0.25	0.21	0.27	0.27	0.11	0.17	0.17
Sat Flow, veh/h	1594	2831	511	1594	2839	515	1594	1683	1416	1594	2085	1139
Grp Volume(v), veh/h	151	267	266	108	341	341	300	263	243	141	163	158
Grp Sat Flow(s),veh/h/ln	1594	1683	1658	1594	1683	1670	1594	1683	1416	1594	1683	1540
Q Serve(g_s), s	7.8	11.3	11.5	5.6	16.0	16.1	15.3	11.3	12.6	7.3	7.4	7.9
Cycle Q Clear(g_c), s	7.8	11.3	11.5	5.6	16.0	16.1	15.3	11.3	12.6	7.3	7.4	7.9
Prop In Lane	1.00		0.31	1.00		0.31	1.00		1.00	1.00		0.74
Lane Grp Cap(c), veh/h	182	474	467	133	423	419	336	461	388	172	288	264
V/C Ratio(X)	0.83	0.56	0.57	0.81	0.81	0.81	0.89	0.57	0.63	0.82	0.56	0.60
Avail Cap(c_a), veh/h	301	659	649	255	611	606	544	661	556	375	482	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	25.7	25.8	37.7	29.5	29.5	32.2	26.2	26.6	36.6	31.9	32.1
Incr Delay (d2), s/veh	3.9	1.1	1.1	4.4	5.2	5.4	6.9	1.1	1.7	3.7	1.7	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.2	4.2	2.2	6.5	6.5	6.1	4.3	4.1	2.8	3.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	26.7	26.9	42.1	34.7	35.0	39.1	27.3	28.3	40.3	33.6	34.3
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		684			790			806			462	
Approach Delay, s/veh		29.8			35.8			32.0			35.9	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	28.8	11.6	29.8	22.2	20.1	14.2	27.2
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	19.7	32.9	13.4	32.8	28.6	24.0	15.8	30.4
Max Q Clear Time (g_c+I1), s	9.3	14.6	7.6	13.5	17.3	9.9	9.8	18.1
Green Ext Time (p_c), s	0.1	2.7	0.1	2.7	0.3	1.4	0.1	3.0

Intersection Summary	
HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	61	97	11	103	76	129	396	16	34	186	74
Future Vol, veh/h	97	61	97	11	103	76	129	396	16	34	186	74
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	131	82	131	15	139	103	174	535	22	46	251	100
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

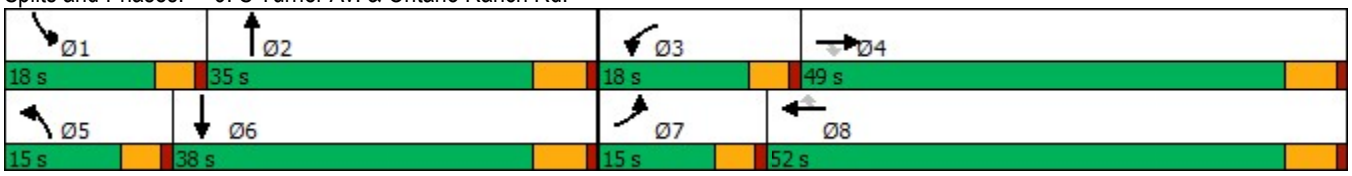
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	16.2	16	27.3	17.2
HCM LOS	C	C	D	C

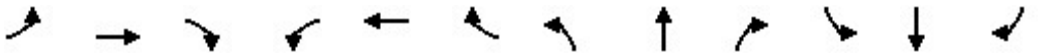
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	89%	0%	100%	17%	0%	100%	31%	0%	100%	46%
Vol Right, %	0%	0%	11%	0%	0%	83%	0%	0%	69%	0%	0%	54%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	264	148	97	41	117	11	69	110	34	124	136
LT Vol	129	0	0	97	0	0	11	0	0	34	0	0
Through Vol	0	264	132	0	41	20	0	69	34	0	124	62
RT Vol	0	0	16	0	0	97	0	0	76	0	0	74
Lane Flow Rate	174	357	200	131	55	159	15	93	149	46	168	184
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.421	0.812	0.451	0.349	0.139	0.375	0.041	0.241	0.368	0.12	0.414	0.434
Departure Headway (Hd)	8.69	8.19	8.115	9.591	9.091	8.512	9.859	9.359	8.877	9.388	8.888	8.507
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	417	446	446	375	394	422	363	383	406	382	406	423
Service Time	6.39	5.89	5.815	7.35	6.85	6.271	7.62	7.12	6.638	7.146	6.646	6.265
HCM Lane V/C Ratio	0.417	0.8	0.448	0.349	0.14	0.377	0.041	0.243	0.367	0.12	0.414	0.435
HCM Control Delay	17.6	37.7	17.3	17.4	13.3	16.3	13	15.1	16.8	13.4	17.8	17.7
HCM Lane LOS	C	E	C	C	B	C	B	C	C	B	C	C
HCM 95th-tile Q	2	7.5	2.3	1.5	0.5	1.7	0.1	0.9	1.7	0.4	2	2.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	471	15	52	686	24	34	129	53	64
Future Volume (vph)	32	471	15	52	686	24	34	129	53	64
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	15.0	49.0	49.0	18.0	52.0	52.0	15.0	35.0	18.0	38.0
Total Split (%)	12.5%	40.8%	40.8%	15.0%	43.3%	43.3%	12.5%	29.2%	15.0%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	7.1	21.4	21.4	7.9	22.0	22.0	7.1	13.2	7.9	13.8
Actuated g/C Ratio	0.12	0.35	0.35	0.13	0.36	0.36	0.12	0.22	0.13	0.23
v/c Ratio	0.18	0.42	0.03	0.25	0.60	0.04	0.18	0.45	0.26	0.22
Control Delay	36.5	19.3	0.1	35.6	20.7	0.1	36.5	29.1	35.5	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	19.3	0.1	35.6	20.7	0.1	36.5	29.1	35.5	24.0
LOS	D	B	A	D	C	A	D	C	D	C
Approach Delay		19.8			21.0			30.4		28.5
Approach LOS		B			C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 60.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	471	15	52	686	24	34	129	34	53	64	19
Future Volume (veh/h)	32	471	15	52	686	24	34	129	34	53	64	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	523	13	58	762	19	38	143	32	59	71	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	1117	498	99	1175	524	73	220	49	100	263	37
Arrive On Green	0.04	0.31	0.31	0.06	0.33	0.33	0.04	0.15	0.15	0.06	0.16	0.16
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1480	331	1781	1604	226
Grp Volume(v), veh/h	36	523	13	58	762	19	38	0	175	59	0	81
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1811	1781	0	1830
Q Serve(g_s), s	1.0	5.8	0.3	1.6	8.9	0.4	1.0	0.0	4.5	1.6	0.0	1.9
Cycle Q Clear(g_c), s	1.0	5.8	0.3	1.6	8.9	0.4	1.0	0.0	4.5	1.6	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.12
Lane Grp Cap(c), veh/h	70	1117	498	99	1175	524	73	0	269	100	0	300
V/C Ratio(X)	0.51	0.47	0.03	0.58	0.65	0.04	0.52	0.00	0.65	0.59	0.00	0.27
Avail Cap(c_a), veh/h	378	3136	1399	488	3354	1496	378	0	1080	488	0	1203
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.0	13.5	11.6	22.6	14.0	11.1	23.0	0.0	19.6	22.5	0.0	17.9
Incr Delay (d2), s/veh	2.1	0.3	0.0	2.0	0.6	0.0	2.1	0.0	2.6	2.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.7	0.1	0.6	2.7	0.1	0.4	0.0	1.7	0.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	13.8	11.6	24.6	14.6	11.1	25.1	0.0	22.3	24.6	0.0	18.4
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	A	B
Approach Vol, veh/h		572			839			213			140	
Approach Delay, s/veh		14.5			15.2			22.8			21.0	
Approach LOS		B			B			C			C	

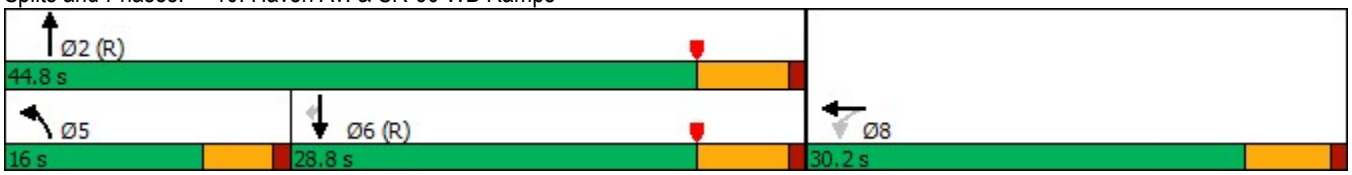
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	13.1	7.3	21.2	6.6	13.8	6.5	22.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.4	29.2	13.4	43.2	10.4	32.2	10.4	46.2
Max Q Clear Time (g_c+I1), s	3.6	6.5	3.6	7.8	3.0	3.9	3.0	10.9
Green Ext Time (p_c), s	0.0	0.8	0.0	3.3	0.0	0.3	0.0	5.2

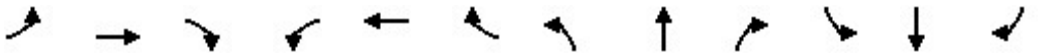
Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	186	4	716	303	1445	734	407
Future Volume (vph)	186	4	716	303	1445	734	407
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	30.2	30.2		16.0	44.8	28.8	28.8
Total Split (%)	40.3%	40.3%		21.3%	59.7%	38.4%	38.4%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	21.0	21.0	75.0	10.2	42.0	26.8	26.8
Actuated g/C Ratio	0.28	0.28	1.00	0.14	0.56	0.36	0.36
v/c Ratio	0.79	0.80	0.47	0.68	0.53	0.42	0.51
Control Delay	37.3	37.7	1.0	34.3	11.6	20.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	37.7	1.0	34.3	11.6	20.2	4.8
LOS	D	D	A	C	B	C	A
Approach Delay		19.3			15.5	14.7	
Approach LOS		B			B	B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 45 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	186	4	716	303	1445	0	0	734	407
Future Volume (veh/h)	0	0	0	186	4	716	303	1445	0	0	734	407
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				747	0	0	316	1505	0	0	765	356
Peak Hour Factor				0.25	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				890	0		397	3014	0	0	2086	639
Arrive On Green				0.25	0.00	0.00	0.23	1.00	0.00	0.00	0.41	0.41
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1564
Grp Volume(v), veh/h				747	0	0	316	1505	0	0	765	356
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1564
Q Serve(g_s), s				14.9	0.0	0.0	6.5	0.0	0.0	0.0	7.8	13.1
Cycle Q Clear(g_c), s				14.9	0.0	0.0	6.5	0.0	0.0	0.0	7.8	13.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				890	0		397	3014	0	0	2086	639
V/C Ratio(X)				0.84	0.00		0.80	0.50	0.00	0.00	0.37	0.56
Avail Cap(c_a), veh/h				1159	0		507	3014	0	0	2086	639
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.58	0.58	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				26.7	0.0	0.0	28.1	0.0	0.0	0.0	15.4	17.0
Incr Delay (d2), s/veh				4.4	0.0	0.0	3.0	0.3	0.0	0.0	0.5	3.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.3	0.0	0.0	2.4	0.1	0.0	0.0	2.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.1	0.0	0.0	31.1	0.3	0.0	0.0	15.9	20.5
LnGrp LOS				C	A		C	A	A	A	B	C
Approach Vol, veh/h					747	A		1821			1121	
Approach Delay, s/veh					31.1			5.7			17.4	
Approach LOS					C			A			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		50.5			13.6	36.8		24.5				
Change Period (Y+Rc), s		6.2			5.0	6.2		5.8				
Max Green Setting (Gmax), s		38.6			11.0	22.6		24.4				
Max Q Clear Time (g_c+I1), s		2.0			8.5	15.1		16.9				
Green Ext Time (p_c), s		8.2			0.2	2.5		1.8				

Intersection Summary		
HCM 6th Ctrl Delay	14.4	
HCM 6th LOS	B	

Notes

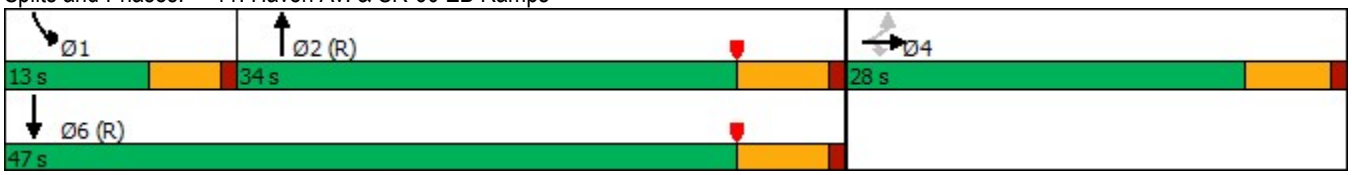
User approved volume balancing among the lanes for turning movement.

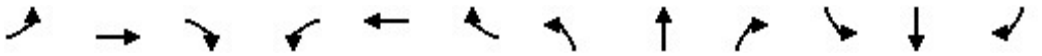
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	718	5	166	1014	324	624
Future Volume (vph)	718	5	166	1014	324	624
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	28.0	28.0	28.0	34.0	13.0	47.0
Total Split (%)	37.3%	37.3%	37.3%	45.3%	17.3%	62.7%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	20.4	20.4	20.4	28.6	9.0	42.6
Actuated g/C Ratio	0.27	0.27	0.27	0.38	0.12	0.57
v/c Ratio	0.83	0.83	0.31	0.72	0.83	0.23
Control Delay	42.1	42.7	5.2	20.8	50.4	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	42.7	5.2	20.8	50.4	8.6
LOS	D	D	A	C	D	A
Approach Delay		35.4		20.8		22.8
Approach LOS		D		C		C

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 48 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	718	5	166	0	0	0	0	1014	321	324	624	0
Future Volume (veh/h)	718	5	166	0	0	0	0	1014	321	324	624	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	760	0	69				0	1067	257	341	657	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	892	0	397				0	1705	410	369	3011	0
Arrive On Green	0.25	0.00	0.25				0.00	0.42	0.42	0.21	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4263	986	3456	5274	0
Grp Volume(v), veh/h	760	0	69				0	887	437	341	657	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1677	1728	1702	0
Q Serve(g_s), s	15.2	0.0	2.6				0.0	15.4	15.4	7.3	0.0	0.0
Cycle Q Clear(g_c), s	15.2	0.0	2.6				0.0	15.4	15.4	7.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.59	1.00		0.00
Lane Grp Cap(c), veh/h	892	0	397				0	1417	698	369	3011	0
V/C Ratio(X)	0.85	0.00	0.17				0.00	0.63	0.63	0.93	0.22	0.00
Avail Cap(c_a), veh/h	1055	0	469				0	1417	698	369	3011	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.82	0.82	0.00
Uniform Delay (d), s/veh	26.8	0.0	22.0				0.0	17.3	17.3	29.2	0.0	0.0
Incr Delay (d2), s/veh	6.0	0.0	0.2				0.0	2.1	4.2	25.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.9				0.0	5.6	5.9	3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.8	0.0	22.2				0.0	19.4	21.5	54.2	0.1	0.0
LnGrp LOS	C	A	C				A	B	C	D	A	A
Approach Vol, veh/h		829						1324			998	
Approach Delay, s/veh		31.9						20.1			18.6	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	37.4		24.6		50.4
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	8.0	27.8		22.2		40.8
Max Q Clear Time (g_c+I1), s	9.3	17.4		17.2		2.0
Green Ext Time (p_c), s	0.0	4.2		1.5		2.8

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

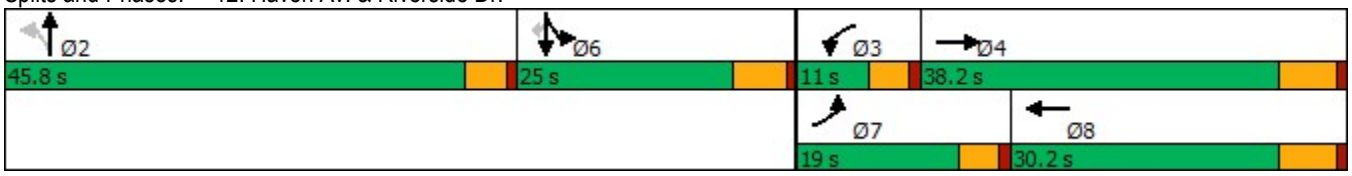
Notes

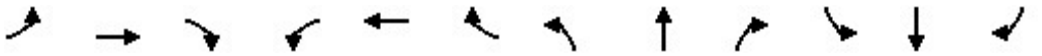
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	323	442	100	343	20	297	262	184	229
Future Volume (vph)	323	442	100	343	20	297	262	184	229
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	38.2	11.0	30.2	45.8	45.8	25.0	25.0	25.0
Total Split (%)	15.8%	31.8%	9.2%	25.2%	38.2%	38.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.4	32.0	6.4	24.0		41.1	19.2	19.2	19.2
Actuated g/C Ratio	0.12	0.27	0.05	0.20		0.34	0.16	0.16	0.16
v/c Ratio	1.82	1.08	1.26	0.81		1.86	1.10	0.70	0.56
Control Delay	419.9	107.4	229.7	50.7		429.8	133.6	61.6	10.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	419.9	107.4	229.7	50.7		429.8	133.6	61.6	10.9
LOS	F	F	F	D		F	F	E	B
Approach Delay		234.4		79.5		429.8		72.4	
Approach LOS		F		E		F		E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.86	
Intersection Signal Delay: 184.1	Intersection LOS: F
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	442	30	100	343	177	20	297	91	262	184	229
Future Volume (veh/h)	323	442	30	100	343	177	20	297	91	262	184	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	344	470	29	106	365	152	21	316	80	279	196	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	484	30	94	508	207	23	354	90	281	313	260
Arrive On Green	0.13	0.29	0.29	0.06	0.22	0.22	0.27	0.27	0.27	0.18	0.18	0.18
Sat Flow, veh/h	1594	1643	101	1594	2299	938	86	1290	326	1594	1772	1471
Grp Volume(v), veh/h	344	0	499	106	265	252	417	0	0	279	196	68
Grp Sat Flow(s),veh/h/ln	1594	0	1744	1594	1683	1554	1702	0	0	1594	1772	1471
Q Serve(g_s), s	14.4	0.0	30.7	6.4	15.8	16.4	25.6	0.0	0.0	19.0	11.1	4.3
Cycle Q Clear(g_c), s	14.4	0.0	30.7	6.4	15.8	16.4	25.6	0.0	0.0	19.0	11.1	4.3
Prop In Lane	1.00		0.06	1.00		0.60	0.05		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	211	0	513	94	372	343	467	0	0	281	313	260
V/C Ratio(X)	1.63	0.00	0.97	1.13	0.71	0.73	0.89	0.00	0.00	0.99	0.63	0.26
Avail Cap(c_a), veh/h	211	0	513	94	372	343	643	0	0	281	313	260
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	0.0	37.9	51.2	39.2	39.4	37.9	0.0	0.0	44.7	41.4	38.6
Incr Delay (d2), s/veh	303.8	0.0	32.5	132.1	6.3	7.9	11.7	0.0	0.0	51.1	3.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.3	0.0	16.9	5.9	6.9	6.7	12.0	0.0	0.0	11.2	5.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	351.0	0.0	70.4	183.3	45.5	47.3	49.6	0.0	0.0	95.7	45.3	39.2
LnGrp LOS	F	A	E	F	D	D	D	A	A	F	D	D
Approach Vol, veh/h		843			623			417			543	
Approach Delay, s/veh		184.9			69.7			49.6			70.5	
Approach LOS		F			E			D			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.5	11.0	38.2		25.0	19.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 41	6.4	32.0		19.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		27.6	8.4	32.7		21.0	16.4	18.4				
Green Ext Time (p_c), s		2.2	0.0	0.0		0.0	0.0	1.4				

Intersection Summary		
HCM 6th Ctrl Delay		106.4
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	68	144	370	207	45
Future Vol, veh/h	52	68	144	370	207	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	72	153	394	220	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	944	244	268	0	-	0
Stage 1	244	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	291	795	1296	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	257	795	1296	-	-	-
Mov Cap-2 Maneuver	375	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	493	-	-	-	-	-

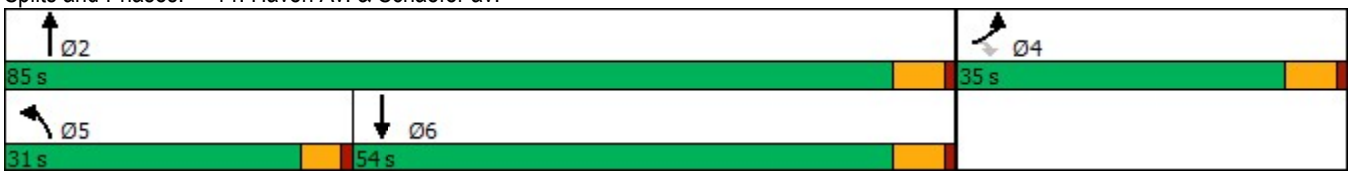
Approach	EB	NB	SB
HCM Control Delay, s	12.7	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1296	-	375	795	-	-
HCM Lane V/C Ratio	0.118	-	0.148	0.091	-	-
HCM Control Delay (s)	8.2	-	16.3	10	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	0.3	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	39	78	97	451	273
Future Volume (vph)	39	78	97	451	273
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	35.0	35.0	31.0	85.0	54.0
Total Split (%)	29.2%	29.2%	25.8%	70.8%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.4	12.4	8.1	29.2	19.2
Actuated g/C Ratio	0.26	0.26	0.17	0.61	0.40
v/c Ratio	0.10	0.19	0.39	0.45	0.24
Control Delay	17.1	6.2	25.6	9.5	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	6.2	25.6	9.5	15.3
LOS	B	A	C	A	B
Approach Delay	9.8			12.4	15.3
Approach LOS	A			B	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 47.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 43.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	78	97	451	273	22
Future Volume (veh/h)	39	78	97	451	273	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	42	31	105	490	297	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	233	219	147	917	930	65
Arrive On Green	0.15	0.15	0.09	0.52	0.29	0.29
Sat Flow, veh/h	1594	1502	1594	1772	3273	224
Grp Volume(v), veh/h	42	31	105	490	156	162
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1683	1725
Q Serve(g_s), s	0.8	0.6	2.2	6.4	2.5	2.5
Cycle Q Clear(g_c), s	0.8	0.6	2.2	6.4	2.5	2.5
Prop In Lane	1.00	1.00	1.00			0.13
Lane Grp Cap(c), veh/h	233	219	147	917	492	504
V/C Ratio(X)	0.18	0.14	0.72	0.53	0.32	0.32
Avail Cap(c_a), veh/h	1350	1272	1221	4072	2354	2412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	12.8	15.2	5.5	9.5	9.5
Incr Delay (d2), s/veh	0.4	0.3	2.4	0.5	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	0.7	0.8	0.6	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.3	13.1	17.7	6.0	9.9	9.9
LnGrp LOS	B	B	B	A	A	A
Approach Vol, veh/h	73			595	318	
Approach Delay, s/veh	13.2			8.1	9.9	
Approach LOS	B			A	A	

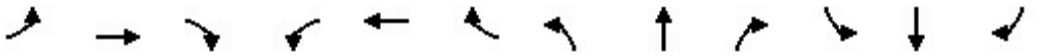
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		23.6		10.8	7.8	15.9
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		79.2		29.2	26.4	48.2
Max Q Clear Time (g_c+I1), s		8.4		2.8	4.2	4.5
Green Ext Time (p_c), s		3.1		0.2	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	552	17	74	512	151	36	288	113	195	184	52
Future Volume (vph)	113	552	17	74	512	151	36	288	113	195	184	52
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	15.0	38.0	38.0	11.5	34.5	34.5	11.7	48.5	48.5	22.0	58.8	58.8
Total Split (%)	12.5%	31.7%	31.7%	9.6%	28.8%	28.8%	9.8%	40.4%	40.4%	18.3%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.3	34.7	34.7	6.4	28.3	28.3	6.4	24.2	24.2	16.7	39.0	39.0
Actuated g/C Ratio	0.10	0.34	0.34	0.06	0.28	0.28	0.06	0.24	0.24	0.17	0.39	0.39
v/c Ratio	0.76	0.36	0.03	0.44	0.32	0.30	0.39	0.73	0.26	0.80	0.29	0.09
Control Delay	76.3	28.3	0.1	56.5	31.1	7.1	61.0	45.9	3.2	66.0	23.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.3	28.3	0.1	56.5	31.1	7.1	61.0	45.9	3.2	66.0	23.6	0.3
LOS	E	C	A	E	C	A	E	D	A	E	C	A
Approach Delay		35.6			28.7			36.1			40.0	
Approach LOS		D			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 34.3	Intersection LOS: C
Intersection Capacity Utilization 69.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	552	17	74	512	151	36	288	113	195	184	52
Future Volume (veh/h)	113	552	17	74	512	151	36	288	113	195	184	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	122	594	7	80	551	110	39	310	71	210	198	33
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	1677	520	137	1834	452	54	398	337	240	605	510
Arrive On Green	0.09	0.35	0.35	0.05	0.30	0.30	0.03	0.22	0.22	0.15	0.34	0.34
Sat Flow, veh/h	1594	4837	1500	2910	6095	1502	1594	1772	1500	1594	1772	1495
Grp Volume(v), veh/h	122	594	7	80	551	110	39	310	71	210	198	33
Grp Sat Flow(s),veh/h/ln	1594	1612	1500	1455	1524	1502	1594	1772	1500	1594	1772	1495
Q Serve(g_s), s	7.0	8.5	0.3	2.5	6.5	5.1	2.3	15.3	3.6	12.0	7.7	1.4
Cycle Q Clear(g_c), s	7.0	8.5	0.3	2.5	6.5	5.1	2.3	15.3	3.6	12.0	7.7	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	1677	520	137	1834	452	54	398	337	240	605	510
V/C Ratio(X)	0.83	0.35	0.01	0.59	0.30	0.24	0.72	0.78	0.21	0.87	0.33	0.06
Avail Cap(c_a), veh/h	178	1677	520	216	1834	452	122	813	688	298	1009	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	22.6	20.0	43.5	25.0	24.5	44.5	33.9	29.4	38.7	22.7	20.7
Incr Delay (d2), s/veh	19.4	0.6	0.0	1.5	0.4	1.3	6.4	3.3	0.3	18.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.0	0.1	0.9	2.2	1.8	1.0	6.6	1.2	5.6	3.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.9	23.2	20.0	44.9	25.4	25.8	50.9	37.2	29.7	56.7	23.0	20.7
LnGrp LOS	E	C	B	D	C	C	D	D	C	E	C	C
Approach Vol, veh/h		723			741			420			441	
Approach Delay, s/veh		29.5			27.6			37.2			38.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.6	26.7	9.0	38.8	7.8	37.5	13.2	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.4	42.7	6.9	* 32	7.1	53.0	10.4	28.0
Max Q Clear Time (g_c+I1), s	14.0	17.3	4.5	10.5	4.3	9.7	9.0	8.5
Green Ext Time (p_c), s	0.1	1.9	0.0	3.5	0.0	1.2	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

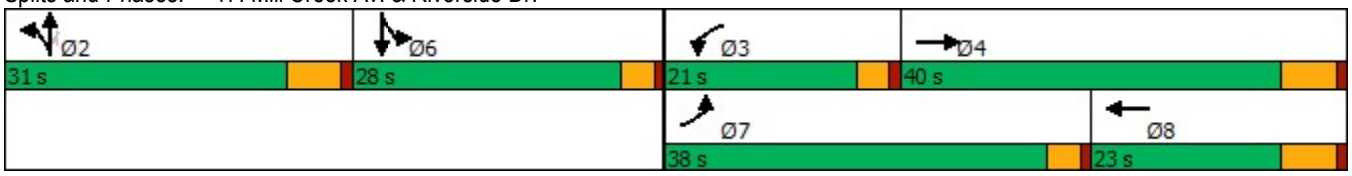
Notes

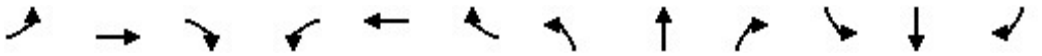
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	297	169	99	194	191	75	73	83	155
Future Volume (vph)	297	169	99	194	191	75	73	83	155
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	38.0	40.0	21.0	23.0	31.0	31.0	31.0	28.0	28.0
Total Split (%)	31.7%	33.3%	17.5%	19.2%	25.8%	25.8%	25.8%	23.3%	23.3%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	28.7	31.0	12.6	14.9	20.7	20.7	20.7	21.4	21.4
Actuated g/C Ratio	0.27	0.29	0.12	0.14	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.88	0.47	0.67	0.74	0.79	0.28	0.23	0.33	0.84
Control Delay	61.0	14.8	65.6	49.1	61.2	41.3	3.4	42.7	62.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	14.8	65.6	49.1	61.2	41.3	3.4	42.7	62.4
LOS	E	B	E	D	E	D	A	D	E
Approach Delay		34.4		53.4		44.4			57.1
Approach LOS		C		D		D			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 44.6	Intersection LOS: D
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	169	235	99	194	90	191	75	73	83	155	70
Future Volume (veh/h)	297	169	235	99	194	90	191	75	73	83	155	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	376	214	220	125	246	85	242	95	46	105	196	73
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	407	499	440	152	335	112	288	321	270	351	263	98
Arrive On Green	0.26	0.30	0.30	0.10	0.14	0.14	0.18	0.18	0.18	0.22	0.22	0.22
Sat Flow, veh/h	1594	1683	1486	1594	2457	824	1594	1772	1492	1594	1191	444
Grp Volume(v), veh/h	376	214	220	125	166	165	242	95	46	105	0	269
Grp Sat Flow(s),veh/h/ln	1594	1683	1486	1594	1683	1598	1594	1772	1492	1594	0	1634
Q Serve(g_s), s	22.0	9.8	11.7	7.4	9.0	9.5	14.0	4.4	2.5	5.3	0.0	14.7
Cycle Q Clear(g_c), s	22.0	9.8	11.7	7.4	9.0	9.5	14.0	4.4	2.5	5.3	0.0	14.7
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	407	499	440	152	230	218	288	321	270	351	0	360
V/C Ratio(X)	0.92	0.43	0.50	0.82	0.72	0.76	0.84	0.30	0.17	0.30	0.00	0.75
Avail Cap(c_a), veh/h	567	599	529	284	299	284	420	467	393	400	0	410
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	27.1	27.8	42.5	39.5	39.7	37.8	33.9	33.1	31.1	0.0	34.8
Incr Delay (d2), s/veh	14.5	0.6	0.9	4.2	5.9	8.1	9.6	0.5	0.3	0.5	0.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	3.7	4.0	2.9	3.9	4.0	6.0	1.9	0.9	2.0	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	27.7	28.7	46.7	45.5	47.9	47.4	34.4	33.4	31.6	0.0	41.2
LnGrp LOS	D	C	C	D	D	D	D	C	C	C	A	D
Approach Vol, veh/h		810			456			383			374	
Approach Delay, s/veh		37.9			46.7			42.5			38.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.1	13.1	34.3		25.1	28.4	19.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		25.2	17.0	34.0		24.0	34.0	17.0				
Max Q Clear Time (g_c+I1), s		16.0	9.4	13.7		16.7	24.0	11.5				
Green Ext Time (p_c), s		0.9	0.1	2.2		1.1	0.4	0.8				

Intersection Summary												
HCM 6th Ctrl Delay			40.9									
HCM 6th LOS			D									

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	3	2
Future Vol, veh/h	0	0	0	0	3	2
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	6	4
Number of Lanes	0	1	1	0	1	0

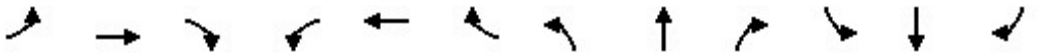
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	0	0	7.1
HCM LOS	-	-	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	60%
Vol Thru, %	100%	100%	40%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	0	5
LT Vol	0	0	3
Through Vol	0	0	2
RT Vol	0	0	0
Lane Flow Rate	0	0	10
Geometry Grp	1	1	1
Degree of Util (X)	0	0	0.011
Departure Headway (Hd)	3.941	3.952	4.054
Convergence, Y/N	Yes	Yes	Yes
Cap	0	0	888
Service Time	1.943	1.956	2.054
HCM Lane V/C Ratio	0	0	0.011
HCM Control Delay	6.9	7	7.1
HCM Lane LOS	N	N	A
HCM 95th-tile Q	0	0	0

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	526	376	1106	377	262
Future Volume (vph)	4	526	376	1106	377	262
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	22.5	22.5	11.2	22.5	22.5	22.5
Total Split (s)	37.0	37.0	28.0	53.0	25.0	25.0
Total Split (%)	41.1%	41.1%	31.1%	58.9%	27.8%	27.8%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	27.4	27.4	20.4	39.7	14.5	14.5
Actuated g/C Ratio	0.34	0.34	0.26	0.50	0.18	0.18
v/c Ratio	0.21	0.89	0.85	0.61	0.57	0.53
Control Delay	21.0	40.0	48.3	16.3	34.4	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	40.0	48.3	16.3	34.4	8.3
LOS	C	D	D	B	C	A
Approach Delay	36.3			24.4	23.7	
Approach LOS	D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 79.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	123	4	526	376	1106	0	0	377	262
Future Volume (veh/h)	0	0	0	123	4	526	376	1106	0	0	377	262
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				126	4	367	384	1129	0	0	385	228
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				481	15	441	438	1945	0	0	745	316
Arrive On Green				0.28	0.28	0.28	0.25	0.52	0.00	0.00	0.20	0.20
Sat Flow, veh/h				1729	55	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				130	0	367	384	1129	0	0	385	228
Grp Sat Flow(s),veh/h/ln				1784	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				3.5	0.0	13.4	12.7	12.7	0.0	0.0	5.6	8.3
Cycle Q Clear(g_c), s				3.5	0.0	13.4	12.7	12.7	0.0	0.0	5.6	8.3
Prop In Lane				0.97		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				496	0	441	438	1945	0	0	745	316
V/C Ratio(X)				0.26	0.00	0.83	0.88	0.58	0.00	0.00	0.52	0.72
Avail Cap(c_a), veh/h				895	0	795	679	2852	0	0	1146	485
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				17.3	0.0	20.8	22.3	10.1	0.0	0.0	21.9	23.0
Incr Delay (d2), s/veh				0.3	0.0	4.2	5.4	0.3	0.0	0.0	0.6	3.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	4.7	5.1	3.6	0.0	0.0	2.2	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				17.5	0.0	25.0	27.6	10.4	0.0	0.0	22.5	26.1
LnGrp LOS				B	A	C	C	B	A	A	C	C
Approach Vol, veh/h					497			1513			613	
Approach Delay, s/veh					23.0			14.8			23.8	
Approach LOS					C			B			C	

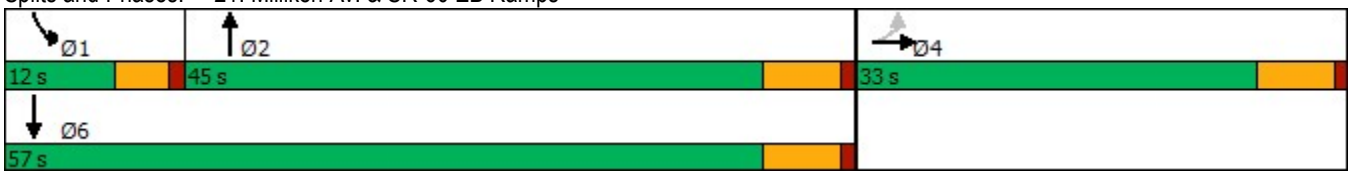
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		38.1			19.7	18.4		23.3				
Change Period (Y+Rc), s		6.2			4.6	6.2		6.2				
Max Green Setting (Gmax), s		46.8			23.4	18.8		30.8				
Max Q Clear Time (g_c+I1), s		14.7			14.7	10.3		15.4				
Green Ext Time (p_c), s		8.6			0.4	2.0		1.7				

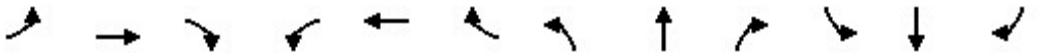
Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	436	3	1102	85	394
Future Volume (vph)	436	3	1102	85	394
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	22.5	9.6	22.5
Total Split (s)	33.0	33.0	45.0	12.0	57.0
Total Split (%)	36.7%	36.7%	50.0%	13.3%	63.3%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	22.2	22.2	33.3	7.1	41.9
Actuated g/C Ratio	0.29	0.29	0.43	0.09	0.54
v/c Ratio	0.77	0.54	0.80	0.54	0.20
Control Delay	38.9	10.2	24.7	52.5	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	10.2	24.7	52.5	9.4
LOS	D	B	C	D	A
Approach Delay		25.2	24.7		17.1
Approach LOS		C	C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 77.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 23.3	Intersection LOS: C
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	436	3	286	0	0	0	0	1102	127	85	394	0
Future Volume (veh/h)	436	3	286	0	0	0	0	1102	127	85	394	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	343	152	233				0	1136	107	88	406	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	492	184	282				0	1413	133	113	2051	0
Arrive On Green	0.28	0.28	0.28				0.00	0.42	0.42	0.06	0.55	0.00
Sat Flow, veh/h	1781	666	1021				0	3367	317	1781	3741	0
Grp Volume(v), veh/h	343	0	385				0	630	613	88	406	0
Grp Sat Flow(s),veh/h/ln	1781	0	1687				0	1870	1813	1781	1870	0
Q Serve(g_s), s	12.2	0.0	15.1				0.0	20.9	20.9	3.4	3.9	0.0
Cycle Q Clear(g_c), s	12.2	0.0	15.1				0.0	20.9	20.9	3.4	3.9	0.0
Prop In Lane	1.00		0.61				0.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h	492	0	466				0	785	761	113	2051	0
V/C Ratio(X)	0.70	0.00	0.83				0.00	0.80	0.80	0.78	0.20	0.00
Avail Cap(c_a), veh/h	675	0	639				0	1027	995	186	2688	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.9	0.0	24.0				0.0	18.0	18.0	32.6	8.1	0.0
Incr Delay (d2), s/veh	1.9	0.0	6.4				0.0	3.5	3.7	4.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	6.1				0.0	8.0	7.8	1.5	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	0.0	30.4				0.0	21.5	21.7	36.9	8.1	0.0
LnGrp LOS	C	A	C				A	C	C	D	A	A
Approach Vol, veh/h		728						1243			494	
Approach Delay, s/veh		27.8						21.6			13.3	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.1	35.9		25.7		45.0
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	7.4	38.8		26.8		50.8
Max Q Clear Time (g_c+I1), s	5.4	22.9		17.1		5.9
Green Ext Time (p_c), s	0.0	6.7		2.4		2.5

Intersection Summary			
HCM 6th Ctrl Delay			21.7
HCM 6th LOS			C

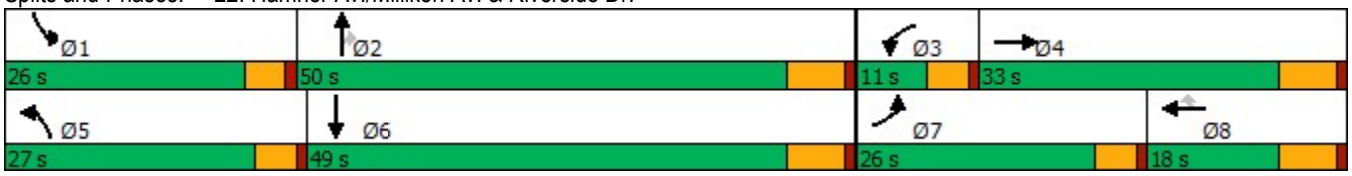
Notes

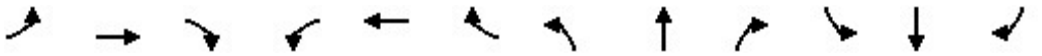
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	132	57	28	70	243	144	811	58	244	318
Future Volume (vph)	132	57	28	70	243	144	811	58	244	318
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	26.0	33.0	11.0	18.0	18.0	27.0	50.0	50.0	26.0	49.0
Total Split (%)	21.7%	27.5%	9.2%	15.0%	15.0%	22.5%	41.7%	41.7%	21.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	14.3	23.7	5.9	10.8	10.8	15.2	34.9	34.9	21.7	41.4
Actuated g/C Ratio	0.14	0.23	0.06	0.10	0.10	0.15	0.34	0.34	0.21	0.40
v/c Ratio	0.70	0.53	0.36	0.43	0.69	0.72	0.83	0.11	0.85	0.39
Control Delay	61.1	27.2	62.9	55.4	15.5	61.1	39.0	0.4	65.4	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	27.2	62.9	55.4	15.5	61.1	39.0	0.4	65.4	22.1
LOS	E	C	E	E	B	E	D	A	E	C
Approach Delay		40.6		27.5			39.9			37.5
Approach LOS		D		C			D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 73.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	57	144	28	70	243	144	811	58	244	318	124
Future Volume (veh/h)	132	57	144	28	70	243	144	811	58	244	318	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	152	66	113	32	80	245	166	932	56	280	366	121
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	123	210	48	223	189	196	1132	505	310	1017	332
Arrive On Green	0.11	0.21	0.21	0.03	0.13	0.13	0.12	0.34	0.34	0.19	0.41	0.41
Sat Flow, veh/h	1594	587	1004	1594	1772	1502	1594	3367	1502	1594	2495	813
Grp Volume(v), veh/h	152	0	179	32	80	245	166	932	56	280	245	242
Grp Sat Flow(s),veh/h/ln	1594	0	1591	1594	1772	1502	1594	1683	1502	1594	1683	1625
Q Serve(g_s), s	8.8	0.0	9.4	1.9	3.9	11.8	9.6	23.9	2.4	16.1	9.5	9.7
Cycle Q Clear(g_c), s	8.8	0.0	9.4	1.9	3.9	11.8	9.6	23.9	2.4	16.1	9.5	9.7
Prop In Lane	1.00		0.63	1.00		1.00	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	181	0	333	48	223	189	196	1132	505	310	686	662
V/C Ratio(X)	0.84	0.00	0.54	0.67	0.36	1.30	0.85	0.82	0.11	0.90	0.36	0.36
Avail Cap(c_a), veh/h	363	0	454	109	223	189	380	1570	700	363	767	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	33.1	45.1	37.6	41.1	40.3	28.6	21.5	37.0	19.3	19.4
Incr Delay (d2), s/veh	3.9	0.0	1.3	5.8	1.0	167.8	3.8	2.6	0.1	21.3	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	3.5	0.8	1.7	12.9	3.7	9.1	0.8	7.7	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	0.0	34.4	50.9	38.6	208.9	44.1	31.2	21.6	58.3	19.6	19.7
LnGrp LOS	D	A	C	D	D	F	D	C	C	E	B	B
Approach Vol, veh/h		331			357			1154			767	
Approach Delay, s/veh		39.1			156.5			32.6			33.8	
Approach LOS		D			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.9	37.8	7.4	25.9	16.2	44.5	15.3	18.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	43.8	6.4	26.8	22.4	42.8	21.4	11.8
Max Q Clear Time (g_c+I1), s	18.1	25.9	3.9	11.4	11.6	11.7	10.8	13.8
Green Ext Time (p_c), s	0.1	5.7	0.0	0.7	0.1	2.7	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.7
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	0	1025	446	3
Future Vol, veh/h	5	2	0	1025	446	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	2	0	1165	507	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1092	509	510	0	-	0
Stage 1	509	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	223	563	1053	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	223	563	1053	-	-	-
Mov Cap-2 Maneuver	422	-	-	-	-	-
Stage 1	603	-	-	-	-	-
Stage 2	522	-	-	-	-	-

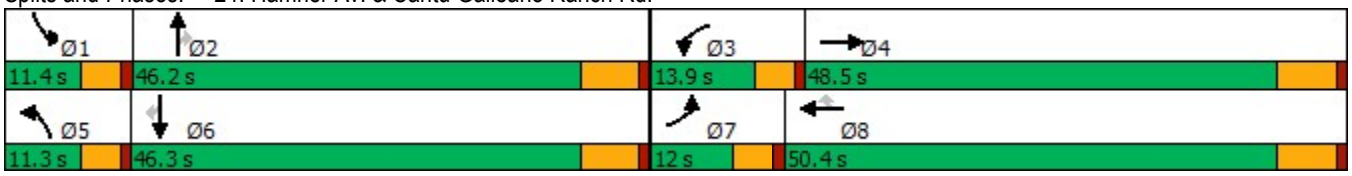
Approach	EB	NB	SB
HCM Control Delay, s	13.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1053	-	455	-	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	0	-	13.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	138	578	240	646	244	156	586	310	169	182	73
Future Volume (vph)	138	578	240	646	244	156	586	310	169	182	73
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.0	48.5	13.9	50.4	50.4	11.3	46.2	46.2	11.4	46.3	46.3
Total Split (%)	10.0%	40.4%	11.6%	42.0%	42.0%	9.4%	38.5%	38.5%	9.5%	38.6%	38.6%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.2	21.0	9.7	23.5	23.5	7.1	19.3	19.3	7.2	19.4	19.4
Actuated g/C Ratio	0.09	0.26	0.12	0.29	0.29	0.09	0.24	0.24	0.09	0.24	0.24
v/c Ratio	0.47	0.41	0.60	0.65	0.41	0.54	0.50	0.58	0.58	0.22	0.16
Control Delay	44.9	23.9	44.3	28.2	7.7	47.1	27.9	13.2	47.8	25.6	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	23.9	44.3	28.2	7.7	47.1	27.9	13.2	47.8	25.6	2.4
LOS	D	C	D	C	A	D	C	B	D	C	A
Approach Delay		27.6		27.2			26.4			30.5	
Approach LOS		C		C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 80.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 56.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	578	72	240	646	244	156	586	310	169	182	73
Future Volume (veh/h)	138	578	72	240	646	244	156	586	310	169	182	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	144	602	63	250	673	183	162	610	200	176	190	5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1489	153	355	990	442	260	1120	348	271	790	353
Arrive On Green	0.07	0.25	0.25	0.10	0.28	0.28	0.08	0.22	0.22	0.08	0.22	0.22
Sat Flow, veh/h	3456	5973	612	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	144	484	181	250	673	183	162	610	200	176	190	5
Grp Sat Flow(s),veh/h/ln	1728	1609	1760	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	2.5	5.2	5.4	4.4	10.5	5.9	2.8	6.6	7.0	3.1	2.7	0.2
Cycle Q Clear(g_c), s	2.5	5.2	5.4	4.4	10.5	5.9	2.8	6.6	7.0	3.1	2.7	0.2
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	1203	439	355	990	442	260	1120	348	271	790	353
V/C Ratio(X)	0.57	0.40	0.41	0.70	0.68	0.41	0.62	0.54	0.58	0.65	0.24	0.01
Avail Cap(c_a), veh/h	409	3242	1183	514	2496	1113	370	3268	1014	376	2280	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	19.6	19.6	27.1	20.1	18.4	28.0	21.6	21.8	28.0	20.0	19.0
Incr Delay (d2), s/veh	0.7	0.2	0.6	1.0	0.8	0.6	0.9	0.4	1.5	1.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.6	1.9	1.6	3.6	1.8	1.1	2.3	2.3	1.2	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	19.8	20.3	28.1	20.9	19.0	29.0	22.1	23.3	29.0	20.1	19.0
LnGrp LOS	C	B	C	C	C	B	C	C	C	C	C	B
Approach Vol, veh/h		809			1106			972			371	
Approach Delay, s/veh		21.5			22.2			23.5			24.3	
Approach LOS		C			C			C			C	

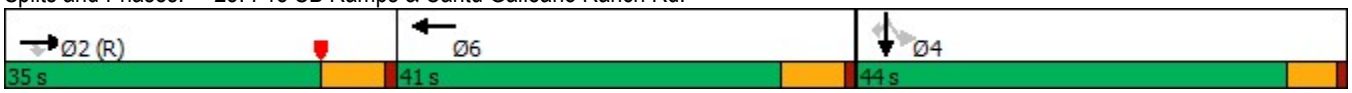
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	19.9	11.0	22.1	9.3	20.1	9.2	23.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.8	40.0	9.3	42.0	6.7	40.1	7.4	43.9
Max Q Clear Time (g_c+I1), s	5.1	9.0	6.4	7.4	4.8	4.7	4.5	12.5
Green Ext Time (p_c), s	0.0	4.7	0.1	4.0	0.0	1.1	0.1	4.9

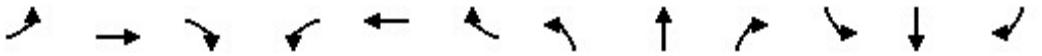
Intersection Summary	
HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	787	308	677	168	258	0	944
Future Volume (vph)	787	308	677	168	258	0	944
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	35.0	35.0	41.0		44.0	44.0	44.0
Total Split (%)	29.2%	29.2%	34.2%		36.7%	36.7%	36.7%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	Min		Min	Min	Min
Act Effct Green (s)	42.5	42.5	30.2	120.0	28.2	28.2	28.2
Actuated g/C Ratio	0.35	0.35	0.25	1.00	0.24	0.24	0.24
v/c Ratio	0.47	0.43	0.83	0.07	0.64	0.73	0.70
Control Delay	33.5	5.8	40.0	0.0	47.7	10.5	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	5.8	40.0	0.0	47.7	10.5	8.9
LOS	C	A	D	A	D	B	A
Approach Delay	25.7		32.1			17.1	
Approach LOS	C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	787	308	0	677	168	0	0	0	258	0	944
Future Volume (veh/h)	0	787	308	0	677	168	0	0	0	258	0	944
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	855	0	0	736	0				187	0	651
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	3373		0	2348					422	0	751
Arrive On Green	0.00	0.66	0.00	0.00	0.22	0.00				0.24	0.00	0.24
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	855	0	0	736	0				187	0	651
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	8.2	0.0	0.0	20.9	0.0				10.7	0.0	23.7
Cycle Q Clear(g_c), s	0.0	8.2	0.0	0.0	20.9	0.0				10.7	0.0	23.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3373		0	2348					422	0	751
V/C Ratio(X)	0.00	0.25		0.00	0.31					0.44	0.00	0.87
Avail Cap(c_a), veh/h	0	3373		0	2348					571	0	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.87	0.00	0.00	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.3	0.0	0.0	24.1	0.0				39.0	0.0	44.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0				0.7	0.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	0.0	0.0	9.8	0.0				4.7	0.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.5	0.0	0.0	24.1	0.0				39.8	0.0	50.2
LnGrp LOS	A	A		A	C					D	A	D
Approach Vol, veh/h		855	A		736	A					838	
Approach Delay, s/veh		8.5			24.1						47.8	
Approach LOS		A			C						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		86.1		33.9		86.1						
Change Period (Y+Rc), s		6.8		5.5		6.8						
Max Green Setting (Gmax), s		28.2		38.5		34.2						
Max Q Clear Time (g_c+I1), s		10.2		25.7		22.9						
Green Ext Time (p_c), s		4.9		2.8		3.3						

Intersection Summary		
HCM 6th Ctrl Delay		26.8
HCM 6th LOS		C

Notes

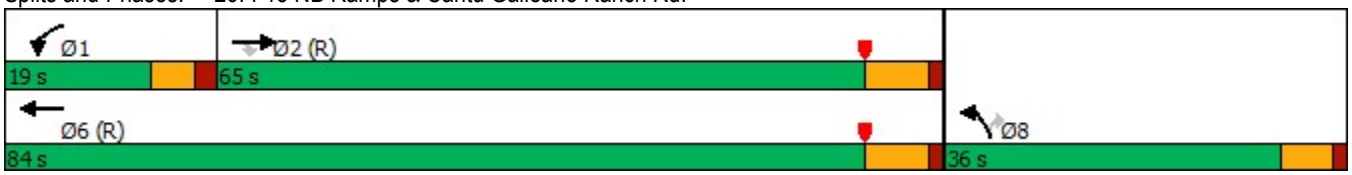
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	399	679	194	399	446	377
Future Volume (vph)	399	679	194	399	446	377
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.5	22.5	22.5	22.5
Total Split (s)	65.0	65.0	19.0	84.0	36.0	36.0
Total Split (%)	54.2%	54.2%	15.8%	70.0%	30.0%	30.0%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	61.8	61.8	12.1	79.9	26.8	26.8
Actuated g/C Ratio	0.52	0.52	0.10	0.67	0.22	0.22
v/c Ratio	0.17	0.63	0.61	0.13	0.79	0.52
Control Delay	26.1	21.3	59.5	8.0	49.5	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	21.3	59.5	8.0	49.5	7.7
LOS	C	C	E	A	D	A
Approach Delay	23.1			24.8	36.3	
Approach LOS	C			C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 27.9	Intersection LOS: C
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	399	679	194	399	446	377
Future Volume (veh/h)	399	679	194	399	446	377
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	434	426	211	434	485	242
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2962	919	271	3617	644	287
Arrive On Green	0.19	0.19	0.08	0.71	0.18	0.18
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	434	426	211	434	485	242
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	8.5	28.6	7.2	3.3	15.5	17.7
Cycle Q Clear(g_c), s	8.5	28.6	7.2	3.3	15.5	17.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2962	919	271	3617	644	287
V/C Ratio(X)	0.15	0.46	0.78	0.12	0.75	0.84
Avail Cap(c_a), veh/h	2962	919	374	3617	891	396
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.91	0.91	1.00	1.00
Uniform Delay (d), s/veh	23.8	31.9	54.3	5.6	46.6	47.5
Incr Delay (d2), s/veh	0.1	1.4	6.3	0.1	2.4	11.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	12.3	3.2	0.9	6.9	7.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.9	33.4	60.6	5.6	49.0	59.0
LnGrp LOS	C	C	E	A	D	E
Approach Vol, veh/h	860			645	727	
Approach Delay, s/veh	28.6			23.6	52.3	
Approach LOS	C			C	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	15.4	76.9				92.3	27.7
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	13.0	57.7				76.7	30.0
Max Q Clear Time (g_c+I1), s	9.2	30.6				5.3	19.7
Green Ext Time (p_c), s	0.2	4.2				2.7	2.0

Intersection Summary		
HCM 6th Ctrl Delay		34.9
HCM 6th LOS		C

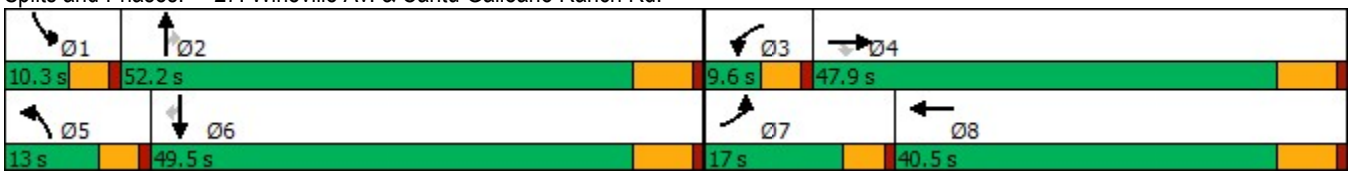
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	359	259	255	27	192	241	285	17	20	56	111
Future Volume (vph)	359	259	255	27	192	241	285	17	20	56	111
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	17.0	47.9	47.9	9.6	40.5	13.0	52.2	52.2	10.3	49.5	49.5
Total Split (%)	14.2%	39.9%	39.9%	8.0%	33.8%	10.8%	43.5%	43.5%	8.6%	41.3%	41.3%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.5	26.5	26.5	5.4	11.4	9.2	24.6	24.6	5.7	11.6	11.6
Actuated g/C Ratio	0.19	0.38	0.38	0.08	0.16	0.13	0.35	0.35	0.08	0.17	0.17
v/c Ratio	0.59	0.12	0.36	0.11	0.30	0.58	0.25	0.03	0.15	0.20	0.31
Control Delay	33.8	16.8	4.6	39.1	22.4	38.6	17.7	0.1	41.1	25.9	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	16.8	4.6	39.1	22.4	38.6	17.7	0.1	41.1	25.9	4.3
LOS	C	B	A	D	C	D	B	A	D	C	A
Approach Delay		20.2			24.2		26.5			14.7	
Approach LOS		C			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 69.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 22.0	Intersection LOS: C
Intersection Capacity Utilization 45.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	359	259	255	27	192	42	241	285	17	20	56	111
Future Volume (veh/h)	359	259	255	27	192	42	241	285	17	20	56	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	390	282	167	29	209	26	262	310	8	22	61	94
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	550	1546	381	117	531	64	401	721	322	48	213	180
Arrive On Green	0.16	0.24	0.24	0.03	0.11	0.11	0.12	0.20	0.20	0.03	0.11	0.11
Sat Flow, veh/h	3456	6434	1585	3456	4616	558	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	390	282	167	29	153	82	262	310	8	22	61	94
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1770	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	4.8	1.6	4.0	0.4	1.9	1.9	3.2	3.4	0.2	0.5	1.3	2.5
Cycle Q Clear(g_c), s	4.8	1.6	4.0	0.4	1.9	1.9	3.2	3.4	0.2	0.5	1.3	2.5
Prop In Lane	1.00		1.00	1.00		0.32	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	550	1546	381	117	391	203	401	721	322	48	213	180
V/C Ratio(X)	0.71	0.18	0.44	0.25	0.39	0.41	0.65	0.43	0.02	0.46	0.29	0.52
Avail Cap(c_a), veh/h	958	5955	1467	386	2587	1345	649	3631	1619	227	1798	1524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	13.5	14.4	21.1	18.3	18.4	18.9	15.6	14.3	21.5	18.2	18.7
Incr Delay (d2), s/veh	0.6	0.1	0.8	0.4	0.6	1.3	0.7	0.4	0.0	2.6	0.7	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.4	1.1	0.1	0.6	0.7	1.1	1.1	0.1	0.2	0.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	13.6	15.2	21.5	19.0	19.7	19.6	16.0	14.3	24.0	18.9	21.0
LnGrp LOS	B	B	B	C	B	B	B	B	B	C	B	C
Approach Vol, veh/h		839			264			580			177	
Approach Delay, s/veh		16.2			19.5			17.6			20.7	
Approach LOS		B			B			B			C	

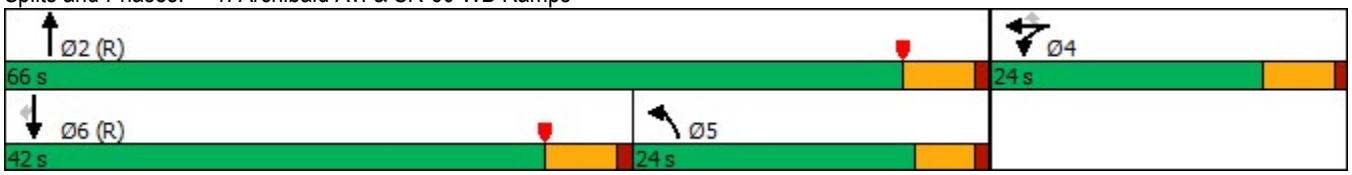
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	15.6	6.1	17.2	9.8	11.6	11.7	11.6
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	5.7	45.7	5.0	41.4	8.4	43.0	12.4	34.0
Max Q Clear Time (g_c+I1), s	2.5	5.4	2.4	6.0	5.2	4.5	6.8	3.9
Green Ext Time (p_c), s	0.0	2.0	0.0	2.2	0.2	0.6	0.4	1.2

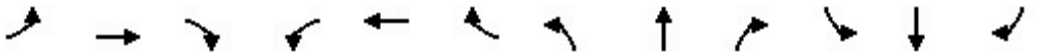
Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	380	1	176	493	467	1180	321
Future Volume (vph)	380	1	176	493	467	1180	321
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	24.0	24.0	24.0	24.0	66.0	42.0	42.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	15.7	15.7	15.7	16.8	62.7	40.9	40.9
Actuated g/C Ratio	0.17	0.17	0.17	0.19	0.70	0.45	0.45
v/c Ratio	0.70	0.71	0.41	0.79	0.13	0.41	0.37
Control Delay	47.9	47.9	8.5	39.6	1.5	17.9	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	47.9	8.5	39.6	1.5	17.9	3.5
LOS	D	D	A	D	A	B	A
Approach Delay		36.7			21.1	14.8	
Approach LOS		D			C	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	380	1	176	493	467	0	0	1180	321
Future Volume (veh/h)	0	0	0	380	1	176	493	467	0	0	1180	321
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				411	0	48	503	477	0	0	1204	228
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				512	0	228	1308	3714	0	0	1831	439
Arrive On Green				0.14	0.00	0.14	0.12	0.24	0.00	0.00	0.28	0.28
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1542
Grp Volume(v), veh/h				411	0	48	503	477	0	0	1204	228
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1542
Q Serve(g_s), s				10.0	0.0	2.4	12.0	6.6	0.0	0.0	14.8	11.2
Cycle Q Clear(g_c), s				10.0	0.0	2.4	12.0	6.6	0.0	0.0	14.8	11.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				512	0	228	1308	3714	0	0	1831	439
V/C Ratio(X)				0.80	0.00	0.21	0.38	0.13	0.00	0.00	0.66	0.52
Avail Cap(c_a), veh/h				720	0	321	1308	3714	0	0	2588	620
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.97	0.97	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				37.3	0.0	34.0	29.7	11.8	0.0	0.0	28.3	27.0
Incr Delay (d2), s/veh				4.4	0.0	0.5	0.1	0.1	0.0	0.0	1.9	4.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	2.3	5.4	2.0	0.0	0.0	5.5	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.7	0.0	34.5	29.8	11.9	0.0	0.0	30.2	31.4
LnGrp LOS				D	A	C	C	B	A	A	C	C
Approach Vol, veh/h					459			980			1432	
Approach Delay, s/veh					41.0			21.1			30.4	
Approach LOS					D			C			C	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	71.3	18.7	39.9	31.4
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	18.2	19.0	* 36
Max Q Clear Time (g_c+I1), s	8.6	12.0	14.0	16.8
Green Ext Time (p_c), s	3.2	0.9	0.5	8.7

Intersection Summary	
HCM 6th Ctrl Delay	28.9
HCM 6th LOS	C

Notes

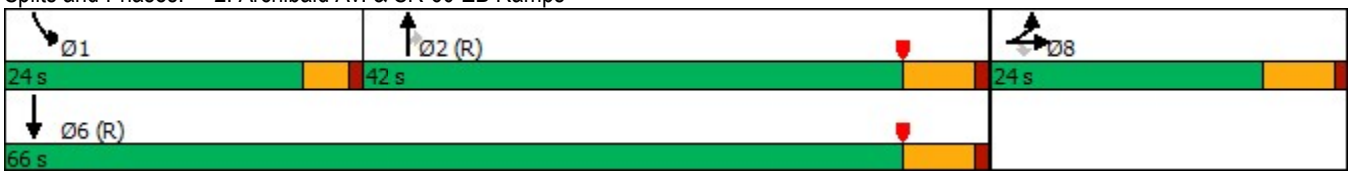
User approved volume balancing among the lanes for turning movement.

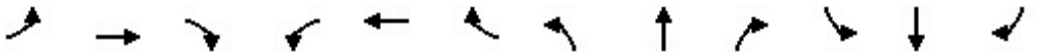
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	112	1	426	850	505	477	1083
Future Volume (vph)	112	1	426	850	505	477	1083
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	24.0	24.0	24.0	42.0	42.0	24.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	46.7%	46.7%	26.7%	73.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	12.3	12.3	12.3	45.5	45.5	16.6	66.1
Actuated g/C Ratio	0.14	0.14	0.14	0.51	0.51	0.18	0.73
v/c Ratio	0.44	0.73	0.70	0.27	0.49	0.76	0.29
Control Delay	40.4	30.0	27.7	14.2	3.5	52.4	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	30.0	27.7	14.2	3.5	52.4	0.9
LOS	D	C	C	B	A	D	A
Approach Delay		31.0		10.2			16.7
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	1	426	0	0	0	0	850	505	477	1083	0
Future Volume (veh/h)	112	1	426	0	0	0	0	850	505	477	1083	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	76	0	236				0	859	334	482	1094	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	183	0	326				0	3629	875	552	3923	0
Arrive On Green	0.10	0.00	0.10				0.00	0.56	0.56	0.32	1.00	0.00
Sat Flow, veh/h	1781	0	3170				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	76	0	236				0	859	334	482	1094	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1609	1551	1728	1702	0
Q Serve(g_s), s	3.6	0.0	6.5				0.0	6.0	10.8	11.8	0.0	0.0
Cycle Q Clear(g_c), s	3.6	0.0	6.5				0.0	6.0	10.8	11.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	183	0	326				0	3629	875	552	3923	0
V/C Ratio(X)	0.42	0.00	0.72				0.00	0.24	0.38	0.87	0.28	0.00
Avail Cap(c_a), veh/h	360	0	641				0	3629	875	768	3923	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.89	0.89	0.00
Uniform Delay (d), s/veh	37.8	0.0	39.1				0.0	9.9	10.9	29.7	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	3.1				0.0	0.2	1.3	5.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.5				0.0	1.8	3.3	4.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	0.0	42.2				0.0	10.0	12.2	35.4	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		312						1193			1576	
Approach Delay, s/veh		41.5						10.6			10.9	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.4	56.6				74.9		15.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	20.0	36.2				60.2		18.2				
Max Q Clear Time (g_c+I1), s	13.8	12.8				2.0		8.5				
Green Ext Time (p_c), s	0.5	6.9				8.7		0.8				

Intersection Summary			
HCM 6th Ctrl Delay			13.9
HCM 6th LOS			B

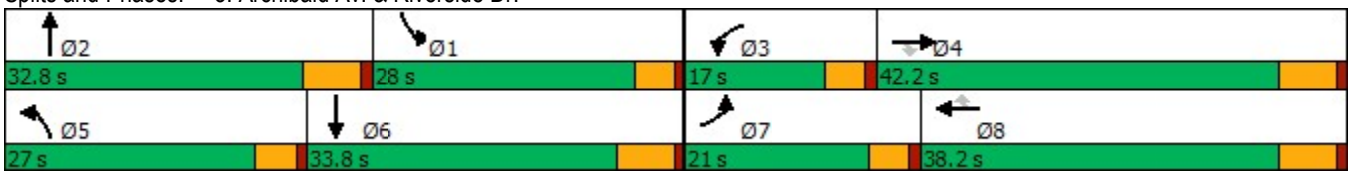
Notes

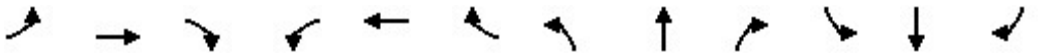
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	166	506	277	113	369	137	227	807	242	781
Future Volume (vph)	166	506	277	113	369	137	227	807	242	781
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	42.2	42.2	17.0	38.2	38.2	27.0	32.8	28.0	33.8
Total Split (%)	17.5%	35.2%	35.2%	14.2%	31.8%	31.8%	22.5%	27.3%	23.3%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.3	23.1	23.1	10.8	19.6	19.6	18.5	24.1	20.3	25.9
Actuated g/C Ratio	0.14	0.23	0.23	0.11	0.20	0.20	0.18	0.24	0.20	0.26
v/c Ratio	0.75	0.67	0.51	0.68	0.58	0.35	0.80	0.78	0.77	0.81
Control Delay	65.5	40.4	7.4	67.1	41.1	8.6	61.8	42.0	57.5	40.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	40.4	7.4	67.1	41.1	8.6	61.8	42.0	57.5	40.8
LOS	E	D	A	E	D	A	E	D	E	D
Approach Delay		35.1			38.6			46.1		44.1
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.4	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	506	277	113	369	137	227	807	70	242	781	196
Future Volume (veh/h)	166	506	277	113	369	137	227	807	70	242	781	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	169	516	214	115	377	91	232	823	64	247	797	167
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	775	337	141	650	288	265	1103	85	280	1077	224
Arrive On Green	0.13	0.23	0.23	0.09	0.19	0.19	0.17	0.24	0.24	0.18	0.27	0.27
Sat Flow, veh/h	1594	3367	1463	1594	3367	1492	1594	4572	354	1594	4004	832
Grp Volume(v), veh/h	169	516	214	115	377	91	232	579	308	247	641	323
Grp Sat Flow(s),veh/h/ln	1594	1683	1463	1594	1683	1492	1594	1612	1701	1594	1612	1611
Q Serve(g_s), s	9.1	12.2	11.6	6.2	8.9	2.8	12.5	14.6	14.7	13.3	15.9	16.1
Cycle Q Clear(g_c), s	9.1	12.2	11.6	6.2	8.9	2.8	12.5	14.6	14.7	13.3	15.9	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.52
Lane Grp Cap(c), veh/h	200	775	337	141	650	288	265	778	410	280	867	433
V/C Ratio(X)	0.84	0.67	0.64	0.82	0.58	0.32	0.87	0.75	0.75	0.88	0.74	0.75
Avail Cap(c_a), veh/h	298	1381	600	225	1227	544	407	977	515	425	1014	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	30.7	30.5	39.3	32.2	11.2	35.7	30.8	30.8	35.3	29.3	29.3
Incr Delay (d2), s/veh	8.9	1.0	2.0	5.3	0.8	0.6	8.6	2.4	4.6	9.3	2.4	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.7	3.9	2.5	3.4	1.5	5.1	5.5	6.1	5.5	5.9	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	31.7	32.5	44.6	33.0	11.8	44.3	33.2	35.5	44.6	31.7	34.4
LnGrp LOS	D	C	C	D	C	B	D	C	D	D	C	C
Approach Vol, veh/h		899			583			1119			1211	
Approach Delay, s/veh		34.7			32.0			36.1			35.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.6	27.4	12.4	26.4	19.2	29.8	15.6	23.1
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.4	* 27	12.4	36.0	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	15.3	16.7	8.2	14.2	14.5	18.1	11.1	10.9
Green Ext Time (p_c), s	0.2	3.6	0.0	3.7	0.2	3.9	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

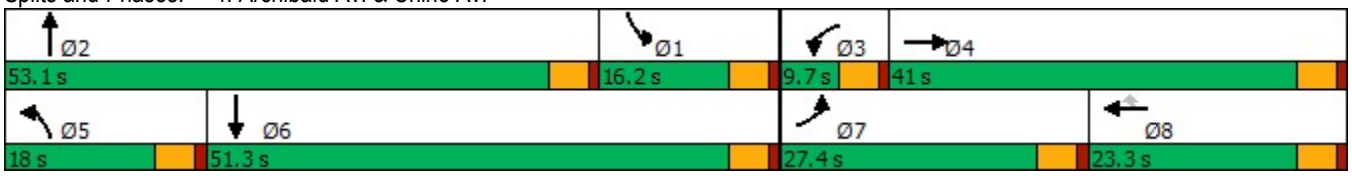
Notes

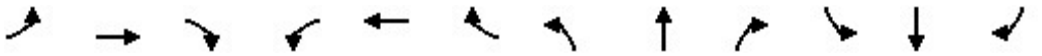
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	161	231	10	52	58	92	945	68	919
Future Volume (vph)	161	231	10	52	58	92	945	68	919
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	27.4	41.0	9.7	23.3	23.3	18.0	53.1	16.2	51.3
Total Split (%)	22.8%	34.2%	8.1%	19.4%	19.4%	15.0%	44.3%	13.5%	42.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.5	27.1	5.8	9.7	9.7	11.0	28.0	16.4	33.7
Actuated g/C Ratio	0.21	0.32	0.07	0.12	0.12	0.13	0.33	0.19	0.40
v/c Ratio	0.51	0.68	0.09	0.27	0.18	0.47	0.57	0.23	0.73
Control Delay	43.3	33.8	51.5	44.3	1.2	49.8	28.2	35.8	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	33.8	51.5	44.3	1.2	49.8	28.2	35.8	27.5
LOS	D	C	D	D	A	D	C	D	C
Approach Delay		36.7		24.0			30.0		28.0
Approach LOS		D		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	231	128	10	52	58	92	945	21	68	919	64
Future Volume (veh/h)	161	231	128	10	52	58	92	945	21	68	919	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	168	241	108	10	54	28	96	984	21	71	957	63
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	295	132	20	244	206	120	1518	32	259	1250	82
Arrive On Green	0.13	0.26	0.26	0.01	0.14	0.14	0.08	0.29	0.29	0.16	0.38	0.38
Sat Flow, veh/h	1594	1153	517	1594	1772	1502	1594	5183	111	1594	3288	216
Grp Volume(v), veh/h	168	0	349	10	54	28	96	673	332	71	516	504
Grp Sat Flow(s),veh/h/ln	1594	0	1670	1594	1772	1502	1594	1772	1750	1594	1772	1733
Q Serve(g_s), s	6.8	0.0	13.1	0.4	1.8	0.7	4.0	11.1	11.1	2.6	17.0	17.0
Cycle Q Clear(g_c), s	6.8	0.0	13.1	0.4	1.8	0.7	4.0	11.1	11.1	2.6	17.0	17.0
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.06	1.00		0.12
Lane Grp Cap(c), veh/h	209	0	428	20	244	206	120	1038	512	259	674	659
V/C Ratio(X)	0.80	0.00	0.82	0.49	0.22	0.14	0.80	0.65	0.65	0.27	0.77	0.77
Avail Cap(c_a), veh/h	544	0	910	122	496	421	320	2574	1271	277	1239	1212
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	23.3	32.7	25.6	10.7	30.4	20.6	20.6	24.5	18.1	18.1
Incr Delay (d2), s/veh	7.0	0.0	3.9	17.5	0.5	0.3	11.4	0.7	1.4	0.6	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	5.1	0.2	0.7	0.4	1.7	3.9	3.9	0.9	5.9	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	0.0	27.2	50.3	26.1	11.0	41.8	21.3	22.0	25.1	19.9	20.0
LnGrp LOS	D	A	C	D	C	B	D	C	C	C	B	B
Approach Vol, veh/h		517			92			1101			1091	
Approach Delay, s/veh		29.8			24.1			23.3			20.3	
Approach LOS		C			C			C			C	

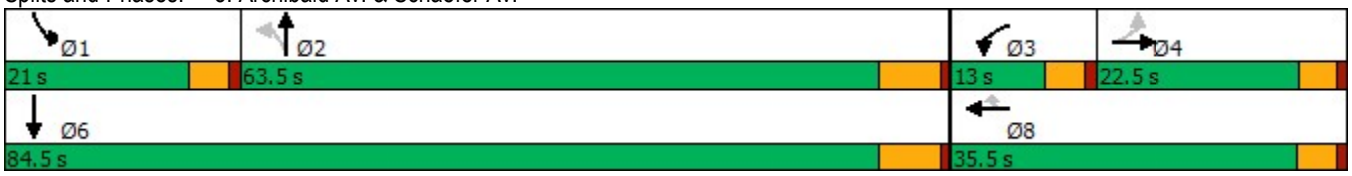
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	24.1	5.4	21.7	9.6	30.0	13.4	13.8
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	11.6	48.5	5.1	36.4	13.4	46.7	22.8	18.7
Max Q Clear Time (g_c+I1), s	4.6	13.1	2.4	15.1	6.0	19.0	8.8	3.8
Green Ext Time (p_c), s	0.1	6.5	0.0	2.0	0.1	6.4	0.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	10	15	980	45	1020	
Future Volume (vph)	10	15	980	45	1020	
Turn Type	Prot	Perm	NA	Prot	NA	
Protected Phases	3		2	1	6	4
Permitted Phases		8				
Detector Phase	3	8	2	1	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	32.6	37.5	9.6	23.5	22.5
Total Split (s)	13.0	35.5	63.5	21.0	84.5	22.5
Total Split (%)	10.8%	29.6%	52.9%	17.5%	70.4%	19%
Yellow Time (s)	3.6	3.6	5.5	3.6	5.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	4.6	6.5	4.6	6.5	
Lead/Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	9.0	9.6	27.7	8.1	32.4	
Actuated g/C Ratio	0.25	0.27	0.78	0.23	0.91	
v/c Ratio	0.03	0.03	0.28	0.13	0.36	
Control Delay	15.6	0.1	7.5	21.4	4.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.6	0.1	7.5	21.4	4.2	
LOS	B	A	A	C	A	
Approach Delay			7.5		5.0	
Approach LOS			A		A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 35.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 6.2	Intersection LOS: A
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	10	0	15	0	980	11	45	1020	0
Future Volume (veh/h)	0	0	0	10	0	15	0	980	11	45	1020	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	0	0	0	11	0	10	0	1043	10	48	1085	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	5	0	23	87	73	215	2117	20	86	2086	0
Arrive On Green	0.00	0.00	0.00	0.01	0.00	0.05	0.00	0.43	0.43	0.05	0.62	0.00
Sat Flow, veh/h	1257	1772	0	1594	1772	1484	465	4940	47	1594	3455	0
Grp Volume(v), veh/h	0	0	0	11	0	10	0	681	372	48	1085	0
Grp Sat Flow(s),veh/h/ln	1257	1772	0	1594	1772	1484	465	1612	1762	1594	1683	0
Q Serve(g_s), s	0.0	0.0	0.0	0.2	0.0	0.2	0.0	5.1	5.1	1.0	6.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.2	0.0	0.2	0.0	5.1	5.1	1.0	6.1	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h	215	5	0	23	87	73	215	1382	755	86	2086	0
V/C Ratio(X)	0.00	0.00	0.00	0.48	0.00	0.14	0.00	0.49	0.49	0.56	0.52	0.00
Avail Cap(c_a), veh/h	1019	952	0	399	1634	1368	807	5485	2997	780	7836	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	16.4	0.0	15.3	0.0	6.9	6.9	15.5	3.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	5.5	0.0	0.8	0.0	0.3	0.5	2.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.6	0.7	0.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	21.9	0.0	16.1	0.0	7.2	7.4	17.6	3.8	0.0
LnGrp LOS	A	A	A	C	A	B	A	A	A	B	A	A
Approach Vol, veh/h		0			21			1053			1133	
Approach Delay, s/veh		0.0			19.1			7.3			4.4	
Approach LOS					B			A			A	

Timer - Assigned Phs	1	2	3	4	6	8
Phs Duration (G+Y+Rc), s	6.4	20.9	5.1	1.2	27.3	6.2
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6	6.5	4.6
Max Green Setting (Gmax), s	16.4	57.0	8.4	* 18	78.0	30.9
Max Q Clear Time (g_c+I1), s	3.0	7.1	2.2	0.0	8.1	2.2
Green Ext Time (p_c), s	0.0	7.1	0.0	0.0	8.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A

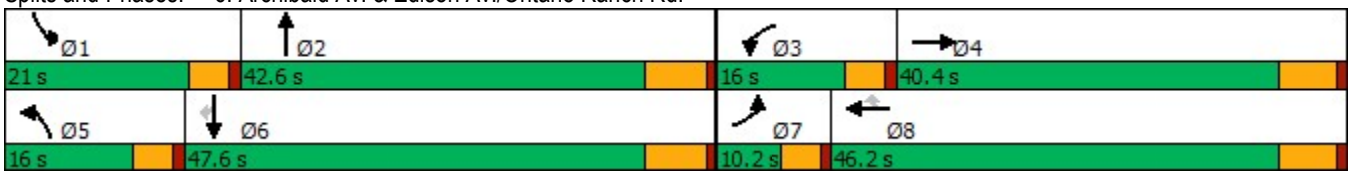
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	508	265	243	176	106	95	744	293	147	753	60
Future Volume (vph)	95	508	265	243	176	106	95	744	293	147	753	60
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.2	40.4		16.0	46.2	46.2	16.0	42.6		21.0	47.6	47.6
Total Split (%)	8.5%	33.7%		13.3%	38.5%	38.5%	13.3%	35.5%		17.5%	39.7%	39.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.8	21.4	95.8	11.3	27.0	27.0	9.8	27.1	95.8	13.3	30.6	30.6
Actuated g/C Ratio	0.06	0.22	1.00	0.12	0.28	0.28	0.10	0.28	1.00	0.14	0.32	0.32
v/c Ratio	0.56	0.68	0.19	0.73	0.37	0.21	0.62	0.79	0.21	0.70	0.70	0.11
Control Delay	61.4	39.4	0.3	56.9	31.2	2.4	62.9	38.9	0.3	60.4	33.0	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	39.4	0.3	56.9	31.2	2.4	62.9	38.9	0.3	60.4	33.0	0.4
LOS	E	D	A	E	C	A	E	D	A	E	C	A
Approach Delay		29.9			37.3			30.9			35.1	
Approach LOS		C			D			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 32.8	Intersection LOS: C
Intersection Capacity Utilization 72.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	508	265	243	176	106	95	744	293	147	753	60
Future Volume (veh/h)	95	508	265	243	176	106	95	744	293	147	753	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	100	535	0	256	185	70	100	783	0	155	793	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	737		330	463	392	124	1009		188	1150	487
Arrive On Green	0.06	0.21	0.00	0.11	0.26	0.26	0.08	0.28	0.00	0.12	0.32	0.32
Sat Flow, veh/h	3000	3544	1502	3000	1772	1500	1594	3544	1502	1594	3544	1502
Grp Volume(v), veh/h	100	535	0	256	185	70	100	783	0	155	793	44
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	2.5	11.0	0.0	6.5	6.7	2.8	4.8	15.9	0.0	7.4	15.2	1.6
Cycle Q Clear(g_c), s	2.5	11.0	0.0	6.5	6.7	2.8	4.8	15.9	0.0	7.4	15.2	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	737		330	463	392	124	1009		188	1150	487
V/C Ratio(X)	0.59	0.73		0.78	0.40	0.18	0.81	0.78		0.83	0.69	0.09
Avail Cap(c_a), veh/h	215	1548		437	905	766	232	1634		334	1860	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	28.9	0.0	33.9	23.9	22.4	35.5	25.7	0.0	33.8	23.0	18.4
Incr Delay (d2), s/veh	1.2	1.4	0.0	4.3	0.6	0.2	4.6	1.3	0.0	3.5	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.4	0.0	2.4	2.6	0.9	1.9	6.0	0.0	2.8	5.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	30.3	0.0	38.2	24.4	22.6	40.1	27.0	0.0	37.3	23.7	18.5
LnGrp LOS	D	C		D	C	C	D	C		D	C	B
Approach Vol, veh/h		635	A		511			883	A		992	
Approach Delay, s/veh		31.4			31.1			28.5			25.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	28.8	13.2	22.5	10.7	31.9	9.0	26.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.4	36.1	11.4	34.2	11.4	41.1	5.6	40.0
Max Q Clear Time (g_c+I1), s	9.4	17.9	8.5	13.0	6.8	17.2	4.5	8.7
Green Ext Time (p_c), s	0.1	4.4	0.1	3.1	0.0	5.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	28.6
HCM 6th LOS	C

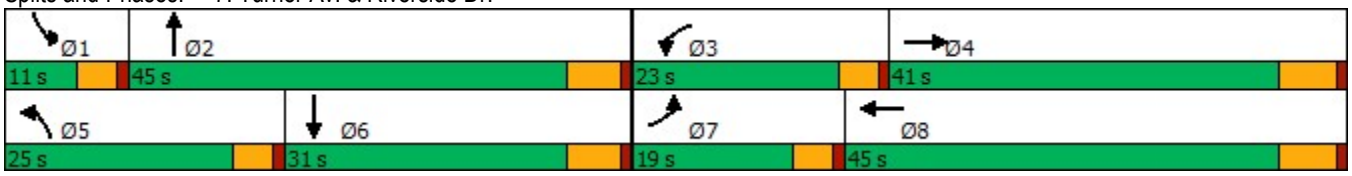
Notes

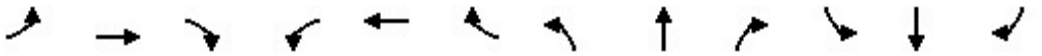
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	87	468	115	562	134	45	23	40
Future Volume (vph)	87	468	115	562	134	45	23	40
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	19.0	41.0	23.0	45.0	25.0	45.0	11.0	31.0
Total Split (%)	15.8%	34.2%	19.2%	37.5%	20.8%	37.5%	9.2%	25.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.3	22.4	11.0	26.8	12.1	25.7	5.9	12.4
Actuated g/C Ratio	0.12	0.28	0.14	0.33	0.15	0.32	0.07	0.15
v/c Ratio	0.49	0.73	0.55	0.55	0.58	0.18	0.21	0.19
Control Delay	47.6	30.6	46.3	26.0	45.5	8.9	47.9	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	30.6	46.3	26.0	45.5	8.9	47.9	18.9
LOS	D	C	D	C	D	A	D	B
Approach Delay		32.6		29.3		24.8		24.7
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 80.3	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 29.6	Intersection LOS: C
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	468	186	115	562	35	134	45	131	23	40	53
Future Volume (veh/h)	87	468	186	115	562	35	134	45	131	23	40	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	90	482	136	119	579	23	138	46	110	24	41	47
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	691	193	149	960	38	172	434	384	44	299	262
Arrive On Green	0.07	0.27	0.27	0.09	0.29	0.29	0.11	0.26	0.26	0.03	0.18	0.18
Sat Flow, veh/h	1594	2579	722	1594	3298	131	1594	1683	1487	1594	1683	1474
Grp Volume(v), veh/h	90	313	305	119	295	307	138	46	110	24	41	47
Grp Sat Flow(s),veh/h/ln	1594	1683	1618	1594	1683	1746	1594	1683	1487	1594	1683	1474
Q Serve(g_s), s	3.3	10.0	10.2	4.4	9.0	9.1	5.1	1.3	3.6	0.9	1.2	1.6
Cycle Q Clear(g_c), s	3.3	10.0	10.2	4.4	9.0	9.1	5.1	1.3	3.6	0.9	1.2	1.6
Prop In Lane	1.00		0.45	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	451	433	149	490	508	172	434	384	44	299	262
V/C Ratio(X)	0.81	0.70	0.70	0.80	0.60	0.60	0.80	0.11	0.29	0.55	0.14	0.18
Avail Cap(c_a), veh/h	383	977	939	489	1089	1129	542	1100	972	170	707	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	19.8	19.8	26.6	18.3	18.3	26.1	17.0	17.8	28.8	20.8	21.0
Incr Delay (d2), s/veh	5.2	1.9	2.1	3.8	1.2	1.2	3.3	0.1	0.4	3.9	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.5	3.4	1.6	3.0	3.1	1.9	0.4	1.1	0.4	0.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	21.7	21.9	30.4	19.5	19.4	29.4	17.1	18.2	32.7	21.0	21.3
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		708			721			294			112	
Approach Delay, s/veh		23.2			21.3			23.3			23.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	21.3	10.2	22.3	11.1	16.4	8.8	23.7
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	6.4	39.2	18.4	34.8	20.4	25.2	14.4	38.8
Max Q Clear Time (g_c+I1), s	2.9	5.6	6.4	12.2	7.1	3.6	5.3	11.1
Green Ext Time (p_c), s	0.0	0.9	0.1	3.3	0.1	0.3	0.1	3.3

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	91	54	12	48	30	20	120	8	13	186	43
Future Vol, veh/h	94	91	54	12	48	30	20	120	8	13	186	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	99	59	13	52	33	22	130	9	14	202	47
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

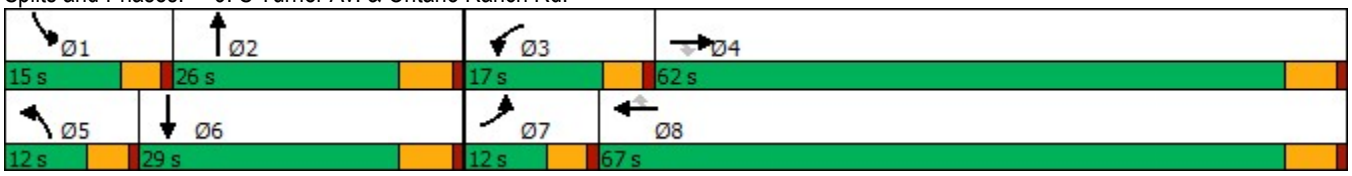
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	9.9	9.4	9.8	10
HCM LOS	A	A	A	A

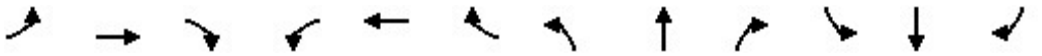
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	83%	0%	100%	36%	0%	100%	35%	0%	100%	59%
Vol Right, %	0%	0%	17%	0%	0%	64%	0%	0%	65%	0%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	80	48	94	61	84	12	32	46	13	124	105
LT Vol	20	0	0	94	0	0	12	0	0	13	0	0
Through Vol	0	80	40	0	61	30	0	32	16	0	124	62
RT Vol	0	0	8	0	0	54	0	0	30	0	0	43
Lane Flow Rate	22	87	52	102	66	92	13	35	50	14	135	114
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.04	0.149	0.088	0.185	0.11	0.142	0.025	0.061	0.082	0.025	0.224	0.181
Departure Headway (Hd)	6.681	6.181	6.064	6.517	6.017	5.569	6.86	6.36	5.904	6.486	5.986	5.7
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	537	581	591	552	597	644	522	563	607	553	601	630
Service Time	4.413	3.913	3.796	4.245	3.745	3.297	4.594	4.094	3.637	4.214	3.714	3.427
HCM Lane V/C Ratio	0.041	0.15	0.088	0.185	0.111	0.143	0.025	0.062	0.082	0.025	0.225	0.181
HCM Control Delay	9.7	10	9.4	10.7	9.5	9.2	9.8	9.5	9.2	9.4	10.4	9.7
HCM Lane LOS	A	A	A	B	A	A	A	A	A	A	B	A
HCM 95th-tile Q	0.1	0.5	0.3	0.7	0.4	0.5	0.1	0.2	0.3	0.1	0.9	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	16	929	44	55	629	25	16	11	41	28
Future Volume (vph)	16	929	44	55	629	25	16	11	41	28
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	12.0	62.0	62.0	17.0	67.0	67.0	12.0	26.0	15.0	29.0
Total Split (%)	10.0%	51.7%	51.7%	14.2%	55.8%	55.8%	10.0%	21.7%	12.5%	24.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	6.5	28.3	28.3	8.0	33.2	33.2	6.5	8.6	7.4	13.1
Actuated g/C Ratio	0.10	0.45	0.45	0.13	0.53	0.53	0.10	0.14	0.12	0.21
v/c Ratio	0.09	0.63	0.06	0.26	0.36	0.03	0.09	0.16	0.21	0.11
Control Delay	39.8	18.0	0.1	37.7	10.8	0.1	39.8	19.4	38.2	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	18.0	0.1	37.7	10.8	0.1	39.8	19.4	38.2	22.8
LOS	D	B	A	D	B	A	D	B	D	C
Approach Delay		17.6			12.5			25.4		30.9
Approach LOS		B			B			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 63.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	929	44	55	629	25	16	11	27	41	28	9
Future Volume (veh/h)	16	929	44	55	629	25	16	11	27	41	28	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	999	47	59	676	27	17	12	29	44	30	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	1483	661	97	1603	715	37	45	110	80	158	53
Arrive On Green	0.02	0.42	0.42	0.05	0.45	0.45	0.02	0.09	0.09	0.04	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	486	1174	1781	1342	447
Grp Volume(v), veh/h	17	999	47	59	676	27	17	0	41	44	0	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1659	1781	0	1790
Q Serve(g_s), s	0.5	12.2	1.0	1.7	6.9	0.5	0.5	0.0	1.2	1.3	0.0	1.1
Cycle Q Clear(g_c), s	0.5	12.2	1.0	1.7	6.9	0.5	0.5	0.0	1.2	1.3	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	1.00		0.25
Lane Grp Cap(c), veh/h	37	1483	661	97	1603	715	37	0	155	80	0	211
V/C Ratio(X)	0.46	0.67	0.07	0.61	0.42	0.04	0.46	0.00	0.26	0.55	0.00	0.19
Avail Cap(c_a), veh/h	247	3741	1669	414	4074	1817	247	0	628	347	0	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	12.6	9.3	24.7	9.9	8.2	25.8	0.0	22.5	25.0	0.0	21.3
Incr Delay (d2), s/veh	3.2	0.5	0.0	2.3	0.2	0.0	3.2	0.0	0.9	2.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.6	0.3	0.7	2.0	0.1	0.2	0.0	0.5	0.5	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	13.2	9.4	26.9	10.1	8.2	29.1	0.0	23.4	27.2	0.0	21.7
LnGrp LOS	C	B	A	C	B	A	C	A	C	C	A	C
Approach Vol, veh/h		1063			762			58			84	
Approach Delay, s/veh		13.2			11.3			25.0			24.6	
Approach LOS		B			B			C			C	

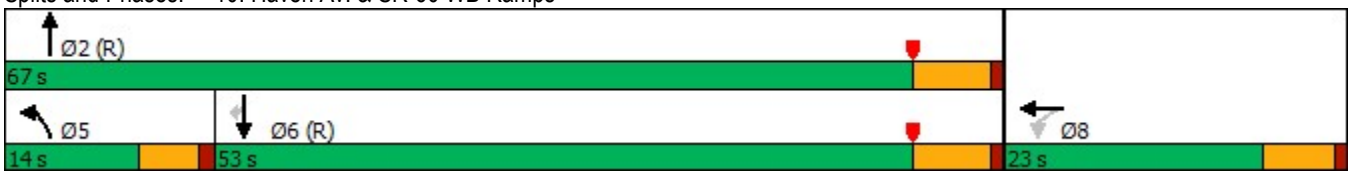
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	10.8	7.5	28.1	5.7	12.1	5.7	29.9
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	20.2	12.4	56.2	7.4	23.2	7.4	61.2
Max Q Clear Time (g_c+I1), s	3.3	3.2	3.7	14.2	2.5	3.1	2.5	8.9
Green Ext Time (p_c), s	0.0	0.1	0.0	8.1	0.0	0.1	0.0	4.9

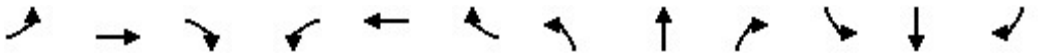
Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	272	10	562	142	829	1367	695
Future Volume (vph)	272	10	562	142	829	1367	695
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	23.0	23.0		14.0	67.0	53.0	53.0
Total Split (%)	25.6%	25.6%		15.6%	74.4%	58.9%	58.9%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.3	13.3	90.0	7.9	64.7	51.8	51.8
Actuated g/C Ratio	0.15	0.15	1.00	0.09	0.72	0.58	0.58
v/c Ratio	0.59	0.59	0.37	0.49	0.24	0.49	0.60
Control Delay	45.4	45.1	0.7	35.3	5.0	12.5	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	45.1	0.7	35.3	5.0	12.5	3.3
LOS	D	D	A	D	A	B	A
Approach Delay		15.5			9.4	9.4	
Approach LOS		B			A	A	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 10.8	Intersection LOS: B
Intersection Capacity Utilization 69.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	272	10	562	142	829	0	0	1367	695
Future Volume (veh/h)	0	0	0	272	10	562	142	829	0	0	1367	695
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				290	0	0	148	864	0	0	1424	576
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				396	0		216	3858	0	0	3256	998
Arrive On Green				0.11	0.00	0.00	0.12	1.00	0.00	0.00	0.64	0.64
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1565
Grp Volume(v), veh/h				290	0	0	148	864	0	0	1424	576
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1565
Q Serve(g_s), s				7.1	0.0	0.0	3.7	0.0	0.0	0.0	12.6	19.0
Cycle Q Clear(g_c), s				7.1	0.0	0.0	3.7	0.0	0.0	0.0	12.6	19.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				396	0		216	3858	0	0	3256	998
V/C Ratio(X)				0.73	0.00		0.69	0.22	0.00	0.00	0.44	0.58
Avail Cap(c_a), veh/h				681	0		346	3858	0	0	3256	998
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.89	0.89	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				38.7	0.0	0.0	38.5	0.0	0.0	0.0	8.2	9.3
Incr Delay (d2), s/veh				2.6	0.0	0.0	1.3	0.1	0.0	0.0	0.4	2.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.1	0.0	0.0	1.5	0.0	0.0	0.0	3.8	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.4	0.0	0.0	39.8	0.1	0.0	0.0	8.6	11.8
LnGrp LOS				D	A		D	A	A	A	A	B
Approach Vol, veh/h					290	A		1012			2000	
Approach Delay, s/veh					41.4			5.9			9.5	
Approach LOS					D			A			A	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	74.2		10.6	63.6		15.8						
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8						
Max Green Setting (Gmax), s	60.8		9.0	46.8		17.2						
Max Q Clear Time (g_c+I1), s	2.0		5.7	21.0		9.1						
Green Ext Time (p_c), s	3.9		0.1	8.7		0.6						

Intersection Summary		
HCM 6th Ctrl Delay	11.2	
HCM 6th LOS	B	

Notes

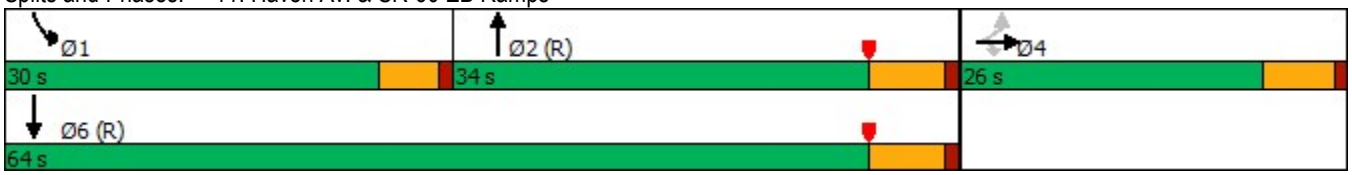
User approved volume balancing among the lanes for turning movement.

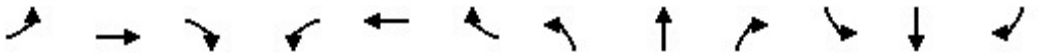
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	349	2	212	614	609	1048
Future Volume (vph)	349	2	212	614	609	1048
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	26.0	26.0	26.0	34.0	30.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	37.8%	33.3%	71.1%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	15.3	15.3	15.3	36.4	21.3	62.7
Actuated g/C Ratio	0.17	0.17	0.17	0.40	0.24	0.70
v/c Ratio	0.64	0.65	0.61	0.41	0.78	0.31
Control Delay	44.6	44.8	23.4	19.1	53.3	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	44.8	23.4	19.1	53.3	4.2
LOS	D	D	C	B	D	A
Approach Delay		36.7		19.1		22.2
Approach LOS		D		B		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 69.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	2	212	0	0	0	0	614	179	609	1048	0
Future Volume (veh/h)	349	2	212	0	0	0	0	614	179	609	1048	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	365	0	107				0	640	128	634	1092	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	477	0	212				0	2006	395	720	3742	0
Arrive On Green	0.13	0.00	0.13				0.00	0.47	0.47	0.42	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4447	843	3456	5274	0
Grp Volume(v), veh/h	365	0	107				0	507	261	634	1092	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1718	1728	1702	0
Q Serve(g_s), s	8.9	0.0	5.6				0.0	8.4	8.6	15.2	0.0	0.0
Cycle Q Clear(g_c), s	8.9	0.0	5.6				0.0	8.4	8.6	15.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.49	1.00		0.00
Lane Grp Cap(c), veh/h	477	0	212				0	1596	806	720	3742	0
V/C Ratio(X)	0.77	0.00	0.50				0.00	0.32	0.32	0.88	0.29	0.00
Avail Cap(c_a), veh/h	800	0	356				0	1596	806	960	3742	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.86	0.86	0.00
Uniform Delay (d), s/veh	37.6	0.0	36.2				0.0	14.9	15.0	25.2	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.0	1.8				0.0	0.5	1.1	6.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	2.2				0.0	3.0	3.2	5.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	38.0				0.0	15.4	16.0	31.8	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	C	A	A
Approach Vol, veh/h		472						768			1726	
Approach Delay, s/veh		39.7						15.6			11.8	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.7	48.4		17.9		72.1
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	25.0	27.8		20.2		57.8
Max Q Clear Time (g_c+I1), s	17.2	10.6		10.9		2.0
Green Ext Time (p_c), s	1.5	2.8		1.2		5.3

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

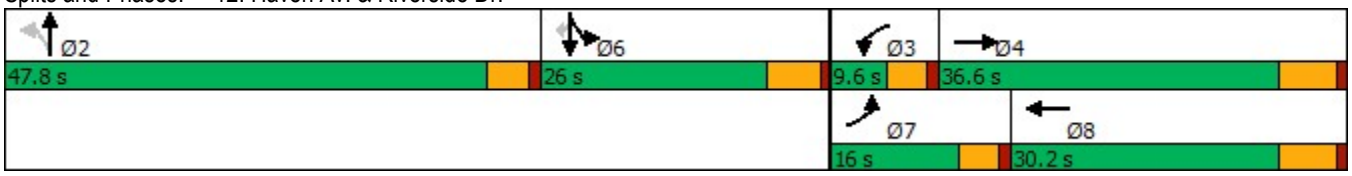
Notes

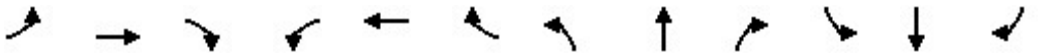
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	291	301	53	267	29	305	123	346	334
Future Volume (vph)	291	301	53	267	29	305	123	346	334
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	16.0	36.6	9.6	30.2	47.8	47.8	26.0	26.0	26.0
Total Split (%)	13.3%	30.5%	8.0%	25.2%	39.8%	39.8%	21.7%	21.7%	21.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.4	27.5	5.0	21.1		43.2	20.2	20.2	20.2
Actuated g/C Ratio	0.10	0.23	0.04	0.18		0.37	0.17	0.17	0.17
v/c Ratio	1.97	0.89	0.82	0.60		1.94	0.47	1.18	0.64
Control Delay	487.7	67.1	125.2	44.7		463.5	51.0	153.5	10.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	487.7	67.1	125.2	44.7		463.5	51.0	153.5	10.7
LOS	F	E	F	D		F	D	F	B
Approach Delay		258.4		55.4		463.5		78.3	
Approach LOS		F		E		F		E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.97	
Intersection Signal Delay: 192.8	Intersection LOS: F
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	301	47	53	267	79	29	305	53	123	346	334
Future Volume (veh/h)	291	301	47	53	267	79	29	305	53	123	346	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	303	314	48	55	278	62	30	318	49	128	360	122
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	357	55	67	428	94	35	370	57	351	390	329
Arrive On Green	0.12	0.24	0.24	0.04	0.16	0.16	0.27	0.27	0.27	0.22	0.22	0.22
Sat Flow, veh/h	1594	1493	228	1594	2731	598	131	1383	213	1594	1772	1498
Grp Volume(v), veh/h	303	0	362	55	169	171	397	0	0	128	360	122
Grp Sat Flow(s),veh/h/ln	1594	0	1722	1594	1683	1645	1727	0	0	1594	1772	1498
Q Serve(g_s), s	11.4	0.0	18.6	3.1	8.7	9.0	20.1	0.0	0.0	6.3	18.3	6.4
Cycle Q Clear(g_c), s	11.4	0.0	18.6	3.1	8.7	9.0	20.1	0.0	0.0	6.3	18.3	6.4
Prop In Lane	1.00		0.13	1.00		0.36	0.08		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	198	0	411	67	264	258	461	0	0	351	390	329
V/C Ratio(X)	1.53	0.00	0.88	0.82	0.64	0.66	0.86	0.00	0.00	0.37	0.92	0.37
Avail Cap(c_a), veh/h	198	0	570	87	440	430	810	0	0	351	390	329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	0.0	33.7	43.6	36.3	36.4	32.0	0.0	0.0	30.4	35.1	30.4
Incr Delay (d2), s/veh	263.1	0.0	11.4	28.9	2.6	2.9	4.8	0.0	0.0	0.6	27.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	0.0	8.5	1.7	3.5	3.6	8.8	0.0	0.0	2.3	10.3	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	303.4	0.0	45.1	72.5	38.9	39.3	36.8	0.0	0.0	31.0	62.5	31.1
LnGrp LOS	F	A	D	E	D	D	D	A	A	C	E	C
Approach Vol, veh/h		665			395			397			610	
Approach Delay, s/veh		162.8			43.7			36.8			49.6	
Approach LOS		F			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.2	8.5	28.1		26.0	16.0	20.6				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 43	5.0	30.4		20.2	11.4	24.0				
Max Q Clear Time (g_c+I1), s		22.1	5.1	20.6		20.3	13.4	11.0				
Green Ext Time (p_c), s		2.5	0.0	1.3		0.0	0.0	1.4				

Intersection Summary		
HCM 6th Ctrl Delay		82.4
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	69	74	314	428	28
Future Vol, veh/h	40	69	74	314	428	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	73	78	331	451	29

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	953	466	480	0	-	0
Stage 1	466	-	-	-	-	-
Stage 2	487	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	287	597	1082	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	266	597	1082	-	-	-
Mov Cap-2 Maneuver	396	-	-	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	1.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1082	-	396	597	-	-
HCM Lane V/C Ratio	0.072	-	0.106	0.122	-	-
HCM Control Delay (s)	8.6	-	15.2	11.9	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	0.4	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	22	76	116	367	472
Future Volume (vph)	22	76	116	367	472
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	34.0	34.0	34.0	86.0	52.0
Total Split (%)	28.3%	28.3%	28.3%	71.7%	43.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.5	12.5	9.8	33.9	22.7
Actuated g/C Ratio	0.24	0.24	0.19	0.65	0.44
v/c Ratio	0.07	0.21	0.45	0.37	0.39
Control Delay	19.5	6.8	27.5	8.0	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.5	6.8	27.5	8.0	16.8
LOS	B	A	C	A	B
Approach Delay	9.7			12.7	16.8
Approach LOS	A			B	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 51.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 43.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	76	116	367	472	20
Future Volume (veh/h)	22	76	116	367	472	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	26	19	135	427	549	23
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	163	154	171	971	993	42
Arrive On Green	0.10	0.10	0.11	0.55	0.30	0.30
Sat Flow, veh/h	1594	1502	1594	1772	3381	138
Grp Volume(v), veh/h	26	19	135	427	280	292
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1683	1747
Q Serve(g_s), s	0.5	0.4	2.7	4.8	4.6	4.6
Cycle Q Clear(g_c), s	0.5	0.4	2.7	4.8	4.6	4.6
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	163	154	171	971	508	527
V/C Ratio(X)	0.16	0.12	0.79	0.44	0.55	0.55
Avail Cap(c_a), veh/h	1356	1277	1413	4287	2346	2435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	13.5	14.4	4.5	9.7	9.7
Incr Delay (d2), s/veh	0.5	0.4	3.1	0.3	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.8	0.4	1.1	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.0	13.9	17.5	4.8	10.6	10.6
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	45			562	572	
Approach Delay, s/veh	14.0			7.8	10.6	
Approach LOS	B			A	B	

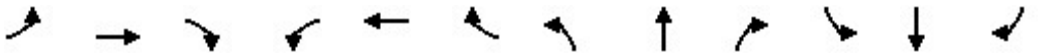
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		24.0		9.2	8.2	15.8
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		80.2		28.2	29.4	46.2
Max Q Clear Time (g_c+I1), s		6.8		2.5	4.7	6.6
Green Ext Time (p_c), s		2.6		0.1	0.2	3.3

Intersection Summary		
HCM 6th Ctrl Delay	9.4	
HCM 6th LOS	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	787	35	221	611	192	18	179	68	196	306	47
Future Volume (vph)	143	787	35	221	611	192	18	179	68	196	306	47
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.3	39.5	39.5	6.3	33.2	33.2	6.0	19.4	19.4	10.5	30.4	30.4
Actuated g/C Ratio	0.13	0.41	0.41	0.06	0.34	0.34	0.06	0.20	0.20	0.11	0.31	0.31
v/c Ratio	0.76	0.43	0.05	1.26	0.31	0.32	0.20	0.54	0.17	1.22	0.59	0.09
Control Delay	67.6	23.2	0.1	192.4	25.8	5.8	52.3	39.4	0.9	180.2	33.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.6	23.2	0.1	192.4	25.8	5.8	52.3	39.4	0.9	180.2	33.7	0.3
LOS	E	C	A	F	C	A	D	D	A	F	C	A
Approach Delay		28.9			58.0			30.4			83.2	
Approach LOS		C			E			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 50.3	Intersection LOS: D
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	787	35	221	611	192	18	179	68	196	306	47
Future Volume (veh/h)	143	787	35	221	611	192	18	179	68	196	306	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	152	837	24	235	650	159	19	190	22	209	326	17
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	2110	655	202	2390	589	34	244	207	185	413	350
Arrive On Green	0.11	0.44	0.44	0.07	0.39	0.39	0.02	0.14	0.14	0.12	0.23	0.23
Sat Flow, veh/h	1594	4837	1502	2910	6095	1502	1594	1772	1502	1594	1772	1502
Grp Volume(v), veh/h	152	837	24	235	650	159	19	190	22	209	326	17
Grp Sat Flow(s),veh/h/ln	1594	1612	1502	1455	1524	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	8.4	10.5	0.8	6.2	6.5	6.4	1.1	9.3	1.1	10.4	15.5	0.8
Cycle Q Clear(g_c), s	8.4	10.5	0.8	6.2	6.5	6.4	1.1	9.3	1.1	10.4	15.5	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	2110	655	202	2390	589	34	244	207	185	413	350
V/C Ratio(X)	0.84	0.40	0.04	1.16	0.27	0.27	0.57	0.78	0.11	1.13	0.79	0.05
Avail Cap(c_a), veh/h	221	2110	655	202	2390	589	193	856	726	185	848	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	17.2	14.4	41.6	18.5	18.5	43.4	37.2	33.7	39.5	32.2	26.6
Incr Delay (d2), s/veh	17.8	0.6	0.1	114.7	0.3	1.1	5.5	5.4	0.2	104.4	3.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	3.6	0.3	5.3	2.1	2.2	0.5	4.2	0.4	9.2	6.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	17.7	14.5	156.3	18.8	19.6	48.8	42.6	34.0	143.9	35.7	26.7
LnGrp LOS	E	B	B	F	B	B	D	D	C	F	D	C
Approach Vol, veh/h		1013			1044			231			552	
Approach Delay, s/veh		23.5			49.9			42.3			76.4	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	18.1	10.8	45.5	6.5	26.6	14.8	41.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	12.4	11.3	8.2	12.5	3.1	17.5	10.4	8.5
Green Ext Time (p_c), s	0.0	1.0	0.0	5.6	0.0	1.8	0.0	4.4

Intersection Summary	
HCM 6th Ctrl Delay	45.0
HCM 6th LOS	D

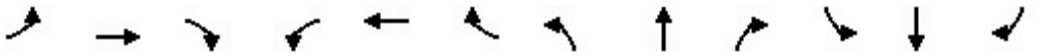
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	88	260	13	270	58	18	21	58	14
Future Volume (vph)	88	260	13	270	58	18	21	58	14
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	22.0	43.0	11.0	32.0	37.0	37.0	37.0	29.0	29.0
Total Split (%)	18.3%	35.8%	9.2%	26.7%	30.8%	30.8%	30.8%	24.2%	24.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	8.9	22.9	5.8	13.8	12.5	12.5	12.5	12.4	12.4
Actuated g/C Ratio	0.13	0.35	0.09	0.21	0.19	0.19	0.19	0.19	0.19
v/c Ratio	0.44	0.34	0.10	0.58	0.21	0.06	0.06	0.21	0.19
Control Delay	37.4	16.3	37.7	26.4	28.3	27.1	0.3	28.7	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	16.3	37.7	26.4	28.3	27.1	0.3	28.7	13.9
LOS	D	B	D	C	C	C	A	C	B
Approach Delay		20.5		26.7		22.1			21.3
Approach LOS		C		C		C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 66.2	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 23.1	Intersection LOS: C
Intersection Capacity Utilization 41.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	260	100	13	270	113	58	18	21	58	14	44
Future Volume (veh/h)	88	260	100	13	270	113	58	18	21	58	14	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	94	277	86	14	287	91	62	19	9	62	15	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	613	186	28	470	146	295	328	277	309	108	195
Arrive On Green	0.07	0.24	0.24	0.02	0.19	0.19	0.18	0.18	0.18	0.19	0.19	0.19
Sat Flow, veh/h	1594	2539	772	1594	2528	786	1594	1772	1499	1594	558	1005
Grp Volume(v), veh/h	94	182	181	14	189	189	62	19	9	62	0	42
Grp Sat Flow(s),veh/h/ln	1594	1683	1627	1594	1683	1630	1594	1772	1499	1594	0	1563
Q Serve(g_s), s	3.2	5.0	5.2	0.5	5.6	5.8	1.8	0.5	0.3	1.8	0.0	1.2
Cycle Q Clear(g_c), s	3.2	5.0	5.2	0.5	5.6	5.8	1.8	0.5	0.3	1.8	0.0	1.2
Prop In Lane	1.00		0.47	1.00		0.48	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	116	406	393	28	313	303	295	328	277	309	0	303
V/C Ratio(X)	0.81	0.45	0.46	0.50	0.60	0.62	0.21	0.06	0.03	0.20	0.00	0.14
Avail Cap(c_a), veh/h	525	1140	1102	204	801	776	910	1012	856	729	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	17.6	17.7	26.6	20.4	20.5	18.9	18.3	18.3	18.5	0.0	18.2
Incr Delay (d2), s/veh	5.0	0.8	0.8	5.1	1.9	2.1	0.4	0.1	0.0	0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.7	1.7	0.2	2.0	2.0	0.6	0.2	0.1	0.6	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	18.4	18.5	31.7	22.3	22.6	19.2	18.4	18.3	18.8	0.0	18.5
LnGrp LOS	C	B	B	C	C	C	B	B	B	B	A	B
Approach Vol, veh/h		457			392			90			104	
Approach Delay, s/veh		20.8			22.8			19.0			18.7	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.9	5.0	19.2		14.6	8.0	16.2				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		31.2	7.0	37.0		25.0	18.0	26.0				
Max Q Clear Time (g_c+I1), s		3.8	2.5	7.2		3.8	5.2	7.8				
Green Ext Time (p_c), s		0.2	0.0	1.9		0.3	0.1	1.8				

Intersection Summary												
HCM 6th Ctrl Delay			21.2									
HCM 6th LOS			C									

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	1	0
Future Vol, veh/h	0	0	0	0	1	0
Peak Hour Factor	0.25	0.25	0.25	0.25	0.25	0.25
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	4	0
Number of Lanes	0	1	1	0	1	0

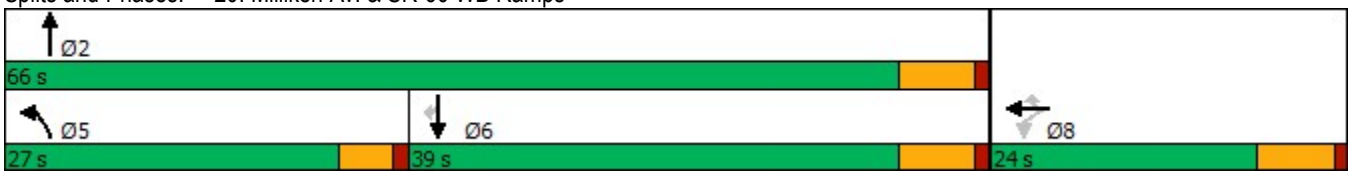
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	0	0	7.2
HCM LOS	-	-	A

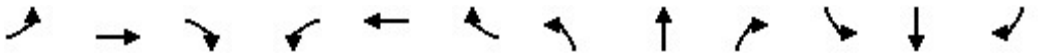
Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	100%
Vol Thru, %	100%	100%	0%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	0	1
LT Vol	0	0	1
Through Vol	0	0	0
RT Vol	0	0	0
Lane Flow Rate	0	0	4
Geometry Grp	1	1	1
Degree of Util (X)	0	0	0.005
Departure Headway (Hd)	3.937	3.942	4.134
Convergence, Y/N	Yes	Yes	Yes
Cap	0	0	871
Service Time	1.938	1.944	2.134
HCM Lane V/C Ratio	0	0	0.005
HCM Control Delay	6.9	6.9	7.2
HCM Lane LOS	N	N	A
HCM 95th-tile Q	0	0	0

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	319	280	694	898	518
Future Volume (vph)	4	319	280	694	898	518
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	9.6	16.2	16.2	16.2
Total Split (s)	24.0	24.0	27.0	66.0	39.0	39.0
Total Split (%)	26.7%	26.7%	30.0%	73.3%	43.3%	43.3%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	12.2	12.2	16.1	47.7	26.8	26.8
Actuated g/C Ratio	0.17	0.17	0.22	0.66	0.37	0.37
v/c Ratio	0.29	0.68	0.75	0.30	0.68	0.58
Control Delay	32.4	16.1	40.3	5.6	22.9	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	16.1	40.3	5.6	22.9	4.8
LOS	C	B	D	A	C	A
Approach Delay	19.4			15.6	16.3	
Approach LOS	B			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 72.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	79	4	319	280	694	0	0	898	518
Future Volume (veh/h)	0	0	0	79	4	319	280	694	0	0	898	518
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				82	4	156	292	723	0	0	935	456
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				264	13	246	344	2431	0	0	1438	610
Arrive On Green				0.16	0.16	0.16	0.19	0.65	0.00	0.00	0.38	0.38
Sat Flow, veh/h				1702	83	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				86	0	156	292	723	0	0	935	456
Grp Sat Flow(s),veh/h/ln				1785	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				2.7	0.0	5.9	10.1	5.3	0.0	0.0	13.0	15.8
Cycle Q Clear(g_c), s				2.7	0.0	5.9	10.1	5.3	0.0	0.0	13.0	15.8
Prop In Lane				0.95		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				277	0	246	344	2431	0	0	1438	610
V/C Ratio(X)				0.31	0.00	0.63	0.85	0.30	0.00	0.00	0.65	0.75
Avail Cap(c_a), veh/h				500	0	444	627	3517	0	0	1929	817
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				23.9	0.0	25.2	24.8	4.8	0.0	0.0	16.1	16.9
Incr Delay (d2), s/veh				0.6	0.0	2.7	2.3	0.1	0.0	0.0	0.5	2.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.1	0.0	2.1	3.9	1.1	0.0	0.0	4.5	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.5	0.0	27.9	27.0	4.9	0.0	0.0	16.6	19.5
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					242			1015			1391	
Approach Delay, s/veh					26.7			11.3			17.5	
Approach LOS					C			B			B	

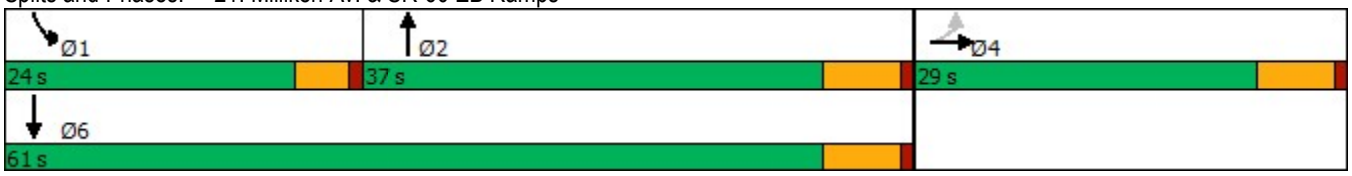
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		47.5			16.9	30.7		16.1				
Change Period (Y+Rc), s		6.2			4.6	6.2		6.2				
Max Green Setting (Gmax), s		59.8			22.4	32.8		17.8				
Max Q Clear Time (g_c+I1), s		7.3			12.1	17.8		7.9				
Green Ext Time (p_c), s		5.0			0.3	6.6		0.6				

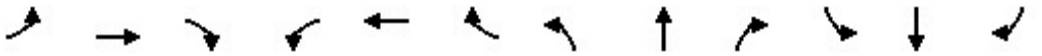
Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	263	4	703	223	753
Future Volume (vph)	263	4	703	223	753
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	16.2	16.2	23.2	9.6	16.2
Total Split (s)	29.0	29.0	37.0	24.0	61.0
Total Split (%)	32.2%	32.2%	41.1%	26.7%	67.8%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	16.1	16.1	22.9	13.6	41.3
Actuated g/C Ratio	0.23	0.23	0.33	0.19	0.59
v/c Ratio	0.61	0.65	0.72	0.68	0.36
Control Delay	33.6	17.9	25.0	39.4	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	17.9	25.0	39.4	8.2
LOS	C	B	C	D	A
Approach Delay		24.5	25.0		15.3
Approach LOS		C	C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 70.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	4	296	0	0	0	0	703	128	223	753	0
Future Volume (veh/h)	263	4	296	0	0	0	0	703	128	223	753	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	257	28	235				0	732	104	232	784	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	393	38	317				0	1012	144	286	2090	0
Arrive On Green	0.22	0.22	0.22				0.00	0.32	0.32	0.16	0.56	0.00
Sat Flow, veh/h	1781	172	1440				0	3204	455	1781	3741	0
Grp Volume(v), veh/h	257	0	263				0	427	409	232	784	0
Grp Sat Flow(s),veh/h/ln	1781	0	1611				0	1870	1788	1781	1870	0
Q Serve(g_s), s	7.4	0.0	8.5				0.0	11.4	11.4	7.1	6.6	0.0
Cycle Q Clear(g_c), s	7.4	0.0	8.5				0.0	11.4	11.4	7.1	6.6	0.0
Prop In Lane	1.00		0.89				0.00		0.25	1.00		0.00
Lane Grp Cap(c), veh/h	393	0	355				0	591	565	286	2090	0
V/C Ratio(X)	0.65	0.00	0.74				0.00	0.72	0.72	0.81	0.38	0.00
Avail Cap(c_a), veh/h	724	0	655				0	1027	982	616	3654	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.9	0.0	20.4				0.0	17.0	17.0	22.7	6.9	0.0
Incr Delay (d2), s/veh	1.9	0.0	3.0				0.0	1.7	1.8	2.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	3.0				0.0	4.1	3.9	2.6	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	0.0	23.4				0.0	18.7	18.8	24.8	7.0	0.0
LnGrp LOS	C	A	C				A	B	B	C	A	A
Approach Vol, veh/h		520						836			1016	
Approach Delay, s/veh		22.6						18.8			11.1	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	13.6	23.9		18.6		37.5						
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2						
Max Green Setting (Gmax), s	19.4	30.8		22.8		54.8						
Max Q Clear Time (g_c+I1), s	9.1	13.4		10.5		8.6						
Green Ext Time (p_c), s	0.2	4.3		1.8		5.5						

Intersection Summary			
HCM 6th Ctrl Delay			16.3
HCM 6th LOS			B

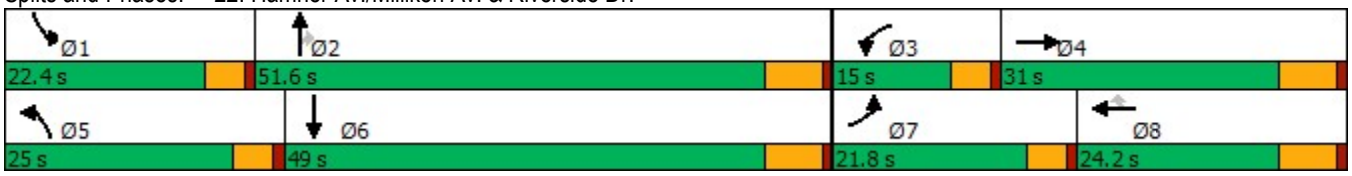
Notes

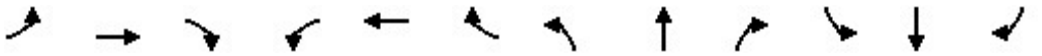
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	113	83	80	78	160	149	484	49	212	698
Future Volume (vph)	113	83	80	78	160	149	484	49	212	698
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	21.8	31.0	15.0	24.2	24.2	25.0	51.6	51.6	22.4	49.0
Total Split (%)	18.2%	25.8%	12.5%	20.2%	20.2%	20.8%	43.0%	43.0%	18.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	11.7	20.2	8.9	14.3	14.3	14.0	28.8	28.8	17.7	32.5
Actuated g/C Ratio	0.12	0.21	0.09	0.15	0.15	0.15	0.30	0.30	0.19	0.34
v/c Ratio	0.61	0.63	0.57	0.31	0.46	0.68	0.50	0.09	0.76	0.81
Control Delay	57.8	36.4	63.2	44.7	11.3	57.0	28.7	0.3	59.2	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	36.4	63.2	44.7	11.3	57.0	28.7	0.3	59.2	35.1
LOS	E	D	E	D	B	E	C	A	E	D
Approach Delay		43.4		32.6			32.8			39.9
Approach LOS		D		C			C			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	83	148	80	78	160	149	484	49	212	698	168
Future Volume (veh/h)	113	83	148	80	78	160	149	484	49	212	698	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	119	87	115	84	82	130	157	509	47	223	735	163
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	115	152	104	248	210	192	1011	450	262	939	208
Arrive On Green	0.09	0.17	0.17	0.07	0.14	0.14	0.12	0.30	0.30	0.16	0.34	0.34
Sat Flow, veh/h	1594	685	905	1594	1772	1502	1594	3367	1499	1594	2731	605
Grp Volume(v), veh/h	119	0	202	84	82	130	157	509	47	223	453	445
Grp Sat Flow(s),veh/h/ln	1594	0	1590	1594	1772	1502	1594	1683	1499	1594	1683	1653
Q Serve(g_s), s	5.2	0.0	8.6	3.7	3.0	5.8	6.9	8.9	1.6	9.7	17.2	17.2
Cycle Q Clear(g_c), s	5.2	0.0	8.6	3.7	3.0	5.8	6.9	8.9	1.6	9.7	17.2	17.2
Prop In Lane	1.00		0.57	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	148	0	267	104	248	210	192	1011	450	262	579	569
V/C Ratio(X)	0.80	0.00	0.76	0.81	0.33	0.62	0.82	0.50	0.10	0.85	0.78	0.78
Avail Cap(c_a), veh/h	384	0	553	232	447	379	456	2142	954	398	1010	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	28.3	32.9	27.7	28.9	30.6	20.6	18.0	29.0	21.0	21.0
Incr Delay (d2), s/veh	3.9	0.0	4.4	5.5	0.8	2.9	3.2	0.4	0.1	6.9	2.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	3.3	1.5	1.2	2.1	2.5	3.1	0.5	3.8	6.1	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	0.0	32.7	38.4	28.4	31.8	33.9	21.0	18.1	35.9	23.4	23.4
LnGrp LOS	D	A	C	D	C	C	C	C	B	D	C	C
Approach Vol, veh/h		321			296			713			1121	
Approach Delay, s/veh		33.8			32.7			23.6			25.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	27.6	9.3	18.2	13.2	30.7	11.2	16.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.8	45.4	10.4	24.8	20.4	42.8	17.2	18.0
Max Q Clear Time (g_c+I1), s	11.7	10.9	5.7	10.6	8.9	19.2	7.2	7.8
Green Ext Time (p_c), s	0.2	3.3	0.0	0.8	0.1	5.3	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	663	906	2
Future Vol, veh/h	1	0	0	663	906	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	729	996	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1362	997	998	0	-	0
Stage 1	997	-	-	-	-	-
Stage 2	365	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	151	295	691	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	151	295	691	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	674	-	-	-	-	-

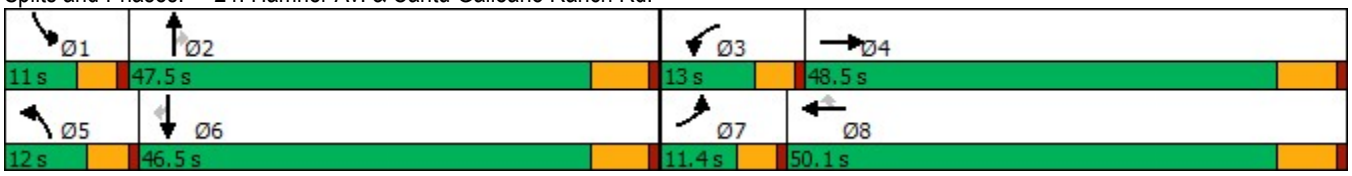
Approach	EB	NB	SB
HCM Control Delay, s	16.3	0	0
HCM LOS	C		

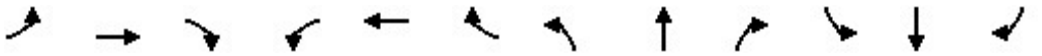
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	691	-	319	-	-
HCM Lane V/C Ratio	-	-	0.003	-	-
HCM Control Delay (s)	0	-	16.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	126	655	371	684	151	298	356	293	240	499	90
Future Volume (vph)	126	655	371	684	151	298	356	293	240	499	90
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.4	48.5	13.0	50.1	50.1	12.0	47.5	47.5	11.0	46.5	46.5
Total Split (%)	9.5%	40.4%	10.8%	41.8%	41.8%	10.0%	39.6%	39.6%	9.2%	38.8%	38.8%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	22.4	8.8	24.4	24.4	7.8	21.0	21.0	6.7	20.0	20.0
Actuated g/C Ratio	0.08	0.27	0.11	0.30	0.30	0.10	0.26	0.26	0.08	0.24	0.24
v/c Ratio	0.46	0.54	1.05	0.68	0.27	0.95	0.28	0.55	0.89	0.60	0.20
Control Delay	46.3	23.9	98.4	29.1	5.4	80.5	25.1	14.1	73.1	30.7	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	23.9	98.4	29.1	5.4	80.5	25.1	14.1	73.1	30.7	4.6
LOS	D	C	F	C	A	F	C	B	E	C	A
Approach Delay		26.6		47.4			39.1			40.2	
Approach LOS		C		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 81.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 38.6	Intersection LOS: D
Intersection Capacity Utilization 64.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	655	254	371	684	151	298	356	293	240	499	90
Future Volume (veh/h)	126	655	254	371	684	151	298	356	293	240	499	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	131	682	209	386	712	91	310	371	222	250	520	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	1191	350	422	1048	467	372	1160	360	321	756	337
Arrive On Green	0.07	0.24	0.24	0.12	0.29	0.29	0.11	0.23	0.23	0.09	0.21	0.21
Sat Flow, veh/h	3456	4971	1462	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	131	661	230	386	712	91	310	371	222	250	520	53
Grp Sat Flow(s),veh/h/ln	1728	1609	1607	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	2.5	8.3	8.7	7.6	12.2	3.0	6.1	4.2	8.7	4.9	9.3	1.9
Cycle Q Clear(g_c), s	2.5	8.3	8.7	7.6	12.2	3.0	6.1	4.2	8.7	4.9	9.3	1.9
Prop In Lane	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	1156	385	422	1048	467	372	1160	360	321	756	337
V/C Ratio(X)	0.57	0.57	0.60	0.92	0.68	0.19	0.83	0.32	0.62	0.78	0.69	0.16
Avail Cap(c_a), veh/h	341	2944	981	422	2251	1004	372	3064	951	321	2081	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	23.1	23.2	29.9	21.4	18.2	30.1	22.2	23.9	30.5	25.0	22.1
Incr Delay (d2), s/veh	0.8	0.4	1.5	23.9	0.8	0.2	14.3	0.2	1.7	10.5	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.7	3.0	4.2	4.3	0.9	3.0	1.5	2.9	2.3	3.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	23.5	24.7	53.8	22.2	18.4	44.4	22.3	25.6	41.0	26.1	22.3
LnGrp LOS	C	C	C	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1022			1189			903			823	
Approach Delay, s/veh		24.9			32.1			30.7			30.4	
Approach LOS		C			C			C			C	

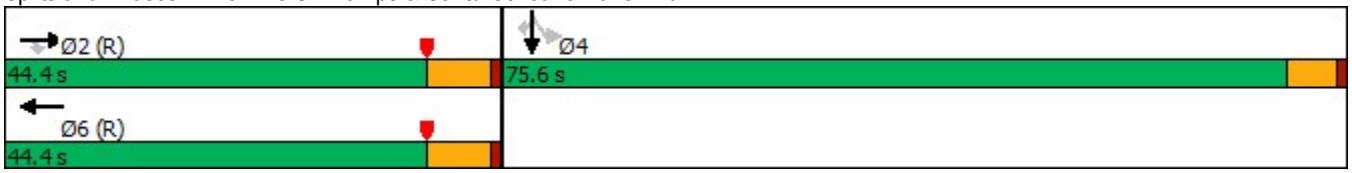
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	21.8	13.0	23.0	12.0	20.8	9.2	26.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	7.4	40.3	6.8	43.6
Max Q Clear Time (g_c+I1), s	6.9	10.7	9.6	10.7	8.1	11.3	4.5	14.2
Green Ext Time (p_c), s	0.0	3.0	0.0	5.8	0.0	3.4	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1092	329	599	137	290	1	1170
Future Volume (vph)	1092	329	599	137	290	1	1170
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	44.4	44.4	44.4		75.6	75.6	75.6
Total Split (%)	37.0%	37.0%	37.0%		63.0%	63.0%	63.0%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min		Min	Min	Min
Act Effct Green (s)	45.3	45.3	45.3	120.0	62.4	62.4	62.4
Actuated g/C Ratio	0.38	0.38	0.38	1.00	0.52	0.52	0.52
v/c Ratio	0.62	0.44	0.49	0.05	0.32	0.83	0.80
Control Delay	33.5	4.9	31.9	0.0	16.7	31.2	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	4.9	31.9	0.0	16.7	31.2	28.3
LOS	C	A	C	A	B	C	C
Approach Delay	26.9		25.9			27.4	
Approach LOS	C		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 113.2 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1092	329	0	599	137	0	0	0	290	1	1170
Future Volume (veh/h)	0	1092	329	0	599	137	0	0	0	290	1	1170
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1187	0	0	651	0				210	0	1066
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2641		0	1838					677	0	1205
Arrive On Green	0.00	0.52	0.00	0.00	0.69	0.00				0.38	0.00	0.38
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1187	0	0	651	0				210	0	1066
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	17.5	0.0	0.0	9.1	0.0				9.9	0.0	37.7
Cycle Q Clear(g_c), s	0.0	17.5	0.0	0.0	9.1	0.0				9.9	0.0	37.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2641		0	1838					677	0	1205
V/C Ratio(X)	0.00	0.45		0.00	0.35					0.31	0.00	0.88
Avail Cap(c_a), veh/h	0	2641		0	1838					1041	0	1852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.77	0.00	0.00	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	18.2	0.0	0.0	10.4	0.0				26.1	0.0	34.7
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0				0.3	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.3	0.0	0.0	3.0	0.0				4.1	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.6	0.0	0.0	10.9	0.0				26.4	0.0	38.3
LnGrp LOS	A	B		A	B					C	A	D
Approach Vol, veh/h		1187	A		651	A					1276	
Approach Delay, s/veh		18.6			10.9						36.3	
Approach LOS		B			B						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	68.9	51.1	68.9
Change Period (Y+Rc), s	6.8	5.5	6.8
Max Green Setting (Gmax), s	37.6	70.1	37.6
Max Q Clear Time (g_c+I1), s	19.5	39.7	11.1
Green Ext Time (p_c), s	7.0	5.9	3.9

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

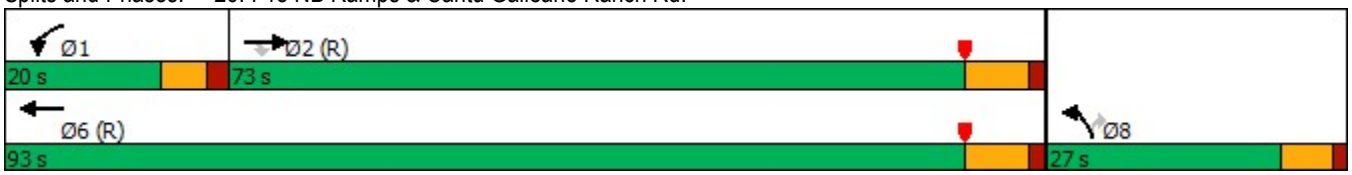
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	708	718	219	381	335	154
Future Volume (vph)	708	718	219	381	335	154
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.0	22.5	22.5	22.5
Total Split (s)	73.0	73.0	20.0	93.0	27.0	27.0
Total Split (%)	60.8%	60.8%	16.7%	77.5%	22.5%	22.5%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	68.6	68.6	13.6	88.2	18.5	18.5
Actuated g/C Ratio	0.57	0.57	0.11	0.74	0.15	0.15
v/c Ratio	0.26	0.65	0.61	0.11	0.72	0.43
Control Delay	24.8	24.1	57.4	5.0	55.5	10.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	24.8	24.2	57.4	5.0	55.5	10.6
LOS	C	C	E	A	E	B
Approach Delay	24.5			24.1	42.8	
Approach LOS	C			C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 28.0	Intersection LOS: C
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	708	718	219	381	335	154
Future Volume (veh/h)	708	718	219	381	335	154
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	770	500	238	414	364	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	3208	996	299	3904	444	197
Arrive On Green	1.00	1.00	0.09	0.76	0.12	0.12
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	770	500	238	414	364	109
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	0.0	0.0	8.1	2.5	12.0	7.8
Cycle Q Clear(g_c), s	0.0	0.0	8.1	2.5	12.0	7.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3208	996	299	3904	444	197
V/C Ratio(X)	0.24	0.50	0.80	0.11	0.82	0.55
Avail Cap(c_a), veh/h	3208	996	403	3904	623	277
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.94	0.94	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	53.8	3.6	51.2	49.4
Incr Delay (d2), s/veh	0.1	1.5	7.4	0.1	6.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.4	3.7	0.6	5.6	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.1	1.5	61.1	3.7	57.2	51.8
LnGrp LOS	A	A	E	A	E	D
Approach Vol, veh/h	1270			652	473	
Approach Delay, s/veh	0.7			24.6	56.0	
Approach LOS	A			C	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	16.4	82.7				99.1	20.9
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	14.0	65.7				85.7	21.0
Max Q Clear Time (g_c+I1), s	10.1	2.0				4.5	14.0
Green Ext Time (p_c), s	0.3	7.8				2.6	1.0

Intersection Summary			
HCM 6th Ctrl Delay		18.1	
HCM 6th LOS		B	

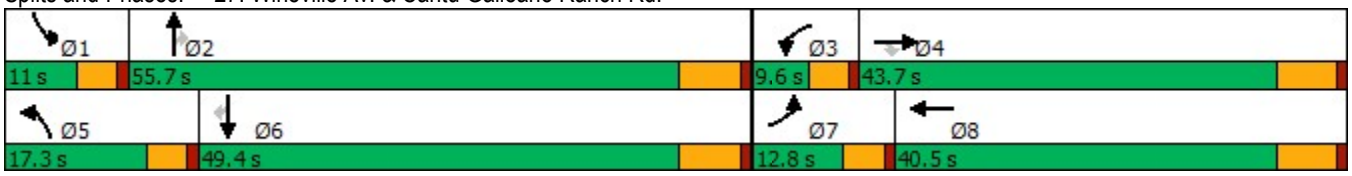
Notes

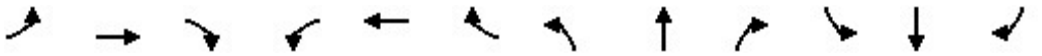
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	102	340	319	26	236	194	93	47	29	169	175
Future Volume (vph)	102	340	319	26	236	194	93	47	29	169	175
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	12.8	43.7	43.7	9.6	40.5	17.3	55.7	55.7	11.0	49.4	49.4
Total Split (%)	10.7%	36.4%	36.4%	8.0%	33.8%	14.4%	46.4%	46.4%	9.2%	41.2%	41.2%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.1	18.1	18.1	5.7	12.2	9.1	26.1	26.1	6.3	15.2	15.2
Actuated g/C Ratio	0.11	0.28	0.28	0.09	0.19	0.14	0.40	0.40	0.10	0.23	0.23
v/c Ratio	0.30	0.21	0.51	0.09	0.30	0.44	0.07	0.07	0.19	0.43	0.37
Control Delay	36.9	20.4	6.1	39.3	24.6	34.8	16.6	0.2	40.4	26.4	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	20.4	6.1	39.3	24.6	34.8	16.6	0.2	40.4	26.4	6.3
LOS	D	C	A	D	C	C	B	A	D	C	A
Approach Delay		16.6			25.9		24.9			18.1	
Approach LOS		B			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 65.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 20.0	Intersection LOS: C
Intersection Capacity Utilization 47.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	340	319	26	236	21	194	93	47	29	169	175
Future Volume (veh/h)	102	340	319	26	236	21	194	93	47	29	169	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	370	209	28	257	13	211	101	25	32	184	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	1435	354	113	865	43	348	811	362	65	307	260
Arrive On Green	0.08	0.22	0.22	0.03	0.17	0.17	0.10	0.23	0.23	0.04	0.16	0.16
Sat Flow, veh/h	3456	6434	1585	3456	4980	249	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	111	370	209	28	175	95	211	101	25	32	184	125
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1826	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	1.4	2.2	5.5	0.4	2.1	2.1	2.7	1.0	0.6	0.8	4.2	3.3
Cycle Q Clear(g_c), s	1.4	2.2	5.5	0.4	2.1	2.1	2.7	1.0	0.6	0.8	4.2	3.3
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	1435	354	113	591	317	348	811	362	65	307	260
V/C Ratio(X)	0.39	0.26	0.59	0.25	0.30	0.30	0.61	0.12	0.07	0.49	0.60	0.48
Avail Cap(c_a), veh/h	612	5170	1274	373	2500	1341	948	3777	1685	246	1733	1469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	14.8	16.1	21.8	16.7	16.7	19.9	14.2	14.0	21.9	17.9	17.6
Incr Delay (d2), s/veh	0.3	0.1	1.6	0.4	0.3	0.5	0.6	0.1	0.1	2.1	1.9	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.6	1.6	0.1	0.6	0.7	0.9	0.3	0.2	0.3	1.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	14.9	17.7	22.3	16.9	17.2	20.6	14.3	14.1	24.0	19.8	18.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		690			298			337			341	
Approach Delay, s/veh		16.6			17.5			18.2			19.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	17.1	6.1	16.8	9.3	14.1	8.4	14.5
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	6.4	49.2	5.0	37.2	12.7	42.9	8.2	34.0
Max Q Clear Time (g_c+I1), s	2.8	3.0	2.4	7.5	4.7	6.2	3.4	4.1
Green Ext Time (p_c), s	0.0	0.7	0.0	2.9	0.2	1.4	0.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

APPENDIX 3.3: EXISTING (2022) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

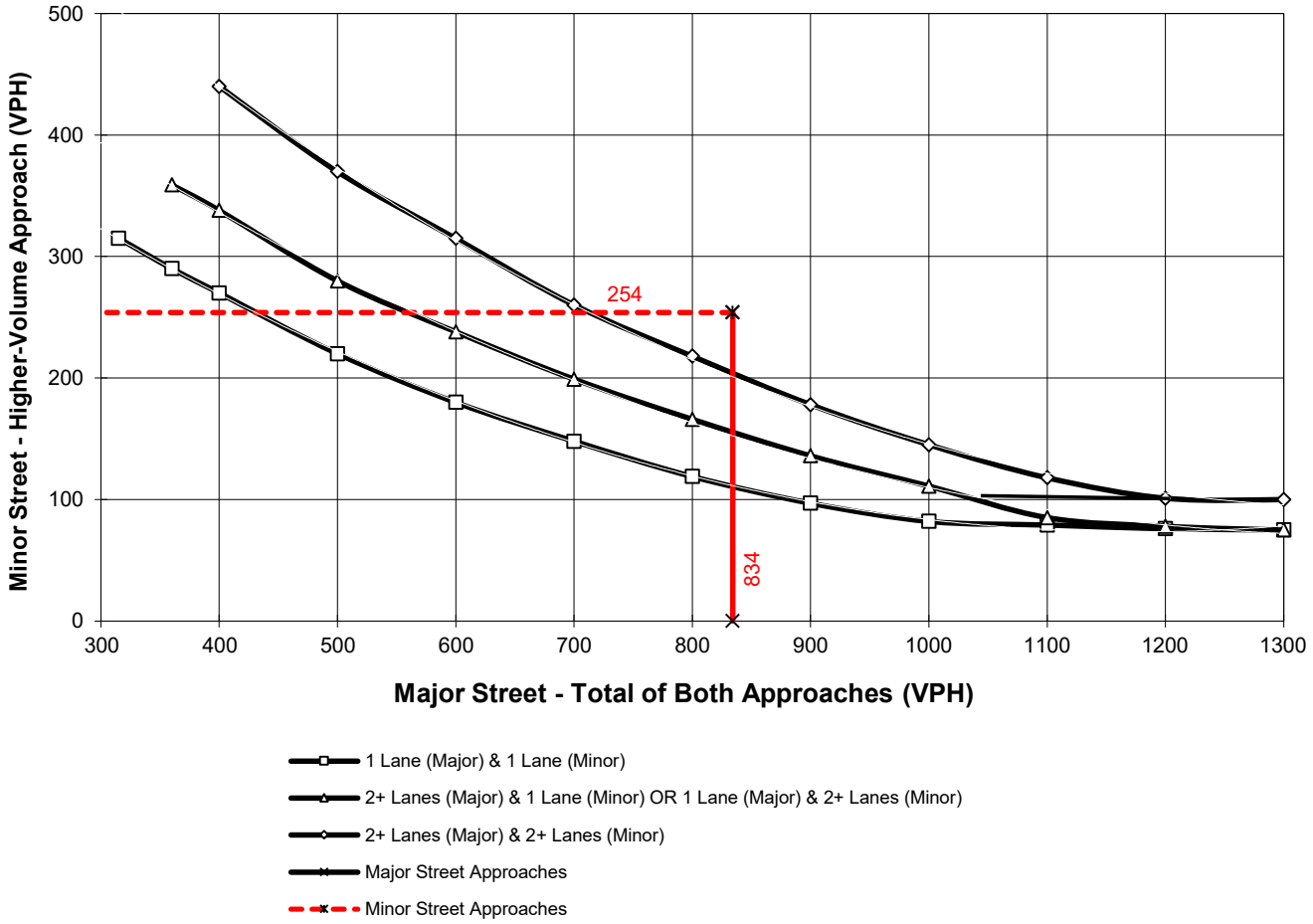
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2022) Conditions - Weekday AM Peak Hour**

Major Street Name = **Turner Av.**
Total of Both Approaches (VPH) = **834**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Chino Av.**
High Volume Approach (VPH) = **254**
Number of Approach Lanes Minor Street = **2**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

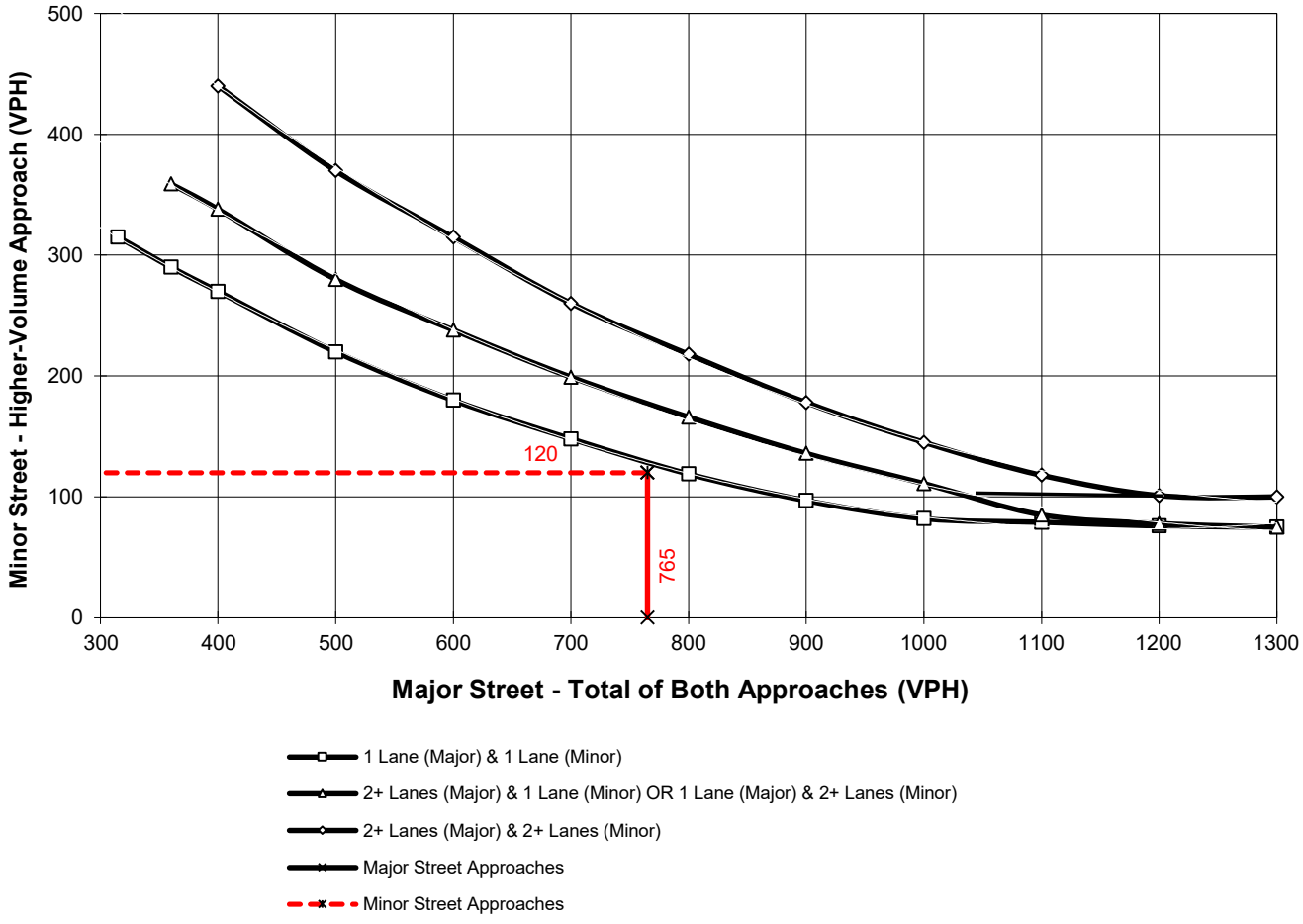
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2022) Conditions - Weekday AM Peak Hour**

Major Street Name = **Haven Av.** Total of Both Approaches (VPH) = **765**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Chino Av.** High Volume Approach (VPH) = **120**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

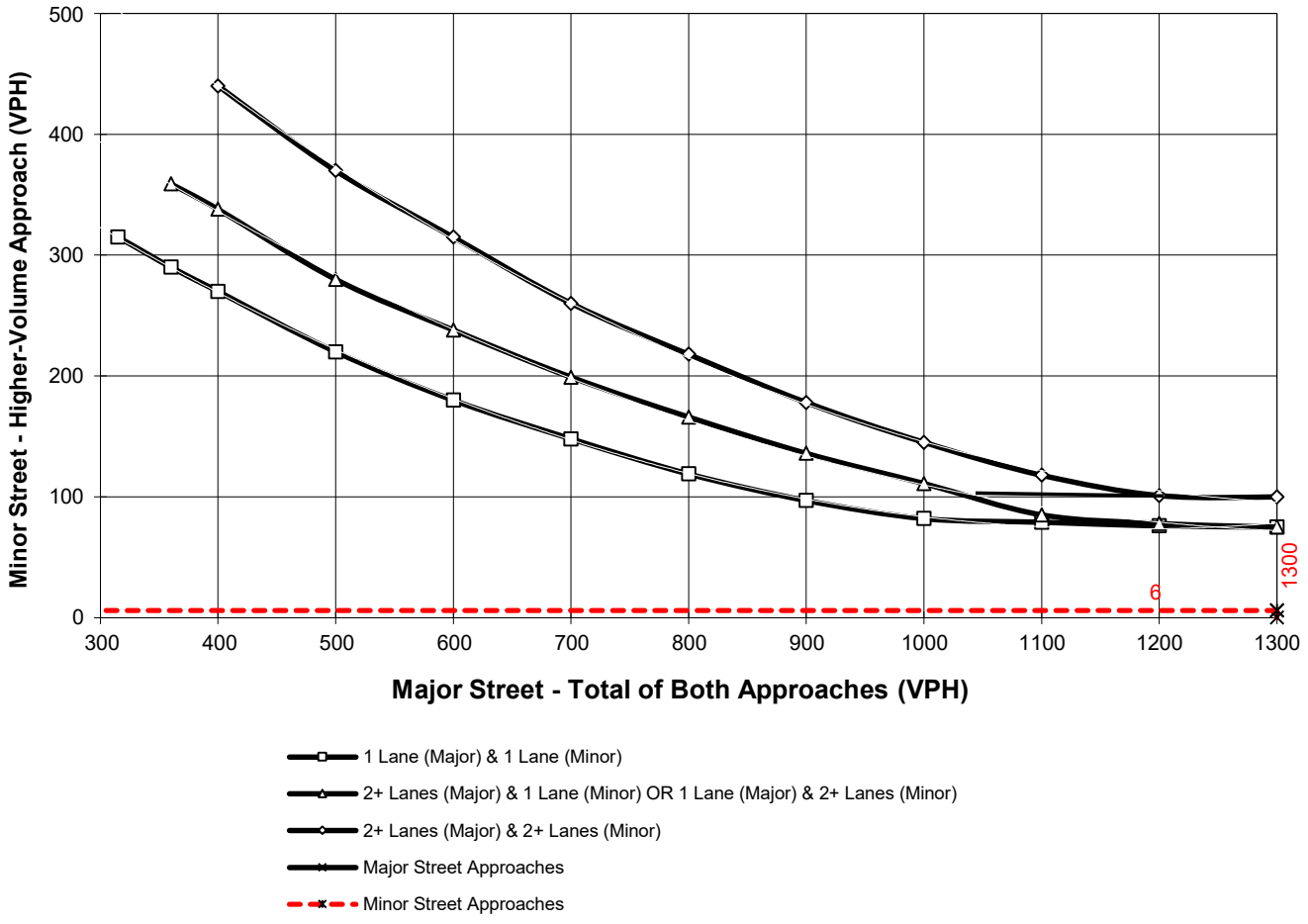
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2022) Conditions - Weekday AM Peak Hour**

Major Street Name = **Hamner Av.** Total of Both Approaches (VPH) = **1473**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Chino Av.** High Volume Approach (VPH) = **6**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 3.4: EXISTING (2022) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	278	267	257	777	972	405	163
v/c Ratio	0.74	0.62	0.56	0.85	0.30	0.19	0.26
Control Delay	46.2	22.5	16.4	36.7	4.0	23.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	22.5	16.4	36.7	4.0	23.0	4.9
Queue Length 50th (ft)	148	70	43	222	42	51	0
Queue Length 95th (ft)	#308	#178	131	#323	19	62	39
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	384	439	468	928	3485	2493	715
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.61	0.55	0.84	0.28	0.16	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	290	278	270	1461	596	162	648
v/c Ratio	0.71	0.62	0.50	0.46	0.55	0.53	0.20
Control Delay	40.7	22.1	8.5	16.4	3.7	53.4	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	22.1	8.5	16.4	3.7	53.4	4.0
Queue Length 50th (ft)	157	84	14	155	0	47	53
Queue Length 95th (ft)	228	160	74	209	60	m63	13
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	526	548	628	3182	1075	323	3201
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.51	0.43	0.46	0.55	0.50	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	372	376	746	316	1505	765	424
v/c Ratio	0.79	0.80	0.47	0.68	0.53	0.42	0.51
Control Delay	37.3	37.7	1.0	34.3	11.6	20.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	37.7	1.0	34.3	11.6	20.2	4.8
Queue Length 50th (ft)	162	164	0	81	160	102	0
Queue Length 95th (ft)	52	256	0	m112	216	141	61
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	546	548	1583	505	2845	1817	830
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.69	0.47	0.63	0.53	0.42	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	378	383	175	1405	341	657
v/c Ratio	0.83	0.83	0.31	0.72	0.83	0.23
Control Delay	42.1	42.7	5.2	20.8	50.4	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	42.7	5.2	20.8	50.4	8.6
Queue Length 50th (ft)	167	169	0	186	91	65
Queue Length 95th (ft)	#302	#307	42	239	#167	80
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	497	499	591	1938	410	2887
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.77	0.30	0.72	0.83	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	130	537	384	1129	385	267
v/c Ratio	0.21	0.89	0.85	0.64	0.59	0.52
Control Delay	21.2	40.5	48.8	17.0	35.0	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	40.5	48.8	17.0	35.0	8.2
Queue Length 50th (ft)	49	225	195	225	103	0
Queue Length 95th (ft)	95	#439	#357	290	148	62
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	701	682	530	2121	852	583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.79	0.72	0.53	0.45	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	391	356	1267	88	406
v/c Ratio	0.80	0.55	0.83	0.56	0.21
Control Delay	41.9	10.5	26.9	54.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	10.5	26.9	54.3	9.6
Queue Length 50th (ft)	212	35	324	49	55
Queue Length 95th (ft)	#361	120	415	#113	79
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	604	729	1822	175	2351
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.65	0.49	0.70	0.50	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	855	335	736	183	252	531	523
v/c Ratio	0.47	0.43	0.83	0.07	0.64	0.73	0.70
Control Delay	33.5	5.8	40.0	0.0	47.7	10.5	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	5.8	40.0	0.0	47.7	10.5	8.9
Queue Length 50th (ft)	189	0	305	0	185	18	7
Queue Length 95th (ft)	273	76	221	m0	249	130	102
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1800	776	1008	2787	539	806	829
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.43	0.73	0.07	0.47	0.66	0.63

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	434	738	211	434	612	283
v/c Ratio	0.17	0.63	0.61	0.13	0.79	0.52
Control Delay	26.1	21.3	59.5	8.0	49.5	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	21.3	59.5	8.0	49.5	7.7
Queue Length 50th (ft)	101	380	81	41	222	0
Queue Length 95th (ft)	67	353	122	65	268	74
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2653	1178	379	3413	881	579
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.63	0.56	0.13	0.69	0.49

Intersection Summary

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	206	201	162	503	477	1204	328
v/c Ratio	0.70	0.71	0.41	0.79	0.13	0.41	0.37
Control Delay	47.9	47.9	8.5	39.6	1.5	17.9	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	47.9	8.5	39.6	1.5	17.9	3.5
Queue Length 50th (ft)	114	114	0	153	12	134	0
Queue Length 95th (ft)	190	193	53	197	1	174	50
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	344	332	437	726	3557	2934	892
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.61	0.37	0.69	0.13	0.41	0.37

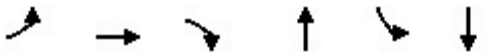
Intersection Summary

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	223	219	859	510	482	1094
v/c Ratio	0.44	0.73	0.70	0.27	0.49	0.76	0.29
Control Delay	40.4	30.0	27.7	14.2	3.5	52.4	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	30.0	27.7	14.2	3.5	52.4	0.9
Queue Length 50th (ft)	56	57	52	77	0	131	0
Queue Length 95th (ft)	101	132	123	120	60	171	16
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	339	393	404	3239	1042	762	3733
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.57	0.54	0.27	0.49	0.63	0.29

Intersection Summary

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	147	146	585	148	864	1424	724
v/c Ratio	0.59	0.59	0.37	0.49	0.24	0.49	0.60
Control Delay	45.4	45.1	0.7	35.3	5.0	12.5	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	45.1	0.7	35.3	5.0	12.5	3.3
Queue Length 50th (ft)	83	83	0	43	82	162	0
Queue Length 95th (ft)	141	140	0	77	101	228	53
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	321	322	1583	345	3655	2928	1206
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.45	0.37	0.43	0.24	0.49	0.60

Intersection Summary



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	182	184	221	826	634	1092
v/c Ratio	0.64	0.65	0.61	0.41	0.78	0.31
Control Delay	44.6	44.8	23.4	19.1	53.3	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	44.8	23.4	19.1	53.3	4.2
Queue Length 50th (ft)	101	103	54	108	188	61
Queue Length 95th (ft)	163	165	120	165	224	73
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	377	378	444	2031	953	3544
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.49	0.50	0.41	0.67	0.31

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	86	332	292	723	935	540
v/c Ratio	0.29	0.69	0.75	0.31	0.71	0.58
Control Delay	32.7	16.2	40.7	5.7	23.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	16.2	40.7	5.7	23.7	4.7
Queue Length 50th (ft)	36	28	123	54	175	0
Queue Length 95th (ft)	83	118	238	107	310	65
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	445	595	558	2915	1635	1022
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.56	0.52	0.25	0.57	0.53

Intersection Summary

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	247	339	865	232	784
v/c Ratio	0.64	0.67	0.75	0.69	0.38
Control Delay	35.5	18.9	26.2	40.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	18.9	26.2	40.5	8.5
Queue Length 50th (ft)	106	54	173	98	86
Queue Length 95th (ft)	212	167	287	196	142
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	559	641	1569	501	2757
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.53	0.55	0.46	0.28

Intersection Summary

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1187	358	651	149	283	656	649
v/c Ratio	0.62	0.44	0.49	0.05	0.32	0.83	0.80
Control Delay	33.5	4.9	31.9	0.0	16.7	31.2	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	4.9	31.9	0.0	16.7	31.2	28.3
Queue Length 50th (ft)	283	0	138	0	120	390	355
Queue Length 95th (ft)	356	67	318	0	164	537	484
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1920	820	1336	2787	981	875	906
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.44	0.49	0.05	0.29	0.75	0.72

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	770	780	238	414	381	150
v/c Ratio	0.26	0.65	0.61	0.11	0.72	0.43
Control Delay	24.8	24.1	57.4	5.0	55.5	10.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	24.8	24.2	57.4	5.0	55.5	10.6
Queue Length 50th (ft)	207	463	91	29	145	0
Queue Length 95th (ft)	126	387	130	47	188	61
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2960	1206	425	3759	617	381
Starvation Cap Reductn	0	57	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.68	0.56	0.11	0.62	0.39

Intersection Summary

APPENDIX 4.1: TRIP GENERATION SUMMARY

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Trip Generation Rates

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
Industrial Park[3]	TSF	130	0.275	0.065	0.340	0.075	0.265	0.340	3.370
Passenger Cars			0.243	0.057	0.300	0.066	0.234	0.300	2.800
2-Axle Trucks			0.005	0.001	0.007	0.001	0.005	0.007	0.095
3-Axle Trucks			0.007	0.002	0.008	0.002	0.006	0.008	0.118
4+-Axle Trucks			0.020	0.005	0.025	0.006	0.020	0.025	0.357
High-Cube Transload Warehouse[3]	TSF	154	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars			0.052	0.008	0.060	0.023	0.067	0.090	1.180
2-Axle Trucks			0.002	0.001	0.003	0.001	0.001	0.002	0.037
3-Axle Trucks			0.002	0.002	0.004	0.001	0.001	0.002	0.046
4+-Axle Trucks			0.006	0.007	0.013	0.003	0.003	0.006	0.138
High-Cube Fulfillment Center (Sort)[3]	TSF	155	0.705	0.165	0.870	0.468	0.732	1.200	6.440
Passenger Cars			0.695	0.155	0.850	0.458	0.722	1.180	6.250
2-Axle Trucks			0.002	0.001	0.003	0.002	0.001	0.003	0.032
3-Axle Trucks			0.002	0.002	0.004	0.002	0.002	0.004	0.039
4+-Axle Trucks			0.006	0.007	0.013	0.006	0.007	0.013	0.119
High-Cube Cold Storage Warehouse[3]	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.062	0.018	0.080	0.025	0.065	0.090	1.370
2-Axle Trucks			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-Axle Trucks			0.005	0.011	0.016	0.008	0.008	0.016	0.407
High-Cube Fulfillment Center Warehouse[4]	TSF	--	0.094	0.028	0.122	0.046	0.119	0.165	2.129
Passenger Cars			0.079	0.024	0.103	0.040	0.104	0.144	1.750
2-4 Axle Trucks			0.006	0.002	0.008	0.003	0.008	0.011	0.162
5+-Axle Trucks			0.008	0.003	0.011	0.003	0.007	0.010	0.217

Trip Generation Rates

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Single Family Detached Residential	DU	210	0.18	0.52	0.70	0.59	0.35	0.94	9.43
Multifamily (Low-Rise) Housing	DU	220	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Public Park	AC	411	0.01	0.01	0.02	0.06	0.05	0.11	0.78
General Office	TSF	710	1.34	0.18	1.52	0.24	1.20	1.44	10.84
Shopping Center (>150,000 SF)	TSF	820	0.52	0.32	0.84	1.63	1.77	3.40	37.01
Shopping Center (40,000-150,000 SF)	TSF	821	1.07	0.66	1.73	2.54	2.65	5.19	67.52
Strip Retail (<40,000 SF)	TSF	822	1.42	0.94	2.36	3.30	3.29	6.59	54.45
High Turnover Restaurant	TSF	932	5.26	4.31	9.57	5.52	3.53	9.05	107.20
Fast-Food Restaurant With Drive-Thru Window	TSF	934	22.75	21.86	44.61	17.18	15.85	33.03	467.48
Gas Station (4,000-5,500 SF Convenience)	VFP	945	13.52	13.52	27.04	11.38	11.38	22.76	257.13

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet; DU = Dwelling Units; AC = Acres; VFP = Vehicle Fueling Position

[3] Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.

Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

[4] Vehicle Mix Source: High Cube Warehouse Trip Generation Study, WSP, January 29, 2019.

Inbound and outbound split source: ITE Trip Generation Manual, Eleventh Edition (2021) for ITE Land Use Code 154.

Trip Generation Summary (PCE)

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Existing Uses:									
PA 3A: Multifamily (Low-Rise) Residential	106	DU	19	55	74	63	37	100	1,000
PA 3A: Single Family Detached Residential	58	DU	11	30	41	34	20	54	548
PA 4A: Single Family Detached Residential	70	DU	13	36	49	41	24	65	660
PA 4A: Multifamily (Low-Rise) Residential	246	DU	24	75	99	79	46	125	1,658
PA 3A, 4A Subtotal			**67**	**196**	**263**	**217**	**127**	**344**	**3,866**
Phase 1:									
PA 2C, 3C, 5A: Business Park (20%)	316.725	TSF							
Passenger Cars			77	18	95	21	74	95	888
Trucks (PCE)			26	6	32	7	25	32	460
PA 2C, 3C, 5A: High-Cube Cold Storage (10%)	158.362	TSF							
Passenger Cars			10	3	13	4	10	14	218
Trucks (PCE)			3	8	11	6	6	12	282
PA 2C, 3C, 5A: High-Cube Fulfillment (70%)	1,108.536	TSF							
Passenger Cars			88	26	114	45	115	160	1,940
Trucks (PCE)			42	12	54	16	42	58	1,082
Internal Capture (1% AM, 2% PM/Daily)			-2	0	-2	-1	-4	-5	-62
PA 2B: Multifamily (Low-Rise) Residential	190	DU	18	58	76	61	36	97	1,282
PA 2A: Public Park	1.3	AC	0	0	0	0	0	0	2
PA 3A: Single Family Detached Residential	100	DU	18	52	70	59	35	94	944
PA 3A: Multifamily (Low-Rise) Residential	4	DU	0	1	1	1	1	2	28
PA 3A: Single Family Detached Residential	42	DU	8	22	30	25	15	40	396
PA 3A: Multifamily (Low-Rise) Residential	250	DU	24	76	100	80	47	127	1,686
PA 3B: Multifamily (Low-Rise) Residential	190	DU	18	58	76	61	36	97	1,282
PA 4A: Single Family Detached Residential	230	DU	42	119	161	136	80	216	2,170
PA 4A: Multifamily (Low-Rise) Residential	553	DU	53	168	221	178	104	282	3,728
Internal Capture (4% AM, 12% PM/Daily)			-7	-22	-29	-72	-42	-114	-1,382
PA 5C: Strip Retail	7.500	TSF	11	7	18	25	25	50	408
Internal Capture (3% AM, 19% PM/Daily)			0	0	0	-5	-5	-10	-78
PA 5C: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 2, 3, 4, & 5 Subtotal			**479**	**662**	**1,141**	**684**	**637**	**1,321**	**16,106**
PA 6A: High-Cube Transload (50%)	591.763	TSF							
Passenger Cars			31	5	36	14	40	54	698
Trucks (PCE)			15	15	30	7	8	15	332
PA 6A: High-Cube Fulfillment Center (25%)	295.881	TSF							
Passenger Cars			206	46	252	136	214	350	1,850
Trucks (PCE)			7	8	15	7	8	15	144
PA 6A: High-Cube Cold Storage (25%)	295.881	TSF							
Passenger Cars			18	5	23	7	19	26	406
Trucks (PCE)			6	15	21	11	11	22	526
Internal Capture (1% AM, 2% PM/Daily)			-3	-1	-4	-3	-5	-8	-60
PA 6 Subtotal			**280**	**93**	**373**	**179**	**295**	**474**	**3,896**
PA 7, 8, 9: Single Family Detached Residential	300	DU	55	155	210	178	104	282	2,829
PA 7, 8, 9: Multifamily (Low-Rise) Residential	552	DU	53	168	221	177	104	281	3,720
PA 10A, 10B: Multifamily (Low-Rise) Residential	550	DU	53	167	220	177	104	281	3,707
Internal Capture (4% AM, 12% PM/Daily)			-6	-20	-26	-64	-37	-101	-1,232
PA 10A, 10B: Shopping Center (75%)	37.500	TSF	40	25	65	95	99	194	2,532
Internal Capture (3% AM, 19% PM/Daily)			-1	-1	-2	-18	-19	-37	-482
Pass-by (40% PM/Daily)			0	0	0	-32	-32	-64	-820
PA 10A, 10B: High Turnover Restaurant (15%)	7.500	TSF	39	32	71	41	26	67	804
Internal Capture (8% AM, 17% PM/Daily)			-3	-3	-6	-7	-4	-11	-130
Pass-by (43% PM/Daily)			0	0	0	-9	-9	-18	-290
PA 10A, 10B: Fast-Food Restaurant w/ Drive-Throu	5.000	TSF	114	109	223	86	79	165	2,338
Internal Capture (8% AM, 17% PM/Daily)			-9	-9	-18	-15	-13	-28	-374
Pass-by (50% AM, 55% PM/Daily)			-50	-50	-100	-34	-34	-68	-1,022
PA 10A, 10B: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 7, 8, 9, & 10 Subtotal			**335**	**623**	**958**	**612**	**405**	**1,017**	**12,412**

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
PA 4B: Single Family Detached Residential	150	DU	27	78	105	89	52	141	1,416
PA 4B: Multifamily (Low-Rise) Residential	1,000	DU	96	304	400	321	189	510	6,740
Internal Capture (4% AM, 12% PM/Daily)			-5	-15	-20	-49	-29	-78	-980
PA 4B: Shopping Center (75%)	124.637	TSF	134	82	216	317	330	647	8,416
Internal Capture (3% AM, 19% PM/Daily)			-4	-2	-6	-60	-63	-123	-1,600
Pass-by (40% PM/Daily)			0	0	0	-107	-107	-214	-2,726
PA 4B: High Turnover Restaurant (15%)	24.927	TSF	131	107	238	138	88	226	2,672

Trip Generation Summary (PCE)

Internal Capture (8% AM, 17% PM/Daily)			-10	-9	-19	-23	-15	-38	-428
Pass-by (43% PM/Daily)			0	0	0	-31	-31	-62	-966
PA 4B: Fast-Food Restaurant w/ Drive-Through (10	16.618	TSF	378	363	741	285	263	548	7,770
Internal Capture (8% AM, 17% PM/Daily)			-30	-29	-59	-48	-45	-93	-1,244
Pass-by (50% AM, 55% PM/Daily)			-167	-167	-334	-113	-113	-226	-3,394
PA 4B: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 4B Subtotal			**600**	**762**	**1,362**	**756**	**556**	**1,312**	**16,508**
Phase 1 Total (Actual Vehicles)			**1,694**	**2,140**	**3,834**	**2,231**	**1,893**	**4,124**	**48,922**
Phase 2:									
PA 1A: Single Family Detached Residential	128	DU	23	66	89	76	45	121	1,208
PA 1B: Single Family Detached Residential	94	DU	17	49	66	56	33	89	886
PA 1B: Multifamily (Low-Rise) Residential	200	DU	19	61	80	64	38	102	1,348
PA 1C: Single Family Detached Residential	231	DU	42	120	162	137	80	217	2,178
PA 1C: Multifamily (Low-Rise) Residential	800	DU	77	243	320	257	151	408	5,392
Internal Capture (4% AM, 12% PM/Daily)			-7	-22	-29	-71	-42	-113	-1,322
PA 1 Subtotal			**171**	**517**	**688**	**519**	**305**	**824**	**9,690**
Public Park	27.0	AC	0	0	0	2	1	3	22
PA 3 Subtotal			**0**	**0**	**0**	**2**	**1**	**3**	**22**
PA 6B: Shopping Center (75%)	225.000	TSF	117	72	189	367	398	765	8,328
Internal Capture (3% AM, 19% PM/Daily)			-4	-2	-6	-70	-76	-146	-1,582
Pass-by (40% PM/Daily)			0	0	0	-129	-129	-258	-2,698
PA 6B: High Turnover Restaurant (15%)	45.000	TSF	237	194	431	248	159	407	4,824
Internal Capture (8% AM, 17% PM/Daily)			-19	-16	-35	-42	-27	-69	-772
Pass-by (43% PM/Daily)			0	0	0	-57	-57	-114	-1,742
PA 6B: Fast-Food Restaurant w/ Drive-Through (10	30.000	TSF	683	656	1,339	515	476	991	14,024
Internal Capture (8% AM, 17% PM/Daily)			-55	-52	-107	-88	-81	-169	-2,244
Pass-by (50% AM, 55% PM/Daily)			-302	-302	-604	-205	-205	-410	-6,126
PA 6B: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 6 Subtotal			**707**	**600**	**1,307**	**576**	**495**	**1,071**	**12,844**
PA 7, 8, 9: Shopping Center (75%)	243.750	TSF	127	78	205	398	431	829	9,022
Internal Capture (3% AM, 19% PM/Daily)			-4	-2	-6	-76	-82	-158	-1,714
Pass-by (40% PM/Daily)			0	0	0	-140	-140	-280	-2,924
PA 7, 8, 9: High Turnover Restaurant (15%)	48.750	TSF	257	210	467	269	172	441	5,226
Internal Capture (8% AM, 17% PM/Daily)			-21	-17	-38	-46	-29	-75	-836
Pass-by (43% PM/Daily)			0	0	0	-61	-61	-122	-1,888
PA 7, 8, 9: Fast-Food Restaurant w/ Drive-Through	32.500	TSF	739	710	1,449	558	515	1,073	15,194
Internal Capture (8% AM, 17% PM/Daily)			-59	-57	-116	-95	-88	-183	-2,432
Pass-by (50% AM, 55% PM/Daily)			-327	-327	-654	-222	-222	-444	-6,636
PA 7, 8, 9: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 7, 8, 9 Subtotal			**762**	**645**	**1,407**	**622**	**533**	**1,155**	**13,844**
PA 5B: Single Family Detached Residential	150	DU	27	78	105	89	52	141	1,416
PA 5B: Multifamily (Low-Rise) Residential	1,000	DU	96	304	400	321	189	510	6,740
Internal Capture (4% AM, 12% PM/Daily)			-5	-15	-20	-49	-29	-78	-980
PA 5A, 5B: Shopping Center (75%)	57.240	TSF	61	38	99	146	152	298	3,865
Internal Capture (3% AM, 19% PM/Daily)			-2	-1	-3	-28	-29	-57	-734
Pass-by (40% PM/Daily)			0	0	0	-49	-49	-98	-1,252
PA 5A, 5B: High Turnover Restaurant (15%)	11.448	TSF	60	49	109	63	40	103	1,227
Internal Capture (8% AM, 17% PM/Daily)			-5	-4	-9	-11	-7	-18	-196
Pass-by (43% PM/Daily)			0	0	0	-14	-14	-28	-444
PA 5A, 5B: Fast-Food Restaurant w/ Drive-Through	7.632	TSF	174	167	341	131	121	252	3,568
Internal Capture (8% AM, 17% PM/Daily)			-14	-13	-27	-22	-21	-43	-572
Pass-by (50% AM, 55% PM/Daily)			-77	-77	-154	-52	-52	-104	-1,558
PA 5A, 5B: Gas Station	16	VFP	216	216	432	182	182	364	4,114
Internal Capture (3% AM, 19% PM/Daily)			-6	-6	-12	-35	-35	-70	-782
Pass-by (76% AM, 75% PM/Daily)			-160	-160	-320	-110	-110	-220	-2,500
PA 5 Subtotal			**365**	**576**	**941**	**562**	**390**	**952**	**11,912**
Phase 2 Total Trips			**2,005**	**2,338**	**4,343**	**2,281**	**1,724**	**4,005**	**48,312**
Project Buildout Total Trips (PCE)			**3,699**	**4,478**	**8,177**	**4,512**	**3,617**	**8,129**	**97,234**

[1] DU = dwelling units; TSF = thousand square feet; AC = acres

APPENDIX 4.2: POST PROCESSING WORKSHEETS

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Archibald Av. & SR-60 WB Ramps
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	719	714	-5	-1%	461	399	-62	-13%
	Through	839	1,568	729	87%	381	440	59	15%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	1,558	2,282	724	46%	842	839	-3	0%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	328	482	154	47%	1,091	1,901	810	74%
	Right	95	127	32	34%	266	321	55	21%
	SB Total	423	609	186	44%	1,357	2,222	865	64%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
WEST BOUND	Left	270	239	-31	-11%	316	381	65	21%
	Through	7	6	-1	-14%	1	1	0	0%
	Right	385	585	200	52%	151	168	17	11%
	WB Total	662	830	168	25%	468	550	82	18%
TOTAL ENTERING VOLUME		2,643	3,721	1078	41%	2,667	3,611	944	35%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	609	2,222			
North Leg	Outbound	2,153	608			
North Leg	**TOTAL**	**2,762**	**2,830**	**6%**	**6%**	**45,251**
South Leg	Inbound	2,282	839			
South Leg	Outbound	721	2,282			
South Leg	**TOTAL**	**3,003**	**3,121**	**7%**	**8%**	**40,316**
East Leg	Inbound	830	550			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**830**	**550**	**11%**	**7%**	**7,837**
West Leg	Inbound	0	0			
West Leg	Outbound	847	721			
West Leg	**TOTAL**	**847**	**721**	**17%**	**15%**	**4,935**
OVERALL TOTAL		***7,442***	***7,222***	***8%***	***7%***	***98,339***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Archibald Av. & SR-60 EB Ramps
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	1,271	1,827	556	44%	779	793	14	2%
	Right	417	456	39	9%	453	436	-17	-4%
	NB Total	1,688	2,283	595	35%	1,232	1,229	-3	0%
SOUTH BOUND	Left	101	149	48	48%	453	662	209	46%
	Through	502	543	41	8%	954	1,589	635	67%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	603	692	89	15%	1,407	2,251	844	60%
EAST BOUND	Left	273	433	160	59%	65	53	-12	-18%
	Through	4	5	1	25%	1	1	0	0%
	Right	380	337	-43	-11%	391	346	-45	-12%
	EB Total	657	775	118	18%	457	400	-57	-12%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		2,948	3,750	802	27%	3,096	3,880	784	25%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	692	2,251			
North Leg	Outbound	2,260	846			
North Leg	**TOTAL**	**2,952**	**3,097**	**7%**	**7%**	**45,251**
South Leg	Inbound	2,283	1,229			
South Leg	Outbound	880	1,935			
South Leg	**TOTAL**	**3,163**	**3,164**	**8%**	**8%**	**40,316**
East Leg	Inbound	0	0			
East Leg	Outbound	610	1,099			
East Leg	**TOTAL**	**610**	**1,099**	**8%**	**14%**	**7,837**
West Leg	Inbound	775	400			
West Leg	Outbound	0	0			
West Leg	**TOTAL**	**775**	**400**	**16%**	**8%**	**4,935**
OVERALL TOTAL		***7,500***	***7,760***	***8%***	***8%***	***98,339***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Archibald Av. & Riverside Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	255	409	154	60%	226	379	153	68%
	Through	1,082	1,561	479	44%	719	668	-51	-7%
	Right	75	161	86	115%	67	82	15	22%
	NB Total	1,412	2,131	719	51%	1,012	1,129	117	12%
SOUTH BOUND	Left	160	170	10	6%	238	277	39	16%
	Through	413	470	57	14%	677	1,106	429	63%
	Right	164	130	-34	-21%	193	307	114	59%
	SB Total	737	770	33	4%	1,108	1,690	582	53%
EAST BOUND	Left	132	203	71	54%	159	223	64	40%
	Through	314	718	404	129%	493	913	420	85%
	Right	125	306	181	145%	271	705	434	160%
	EB Total	571	1,227	656	115%	923	1,841	918	99%
WEST BOUND	Left	85	174	89	105%	112	244	132	118%
	Through	434	621	187	43%	362	769	407	112%
	Right	207	266	59	29%	133	157	24	18%
	WB Total	726	1,061	335	46%	607	1,170	563	93%
TOTAL ENTERING VOLUME		3,446	5,189	1743	51%	3,650	5,830	2180	60%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	770	1,690			
North Leg	Outbound	2,030	1,048			
North Leg	**TOTAL**	**2,800**	**2,738**	**11%**	**11%**	**25,567**
South Leg	Inbound	2,131	1,129			
South Leg	Outbound	950	2,055			
South Leg	**TOTAL**	**3,081**	**3,184**	**10%**	**11%**	**29,855**
East Leg	Inbound	1,061	1,170			
East Leg	Outbound	1,049	1,272			
East Leg	**TOTAL**	**2,110**	**2,442**	**7%**	**8%**	**31,890**
West Leg	Inbound	1,227	1,841			
West Leg	Outbound	1,160	1,455			
West Leg	**TOTAL**	**2,387**	**3,296**	**9%**	**12%**	**27,324**
OVERALL TOTAL		***10,378***	***11,660***	**9%**	***10%***	***114,636***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Archibald Av. & Chino Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	143	293	150	105%	85	230	145	171%
	Through	1,061	1,765	704	66%	848	927	79	9%
	Right	85	119	34	40%	18	23	5	28%
	NB Total	1,289	2,177	888	69%	951	1,180	229	24%
SOUTH BOUND	Left	48	85	37	77%	68	93	25	37%
	Through	494	677	183	37%	802	1,614	812	101%
	Right	47	121	74	157%	46	134	88	191%
	SB Total	589	883	294	50%	916	1,841	925	101%
EAST BOUND	Left	65	148	83	128%	136	185	49	36%
	Through	66	127	61	92%	220	347	127	58%
	Right	43	64	21	49%	120	279	159	133%
	EB Total	174	339	165	95%	476	811	335	70%
WEST BOUND	Left	79	54	-25	-32%	9	22	13	144%
	Through	96	123	27	28%	49	170	121	247%
	Right	167	173	6	4%	55	77	22	40%
	WB Total	342	350	8	2%	113	269	156	138%
TOTAL ENTERING VOLUME		2,394	3,749	1355	57%	2,456	4,101	1645	67%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	883	1,841			
North Leg	Outbound	2,086	1,189			
North Leg	**TOTAL**	**2,969**	**3,030**	**10%**	**10%**	**29,855**
South Leg	Inbound	2,177	1,180			
South Leg	Outbound	795	1,915			
South Leg	**TOTAL**	**2,972**	**3,095**	**10%**	**11%**	**28,330**
East Leg	Inbound	350	269			
East Leg	Outbound	331	463			
East Leg	**TOTAL**	**681**	**732**	**7%**	**8%**	**9,585**
West Leg	Inbound	339	811			
West Leg	Outbound	537	534			
West Leg	**TOTAL**	**876**	**1,345**	**6%**	**9%**	**15,185**
OVERALL TOTAL		***7,498***	***8,202***	**9%**	***10%***	***82,955***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Archibald Av. & Schaefer Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	1,128	1,822	694	62%	883	1,133	250	28%
	Right	19	28	9	47%	11	12	1	9%
	NB Total	1,147	1,850	703	61%	894	1,145	251	28%
SOUTH BOUND	Left	42	82	40	95%	44	242	198	450%
	Through	636	761	125	20%	902	1,567	665	74%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	678	843	165	24%	946	1,809	863	91%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
WEST BOUND	Left	26	59	33	127%	9	12	3	33%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	61	248	187	307%	15	74	59	393%
	WB Total	87	307	220	253%	24	86	62	258%
TOTAL ENTERING VOLUME		1,912	3,000	1088	57%	1,864	3,040	1176	63%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	843	1,809			
North Leg	Outbound	2,070	1,207			
North Leg	**TOTAL**	**2,913**	**3,016**	**10%**	**11%**	**28,330**
South Leg	Inbound	1,850	1,145			
South Leg	Outbound	820	1,579			
South Leg	**TOTAL**	**2,670**	**2,724**	**11%**	**11%**	**24,202**
East Leg	Inbound	307	86			
East Leg	Outbound	110	254			
East Leg	**TOTAL**	**417**	**340**	**6%**	**5%**	**7,317**
West Leg	Inbound	0	0			
West Leg	Outbound	0	0			
West Leg	**TOTAL**	**0**	**0**	**0%**	**0%**	**1,031**
OVERALL TOTAL		***6,000***	***6,080***	**10%**	***10%***	***60,880***

Z:\Shared\UcJobs_14600-15000_14800\14822\02_LOS\Post Processing\[05_Archibald & Schaefer.xls]Output (3)

Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Archibald Av. & Merrill Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	161	690	529	329%	87	305	218	251%
	Through	937	1,637	700	75%	673	1,220	547	81%
	Right	198	288	90	45%	249	341	92	37%
	NB Total	1,296	2,615	1,319	102%	1,009	1,866	857	85%
SOUTH BOUND	Left	75	57	-18	-24%	140	181	41	29%
	Through	431	943	512	119%	670	1,716	1,046	156%
	Right	45	101	56	124%	38	126	88	232%
	SB Total	551	1,101	550	100%	848	2,023	1,175	139%
EAST BOUND	Left	21	43	22	105%	77	178	101	131%
	Through	99	168	69	70%	458	800	342	75%
	Right	60	292	232	387%	253	874	621	245%
	EB Total	180	503	323	179%	788	1,852	1,064	135%
WEST BOUND	Left	176	304	128	73%	176	225	49	28%
	Through	258	457	199	77%	139	230	91	65%
	Right	98	71	-27	-28%	99	85	-14	-14%
	WB Total	532	832	300	56%	414	540	126	30%
TOTAL ENTERING VOLUME		2,559	5,051	2492	97%	3,059	6,281	3222	105%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,101	2,023			
North Leg	Outbound	1,751	1,483			
North Leg	**TOTAL**	**2,852**	**3,506**	**7%**	**9%**	**38,374**
South Leg	Inbound	2,615	1,866			
South Leg	Outbound	1,539	2,815			
South Leg	**TOTAL**	**4,154**	**4,681**	**9%**	**10%**	**46,176**
East Leg	Inbound	832	540			
East Leg	Outbound	513	1,322			
East Leg	**TOTAL**	**1,345**	**1,862**	**13%**	**18%**	**10,348**
West Leg	Inbound	503	1,852			
West Leg	Outbound	1,248	661			
West Leg	**TOTAL**	**1,751**	**2,513**	**9%**	**13%**	**19,885**
OVERALL TOTAL		***10,102***	***12,562***	**9%**	***11%***	***114,783***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Turner Av. & Riverside Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	236	315	79	33%	133	107	-26	-20%
	Through	207	161	-46	-22%	44	25	-19	-43%
	Right	218	271	53	24%	128	163	35	27%
	NB Total	661	747	86	13%	305	295	-10	-3%
SOUTH BOUND	Left	110	134	24	22%	21	36	15	71%
	Through	159	111	-48	-30%	36	19	-17	-47%
	Right	109	143	34	31%	53	57	4	8%
	SB Total	378	388	10	3%	110	112	2	2%
EAST BOUND	Left	114	171	57	50%	86	86	0	0%
	Through	340	815	475	140%	458	1,011	553	121%
	Right	109	149	40	37%	182	122	-60	-33%
	EB Total	563	1,135	572	102%	726	1,219	493	68%
WEST BOUND	Left	83	70	-13	-16%	113	109	-4	-4%
	Through	430	682	252	59%	546	1,095	549	101%
	Right	128	118	-10	-8%	34	49	15	44%
	WB Total	641	870	229	36%	693	1,253	560	81%
TOTAL ENTERING VOLUME		2,243	3,140	897	40%	1,834	2,879	1045	57%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	388	112			
North Leg	Outbound	450	160			
North Leg	**TOTAL**	**838**	**272**	**#DIV/0!**	**#DIV/0!**	**-**
South Leg	Inbound	747	295			
South Leg	Outbound	330	250			
South Leg	**TOTAL**	**1,077**	**545**	**27%**	**13%**	**4,047**
East Leg	Inbound	870	1,253			
East Leg	Outbound	1,220	1,210			
East Leg	**TOTAL**	**2,090**	**2,463**	**6%**	**8%**	**32,504**
West Leg	Inbound	1,135	1,219			
West Leg	Outbound	1,140	1,259			
West Leg	**TOTAL**	**2,275**	**2,478**	**7%**	**8%**	**31,884**
OVERALL TOTAL		***6,280***	***5,758***	**9%**	***8%***	***68,435***

Z:\Shared\UcJobs_14600-15000_14800\14822\02_LOS\Post Processing\[07_Turner & Riverside.xls]Output (3)

Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Turner Av. & Chino Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	129	97	-32	-25%	18	17	-1	-6%
	Through	396	417	21	5%	119	89	-30	-25%
	Right	15	19	4	27%	8	4	-4	-50%
	NB Total	540	533	-7	-1%	145	110	-35	-24%
SOUTH BOUND	Left	33	85	52	158%	13	11	-2	-15%
	Through	182	202	20	11%	184	159	-25	-14%
	Right	73	109	36	49%	41	69	28	68%
	SB Total	288	396	108	38%	238	239	1	0%
EAST BOUND	Left	96	170	74	77%	92	192	100	109%
	Through	58	126	68	117%	89	124	35	39%
	Right	96	90	-6	-6%	53	74	21	40%
	EB Total	250	386	136	54%	234	390	156	67%
WEST BOUND	Left	11	8	-3	-27%	11	13	2	18%
	Through	96	94	-2	-2%	41	95	54	132%
	Right	75	103	28	37%	29	52	23	79%
	WB Total	182	205	23	13%	81	160	79	98%
TOTAL ENTERING VOLUME		1,260	1,520	260	21%	698	899	201	29%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	396	239			
North Leg	Outbound	690	333			
North Leg	**TOTAL**	**1,086**	**572**	**17%**	**9%**	**6,520**
South Leg	Inbound	533	110			
South Leg	Outbound	300	246			
South Leg	**TOTAL**	**833**	**356**	**74%**	**31%**	**1,131**
East Leg	Inbound	205	160			
East Leg	Outbound	230	139			
East Leg	**TOTAL**	**435**	**299**	**4%**	**3%**	**10,598**
West Leg	Inbound	386	390			
West Leg	Outbound	300	181			
West Leg	**TOTAL**	**686**	**571**	**9%**	**8%**	**7,497**
OVERALL TOTAL		***3,040***	***1,798***	**12%**	***7%***	***25,746***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Turner Av. & Ontario Ranch Rd.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	33	46	13	39%	16	18	2	13%
	Through	128	124	-4	-3%	11	19	8	73%
	Right	34	29	-5	-15%	27	13	-14	-52%
	NB Total	195	199	4	2%	54	50	-4	-7%
SOUTH BOUND	Left	51	220	169	331%	41	160	119	290%
	Through	63	77	14	22%	25	38	13	52%
	Right	19	131	112	589%	8	70	62	775%
	SB Total	133	428	295	222%	74	268	194	262%
EAST BOUND	Left	31	150	119	384%	16	158	142	888%
	Through	331	1,424	1,093	330%	809	2,207	1,398	173%
	Right	15	18	3	20%	43	45	2	5%
	EB Total	377	1,592	1,215	322%	868	2,410	1,542	178%
WEST BOUND	Left	31	16	-15	-48%	54	37	-17	-31%
	Through	538	1,526	988	184%	476	1,892	1,416	297%
	Right	24	48	24	100%	24	153	129	538%
	WB Total	593	1,590	997	168%	554	2,082	1,528	276%
TOTAL ENTERING VOLUME		1,298	3,809	2511	193%	1,550	4,810	3260	210%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	428	268			
North Leg	Outbound	322	330			
North Leg	**TOTAL**	**750**	**598**	**9%**	**7%**	**8,022**
South Leg	Inbound	199	50			
South Leg	Outbound	111	120			
South Leg	**TOTAL**	**310**	**170**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	1,590	2,082			
East Leg	Outbound	1,673	2,380			
East Leg	**TOTAL**	**3,263**	**4,462**	**6%**	**8%**	**54,034**
West Leg	Inbound	1,592	2,410			
West Leg	Outbound	1,703	1,980			
West Leg	**TOTAL**	**3,295**	**4,390**	**6%**	**8%**	**55,735**
OVERALL TOTAL		***7,618***	***9,620***	**6%**	***8%***	***117,791***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Haven Av. & SR-60 WB Ramps
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	297	286	-11	-4%	141	177	36	26%
	Through	1,309	2,197	888	68%	718	1,224	506	70%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	1,606	2,483	877	55%	859	1,401	542	63%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	656	1,184	528	80%	1,314	2,179	865	66%
	Right	301	322	21	7%	594	690	96	16%
	SB Total	957	1,506	549	57%	1,908	2,869	961	50%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
WEST BOUND	Left	162	186	24	15%	257	344	87	34%
	Through	3	2	-1	-33%	9	8	-1	-11%
	Right	617	733	116	19%	491	628	137	28%
	WB Total	782	921	139	18%	757	980	223	29%
TOTAL ENTERING VOLUME		3,345	4,910	1565	47%	3,524	5,250	1726	49%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,506	2,869			
North Leg	Outbound	2,930	1,852			
North Leg	**TOTAL**	**4,436**	**4,721**	**8%**	**8%**	**58,300**
South Leg	Inbound	2,483	1,401			
South Leg	Outbound	1,370	2,523			
South Leg	**TOTAL**	**3,853**	**3,924**	**7%**	**8%**	**51,505**
East Leg	Inbound	921	980			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**921**	**980**	**8%**	**9%**	**11,439**
West Leg	Inbound	0	0			
West Leg	Outbound	610	875			
West Leg	**TOTAL**	**610**	**875**	**10%**	**14%**	**6,120**
OVERALL TOTAL		***9,820***	***10,500***	***8%***	***8%***	***127,364***

Z:\Shared\UcJobs_14600-15000_14800\14822\02_LOS\Post Processing\[10_Haven & SR-60 WB Ramps.xls]Output (3)

Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Haven Av. & SR-60 EB Ramps
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	1,002	1,767	765	76%	600	1,164	564	94%
	Right	313	395	82	26%	175	229	54	31%
	NB Total	1,315	2,162	847	64%	775	1,393	618	80%
SOUTH BOUND	Left	241	336	95	39%	560	610	50	9%
	Through	599	1,051	452	75%	1,030	1,939	909	88%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	840	1,387	547	65%	1,590	2,549	959	60%
EAST BOUND	Left	602	714	112	19%	260	236	-24	-9%
	Through	3	3	0	0%	1	1	0	0%
	Right	163	174	11	7%	209	221	12	6%
	EB Total	768	891	123	16%	470	458	-12	-3%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		2,923	4,440	1517	52%	2,835	4,400	1565	55%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,387	2,549			
North Leg	Outbound	2,481	1,400			
North Leg	**TOTAL**	**3,868**	**3,949**	**7%**	**8%**	**51,604**
South Leg	Inbound	2,162	1,393			
South Leg	Outbound	1,225	2,160			
South Leg	**TOTAL**	**3,387**	**3,553**	**7%**	**8%**	**45,411**
East Leg	Inbound	0	0			
East Leg	Outbound	734	840			
East Leg	**TOTAL**	**734**	**840**	**7%**	**8%**	**10,529**
West Leg	Inbound	891	458			
West Leg	Outbound	0	0			
West Leg	**TOTAL**	**891**	**458**	**16%**	**8%**	**5,559**
OVERALL TOTAL		***8,880***	***8,800***	***8%***	***8%***	***113,103***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Haven Av. & Riverside Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	17	19	2	12%	28	65	37	132%
	Through	283	505	222	78%	295	642	347	118%
	Right	89	159	70	79%	50	153	103	206%
	NB Total	389	683	294	76%	373	860	487	131%
SOUTH BOUND	Left	260	478	218	84%	119	274	155	130%
	Through	174	412	238	137%	338	756	418	124%
	Right	223	255	32	14%	330	571	241	73%
	SB Total	657	1,145	488	74%	787	1,601	814	103%
EAST BOUND	Left	311	546	235	76%	276	462	186	67%
	Through	433	763	330	76%	290	683	393	136%
	Right	25	57	32	128%	46	105	59	128%
	EB Total	769	1,366	597	78%	612	1,250	638	104%
WEST BOUND	Left	99	321	222	224%	51	136	85	167%
	Through	336	526	190	57%	260	535	275	106%
	Right	175	439	264	151%	77	150	73	95%
	WB Total	610	1,286	676	111%	388	821	433	112%
TOTAL ENTERING VOLUME		2,425	4,480	2055	85%	2,160	4,532	2372	110%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,145	1,601			
North Leg	Outbound	1,490	1,254			
North Leg	**TOTAL**	**2,635**	**2,855**	**8%**	**8%**	**33,655**
South Leg	Inbound	683	860			
South Leg	Outbound	790	997			
South Leg	**TOTAL**	**1,473**	**1,857**	**5%**	**7%**	**27,969**
East Leg	Inbound	1,286	821			
East Leg	Outbound	1,400	1,110			
East Leg	**TOTAL**	**2,686**	**1,931**	**8%**	**6%**	**32,661**
West Leg	Inbound	1,366	1,250			
West Leg	Outbound	800	1,171			
West Leg	**TOTAL**	**2,166**	**2,421**	**7%**	**7%**	**32,504**
OVERALL TOTAL		***8,960***	***9,064***	***7%***	***7%***	***126,789***

Z:\Shared\UcJobs_14600-15000_14800\14822\02_LOS\Post Processing\[12_Haven & Riverside.xls]Output (3)

Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Haven Av. & Chino Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	143	158	15	10%	68	184	116	171%
	Through	364	685	321	88%	305	704	399	131%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	507	843	336	66%	373	888	515	138%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	197	611	414	210%	419	735	316	75%
	Right	37	106	69	186%	27	356	329	1219%
	SB Total	234	717	483	206%	446	1,091	645	145%
EAST BOUND	Left	49	252	203	414%	38	126	88	232%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	64	208	144	225%	67	35	-32	-48%
	EB Total	113	460	347	307%	105	161	56	53%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		854	2,020	1166	137%	924	2,140	1216	132%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	717	1,091			
North Leg	Outbound	937	830			
North Leg	**TOTAL**	**1,654**	**1,921**	**6%**	**7%**	**27,969**
South Leg	Inbound	843	888			
South Leg	Outbound	819	770			
South Leg	**TOTAL**	**1,662**	**1,658**	**7%**	**7%**	**23,274**
East Leg	Inbound	0	0			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**0**	**0**	**0%**	**0%**	**5,314**
West Leg	Inbound	460	161			
West Leg	Outbound	264	540			
West Leg	**TOTAL**	**724**	**701**	**5%**	**5%**	**14,592**
OVERALL TOTAL		***4,040***	***4,280***	**6%**	***6%***	***71,149***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	9/28/22

LOCATION: Haven Av. & Schaefer Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	56	55	5500%	1	30	29	2900%
	Through	2	458	456	22800%	2	351	349	17450%
	Right	1	146	145	14500%	1	369	368	36800%
	NB Total	4	660	656	16400%	4	750	746	18650%
SOUTH BOUND	Left	1	5	4	400%	1	311	310	31000%
	Through	2	32	30	1500%	2	513	511	25550%
	Right	1	2	1	100%	1	25	24	2400%
	SB Total	4	39	35	875%	4	849	845	21125%
EAST BOUND	Left	1	73	72	7200%	1	40	39	3900%
	Through	2	210	208	10400%	2	380	378	18900%
	Right	1	137	136	13600%	1	70	69	6900%
	EB Total	4	420	416	10400%	4	490	486	12150%
WEST BOUND	Left	1	553	552	55200%	1	257	256	25600%
	Through	2	323	321	16050%	2	114	112	5600%
	Right	1	293	292	29200%	1	148	147	14700%
	WB Total	4	1,169	1,165	29125%	4	519	515	12875%
TOTAL ENTERING VOLUME		16	2,288	2272	14200%	16	2,608	2592	16200%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	39	849			
North Leg	Outbound	824	539			
North Leg	**TOTAL**	**863**	**1,388**	**4%**	**6%**	**23,273**
South Leg	Inbound	660	750			
South Leg	Outbound	722	840			
South Leg	**TOTAL**	**1,382**	**1,590**	**6%**	**7%**	**23,691**
East Leg	Inbound	1,169	519			
East Leg	Outbound	361	1,060			
East Leg	**TOTAL**	**1,530**	**1,579**	**6%**	**6%**	**24,345**
West Leg	Inbound	420	490			
West Leg	Outbound	381	169			
West Leg	**TOTAL**	**801**	**659**	**14%**	**11%**	**5,763**
OVERALL TOTAL		***4,576***	***5,216***	**6%**	***7%***	***77,072***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Haven Av. & Ontario Ranch Rd.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	31	75	44	142%	17	93	76	447%
	Through	275	323	48	17%	176	399	223	127%
	Right	109	192	83	76%	65	117	52	80%
	NB Total	415	590	175	42%	258	609	351	136%
SOUTH BOUND	Left	187	489	302	161%	192	250	58	30%
	Through	176	419	243	138%	302	421	119	39%
	Right	48	172	124	258%	46	181	135	293%
	SB Total	411	1,080	669	163%	540	852	312	58%
EAST BOUND	Left	99	230	131	132%	141	462	321	228%
	Through	432	1,503	1,071	248%	685	1,778	1,093	160%
	Right	17	54	37	218%	34	95	61	179%
	EB Total	548	1,787	1,239	226%	860	2,335	1,475	172%
WEST BOUND	Left	69	127	58	84%	216	270	54	25%
	Through	396	1,092	696	176%	494	1,749	1,255	254%
	Right	138	186	48	35%	188	277	89	47%
	WB Total	603	1,405	802	133%	898	2,296	1,398	156%
TOTAL ENTERING VOLUME		1,977	4,862	2885	146%	2,556	6,092	3536	138%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,080	852			
North Leg	Outbound	739	1,138			
North Leg	**TOTAL**	**1,819**	**1,990**	**8%**	**8%**	**23,691**
South Leg	Inbound	590	609			
South Leg	Outbound	600	786			
South Leg	**TOTAL**	**1,190**	**1,395**	**13%**	**15%**	**9,052**
East Leg	Inbound	1,405	2,296			
East Leg	Outbound	2,184	2,145			
East Leg	**TOTAL**	**3,589**	**4,441**	**8%**	**9%**	**47,309**
West Leg	Inbound	1,787	2,335			
West Leg	Outbound	1,339	2,023			
West Leg	**TOTAL**	**3,126**	**4,358**	**6%**	**8%**	**54,034**
OVERALL TOTAL		***9,724***	***12,184***	***7%***	***9%***	***134,086***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	9/28/22

LOCATION: Mill Creek Av. & Riverside Dr.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	104	103	10300%	1	0	-1	-100%
	Through	2	0	-2	-100%	2	0	-2	-100%
	Right	1	251	250	25000%	1	0	-1	-100%
	NB Total	4	355	351	8775%	4	0	-4	-100%
SOUTH BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	2	0	-2	-100%	2	0	-2	-100%
	Right	1	0	-1	-100%	1	0	-1	-100%
	SB Total	4	0	-4	-100%	4	0	-4	-100%
EAST BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	2	779	777	38850%	2	1,340	1,338	66900%
	Right	1	27	26	2600%	1	86	85	8500%
	EB Total	4	806	802	20050%	4	1,426	1,422	35550%
WEST BOUND	Left	1	83	82	8200%	1	294	293	29300%
	Through	2	986	984	49200%	2	1,030	1,028	51400%
	Right	1	0	-1	-100%	1	0	-1	-100%
	WB Total	4	1,069	1,065	26625%	4	1,324	1,320	33000%
TOTAL ENTERING VOLUME		16	2,230	2214	13838%	16	2,750	2734	17088%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	0			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
South Leg	Inbound	355	0			
South Leg	Outbound	110	380			
South Leg	**TOTAL**	**465**	**380**	**8%**	**6%**	**6,155**
East Leg	Inbound	1,069	1,324			
East Leg	Outbound	1,030	1,340			
East Leg	**TOTAL**	**2,099**	**2,664**	**6%**	**8%**	**34,226**
West Leg	Inbound	806	1,426			
West Leg	Outbound	1,090	1,030			
West Leg	**TOTAL**	**1,896**	**2,456**	**6%**	**8%**	**29,243**
OVERALL TOTAL		***4,460***	***5,500***	**6%**	***8%***	***69,624***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	9/28/22

LOCATION: Mill Creek Av. & Chino Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	33	32	3200%	1	8	7	700%
	Through	2	62	60	3000%	2	0	-2	-100%
	Right	1	5	4	400%	1	2	1	100%
	NB Total	4	100	96	2400%	4	10	6	150%
SOUTH BOUND	Left	1	13	12	1200%	1	70	69	6900%
	Through	2	4	2	100%	2	78	76	3800%
	Right	1	95	94	9400%	1	236	235	23500%
	SB Total	4	112	108	2700%	4	384	380	9500%
EAST BOUND	Left	1	268	267	26700%	1	0	-1	-100%
	Through	2	182	180	9000%	2	488	486	24300%
	Right	1	6	5	500%	1	61	60	6000%
	EB Total	4	456	452	11300%	4	549	545	13625%
WEST BOUND	Left	1	0	-1	-100%	1	11	10	1000%
	Through	2	92	90	4500%	2	296	294	14700%
	Right	1	19	18	1800%	1	0	-1	-100%
	WB Total	4	111	107	2675%	4	307	303	7575%
TOTAL ENTERING VOLUME		16	779	763	4769%	16	1,250	1234	7713%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	112	384			
North Leg	Outbound	349	0			
North Leg	**TOTAL**	**461**	**384**	**7%**	**6%**	**6,155**
South Leg	Inbound	100	10			
South Leg	Outbound	10	150			
South Leg	**TOTAL**	**110**	**160**	**8%**	**12%**	**1,385**
East Leg	Inbound	111	307			
East Leg	Outbound	200	560			
East Leg	**TOTAL**	**311**	**867**	**4%**	**11%**	**7,869**
West Leg	Inbound	456	549			
West Leg	Outbound	220	540			
West Leg	**TOTAL**	**676**	**1,089**	**5%**	**8%**	**12,867**
OVERALL TOTAL		***1,558***	***2,500***	**6%**	***9%***	***28,276***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2040)	Analyst:	CP
		Date:	9/28/22

LOCATION: Mill Creek Av. & Ontario Ranch Rd.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	47	46	4600%	1	14	13	1300%
	Through	2	19	17	850%	2	1	-1	-50%
	Right	1	128	127	12700%	1	36	35	3500%
	NB Total	4	194	190	4750%	4	51	47	1175%
SOUTH BOUND	Left	1	0	-1	-100%	1	99	98	9800%
	Through	2	0	-2	-100%	2	14	12	600%
	Right	1	0	-1	-100%	1	39	38	3800%
	SB Total	4	0	-4	-100%	4	152	148	3700%
EAST BOUND	Left	1	24	23	2300%	1	3	2	200%
	Through	3	1,462	1,459	48633%	3	1,785	1,782	59400%
	Right	1	12	11	1100%	1	27	26	2600%
	EB Total	5	1,498	1,493	29860%	5	1,815	1,810	36200%
WEST BOUND	Left	1	28	27	2700%	1	59	58	5800%
	Through	3	1,273	1,270	42333%	3	1,526	1,523	50767%
	Right	1	57	56	5600%	1	6	5	500%
	WB Total	5	1,358	1,353	27060%	5	1,591	1,586	31720%
TOTAL ENTERING VOLUME		18	3,050	3032	16844%	18	3,609	3591	19950%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	152			
North Leg	Outbound	100	10			
North Leg	**TOTAL**	**100**	**162**	**8%**	**12%**	**1,301**
South Leg	Inbound	194	51			
South Leg	Outbound	40	100			
South Leg	**TOTAL**	**234**	**151**	**8%**	**5%**	**3,058**
East Leg	Inbound	1,358	1,591			
East Leg	Outbound	1,590	1,920			
East Leg	**TOTAL**	**2,948**	**3,511**	**5%**	**6%**	**55,493**
West Leg	Inbound	1,498	1,815			
West Leg	Outbound	1,320	1,579			
West Leg	**TOTAL**	**2,818**	**3,394**	**6%**	**7%**	**47,309**
OVERALL TOTAL		***6,100***	***7,218***	**6%**	***7%***	***107,161***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Milliken & SR-60 WB Ramps
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	257	142	-115	-45%	212	383	171	81%
	Through	921	1,588	667	72%	505	1,374	869	172%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	1,178	1,730	552	47%	717	1,757	1,040	145%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	265	915	650	245%	818	1,559	741	91%
	Right	128	182	54	42%	400	266	-134	-34%
	SB Total	393	1,097	704	179%	1,218	1,825	607	50%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
WEST BOUND	Left	113	125	12	11%	67	267	200	299%
	Through	2	1	-1	-50%	2	3	1	50%
	Right	474	677	203	43%	262	548	286	109%
	WB Total	589	803	214	36%	331	818	487	147%
TOTAL ENTERING VOLUME		2,160	3,630	1470	68%	2,266	4,400	2134	94%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,097	1,825			
North Leg	Outbound	2,265	1,922			
North Leg	**TOTAL**	**3,362**	**3,747**	**8%**	**9%**	**44,068**
South Leg	Inbound	1,730	1,757			
South Leg	Outbound	1,040	1,826			
South Leg	**TOTAL**	**2,770**	**3,583**	**6%**	**7%**	**47,911**
East Leg	Inbound	803	818			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**803**	**818**	**8%**	**8%**	**10,444**
West Leg	Inbound	0	0			
West Leg	Outbound	325	652			
West Leg	**TOTAL**	**325**	**652**	**8%**	**17%**	**3,949**
OVERALL TOTAL		***7,260***	***8,800***	***7%***	***8%***	***106,372***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Milliken & SR-60 EB Ramps
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	914	1,568	654	72%	564	1,722	1,158	205%
	Right	109	391	282	259%	117	352	235	201%
	NB Total	1,023	1,959	936	91%	681	2,074	1,393	205%
SOUTH BOUND	Left	48	68	20	42%	202	99	-103	-51%
	Through	317	928	611	193%	681	1,698	1,017	149%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	365	996	631	173%	883	1,797	914	104%
EAST BOUND	Left	302	192	-110	-36%	145	46	-99	-68%
	Through	1	1	0	0%	2	1	-1	-50%
	Right	176	482	306	174%	208	332	124	60%
	EB Total	479	675	196	41%	355	379	24	7%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		1,867	3,630	1763	94%	1,919	4,250	2331	121%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	996	1,797			
North Leg	Outbound	1,760	1,768			
North Leg	**TOTAL**	**2,756**	**3,565**	**6%**	**7%**	**47,911**
South Leg	Inbound	1,959	2,074			
South Leg	Outbound	1,410	2,030			
South Leg	**TOTAL**	**3,369**	**4,104**	**6%**	**8%**	**53,883**
East Leg	Inbound	0	0			
East Leg	Outbound	460	452			
East Leg	**TOTAL**	**460**	**452**	**4%**	**4%**	**11,111**
West Leg	Inbound	675	379			
West Leg	Outbound	0	0			
West Leg	**TOTAL**	**675**	**379**	**12%**	**7%**	**5,538**
OVERALL TOTAL		***7,260***	***8,500***	**6%**	***7%***	***118,443***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Milliken & Riverside Dr.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	140	263	123	88%	145	482	337	232%
	Through	733	1,368	635	87%	413	1,443	1,030	249%
	Right	33	62	29	88%	26	40	14	54%
	NB Total	906	1,693	787	87%	584	1,965	1,381	236%
SOUTH BOUND	Left	125	287	162	130%	116	164	48	41%
	Through	236	828	592	251%	638	1,418	780	122%
	Right	117	270	153	131%	164	504	340	207%
	SB Total	478	1,385	907	190%	918	2,086	1,168	127%
EAST BOUND	Left	127	371	244	192%	108	328	220	204%
	Through	55	161	106	193%	82	109	27	33%
	Right	138	619	481	349%	145	303	158	109%
	EB Total	320	1,151	831	260%	335	740	405	121%
WEST BOUND	Left	16	34	18	113%	61	109	48	79%
	Through	63	87	24	38%	77	191	114	148%
	Right	110	151	41	37%	96	250	154	160%
	WB Total	189	272	83	44%	234	550	316	135%
TOTAL ENTERING VOLUME		1,893	4,501	2608	138%	2,071	5,341	3270	158%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,385	2,086			
North Leg	Outbound	1,890	2,021			
North Leg	**TOTAL**	**3,275**	**4,107**	**6%**	**8%**	**53,883**
South Leg	Inbound	1,693	1,965			
South Leg	Outbound	1,481	1,830			
South Leg	**TOTAL**	**3,174**	**3,795**	**7%**	**9%**	**43,331**
East Leg	Inbound	272	550			
East Leg	Outbound	510	313			
East Leg	**TOTAL**	**782**	**863**	**5%**	**6%**	**14,843**
West Leg	Inbound	1,151	740			
West Leg	Outbound	620	1,177			
West Leg	**TOTAL**	**1,771**	**1,917**	**5%**	**6%**	**34,226**
OVERALL TOTAL		***9,002***	***10,682***	**6%**	***7%***	***146,283***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Hamner Av. & Chino Av.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	946	1,686	740	78%	597	1,905	1,308	219%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	946	1,686	740	78%	597	1,905	1,308	219%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	366	1,600	1,234	337%	837	1,855	1,018	122%
	Right	2	0	-2	-100%	2	10	8	400%
	SB Total	368	1,600	1,232	335%	839	1,865	1,026	122%
EAST BOUND	Left	4	24	20	500%	1	0	-1	-100%
	Through	0	0	0	#DIV/0!	1	0	-1	-100%
	Right	1	10	9	900%	0	0	0	#DIV/0!
	EB Total	5	34	29	580%	2	0	-2	-100%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		1,319	3,320	2001	152%	1,438	3,770	2332	162%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,600	1,865			
North Leg	Outbound	1,710	1,905			
North Leg	**TOTAL**	**3,310**	**3,770**	**8%**	**9%**	**41,423**
South Leg	Inbound	1,686	1,905			
South Leg	Outbound	1,610	1,855			
South Leg	**TOTAL**	**3,296**	**3,760**	**7%**	**8%**	**45,013**
East Leg	Inbound	0	0			
East Leg	Outbound	0	0			
East Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
West Leg	Inbound	34	0			
West Leg	Outbound	0	10			
West Leg	**TOTAL**	**34**	**10**	**0%**	**0%**	**7,869**
OVERALL TOTAL		***6,640***	***7,540***	***7%***	***8%***	***94,305***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Hamner Av. & Ontario Ranch Rd.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	133	314	181	136%	296	332	36	12%
	Through	572	749	177	31%	345	379	34	10%
	Right	297	187	-110	-37%	289	89	-200	-69%
	NB Total	1,002	1,250	248	25%	930	800	-130	-14%
SOUTH BOUND	Left	133	373	240	180%	222	611	389	175%
	Through	174	207	33	19%	496	826	330	67%
	Right	42	441	399	950%	77	774	697	905%
	SB Total	349	1,021	672	193%	795	2,211	1,416	178%
EAST BOUND	Left	127	850	723	569%	86	831	745	866%
	Through	470	1,509	1,039	221%	589	1,593	1,004	170%
	Right	68	93	25	37%	251	410	159	63%
	EB Total	665	2,452	1,787	269%	926	2,834	1,908	206%
WEST BOUND	Left	221	65	-156	-71%	366	176	-190	-52%
	Through	540	1,405	865	160%	565	1,637	1,072	190%
	Right	212	307	95	45%	124	352	228	184%
	WB Total	973	1,777	804	83%	1,055	2,165	1,110	105%
TOTAL ENTERING VOLUME		2,989	6,500	3511	117%	3,706	8,010	4304	116%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,021	2,211			
North Leg	Outbound	1,906	1,562			
North Leg	**TOTAL**	**2,927**	**3,773**	**6%**	**8%**	**48,295**
South Leg	Inbound	1,250	800			
South Leg	Outbound	365	1,412			
South Leg	**TOTAL**	**1,615**	**2,212**	**10%**	**14%**	**16,276**
East Leg	Inbound	1,777	2,165			
East Leg	Outbound	2,069	2,293			
East Leg	**TOTAL**	**3,846**	**4,458**	**7%**	**8%**	**53,422**
West Leg	Inbound	2,452	2,834			
West Leg	Outbound	2,160	2,743			
West Leg	**TOTAL**	**4,612**	**5,577**	**8%**	**10%**	**55,493**
OVERALL TOTAL		***13,000***	***16,020***	***7%***	***9%***	***173,486***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: I-15 SB Ramps & Cantu Galleano Rd.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	223	141	-82	-37%	263	284	21	8%
	Through	0	0	0	#DIV/0!	1	1	0	0%
	Right	816	1,539	723	89%	1,055	1,493	438	42%
	SB Total	1,039	1,680	641	62%	1,319	1,778	459	35%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	666	1,409	743	112%	999	1,901	902	90%
	Right	247	250	3	1%	321	322	1	0%
	EB Total	913	1,659	746	82%	1,320	2,223	903	68%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	621	701	80	13%	550	1,236	686	125%
	Right	104	360	256	246%	111	504	393	354%
	WB Total	725	1,061	336	46%	661	1,740	1,079	163%
TOTAL ENTERING VOLUME		2,677	4,400	1723	64%	3,300	5,741	2441	74%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	1,680	1,778			
North Leg	Outbound	360	504			
North Leg	**TOTAL**	**2,040**	**2,282**	**14%**	**16%**	**14,507**
South Leg	Inbound	0	0			
South Leg	Outbound	250	323			
South Leg	**TOTAL**	**250**	**323**	**#DIV/0!**	**#DIV/0!**	**-**
East Leg	Inbound	1,061	1,740			
East Leg	Outbound	1,550	2,185			
East Leg	**TOTAL**	**2,611**	**3,925**	**8%**	**12%**	**33,451**
West Leg	Inbound	1,659	2,223			
West Leg	Outbound	2,240	2,729			
West Leg	**TOTAL**	**3,899**	**4,952**	**8%**	**11%**	**45,895**
OVERALL TOTAL		***8,800***	***11,482***	**9%**	***12%***	***93,853***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: I-15 NB Ramps & Cantu Galleano Rd.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	410	622	212	52%	306	998	692	226%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	318	481	163	51%	120	126	6	5%
	NB Total	728	1,103	375	52%	426	1,124	698	164%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	354	529	175	49%	648	764	116	18%
	Right	564	1,057	493	87%	655	1,424	769	117%
	EB Total	918	1,586	668	73%	1,303	2,188	885	68%
WEST BOUND	Left	162	253	91	56%	190	236	46	24%
	Through	311	388	77	25%	330	692	362	110%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	473	641	168	36%	520	928	408	78%
TOTAL ENTERING VOLUME		2,119	3,330	1211	57%	2,249	4,240	1991	89%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	0	0			
North Leg	Outbound	0	0			
North Leg	**TOTAL**	**0**	**0**	**#DIV/0!**	**#DIV/0!**	**-**
South Leg	Inbound	1,103	1,124			
South Leg	Outbound	1,310	1,660			
South Leg	**TOTAL**	**2,413**	**2,784**	**8%**	**10%**	**28,937**
East Leg	Inbound	641	928			
East Leg	Outbound	1,010	890			
East Leg	**TOTAL**	**1,651**	**1,818**	**14%**	**16%**	**11,644**
West Leg	Inbound	1,586	2,188			
West Leg	Outbound	1,010	1,690			
West Leg	**TOTAL**	**2,596**	**3,878**	**8%**	**11%**	**34,283**
OVERALL TOTAL		***6,660***	***8,480***	**9%**	***11%***	***74,864***

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Project:	Rich Haven SP	Job #:	14822
Scenario:	Horizon Year (2050) Without Project	Analyst:	CP
		Date:	9/28/22

LOCATION: Wineville Av. & Cantu Galleano Rd.
FORECAST YEAR: 2050

INDIVIDUAL TURN VOLUME GROWTH REVIEW

		AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
APPROACH	TURNING MOVEMENT	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	219	209	-10	-5%	182	205	23	13%
	Through	274	250	-24	-9%	82	85	3	4%
	Right	16	11	-5	-31%	41	23	-18	-44%
	NB Total	509	470	-39	-8%	305	313	8	3%
SOUTH BOUND	Left	15	23	8	53%	27	29	2	7%
	Through	52	60	8	15%	155	120	-35	-23%
	Right	48	106	58	121%	121	266	145	120%
	SB Total	115	189	74	64%	303	415	112	37%
EAST BOUND	Left	308	568	260	84%	59	140	81	137%
	Through	226	307	81	36%	323	408	85	26%
	Right	232	233	1	0%	301	274	-27	-9%
	EB Total	766	1,108	342	45%	683	822	139	20%
WEST BOUND	Left	19	18	-1	-5%	22	16	-6	-27%
	Through	155	277	122	79%	213	449	236	111%
	Right	38	65	27	71%	18	35	17	94%
	WB Total	212	360	148	70%	253	500	247	98%
TOTAL ENTERING VOLUME		1,602	2,127	525	33%	1,544	2,050	506	33%

FORECAST PEAK HOUR TO ADT COMPARISON

		VOLUMES		PERCENT OF ADT		
		AM	PM	AM	PM	ADT
North Leg	Inbound	189	415			
North Leg	Outbound	883	260			
North Leg	**TOTAL**	**1,072**	**675**	**11%**	**7%**	**9,658**
South Leg	Inbound	470	313			
South Leg	Outbound	311	410			
South Leg	**TOTAL**	**781**	**723**	**14%**	**13%**	**5,466**
East Leg	Inbound	360	500			
East Leg	Outbound	341	460			
East Leg	**TOTAL**	**701**	**960**	**18%**	**24%**	**3,987**
West Leg	Inbound	1,108	822			
West Leg	Outbound	592	920			
West Leg	**TOTAL**	**1,700**	**1,742**	**15%**	**15%**	**11,643**
OVERALL TOTAL		***4,254***	***4,100***	**14%**	***13%***	***30,754***

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APPENDIX 5.1: E+P (PHASE 1) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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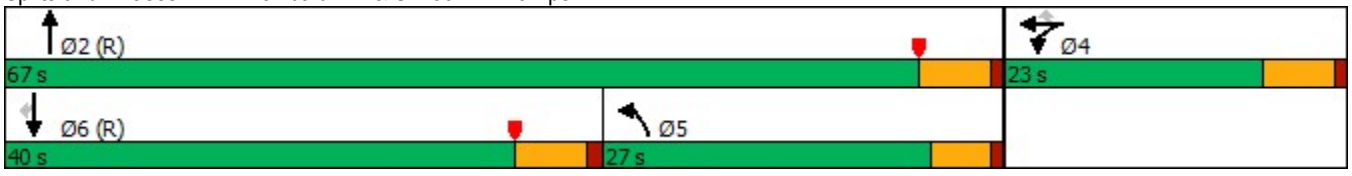
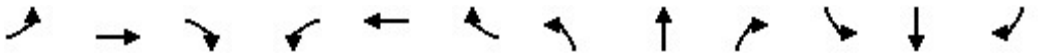
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	336	8	442	761	1014	424	160
Future Volume (vph)	336	8	442	761	1014	424	160
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	23.0	23.0	23.0	27.0	67.0	40.0	40.0
Total Split (%)	25.6%	25.6%	25.6%	30.0%	74.4%	44.4%	44.4%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	20.1	20.1	20.1	24.0	58.3	29.3	29.3
Actuated g/C Ratio	0.22	0.22	0.22	0.27	0.65	0.33	0.33
v/c Ratio	0.74	0.62	0.58	0.85	0.31	0.21	0.26
Control Delay	46.2	22.5	19.0	36.4	4.0	23.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	22.5	19.0	36.4	4.0	23.1	4.9
LOS	D	C	B	D	A	C	A
Approach Delay		29.6			17.9	18.1	
Approach LOS		C			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	336	8	442	761	1014	0	0	424	160
Future Volume (veh/h)	0	0	0	336	8	442	761	1014	0	0	424	160
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				488	0	268	777	1035	0	0	433	66
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				673	0	299	1726	3484	0	0	761	187
Arrive On Green				0.19	0.00	0.19	1.00	1.00	0.00	0.00	0.12	0.12
Sat Flow, veh/h				3563	0	1583	3456	5274	0	0	6696	1585
Grp Volume(v), veh/h				488	0	268	777	1035	0	0	433	66
Grp Sat Flow(s),veh/h/ln				1781	0	1583	1728	1702	0	0	1609	1585
Q Serve(g_s), s				11.6	0.0	14.9	0.0	0.0	0.0	0.0	5.7	3.4
Cycle Q Clear(g_c), s				11.6	0.0	14.9	0.0	0.0	0.0	0.0	5.7	3.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				673	0	299	1726	3484	0	0	761	187
V/C Ratio(X)				0.73	0.00	0.90	0.45	0.30	0.00	0.00	0.57	0.35
Avail Cap(c_a), veh/h				681	0	302	1726	3484	0	0	2445	602
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.84	0.84	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				34.3	0.0	35.6	0.0	0.0	0.0	0.0	37.5	36.5
Incr Delay (d2), s/veh				3.8	0.0	27.1	0.1	0.2	0.0	0.0	3.1	5.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	0.0	14.4	0.0	0.1	0.0	0.0	2.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.1	0.0	62.7	0.1	0.2	0.0	0.0	40.6	41.6
LnGrp LOS				D	A	E	A	A	A	A	D	D
Approach Vol, veh/h					756			1812			499	
Approach Delay, s/veh					46.8			0.1			40.7	
Approach LOS					D			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.2	22.8	50.8	16.4
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	61.2	17.2	22.0	* 34
Max Q Clear Time (g_c+I1), s	2.0	16.9	2.0	7.7
Green Ext Time (p_c), s	8.4	0.1	1.4	2.9

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Notes

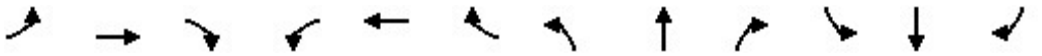
User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	350	5	425	1420	554	151	630
Future Volume (vph)	350	5	425	1420	554	151	630
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	34.0	34.0	34.0	44.0	44.0	12.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	48.9%	48.9%	13.3%	62.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	21.7	21.7	21.7	44.7	44.7	8.0	56.7
Actuated g/C Ratio	0.24	0.24	0.24	0.50	0.50	0.09	0.63
v/c Ratio	0.71	0.62	0.51	0.48	0.55	0.53	0.21
Control Delay	40.7	22.1	9.7	16.6	3.7	54.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	22.1	9.7	16.6	3.7	54.0	3.8
LOS	D	C	A	B	A	D	A
Approach Delay		24.6		13.0			13.5
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	5	425	0	0	0	0	1420	554	151	630	0
Future Volume (veh/h)	350	5	425	0	0	0	0	1420	554	151	630	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	454	0	164				0	1527	416	162	677	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	590	0	258				0	3826	922	230	3603	0
Arrive On Green	0.17	0.00	0.17				0.00	0.59	0.59	0.13	1.00	0.00
Sat Flow, veh/h	3563	0	1561				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	454	0	164				0	1527	416	162	677	0
Grp Sat Flow(s),veh/h/ln	1781	0	1561				0	1609	1551	1728	1702	0
Q Serve(g_s), s	11.0	0.0	8.8				0.0	11.4	13.4	4.0	0.0	0.0
Cycle Q Clear(g_c), s	11.0	0.0	8.8				0.0	11.4	13.4	4.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	590	0	258				0	3826	922	230	3603	0
V/C Ratio(X)	0.77	0.00	0.63				0.00	0.40	0.45	0.71	0.19	0.00
Avail Cap(c_a), veh/h	1116	0	489				0	3826	922	307	3603	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	35.9	0.0	35.0				0.0	9.7	10.1	38.2	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	2.6				0.0	0.3	1.6	2.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	3.4				0.0	3.3	4.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	0.0	37.6				0.0	10.0	11.7	40.4	0.1	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		618						1943			839	
Approach Delay, s/veh		37.9						10.4			7.9	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	10.0	59.3				69.3		20.7				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	8.0	38.2				50.2		28.2				
Max Q Clear Time (g_c+I1), s	6.0	15.4				2.0		13.0				
Green Ext Time (p_c), s	0.0	12.7				4.6		1.9				

Intersection Summary			
HCM 6th Ctrl Delay			14.8
HCM 6th LOS			B

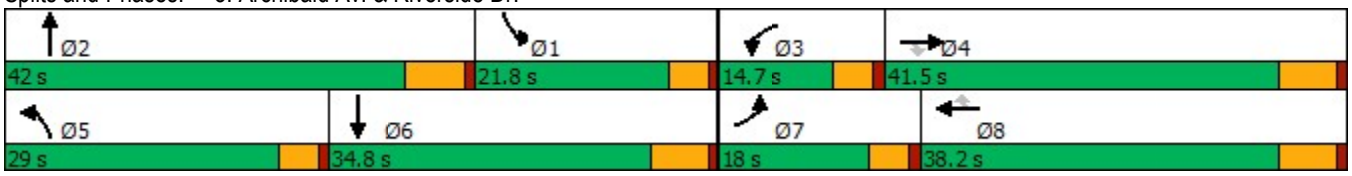
Notes

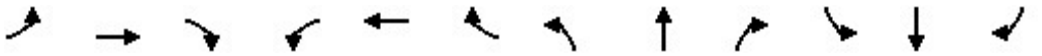
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	149	371	156	86	505	211	286	1328	175	538
Future Volume (vph)	149	371	156	86	505	211	286	1328	175	538
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	41.5	41.5	14.7	38.2	38.2	29.0	42.0	21.8	34.8
Total Split (%)	15.0%	34.6%	34.6%	12.3%	31.8%	31.8%	24.2%	35.0%	18.2%	29.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.9	27.2	27.2	9.1	23.4	23.4	23.2	36.0	15.4	28.2
Actuated g/C Ratio	0.12	0.25	0.25	0.08	0.21	0.21	0.21	0.33	0.14	0.26
v/c Ratio	0.83	0.46	0.33	0.69	0.73	0.45	0.89	0.93	0.82	0.60
Control Delay	83.4	37.0	6.4	77.0	46.8	7.8	71.2	47.7	75.0	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.4	37.0	6.4	77.0	46.8	7.8	71.2	47.7	75.0	35.8
LOS	F	D	A	E	D	A	E	D	E	D
Approach Delay		40.1			39.8			51.7		43.5
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 45.6	Intersection LOS: D
Intersection Capacity Utilization 83.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	371	156	86	505	211	286	1328	78	175	538	174
Future Volume (veh/h)	149	371	156	86	505	211	286	1328	78	175	538	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	155	386	104	90	526	156	298	1383	78	182	560	141
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	839	368	111	691	302	324	1540	87	209	1049	258
Arrive On Green	0.11	0.25	0.25	0.07	0.21	0.21	0.20	0.33	0.33	0.13	0.27	0.27
Sat Flow, veh/h	1594	3367	1477	1594	3367	1472	1594	4680	264	1594	3861	949
Grp Volume(v), veh/h	155	386	104	90	526	156	298	953	508	182	465	236
Grp Sat Flow(s),veh/h/ln	1594	1683	1477	1594	1683	1472	1594	1612	1720	1594	1612	1585
Q Serve(g_s), s	10.0	10.2	6.0	5.8	15.4	6.8	19.2	29.5	29.5	11.8	12.9	13.3
Cycle Q Clear(g_c), s	10.0	10.2	6.0	5.8	15.4	6.8	19.2	29.5	29.5	11.8	12.9	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.60
Lane Grp Cap(c), veh/h	181	839	368	111	691	302	324	1061	566	209	876	431
V/C Ratio(X)	0.86	0.46	0.28	0.81	0.76	0.52	0.92	0.90	0.90	0.87	0.53	0.55
Avail Cap(c_a), veh/h	204	1133	497	153	1027	449	371	1100	587	261	879	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	33.4	31.8	48.1	39.3	17.5	40.9	33.5	33.5	44.7	32.5	32.7
Incr Delay (d2), s/veh	24.2	0.4	0.4	14.4	1.9	1.4	24.1	9.8	16.4	19.3	0.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	4.0	2.1	2.7	6.2	3.4	9.3	12.1	13.9	5.5	4.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.9	33.8	32.2	62.6	41.2	18.8	65.0	43.3	49.9	64.0	33.1	34.1
LnGrp LOS	E	C	C	E	D	B	E	D	D	E	C	C
Approach Vol, veh/h		645			772			1759			883	
Approach Delay, s/veh		42.2			39.2			48.9			39.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	40.7	11.9	32.4	26.0	34.7	16.5	27.7
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.2	* 36	10.1	35.3	24.4	28.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	13.8	31.5	7.8	12.2	21.2	15.3	12.0	17.4
Green Ext Time (p_c), s	0.1	3.0	0.0	2.5	0.1	3.4	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

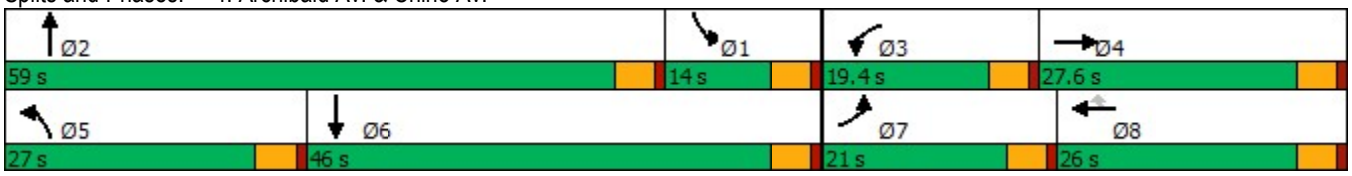
Notes

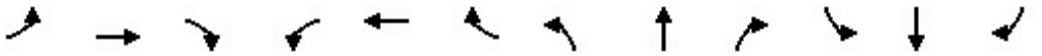
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	112	99	88	170	171	161	1297	51	631
Future Volume (vph)	112	99	88	170	171	161	1297	51	631
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	21.0	27.6	19.4	26.0	26.0	27.0	59.0	14.0	46.0
Total Split (%)	17.5%	23.0%	16.2%	21.7%	21.7%	22.5%	49.2%	11.7%	38.3%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.0	21.1	11.5	16.1	16.1	16.7	43.0	8.4	31.5
Actuated g/C Ratio	0.13	0.22	0.12	0.17	0.17	0.17	0.44	0.09	0.33
v/c Ratio	0.62	0.48	0.55	0.68	0.48	0.69	0.70	0.44	0.73
Control Delay	57.6	39.1	56.9	53.6	10.2	55.0	24.8	59.0	33.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	39.1	56.9	53.6	10.2	55.0	24.8	59.0	33.5
LOS	E	D	E	D	B	D	C	E	C
Approach Delay		46.9		37.0			27.9		35.3
Approach LOS		D		D			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 32.7	Intersection LOS: C
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	99	55	88	170	171	161	1297	94	51	631	71
Future Volume (veh/h)	112	99	55	88	170	171	161	1297	94	51	631	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	132	116	57	104	200	107	189	1526	103	60	742	76
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	191	94	131	265	224	230	2210	149	77	1114	114
Arrive On Green	0.10	0.17	0.17	0.08	0.15	0.15	0.14	0.45	0.45	0.05	0.35	0.35
Sat Flow, veh/h	1594	1122	551	1594	1772	1502	1594	4919	332	1594	3155	323
Grp Volume(v), veh/h	132	0	173	104	200	107	189	1099	530	60	417	401
Grp Sat Flow(s),veh/h/ln	1594	0	1673	1594	1772	1502	1594	1772	1707	1594	1772	1706
Q Serve(g_s), s	6.0	0.0	7.0	4.7	8.0	3.8	8.5	18.2	18.2	2.7	14.6	14.6
Cycle Q Clear(g_c), s	6.0	0.0	7.0	4.7	8.0	3.8	8.5	18.2	18.2	2.7	14.6	14.6
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.19	1.00		0.19
Lane Grp Cap(c), veh/h	165	0	286	131	265	224	230	1592	767	77	626	602
V/C Ratio(X)	0.80	0.00	0.61	0.80	0.76	0.48	0.82	0.69	0.69	0.78	0.67	0.67
Avail Cap(c_a), veh/h	355	0	523	321	515	437	485	2621	1262	204	997	960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	28.2	33.2	30.0	18.2	30.6	16.2	16.2	34.6	20.1	20.1
Incr Delay (d2), s/veh	8.7	0.0	2.1	10.5	4.4	1.6	7.2	0.5	1.1	15.8	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	2.8	2.1	3.5	1.7	3.3	5.9	5.8	1.3	5.3	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	30.3	43.7	34.4	19.8	37.8	16.7	17.3	50.5	21.3	21.4
LnGrp LOS	D	A	C	D	C	B	D	B	B	D	C	C
Approach Vol, veh/h		305			411			1818			878	
Approach Delay, s/veh		34.9			32.9			19.1			23.4	
Approach LOS		C			C			B			C	

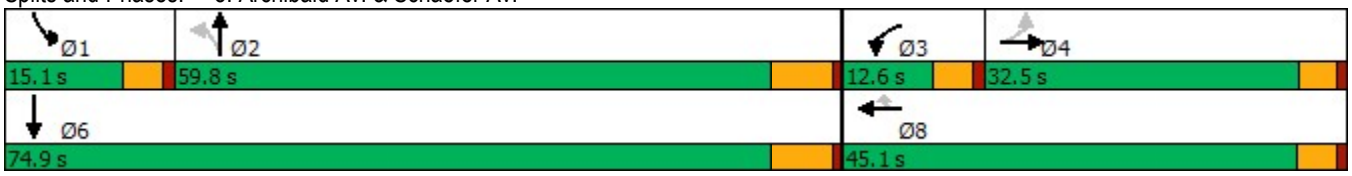
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	37.6	10.6	17.2	15.2	30.6	12.2	15.6
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	9.4	54.4	14.8	23.0	22.4	41.4	16.4	21.4
Max Q Clear Time (g_c+I1), s	4.7	20.2	6.7	9.0	10.5	16.6	8.0	10.0
Green Ext Time (p_c), s	0.0	12.8	0.1	0.7	0.4	4.7	0.2	1.0

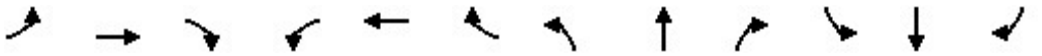
Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	35	62	1389	46	813	
Future Volume (vph)	35	62	1389	46	813	
Turn Type	Prot	Perm	NA	Prot	NA	
Protected Phases	3		2	1	6	4
Permitted Phases		8				
Detector Phase	3	8	2	1	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	32.6	37.5	9.6	23.5	32.5
Total Split (s)	12.6	45.1	59.8	15.1	74.9	32.5
Total Split (%)	10.5%	37.6%	49.8%	12.6%	62.4%	27%
Yellow Time (s)	3.6	3.6	5.5	3.6	5.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	4.6	6.5	4.6	6.5	
Lead/Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	10.2	10.5	38.7	8.6	45.0	
Actuated g/C Ratio	0.17	0.17	0.64	0.14	0.74	
v/c Ratio	0.16	0.19	0.55	0.25	0.39	
Control Delay	29.7	1.0	12.1	37.0	5.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	29.7	1.0	12.1	37.0	5.6	
LOS	C	A	B	D	A	
Approach Delay			12.1		7.3	
Approach LOS			B		A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 60.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 10.3	Intersection LOS: B
Intersection Capacity Utilization 65.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	35	0	62	0	1389	26	46	813	0
Future Volume (veh/h)	0	0	0	35	0	62	0	1389	26	46	813	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.93	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	0	0	0	42	0	74	0	1654	19	55	968	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	127	0	67	335	265	118	2484	29	79	2118	0
Arrive On Green	0.00	0.00	0.00	0.04	0.00	0.19	0.00	0.50	0.50	0.05	0.63	0.00
Sat Flow, veh/h	1186	1772	0	1594	1772	1401	519	4928	57	1594	3455	0
Grp Volume(v), veh/h	0	0	0	42	0	74	0	1082	591	55	968	0
Grp Sat Flow(s),veh/h/ln	1186	1772	0	1594	1772	1401	519	1612	1760	1594	1683	0
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	2.8	0.0	15.3	15.3	2.1	9.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.6	0.0	2.8	0.0	15.3	15.3	2.1	9.1	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h	118	127	0	67	335	265	118	1625	887	79	2118	0
V/C Ratio(X)	0.00	0.00	0.00	0.63	0.00	0.28	0.00	0.67	0.67	0.69	0.46	0.00
Avail Cap(c_a), veh/h	578	814	0	209	1177	931	311	2820	1539	275	3778	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	28.7	0.0	21.2	0.0	11.3	11.3	28.5	5.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.6	0.0	0.6	0.0	0.5	0.9	4.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.6	0.0	0.8	0.0	3.7	4.1	0.8	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.4	0.0	21.7	0.0	11.8	12.2	32.5	6.0	0.0
LnGrp LOS	A	A	A	C	A	C	A	B	B	C	A	A
Approach Vol, veh/h		0			116			1673			1023	
Approach Delay, s/veh		0.0			25.6			11.9			7.5	
Approach LOS					C			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	7.6	37.2	7.1	9.0		44.8		16.1				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	10.5	53.3	8.0	* 28		68.4		40.5				
Max Q Clear Time (g_c+I1), s	4.1	17.3	3.6	0.0		11.1		4.8				
Green Ext Time (p_c), s	0.0	13.4	0.0	0.0		7.1		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

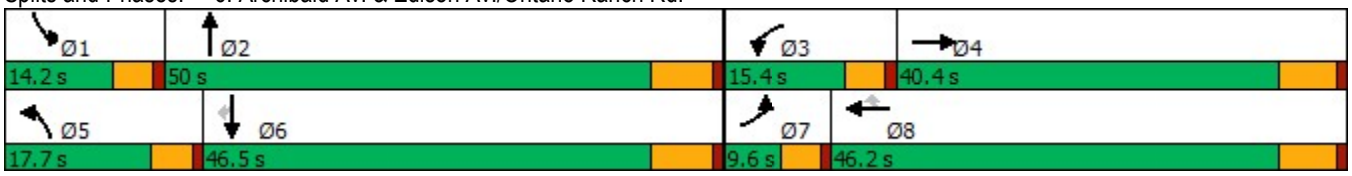
Notes

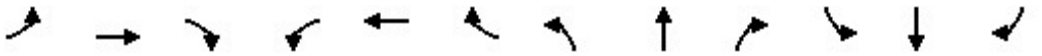
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	260	65	357	456	211	167	1045	352	156	499	62
Future Volume (vph)	35	260	65	357	456	211	167	1045	352	156	499	62
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	40.4		15.4	46.2	46.2	17.7	50.0		14.2	46.5	46.5
Total Split (%)	8.0%	33.7%		12.8%	38.5%	38.5%	14.8%	41.7%		11.8%	38.8%	38.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.1	24.7	107.3	11.1	35.4	35.4	13.4	39.1	107.3	9.9	35.6	35.6
Actuated g/C Ratio	0.05	0.23	1.00	0.10	0.33	0.33	0.12	0.36	1.00	0.09	0.33	0.33
v/c Ratio	0.27	0.35	0.05	1.27	0.86	0.36	0.93	0.89	0.26	1.18	0.47	0.12
Control Delay	59.6	35.2	0.1	186.9	51.0	5.6	98.6	43.0	0.4	176.6	30.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	35.2	0.1	186.9	51.0	5.6	98.6	43.0	0.4	176.6	30.8	0.4
LOS	E	D	A	F	D	A	F	D	A	F	C	A
Approach Delay		31.2			89.0			39.4			59.9	
Approach LOS		C			F			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 56.4	Intersection LOS: E
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	260	65	357	456	211	167	1045	352	156	499	62
Future Volume (veh/h)	35	260	65	357	456	211	167	1045	352	156	499	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	38	286	0	392	501	209	184	1148	0	171	548	57
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	861		301	552	462	194	1292		142	1177	487
Arrive On Green	0.03	0.24	0.00	0.10	0.31	0.31	0.12	0.36	0.00	0.09	0.33	0.33
Sat Flow, veh/h	3000	3544	1502	3000	1772	1483	1594	3544	1502	1594	3544	1468
Grp Volume(v), veh/h	38	286	0	392	501	209	184	1148	0	171	548	57
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1483	1594	1772	1502	1594	1772	1468
Q Serve(g_s), s	1.3	7.2	0.0	10.8	29.2	12.2	12.4	32.8	0.0	9.6	13.2	2.9
Cycle Q Clear(g_c), s	1.3	7.2	0.0	10.8	29.2	12.2	12.4	32.8	0.0	9.6	13.2	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	861		301	552	462	194	1292		142	1177	487
V/C Ratio(X)	0.40	0.33		1.30	0.91	0.45	0.95	0.89		1.20	0.47	0.12
Avail Cap(c_a), veh/h	139	1124		301	658	550	194	1430		142	1315	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	33.6	0.0	48.5	35.6	29.7	47.0	32.2	0.0	49.1	28.4	25.0
Incr Delay (d2), s/veh	1.0	0.2	0.0	159.0	14.7	0.7	49.8	6.8	0.0	140.9	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.0	0.0	10.5	14.0	4.2	7.3	14.0	0.0	9.2	5.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	33.8	0.0	207.5	50.3	30.4	96.9	39.0	0.0	190.0	28.7	25.1
LnGrp LOS	D	C		F	D	C	F	D		F	C	C
Approach Vol, veh/h		324	A		1102			1332	A		776	
Approach Delay, s/veh		36.0			102.4			47.0			64.0	
Approach LOS		D			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	45.8	15.4	32.4	17.7	42.3	8.0	39.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	9.6	43.5	10.8	34.2	13.1	40.0	5.0	40.0
Max Q Clear Time (g_c+I1), s	11.6	34.8	12.8	9.2	14.4	15.2	3.3	31.2
Green Ext Time (p_c), s	0.0	4.5	0.0	1.6	0.0	3.4	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	67.0
HCM 6th LOS	E

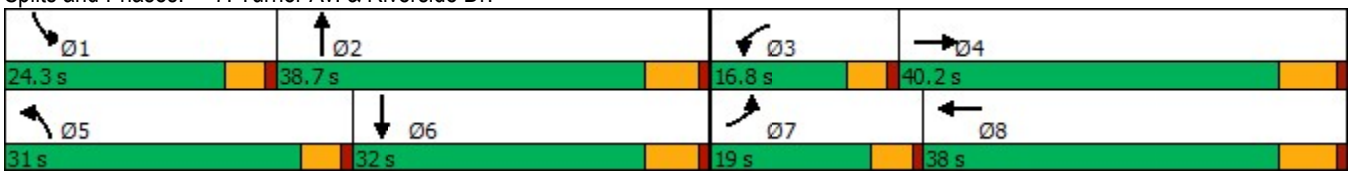
Notes

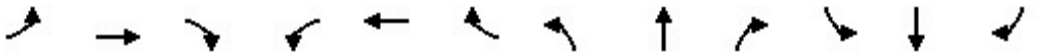
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	119	408	85	519	237	208	111	161
Future Volume (vph)	119	408	85	519	237	208	111	161
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	19.0	40.2	16.8	38.0	31.0	38.7	24.3	32.0
Total Split (%)	15.8%	33.5%	14.0%	31.7%	25.8%	32.3%	20.3%	26.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	13.0	32.5	10.5	29.9	23.2	24.0	13.4	14.1
Actuated g/C Ratio	0.13	0.32	0.10	0.29	0.23	0.24	0.13	0.14
v/c Ratio	0.75	0.63	0.66	0.85	0.83	0.62	0.68	0.63
Control Delay	68.3	32.8	66.8	43.5	59.2	24.2	60.6	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	32.8	66.8	43.5	59.2	24.2	60.6	32.1
LOS	E	C	E	D	E	C	E	C
Approach Delay		39.4		46.2		36.7		40.4
Approach LOS		D		D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.9	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 40.9	Intersection LOS: D
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	408	113	85	519	129	237	208	219	111	161	110
Future Volume (veh/h)	119	408	113	85	519	129	237	208	219	111	161	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.94	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	151	516	82	108	657	105	300	263	243	141	204	117
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	873	138	133	788	126	333	454	382	171	350	191
Arrive On Green	0.11	0.30	0.30	0.08	0.27	0.27	0.21	0.27	0.27	0.11	0.17	0.17
Sat Flow, veh/h	1594	2896	458	1594	2901	463	1594	1683	1415	1594	2085	1139
Grp Volume(v), veh/h	151	299	299	108	381	381	300	263	243	141	163	158
Grp Sat Flow(s),veh/h/ln	1594	1683	1671	1594	1683	1681	1594	1683	1415	1594	1683	1540
Q Serve(g_s), s	8.3	13.4	13.5	5.9	18.9	19.0	16.3	12.0	13.5	7.7	7.9	8.5
Cycle Q Clear(g_c), s	8.3	13.4	13.5	5.9	18.9	19.0	16.3	12.0	13.5	7.7	7.9	8.5
Prop In Lane	1.00		0.27	1.00		0.28	1.00		1.00	1.00		0.74
Lane Grp Cap(c), veh/h	180	507	504	133	457	456	333	454	382	171	283	259
V/C Ratio(X)	0.84	0.59	0.59	0.81	0.83	0.84	0.90	0.58	0.64	0.83	0.58	0.61
Avail Cap(c_a), veh/h	258	644	639	219	602	601	473	623	524	353	496	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	26.4	26.4	40.1	30.5	30.5	34.3	28.1	28.6	38.9	34.1	34.3
Incr Delay (d2), s/veh	10.6	1.1	1.1	4.5	7.6	7.7	12.5	1.2	1.8	3.8	1.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.0	5.1	2.3	7.9	8.0	7.1	4.7	4.4	3.0	3.2	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	27.5	27.6	44.6	38.1	38.2	46.8	29.3	30.4	42.7	35.9	36.6
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	D	D
Approach Vol, veh/h		749			870			806			462	
Approach Delay, s/veh		31.9			38.9			36.1			38.2	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	29.8	12.0	33.0	23.2	20.7	14.7	30.3
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	19.7	32.9	12.2	34.0	26.4	26.2	14.4	31.8
Max Q Clear Time (g_c+I1), s	9.7	15.5	7.9	15.5	18.3	10.5	10.3	21.0
Green Ext Time (p_c), s	0.1	2.7	0.0	3.0	0.3	1.5	0.1	3.1

Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	26.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	92	97	26	174	90	129	396	24	40	186	74
Future Vol, veh/h	97	92	97	26	174	90	129	396	24	40	186	74
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	131	124	131	35	235	122	174	535	32	54	251	100
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

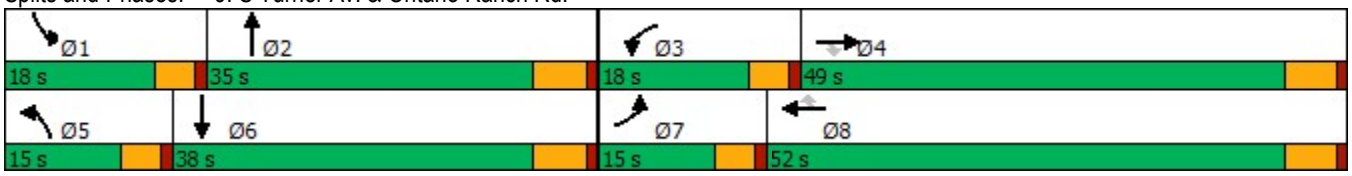
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	18.9	20.9	36.6	20.2
HCM LOS	C	C	E	C

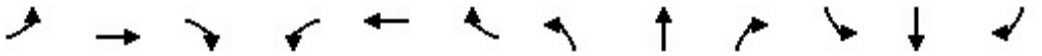
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	85%	0%	100%	24%	0%	100%	39%	0%	100%	46%
Vol Right, %	0%	0%	15%	0%	0%	76%	0%	0%	61%	0%	0%	54%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	264	156	97	61	128	26	116	148	40	124	136
LT Vol	129	0	0	97	0	0	26	0	0	40	0	0
Through Vol	0	264	132	0	61	31	0	116	58	0	124	62
RT Vol	0	0	24	0	0	97	0	0	90	0	0	74
Lane Flow Rate	174	357	211	131	83	173	35	157	200	54	168	184
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.462	0.897	0.524	0.381	0.229	0.452	0.102	0.433	0.529	0.156	0.46	0.485
Departure Headway (Hd)	9.551	9.051	8.944	10.467	9.967	9.435	10.454	9.954	9.528	10.386	9.886	9.505
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	377	400	403	343	360	381	342	361	378	344	364	379
Service Time	7.324	6.824	6.716	8.251	7.751	7.22	8.237	7.737	7.312	8.172	7.672	7.291
HCM Lane V/C Ratio	0.462	0.892	0.524	0.382	0.231	0.454	0.102	0.435	0.529	0.157	0.462	0.485
HCM Control Delay	20.3	53.6	21.2	19.6	15.7	19.8	14.4	20.2	22.6	15.1	20.9	21
HCM Lane LOS	C	F	C	C	C	C	B	C	C	C	C	C
HCM 95th-tile Q	2.4	9.3	2.9	1.7	0.9	2.3	0.3	2.1	3	0.5	2.3	2.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	746	15	80	1055	58	34	129	71	64
Future Volume (vph)	32	746	15	80	1055	58	34	129	71	64
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	15.0	49.0	49.0	18.0	52.0	52.0	15.0	35.0	18.0	38.0
Total Split (%)	12.5%	40.8%	40.8%	15.0%	43.3%	43.3%	12.5%	29.2%	15.0%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	7.3	31.9	31.9	9.5	36.5	36.5	7.3	15.2	9.1	19.4
Actuated g/C Ratio	0.09	0.39	0.39	0.12	0.45	0.45	0.09	0.19	0.11	0.24
v/c Ratio	0.23	0.60	0.02	0.43	0.74	0.08	0.24	0.56	0.40	0.21
Control Delay	48.2	24.2	0.1	48.5	24.5	1.0	48.2	40.5	48.1	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	24.2	0.1	48.5	24.5	1.0	48.2	40.5	48.1	29.6
LOS	D	C	A	D	C	A	D	D	D	C
Approach Delay		24.7			24.9			41.8		38.1
Approach LOS		C			C			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 81.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 27.2	Intersection LOS: C
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	746	15	80	1055	58	34	129	45	71	64	19
Future Volume (veh/h)	32	746	15	80	1055	58	34	129	45	71	64	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	829	13	89	1172	56	38	143	44	79	71	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1468	655	115	1567	699	68	197	61	104	263	37
Arrive On Green	0.04	0.41	0.41	0.06	0.44	0.44	0.04	0.14	0.14	0.06	0.16	0.16
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1372	422	1781	1604	226
Grp Volume(v), veh/h	36	829	13	89	1172	56	38	0	187	79	0	81
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1794	1781	0	1830
Q Serve(g_s), s	1.3	11.6	0.3	3.2	17.9	1.3	1.4	0.0	6.5	2.8	0.0	2.5
Cycle Q Clear(g_c), s	1.3	11.6	0.3	3.2	17.9	1.3	1.4	0.0	6.5	2.8	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.12
Lane Grp Cap(c), veh/h	66	1468	655	115	1567	699	68	0	258	104	0	300
V/C Ratio(X)	0.55	0.56	0.02	0.77	0.75	0.08	0.56	0.00	0.73	0.76	0.00	0.27
Avail Cap(c_a), veh/h	285	2363	1054	367	2527	1127	285	0	807	367	0	907
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	14.6	11.3	29.9	15.2	10.5	30.7	0.0	26.6	30.1	0.0	23.8
Incr Delay (d2), s/veh	2.7	0.3	0.0	4.1	0.7	0.0	2.6	0.0	3.9	4.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.7	0.1	1.4	5.7	0.4	0.6	0.0	2.8	1.2	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	14.9	11.3	34.1	15.9	10.6	33.4	0.0	30.4	34.3	0.0	24.2
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	A	C
Approach Vol, veh/h		878			1317			225			160	
Approach Delay, s/veh		15.6			16.9			30.9			29.2	
Approach LOS		B			B			C			C	

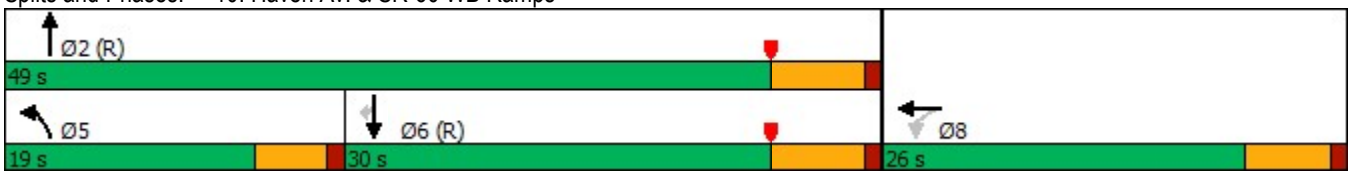
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	15.1	8.8	32.6	7.1	16.5	7.0	34.4
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.4	29.2	13.4	43.2	10.4	32.2	10.4	46.2
Max Q Clear Time (g_c+I1), s	4.8	8.5	5.2	13.6	3.4	4.5	3.3	19.9
Green Ext Time (p_c), s	0.0	0.9	0.0	5.6	0.0	0.3	0.0	8.8

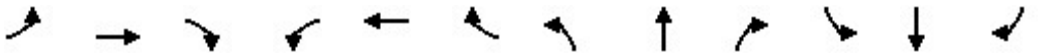
Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	186	4	716	574	1551	822	407
Future Volume (vph)	186	4	716	574	1551	822	407
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	26.0	26.0		19.0	49.0	30.0	30.0
Total Split (%)	34.7%	34.7%		25.3%	65.3%	40.0%	40.0%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.3	19.3	75.0	14.1	43.7	24.6	24.6
Actuated g/C Ratio	0.26	0.26	1.00	0.19	0.58	0.33	0.33
v/c Ratio	0.86	0.87	0.47	0.93	0.55	0.51	0.53
Control Delay	47.9	48.6	1.0	44.4	12.5	21.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	48.6	1.0	44.4	12.5	21.9	5.0
LOS	D	D	A	D	B	C	A
Approach Delay		24.7			21.1	16.3	
Approach LOS		C			C	B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 45 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	186	4	716	574	1551	0	0	822	407
Future Volume (veh/h)	0	0	0	186	4	716	574	1551	0	0	822	407
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				747	0	0	598	1616	0	0	856	268
Peak Hour Factor				0.25	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				858	0		645	3059	0	0	1765	541
Arrive On Green				0.24	0.00	0.00	0.37	1.00	0.00	0.00	0.35	0.35
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1564
Grp Volume(v), veh/h				747	0	0	598	1616	0	0	856	268
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1564
Q Serve(g_s), s				15.1	0.0	0.0	12.4	0.0	0.0	0.0	9.9	10.1
Cycle Q Clear(g_c), s				15.1	0.0	0.0	12.4	0.0	0.0	0.0	9.9	10.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				858	0		645	3059	0	0	1765	541
V/C Ratio(X)				0.87	0.00		0.93	0.53	0.00	0.00	0.48	0.50
Avail Cap(c_a), veh/h				960	0		645	3059	0	0	1765	541
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.28	0.28	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				27.3	0.0	0.0	23.0	0.0	0.0	0.0	19.3	19.4
Incr Delay (d2), s/veh				8.1	0.0	0.0	7.1	0.2	0.0	0.0	1.0	3.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.8	0.0	0.0	4.2	0.1	0.0	0.0	3.6	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				35.4	0.0	0.0	30.1	0.2	0.0	0.0	20.2	22.6
LnGrp LOS				D	A		C	A	A	A	C	C
Approach Vol, veh/h					747	A		2214			1124	
Approach Delay, s/veh					35.4			8.3			20.8	
Approach LOS					D			A			C	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	51.1		19.0	32.1		23.9						
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8						
Max Green Setting (Gmax), s	42.8		14.0	23.8		20.2						
Max Q Clear Time (g_c+I1), s	2.0		14.4	12.1		17.1						
Green Ext Time (p_c), s	9.3		0.0	3.4		1.0						

Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Notes

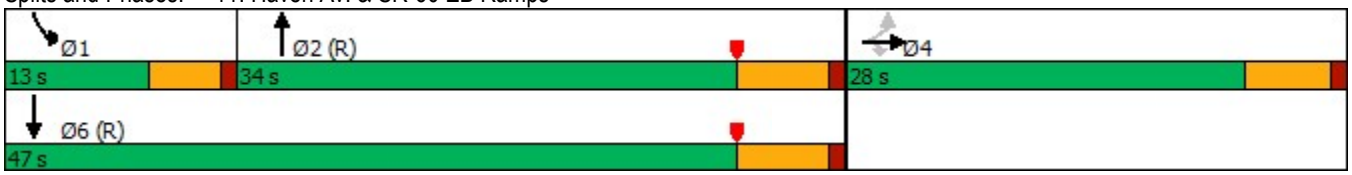
User approved volume balancing among the lanes for turning movement.

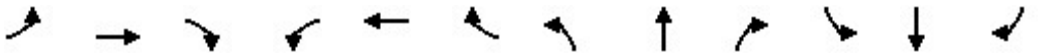
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	718	5	309	1391	324	712
Future Volume (vph)	718	5	309	1391	324	712
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	28.0	28.0	28.0	34.0	13.0	47.0
Total Split (%)	37.3%	37.3%	37.3%	45.3%	17.3%	62.7%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	20.7	20.7	20.7	28.5	8.8	42.3
Actuated g/C Ratio	0.28	0.28	0.28	0.38	0.12	0.56
v/c Ratio	0.81	0.82	0.57	0.94	0.85	0.26
Control Delay	40.7	41.3	14.5	33.2	50.9	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	41.3	14.5	33.2	50.9	8.8
LOS	D	D	B	C	D	A
Approach Delay		33.0		33.2		22.0
Approach LOS		C		C		C

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 48 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	718	5	309	0	0	0	0	1391	321	324	712	0
Future Volume (veh/h)	718	5	309	0	0	0	0	1391	321	324	712	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	760	0	167				0	1464	180	341	749	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	899	0	400				0	1906	234	369	3001	0
Arrive On Green	0.25	0.00	0.25				0.00	0.41	0.41	0.21	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4767	565	3456	5274	0
Grp Volume(v), veh/h	760	0	167				0	1083	561	341	749	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1759	1728	1702	0
Q Serve(g_s), s	15.2	0.0	6.6				0.0	20.5	20.5	7.3	0.0	0.0
Cycle Q Clear(g_c), s	15.2	0.0	6.6				0.0	20.5	20.5	7.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.32	1.00		0.00
Lane Grp Cap(c), veh/h	899	0	400				0	1411	729	369	3001	0
V/C Ratio(X)	0.85	0.00	0.42				0.00	0.77	0.77	0.93	0.25	0.00
Avail Cap(c_a), veh/h	1055	0	469				0	1411	729	369	3001	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.75	0.75	0.00
Uniform Delay (d), s/veh	26.7	0.0	23.4				0.0	18.9	18.9	29.2	0.0	0.0
Incr Delay (d2), s/veh	5.7	0.0	0.7				0.0	4.1	7.6	23.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	2.3				0.0	7.7	8.6	3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	0.0	24.1				0.0	22.9	26.5	52.7	0.1	0.0
LnGrp LOS	C	A	C				A	C	C	D	A	A
Approach Vol, veh/h		927						1644			1090	
Approach Delay, s/veh		30.9						24.2			16.6	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	37.3		24.7		50.3
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	8.0	27.8		22.2		40.8
Max Q Clear Time (g_c+I1), s	9.3	22.5		17.2		2.0
Green Ext Time (p_c), s	0.0	3.2		1.7		3.3

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

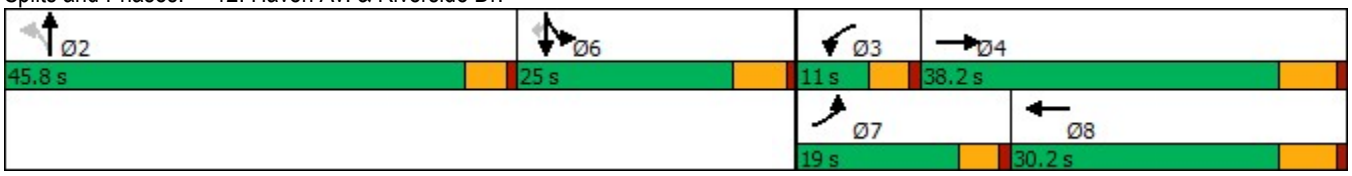
Notes

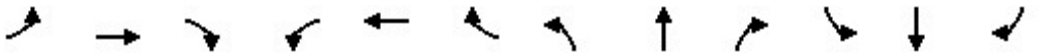
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	323	485	114	378	47	672	293	392	229
Future Volume (vph)	323	485	114	378	47	672	293	392	229
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	38.2	11.0	30.2	45.8	45.8	25.0	25.0	25.0
Total Split (%)	15.8%	31.8%	9.2%	25.2%	38.2%	38.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.4	32.0	6.4	24.0		41.1	19.2	19.2	19.2
Actuated g/C Ratio	0.12	0.27	0.05	0.20		0.34	0.16	0.16	0.16
v/c Ratio	1.82	1.20	1.44	0.88		7.48	1.23	1.48	0.57
Control Delay	419.9	149.1	293.3	57.6		2940.6	176.7	269.8	13.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	419.9	149.1	293.3	57.6		2940.6	176.7	269.8	13.0
LOS	F	F	F	E		F	F	F	B
Approach Delay		252.5		97.2		2940.6		175.5	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 7.48	
Intersection Signal Delay: 876.7	Intersection LOS: F
Intersection Capacity Utilization 125.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	485	39	114	378	185	47	672	103	293	392	229
Future Volume (veh/h)	323	485	39	114	378	185	47	672	103	293	392	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	344	516	38	121	402	161	50	715	93	312	417	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	432	32	85	465	183	35	494	64	255	284	235
Arrive On Green	0.12	0.27	0.27	0.05	0.20	0.20	0.34	0.34	0.34	0.16	0.16	0.16
Sat Flow, veh/h	1594	1619	119	1594	2323	916	101	1442	188	1594	1772	1468
Grp Volume(v), veh/h	344	0	554	121	290	273	858	0	0	312	417	68
Grp Sat Flow(s),veh/h/ln	1594	0	1738	1594	1683	1556	1730	0	0	1594	1772	1468
Q Serve(g_s), s	14.4	0.0	32.0	6.4	19.9	20.5	41.1	0.0	0.0	19.2	19.2	4.9
Cycle Q Clear(g_c), s	14.4	0.0	32.0	6.4	19.9	20.5	41.1	0.0	0.0	19.2	19.2	4.9
Prop In Lane	1.00		0.07	1.00		0.59	0.06		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	191	0	464	85	337	311	592	0	0	255	284	235
V/C Ratio(X)	1.80	0.00	1.20	1.42	0.86	0.88	1.45	0.00	0.00	1.22	1.47	0.29
Avail Cap(c_a), veh/h	191	0	464	85	337	311	592	0	0	255	284	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	44.0	56.8	46.4	46.6	39.5	0.0	0.0	50.4	50.4	44.4
Incr Delay (d2), s/veh	379.5	0.0	107.3	245.8	19.6	23.7	211.1	0.0	0.0	130.4	230.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.7	0.0	26.9	8.3	9.8	9.6	51.9	0.0	0.0	16.6	26.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	432.3	0.0	151.3	302.6	65.9	70.3	250.5	0.0	0.0	180.8	280.5	45.1
LnGrp LOS	F	A	F	F	E	E	F	A	A	F	F	D
Approach Vol, veh/h		898			684			858			797	
Approach Delay, s/veh		258.9			109.5			250.5			221.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.8	11.0	38.2		25.0	19.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 41	6.4	32.0		19.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		43.1	8.4	34.0		21.2	16.4	22.5				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.5				

Intersection Summary		
HCM 6th Ctrl Delay		215.9
HCM 6th LOS		F

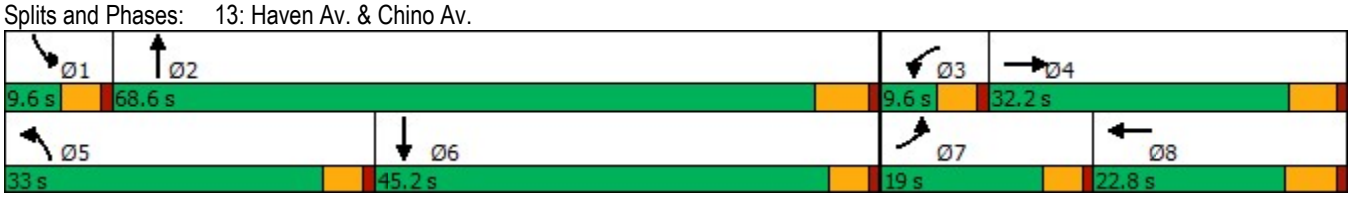
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	65	27	81	45	164	771	434	
Future Volume (vph)	65	27	81	45	164	771	434	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	19.0	32.2	9.6	22.8	33.0	68.6	45.2	9.6
Total Split (%)	15.8%	26.8%	8.0%	19.0%	27.5%	57.2%	37.7%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	8.8	15.3	5.0	13.2	15.2	63.9	45.2	
Actuated g/C Ratio	0.09	0.15	0.05	0.13	0.15	0.64	0.45	
v/c Ratio	0.50	0.35	1.00	0.20	0.72	1.00	0.71	
Control Delay	57.0	15.9	145.5	43.7	58.0	47.1	30.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	57.0	15.9	145.5	43.7	58.0	47.1	30.5	
LOS	E	B	F	D	E	D	C	
Approach Delay		31.4		109.1		48.6	30.5	
Approach LOS		C		F		D	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 46.3	Intersection LOS: D
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	27	80	81	45	0	164	771	250	0	434	86
Future Volume (veh/h)	65	27	80	81	45	0	164	771	250	0	434	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	69	29	85	88	49	0	174	820	272	0	462	91
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	45	133	96	202	0	205	844	280	2	696	137
Arrive On Green	0.05	0.11	0.11	0.05	0.11	0.00	0.13	0.66	0.66	0.00	0.48	0.48
Sat Flow, veh/h	1594	419	1230	1781	1870	0	1594	1273	422	1781	1438	283
Grp Volume(v), veh/h	69	0	114	88	49	0	174	0	1092	0	0	553
Grp Sat Flow(s),veh/h/ln	1594	0	1649	1781	1870	0	1594	0	1696	1781	0	1721
Q Serve(g_s), s	4.0	0.0	6.1	4.5	2.2	0.0	9.9	0.0	56.4	0.0	0.0	22.6
Cycle Q Clear(g_c), s	4.0	0.0	6.1	4.5	2.2	0.0	9.9	0.0	56.4	0.0	0.0	22.6
Prop In Lane	1.00		0.75	1.00		0.00	1.00		0.25	1.00		0.16
Lane Grp Cap(c), veh/h	86	0	178	96	202	0	205	0	1124	2	0	833
V/C Ratio(X)	0.80	0.00	0.64	0.91	0.24	0.00	0.85	0.00	0.97	0.00	0.00	0.66
Avail Cap(c_a), veh/h	248	0	478	96	344	0	489	0	1152	96	0	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	39.5	43.5	37.8	0.0	39.4	0.0	14.8	0.0	0.0	18.1
Incr Delay (d2), s/veh	6.5	0.0	3.8	63.3	0.6	0.0	3.7	0.0	19.7	0.0	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	2.6	3.6	1.0	0.0	3.9	0.0	21.8	0.0	0.0	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	0.0	43.3	106.8	38.4	0.0	43.1	0.0	34.5	0.0	0.0	20.1
LnGrp LOS	D	A	D	F	D	A	D	A	C	A	A	C
Approach Vol, veh/h		183			137			1266			553	
Approach Delay, s/veh		45.8			82.3			35.7			20.1	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	67.1	9.6	15.8	16.5	50.6	9.6	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	62.8	5.0	* 27	28.4	* 41	14.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	58.4	6.5	8.1	11.9	24.6	6.0	4.2
Green Ext Time (p_c), s	0.0	2.9	0.0	0.5	0.2	3.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

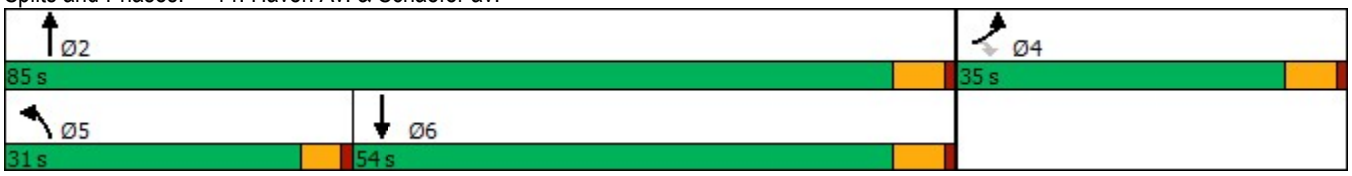
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	39	85	103	1118	592
Future Volume (vph)	39	85	103	1118	592
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	35.0	35.0	31.0	85.0	54.0
Total Split (%)	29.2%	29.2%	25.8%	70.8%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.2	12.2	11.6	83.6	66.2
Actuated g/C Ratio	0.12	0.12	0.11	0.81	0.64
v/c Ratio	0.22	0.36	0.63	0.85	0.30
Control Delay	43.5	12.5	59.4	16.8	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	12.5	59.4	16.8	10.5
LOS	D	B	E	B	B
Approach Delay	22.2			20.4	10.5
Approach LOS	C			C	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 80.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	85	103	1118	592	22
Future Volume (veh/h)	39	85	103	1118	592	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	42	38	112	1215	643	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	167	158	140	1325	2051	67
Arrive On Green	0.10	0.10	0.09	0.75	0.60	0.60
Sat Flow, veh/h	1594	1502	1594	1772	3410	111
Grp Volume(v), veh/h	42	38	112	1215	334	330
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1772	1749
Q Serve(g_s), s	1.9	1.8	5.4	43.3	7.3	7.3
Cycle Q Clear(g_c), s	1.9	1.8	5.4	43.3	7.3	7.3
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	167	158	140	1325	1066	1052
V/C Ratio(X)	0.25	0.24	0.80	0.92	0.31	0.31
Avail Cap(c_a), veh/h	591	557	535	1783	1085	1071
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	32.3	35.2	8.0	7.7	7.7
Incr Delay (d2), s/veh	0.8	0.8	4.0	6.4	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.6	2.1	10.0	2.2	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.1	33.1	39.3	14.4	7.9	7.9
LnGrp LOS	C	C	D	B	A	A
Approach Vol, veh/h	80			1327	664	
Approach Delay, s/veh	33.1			16.5	7.9	
Approach LOS	C			B	A	

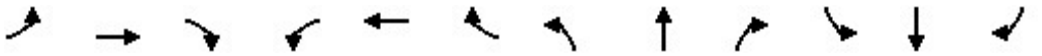
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		64.6		14.1	11.5	53.1
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		79.2		29.2	26.4	48.2
Max Q Clear Time (g_c+I1), s		45.3		3.9	7.4	9.3
Green Ext Time (p_c), s		13.5		0.2	0.1	4.0

Intersection Summary		
HCM 6th Ctrl Delay		14.4
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	800	17	75	797	366	36	434	118	366	240	201
Future Volume (vph)	172	800	17	75	797	366	36	434	118	366	240	201
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	36.3	36.3	12.2	34.5	34.5	12.2	48.5	48.5	23.0	59.3	59.3
Total Split (%)	11.7%	30.3%	30.3%	10.2%	28.8%	28.8%	10.2%	40.4%	40.4%	19.2%	49.4%	49.4%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	9.4	33.2	33.2	6.8	28.1	28.1	6.6	33.8	33.8	18.5	50.0	50.0
Actuated g/C Ratio	0.08	0.30	0.30	0.06	0.25	0.25	0.06	0.30	0.30	0.17	0.45	0.45
v/c Ratio	1.38	0.54	0.03	0.45	0.48	0.60	0.41	0.87	0.23	1.50	0.33	0.28
Control Delay	250.9	36.3	0.1	60.3	37.4	9.5	66.3	54.5	3.1	279.6	22.1	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	250.9	36.3	0.1	60.3	37.4	9.5	66.3	54.5	3.1	279.6	22.1	3.6
LOS	F	D	A	E	D	A	E	D	A	F	C	A
Approach Delay		73.0			30.5			44.9			134.4	
Approach LOS		E			C			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay: 67.6	Intersection LOS: E
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	800	17	75	797	366	36	434	118	366	240	201
Future Volume (veh/h)	172	800	17	75	797	366	36	434	118	366	240	201
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	185	860	7	81	857	211	39	467	68	394	258	125
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	1583	447	125	1801	382	50	529	448	266	769	649
Arrive On Green	0.09	0.30	0.30	0.04	0.25	0.25	0.03	0.30	0.30	0.17	0.43	0.43
Sat Flow, veh/h	1594	5316	1500	3000	7088	1502	1594	1772	1500	1594	1772	1496
Grp Volume(v), veh/h	185	860	7	81	857	211	39	467	68	394	258	125
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1772	1500	1594	1772	1496
Q Serve(g_s), s	9.4	14.9	0.4	2.9	11.3	13.4	2.7	27.7	3.7	18.4	10.6	5.7
Cycle Q Clear(g_c), s	9.4	14.9	0.4	2.9	11.3	13.4	2.7	27.7	3.7	18.4	10.6	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	1583	447	125	1801	382	50	529	448	266	769	649
V/C Ratio(X)	1.36	0.54	0.02	0.65	0.48	0.55	0.77	0.88	0.15	1.48	0.34	0.19
Avail Cap(c_a), veh/h	136	1583	447	207	1801	382	110	687	581	266	860	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.4	32.4	27.3	52.0	34.9	35.7	53.0	36.8	28.4	45.9	20.7	19.3
Incr Delay (d2), s/veh	202.4	1.3	0.1	2.1	0.9	5.7	9.0	10.6	0.2	235.4	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	6.3	0.1	1.1	4.7	5.2	1.2	12.9	1.3	24.4	4.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	252.8	33.8	27.4	54.1	35.8	41.3	62.0	47.4	28.6	281.3	20.9	19.4
LnGrp LOS	F	C	C	D	D	D	E	D	C	F	C	B
Approach Vol, veh/h		1052			1149			574			777	
Approach Delay, s/veh		72.2			38.1			46.2			152.7	
Approach LOS		E			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	38.7	9.2	39.3	8.1	53.6	14.0	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	18.4	42.7	7.6	* 30	7.6	53.5	9.4	28.0
Max Q Clear Time (g_c+I1), s	20.4	29.7	4.9	16.9	4.7	12.6	11.4	15.4
Green Ext Time (p_c), s	0.0	2.3	0.0	4.4	0.0	1.8	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	74.6
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

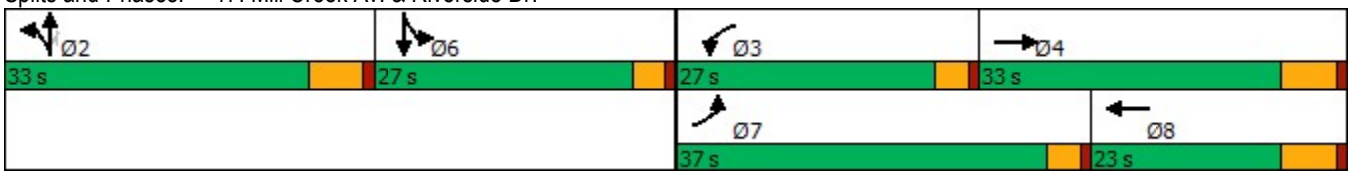
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	301	102	0	74
Demand Flow Rate, veh/h	307	104	0	76
Vehicles Circulating, veh/h	30	14	337	94
Vehicles Exiting, veh/h	140	323	0	24
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	3.3	0.0	3.4
Approach LOS	A	A	-	A

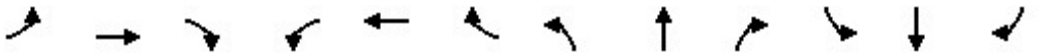
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	307	104	0	76
Cap Entry Lane, veh/h	1338	1360	979	1254
Entry HV Adj Factor	0.981	0.982	1.000	0.974
Flow Entry, veh/h	301	102	0	74
Cap Entry, veh/h	1313	1336	979	1221
V/C Ratio	0.229	0.076	0.000	0.061
Control Delay, s/veh	4.7	3.3	3.7	3.4
LOS	A	A	A	A
95th %tile Queue, veh	1	0	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	303	189	191	206	207	75	273	83	155
Future Volume (vph)	303	189	191	206	207	75	273	83	155
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	37.0	33.0	27.0	23.0	33.0	33.0	33.0	27.0	27.0
Total Split (%)	30.8%	27.5%	22.5%	19.2%	27.5%	27.5%	27.5%	22.5%	22.5%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	29.4	24.5	19.9	15.0	22.7	22.7	22.7	21.9	21.9
Actuated g/C Ratio	0.27	0.22	0.18	0.14	0.21	0.21	0.21	0.20	0.20
v/c Ratio	0.90	0.66	0.84	0.75	0.80	0.26	0.60	0.33	0.87
Control Delay	65.3	22.9	70.1	50.1	61.0	39.9	8.8	43.9	67.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	22.9	70.1	50.1	61.0	39.9	8.8	43.9	67.8
LOS	E	C	E	D	E	D	A	D	E
Approach Delay		39.1		58.0		32.4			61.5
Approach LOS		D		E		C			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.2	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 44.9	Intersection LOS: D
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	303	189	300	191	206	90	207	75	273	83	155	77
Future Volume (veh/h)	303	189	300	191	206	90	207	75	273	83	155	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	384	239	303	242	261	85	262	95	300	105	196	81
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	409	400	335	268	352	111	354	394	332	323	232	96
Arrive On Green	0.26	0.23	0.23	0.17	0.14	0.14	0.22	0.22	0.22	0.20	0.20	0.20
Sat Flow, veh/h	1594	1772	1482	1594	2562	811	1594	1772	1494	1594	1146	473
Grp Volume(v), veh/h	384	239	303	242	178	168	262	95	300	105	0	277
Grp Sat Flow(s),veh/h/ln	1594	1772	1482	1594	1772	1601	1594	1772	1494	1594	0	1619
Q Serve(g_s), s	25.9	13.2	21.8	16.3	10.6	11.1	16.8	4.8	21.4	6.2	0.0	18.0
Cycle Q Clear(g_c), s	25.9	13.2	21.8	16.3	10.6	11.1	16.8	4.8	21.4	6.2	0.0	18.0
Prop In Lane	1.00		1.00	1.00		0.51	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	409	400	335	268	243	220	354	394	332	323	0	328
V/C Ratio(X)	0.94	0.60	0.91	0.90	0.73	0.76	0.74	0.24	0.90	0.32	0.00	0.84
Avail Cap(c_a), veh/h	480	437	365	334	275	248	396	440	371	334	0	340
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.9	38.0	41.3	44.7	45.3	45.5	39.7	35.0	41.5	37.3	0.0	42.0
Incr Delay (d2), s/veh	23.1	1.9	24.1	20.7	8.5	11.7	6.4	0.3	23.2	0.6	0.0	16.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	5.7	9.8	7.7	5.0	4.9	6.9	2.1	9.6	2.5	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.0	39.9	65.4	65.4	53.8	57.2	46.1	35.3	64.7	37.9	0.0	58.9
LnGrp LOS	E	D	E	E	D	E	D	D	E	D	A	E
Approach Vol, veh/h		926			588			657			382	
Approach Delay, s/veh		57.8			59.5			53.0			53.1	
Approach LOS		E			E			D			D	

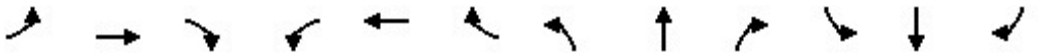
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.2	22.4	30.8		26.2	32.1	21.1				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		27.2	23.0	27.0		23.0	33.0	17.0				
Max Q Clear Time (g_c+I1), s		23.4	18.3	23.8		20.0	27.9	13.1				
Green Ext Time (p_c), s		0.9	0.1	0.9		0.6	0.3	0.6				

Intersection Summary												
HCM 6th Ctrl Delay			56.3									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	123	151	14	49	5	65	17	110
Future Volume (vph)	123	151	14	49	5	65	17	110
Turn Type	Perm	NA	Split	NA	Perm	NA	Perm	NA
Protected Phases		4	8	8		2		6
Permitted Phases	4				2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	73.0	73.0	22.5	22.5	24.5	24.5	24.5	24.5
Total Split (%)	60.8%	60.8%	18.8%	18.8%	20.4%	20.4%	20.4%	20.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	68.8	68.8	9.8	9.8	20.1	20.1	20.1	20.1
Actuated g/C Ratio	0.63	0.63	0.09	0.09	0.18	0.18	0.18	0.18
v/c Ratio	2.00	0.16	0.18	0.37	0.05	0.41	0.18	0.78
Control Delay	519.2	9.7	48.9	50.5	42.4	45.1	43.4	60.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	519.2	9.7	48.9	50.5	42.4	45.1	43.4	60.2
LOS	F	A	D	D	D	D	D	E
Approach Delay		225.8		50.0		45.0		58.3
Approach LOS		F		D		D		E

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 109.9			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 2.00			
Intersection Signal Delay: 117.8		Intersection LOS: F	
Intersection Capacity Utilization 29.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 18: Mill Creek Av. & Chino Av.

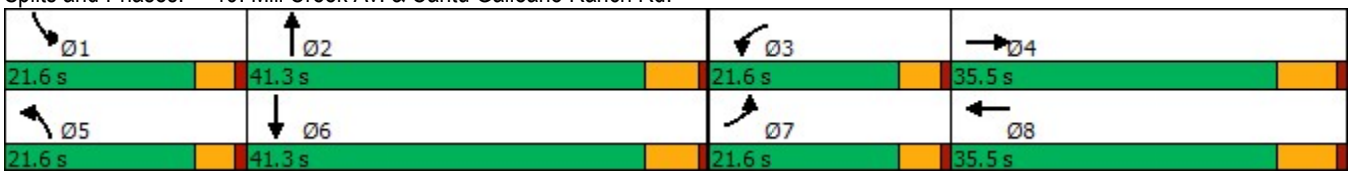


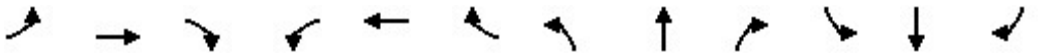
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	151	17	14	49	4	5	65	4	17	110	40
Future Volume (veh/h)	123	151	17	14	49	4	5	65	4	17	110	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	164	9	28	53	4	5	130	4	34	220	23
Peak Hour Factor	0.92	0.92	0.92	0.50	0.92	0.50	0.92	0.50	0.50	0.50	0.50	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	325	18	155	150	11	395	418	13	481	386	40
Arrive On Green	0.18	0.18	0.18	0.09	0.09	0.09	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	1757	96	1781	1717	130	1137	1805	56	1256	1665	174
Grp Volume(v), veh/h	134	0	173	28	0	57	5	0	134	34	0	243
Grp Sat Flow(s),veh/h/ln	1781	0	1853	1781	0	1847	1137	0	1860	1256	0	1839
Q Serve(g_s), s	1.8	0.0	2.3	0.4	0.0	0.8	0.1	0.0	1.6	0.6	0.0	3.2
Cycle Q Clear(g_c), s	1.8	0.0	2.3	0.4	0.0	0.8	3.3	0.0	1.6	2.2	0.0	3.2
Prop In Lane	1.00		0.05	1.00		0.07	1.00		0.03	1.00		0.09
Lane Grp Cap(c), veh/h	329	0	342	155	0	161	395	0	431	481	0	426
V/C Ratio(X)	0.41	0.00	0.51	0.18	0.00	0.35	0.01	0.00	0.31	0.07	0.00	0.57
Avail Cap(c_a), veh/h	4486	0	4667	1179	0	1222	968	0	1368	1113	0	1352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	10.0	11.5	0.0	11.7	10.7	0.0	8.6	9.6	0.0	9.2
Incr Delay (d2), s/veh	0.8	0.0	1.2	0.6	0.0	1.3	0.0	0.0	0.4	0.1	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.6	0.1	0.0	0.3	0.0	0.0	0.4	0.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.6	0.0	11.1	12.1	0.0	13.0	10.7	0.0	9.1	9.6	0.0	10.4
LnGrp LOS	B	A	B	B	A	B	B	A	A	A	A	B
Approach Vol, veh/h		307			85			139			277	
Approach Delay, s/veh		10.9			12.7			9.1			10.4	
Approach LOS		B			B			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.8		9.5		10.8		6.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.0		68.5		20.0		18.0				
Max Q Clear Time (g_c+I1), s		5.3		4.3		5.2		2.8				
Green Ext Time (p_c), s		0.5		1.3		1.1		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			10.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	75	343	94	197	215	41	88	13
Future Volume (vph)	75	343	94	197	215	41	88	13
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	23.5	9.6	23.5	9.6	27.8	9.6	27.8
Total Split (s)	21.6	35.5	21.6	35.5	21.6	41.3	21.6	41.3
Total Split (%)	18.0%	29.6%	18.0%	29.6%	18.0%	34.4%	18.0%	34.4%
Yellow Time (s)	3.6	5.5	3.6	5.5	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	7.9	12.6	8.7	13.2	15.9	22.4	8.5	12.2
Actuated g/C Ratio	0.11	0.18	0.13	0.19	0.23	0.33	0.12	0.18
v/c Ratio	0.40	0.54	0.46	0.45	0.57	0.26	0.44	0.19
Control Delay	37.9	25.5	38.0	13.4	33.4	10.4	37.9	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	25.5	38.0	13.4	33.4	10.4	37.9	13.0
LOS	D	C	D	B	C	B	D	B
Approach Delay		27.2		17.6		24.0		28.1
Approach LOS		C		B		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 68.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 23.2	Intersection LOS: C
Intersection Capacity Utilization 52.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 19: Mill Creek Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	343	130	94	197	268	215	41	106	88	13	45
Future Volume (veh/h)	75	343	130	94	197	268	215	41	106	88	13	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	373	98	102	214	150	234	45	61	96	14	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	747	189	132	656	306	289	198	269	125	91	215
Arrive On Green	0.07	0.18	0.18	0.07	0.19	0.19	0.16	0.28	0.28	0.07	0.18	0.18
Sat Flow, veh/h	1781	4063	1027	1781	3404	1585	1781	719	975	1781	495	1166
Grp Volume(v), veh/h	82	310	161	102	214	150	234	0	106	96	0	47
Grp Sat Flow(s),veh/h/ln	1781	1702	1686	1781	1702	1585	1781	0	1695	1781	0	1661
Q Serve(g_s), s	2.5	4.4	4.7	3.1	2.9	4.6	6.9	0.0	2.6	2.9	0.0	1.3
Cycle Q Clear(g_c), s	2.5	4.4	4.7	3.1	2.9	4.6	6.9	0.0	2.6	2.9	0.0	1.3
Prop In Lane	1.00		0.61	1.00		1.00	1.00		0.58	1.00		0.70
Lane Grp Cap(c), veh/h	116	626	310	132	656	306	289	0	468	125	0	306
V/C Ratio(X)	0.70	0.50	0.52	0.77	0.33	0.49	0.81	0.00	0.23	0.77	0.00	0.15
Avail Cap(c_a), veh/h	557	1816	899	557	1816	846	557	0	1107	557	0	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.9	19.9	20.0	24.7	18.9	19.6	22.0	0.0	15.2	24.8	0.0	18.6
Incr Delay (d2), s/veh	2.9	0.6	1.3	3.6	0.3	1.2	2.1	0.0	0.2	3.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.5	1.6	1.2	1.0	1.5	2.6	0.0	0.9	1.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	20.5	21.3	28.3	19.2	20.8	24.0	0.0	15.4	28.5	0.0	18.9
LnGrp LOS	C	C	C	C	B	C	C	A	B	C	A	B
Approach Vol, veh/h		553			466			340			143	
Approach Delay, s/veh		21.8			21.7			21.4			25.3	
Approach LOS		C			C			C			C	

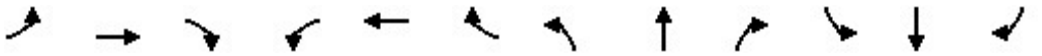
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.4	20.8	8.6	16.5	13.4	15.8	8.2	17.0
Change Period (Y+Rc), s	4.6	5.8	4.6	6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.0	35.5	17.0	29.0	17.0	35.5	17.0	29.0
Max Q Clear Time (g_c+I1), s	4.9	4.6	5.1	6.7	8.9	3.3	4.5	6.6
Green Ext Time (p_c), s	0.1	0.5	0.1	2.5	0.2	0.2	0.1	1.9

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	526	403	1258	463	262
Future Volume (vph)	4	526	403	1258	463	262
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	22.5	22.5	11.2	22.5	22.5	22.5
Total Split (s)	37.0	37.0	28.0	53.0	25.0	25.0
Total Split (%)	41.1%	41.1%	31.1%	58.9%	27.8%	27.8%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	27.9	27.9	21.7	42.4	16.0	16.0
Actuated g/C Ratio	0.34	0.34	0.26	0.51	0.19	0.19
v/c Ratio	0.41	0.90	0.89	0.67	0.66	0.51
Control Delay	24.4	43.0	53.7	17.5	36.6	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	43.0	53.7	17.5	36.6	8.0
LOS	C	D	D	B	D	A
Approach Delay	37.1			26.3	26.2	
Approach LOS	D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 82.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 28.9	Intersection LOS: C
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	237	4	526	403	1258	0	0	463	262
Future Volume (veh/h)	0	0	0	237	4	526	403	1258	0	0	463	262
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				242	4	367	411	1284	0	0	472	228
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				495	8	447	461	1976	0	0	745	316
Arrive On Green				0.28	0.28	0.28	0.26	0.53	0.00	0.00	0.20	0.20
Sat Flow, veh/h				1754	29	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				246	0	367	411	1284	0	0	472	228
Grp Sat Flow(s),veh/h/ln				1783	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				7.5	0.0	14.1	14.5	16.1	0.0	0.0	7.6	8.8
Cycle Q Clear(g_c), s				7.5	0.0	14.1	14.5	16.1	0.0	0.0	7.6	8.8
Prop In Lane				0.98		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				503	0	447	461	1976	0	0	745	316
V/C Ratio(X)				0.49	0.00	0.82	0.89	0.65	0.00	0.00	0.63	0.72
Avail Cap(c_a), veh/h				840	0	747	638	2679	0	0	1076	456
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				19.5	0.0	21.9	23.4	11.1	0.0	0.0	24.0	24.5
Incr Delay (d2), s/veh				0.7	0.0	3.8	9.4	0.4	0.0	0.0	0.9	3.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.8	0.0	5.0	6.4	4.8	0.0	0.0	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.3	0.0	25.7	32.7	11.4	0.0	0.0	24.9	27.6
LnGrp LOS				C	A	C	C	B	A	A	C	C
Approach Vol, veh/h					613			1695			700	
Approach Delay, s/veh					23.5			16.6			25.8	
Approach LOS					C			B			C	

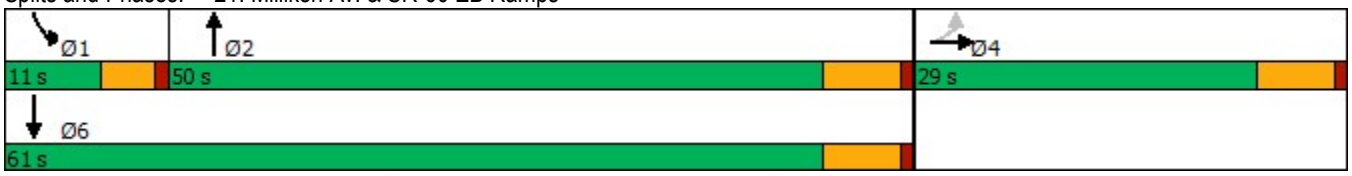
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		40.7			21.5	19.2		24.6				
Change Period (Y+Rc), s		6.2			4.6	6.2		6.2				
Max Green Setting (Gmax), s		46.8			23.4	18.8		30.8				
Max Q Clear Time (g_c+I1), s		18.1			16.5	10.8		16.1				
Green Ext Time (p_c), s		10.0			0.4	2.2		2.3				

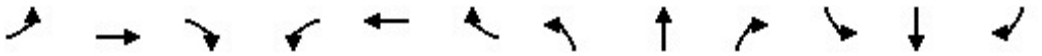
Intersection Summary												
HCM 6th Ctrl Delay			20.1									
HCM 6th LOS			C									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	436	3	1281	85	594
Future Volume (vph)	436	3	1281	85	594
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	22.5	9.6	22.5
Total Split (s)	29.0	29.0	50.0	11.0	61.0
Total Split (%)	32.2%	32.2%	55.6%	12.2%	67.8%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	21.7	21.7	41.2	6.3	49.4
Actuated g/C Ratio	0.26	0.26	0.49	0.08	0.59
v/c Ratio	0.88	0.66	0.89	0.66	0.28
Control Delay	54.2	15.0	27.6	66.1	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	15.0	27.6	66.1	8.7
LOS	D	B	C	E	A
Approach Delay		34.2	27.6		15.9
Approach LOS		C	C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 83.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	436	3	361	0	0	0	0	1281	282	85	594	0
Future Volume (veh/h)	436	3	361	0	0	0	0	1281	282	85	594	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	319	185	186				0	1321	157	88	612	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	443	213	214				0	1560	184	113	2230	0
Arrive On Green	0.25	0.25	0.25				0.00	0.48	0.48	0.06	0.60	0.00
Sat Flow, veh/h	1781	855	860				0	3283	388	1781	3741	0
Grp Volume(v), veh/h	319	0	371				0	749	729	88	612	0
Grp Sat Flow(s),veh/h/ln	1781	0	1716				0	1870	1801	1781	1870	0
Q Serve(g_s), s	13.1	0.0	16.6				0.0	28.0	28.5	3.9	6.3	0.0
Cycle Q Clear(g_c), s	13.1	0.0	16.6				0.0	28.0	28.5	3.9	6.3	0.0
Prop In Lane	1.00		0.50				0.00		0.22	1.00		0.00
Lane Grp Cap(c), veh/h	443	0	427				0	889	856	113	2230	0
V/C Ratio(X)	0.72	0.00	0.87				0.00	0.84	0.85	0.78	0.27	0.00
Avail Cap(c_a), veh/h	508	0	490				0	1025	987	143	2566	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.5	0.0	28.8				0.0	18.4	18.5	36.9	7.8	0.0
Incr Delay (d2), s/veh	4.2	0.0	14.1				0.0	5.8	6.5	14.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	7.9				0.0	11.3	11.2	2.0	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.7	0.0	42.8				0.0	24.2	25.0	51.4	7.9	0.0
LnGrp LOS	C	A	D				A	C	C	D	A	A
Approach Vol, veh/h		690						1478			700	
Approach Delay, s/veh		37.7						24.6			13.3	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.7	44.2		26.1		53.8
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	6.4	43.8		22.8		54.8
Max Q Clear Time (g_c+I1), s	5.9	30.5		18.6		8.3
Green Ext Time (p_c), s	0.0	7.5		1.3		4.0

Intersection Summary		
HCM 6th Ctrl Delay		25.0
HCM 6th LOS		C

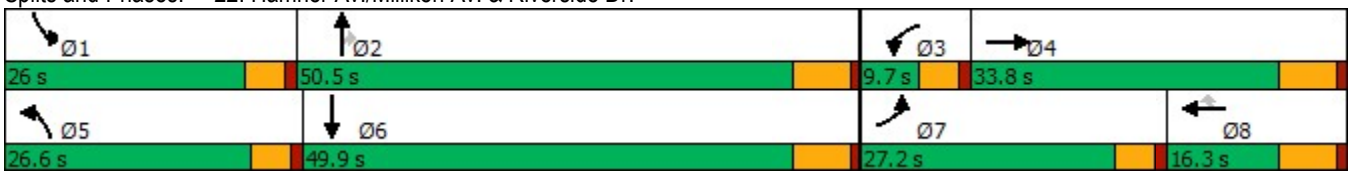
Notes

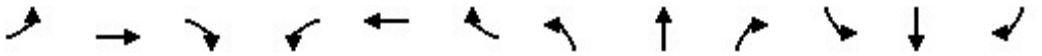
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	261	148	28	113	243	144	1016	58	244	532
Future Volume (vph)	261	148	28	113	243	144	1016	58	244	532
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	27.2	33.8	9.7	16.3	16.3	26.6	50.5	50.5	26.0	49.9
Total Split (%)	22.7%	28.2%	8.1%	13.6%	13.6%	22.2%	42.1%	42.1%	21.7%	41.6%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	22.6	31.5	5.1	10.1	10.1	16.5	43.6	43.6	21.4	48.5
Actuated g/C Ratio	0.19	0.26	0.04	0.08	0.08	0.14	0.37	0.37	0.18	0.41
v/c Ratio	1.00	0.73	0.48	0.87	0.73	0.76	0.95	0.10	0.99	0.62
Control Delay	101.1	47.3	79.3	100.7	18.2	70.8	54.1	0.3	99.6	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.1	47.3	79.3	100.7	18.2	70.8	54.1	0.3	99.6	29.6
LOS	F	D	E	F	B	E	D	A	F	C
Approach Delay		72.7		46.9			53.5			47.3
Approach LOS		E		D			D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 54.2	Intersection LOS: D
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	148	144	28	113	243	144	1016	58	244	532	185
Future Volume (veh/h)	261	148	144	28	113	243	144	1016	58	244	532	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	300	170	86	32	130	141	166	1168	38	280	611	110
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	274	138	44	150	127	191	1231	549	286	1213	218
Arrive On Green	0.19	0.25	0.25	0.03	0.08	0.08	0.12	0.37	0.37	0.18	0.43	0.43
Sat Flow, veh/h	1594	1110	561	1594	1772	1502	1594	3367	1502	1594	2851	512
Grp Volume(v), veh/h	300	0	256	32	130	141	166	1168	38	280	360	361
Grp Sat Flow(s),veh/h/ln	1594	0	1671	1594	1772	1502	1594	1683	1502	1594	1683	1680
Q Serve(g_s), s	22.4	0.0	16.3	2.4	8.6	10.1	12.2	40.2	2.0	20.9	18.7	18.8
Cycle Q Clear(g_c), s	22.4	0.0	16.3	2.4	8.6	10.1	12.2	40.2	2.0	20.9	18.7	18.8
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	302	0	412	44	150	127	191	1231	549	286	716	714
V/C Ratio(X)	0.99	0.00	0.62	0.73	0.87	1.11	0.87	0.95	0.07	0.98	0.50	0.50
Avail Cap(c_a), veh/h	302	0	412	68	150	127	294	1250	557	286	716	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	40.0	57.6	53.9	54.6	51.6	36.8	24.6	48.7	25.1	25.1
Incr Delay (d2), s/veh	50.0	0.0	2.9	8.5	37.9	112.2	10.7	14.8	0.1	47.3	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	0.0	6.7	1.0	5.3	7.6	5.3	17.9	0.7	11.7	7.1	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	98.3	0.0	42.8	66.1	91.8	166.8	62.3	51.6	24.7	96.0	25.6	25.7
LnGrp LOS	F	A	D	E	F	F	E	D	C	F	C	C
Approach Vol, veh/h		556			303			1372			1001	
Approach Delay, s/veh		72.7			124.0			52.2			45.3	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	49.8	7.9	35.6	18.9	56.9	27.2	16.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	44.3	5.1	27.6	22.0	43.7	22.6	10.1
Max Q Clear Time (g_c+I1), s	22.9	42.2	4.4	18.3	14.2	20.8	24.4	12.1
Green Ext Time (p_c), s	0.0	1.4	0.0	0.8	0.1	4.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.3
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	105	78	28	1131	615	48
Future Vol, veh/h	105	78	28	1131	615	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	119	89	32	1285	699	55

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1434	727	754	0	-	0
Stage 1	727	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	136	423	854	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 118	423	854	-	-	-
Mov Cap-2 Maneuver	310	-	-	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.3	0.8	0
HCM LOS	D		

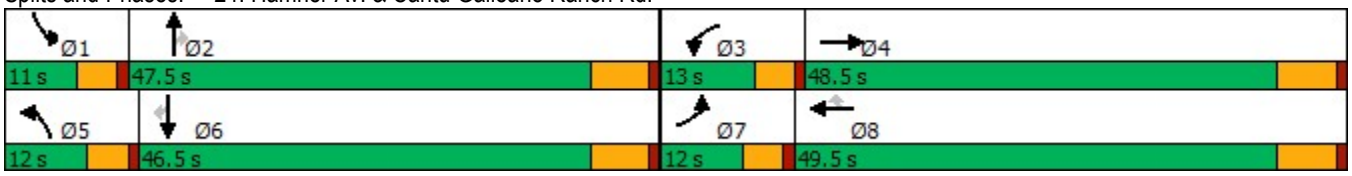
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	854	-	350	-	-
HCM Lane V/C Ratio	0.037	-	0.594	-	-
HCM Control Delay (s)	9.4	0.6	29.3	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	3.6	-	-

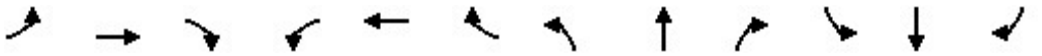
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	235	992	268	1113	281	233	599	363	212	223	199
Future Volume (vph)	235	992	268	1113	281	233	599	363	212	223	199
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.0	48.5	13.0	49.5	49.5	12.0	47.5	47.5	11.0	46.5	46.5
Total Split (%)	10.0%	40.4%	10.8%	41.3%	41.3%	10.0%	39.6%	39.6%	9.2%	38.8%	38.8%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.6	37.8	8.6	38.8	38.8	7.6	24.1	24.1	6.5	23.1	23.1
Actuated g/C Ratio	0.08	0.38	0.09	0.39	0.39	0.08	0.24	0.24	0.07	0.23	0.23
v/c Ratio	0.94	0.48	0.94	0.84	0.39	0.93	0.51	0.75	0.98	0.28	0.43
Control Delay	91.3	24.2	88.0	35.1	9.5	89.8	33.6	29.4	105.2	31.9	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.3	24.2	88.0	35.1	9.5	89.8	33.6	29.4	105.2	31.9	12.0
LOS	F	C	F	D	A	F	C	C	F	C	B
Approach Delay		35.9		39.3			43.3			50.2	
Approach LOS		D		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 40.7	Intersection LOS: D
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	992	130	268	1113	281	233	599	363	212	223	199
Future Volume (veh/h)	235	992	130	268	1113	281	233	599	363	212	223	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	245	1033	83	279	1159	158	243	624	217	221	232	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	2339	187	328	1398	624	289	1036	322	250	681	304
Arrive On Green	0.08	0.38	0.38	0.09	0.39	0.39	0.08	0.20	0.20	0.07	0.19	0.19
Sat Flow, veh/h	3456	6120	488	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	245	813	303	279	1159	158	243	624	217	221	232	113
Grp Sat Flow(s),veh/h/ln	1728	1609	1782	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.2	11.1	11.2	7.0	26.0	5.9	6.1	9.8	11.2	5.6	5.0	5.5
Cycle Q Clear(g_c), s	6.2	11.1	11.2	7.0	26.0	5.9	6.1	9.8	11.2	5.6	5.0	5.5
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	1844	681	328	1398	624	289	1036	322	250	681	304
V/C Ratio(X)	0.85	0.44	0.44	0.85	0.83	0.25	0.84	0.60	0.67	0.88	0.34	0.37
Avail Cap(c_a), veh/h	289	2291	846	328	1728	771	289	2384	740	250	1619	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	20.3	20.3	39.4	24.1	18.1	39.9	32.0	32.6	40.7	30.9	31.1
Incr Delay (d2), s/veh	19.4	0.2	0.5	17.8	2.9	0.2	18.4	0.6	2.5	28.0	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.7	4.2	3.6	9.9	1.9	3.2	3.8	4.1	3.2	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	20.5	20.8	57.2	27.0	18.3	58.4	32.6	35.0	68.7	31.2	31.9
LnGrp LOS	E	C	C	E	C	B	E	C	D	E	C	C
Approach Vol, veh/h		1361			1596			1084			566	
Approach Delay, s/veh		27.5			31.5			38.9			46.0	
Approach LOS		C			C			D			D	

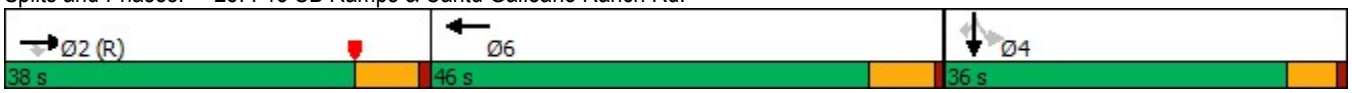
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	24.1	13.0	40.3	12.0	23.1	12.0	41.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	7.4	40.3	7.4	43.0
Max Q Clear Time (g_c+I1), s	7.6	13.2	9.0	13.2	8.1	7.5	8.2	28.0
Green Ext Time (p_c), s	0.0	4.8	0.0	7.3	0.0	1.7	0.0	6.8

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1065	540	989	168	258	0	1165
Future Volume (vph)	1065	540	989	168	258	0	1165
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	38.0	38.0	46.0		36.0	36.0	36.0
Total Split (%)	31.7%	31.7%	38.3%		30.0%	30.0%	30.0%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	Min		Min	Min	Min
Act Effct Green (s)	35.0	35.0	38.8	120.0	27.1	27.1	27.1
Actuated g/C Ratio	0.29	0.29	0.32	1.00	0.23	0.23	0.23
v/c Ratio	0.78	0.67	0.94	0.07	0.66	0.92	0.90
Control Delay	44.3	7.2	45.2	0.0	50.7	30.1	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	7.2	45.2	0.0	50.7	30.1	27.4
LOS	D	A	D	A	D	C	C
Approach Delay	31.8		38.7			32.3	
Approach LOS	C		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 85.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1065	540	0	989	168	0	0	0	258	0	1165
Future Volume (veh/h)	0	1065	540	0	989	168	0	0	0	258	0	1165
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1158	0	0	1075	0				187	0	736
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	3314		0	2306					443	0	788
Arrive On Green	0.00	0.65	0.00	0.00	0.21	0.00				0.25	0.00	0.25
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1158	0	0	1075	0				187	0	736
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	12.4	0.0	0.0	31.7	0.0				10.6	0.0	27.3
Cycle Q Clear(g_c), s	0.0	12.4	0.0	0.0	31.7	0.0				10.6	0.0	27.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3314		0	2306					443	0	788
V/C Ratio(X)	0.00	0.35		0.00	0.47					0.42	0.00	0.93
Avail Cap(c_a), veh/h	0	3314		0	2306					453	0	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.77	0.00	0.00	0.77	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.6	0.0	0.0	29.0	0.0				37.9	0.0	44.1
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0				0.6	0.0	17.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.9	0.0	0.0	14.9	0.0				4.6	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.8	0.0	0.0	29.1	0.0				38.5	0.0	61.7
LnGrp LOS	A	A		A	C					D	A	E
Approach Vol, veh/h		1158	A		1075	A					923	
Approach Delay, s/veh		9.8			29.1						57.0	
Approach LOS		A			C						E	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		84.7		35.3		84.7						
Change Period (Y+Rc), s		6.8		5.5		6.8						
Max Green Setting (Gmax), s		31.2		30.5		39.2						
Max Q Clear Time (g_c+I1), s		14.4		29.3		33.7						
Green Ext Time (p_c), s		6.6		0.5		3.0						

Intersection Summary		
HCM 6th Ctrl Delay		30.2
HCM 6th LOS		C

Notes

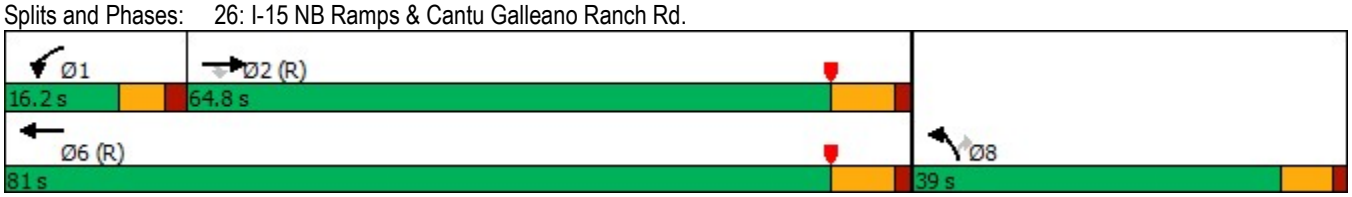
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	456	886	194	445	712	377
Future Volume (vph)	456	886	194	445	712	377
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.5	22.5	22.5	22.5
Total Split (s)	64.8	64.8	16.2	81.0	39.0	39.0
Total Split (%)	54.0%	54.0%	13.5%	67.5%	32.5%	32.5%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	55.8	55.8	11.6	73.4	33.3	33.3
Actuated g/C Ratio	0.46	0.46	0.10	0.61	0.28	0.28
v/c Ratio	0.21	0.81	0.64	0.16	0.86	0.55
Control Delay	31.4	32.0	61.4	10.4	50.8	6.8
Queue Delay	0.0	7.9	0.0	0.0	0.0	0.0
Total Delay	31.4	39.8	61.4	10.4	50.8	6.8
LOS	C	D	E	B	D	A
Approach Delay	37.0			25.9	37.2	
Approach LOS	D			C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 34.8	Intersection LOS: C
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	456	886	194	445	712	377
Future Volume (veh/h)	456	886	194	445	712	377
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	496	517	211	484	774	225
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2647	822	267	3296	868	386
Arrive On Green	0.17	0.17	0.08	0.65	0.24	0.24
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	496	517	211	484	774	225
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	10.0	36.4	7.2	4.5	25.2	15.0
Cycle Q Clear(g_c), s	10.0	36.4	7.2	4.5	25.2	15.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2647	822	267	3296	868	386
V/C Ratio(X)	0.19	0.63	0.79	0.15	0.89	0.58
Avail Cap(c_a), veh/h	2647	822	294	3296	980	436
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.56	0.56	0.90	0.90	1.00	1.00
Uniform Delay (d), s/veh	28.1	39.0	54.4	8.3	43.9	40.0
Incr Delay (d2), s/veh	0.1	2.1	11.5	0.1	9.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	15.7	3.4	1.4	11.9	5.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.2	41.1	65.9	8.4	53.4	41.6
LnGrp LOS	C	D	E	A	D	D
Approach Vol, veh/h	1013			695	999	
Approach Delay, s/veh	34.8			25.9	50.8	
Approach LOS	C			C	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	15.3	69.5				84.8	35.2
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	10.2	57.5				73.7	33.0
Max Q Clear Time (g_c+I1), s	9.2	38.4				6.5	27.2
Green Ext Time (p_c), s	0.1	4.6				3.1	2.0

Intersection Summary			
HCM 6th Ctrl Delay		38.4	
HCM 6th LOS		D	

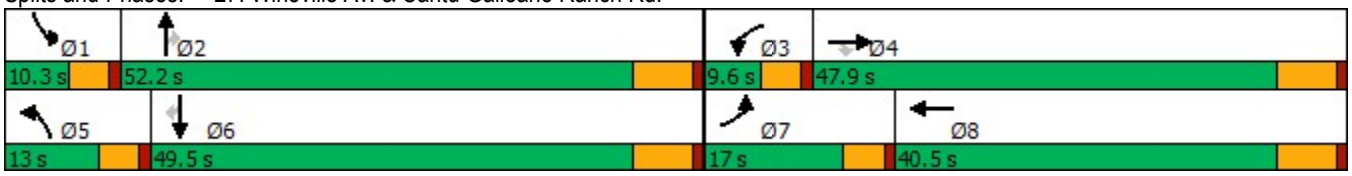
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	379	282	269	27	220	247	285	17	20	56	123
Future Volume (vph)	379	282	269	27	220	247	285	17	20	56	123
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	17.0	47.9	47.9	9.6	40.5	13.0	52.2	52.2	10.3	49.5	49.5
Total Split (%)	14.2%	39.9%	39.9%	8.0%	33.8%	10.8%	43.5%	43.5%	8.6%	41.3%	41.3%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.5	26.9	26.9	5.4	11.8	9.1	24.5	24.5	5.7	11.6	11.6
Actuated g/C Ratio	0.19	0.38	0.38	0.08	0.17	0.13	0.35	0.35	0.08	0.17	0.17
v/c Ratio	0.63	0.12	0.37	0.11	0.33	0.60	0.25	0.03	0.15	0.20	0.34
Control Delay	34.8	16.7	4.6	39.3	23.7	39.2	17.9	0.1	41.3	26.1	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	16.7	4.6	39.3	23.7	39.2	17.9	0.1	41.3	26.1	5.7
LOS	C	B	A	D	C	D	B	A	D	C	A
Approach Delay		20.5			25.2		26.9			15.0	
Approach LOS		C			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 70.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 46.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	379	282	269	27	220	42	247	285	17	20	56	123
Future Volume (veh/h)	379	282	269	27	220	42	247	285	17	20	56	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	412	307	182	29	239	26	268	310	8	22	61	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	566	1617	398	116	568	60	403	748	334	47	225	191
Arrive On Green	0.16	0.25	0.25	0.03	0.12	0.12	0.12	0.21	0.21	0.03	0.12	0.12
Sat Flow, veh/h	3456	6434	1585	3456	4687	498	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	412	307	182	29	172	93	268	310	8	22	61	107
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1781	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	5.3	1.7	4.5	0.4	2.2	2.2	3.4	3.5	0.2	0.6	1.4	3.0
Cycle Q Clear(g_c), s	5.3	1.7	4.5	0.4	2.2	2.2	3.4	3.5	0.2	0.6	1.4	3.0
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	566	1617	398	116	412	216	403	748	334	47	225	191
V/C Ratio(X)	0.73	0.19	0.46	0.25	0.42	0.43	0.66	0.41	0.02	0.46	0.27	0.56
Avail Cap(c_a), veh/h	923	5735	1413	372	2492	1304	625	3497	1560	219	1732	1468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	13.7	14.7	21.9	18.9	18.9	19.6	15.9	14.6	22.3	18.6	19.3
Incr Delay (d2), s/veh	0.7	0.1	0.8	0.4	0.7	1.4	0.7	0.4	0.0	2.6	0.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.5	1.2	0.1	0.7	0.8	1.2	1.2	0.1	0.2	0.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	13.7	15.5	22.3	19.6	20.3	20.3	16.2	14.6	24.9	19.2	21.8
LnGrp LOS	B	B	B	C	B	C	C	B	B	C	B	C
Approach Vol, veh/h		901			294			586			190	
Approach Delay, s/veh		16.5			20.1			18.1			21.4	
Approach LOS		B			C			B			C	

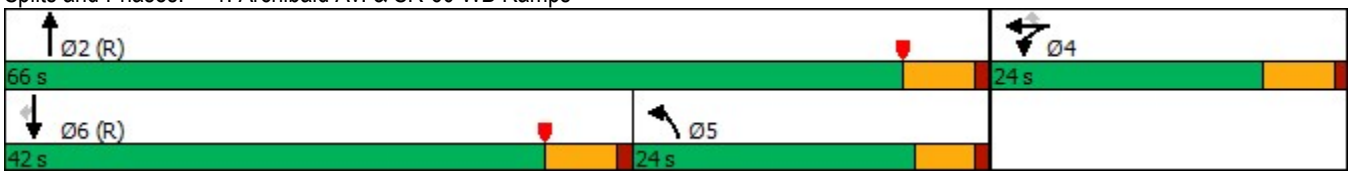
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	16.3	6.2	18.2	10.0	12.1	12.2	12.1
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	5.7	45.7	5.0	41.4	8.4	43.0	12.4	34.0
Max Q Clear Time (g_c+I1), s	2.6	5.5	2.4	6.5	5.4	5.0	7.3	4.2
Green Ext Time (p_c), s	0.0	2.0	0.0	2.4	0.1	0.6	0.4	1.4

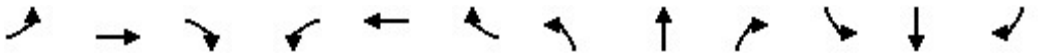
Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	380	1	176	493	506	1241	321
Future Volume (vph)	380	1	176	493	506	1241	321
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	24.0	24.0	24.0	24.0	66.0	42.0	42.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	15.7	15.7	15.7	16.8	62.7	40.9	40.9
Actuated g/C Ratio	0.17	0.17	0.17	0.19	0.70	0.45	0.45
v/c Ratio	0.70	0.71	0.41	0.79	0.15	0.43	0.37
Control Delay	47.9	47.9	8.5	39.6	1.4	18.2	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	47.9	8.5	39.6	1.4	18.2	3.5
LOS	D	D	A	D	A	B	A
Approach Delay		36.7			20.2	15.1	
Approach LOS		D			C	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	380	1	176	493	506	0	0	1241	321
Future Volume (veh/h)	0	0	0	380	1	176	493	506	0	0	1241	321
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				411	0	48	503	516	0	0	1266	228
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				512	0	228	1270	3714	0	0	1900	456
Arrive On Green				0.14	0.00	0.14	0.12	0.24	0.00	0.00	0.30	0.30
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1543
Grp Volume(v), veh/h				411	0	48	503	516	0	0	1266	228
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1543
Q Serve(g_s), s				10.0	0.0	2.4	12.1	7.2	0.0	0.0	15.5	11.0
Cycle Q Clear(g_c), s				10.0	0.0	2.4	12.1	7.2	0.0	0.0	15.5	11.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				512	0	228	1270	3714	0	0	1900	456
V/C Ratio(X)				0.80	0.00	0.21	0.40	0.14	0.00	0.00	0.67	0.50
Avail Cap(c_a), veh/h				720	0	321	1270	3714	0	0	2588	621
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.97	0.97	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				37.3	0.0	34.0	30.3	12.0	0.0	0.0	27.8	26.2
Incr Delay (d2), s/veh				4.4	0.0	0.5	0.1	0.1	0.0	0.0	1.9	3.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	2.3	5.4	2.2	0.0	0.0	5.8	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.7	0.0	34.5	30.4	12.1	0.0	0.0	29.7	30.1
LnGrp LOS				D	A	C	C	B	A	A	C	C
Approach Vol, veh/h					459			1019			1494	
Approach Delay, s/veh					41.0			21.1			29.7	
Approach LOS					D			C			C	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	71.3	18.7	38.9	32.4
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	18.2	19.0	* 36
Max Q Clear Time (g_c+I1), s	9.2	12.0	14.1	17.5
Green Ext Time (p_c), s	3.5	0.9	0.5	9.0

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Notes

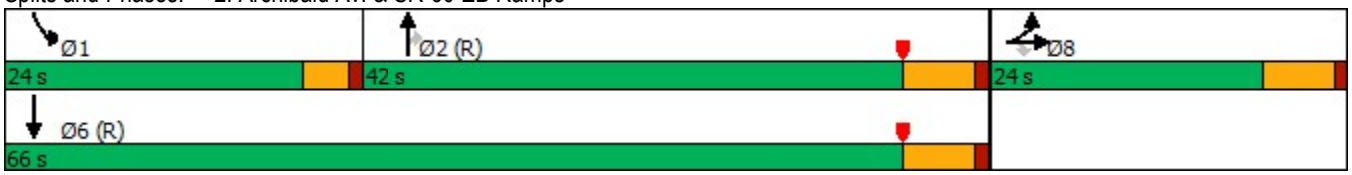
User approved volume balancing among the lanes for turning movement.

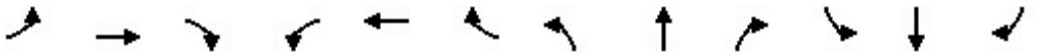
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	112	1	426	889	505	477	1144
Future Volume (vph)	112	1	426	889	505	477	1144
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	24.0	24.0	24.0	42.0	42.0	24.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	46.7%	46.7%	26.7%	73.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	12.8	12.8	12.8	45.0	45.0	16.6	65.6
Actuated g/C Ratio	0.14	0.14	0.14	0.50	0.50	0.18	0.73
v/c Ratio	0.43	0.74	0.71	0.28	0.49	0.76	0.31
Control Delay	39.3	33.1	30.5	14.5	3.5	52.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	33.1	30.5	14.5	3.5	52.5	1.0
LOS	D	C	C	B	A	D	A
Approach Delay		33.2		10.6			16.2
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	1	426	0	0	0	0	889	505	477	1144	0
Future Volume (veh/h)	112	1	426	0	0	0	0	889	505	477	1144	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	76	0	236				0	898	334	482	1156	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	183	0	326				0	3629	875	552	3923	0
Arrive On Green	0.10	0.00	0.10				0.00	0.56	0.56	0.32	1.00	0.00
Sat Flow, veh/h	1781	0	3170				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	76	0	236				0	898	334	482	1156	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1609	1551	1728	1702	0
Q Serve(g_s), s	3.6	0.0	6.5				0.0	6.4	10.8	11.8	0.0	0.0
Cycle Q Clear(g_c), s	3.6	0.0	6.5				0.0	6.4	10.8	11.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	183	0	326				0	3629	875	552	3923	0
V/C Ratio(X)	0.42	0.00	0.72				0.00	0.25	0.38	0.87	0.29	0.00
Avail Cap(c_a), veh/h	360	0	641				0	3629	875	768	3923	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.88	0.88	0.00
Uniform Delay (d), s/veh	37.8	0.0	39.1				0.0	9.9	10.9	29.7	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	3.1				0.0	0.2	1.3	5.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.5				0.0	1.9	3.3	4.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	0.0	42.2				0.0	10.1	12.2	35.4	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		312						1232			1638	
Approach Delay, s/veh		41.5						10.7			10.5	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.4	56.6				74.9		15.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	20.0	36.2				60.2		18.2				
Max Q Clear Time (g_c+I1), s	13.8	12.8				2.0		8.5				
Green Ext Time (p_c), s	0.5	7.2				9.4		0.8				

Intersection Summary			
HCM 6th Ctrl Delay			13.6
HCM 6th LOS			B

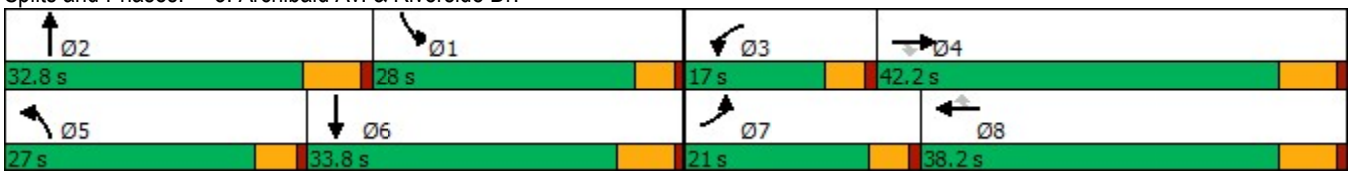
Notes

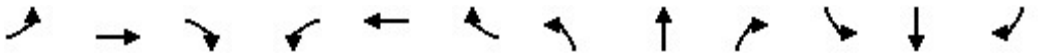
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	166	578	303	113	436	139	246	844	243	841
Future Volume (vph)	166	578	303	113	436	139	246	844	243	841
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	42.2	42.2	17.0	38.2	38.2	27.0	32.8	28.0	33.8
Total Split (%)	17.5%	35.2%	35.2%	14.2%	31.8%	31.8%	22.5%	27.3%	23.3%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.4	26.0	26.0	10.9	22.4	22.4	20.0	24.9	22.2	27.1
Actuated g/C Ratio	0.14	0.25	0.25	0.10	0.21	0.21	0.19	0.24	0.21	0.26
v/c Ratio	0.79	0.72	0.52	0.71	0.63	0.34	0.84	0.83	0.75	0.86
Control Delay	71.3	42.3	7.1	72.4	42.6	8.1	67.5	46.2	56.5	46.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	42.3	7.1	72.4	42.6	8.1	67.5	46.2	56.5	46.0
LOS	E	D	A	E	D	A	E	D	E	D
Approach Delay		36.7			40.5			50.8		47.9
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.9	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 44.7	Intersection LOS: D
Intersection Capacity Utilization 82.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	578	303	113	436	139	246	844	70	243	841	196
Future Volume (veh/h)	166	578	303	113	436	139	246	844	70	243	841	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	169	590	240	115	445	93	251	861	64	248	858	167
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	826	359	140	703	312	282	1099	81	288	1058	205
Arrive On Green	0.12	0.25	0.25	0.09	0.21	0.21	0.18	0.24	0.24	0.18	0.26	0.26
Sat Flow, veh/h	1594	3367	1464	1594	3367	1493	1594	4589	340	1594	4059	785
Grp Volume(v), veh/h	169	590	240	115	445	93	251	604	321	248	681	344
Grp Sat Flow(s),veh/h/ln	1594	1683	1464	1594	1683	1493	1594	1612	1704	1594	1612	1620
Q Serve(g_s), s	9.8	15.1	13.9	6.7	11.3	3.0	14.5	16.5	16.6	14.2	18.6	18.8
Cycle Q Clear(g_c), s	9.8	15.1	13.9	6.7	11.3	3.0	14.5	16.5	16.6	14.2	18.6	18.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.48
Lane Grp Cap(c), veh/h	198	826	359	140	703	312	282	772	408	288	841	422
V/C Ratio(X)	0.85	0.71	0.67	0.82	0.63	0.30	0.89	0.78	0.79	0.86	0.81	0.82
Avail Cap(c_a), veh/h	278	1287	560	210	1144	507	379	911	481	396	945	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	32.5	32.1	42.2	34.0	11.5	37.9	33.5	33.5	37.4	32.6	32.7
Incr Delay (d2), s/veh	12.4	1.2	2.2	8.9	0.9	0.5	15.1	3.8	7.2	10.3	4.8	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	5.8	4.8	2.8	4.4	1.7	6.5	6.4	7.2	6.0	7.3	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	33.7	34.2	51.1	34.9	12.0	53.0	37.3	40.8	47.7	37.5	42.3
LnGrp LOS	D	C	C	D	C	B	D	D	D	D	D	D
Approach Vol, veh/h		999			653			1176			1273	
Approach Delay, s/veh		37.0			34.5			41.6			40.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	28.8	12.9	29.3	21.2	30.7	16.3	25.9
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.4	* 27	12.4	36.0	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	16.2	18.6	8.7	17.1	16.5	20.8	11.8	13.3
Green Ext Time (p_c), s	0.2	3.3	0.0	4.2	0.2	3.3	0.1	2.7

Intersection Summary	
HCM 6th Ctrl Delay	39.1
HCM 6th LOS	D

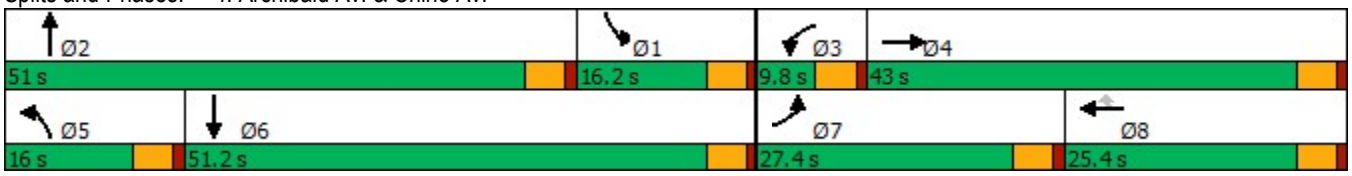
Notes

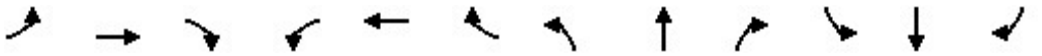
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	161	302	18	100	58	97	1001	68	1005
Future Volume (vph)	161	302	18	100	58	97	1001	68	1005
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	27.4	43.0	9.8	25.4	25.4	16.0	51.0	16.2	51.2
Total Split (%)	22.8%	35.8%	8.2%	21.2%	21.2%	13.3%	42.5%	13.5%	42.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.1	31.3	5.5	13.6	13.6	10.5	34.0	17.2	37.6
Actuated g/C Ratio	0.17	0.32	0.06	0.14	0.14	0.11	0.35	0.18	0.39
v/c Ratio	0.64	0.82	0.21	0.42	0.16	0.59	0.58	0.25	0.82
Control Delay	53.1	44.7	58.8	46.9	1.0	62.5	30.6	41.4	33.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	44.7	58.8	46.9	1.0	62.5	30.6	41.4	33.6
LOS	D	D	E	D	A	E	C	D	C
Approach Delay		46.9		33.1			33.4		34.1
Approach LOS		D		C			C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 36.3	Intersection LOS: D
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	302	134	18	100	58	97	1001	27	68	1005	64
Future Volume (veh/h)	161	302	134	18	100	58	97	1001	27	68	1005	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	168	315	115	19	104	28	101	1043	27	71	1047	63
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	362	132	34	332	281	125	1476	38	285	1279	77
Arrive On Green	0.13	0.29	0.29	0.02	0.19	0.19	0.08	0.29	0.29	0.18	0.39	0.39
Sat Flow, veh/h	1594	1233	450	1594	1772	1502	1594	5156	133	1594	3309	199
Grp Volume(v), veh/h	168	0	430	19	104	28	101	717	353	71	561	549
Grp Sat Flow(s),veh/h/ln	1594	0	1683	1594	1772	1502	1594	1772	1745	1594	1772	1736
Q Serve(g_s), s	8.6	0.0	20.3	1.0	4.2	0.8	5.2	15.1	15.2	3.2	23.8	23.8
Cycle Q Clear(g_c), s	8.6	0.0	20.3	1.0	4.2	0.8	5.2	15.1	15.2	3.2	23.8	23.8
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.08	1.00		0.11
Lane Grp Cap(c), veh/h	204	0	494	34	332	281	125	1015	500	285	685	671
V/C Ratio(X)	0.82	0.00	0.87	0.56	0.31	0.10	0.80	0.71	0.71	0.25	0.82	0.82
Avail Cap(c_a), veh/h	434	0	772	99	440	373	217	1965	967	285	987	967
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	28.0	40.6	29.4	11.7	37.9	26.7	26.7	29.5	23.0	23.0
Incr Delay (d2), s/veh	8.1	0.0	6.7	13.6	0.5	0.2	11.3	0.9	1.9	0.5	3.7	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	8.5	0.5	1.8	0.5	2.3	5.8	5.8	1.2	9.3	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	0.0	34.7	54.1	29.9	11.9	49.3	27.6	28.6	30.0	26.7	26.8
LnGrp LOS	D	A	C	D	C	B	D	C	C	C	C	C
Approach Vol, veh/h		598			151			1171			1181	
Approach Delay, s/veh		37.2			29.6			29.8			26.9	
Approach LOS		D			C			C			C	

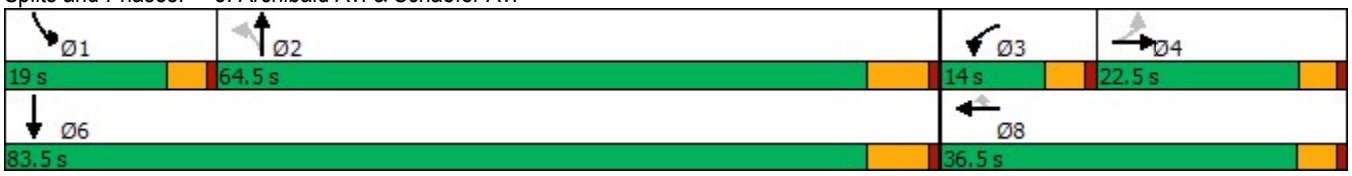
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	28.6	6.4	29.2	11.2	36.9	15.3	20.3
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	11.6	46.4	5.2	38.4	11.4	46.6	22.8	20.8
Max Q Clear Time (g_c+I1), s	5.2	17.2	3.0	22.3	7.2	25.8	10.6	6.2
Green Ext Time (p_c), s	0.1	6.8	0.0	2.3	0.1	6.6	0.3	0.4

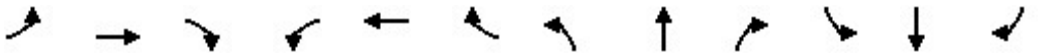
Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	16	15	1047	45	1118	
Future Volume (vph)	16	15	1047	45	1118	
Turn Type	Prot	Perm	NA	Prot	NA	
Protected Phases	3		2	1	6	4
Permitted Phases		8				
Detector Phase	3	8	2	1	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	32.6	37.5	9.6	23.5	22.5
Total Split (s)	14.0	36.5	64.5	19.0	83.5	22.5
Total Split (%)	11.7%	30.4%	53.8%	15.8%	69.6%	19%
Yellow Time (s)	3.6	3.6	5.5	3.6	5.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	4.6	6.5	4.6	6.5	
Lead/Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	9.1	9.6	29.2	8.1	33.9	
Actuated g/C Ratio	0.24	0.26	0.78	0.22	0.91	
v/c Ratio	0.04	0.03	0.30	0.14	0.39	
Control Delay	16.4	0.1	7.5	22.3	4.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.4	0.1	7.5	22.3	4.4	
LOS	B	A	A	C	A	
Approach Delay			7.5		5.1	
Approach LOS			A		A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 37.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 6.2	Intersection LOS: A
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	16	0	15	0	1047	16	45	1118	0
Future Volume (veh/h)	0	0	0	16	0	15	0	1047	16	45	1118	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	0	0	0	17	0	10	0	1114	15	48	1189	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	5	0	35	98	82	204	2191	29	85	2119	0
Arrive On Green	0.00	0.00	0.00	0.02	0.00	0.06	0.00	0.45	0.45	0.05	0.63	0.00
Sat Flow, veh/h	1257	1772	0	1594	1772	1483	421	4917	66	1594	3455	0
Grp Volume(v), veh/h	0	0	0	17	0	10	0	731	398	48	1189	0
Grp Sat Flow(s),veh/h/ln	1257	1772	0	1594	1772	1483	421	1612	1758	1594	1683	0
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	0.2	0.0	5.7	5.7	1.0	7.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.4	0.0	0.2	0.0	5.7	5.7	1.0	7.1	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	204	5	0	35	98	82	204	1437	783	85	2119	0
V/C Ratio(X)	0.00	0.00	0.00	0.49	0.00	0.12	0.00	0.51	0.51	0.57	0.56	0.00
Avail Cap(c_a), veh/h	969	906	0	425	1605	1343	711	5311	2895	652	7360	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	17.0	0.0	15.8	0.0	7.0	7.0	16.3	3.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.9	0.0	0.7	0.0	0.3	0.5	2.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.7	0.8	0.3	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	21.0	0.0	16.5	0.0	7.3	7.5	18.5	4.0	0.0
LnGrp LOS	A	A	A	C	A	B	A	A	A	B	A	A
Approach Vol, veh/h		0			27			1129			1237	
Approach Delay, s/veh		0.0			19.3			7.4			4.5	
Approach LOS					B			A			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	6.5	22.2	5.4	1.2		28.7		6.6				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	14.4	58.0	9.4	* 18		77.0		31.9				
Max Q Clear Time (g_c+I1), s	3.0	7.7	2.4	0.0		9.1		2.2				
Green Ext Time (p_c), s	0.0	7.8	0.0	0.0		9.8		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

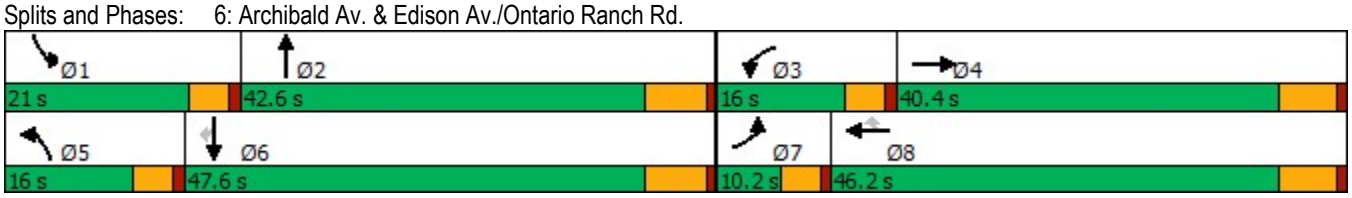
Notes

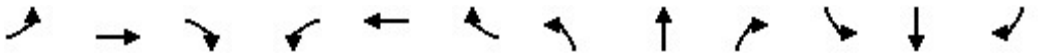
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	655	265	327	307	178	95	744	408	251	753	60
Future Volume (vph)	95	655	265	327	307	178	95	744	408	251	753	60
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.2	40.4		16.0	46.2	46.2	16.0	42.6		21.0	47.6	47.6
Total Split (%)	8.5%	33.7%		13.3%	38.5%	38.5%	13.3%	35.5%		17.5%	39.7%	39.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.7	26.3	105.3	11.5	32.1	32.1	9.9	28.7	105.3	16.6	35.4	35.4
Actuated g/C Ratio	0.05	0.25	1.00	0.11	0.30	0.30	0.09	0.27	1.00	0.16	0.34	0.34
v/c Ratio	0.62	0.78	0.19	1.06	0.60	0.32	0.67	0.81	0.29	1.06	0.67	0.10
Control Delay	69.5	44.2	0.3	111.8	37.0	5.7	71.0	43.7	0.5	118.5	33.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	44.2	0.3	111.8	37.0	5.7	71.0	43.7	0.5	118.5	33.9	0.3
LOS	E	D	A	F	D	A	E	D	A	F	C	A
Approach Delay		35.1			60.3			31.6			51.9	
Approach LOS		D			E			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 105.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 43.3	Intersection LOS: D
Intersection Capacity Utilization 85.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	655	265	327	307	178	95	744	408	251	753	60
Future Volume (veh/h)	95	655	265	327	307	178	95	744	408	251	753	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	100	689	0	344	323	145	100	783	0	264	793	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	848		340	537	455	123	943		260	1249	529
Arrive On Green	0.05	0.24	0.00	0.11	0.30	0.30	0.08	0.27	0.00	0.16	0.35	0.35
Sat Flow, veh/h	3000	3544	1502	3000	1772	1500	1594	3544	1502	1594	3544	1502
Grp Volume(v), veh/h	100	689	0	344	323	145	100	783	0	264	793	44
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	3.3	18.5	0.0	11.4	15.6	7.5	6.2	20.9	0.0	16.4	18.8	2.0
Cycle Q Clear(g_c), s	3.3	18.5	0.0	11.4	15.6	7.5	6.2	20.9	0.0	16.4	18.8	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	848		340	537	455	123	943		260	1249	529
V/C Ratio(X)	0.67	0.81		1.01	0.60	0.32	0.82	0.83		1.02	0.64	0.08
Avail Cap(c_a), veh/h	167	1206		340	705	597	181	1273		260	1449	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	36.1	0.0	44.6	29.8	27.0	45.7	34.7	0.0	42.1	27.2	21.7
Incr Delay (d2), s/veh	6.3	2.9	0.0	51.6	1.1	0.4	10.3	3.5	0.0	59.8	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.8	0.0	6.5	6.3	2.6	2.7	8.7	0.0	10.3	7.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	39.0	0.0	96.2	30.9	27.4	56.0	38.3	0.0	101.8	27.9	21.8
LnGrp LOS	D	D		F	C	C	E	D		F	C	C
Approach Vol, veh/h		789	A		812			883	A		1101	
Approach Delay, s/veh		40.8			57.9			40.3			45.4	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	33.3	16.0	30.3	12.3	41.9	9.6	36.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.4	36.1	11.4	34.2	11.4	41.1	5.6	40.0
Max Q Clear Time (g_c+I1), s	18.4	22.9	13.4	20.5	8.2	20.8	5.3	17.6
Green Ext Time (p_c), s	0.0	3.8	0.0	3.5	0.0	4.8	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	46.0
HCM 6th LOS	D

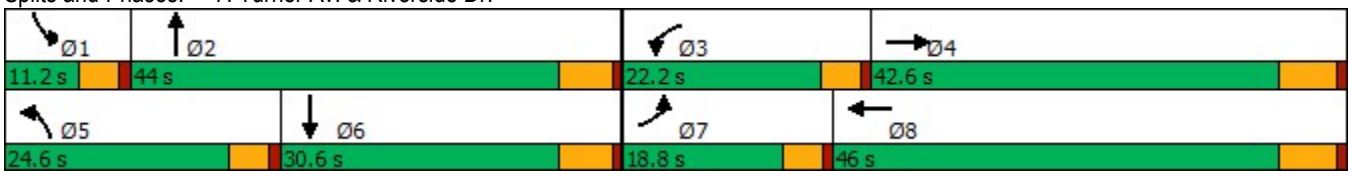
Notes

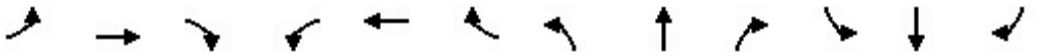
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	87	541	115	631	134	45	23	40
Future Volume (vph)	87	541	115	631	134	45	23	40
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	18.8	42.6	22.2	46.0	24.6	44.0	11.2	30.6
Total Split (%)	15.7%	35.5%	18.5%	38.3%	20.5%	36.7%	9.3%	25.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.5	24.8	11.1	29.2	12.2	25.8	6.0	12.4
Actuated g/C Ratio	0.11	0.30	0.13	0.35	0.15	0.31	0.07	0.15
v/c Ratio	0.50	0.76	0.56	0.59	0.59	0.18	0.21	0.19
Control Delay	49.4	31.7	48.4	26.2	47.4	9.3	49.0	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	31.7	48.4	26.2	47.4	9.3	49.0	19.5
LOS	D	C	D	C	D	A	D	B
Approach Delay		33.6		29.5		25.8		25.4
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 82.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	541	186	115	631	35	134	45	131	23	40	53
Future Volume (veh/h)	87	541	186	115	631	35	134	45	131	23	40	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	90	558	136	119	651	23	138	46	110	24	41	47
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	769	187	148	1031	36	172	424	374	43	288	252
Arrive On Green	0.07	0.29	0.29	0.09	0.31	0.31	0.11	0.25	0.25	0.03	0.17	0.17
Sat Flow, veh/h	1594	2670	648	1594	3315	117	1594	1683	1487	1594	1683	1473
Grp Volume(v), veh/h	90	351	343	119	330	344	138	46	110	24	41	47
Grp Sat Flow(s),veh/h/ln	1594	1683	1635	1594	1683	1749	1594	1683	1487	1594	1683	1473
Q Serve(g_s), s	3.5	11.7	11.8	4.6	10.5	10.5	5.3	1.3	3.7	0.9	1.3	1.7
Cycle Q Clear(g_c), s	3.5	11.7	11.8	4.6	10.5	10.5	5.3	1.3	3.7	0.9	1.3	1.7
Prop In Lane	1.00		0.40	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	485	471	148	524	544	172	424	374	43	288	252
V/C Ratio(X)	0.81	0.72	0.73	0.80	0.63	0.63	0.80	0.11	0.29	0.55	0.14	0.19
Avail Cap(c_a), veh/h	363	983	954	450	1075	1116	511	1031	911	169	670	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	20.0	20.0	27.7	18.4	18.4	27.2	17.9	18.9	29.9	22.0	22.1
Incr Delay (d2), s/veh	5.1	2.1	2.2	3.8	1.3	1.2	3.3	0.1	0.4	4.0	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.1	4.0	1.7	3.5	3.7	2.0	0.5	1.2	0.4	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	22.0	22.2	31.5	19.7	19.6	30.5	18.1	19.3	34.0	22.2	22.5
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		784			793			294			112	
Approach Delay, s/veh		23.4			21.4			24.3			24.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	21.5	10.4	24.2	11.3	16.5	9.0	25.6
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	6.6	38.2	17.6	36.4	20.0	24.8	14.2	39.8
Max Q Clear Time (g_c+I1), s	2.9	5.7	6.6	13.8	7.3	3.7	5.5	12.5
Green Ext Time (p_c), s	0.0	0.8	0.1	3.8	0.1	0.3	0.1	3.7

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	162	54	24	98	40	20	120	23	27	186	43
Future Vol, veh/h	94	162	54	24	98	40	20	120	23	27	186	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	176	59	26	107	43	22	130	25	29	202	47
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

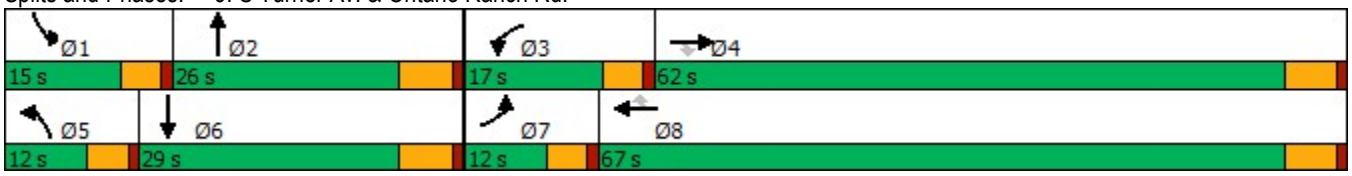
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	10.8	10.3	10.5	10.9
HCM LOS	B	B	B	B

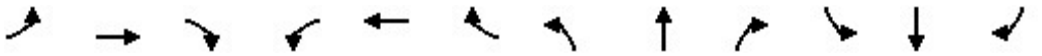
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	63%	0%	100%	50%	0%	100%	45%	0%	100%	59%
Vol Right, %	0%	0%	37%	0%	0%	50%	0%	0%	55%	0%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	80	63	94	108	108	24	65	73	27	124	105
LT Vol	20	0	0	94	0	0	24	0	0	27	0	0
Through Vol	0	80	40	0	108	54	0	65	33	0	124	62
RT Vol	0	0	23	0	0	54	0	0	40	0	0	43
Lane Flow Rate	22	87	68	102	117	117	26	71	79	29	135	114
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.044	0.162	0.123	0.195	0.208	0.197	0.052	0.132	0.139	0.057	0.244	0.197
Departure Headway (Hd)	7.226	6.726	6.47	6.88	6.38	6.03	7.212	6.712	6.327	7.015	6.515	6.228
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	494	532	553	521	561	594	495	533	565	510	550	574
Service Time	4.986	4.486	4.23	4.633	4.133	3.783	4.974	4.474	4.089	4.77	4.27	3.984
HCM Lane V/C Ratio	0.045	0.164	0.123	0.196	0.209	0.197	0.053	0.133	0.14	0.057	0.245	0.199
HCM Control Delay	10.3	10.8	10.1	11.3	10.8	10.3	10.4	10.5	10.1	10.2	11.4	10.5
HCM Lane LOS	B	B	B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.1	0.6	0.4	0.7	0.8	0.7	0.2	0.5	0.5	0.2	1	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	16	1300	44	73	922	48	16	11	75	28
Future Volume (vph)	16	1300	44	73	922	48	16	11	75	28
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	12.0	62.0	62.0	17.0	67.0	67.0	12.0	26.0	15.0	29.0
Total Split (%)	10.0%	51.7%	51.7%	14.2%	55.8%	55.8%	10.0%	21.7%	12.5%	24.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	6.6	42.3	42.3	9.1	48.8	48.8	6.6	8.8	8.8	15.1
Actuated g/C Ratio	0.08	0.50	0.50	0.11	0.58	0.58	0.08	0.10	0.10	0.18
v/c Ratio	0.12	0.79	0.05	0.41	0.49	0.05	0.12	0.32	0.44	0.12
Control Delay	50.0	23.5	0.1	50.6	12.9	0.1	50.0	19.5	52.3	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	23.5	0.1	50.6	12.9	0.1	50.0	19.5	52.3	31.3
LOS	D	C	A	D	B	A	D	B	D	C
Approach Delay		23.0			14.9			25.4		45.4
Approach LOS		C			B			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1300	44	73	922	48	16	11	55	75	28	9
Future Volume (veh/h)	16	1300	44	73	922	48	16	11	55	75	28	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	1398	47	78	991	52	17	12	59	81	30	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	1837	819	101	1966	877	36	20	100	104	151	50
Arrive On Green	0.02	0.52	0.52	0.06	0.55	0.55	0.02	0.07	0.07	0.06	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	275	1352	1781	1342	447
Grp Volume(v), veh/h	17	1398	47	78	991	52	17	0	71	81	0	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1627	1781	0	1790
Q Serve(g_s), s	0.7	22.1	1.0	3.1	12.2	1.1	0.7	0.0	3.0	3.2	0.0	1.4
Cycle Q Clear(g_c), s	0.7	22.1	1.0	3.1	12.2	1.1	0.7	0.0	3.0	3.2	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.25
Lane Grp Cap(c), veh/h	36	1837	819	101	1966	877	36	0	120	104	0	201
V/C Ratio(X)	0.48	0.76	0.06	0.78	0.50	0.06	0.48	0.00	0.59	0.78	0.00	0.20
Avail Cap(c_a), veh/h	187	2827	1261	313	3079	1373	187	0	465	262	0	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.2	13.6	8.5	32.9	9.8	7.3	34.2	0.0	31.7	32.8	0.0	28.5
Incr Delay (d2), s/veh	3.6	0.7	0.0	4.7	0.2	0.0	3.6	0.0	4.6	4.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	7.0	0.3	1.4	3.6	0.3	0.3	0.0	1.2	1.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	14.3	8.5	37.6	10.0	7.3	37.9	0.0	36.3	37.4	0.0	29.0
LnGrp LOS	D	B	A	D	A	A	D	A	D	D	A	C
Approach Vol, veh/h		1462			1121			88			121	
Approach Delay, s/veh		14.4			11.8			36.6			34.6	
Approach LOS		B			B			D			C	

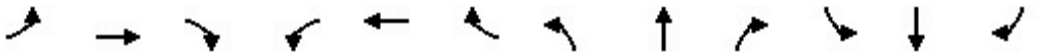
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	11.0	8.6	42.3	6.0	13.7	6.0	44.9
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	20.2	12.4	56.2	7.4	23.2	7.4	61.2
Max Q Clear Time (g_c+I1), s	5.2	5.0	5.1	24.1	2.7	3.4	2.7	14.2
Green Ext Time (p_c), s	0.0	0.2	0.0	12.4	0.0	0.1	0.0	8.1

Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	272	10	562	328	928	1479	695
Future Volume (vph)	272	10	562	328	928	1479	695
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	20.0	20.0		18.0	70.0	52.0	52.0
Total Split (%)	22.2%	22.2%		20.0%	77.8%	57.8%	57.8%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.5	12.5	90.0	12.1	65.5	48.4	48.4
Actuated g/C Ratio	0.14	0.14	1.00	0.13	0.73	0.54	0.54
v/c Ratio	0.63	0.62	0.37	0.75	0.26	0.56	0.66
Control Delay	48.9	48.5	0.7	40.1	4.6	15.2	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	48.5	0.7	40.1	4.6	15.2	7.0
LOS	D	D	A	D	A	B	A
Approach Delay		16.7			13.9	12.6	
Approach LOS		B			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	272	10	562	328	928	0	0	1479	695
Future Volume (veh/h)	0	0	0	272	10	562	328	928	0	0	1479	695
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				290	0	0	342	967	0	0	1541	412
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				396	0		409	3858	0	0	2970	910
Arrive On Green				0.11	0.00	0.00	0.24	1.00	0.00	0.00	0.58	0.58
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1565
Grp Volume(v), veh/h				290	0	0	342	967	0	0	1541	412
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1565
Q Serve(g_s), s				7.1	0.0	0.0	8.5	0.0	0.0	0.0	16.3	13.5
Cycle Q Clear(g_c), s				7.1	0.0	0.0	8.5	0.0	0.0	0.0	16.3	13.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				396	0		409	3858	0	0	2970	910
V/C Ratio(X)				0.73	0.00		0.84	0.25	0.00	0.00	0.52	0.45
Avail Cap(c_a), veh/h				562	0		499	3858	0	0	2970	910
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.75	0.75	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				38.7	0.0	0.0	33.5	0.0	0.0	0.0	11.3	10.7
Incr Delay (d2), s/veh				2.9	0.0	0.0	6.5	0.1	0.0	0.0	0.7	1.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.1	0.0	0.0	3.4	0.0	0.0	0.0	5.3	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.7	0.0	0.0	40.0	0.1	0.0	0.0	11.9	12.3
LnGrp LOS				D	A		D	A	A	A	B	B
Approach Vol, veh/h					290	A		1309			1953	
Approach Delay, s/veh					41.7			10.5			12.0	
Approach LOS					D			B			B	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	74.2		15.7	58.5		15.8						
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8						
Max Green Setting (Gmax), s	63.8		13.0	45.8		14.2						
Max Q Clear Time (g_c+I1), s	2.0		10.5	18.3		9.1						
Green Ext Time (p_c), s	4.5		0.2	9.2		0.4						

Intersection Summary		
HCM 6th Ctrl Delay	13.9	
HCM 6th LOS	B	

Notes

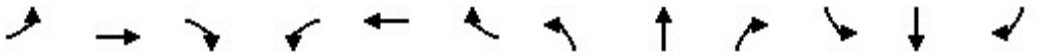
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	349	2	482	899	609	1160
Future Volume (vph)	349	2	482	899	609	1160
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	26.0	26.0	26.0	34.0	30.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	37.8%	33.3%	71.1%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	20.2	20.2	20.2	31.5	21.3	57.8
Actuated g/C Ratio	0.22	0.22	0.22	0.35	0.24	0.64
v/c Ratio	0.48	0.49	1.16	0.64	0.78	0.37
Control Delay	35.4	35.5	123.5	25.9	54.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	35.5	123.5	25.9	54.2	5.2
LOS	D	D	F	C	D	A
Approach Delay		86.4		25.9		22.1
Approach LOS		F		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 37.8	Intersection LOS: D
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	2	482	0	0	0	0	899	179	609	1160	0
Future Volume (veh/h)	349	2	482	0	0	0	0	899	179	609	1160	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	365	0	294				0	936	124	634	1208	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	743	0	331				0	1799	238	720	3360	0
Arrive On Green	0.21	0.00	0.21				0.00	0.39	0.39	0.42	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4731	603	3456	5274	0
Grp Volume(v), veh/h	365	0	294				0	698	362	634	1208	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1761	1728	1702	0
Q Serve(g_s), s	8.1	0.0	16.2				0.0	14.1	14.1	15.2	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	16.2				0.0	14.1	14.1	15.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.34	1.00		0.00
Lane Grp Cap(c), veh/h	743	0	331				0	1342	694	720	3360	0
V/C Ratio(X)	0.49	0.00	0.89				0.00	0.52	0.52	0.88	0.36	0.00
Avail Cap(c_a), veh/h	800	0	356				0	1342	694	960	3360	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.80	0.80	0.00
Uniform Delay (d), s/veh	31.4	0.0	34.6				0.0	20.8	20.8	25.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	22.0				0.0	1.4	2.8	6.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	7.9				0.0	5.3	5.8	5.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	0.0	56.6				0.0	22.2	23.6	31.4	0.2	0.0
LnGrp LOS	C	A	E				A	C	C	C	A	A
Approach Vol, veh/h		659						1060			1842	
Approach Delay, s/veh		42.9						22.7			11.0	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.7	41.7		24.6		65.4
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	25.0	27.8		20.2		57.8
Max Q Clear Time (g_c+I1), s	17.2	16.1		18.2		2.0
Green Ext Time (p_c), s	1.5	3.4		0.6		6.1

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

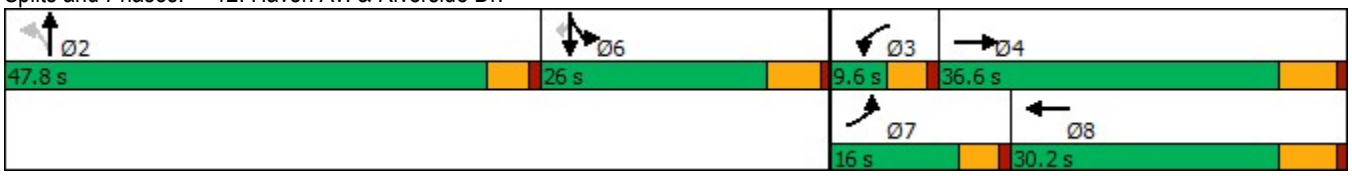
Notes

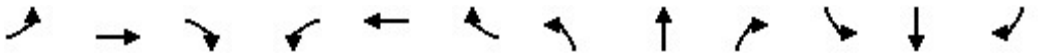
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	291	347	65	320	45	561	135	722	334
Future Volume (vph)	291	347	65	320	45	561	135	722	334
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	16.0	36.6	9.6	30.2	47.8	47.8	26.0	26.0	26.0
Total Split (%)	13.3%	30.5%	8.0%	25.2%	39.8%	39.8%	21.7%	21.7%	21.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.4	30.4	5.0	24.0		43.1	20.2	20.2	20.2
Actuated g/C Ratio	0.10	0.25	0.04	0.20		0.36	0.17	0.17	0.17
v/c Ratio	2.02	1.00	1.05	0.67		5.17	0.53	2.53	0.87
Control Delay	509.9	86.7	180.4	46.2		1903.8	53.7	721.4	44.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	509.9	86.7	180.4	46.2		1903.8	53.7	721.4	44.9
LOS	F	F	F	D		F	D	F	D
Approach Delay		259.8		63.8		1903.8		455.8	
Approach LOS		F		E		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 5.17	
Intersection Signal Delay: 662.6	Intersection LOS: F
Intersection Capacity Utilization 120.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	347	74	65	320	114	45	561	64	135	722	334
Future Volume (veh/h)	291	347	74	65	320	114	45	561	64	135	722	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	303	361	76	68	333	99	47	584	61	141	752	122
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	357	75	66	511	149	42	527	55	268	298	252
Arrive On Green	0.09	0.25	0.25	0.04	0.20	0.20	0.36	0.36	0.36	0.17	0.17	0.17
Sat Flow, veh/h	1594	1410	297	1594	2554	746	118	1467	153	1594	1772	1496
Grp Volume(v), veh/h	303	0	437	68	217	215	692	0	0	141	752	122
Grp Sat Flow(s),veh/h/ln	1594	0	1707	1594	1683	1617	1738	0	0	1594	1772	1496
Q Serve(g_s), s	11.4	0.0	30.4	5.0	14.2	14.7	43.1	0.0	0.0	9.7	20.2	8.9
Cycle Q Clear(g_c), s	11.4	0.0	30.4	5.0	14.2	14.7	43.1	0.0	0.0	9.7	20.2	8.9
Prop In Lane	1.00		0.17	1.00		0.46	0.07		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	151	0	432	66	337	323	624	0	0	268	298	252
V/C Ratio(X)	2.00	0.00	1.01	1.02	0.65	0.66	1.11	0.00	0.00	0.53	2.52	0.48
Avail Cap(c_a), veh/h	151	0	432	66	337	323	624	0	0	268	298	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	44.8	57.5	44.1	44.3	38.5	0.0	0.0	45.5	49.9	45.2
Incr Delay (d2), s/veh	473.2	0.0	46.0	117.3	4.2	5.0	69.4	0.0	0.0	1.9	694.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.3	0.0	17.8	4.1	6.1	6.1	30.0	0.0	0.0	3.9	66.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	527.5	0.0	90.8	174.8	48.3	49.3	107.9	0.0	0.0	47.4	744.3	46.6
LnGrp LOS	F	A	F	F	D	D	F	A	A	D	F	D
Approach Vol, veh/h		740			500			692			1015	
Approach Delay, s/veh		269.6			65.9			107.9			563.6	
Approach LOS		F			E			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		47.8	9.6	36.6		26.0	16.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 43	5.0	30.4		20.2	11.4	24.0				
Max Q Clear Time (g_c+I1), s		45.1	7.0	32.4		22.2	13.4	16.7				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	1.3				

Intersection Summary		
HCM 6th Ctrl Delay		298.3
HCM 6th LOS		F

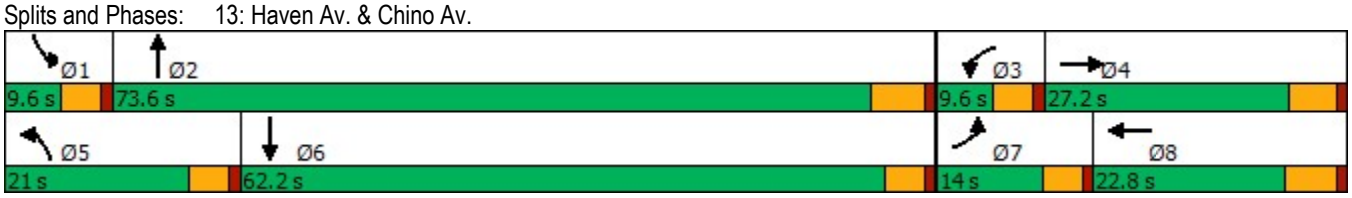
Notes

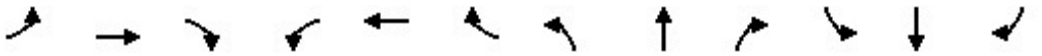
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	81	46	248	40	87	588	830	
Future Volume (vph)	81	46	248	40	87	588	830	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	14.0	27.2	9.6	22.8	21.0	73.6	62.2	9.6
Total Split (%)	11.7%	22.7%	8.0%	19.0%	17.5%	61.3%	51.8%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	11.0	14.0	5.1	13.5	10.6	69.7	58.2	
Actuated g/C Ratio	0.10	0.13	0.05	0.13	0.10	0.67	0.56	
v/c Ratio	0.52	0.51	3.18	0.18	0.58	0.68	0.96	
Control Delay	59.7	30.0	1027.2	47.3	61.3	14.7	45.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	59.7	30.0	1027.2	47.3	61.3	14.7	45.4	
LOS	E	C	F	D	E	B	D	
Approach Delay		41.0		892.6		19.6	45.4	
Approach LOS		D		F		B	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.18	
Intersection Signal Delay: 148.7	Intersection LOS: F
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	46	89	248	40	0	87	588	145	0	830	52
Future Volume (veh/h)	81	46	89	248	40	0	87	588	145	0	830	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	85	50	94	270	43	0	92	619	158	0	874	55
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	67	127	89	188	0	114	914	233	2	913	57
Arrive On Green	0.07	0.12	0.12	0.05	0.10	0.00	0.07	0.67	0.67	0.00	0.55	0.55
Sat Flow, veh/h	1594	581	1093	1781	1870	0	1594	1362	348	1781	1649	104
Grp Volume(v), veh/h	85	0	144	270	43	0	92	0	777	0	0	929
Grp Sat Flow(s),veh/h/ln	1594	0	1674	1781	1870	0	1594	0	1709	1781	0	1753
Q Serve(g_s), s	5.2	0.0	8.3	5.0	2.1	0.0	5.7	0.0	27.3	0.0	0.0	50.2
Cycle Q Clear(g_c), s	5.2	0.0	8.3	5.0	2.1	0.0	5.7	0.0	27.3	0.0	0.0	50.2
Prop In Lane	1.00		0.65	1.00		0.00	1.00		0.20	1.00		0.06
Lane Grp Cap(c), veh/h	105	0	194	89	188	0	114	0	1148	2	0	971
V/C Ratio(X)	0.81	0.00	0.74	3.02	0.23	0.00	0.81	0.00	0.68	0.00	0.00	0.96
Avail Cap(c_a), veh/h	150	0	366	89	319	0	262	0	1162	89	0	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	45.9	0.0	42.6	47.4	41.3	0.0	45.6	0.0	9.9	0.0	0.0	21.1
Incr Delay (d2), s/veh	12.7	0.0	5.5	939.3	0.6	0.0	5.0	0.0	1.6	0.0	0.0	18.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	3.6	25.4	1.0	0.0	2.3	0.0	8.4	0.0	0.0	23.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.7	0.0	48.1	986.7	41.9	0.0	50.7	0.0	11.4	0.0	0.0	39.5
LnGrp LOS	E	A	D	F	D	A	D	A	B	A	A	D
Approach Vol, veh/h		229			313			869			929	
Approach Delay, s/veh		52.0			856.9			15.6			39.5	
Approach LOS		D			F			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	72.7	9.6	17.4	11.7	61.0	11.2	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	67.8	5.0	* 22	16.4	* 58	9.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	29.3	7.0	10.3	7.7	52.2	7.2	4.1
Green Ext Time (p_c), s	0.0	6.1	0.0	0.5	0.1	3.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	141.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	22	82	121	798	1138
Future Volume (vph)	22	82	121	798	1138
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	34.0	34.0	34.0	86.0	52.0
Total Split (%)	28.3%	28.3%	28.3%	71.7%	43.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.1	12.1	12.4	65.6	47.1
Actuated g/C Ratio	0.14	0.14	0.15	0.78	0.56
v/c Ratio	0.11	0.32	0.61	0.67	0.68
Control Delay	35.6	11.2	47.1	10.1	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	11.2	47.1	10.1	18.3
LOS	D	B	D	B	B
Approach Delay	16.5			15.0	18.3
Approach LOS	B			B	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 16.8	Intersection LOS: B
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	82	121	798	1138	20
Future Volume (veh/h)	22	82	121	798	1138	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	26	26	141	928	1323	23
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	157	148	177	1239	1764	31
Arrive On Green	0.10	0.10	0.11	0.70	0.51	0.51
Sat Flow, veh/h	1594	1502	1594	1772	3473	60
Grp Volume(v), veh/h	26	26	141	928	675	671
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1772	1761
Q Serve(g_s), s	0.9	0.9	4.9	18.9	17.3	17.4
Cycle Q Clear(g_c), s	0.9	0.9	4.9	18.9	17.3	17.4
Prop In Lane	1.00	1.00	1.00			0.03
Lane Grp Cap(c), veh/h	157	148	177	1239	900	895
V/C Ratio(X)	0.17	0.18	0.80	0.75	0.75	0.75
Avail Cap(c_a), veh/h	785	739	818	2481	1429	1420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	23.7	24.8	5.4	11.2	11.2
Incr Delay (d2), s/veh	0.5	0.6	3.1	0.9	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.8	1.8	2.7	5.0	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.2	24.3	28.0	6.4	12.5	12.5
LnGrp LOS	C	C	C	A	B	B
Approach Vol, veh/h	52			1069	1346	
Approach Delay, s/veh	24.2			9.2	12.5	
Approach LOS	C			A	B	

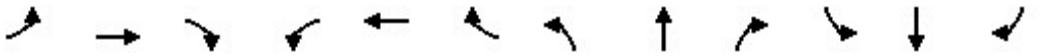
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		45.9		11.4	10.9	34.9
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		80.2		28.2	29.4	46.2
Max Q Clear Time (g_c+I1), s		20.9		2.9	6.9	19.4
Green Ext Time (p_c), s		8.3		0.1	0.2	9.8

Intersection Summary		
HCM 6th Ctrl Delay		11.3
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	1075	35	227	857	360	18	267	70	414	451	138
Future Volume (vph)	291	1075	35	227	857	360	18	267	70	414	451	138
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	16.0	35.2	35.2	15.3	34.5	34.5	10.7	49.5	49.5	20.0	58.8	58.8
Total Split (%)	13.3%	29.3%	29.3%	12.8%	28.8%	28.8%	8.9%	41.3%	41.3%	16.7%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	11.5	29.4	29.4	10.6	28.3	28.3	5.6	23.7	23.7	15.5	40.0	40.0
Actuated g/C Ratio	0.11	0.29	0.29	0.11	0.28	0.28	0.06	0.24	0.24	0.15	0.40	0.40
v/c Ratio	1.71	0.74	0.07	0.77	0.46	0.55	0.22	0.69	0.16	1.80	0.69	0.22
Control Delay	374.5	37.0	0.2	62.2	32.0	6.9	55.6	43.2	0.7	405.1	31.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	374.5	37.0	0.2	62.2	32.0	6.9	55.6	43.2	0.7	405.1	31.6	4.3
LOS	F	D	A	E	C	A	E	D	A	F	C	A
Approach Delay		106.3			30.5			35.5			181.8	
Approach LOS		F			C			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.80	
Intersection Signal Delay: 92.3	Intersection LOS: F
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	1075	35	227	857	360	18	267	70	414	451	138
Future Volume (veh/h)	291	1075	35	227	857	360	18	267	70	414	451	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	310	1144	20	241	912	192	19	284	24	440	480	78
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	1697	479	298	2109	447	33	335	284	261	588	498
Arrive On Green	0.18	0.48	0.48	0.15	0.45	0.45	0.03	0.28	0.28	0.25	0.50	0.50
Sat Flow, veh/h	1594	5316	1502	3000	7088	1502	1594	1772	1502	1594	1772	1502
Grp Volume(v), veh/h	310	1144	20	241	912	192	19	284	24	440	480	78
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1500	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	11.4	15.6	0.7	7.3	8.3	8.2	1.1	14.2	1.1	15.4	21.6	2.7
Cycle Q Clear(g_c), s	11.4	15.6	0.7	7.3	8.3	8.2	1.1	14.2	1.1	15.4	21.6	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1697	479	298	2109	447	33	335	284	261	588	498
V/C Ratio(X)	1.61	0.67	0.04	0.81	0.43	0.43	0.57	0.85	0.08	1.69	0.82	0.16
Avail Cap(c_a), veh/h	193	1697	479	341	2109	447	103	823	697	261	998	846
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	20.7	16.9	39.2	20.6	20.6	45.2	32.4	27.7	35.5	21.2	16.4
Incr Delay (d2), s/veh	295.2	2.2	0.2	10.4	0.6	3.0	5.7	5.9	0.1	325.2	2.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.7	5.2	0.2	2.8	3.0	2.8	0.5	5.7	0.4	28.6	6.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	333.7	22.9	17.0	49.6	21.2	23.6	50.8	38.4	27.9	360.7	24.0	16.6
LnGrp LOS	F	C	B	D	C	C	D	D	C	F	C	B
Approach Vol, veh/h		1474			1345			327			998	
Approach Delay, s/veh		88.2			26.6			38.3			171.9	
Approach LOS		F			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	23.6	14.0	36.5	6.6	37.0	16.0	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.7	10.7	* 29	6.1	53.0	11.4	28.0
Max Q Clear Time (g_c+I1), s	17.4	16.2	9.3	17.6	3.1	23.6	13.4	10.3
Green Ext Time (p_c), s	0.0	1.6	0.1	5.4	0.0	3.1	0.0	5.8

Intersection Summary	
HCM 6th Ctrl Delay	84.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

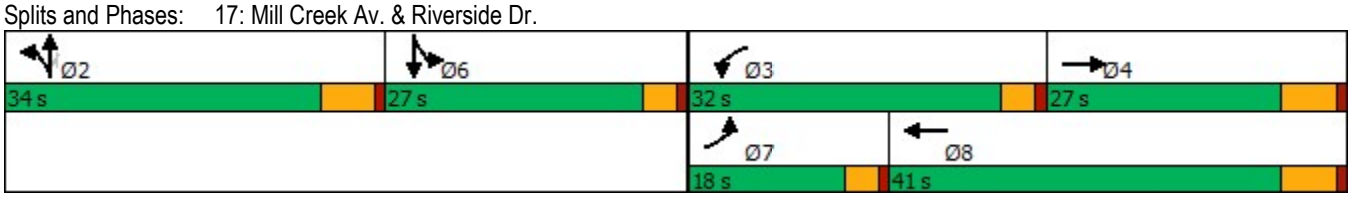
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	209	316	0	43
Demand Flow Rate, veh/h	213	323	0	44
Vehicles Circulating, veh/h	17	46	230	293
Vehicles Exiting, veh/h	320	184	0	76
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	4.9	0.0	4.0
Approach LOS	A	A	-	A

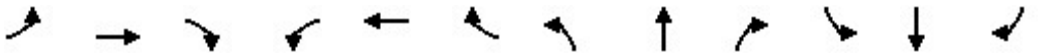
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	213	323	0	44
Cap Entry Lane, veh/h	1356	1317	1091	1023
Entry HV Adj Factor	0.980	0.979	1.000	0.977
Flow Entry, veh/h	209	316	0	43
Cap Entry, veh/h	1329	1289	1091	1000
V/C Ratio	0.157	0.245	0.000	0.043
Control Delay, s/veh	4.0	4.9	3.3	4.0
LOS	A	A	A	A
95th %tile Queue, veh	1	1	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	93	273	215	290	130	18	166	58	14
Future Volume (vph)	93	273	215	290	130	18	166	58	14
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	18.0	27.0	32.0	41.0	34.0	34.0	34.0	27.0	27.0
Total Split (%)	15.0%	22.5%	26.7%	34.2%	28.3%	28.3%	28.3%	22.5%	22.5%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	9.5	14.6	16.3	23.9	13.9	13.9	13.9	12.4	12.4
Actuated g/C Ratio	0.12	0.19	0.21	0.31	0.18	0.18	0.18	0.16	0.16
v/c Ratio	0.51	0.64	0.69	0.40	0.49	0.06	0.43	0.25	0.24
Control Delay	46.7	31.2	42.3	21.9	38.4	31.9	9.3	35.9	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	31.2	42.3	21.9	38.4	31.9	9.3	35.9	16.2
LOS	D	C	D	C	D	C	A	D	B
Approach Delay		34.1		29.0		22.6			25.6
Approach LOS		C		C		C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 78.1	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	273	131	215	290	113	130	18	166	58	14	50
Future Volume (veh/h)	93	273	131	215	290	113	130	18	166	58	14	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	99	290	86	229	309	72	138	19	103	62	15	32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	440	128	274	731	168	263	292	247	277	86	183
Arrive On Green	0.08	0.17	0.17	0.17	0.26	0.26	0.16	0.16	0.16	0.17	0.17	0.17
Sat Flow, veh/h	1594	2633	765	1594	2789	640	1594	1772	1499	1594	495	1056
Grp Volume(v), veh/h	99	193	183	229	195	186	138	19	103	62	0	47
Grp Sat Flow(s),veh/h/ln	1594	1772	1626	1594	1772	1657	1594	1772	1499	1594	0	1550
Q Serve(g_s), s	3.8	6.3	6.5	8.5	5.6	5.7	4.9	0.6	3.8	2.1	0.0	1.6
Cycle Q Clear(g_c), s	3.8	6.3	6.5	8.5	5.6	5.7	4.9	0.6	3.8	2.1	0.0	1.6
Prop In Lane	1.00		0.47	1.00		0.39	1.00		1.00	1.00		0.68
Lane Grp Cap(c), veh/h	123	296	272	274	464	434	263	292	247	277	0	269
V/C Ratio(X)	0.81	0.65	0.67	0.83	0.42	0.43	0.53	0.07	0.42	0.22	0.00	0.17
Avail Cap(c_a), veh/h	363	606	556	727	1010	944	732	814	688	597	0	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.9	23.9	24.0	24.6	18.8	18.8	23.4	21.7	23.0	21.8	0.0	21.6
Incr Delay (d2), s/veh	4.6	2.4	2.9	2.6	0.6	0.7	1.6	0.1	1.1	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.5	2.4	3.0	2.0	1.9	1.7	0.2	1.2	0.8	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	26.3	26.9	27.1	19.4	19.5	25.1	21.7	24.1	22.2	0.0	21.9
LnGrp LOS	C	C	C	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		475			610			260			109	
Approach Delay, s/veh		27.8			22.3			24.5			22.1	
Approach LOS		C			C			C			C	

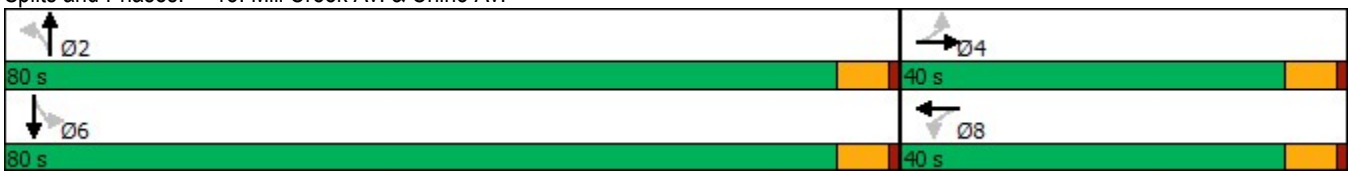
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.9	14.6	16.3		14.7	8.7	22.1				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		28.2	28.0	21.0		23.0	14.0	35.0				
Max Q Clear Time (g_c+I1), s		6.9	10.5	8.5		4.1	5.8	7.7				
Green Ext Time (p_c), s		0.7	0.3	1.5		0.3	0.1	2.0				

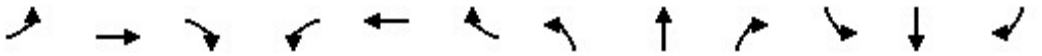
Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	72	88	6	149	20	129	9	84
Future Volume (vph)	72	88	6	149	20	129	9	84
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
Total Split (s)	40.0	40.0	40.0	40.0	80.0	80.0	80.0	80.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	66.7%	66.7%	66.7%	66.7%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	11.5	11.5	11.5	11.5	21.7	21.7	21.7	21.7
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.48	0.48	0.48	0.48
v/c Ratio	0.27	0.22	0.07	0.47	0.06	0.66	0.12	0.54
Control Delay	17.9	15.9	15.7	18.3	7.2	13.3	8.1	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	15.9	15.7	18.3	7.2	13.3	8.1	10.6
LOS	B	B	B	B	A	B	A	B
Approach Delay		16.8		18.0		13.0		10.4
Approach LOS		B		B		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 45.4	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 44.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: Mill Creek Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	88	7	6	149	14	20	129	16	9	84	122
Future Volume (veh/h)	72	88	7	6	149	14	20	129	16	9	84	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	96	5	24	162	32	22	516	36	36	336	57
Peak Hour Factor	0.92	0.92	0.92	0.25	0.92	0.25	0.92	0.25	0.25	0.25	0.25	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	379	403	21	455	347	69	477	729	51	367	657	112
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	1189	1762	92	1294	1517	300	991	1728	121	856	1558	264
Grp Volume(v), veh/h	78	0	101	24	0	194	22	0	552	36	0	393
Grp Sat Flow(s),veh/h/ln	1189	0	1854	1294	0	1816	991	0	1849	856	0	1823
Q Serve(g_s), s	2.0	0.0	1.5	0.5	0.0	3.1	0.6	0.0	8.2	1.2	0.0	5.3
Cycle Q Clear(g_c), s	5.1	0.0	1.5	2.0	0.0	3.1	5.8	0.0	8.2	9.4	0.0	5.3
Prop In Lane	1.00		0.05	1.00		0.16	1.00		0.07	1.00		0.15
Lane Grp Cap(c), veh/h	379	0	424	455	0	416	477	0	780	367	0	769
V/C Ratio(X)	0.21	0.00	0.24	0.05	0.00	0.47	0.05	0.00	0.71	0.10	0.00	0.51
Avail Cap(c_a), veh/h	1331	0	1908	1491	0	1870	2273	0	4129	1918	0	4071
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	10.4	11.3	0.0	11.1	9.2	0.0	7.9	11.8	0.0	7.1
Incr Delay (d2), s/veh	0.3	0.0	0.3	0.0	0.0	0.8	0.0	0.0	1.2	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.4	0.1	0.0	0.9	0.1	0.0	1.7	0.2	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	0.0	10.7	11.3	0.0	11.9	9.3	0.0	9.1	11.9	0.0	7.6
LnGrp LOS	B	A	B	B	A	B	A	A	A	B	A	A
Approach Vol, veh/h		179			218			574			429	
Approach Delay, s/veh		11.9			11.8			9.1			8.0	
Approach LOS		B			B			A			A	

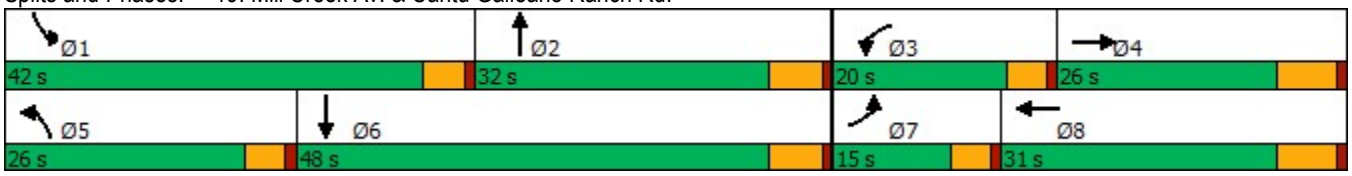
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.8		13.4		19.8		13.4				
Change Period (Y+Rc), s		5.8		5.8		5.8		5.8				
Max Green Setting (Gmax), s		74.2		34.2		74.2		34.2				
Max Q Clear Time (g_c+I1), s		10.2		7.1		11.4		5.1				
Green Ext Time (p_c), s		3.8		0.7		2.6		1.1				

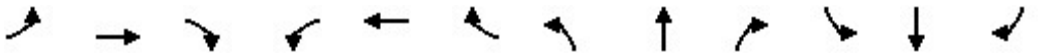
Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	250	90	316	139	24	275	41
Future Volume (vph)	45	250	90	316	139	24	275	41
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	23.5	9.6	23.5	9.6	27.8	9.6	27.8
Total Split (s)	15.0	26.0	20.0	31.0	26.0	32.0	42.0	48.0
Total Split (%)	12.5%	21.7%	16.7%	25.8%	21.7%	26.7%	35.0%	40.0%
Yellow Time (s)	3.6	5.5	3.6	5.5	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	7.0	12.4	9.0	16.5	11.2	12.3	17.4	18.5
Actuated g/C Ratio	0.10	0.17	0.13	0.23	0.16	0.17	0.25	0.26
v/c Ratio	0.28	0.52	0.44	0.42	0.54	0.30	0.69	0.27
Control Delay	39.8	22.8	39.8	22.5	38.9	14.4	35.5	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	22.8	39.8	22.5	38.9	14.4	35.5	11.7
LOS	D	C	D	C	D	B	D	B
Approach Delay		24.4		25.3		28.8		28.2
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 71	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 55.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 19: Mill Creek Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	250	198	90	316	150	139	24	74	275	41	81
Future Volume (veh/h)	45	250	198	90	316	150	139	24	74	275	41	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	272	128	98	343	98	151	26	53	299	45	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	611	266	127	794	217	195	96	196	358	192	261
Arrive On Green	0.05	0.18	0.18	0.07	0.20	0.20	0.11	0.18	0.18	0.20	0.27	0.27
Sat Flow, veh/h	1781	3485	1517	1781	3988	1090	1781	549	1120	1781	719	975
Grp Volume(v), veh/h	49	265	135	98	290	151	151	0	79	299	0	106
Grp Sat Flow(s),veh/h/ln	1781	1702	1597	1781	1702	1674	1781	0	1669	1781	0	1695
Q Serve(g_s), s	1.5	4.0	4.3	3.1	4.3	4.5	4.7	0.0	2.3	9.2	0.0	2.8
Cycle Q Clear(g_c), s	1.5	4.0	4.3	3.1	4.3	4.5	4.7	0.0	2.3	9.2	0.0	2.8
Prop In Lane	1.00		0.95	1.00		0.65	1.00		0.67	1.00		0.58
Lane Grp Cap(c), veh/h	84	597	280	127	678	333	195	0	293	358	0	453
V/C Ratio(X)	0.58	0.44	0.48	0.77	0.43	0.45	0.78	0.00	0.27	0.83	0.00	0.23
Avail Cap(c_a), veh/h	325	1164	546	481	1462	719	668	0	767	1168	0	1254
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	21.0	21.2	26.0	20.0	20.1	24.7	0.0	20.4	21.9	0.0	16.3
Incr Delay (d2), s/veh	2.3	0.5	1.3	3.7	0.4	1.0	2.5	0.0	0.5	2.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.3	1.4	1.2	1.4	1.5	1.9	0.0	0.8	3.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	21.6	22.5	29.8	20.4	21.1	27.2	0.0	20.8	23.8	0.0	16.6
LnGrp LOS	C	C	C	C	C	C	C	A	C	C	A	B
Approach Vol, veh/h		449			539			230			405	
Approach Delay, s/veh		22.6			22.3			25.0			21.9	
Approach LOS		C			C			C			C	

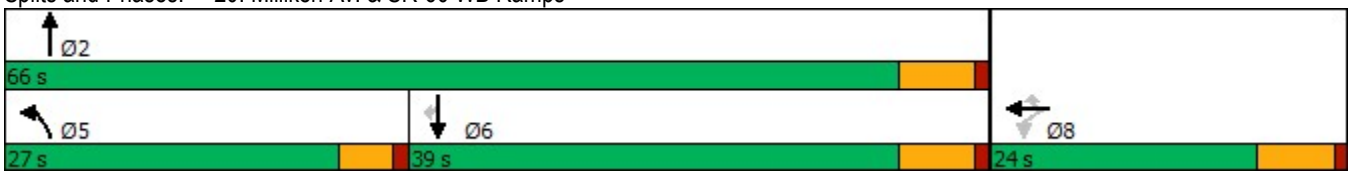
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.1	15.8	8.7	16.5	10.8	21.0	7.3	17.9
Change Period (Y+Rc), s	4.6	5.8	4.6	6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	37.4	26.2	15.4	19.5	21.4	42.2	10.4	24.5
Max Q Clear Time (g_c+I1), s	11.2	4.3	5.1	6.3	6.7	4.8	3.5	6.5
Green Ext Time (p_c), s	0.4	0.3	0.1	1.7	0.1	0.6	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	319	359	807	1051	518
Future Volume (vph)	4	319	359	807	1051	518
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	9.6	16.2	16.2	16.2
Total Split (s)	24.0	24.0	27.0	66.0	39.0	39.0
Total Split (%)	26.7%	26.7%	30.0%	73.3%	43.3%	43.3%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	15.6	15.6	20.3	55.7	30.7	30.7
Actuated g/C Ratio	0.19	0.19	0.24	0.66	0.37	0.37
v/c Ratio	0.75	0.72	0.88	0.34	0.80	0.59
Control Delay	49.1	22.6	54.2	6.7	29.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	22.6	54.2	6.7	29.9	4.9
LOS	D	C	D	A	C	A
Approach Delay	34.0			21.3	21.6	
Approach LOS	C			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 83.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 23.6	Intersection LOS: C
Intersection Capacity Utilization 79.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	235	4	319	359	807	0	0	1051	518
Future Volume (veh/h)	0	0	0	235	4	319	359	807	0	0	1051	518
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				245	4	156	374	841	0	0	1095	456
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				303	5	274	416	2483	0	0	1383	586
Arrive On Green				0.17	0.17	0.17	0.23	0.66	0.00	0.00	0.37	0.37
Sat Flow, veh/h				1754	29	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				249	0	156	374	841	0	0	1095	456
Grp Sat Flow(s),veh/h/ln				1783	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				10.2	0.0	6.8	15.4	7.4	0.0	0.0	19.8	19.3
Cycle Q Clear(g_c), s				10.2	0.0	6.8	15.4	7.4	0.0	0.0	19.8	19.3
Prop In Lane				0.98		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				308	0	274	416	2483	0	0	1383	586
V/C Ratio(X)				0.81	0.00	0.57	0.90	0.34	0.00	0.00	0.79	0.78
Avail Cap(c_a), veh/h				418	0	372	526	2950	0	0	1618	686
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				30.2	0.0	28.8	28.2	5.5	0.0	0.0	21.3	21.2
Incr Delay (d2), s/veh				8.3	0.0	1.9	13.8	0.1	0.0	0.0	2.4	4.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.7	0.0	2.5	7.4	1.8	0.0	0.0	7.8	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.4	0.0	30.7	42.0	5.6	0.0	0.0	23.7	26.0
LnGrp LOS				D	A	C	D	A	A	A	C	C
Approach Vol, veh/h					405			1215			1551	
Approach Delay, s/veh					35.4			16.8			24.4	
Approach LOS					D			B			C	

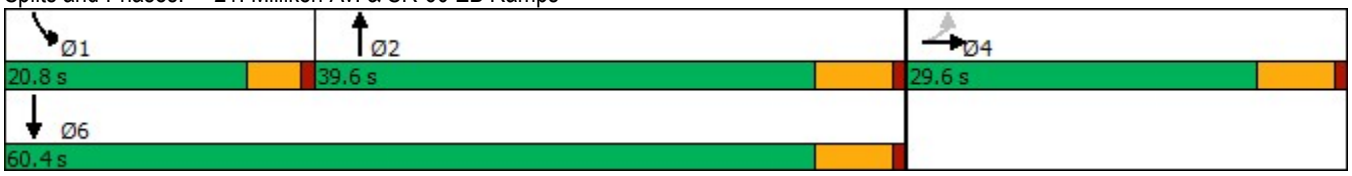
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		56.5			22.3	34.2		19.3				
Change Period (Y+Rc), s		6.2			4.6	6.2		6.2				
Max Green Setting (Gmax), s		59.8			22.4	32.8		17.8				
Max Q Clear Time (g_c+I1), s		9.4			17.4	21.8		12.2				
Green Ext Time (p_c), s		6.1			0.3	6.2		0.9				

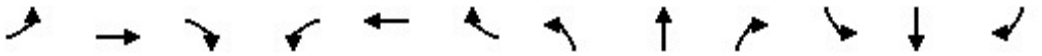
Intersection Summary												
HCM 6th Ctrl Delay			22.9									
HCM 6th LOS			C									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	263	4	894	223	1062
Future Volume (vph)	263	4	894	223	1062
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	16.2	16.2	23.2	9.6	16.2
Total Split (s)	29.6	29.6	39.6	20.8	60.4
Total Split (%)	32.9%	32.9%	44.0%	23.1%	67.1%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	19.8	19.8	30.5	14.0	49.2
Actuated g/C Ratio	0.24	0.24	0.37	0.17	0.60
v/c Ratio	0.58	0.84	0.87	0.77	0.49
Control Delay	34.2	40.4	31.6	51.8	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	40.4	31.6	51.8	10.4
LOS	C	D	C	D	B
Approach Delay		38.0	31.6		17.6
Approach LOS		D	C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 81.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 79.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	4	340	0	0	0	0	894	251	223	1062	0
Future Volume (veh/h)	263	4	340	0	0	0	0	894	251	223	1062	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	233	62	187				0	931	136	232	1106	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	357	82	248				0	1197	175	281	2263	0
Arrive On Green	0.20	0.20	0.20				0.00	0.38	0.38	0.16	0.60	0.00
Sat Flow, veh/h	1781	410	1237				0	3191	466	1781	3741	0
Grp Volume(v), veh/h	233	0	249				0	546	521	232	1106	0
Grp Sat Flow(s),veh/h/ln	1781	0	1648				0	1870	1786	1781	1870	0
Q Serve(g_s), s	7.7	0.0	9.1				0.0	16.4	16.4	8.0	10.6	0.0
Cycle Q Clear(g_c), s	7.7	0.0	9.1				0.0	16.4	16.4	8.0	10.6	0.0
Prop In Lane	1.00		0.75				0.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	357	0	330				0	702	670	281	2263	0
V/C Ratio(X)	0.65	0.00	0.76				0.00	0.78	0.78	0.83	0.49	0.00
Avail Cap(c_a), veh/h	655	0	606				0	982	938	454	3187	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.4	0.0	24.0				0.0	17.5	17.5	26.0	7.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	3.5				0.0	2.7	2.8	3.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.4				0.0	6.1	5.8	3.2	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	0.0	27.5				0.0	20.2	20.3	28.9	7.2	0.0
LnGrp LOS	C	A	C				A	C	C	C	A	A
Approach Vol, veh/h		482						1067			1338	
Approach Delay, s/veh		26.5						20.3			11.0	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.6	30.1		18.9		44.7
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	16.2	33.4		23.4		54.2
Max Q Clear Time (g_c+I1), s	10.0	18.4		11.1		12.6
Green Ext Time (p_c), s	0.2	5.5		1.7		8.8

Intersection Summary		
HCM 6th Ctrl Delay		17.0
HCM 6th LOS		B

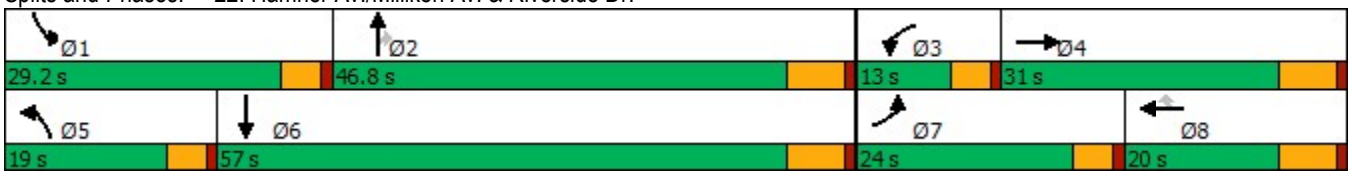
Notes

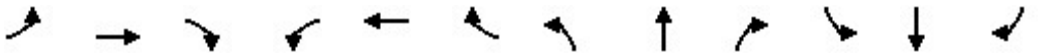
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	208	146	80	169	160	149	703	49	212	920
Future Volume (vph)	208	146	80	169	160	149	703	49	212	920
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	24.0	31.0	13.0	20.0	20.0	19.0	46.8	46.8	29.2	57.0
Total Split (%)	20.0%	25.8%	10.8%	16.7%	16.7%	15.8%	39.0%	39.0%	24.3%	47.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	18.2	23.6	8.1	13.5	13.5	13.5	42.1	42.1	19.9	48.4
Actuated g/C Ratio	0.16	0.20	0.07	0.12	0.12	0.12	0.36	0.36	0.17	0.42
v/c Ratio	0.88	0.87	0.76	0.86	0.48	0.85	0.61	0.08	0.82	0.93
Control Delay	82.2	63.6	94.3	87.4	9.0	87.5	33.4	0.2	70.1	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.2	63.6	94.3	87.4	9.0	87.5	33.4	0.2	70.1	44.2
LOS	F	E	F	F	A	F	C	A	E	D
Approach Delay		71.3		58.1			40.5			48.0
Approach LOS		E		E			D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 50.8	Intersection LOS: D
Intersection Capacity Utilization 87.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	146	148	80	169	160	149	703	49	212	920	299
Future Volume (veh/h)	208	146	148	80	169	160	149	703	49	212	920	299
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	219	154	82	84	178	89	157	740	31	223	968	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	228	121	104	213	181	184	1182	526	252	1127	195
Arrive On Green	0.16	0.21	0.21	0.07	0.12	0.12	0.12	0.35	0.35	0.16	0.39	0.39
Sat Flow, veh/h	1594	1082	576	1594	1772	1502	1594	3367	1499	1594	2862	496
Grp Volume(v), veh/h	219	0	236	84	178	89	157	740	31	223	569	567
Grp Sat Flow(s),veh/h/ln	1594	0	1658	1594	1772	1502	1594	1683	1499	1594	1683	1675
Q Serve(g_s), s	13.5	0.0	13.2	5.2	9.9	5.6	9.7	18.4	1.4	13.8	31.1	31.2
Cycle Q Clear(g_c), s	13.5	0.0	13.2	5.2	9.9	5.6	9.7	18.4	1.4	13.8	31.1	31.2
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	247	0	349	104	213	181	184	1182	526	252	663	660
V/C Ratio(X)	0.89	0.00	0.68	0.81	0.84	0.49	0.85	0.63	0.06	0.88	0.86	0.86
Avail Cap(c_a), veh/h	308	0	409	133	243	206	228	1361	606	390	851	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	0.0	36.5	46.3	43.2	41.3	43.6	27.1	21.6	41.4	27.9	27.9
Incr Delay (d2), s/veh	19.2	0.0	3.5	19.3	19.6	2.1	18.7	0.7	0.0	9.6	7.1	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	5.4	2.5	5.3	2.1	4.6	6.9	0.5	5.8	12.6	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.8	0.0	40.1	65.6	62.8	43.4	62.3	27.8	21.6	51.0	35.0	35.1
LnGrp LOS	E	A	D	E	E	D	E	C	C	D	C	D
Approach Vol, veh/h		455			351			928			1359	
Approach Delay, s/veh		50.0			58.6			33.5			37.7	
Approach LOS		D			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	41.5	11.1	27.3	16.2	45.8	20.2	18.3
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	24.6	40.6	8.4	24.8	14.4	50.8	19.4	13.8
Max Q Clear Time (g_c+I1), s	15.8	20.4	7.2	15.2	11.7	33.2	15.5	11.9
Green Ext Time (p_c), s	0.2	4.5	0.0	0.8	0.0	6.4	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	40.6
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	73	46	73	811	1028	103
Future Vol, veh/h	73	46	73	811	1028	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	51	80	891	1130	113

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1793	1187	1243	0	-	0
Stage 1	1187	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 80	229	558	-	-	-
Stage 1	289	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 57	229	558	-	-	-
Mov Cap-2 Maneuver	186	-	-	-	-	-
Stage 1	207	-	-	-	-	-
Stage 2	508	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	51.2	2.4	0
HCM LOS	F		

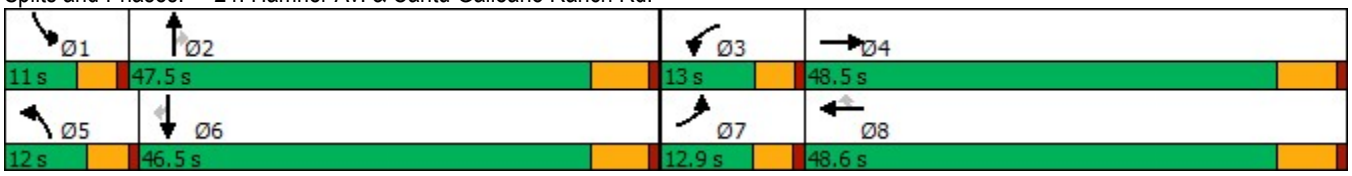
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	558	-	201	-	-
HCM Lane V/C Ratio	0.144	-	0.651	-	-
HCM Control Delay (s)	12.5	1.5	51.2	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	3.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	224	1135	424	1148	198	356	397	328	286	523	187
Future Volume (vph)	224	1135	424	1148	198	356	397	328	286	523	187
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.9	48.5	13.0	48.6	48.6	12.0	47.5	47.5	11.0	46.5	46.5
Total Split (%)	10.8%	40.4%	10.8%	40.5%	40.5%	10.0%	39.6%	39.6%	9.2%	38.8%	38.8%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.4	40.3	8.5	40.4	40.4	7.5	24.6	24.6	6.5	23.6	23.6
Actuated g/C Ratio	0.08	0.40	0.08	0.40	0.40	0.07	0.24	0.24	0.06	0.23	0.23
v/c Ratio	0.83	0.61	1.55	0.85	0.28	1.48	0.34	0.67	1.37	0.67	0.39
Control Delay	71.8	25.4	297.3	36.3	7.2	269.4	32.3	24.0	231.5	39.6	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.8	25.4	297.3	36.3	7.2	269.4	32.3	24.0	231.5	39.6	9.5
LOS	E	C	F	D	A	F	C	C	F	D	A
Approach Delay		31.6		95.6			107.8			89.0	
Approach LOS		C		F			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.55	
Intersection Signal Delay: 77.4	Intersection LOS: E
Intersection Capacity Utilization 81.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	1135	315	424	1148	198	356	397	328	286	523	187
Future Volume (veh/h)	224	1135	315	424	1148	198	356	397	328	286	523	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	233	1182	172	442	1196	128	371	414	186	298	545	112
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	2231	323	312	1397	623	275	1100	341	238	727	324
Arrive On Green	0.09	0.39	0.39	0.09	0.39	0.39	0.08	0.22	0.22	0.07	0.20	0.20
Sat Flow, veh/h	3456	5720	827	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	233	996	358	442	1196	128	371	414	186	298	545	112
Grp Sat Flow(s),veh/h/ln	1728	1609	1721	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.1	14.8	14.9	8.4	28.6	5.0	7.4	6.4	9.7	6.4	13.4	5.6
Cycle Q Clear(g_c), s	6.1	14.8	14.9	8.4	28.6	5.0	7.4	6.4	9.7	6.4	13.4	5.6
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	1882	671	312	1397	623	275	1100	341	238	727	324
V/C Ratio(X)	0.77	0.53	0.53	1.42	0.86	0.21	1.35	0.38	0.54	1.25	0.75	0.35
Avail Cap(c_a), veh/h	308	2179	777	312	1608	717	275	2267	704	238	1540	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	21.8	21.8	42.3	25.8	18.6	42.8	31.2	32.4	43.3	34.7	31.7
Incr Delay (d2), s/veh	10.1	0.2	0.7	205.3	4.3	0.2	179.5	0.2	1.4	143.7	1.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	5.0	5.4	12.2	11.4	1.6	9.8	2.5	3.6	7.3	5.5	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	22.0	22.5	247.6	30.1	18.8	222.3	31.4	33.8	187.0	36.3	32.3
LnGrp LOS	D	C	C	F	C	B	F	C	C	F	D	C
Approach Vol, veh/h		1587			1766			971			955	
Approach Delay, s/veh		26.5			83.7			104.8			82.9	
Approach LOS		C			F			F			F	

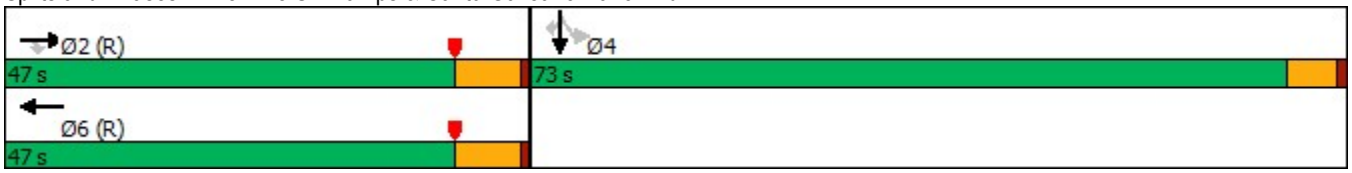
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	26.2	13.0	42.8	12.0	25.2	12.7	43.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	7.4	40.3	8.3	42.1
Max Q Clear Time (g_c+I1), s	8.4	11.7	10.4	16.9	9.4	15.4	8.1	30.6
Green Ext Time (p_c), s	0.0	3.2	0.0	9.0	0.0	3.6	0.0	5.9

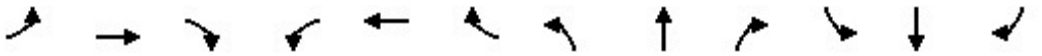
Intersection Summary	
HCM 6th Ctrl Delay	70.2
HCM 6th LOS	E

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1385	596	920	137	290	1	1413
Future Volume (vph)	1385	596	920	137	290	1	1413
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	47.0	47.0	47.0		73.0	73.0	73.0
Total Split (%)	39.2%	39.2%	39.2%		60.8%	60.8%	60.8%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min		Min	Min	Min
Act Effct Green (s)	40.7	40.7	40.7	120.0	67.0	67.0	67.0
Actuated g/C Ratio	0.34	0.34	0.34	1.00	0.56	0.56	0.56
v/c Ratio	0.87	0.70	0.83	0.05	0.30	0.96	0.92
Control Delay	44.1	8.9	50.2	0.0	15.1	49.4	40.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	8.9	50.2	0.0	15.1	49.4	40.0
LOS	D	A	D	A	B	D	D
Approach Delay	33.5		43.7			40.1	
Approach LOS	C		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 113.2 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 38.2	Intersection LOS: D
Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1385	596	0	920	137	0	0	0	290	1	1413
Future Volume (veh/h)	0	1385	596	0	920	137	0	0	0	290	1	1413
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1505	0	0	1000	0				210	0	1323
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2232		0	1553					820	0	1460
Arrive On Green	0.00	0.44	0.00	0.00	0.87	0.00				0.46	0.00	0.46
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1505	0	0	1000	0				210	0	1323
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	28.2	0.0	0.0	9.7	0.0				8.7	0.0	46.4
Cycle Q Clear(g_c), s	0.0	28.2	0.0	0.0	9.7	0.0				8.7	0.0	46.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2232		0	1553					820	0	1460
V/C Ratio(X)	0.00	0.67		0.00	0.64					0.26	0.00	0.91
Avail Cap(c_a), veh/h	0	2232		0	1553					1002	0	1783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.62	0.00	0.00	0.80	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.0	0.0	0.0	4.9	0.0				19.8	0.0	30.0
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	1.7	0.0				0.2	0.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.7	0.0	0.0	2.1	0.0				3.5	0.0	17.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.0	0.0	0.0	6.5	0.0				20.0	0.0	36.2
LnGrp LOS	A	C		A	A					B	A	D
Approach Vol, veh/h		1505	A		1000	A					1533	
Approach Delay, s/veh		28.0			6.5						34.0	
Approach LOS		C			A						C	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		59.2		60.8		59.2						
Change Period (Y+Rc), s		6.8		5.5		6.8						
Max Green Setting (Gmax), s		40.2		67.5		40.2						
Max Q Clear Time (g_c+I1), s		30.2		48.4		11.7						
Green Ext Time (p_c), s		6.2		6.9		6.8						

Intersection Summary	
HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C

Notes

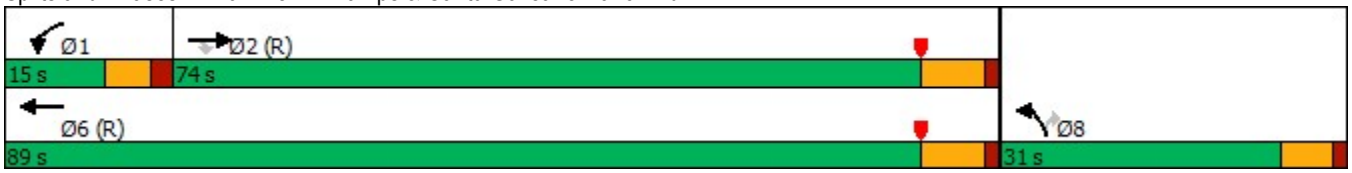
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	762	950	219	443	593	154
Future Volume (vph)	762	950	219	443	593	154
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.0	22.5	22.5	22.5
Total Split (s)	74.0	74.0	15.0	89.0	31.0	31.0
Total Split (%)	61.7%	61.7%	12.5%	74.2%	25.8%	25.8%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	62.5	62.5	11.6	80.2	26.5	26.5
Actuated g/C Ratio	0.52	0.52	0.10	0.67	0.22	0.22
v/c Ratio	0.31	0.85	0.72	0.14	0.87	0.34
Control Delay	23.1	33.8	65.8	7.5	58.2	8.5
Queue Delay	0.0	2.2	0.0	0.0	0.0	0.0
Total Delay	23.1	36.0	65.8	7.5	58.2	8.5
LOS	C	D	E	A	E	A
Approach Delay	30.3			26.8	49.0	
Approach LOS	C			C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 34.0	Intersection LOS: C
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	762	950	219	443	593	154
Future Volume (veh/h)	762	950	219	443	593	154
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	828	598	238	482	645	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2888	897	259	3526	707	315
Arrive On Green	0.94	0.94	0.08	0.69	0.20	0.20
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	828	598	238	482	645	85
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	1.5	6.8	8.2	3.9	21.3	5.4
Cycle Q Clear(g_c), s	1.5	6.8	8.2	3.9	21.3	5.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2888	897	259	3526	707	315
V/C Ratio(X)	0.29	0.67	0.92	0.14	0.91	0.27
Avail Cap(c_a), veh/h	2888	897	259	3526	742	330
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	0.93	0.93	1.00	1.00
Uniform Delay (d), s/veh	1.5	1.6	55.1	6.3	47.1	40.7
Incr Delay (d2), s/veh	0.1	2.1	33.2	0.1	15.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.4	4.6	1.1	10.6	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	1.6	3.7	88.4	6.4	62.2	41.2
LnGrp LOS	A	A	F	A	E	D
Approach Vol, veh/h	1426			720	730	
Approach Delay, s/veh	2.5			33.5	59.7	
Approach LOS	A			C	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	15.0	75.2				90.2	29.8
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	9.0	66.7				81.7	25.0
Max Q Clear Time (g_c+I1), s	10.2	8.8				5.9	23.3
Green Ext Time (p_c), s	0.0	9.1				3.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

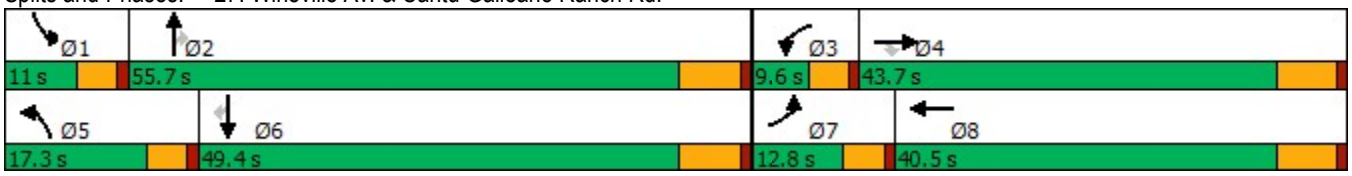
Notes

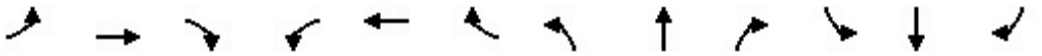
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	115	371	329	26	265	208	93	47	29	169	195
Future Volume (vph)	115	371	329	26	265	208	93	47	29	169	195
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	12.8	43.7	43.7	9.6	40.5	17.3	55.7	55.7	11.0	49.4	49.4
Total Split (%)	10.7%	36.4%	36.4%	8.0%	33.8%	14.4%	46.4%	46.4%	9.2%	41.2%	41.2%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.3	18.7	18.7	5.7	12.6	9.4	26.4	26.4	6.3	15.3	15.3
Actuated g/C Ratio	0.11	0.28	0.28	0.09	0.19	0.14	0.40	0.40	0.09	0.23	0.23
v/c Ratio	0.33	0.22	0.51	0.10	0.32	0.47	0.07	0.07	0.19	0.43	0.40
Control Delay	37.4	20.4	6.1	39.7	25.0	35.2	16.7	0.2	40.9	26.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	20.4	6.1	39.7	25.0	35.2	16.7	0.2	40.9	26.8	6.3
LOS	D	C	A	D	C	D	B	A	D	C	A
Approach Delay		17.0			26.2		25.6			17.7	
Approach LOS		B			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 66.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 20.3	Intersection LOS: C
Intersection Capacity Utilization 48.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	371	329	26	265	21	208	93	47	29	169	195
Future Volume (veh/h)	115	371	329	26	265	21	208	93	47	29	169	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	403	220	28	288	13	226	101	25	32	184	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	294	1491	367	112	897	40	360	823	367	65	306	260
Arrive On Green	0.09	0.23	0.23	0.03	0.18	0.18	0.10	0.23	0.23	0.04	0.16	0.16
Sat Flow, veh/h	3456	6434	1585	3456	5010	224	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	125	403	220	28	195	106	226	101	25	32	184	147
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1830	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	1.6	2.4	5.9	0.4	2.4	2.4	3.0	1.1	0.6	0.8	4.3	4.1
Cycle Q Clear(g_c), s	1.6	2.4	5.9	0.4	2.4	2.4	3.0	1.1	0.6	0.8	4.3	4.1
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	294	1491	367	112	610	328	360	823	367	65	306	260
V/C Ratio(X)	0.43	0.27	0.60	0.25	0.32	0.32	0.63	0.12	0.07	0.50	0.60	0.57
Avail Cap(c_a), veh/h	597	5044	1243	364	2439	1311	925	3685	1643	240	1691	1433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	14.9	16.3	22.4	17.0	17.0	20.4	14.4	14.2	22.4	18.4	18.3
Incr Delay (d2), s/veh	0.4	0.1	1.6	0.4	0.3	0.6	0.7	0.1	0.1	2.2	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	1.7	0.1	0.7	0.8	1.0	0.3	0.2	0.3	1.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	15.0	17.8	22.8	17.3	17.5	21.0	14.5	14.3	24.6	20.3	20.2
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		748			329			352			363	
Approach Delay, s/veh		16.9			17.8			18.7			20.6	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	17.5	6.1	17.5	9.5	14.3	8.6	15.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	6.4	49.2	5.0	37.2	12.7	42.9	8.2	34.0
Max Q Clear Time (g_c+I1), s	2.8	3.1	2.4	7.9	5.0	6.3	3.6	4.4
Green Ext Time (p_c), s	0.0	0.7	0.0	3.1	0.2	1.4	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

APPENDIX 5.2: E+P (BUILDOUT) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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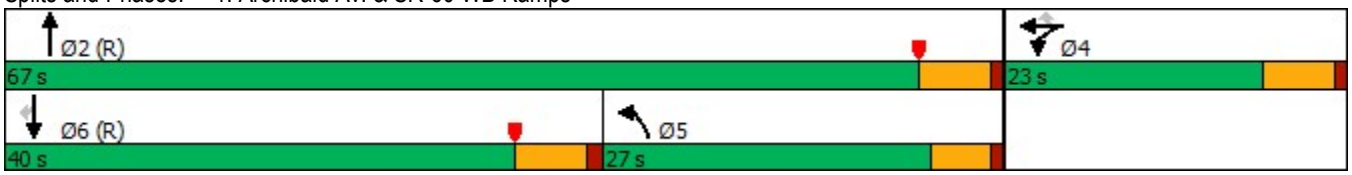
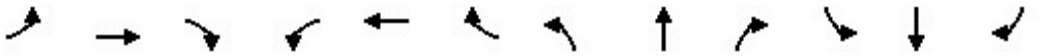
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	336	8	442	761	1064	453	160
Future Volume (vph)	336	8	442	761	1064	453	160
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	23.0	23.0	23.0	27.0	67.0	40.0	40.0
Total Split (%)	25.6%	25.6%	25.6%	30.0%	74.4%	44.4%	44.4%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	20.1	20.1	20.1	24.0	58.3	29.3	29.3
Actuated g/C Ratio	0.22	0.22	0.22	0.27	0.65	0.33	0.33
v/c Ratio	0.74	0.62	0.59	0.85	0.33	0.22	0.26
Control Delay	46.2	22.5	20.9	36.2	3.9	23.2	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	22.5	20.9	36.2	3.9	23.2	4.9
LOS	D	C	C	D	A	C	A
Approach Delay		30.2			17.4	18.4	
Approach LOS		C			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	336	8	442	761	1064	0	0	453	160
Future Volume (veh/h)	0	0	0	336	8	442	761	1064	0	0	453	160
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				488	0	268	777	1086	0	0	462	66
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				673	0	299	1705	3484	0	0	801	197
Arrive On Green				0.19	0.00	0.19	0.99	1.00	0.00	0.00	0.12	0.12
Sat Flow, veh/h				3563	0	1583	3456	5274	0	0	6696	1585
Grp Volume(v), veh/h				488	0	268	777	1086	0	0	462	66
Grp Sat Flow(s),veh/h/ln				1781	0	1583	1728	1702	0	0	1609	1585
Q Serve(g_s), s				11.6	0.0	14.9	0.5	0.0	0.0	0.0	6.1	3.4
Cycle Q Clear(g_c), s				11.6	0.0	14.9	0.5	0.0	0.0	0.0	6.1	3.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				673	0	299	1705	3484	0	0	801	197
V/C Ratio(X)				0.73	0.00	0.90	0.46	0.31	0.00	0.00	0.58	0.33
Avail Cap(c_a), veh/h				681	0	302	1705	3484	0	0	2445	602
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.83	0.83	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				34.3	0.0	35.6	0.3	0.0	0.0	0.0	37.2	36.0
Incr Delay (d2), s/veh				3.8	0.0	27.1	0.1	0.2	0.0	0.0	3.0	4.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	0.0	14.4	0.1	0.1	0.0	0.0	2.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				38.1	0.0	62.7	0.4	0.2	0.0	0.0	40.2	40.5
LnGrp LOS				D	A	E	A	A	A	A	D	D
Approach Vol, veh/h					756			1863			528	
Approach Delay, s/veh					46.8			0.3			40.2	
Approach LOS					D			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.2	22.8	50.2	17.0
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	61.2	17.2	22.0	* 34
Max Q Clear Time (g_c+I1), s	2.0	16.9	2.5	8.1
Green Ext Time (p_c), s	9.0	0.1	1.4	3.1

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

Notes

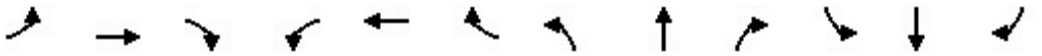
User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	350	5	425	1470	554	151	659
Future Volume (vph)	350	5	425	1470	554	151	659
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	34.0	34.0	34.0	44.0	44.0	12.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	48.9%	48.9%	13.3%	62.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	21.7	21.7	21.7	44.7	44.7	8.0	56.7
Actuated g/C Ratio	0.24	0.24	0.24	0.50	0.50	0.09	0.63
v/c Ratio	0.71	0.62	0.53	0.50	0.55	0.53	0.22
Control Delay	40.7	22.1	11.1	16.8	3.7	54.5	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	22.1	11.1	16.8	3.7	54.5	3.7
LOS	D	C	B	B	A	D	A
Approach Delay		25.0		13.2			13.1
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	5	425	0	0	0	0	1470	554	151	659	0
Future Volume (veh/h)	350	5	425	0	0	0	0	1470	554	151	659	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	454	0	164				0	1581	416	162	709	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	590	0	258				0	3826	922	230	3603	0
Arrive On Green	0.17	0.00	0.17				0.00	0.59	0.59	0.13	1.00	0.00
Sat Flow, veh/h	3563	0	1561				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	454	0	164				0	1581	416	162	709	0
Grp Sat Flow(s),veh/h/ln	1781	0	1561				0	1609	1551	1728	1702	0
Q Serve(g_s), s	11.0	0.0	8.8				0.0	11.9	13.4	4.0	0.0	0.0
Cycle Q Clear(g_c), s	11.0	0.0	8.8				0.0	11.9	13.4	4.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	590	0	258				0	3826	922	230	3603	0
V/C Ratio(X)	0.77	0.00	0.63				0.00	0.41	0.45	0.71	0.20	0.00
Avail Cap(c_a), veh/h	1116	0	489				0	3826	922	307	3603	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.91	0.91	0.00
Uniform Delay (d), s/veh	35.9	0.0	35.0				0.0	9.8	10.1	38.2	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	2.6				0.0	0.3	1.6	2.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	3.4				0.0	3.4	4.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	0.0	37.6				0.0	10.1	11.7	40.4	0.1	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		618						1997			871	
Approach Delay, s/veh		37.9						10.5			7.6	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	10.0	59.3				69.3		20.7				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	8.0	38.2				50.2		28.2				
Max Q Clear Time (g_c+I1), s	6.0	15.4				2.0		13.0				
Green Ext Time (p_c), s	0.0	13.2				4.9		1.9				

Intersection Summary			
HCM 6th Ctrl Delay			14.6
HCM 6th LOS			B

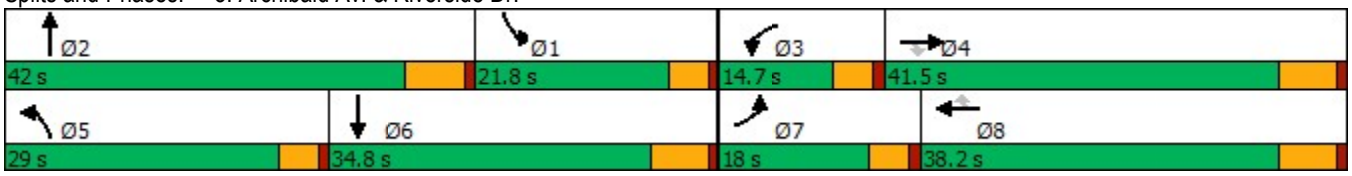
Notes

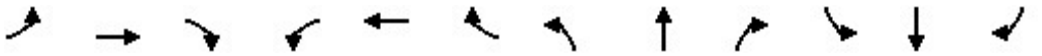
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	149	383	193	86	541	211	324	1378	175	567
Future Volume (vph)	149	383	193	86	541	211	324	1378	175	567
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	41.5	41.5	14.7	38.2	38.2	29.0	42.0	21.8	34.8
Total Split (%)	15.0%	34.6%	34.6%	12.3%	31.8%	31.8%	24.2%	35.0%	18.2%	29.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.9	28.5	28.5	9.1	24.7	24.7	24.5	36.0	15.4	26.9
Actuated g/C Ratio	0.12	0.26	0.26	0.08	0.22	0.22	0.22	0.32	0.14	0.24
v/c Ratio	0.84	0.46	0.38	0.69	0.75	0.44	0.97	0.97	0.83	0.66
Control Delay	85.6	36.7	6.7	78.5	47.2	7.5	84.9	55.4	76.7	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	36.7	6.7	78.5	47.2	7.5	84.9	55.4	76.7	38.4
LOS	F	D	A	E	D	A	F	E	E	D
Approach Delay		38.7			40.5			60.8		45.7
Approach LOS		D			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 49.8	Intersection LOS: D
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	383	193	86	541	211	324	1378	78	175	567	174
Future Volume (veh/h)	149	383	193	86	541	211	324	1378	78	175	567	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	155	399	143	90	564	156	338	1435	78	182	591	141
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	868	381	111	720	315	360	1537	84	208	965	225
Arrive On Green	0.11	0.26	0.26	0.07	0.21	0.21	0.23	0.33	0.33	0.13	0.25	0.25
Sat Flow, veh/h	1594	3367	1478	1594	3367	1472	1594	4691	255	1594	3905	912
Grp Volume(v), veh/h	155	399	143	90	564	156	338	986	527	182	486	246
Grp Sat Flow(s),veh/h/ln	1594	1683	1478	1594	1683	1472	1594	1612	1721	1594	1612	1592
Q Serve(g_s), s	10.3	10.8	8.6	6.0	17.1	6.9	22.5	32.0	32.0	12.1	14.4	14.9
Cycle Q Clear(g_c), s	10.3	10.8	8.6	6.0	17.1	6.9	22.5	32.0	32.0	12.1	14.4	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.57
Lane Grp Cap(c), veh/h	180	868	381	111	720	315	360	1056	564	208	797	394
V/C Ratio(X)	0.86	0.46	0.38	0.81	0.78	0.50	0.94	0.93	0.93	0.87	0.61	0.63
Avail Cap(c_a), veh/h	198	1100	483	149	997	436	360	1069	570	254	854	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	33.8	33.0	49.6	40.1	17.7	41.1	35.2	35.2	46.1	36.0	36.2
Incr Delay (d2), s/veh	26.1	0.4	0.6	16.2	2.8	1.2	31.7	14.3	22.6	21.0	1.1	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	4.2	3.0	2.8	7.0	3.4	11.5	13.7	16.0	5.8	5.5	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.1	34.1	33.6	65.8	42.9	18.9	72.8	49.5	57.8	67.1	37.2	38.8
LnGrp LOS	E	C	C	E	D	B	E	D	E	E	D	D
Approach Vol, veh/h		697			810			1851			914	
Approach Delay, s/veh		42.7			40.8			56.1			43.6	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	41.6	12.1	34.0	29.0	32.9	16.8	29.3
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.2	* 36	10.1	35.3	24.4	28.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	14.1	34.0	8.0	12.8	24.5	16.9	12.3	19.1
Green Ext Time (p_c), s	0.1	1.4	0.0	2.7	0.0	3.3	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	48.3
HCM 6th LOS	D

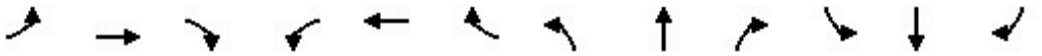
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	112	114	105	215	171	176	1384	51	697
Future Volume (vph)	112	114	105	215	171	176	1384	51	697
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	20.0	29.0	19.0	28.0	28.0	27.0	59.0	13.0	45.0
Total Split (%)	16.7%	24.2%	15.8%	23.3%	23.3%	22.5%	49.2%	10.8%	37.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.0	19.9	12.4	19.3	19.3	18.1	47.1	7.9	33.8
Actuated g/C Ratio	0.13	0.19	0.12	0.19	0.19	0.18	0.46	0.08	0.33
v/c Ratio	0.67	0.65	0.65	0.77	0.47	0.75	0.73	0.50	0.79
Control Delay	63.9	46.1	64.5	58.7	11.3	60.7	26.3	66.5	38.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.9	46.1	64.5	58.7	11.3	60.7	26.3	66.5	38.0
LOS	E	D	E	E	B	E	C	E	D
Approach Delay		52.8		43.4			29.9		39.8
Approach LOS		D		D			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	114	72	105	215	171	176	1384	108	51	697	71
Future Volume (veh/h)	112	114	72	105	215	171	176	1384	108	51	697	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	132	134	77	124	253	107	207	1628	119	60	820	76
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	191	110	153	311	263	244	2231	163	74	1113	103
Arrive On Green	0.10	0.18	0.18	0.10	0.18	0.18	0.15	0.46	0.46	0.05	0.35	0.35
Sat Flow, veh/h	1594	1056	607	1594	1772	1502	1594	4889	357	1594	3188	295
Grp Volume(v), veh/h	132	0	211	124	253	107	207	1180	567	60	456	440
Grp Sat Flow(s),veh/h/ln	1594	0	1663	1594	1772	1502	1594	1772	1702	1594	1772	1711
Q Serve(g_s), s	6.8	0.0	10.0	6.4	11.5	4.3	10.6	22.7	22.7	3.1	18.8	18.8
Cycle Q Clear(g_c), s	6.8	0.0	10.0	6.4	11.5	4.3	10.6	22.7	22.7	3.1	18.8	18.8
Prop In Lane	1.00		0.36	1.00		1.00	1.00		0.21	1.00		0.17
Lane Grp Cap(c), veh/h	162	0	301	153	311	263	244	1617	777	74	619	598
V/C Ratio(X)	0.81	0.00	0.70	0.81	0.81	0.41	0.85	0.73	0.73	0.81	0.74	0.74
Avail Cap(c_a), veh/h	294	0	485	274	496	420	427	2305	1107	160	856	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	32.1	37.0	33.2	20.1	34.4	18.5	18.5	39.5	23.8	23.8
Incr Delay (d2), s/veh	9.4	0.0	2.9	9.7	5.5	1.0	7.9	0.7	1.5	18.8	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	4.0	2.8	5.1	1.9	4.3	7.8	7.6	1.5	7.3	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	35.0	46.8	38.7	21.1	42.3	19.2	20.0	58.4	26.0	26.0
LnGrp LOS	D	A	D	D	D	C	D	B	B	E	C	C
Approach Vol, veh/h		343			484			1954			956	
Approach Delay, s/veh		39.3			36.9			21.9			28.0	
Approach LOS		D			D			C			C	

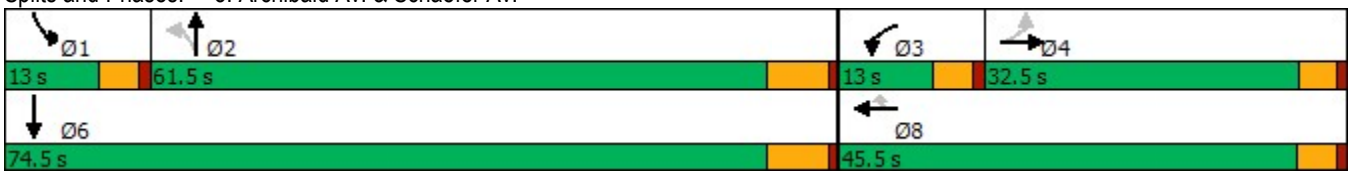
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	42.8	12.6	19.8	17.4	33.8	13.1	19.3
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	8.4	54.4	14.4	24.4	22.4	40.4	15.4	23.4
Max Q Clear Time (g_c+I1), s	5.1	24.7	8.4	12.0	12.6	20.8	8.8	13.5
Green Ext Time (p_c), s	0.0	13.4	0.1	0.8	0.4	4.9	0.2	1.2

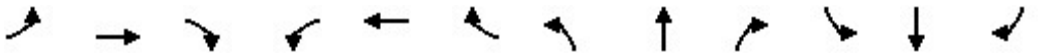
Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	52	62	1506	46	913	
Future Volume (vph)	52	62	1506	46	913	
Turn Type	Prot	Perm	NA	Prot	NA	
Protected Phases	3		2	1	6	4
Permitted Phases		8				
Detector Phase	3	8	2	1	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	32.6	37.5	9.6	23.5	32.5
Total Split (s)	13.0	45.5	61.5	13.0	74.5	32.5
Total Split (%)	10.8%	37.9%	51.3%	10.8%	62.1%	27%
Yellow Time (s)	3.6	3.6	5.5	3.6	5.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	4.6	6.5	4.6	6.5	
Lead/Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	10.8	11.1	42.6	8.2	51.3	
Actuated g/C Ratio	0.16	0.16	0.63	0.12	0.76	
v/c Ratio	0.24	0.21	0.61	0.29	0.43	
Control Delay	32.5	1.3	13.3	41.0	5.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.5	1.3	13.3	41.0	5.9	
LOS	C	A	B	D	A	
Approach Delay			13.3		7.5	
Approach LOS			B		A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 67.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 68.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	52	0	62	0	1506	41	46	913	0
Future Volume (veh/h)	0	0	0	52	0	62	0	1506	41	46	913	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.93	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	0	0	0	62	0	74	0	1793	37	55	1087	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	117	0	82	330	261	108	2589	53	76	2181	0
Arrive On Green	0.00	0.00	0.00	0.05	0.00	0.19	0.00	0.53	0.53	0.05	0.65	0.00
Sat Flow, veh/h	1186	1772	0	1594	1772	1400	464	4875	101	1594	3455	0
Grp Volume(v), veh/h	0	0	0	62	0	74	0	1186	644	55	1087	0
Grp Sat Flow(s),veh/h/ln	1186	1772	0	1594	1772	1400	464	1612	1751	1594	1683	0
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	3.0	0.0	18.2	18.2	2.3	11.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.6	0.0	3.0	0.0	18.2	18.2	2.3	11.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	108	117	0	82	330	261	108	1713	930	76	2181	0
V/C Ratio(X)	0.00	0.00	0.00	0.76	0.00	0.28	0.00	0.69	0.69	0.72	0.50	0.00
Avail Cap(c_a), veh/h	527	743	0	200	1085	857	243	2655	1442	200	3427	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	31.3	0.0	23.4	0.0	11.6	11.6	31.4	6.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	5.4	0.0	0.6	0.0	0.5	0.9	4.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.0	0.0	0.9	0.0	4.5	5.0	0.9	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	36.6	0.0	24.0	0.0	12.1	12.6	36.1	6.3	0.0
LnGrp LOS	A	A	A	D	A	C	A	B	B	D	A	A
Approach Vol, veh/h		0			136			1830			1142	
Approach Delay, s/veh		0.0			29.7			12.3			7.7	
Approach LOS					C			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	7.8	42.0	8.0	9.0		49.8		17.0				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	8.4	55.0	8.4	* 28		68.0		40.9				
Max Q Clear Time (g_c+I1), s	4.3	20.2	4.6	0.0		13.2		5.0				
Green Ext Time (p_c), s	0.0	15.2	0.0	0.0		8.4		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

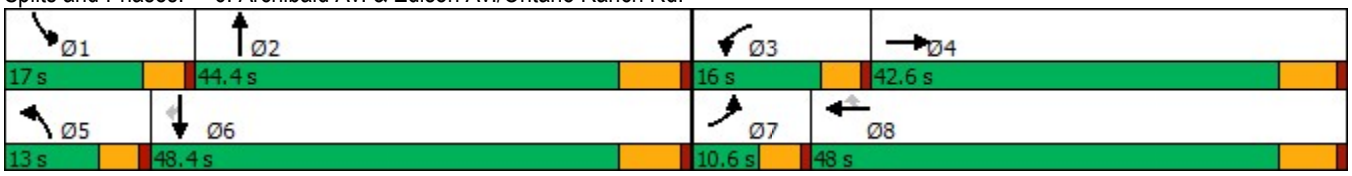
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	446	65	482	645	342	167	1045	455	273	499	62
Future Volume (vph)	35	446	65	482	645	342	167	1045	455	273	499	62
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.6	42.6		16.0	48.0	48.0	13.0	44.4		17.0	48.4	48.4
Total Split (%)	8.8%	35.5%		13.3%	40.0%	40.0%	10.8%	37.0%		14.2%	40.3%	40.3%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.6	32.0	115.8	11.4	41.9	41.9	8.4	38.0	115.8	12.4	42.0	42.0
Actuated g/C Ratio	0.05	0.28	1.00	0.10	0.36	0.36	0.07	0.33	1.00	0.11	0.36	0.36
v/c Ratio	0.26	0.50	0.05	1.80	1.11	0.55	1.61	0.99	0.34	1.78	0.43	0.11
Control Delay	59.1	36.9	0.1	405.8	105.9	15.0	345.4	64.1	0.6	401.0	29.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.1	36.9	0.1	405.8	105.9	15.0	345.4	64.1	0.6	401.0	29.7	0.3
LOS	E	D	A	F	F	B	F	E	A	F	C	A
Approach Delay		33.9			183.2			75.1			149.2	
Approach LOS		C			F			E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.80	
Intersection Signal Delay: 119.0	Intersection LOS: F
Intersection Capacity Utilization 105.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	446	65	482	645	342	167	1045	455	273	499	62
Future Volume (veh/h)	35	446	65	482	645	342	167	1045	455	273	499	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	38	490	0	530	709	200	184	1148	0	300	548	35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	1024		291	630	527	114	1143		168	1263	523
Arrive On Green	0.05	0.43	0.00	0.15	0.53	0.53	0.11	0.48	0.00	0.16	0.53	0.53
Sat Flow, veh/h	3000	3544	1502	3000	1772	1483	1594	3544	1502	1594	3544	1468
Grp Volume(v), veh/h	38	490	0	530	709	200	184	1148	0	300	548	35
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1483	1594	1772	1502	1594	1772	1468
Q Serve(g_s), s	1.4	11.6	0.0	11.4	41.8	9.3	8.4	37.9	0.0	12.4	11.0	1.4
Cycle Q Clear(g_c), s	1.4	11.6	0.0	11.4	41.8	9.3	8.4	37.9	0.0	12.4	11.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	1024		291	630	527	114	1143		168	1263	523
V/C Ratio(X)	0.42	0.48		1.82	1.13	0.38	1.62	1.00		1.78	0.43	0.07
Avail Cap(c_a), veh/h	153	1097		291	630	527	114	1143		168	1263	523
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	27.0	0.0	50.2	27.4	19.8	52.5	30.4	0.0	49.5	20.2	17.9
Incr Delay (d2), s/veh	1.1	0.3	0.0	383.0	75.5	0.5	313.7	27.8	0.0	375.9	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.3	0.0	19.4	26.1	2.8	13.0	16.4	0.0	22.0	3.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	27.3	0.0	433.2	103.0	20.3	366.2	58.1	0.0	425.4	20.4	18.0
LnGrp LOS	E	C		F	F	C	F	F		F	C	B
Approach Vol, veh/h		528	A		1439			1332	A		883	
Approach Delay, s/veh		29.4			213.1			100.7			157.9	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	44.4	16.0	40.2	13.0	48.4	8.2	48.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	12.4	37.9	11.4	36.4	8.4	41.9	6.0	41.8
Max Q Clear Time (g_c+I1), s	14.4	39.9	13.4	13.6	10.4	13.0	3.4	43.8
Green Ext Time (p_c), s	0.0	0.0	0.0	2.8	0.0	3.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	142.5
HCM 6th LOS	F

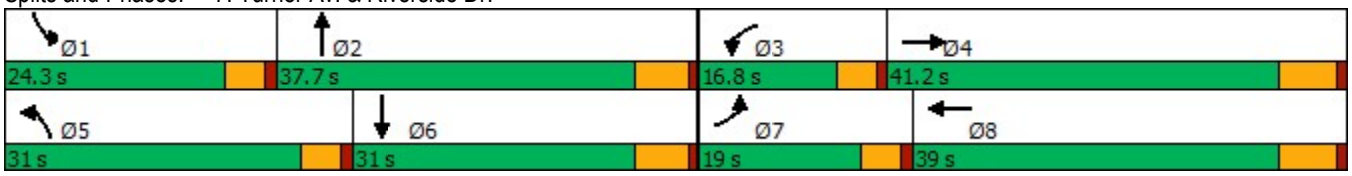
Notes

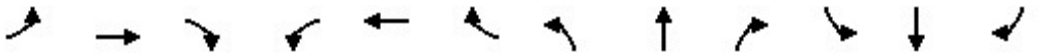
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	119	419	85	554	237	208	111	161
Future Volume (vph)	119	419	85	554	237	208	111	161
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	19.0	41.2	16.8	39.0	31.0	37.7	24.3	31.0
Total Split (%)	15.8%	34.3%	14.0%	32.5%	25.8%	31.4%	20.3%	25.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	13.0	34.1	10.5	31.6	23.4	24.1	13.5	14.2
Actuated g/C Ratio	0.13	0.33	0.10	0.30	0.23	0.23	0.13	0.14
v/c Ratio	0.76	0.63	0.68	0.86	0.84	0.63	0.69	0.64
Control Delay	70.4	32.5	68.7	44.5	61.1	25.0	61.9	32.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	32.5	68.7	44.5	61.1	25.0	61.9	32.9
LOS	E	C	E	D	E	C	E	C
Approach Delay		39.4		47.2		37.9		41.3
Approach LOS		D		D		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.7	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 41.7	Intersection LOS: D
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	419	113	85	554	129	237	208	219	111	161	110
Future Volume (veh/h)	119	419	113	85	554	129	237	208	219	111	161	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.94	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	151	530	82	108	701	105	300	263	243	141	204	117
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	908	140	133	828	124	332	449	378	170	345	188
Arrive On Green	0.11	0.31	0.31	0.08	0.28	0.28	0.21	0.27	0.27	0.11	0.17	0.17
Sat Flow, veh/h	1594	2909	448	1594	2931	439	1594	1683	1415	1594	2084	1139
Grp Volume(v), veh/h	151	306	306	108	402	404	300	263	243	141	163	158
Grp Sat Flow(s),veh/h/ln	1594	1683	1674	1594	1683	1686	1594	1683	1415	1594	1683	1540
Q Serve(g_s), s	8.5	14.0	14.1	6.1	20.7	20.7	16.9	12.5	14.0	8.0	8.2	8.8
Cycle Q Clear(g_c), s	8.5	14.0	14.1	6.1	20.7	20.7	16.9	12.5	14.0	8.0	8.2	8.8
Prop In Lane	1.00		0.27	1.00		0.26	1.00		1.00	1.00		0.74
Lane Grp Cap(c), veh/h	180	526	523	133	476	476	332	449	378	170	279	255
V/C Ratio(X)	0.84	0.58	0.59	0.81	0.85	0.85	0.90	0.59	0.64	0.83	0.58	0.62
Avail Cap(c_a), veh/h	250	642	638	212	601	602	458	585	492	342	462	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	26.5	26.6	41.4	31.0	31.1	35.5	29.2	29.8	40.2	35.4	35.6
Incr Delay (d2), s/veh	12.2	1.0	1.0	5.5	8.9	8.9	14.1	1.2	1.8	3.9	1.9	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.3	5.3	2.5	8.8	8.9	7.4	4.9	4.6	3.2	3.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	27.6	27.6	46.9	39.9	40.0	49.5	30.4	31.6	44.1	37.3	38.1
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	D	D
Approach Vol, veh/h		763			914			806			462	
Approach Delay, s/veh		32.4			40.8			37.9			39.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	30.3	12.2	34.9	23.7	21.0	15.0	32.1
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	19.7	31.9	12.2	35.0	26.4	25.2	14.4	32.8
Max Q Clear Time (g_c+I1), s	10.0	16.0	8.1	16.1	18.9	10.8	10.5	22.7
Green Ext Time (p_c), s	0.1	2.6	0.0	3.1	0.3	1.4	0.1	3.2

Intersection Summary	
HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	31.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	106	97	34	218	99	129	396	27	43	186	74
Future Vol, veh/h	97	106	97	34	218	99	129	396	27	43	186	74
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	131	143	131	46	295	134	174	535	36	58	251	100
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

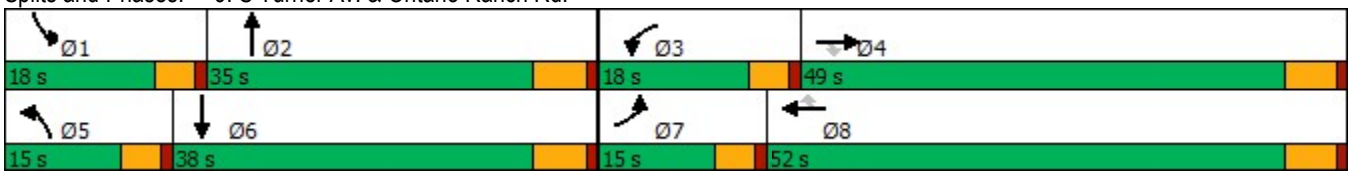
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	20.9	26.4	45.4	22.3
HCM LOS	C	D	E	C

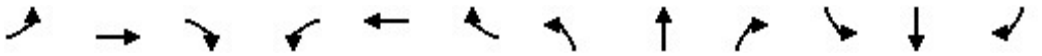
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	83%	0%	100%	27%	0%	100%	42%	0%	100%	46%
Vol Right, %	0%	0%	17%	0%	0%	73%	0%	0%	58%	0%	0%	54%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	264	159	97	71	132	34	145	172	43	124	136
LT Vol	129	0	0	97	0	0	34	0	0	43	0	0
Through Vol	0	264	132	0	71	35	0	145	73	0	124	62
RT Vol	0	0	27	0	0	97	0	0	99	0	0	74
Lane Flow Rate	174	357	215	131	95	179	46	196	232	58	168	184
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.494	0.962	0.572	0.404	0.281	0.501	0.139	0.566	0.643	0.179	0.492	0.52
Departure Headway (Hd)	10.211	9.711	9.592	11.089	10.589	10.076	10.884	10.384	9.98	11.063	10.563	10.182
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	356	375	378	325	340	358	329	348	362	324	342	355
Service Time	7.911	7.411	7.292	8.849	8.349	7.836	8.644	8.144	7.74	8.823	8.323	7.942
HCM Lane V/C Ratio	0.489	0.952	0.569	0.403	0.279	0.5	0.14	0.563	0.641	0.179	0.491	0.518
HCM Control Delay	22.5	69.3	24.4	21.2	17.5	22.6	15.4	25.9	29.1	16.2	23.2	23.5
HCM Lane LOS	C	F	C	C	C	C	C	D	D	C	C	C
HCM 95th-tile Q	2.6	10.7	3.4	1.9	1.1	2.7	0.5	3.3	4.3	0.6	2.6	2.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1170	15	98	1517	90	34	129	94	64
Future Volume (vph)	32	1170	15	98	1517	90	34	129	94	64
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	15.0	49.0	49.0	18.0	52.0	52.0	15.0	35.0	18.0	38.0
Total Split (%)	12.5%	40.8%	40.8%	15.0%	43.3%	43.3%	12.5%	29.2%	15.0%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	6.7	43.6	43.6	10.2	51.5	51.5	6.8	15.7	9.9	23.3
Actuated g/C Ratio	0.07	0.43	0.43	0.10	0.51	0.51	0.07	0.16	0.10	0.23
v/c Ratio	0.31	0.85	0.02	0.61	0.93	0.12	0.32	0.68	0.59	0.22
Control Delay	54.4	33.7	0.1	59.9	36.3	3.6	54.6	49.6	59.4	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	33.7	0.1	59.9	36.3	3.6	54.6	49.6	59.4	30.8
LOS	D	C	A	E	D	A	D	D	E	C
Approach Delay		33.8			35.9			50.4		46.0
Approach LOS		C			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1170	15	98	1517	90	34	129	50	94	64	19
Future Volume (veh/h)	32	1170	15	98	1517	90	34	129	50	94	64	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1300	13	109	1686	92	38	143	50	104	71	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	1675	747	138	1833	818	62	182	64	133	284	40
Arrive On Green	0.03	0.47	0.47	0.08	0.52	0.52	0.03	0.14	0.14	0.07	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1324	463	1781	1604	226
Grp Volume(v), veh/h	36	1300	13	109	1686	92	38	0	193	104	0	81
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1787	1781	0	1830
Q Serve(g_s), s	1.7	26.5	0.4	5.2	38.0	2.6	1.8	0.0	9.1	5.0	0.0	3.3
Cycle Q Clear(g_c), s	1.7	26.5	0.4	5.2	38.0	2.6	1.8	0.0	9.1	5.0	0.0	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		0.12
Lane Grp Cap(c), veh/h	59	1675	747	138	1833	818	62	0	245	133	0	324
V/C Ratio(X)	0.61	0.78	0.02	0.79	0.92	0.11	0.62	0.00	0.79	0.78	0.00	0.25
Avail Cap(c_a), veh/h	213	1765	787	274	1888	842	213	0	600	274	0	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.5	19.2	12.2	39.4	19.4	10.8	41.4	0.0	36.3	39.6	0.0	30.8
Incr Delay (d2), s/veh	3.6	2.1	0.0	3.7	7.7	0.1	3.7	0.0	5.5	3.8	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.7	0.1	2.3	14.7	0.8	0.8	0.0	4.1	2.2	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	21.3	12.3	43.1	27.1	10.9	45.1	0.0	41.8	43.4	0.0	31.2
LnGrp LOS	D	C	B	D	C	B	D	A	D	D	A	C
Approach Vol, veh/h		1349			1887			231			185	
Approach Delay, s/veh		21.8			27.3			42.4			38.1	
Approach LOS		C			C			D			D	

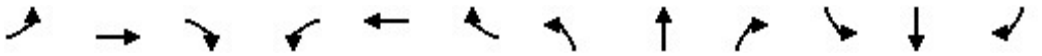
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	17.7	11.4	46.8	7.6	21.2	7.5	50.7
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.4	29.2	13.4	43.2	10.4	32.2	10.4	46.2
Max Q Clear Time (g_c+I1), s	7.0	11.1	7.2	28.5	3.8	5.3	3.7	40.0
Green Ext Time (p_c), s	0.1	0.9	0.1	7.4	0.0	0.3	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	186	4	716	832	1668	923	407
Future Volume (vph)	186	4	716	832	1668	923	407
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	22.7	22.7		24.0	52.3	28.3	28.3
Total Split (%)	30.3%	30.3%		32.0%	69.7%	37.7%	37.7%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	16.9	16.9	75.0	19.0	46.1	22.1	22.1
Actuated g/C Ratio	0.23	0.23	1.00	0.25	0.61	0.29	0.29
v/c Ratio	0.98	0.99	0.47	1.00	0.56	0.64	0.56
Control Delay	74.7	76.6	1.0	42.2	12.1	25.4	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.7	76.6	1.0	42.2	12.1	25.4	5.6
LOS	E	E	A	D	B	C	A
Approach Delay		38.4			22.1	19.3	
Approach LOS		D			C	B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 45 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	186	4	716	832	1668	0	0	923	407
Future Volume (veh/h)	0	0	0	186	4	716	832	1668	0	0	923	407
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				747	0	0	867	1738	0	0	961	216
Peak Hour Factor				0.25	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				803	0		875	3139	0	0	1505	461
Arrive On Green				0.23	0.00	0.00	0.51	1.00	0.00	0.00	0.29	0.29
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1563
Grp Volume(v), veh/h				747	0	0	867	1738	0	0	961	216
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1563
Q Serve(g_s), s				15.4	0.0	0.0	18.6	0.0	0.0	0.0	12.3	8.5
Cycle Q Clear(g_c), s				15.4	0.0	0.0	18.6	0.0	0.0	0.0	12.3	8.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				803	0		875	3139	0	0	1505	461
V/C Ratio(X)				0.93	0.00		0.99	0.55	0.00	0.00	0.64	0.47
Avail Cap(c_a), veh/h				803	0		875	3139	0	0	1505	461
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				28.5	0.0	0.0	18.4	0.0	0.0	0.0	23.0	21.6
Incr Delay (d2), s/veh				17.2	0.0	0.0	7.1	0.1	0.0	0.0	2.1	3.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.9	0.0	0.0	5.0	0.0	0.0	0.0	4.7	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.7	0.0	0.0	25.5	0.1	0.0	0.0	25.1	25.0
LnGrp LOS				D	A		C	A	A	A	C	C
Approach Vol, veh/h					747	A		2605			1177	
Approach Delay, s/veh					45.7			8.5			25.1	
Approach LOS					D			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		52.3			24.0	28.3		22.7				
Change Period (Y+Rc), s		6.2			5.0	6.2		5.8				
Max Green Setting (Gmax), s		46.1			19.0	22.1		16.9				
Max Q Clear Time (g_c+I1), s		2.0			20.6	14.3		17.4				
Green Ext Time (p_c), s		10.7			0.0	3.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	19.0	
HCM 6th LOS	B	

Notes

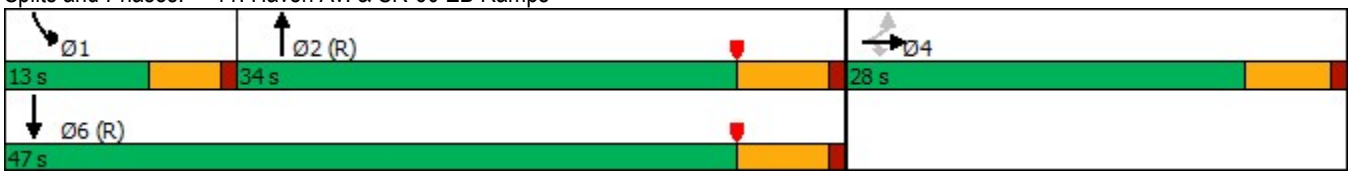
User approved volume balancing among the lanes for turning movement.

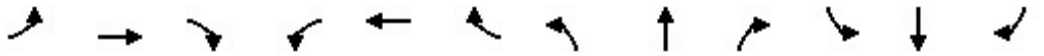
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	718	5	493	1766	324	813
Future Volume (vph)	718	5	493	1766	324	813
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	28.0	28.0	28.0	34.0	13.0	47.0
Total Split (%)	37.3%	37.3%	37.3%	45.3%	17.3%	62.7%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	21.6	21.6	21.6	27.8	8.6	41.4
Actuated g/C Ratio	0.29	0.29	0.29	0.37	0.11	0.55
v/c Ratio	0.78	0.79	0.94	1.17	0.87	0.31
Control Delay	37.5	38.0	47.1	108.5	50.5	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	38.0	47.1	108.5	50.5	9.4
LOS	D	D	D	F	D	A
Approach Delay		41.6		108.5		21.1
Approach LOS		D		F		C

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 48 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 67.8	Intersection LOS: E
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	718	5	493	0	0	0	0	1766	321	324	813	0
Future Volume (veh/h)	718	5	493	0	0	0	0	1766	321	324	813	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	760	0	308				0	1859	180	341	856	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	909	0	404				0	1947	187	369	2987	0
Arrive On Green	0.26	0.00	0.26				0.00	0.41	0.41	0.14	0.78	0.00
Sat Flow, veh/h	3563	0	1585				0	4898	455	3456	5274	0
Grp Volume(v), veh/h	760	0	308				0	1335	704	341	856	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1781	1728	1702	0
Q Serve(g_s), s	15.2	0.0	13.5				0.0	28.5	28.8	7.3	3.6	0.0
Cycle Q Clear(g_c), s	15.2	0.0	13.5				0.0	28.5	28.8	7.3	3.6	0.0
Prop In Lane	1.00		1.00				0.00		0.26	1.00		0.00
Lane Grp Cap(c), veh/h	909	0	404				0	1401	733	369	2987	0
V/C Ratio(X)	0.84	0.00	0.76				0.00	0.95	0.96	0.93	0.29	0.00
Avail Cap(c_a), veh/h	1055	0	469				0	1401	733	369	2987	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.60	0.60	0.00
Uniform Delay (d), s/veh	26.5	0.0	25.8				0.0	21.4	21.5	31.9	3.9	0.0
Incr Delay (d2), s/veh	5.3	0.0	6.2				0.0	15.2	24.8	20.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	5.3				0.0	12.5	15.2	3.7	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	0.0	32.0				0.0	36.5	46.3	51.9	4.0	0.0
LnGrp LOS	C	A	C				A	D	D	D	A	A
Approach Vol, veh/h		1068						2039			1197	
Approach Delay, s/veh		31.8						39.9			17.7	
Approach LOS		C						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	37.1		24.9		50.1
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	8.0	27.8		22.2		40.8
Max Q Clear Time (g_c+I1), s	9.3	30.8		17.2		5.6
Green Ext Time (p_c), s	0.0	0.0		2.0		3.8

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

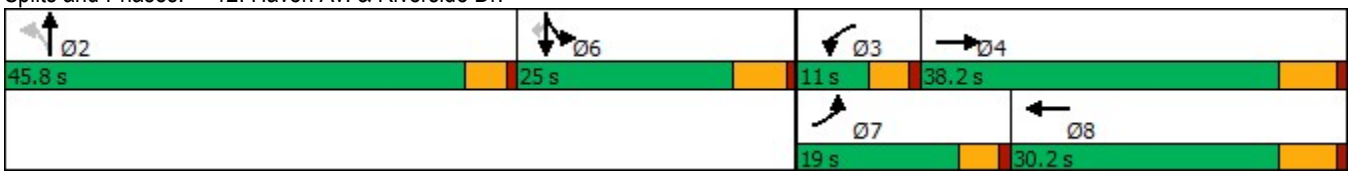
Notes

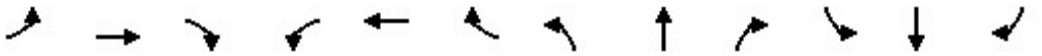
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	323	491	149	396	65	1061	293	693	229
Future Volume (vph)	323	491	149	396	65	1061	293	693	229
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	38.2	11.0	30.2	45.8	45.8	25.0	25.0	25.0
Total Split (%)	15.8%	31.8%	9.2%	25.2%	38.2%	38.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.4	32.0	6.4	24.0		41.1	19.2	19.2	19.2
Actuated g/C Ratio	0.12	0.27	0.05	0.20		0.34	0.16	0.16	0.16
v/c Ratio	1.82	1.23	1.89	0.92		18.08	1.23	2.61	0.67
Control Delay	419.9	160.7	473.8	62.1		7715.4	176.7	757.8	27.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	419.9	160.7	473.8	62.1		7715.4	176.7	757.8	27.9
LOS	F	F	F	E		F	F	F	C
Approach Delay		258.2		146.3		7715.4		479.9	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 18.08	
Intersection Signal Delay: 2613.0	Intersection LOS: F
Intersection Capacity Utilization 167.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	491	45	149	396	185	65	1061	132	293	693	229
Future Volume (veh/h)	323	491	45	149	396	185	65	1061	132	293	693	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	344	522	45	159	421	161	69	1129	123	312	737	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	425	37	85	471	178	31	508	55	255	284	235
Arrive On Green	0.12	0.27	0.27	0.05	0.20	0.20	0.34	0.34	0.34	0.16	0.16	0.16
Sat Flow, veh/h	1594	1596	138	1594	2357	889	91	1483	162	1594	1772	1468
Grp Volume(v), veh/h	344	0	567	159	299	283	1321	0	0	312	737	68
Grp Sat Flow(s),veh/h/ln	1594	0	1733	1594	1683	1562	1735	0	0	1594	1772	1468
Q Serve(g_s), s	14.4	0.0	32.0	6.4	20.7	21.2	41.1	0.0	0.0	19.2	19.2	4.9
Cycle Q Clear(g_c), s	14.4	0.0	32.0	6.4	20.7	21.2	41.1	0.0	0.0	19.2	19.2	4.9
Prop In Lane	1.00		0.08	1.00		0.57	0.05		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	191	0	462	85	337	312	594	0	0	255	284	235
V/C Ratio(X)	1.80	0.00	1.23	1.87	0.89	0.91	2.22	0.00	0.00	1.22	2.60	0.29
Avail Cap(c_a), veh/h	191	0	462	85	337	312	594	0	0	255	284	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	44.0	56.8	46.7	46.9	39.5	0.0	0.0	50.4	50.4	44.4
Incr Delay (d2), s/veh	379.5	0.0	120.0	432.9	23.8	28.3	555.5	0.0	0.0	130.4	730.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.7	0.0	28.4	12.7	10.6	10.4	108.9	0.0	0.0	16.6	65.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	432.3	0.0	164.0	489.7	70.5	75.2	595.0	0.0	0.0	180.8	780.4	45.1
LnGrp LOS	F	A	F	F	E	E	F	A	A	F	F	D
Approach Vol, veh/h		911			741			1321			1117	
Approach Delay, s/veh		265.3			162.2			595.0			568.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.8	11.0	38.2		25.0	19.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 41	6.4	32.0		19.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		43.1	8.4	34.0		21.2	16.4	23.2				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.3				

Intersection Summary												
HCM 6th Ctrl Delay			435.8									
HCM 6th LOS			F									

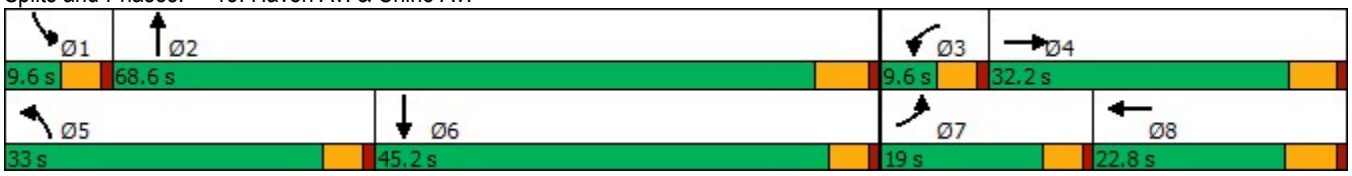
Notes

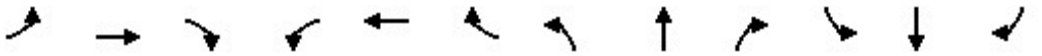
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	74	36	133	71	187	1198	772	
Future Volume (vph)	74	36	133	71	187	1198	772	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	19.0	32.2	9.6	22.8	33.0	68.6	45.2	9.6
Total Split (%)	15.8%	26.8%	8.0%	19.0%	27.5%	57.2%	37.7%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	9.4	16.1	5.0	13.5	17.1	64.7	44.1	
Actuated g/C Ratio	0.09	0.16	0.05	0.13	0.17	0.64	0.43	
v/c Ratio	0.54	0.41	1.67	0.31	0.75	1.58	1.25	
Control Delay	59.1	16.4	375.5	46.7	58.3	287.4	150.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	59.1	16.4	375.5	46.7	58.3	287.4	150.4	
LOS	E	B	F	D	E	F	F	
Approach Delay		31.5		261.4		263.7	150.4	
Approach LOS		C		F		F	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.67	
Intersection Signal Delay: 215.5	Intersection LOS: F
Intersection Capacity Utilization 129.7%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	36	100	133	71	0	187	1198	409	0	772	113
Future Volume (veh/h)	74	36	100	133	71	0	187	1198	409	0	772	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	79	39	106	145	77	0	199	1274	445	0	821	120
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	51	138	94	197	0	230	831	290	2	709	104
Arrive On Green	0.06	0.11	0.11	0.05	0.11	0.00	0.14	0.66	0.66	0.00	0.47	0.47
Sat Flow, veh/h	1594	445	1208	1781	1870	0	1594	1255	438	1781	1511	221
Grp Volume(v), veh/h	79	0	145	145	77	0	199	0	1719	0	0	941
Grp Sat Flow(s),veh/h/ln	1594	0	1653	1781	1870	0	1594	0	1693	1781	0	1732
Q Serve(g_s), s	4.6	0.0	8.1	5.0	3.6	0.0	11.6	0.0	62.8	0.0	0.0	44.5
Cycle Q Clear(g_c), s	4.6	0.0	8.1	5.0	3.6	0.0	11.6	0.0	62.8	0.0	0.0	44.5
Prop In Lane	1.00		0.73	1.00		0.00	1.00		0.26	1.00		0.13
Lane Grp Cap(c), veh/h	98	0	189	94	197	0	230	0	1121	2	0	812
V/C Ratio(X)	0.80	0.00	0.77	1.54	0.39	0.00	0.86	0.00	1.53	0.00	0.00	1.16
Avail Cap(c_a), veh/h	242	0	467	94	335	0	477	0	1121	94	0	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	43.9	0.0	40.8	44.9	39.6	0.0	39.7	0.0	16.0	0.0	0.0	25.2
Incr Delay (d2), s/veh	5.7	0.0	6.4	290.7	1.3	0.0	3.7	0.0	244.6	0.0	0.0	84.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	3.5	9.7	1.7	0.0	4.6	0.0	93.9	0.0	0.0	36.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	0.0	47.2	335.6	40.8	0.0	43.4	0.0	260.6	0.0	0.0	110.0
LnGrp LOS	D	A	D	F	D	A	D	A	F	A	A	F
Approach Vol, veh/h		224			222			1918			941	
Approach Delay, s/veh		48.0			233.4			238.1			110.0	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	68.6	9.6	16.6	18.3	50.3	10.4	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	62.8	5.0	* 27	28.4	* 41	14.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	64.8	7.0	10.1	13.6	46.5	6.6	5.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.2	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	188.4
HCM 6th LOS	F

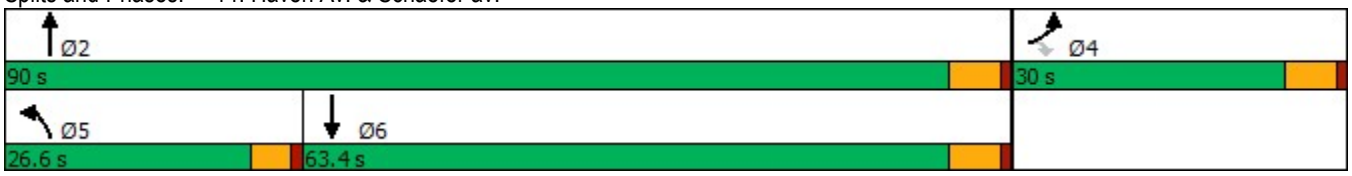
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	39	102	118	1728	1002
Future Volume (vph)	39	102	118	1728	1002
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	30.0	30.0	26.6	90.0	63.4
Total Split (%)	25.0%	25.0%	22.2%	75.0%	52.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.3	12.3	13.1	85.9	68.2
Actuated g/C Ratio	0.11	0.11	0.12	0.78	0.62
v/c Ratio	0.24	0.42	0.68	1.36	0.51
Control Delay	46.5	13.0	63.5	185.1	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	13.0	63.5	185.1	13.9
LOS	D	B	E	F	B
Approach Delay	22.2			177.3	13.9
Approach LOS	C			F	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 114.5	Intersection LOS: F
Intersection Capacity Utilization 114.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	102	118	1728	1002	22
Future Volume (veh/h)	39	102	118	1728	1002	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	42	57	128	1878	1089	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	145	137	152	1411	2295	27
Arrive On Green	0.14	0.14	0.14	1.00	0.99	0.99
Sat Flow, veh/h	1594	1502	1594	1772	3494	42
Grp Volume(v), veh/h	42	57	128	1878	552	550
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1772	1763
Q Serve(g_s), s	2.4	3.6	8.1	82.2	0.9	0.9
Cycle Q Clear(g_c), s	2.4	3.6	8.1	82.2	0.9	0.9
Prop In Lane	1.00	1.00	1.00			0.02
Lane Grp Cap(c), veh/h	145	137	152	1411	1164	1158
V/C Ratio(X)	0.29	0.42	0.84	1.33	0.47	0.47
Avail Cap(c_a), veh/h	374	352	340	1446	1164	1158
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	42.0	43.5	0.0	0.3	0.3
Incr Delay (d2), s/veh	1.1	2.0	4.8	153.8	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.1	3.1	60.3	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	42.6	44.0	48.3	153.8	0.6	0.6
LnGrp LOS	D	D	D	F	A	A
Approach Vol, veh/h	99			2006	1102	
Approach Delay, s/veh	43.4			147.0	0.6	
Approach LOS	D			F	A	

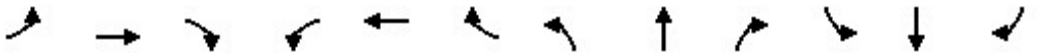
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		89.0		15.2	14.5	74.5
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		84.2		24.2	22.0	57.6
Max Q Clear Time (g_c+I1), s		84.2		5.6	10.1	2.9
Green Ext Time (p_c), s		0.0		0.2	0.1	8.1

Intersection Summary		
HCM 6th Ctrl Delay	93.5	
HCM 6th LOS	F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	1198	17	75	1198	684	36	544	118	681	294	318
Future Volume (vph)	235	1198	17	75	1198	684	36	544	118	681	294	318
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	15.0	38.0	38.0	11.5	34.5	34.5	11.7	48.5	48.5	22.0	58.8	58.8
Total Split (%)	12.5%	31.7%	31.7%	9.6%	28.8%	28.8%	9.8%	40.4%	40.4%	18.3%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.4	34.3	34.3	6.5	28.0	28.0	6.4	41.1	41.1	17.4	56.2	56.2
Actuated g/C Ratio	0.09	0.29	0.29	0.05	0.24	0.24	0.05	0.35	0.35	0.15	0.47	0.47
v/c Ratio	1.82	0.84	0.03	0.50	0.77	1.24	0.45	0.96	0.21	3.16	0.38	0.41
Control Delay	428.1	46.5	0.1	65.7	46.1	146.1	71.8	65.2	2.8	997.9	22.7	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	428.1	46.5	0.1	65.7	46.1	146.1	71.8	65.2	2.8	997.9	22.7	7.2
LOS	F	D	A	E	D	F	E	E	A	F	C	A
Approach Delay		107.9			81.8			55.0			532.4	
Approach LOS		F			F			E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.16	
Intersection Signal Delay: 193.3	Intersection LOS: F
Intersection Capacity Utilization 123.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	1198	17	75	1198	684	36	544	118	681	294	318
Future Volume (veh/h)	235	1198	17	75	1198	684	36	544	118	681	294	318
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	253	1288	7	81	1288	683	39	585	76	732	316	319
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	1507	425	122	1675	355	49	616	521	234	822	694
Arrive On Green	0.09	0.28	0.28	0.04	0.24	0.24	0.03	0.35	0.35	0.15	0.46	0.46
Sat Flow, veh/h	1594	5316	1500	3000	7088	1502	1594	1772	1500	1594	1772	1497
Grp Volume(v), veh/h	253	1288	7	81	1288	683	39	585	76	732	316	319
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1772	1500	1594	1772	1497
Q Serve(g_s), s	10.4	27.1	0.4	3.2	20.1	28.0	2.9	38.1	4.1	17.4	13.8	17.2
Cycle Q Clear(g_c), s	10.4	27.1	0.4	3.2	20.1	28.0	2.9	38.1	4.1	17.4	13.8	17.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	1507	425	122	1675	355	49	616	521	234	822	694
V/C Ratio(X)	1.81	0.85	0.02	0.67	0.77	1.92	0.80	0.95	0.15	3.13	0.38	0.46
Avail Cap(c_a), veh/h	140	1507	425	175	1675	355	96	639	541	234	822	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	40.1	30.5	56.0	42.2	45.2	57.1	37.7	26.6	50.5	20.7	21.6
Incr Delay (d2), s/veh	390.5	6.4	0.1	2.3	3.5	426.3	10.7	23.6	0.1	968.3	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.2	12.1	0.1	1.2	8.7	51.8	1.3	19.6	1.4	69.7	5.5	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	444.5	46.5	30.6	58.4	45.7	471.5	67.8	61.2	26.7	1018.8	21.0	22.1
LnGrp LOS	F	D	C	E	D	F	E	E	C	F	C	C
Approach Vol, veh/h		1548			2052			700			1367	
Approach Delay, s/veh		111.5			187.9			57.8			555.6	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	47.0	9.4	40.1	8.2	60.7	15.0	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.4	42.7	6.9	* 32	7.1	53.0	10.4	28.0
Max Q Clear Time (g_c+I1), s	19.4	40.1	5.2	29.1	4.9	19.2	12.4	30.0
Green Ext Time (p_c), s	0.0	1.0	0.0	1.8	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	239.7
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	5.4
Intersection LOS	A

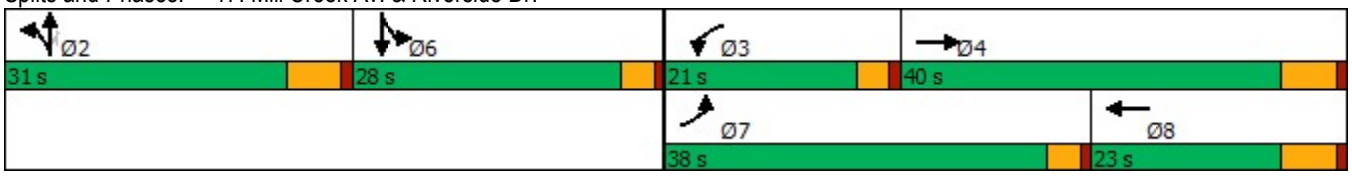
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	484	165	0	123
Demand Flow Rate, veh/h	493	168	0	125
Vehicles Circulating, veh/h	50	24	543	152
Vehicles Exiting, veh/h	227	519	0	40
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	3.7	0.0	4.0
Approach LOS	A	A	-	A

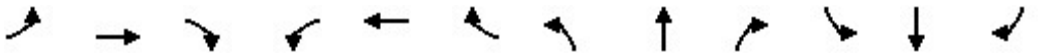
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	493	168	0	125
Cap Entry Lane, veh/h	1311	1346	793	1182
Entry HV Adj Factor	0.981	0.982	1.000	0.984
Flow Entry, veh/h	484	165	0	123
Cap Entry, veh/h	1287	1323	793	1163
V/C Ratio	0.376	0.125	0.000	0.106
Control Delay, s/veh	6.4	3.7	4.5	4.0
LOS	A	A	A	A
95th %tile Queue, veh	2	0	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	318	212	231	226	207	75	396	83	155
Future Volume (vph)	318	212	231	226	207	75	396	83	155
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	38.0	40.0	21.0	23.0	31.0	31.0	31.0	28.0	28.0
Total Split (%)	31.7%	33.3%	17.5%	19.2%	25.8%	25.8%	25.8%	23.3%	23.3%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	31.1	29.5	17.2	15.6	22.4	22.4	22.4	23.2	23.2
Actuated g/C Ratio	0.28	0.26	0.15	0.14	0.20	0.20	0.20	0.21	0.21
v/c Ratio	0.92	0.62	1.21	0.80	0.83	0.27	0.72	0.32	0.91
Control Delay	68.4	21.7	166.9	55.0	66.9	41.7	10.3	43.5	73.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	21.7	166.9	55.0	66.9	41.7	10.3	43.5	73.1
LOS	E	C	F	D	E	D	B	D	E
Approach Delay		39.6		102.2		31.0			65.7
Approach LOS		D		F		C			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.4	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 55.1	Intersection LOS: E
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	318	212	300	231	226	90	207	75	396	83	155	94
Future Volume (veh/h)	318	212	300	231	226	90	207	75	396	83	155	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	403	268	228	292	286	63	262	95	273	105	196	68
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	429	432	353	256	371	80	330	367	309	327	249	86
Arrive On Green	0.27	0.24	0.24	0.16	0.13	0.13	0.21	0.21	0.21	0.20	0.20	0.20
Sat Flow, veh/h	1594	1792	1466	1594	2808	607	1594	1772	1493	1594	1215	422
Grp Volume(v), veh/h	403	265	231	292	178	171	262	95	273	105	0	264
Grp Sat Flow(s),veh/h/ln	1594	1772	1486	1594	1772	1643	1594	1772	1493	1594	0	1637
Q Serve(g_s), s	26.2	14.1	14.8	17.0	10.3	10.7	16.5	4.8	18.8	5.9	0.0	16.2
Cycle Q Clear(g_c), s	26.2	14.1	14.8	17.0	10.3	10.7	16.5	4.8	18.8	5.9	0.0	16.2
Prop In Lane	1.00		0.99	1.00		0.37	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	429	427	358	256	234	217	330	367	309	327	0	335
V/C Ratio(X)	0.94	0.62	0.65	1.14	0.76	0.79	0.79	0.26	0.88	0.32	0.00	0.79
Avail Cap(c_a), veh/h	511	568	477	256	284	264	379	421	355	361	0	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	35.9	36.2	44.5	44.4	44.5	39.9	35.2	40.8	35.9	0.0	39.9
Incr Delay (d2), s/veh	21.9	1.5	2.0	100.1	9.5	12.1	9.8	0.4	20.3	0.6	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	6.0	5.3	13.5	4.9	4.9	7.1	2.0	8.3	2.4	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	37.4	38.1	144.6	53.9	56.7	49.7	35.6	61.1	36.4	0.0	49.8
LnGrp LOS	E	D	D	F	D	E	D	D	E	D	A	D
Approach Vol, veh/h		899			641			630			369	
Approach Delay, s/veh		47.6			96.0			52.5			46.0	
Approach LOS		D			F			D			D	

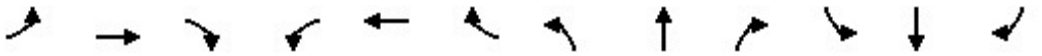
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.7	21.0	31.5		25.7	32.5	20.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		25.2	17.0	34.0		24.0	34.0	17.0				
Max Q Clear Time (g_c+I1), s		20.8	19.0	16.8		18.2	28.2	12.7				
Green Ext Time (p_c), s		1.0	0.0	2.5		0.9	0.3	0.7				

Intersection Summary												
HCM 6th Ctrl Delay			60.8									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	203	248	14	81	5	92	26	118
Future Volume (vph)	203	248	14	81	5	92	26	118
Turn Type	Perm	NA	Split	NA	Perm	NA	Perm	NA
Protected Phases		4	8	8		2		6
Permitted Phases	4				2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	73.0	73.0	22.5	22.5	24.5	24.5	24.5	24.5
Total Split (%)	60.8%	60.8%	18.8%	18.8%	20.4%	20.4%	20.4%	20.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	68.6	68.6	11.7	11.7	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.60	0.60	0.10	0.10	0.18	0.18	0.18	0.18
v/c Ratio	3.40	0.26	0.15	0.53	0.08	0.59	0.38	0.95
Control Delay	1141.8	11.7	47.6	55.5	44.6	51.6	51.8	84.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1141.8	11.7	47.6	55.5	44.6	51.6	51.8	84.1
LOS	F	B	D	E	D	D	D	F
Approach Delay		502.4		53.8		51.4		79.4
Approach LOS		F		D		D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.40	
Intersection Signal Delay: 252.0	Intersection LOS: F
Intersection Capacity Utilization 35.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: Mill Creek Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	248	17	14	81	7	5	92	4	26	118	66
Future Volume (veh/h)	203	248	17	14	81	7	5	92	4	26	118	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	221	270	9	28	88	8	5	184	4	52	236	39
Peak Hour Factor	0.92	0.92	0.92	0.50	0.92	0.50	0.92	0.50	0.50	0.50	0.50	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	455	459	15	183	173	16	327	430	9	396	369	61
Arrive On Green	0.26	0.26	0.26	0.10	0.10	0.10	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	1800	60	1781	1689	154	1104	1824	40	1195	1565	259
Grp Volume(v), veh/h	221	0	279	28	0	96	5	0	188	52	0	275
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	0	1843	1104	0	1863	1195	0	1824
Q Serve(g_s), s	3.5	0.0	4.4	0.5	0.0	1.6	0.1	0.0	2.8	1.3	0.0	4.5
Cycle Q Clear(g_c), s	3.5	0.0	4.4	0.5	0.0	1.6	4.6	0.0	2.8	4.1	0.0	4.5
Prop In Lane	1.00		0.03	1.00		0.08	1.00		0.02	1.00		0.14
Lane Grp Cap(c), veh/h	455	0	474	183	0	189	327	0	439	396	0	430
V/C Ratio(X)	0.49	0.00	0.59	0.15	0.00	0.51	0.02	0.00	0.43	0.13	0.00	0.64
Avail Cap(c_a), veh/h	3676	0	3837	966	0	999	732	0	1123	835	0	1099
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	10.8	13.6	0.0	14.1	13.5	0.0	10.8	12.5	0.0	11.4
Incr Delay (d2), s/veh	0.8	0.0	1.2	0.4	0.0	2.1	0.0	0.0	0.7	0.1	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.2	0.2	0.0	0.6	0.0	0.0	0.8	0.3	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	0.0	12.0	14.0	0.0	16.2	13.5	0.0	11.4	12.7	0.0	13.0
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		500			124			193			327	
Approach Delay, s/veh		11.7			15.7			11.5			13.0	
Approach LOS		B			B			B			B	

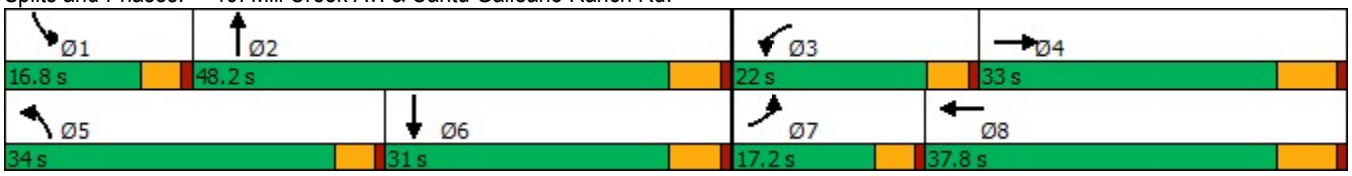
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.3		13.0		12.3		7.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.0		68.5		20.0		18.0				
Max Q Clear Time (g_c+I1), s		6.6		6.4		6.5		3.6				
Green Ext Time (p_c), s		0.7		2.2		1.3		0.4				

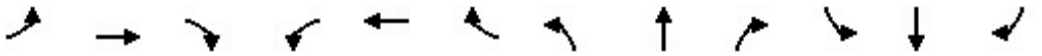
Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	121	877	274	610	462	67	115	22
Future Volume (vph)	121	877	274	610	462	67	115	22
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	23.5	9.6	23.5	9.6	27.8	9.6	27.8
Total Split (s)	17.2	33.0	22.0	37.8	34.0	48.2	16.8	31.0
Total Split (%)	14.3%	27.5%	18.3%	31.5%	28.3%	40.2%	14.0%	25.8%
Yellow Time (s)	3.6	5.5	3.6	5.5	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.3	26.5	17.4	32.7	29.5	30.8	10.8	12.2
Actuated g/C Ratio	0.11	0.25	0.16	0.31	0.28	0.29	0.10	0.11
v/c Ratio	0.71	1.04	1.04	0.65	1.03	0.62	0.70	0.47
Control Delay	68.1	74.7	108.3	31.7	88.9	20.6	68.0	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	74.7	108.3	31.7	88.9	20.6	68.0	17.8
LOS	E	E	F	C	F	C	E	B
Approach Delay		74.1		49.3		59.5		42.3
Approach LOS		E		D		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 60.4	Intersection LOS: E
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Mill Creek Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	877	333	274	610	308	462	67	282	115	22	98
Future Volume (veh/h)	121	877	333	274	610	308	462	67	282	115	22	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	953	199	298	663	172	502	73	166	125	24	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1052	219	297	1318	337	503	148	337	153	43	115
Arrive On Green	0.09	0.25	0.25	0.17	0.33	0.33	0.28	0.29	0.29	0.09	0.10	0.10
Sat Flow, veh/h	1781	4234	881	1781	4053	1035	1781	508	1155	1781	451	1203
Grp Volume(v), veh/h	132	766	386	298	555	280	502	0	239	125	0	88
Grp Sat Flow(s),veh/h/ln	1781	1702	1712	1781	1702	1684	1781	0	1663	1781	0	1654
Q Serve(g_s), s	7.6	22.7	22.8	17.4	13.7	14.0	29.4	0.0	12.4	7.2	0.0	5.3
Cycle Q Clear(g_c), s	7.6	22.7	22.8	17.4	13.7	14.0	29.4	0.0	12.4	7.2	0.0	5.3
Prop In Lane	1.00		0.51	1.00		0.61	1.00		0.69	1.00		0.73
Lane Grp Cap(c), veh/h	161	846	425	297	1107	548	503	0	485	153	0	159
V/C Ratio(X)	0.82	0.90	0.91	1.00	0.50	0.51	1.00	0.00	0.49	0.81	0.00	0.55
Avail Cap(c_a), veh/h	215	866	435	297	1107	548	503	0	677	209	0	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.6	38.0	38.0	43.4	28.3	28.5	37.4	0.0	30.5	46.8	0.0	45.0
Incr Delay (d2), s/veh	12.7	12.8	22.4	52.6	0.4	0.8	39.8	0.0	0.8	11.9	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	10.3	11.5	11.5	5.2	5.3	17.6	0.0	4.8	3.6	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.2	50.7	60.4	96.0	28.7	29.2	77.2	0.0	31.3	58.7	0.0	48.0
LnGrp LOS	E	D	E	F	C	C	E	A	C	E	A	D
Approach Vol, veh/h		1284			1133			741			213	
Approach Delay, s/veh		54.5			46.5			62.4			54.2	
Approach LOS		D			D			E			D	

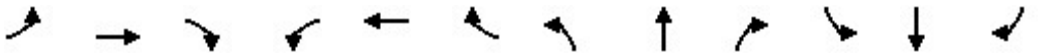
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	36.2	22.0	32.4	34.0	15.8	14.0	40.4
Change Period (Y+Rc), s	4.6	5.8	4.6	6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	12.2	42.4	17.4	26.5	29.4	25.2	12.6	31.3
Max Q Clear Time (g_c+I1), s	9.2	14.4	19.4	24.8	31.4	7.3	9.6	16.0
Green Ext Time (p_c), s	0.0	1.4	0.0	1.1	0.0	0.3	0.0	4.2

Intersection Summary	
HCM 6th Ctrl Delay	53.5
HCM 6th LOS	D

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	526	403	1396	558	262
Future Volume (vph)	4	526	403	1396	558	262
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	22.5	22.5	11.2	22.5	22.5	22.5
Total Split (s)	37.0	37.0	28.0	53.0	25.0	25.0
Total Split (%)	41.1%	41.1%	31.1%	58.9%	27.8%	27.8%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	28.5	28.5	21.9	43.7	17.2	17.2
Actuated g/C Ratio	0.34	0.34	0.26	0.52	0.20	0.20
v/c Ratio	0.71	0.90	0.90	0.74	0.76	0.50
Control Delay	32.7	43.4	56.3	19.3	39.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	43.4	56.3	19.3	39.7	7.7
LOS	C	D	E	B	D	A
Approach Delay	38.7			27.6	29.5	
Approach LOS	D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 84.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 96.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	411	4	526	403	1396	0	0	558	262
Future Volume (veh/h)	0	0	0	411	4	526	403	1396	0	0	558	262
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				419	4	367	411	1424	0	0	569	228
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				519	5	466	457	1974	0	0	768	325
Arrive On Green				0.29	0.29	0.29	0.26	0.53	0.00	0.00	0.21	0.21
Sat Flow, veh/h				1765	17	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				423	0	367	411	1424	0	0	569	228
Grp Sat Flow(s),veh/h/ln				1782	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				15.3	0.0	14.8	15.5	20.2	0.0	0.0	9.9	9.3
Cycle Q Clear(g_c), s				15.3	0.0	14.8	15.5	20.2	0.0	0.0	9.9	9.3
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				524	0	466	457	1974	0	0	768	325
V/C Ratio(X)				0.81	0.00	0.79	0.90	0.72	0.00	0.00	0.74	0.70
Avail Cap(c_a), veh/h				788	0	701	598	2513	0	0	1010	428
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.8	0.0	22.6	25.0	12.5	0.0	0.0	25.9	25.7
Incr Delay (d2), s/veh				3.8	0.0	3.5	11.8	0.8	0.0	0.0	2.1	3.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.1	0.0	5.3	7.2	6.3	0.0	0.0	4.1	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				26.5	0.0	26.1	36.8	13.3	0.0	0.0	28.0	29.1
LnGrp LOS				C	A	C	D	B	A	A	C	C
Approach Vol, veh/h					790			1835			797	
Approach Delay, s/veh					26.3			18.6			28.3	
Approach LOS					C			B			C	

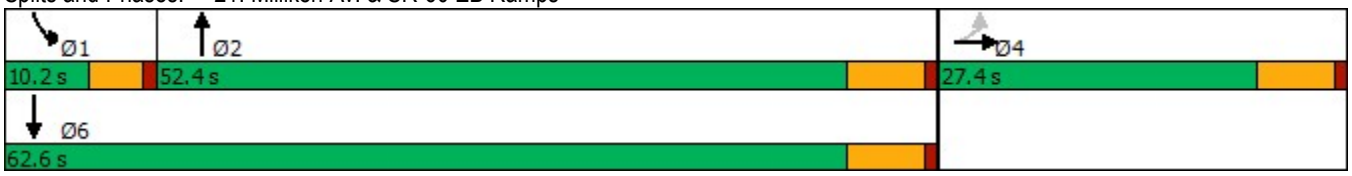
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		43.0			22.5	20.5		26.7				
Change Period (Y+Rc), s		6.2			4.6	6.2		6.2				
Max Green Setting (Gmax), s		46.8			23.4	18.8		30.8				
Max Q Clear Time (g_c+I1), s		22.2			17.5	11.9		17.3				
Green Ext Time (p_c), s		10.8			0.3	2.4		3.2				

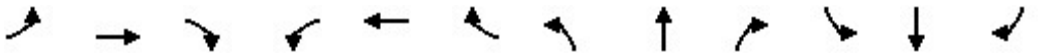
Intersection Summary												
HCM 6th Ctrl Delay			22.6									
HCM 6th LOS			C									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	436	3	1419	85	863
Future Volume (vph)	436	3	1419	85	863
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	22.5	9.6	22.5
Total Split (s)	27.4	27.4	52.4	10.2	62.6
Total Split (%)	30.4%	30.4%	58.2%	11.3%	69.6%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	21.2	21.2	46.2	5.6	56.4
Actuated g/C Ratio	0.24	0.24	0.51	0.06	0.63
v/c Ratio	0.97	0.83	1.04	0.80	0.38
Control Delay	73.6	34.9	53.9	88.4	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	73.6	34.9	53.9	88.4	8.8
LOS	E	C	D	F	A
Approach Delay		53.9	53.9		16.0
Approach LOS		D	D		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 44.0	Intersection LOS: D
Intersection Capacity Utilization 96.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	436	3	361	0	0	0	0	1419	475	85	863	0
Future Volume (veh/h)	436	3	361	0	0	0	0	1419	475	85	863	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	319	185	186				0	1463	253	88	890	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	419	201	203				0	1590	270	112	2338	0
Arrive On Green	0.24	0.24	0.24				0.00	0.51	0.51	0.06	0.62	0.00
Sat Flow, veh/h	1781	855	860				0	3116	529	1781	3741	0
Grp Volume(v), veh/h	319	0	371				0	867	849	88	890	0
Grp Sat Flow(s),veh/h/ln	1781	0	1716				0	1870	1775	1781	1870	0
Q Serve(g_s), s	14.8	0.0	18.7				0.0	37.6	39.8	4.3	10.4	0.0
Cycle Q Clear(g_c), s	14.8	0.0	18.7				0.0	37.6	39.8	4.3	10.4	0.0
Prop In Lane	1.00		0.50				0.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	419	0	404				0	954	905	112	2338	0
V/C Ratio(X)	0.76	0.00	0.92				0.00	0.91	0.94	0.78	0.38	0.00
Avail Cap(c_a), veh/h	425	0	409				0	973	923	112	2375	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.6	0.0	33.1				0.0	19.9	20.4	41.0	8.2	0.0
Incr Delay (d2), s/veh	7.7	0.0	25.3				0.0	12.1	16.4	27.3	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	10.1				0.0	16.7	17.6	2.6	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	0.0	58.4				0.0	32.0	36.8	68.3	8.3	0.0
LnGrp LOS	D	A	E				A	C	D	E	A	A
Approach Vol, veh/h		690						1716			978	
Approach Delay, s/veh		49.6						34.4			13.7	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	51.5		27.1		61.7
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	5.6	46.2		21.2		56.4
Max Q Clear Time (g_c+I1), s	6.3	41.8		20.7		12.4
Green Ext Time (p_c), s	0.0	3.5		0.2		6.5

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

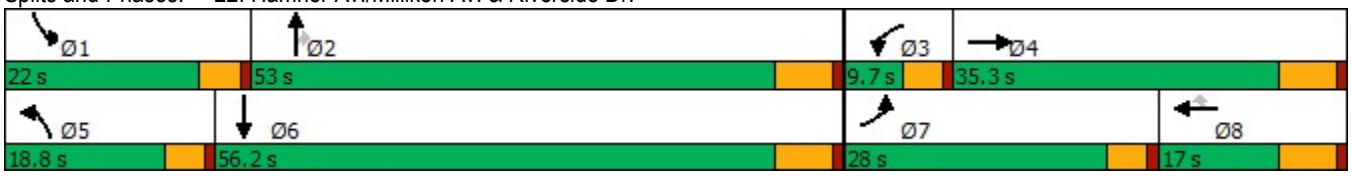
Notes

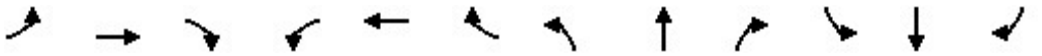
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	340	215	28	147	243	144	1267	58	244	776
Future Volume (vph)	340	215	28	147	243	144	1267	58	244	776
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	28.0	35.3	9.7	17.0	17.0	18.8	53.0	53.0	22.0	56.2
Total Split (%)	23.3%	29.4%	8.1%	14.2%	14.2%	15.7%	44.2%	44.2%	18.3%	46.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	23.4	33.0	5.1	10.8	10.8	13.9	46.8	46.8	17.4	50.3
Actuated g/C Ratio	0.20	0.28	0.04	0.09	0.09	0.12	0.39	0.39	0.14	0.42
v/c Ratio	1.27	0.87	0.48	1.07	0.85	0.91	1.11	0.10	1.22	0.82
Control Delay	184.4	59.5	79.6	143.0	37.2	99.4	97.4	0.3	176.1	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	184.4	59.5	79.6	143.0	37.2	99.4	97.4	0.3	176.1	36.0
LOS	F	E	E	F	D	F	F	A	F	D
Approach Delay		120.2		77.3			93.7			63.7
Approach LOS		F		E			F			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 87.1	Intersection LOS: F
Intersection Capacity Utilization 99.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	215	144	28	147	243	144	1267	58	244	776	211
Future Volume (veh/h)	340	215	144	28	147	243	144	1267	58	244	776	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	391	247	86	32	169	141	166	1456	38	280	892	128
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	324	113	44	159	135	189	1313	586	231	1231	177
Arrive On Green	0.20	0.26	0.26	0.03	0.09	0.09	0.12	0.39	0.39	0.14	0.42	0.42
Sat Flow, veh/h	1594	1256	437	1594	1772	1502	1594	3367	1502	1594	2955	424
Grp Volume(v), veh/h	391	0	333	32	169	141	166	1456	38	280	508	512
Grp Sat Flow(s),veh/h/ln	1594	0	1693	1594	1772	1502	1594	1683	1502	1594	1683	1696
Q Serve(g_s), s	23.4	0.0	21.8	2.4	10.8	10.8	12.3	46.8	1.9	17.4	30.3	30.3
Cycle Q Clear(g_c), s	23.4	0.0	21.8	2.4	10.8	10.8	12.3	46.8	1.9	17.4	30.3	30.3
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	311	0	436	44	159	135	189	1313	586	231	701	707
V/C Ratio(X)	1.26	0.00	0.76	0.73	1.06	1.04	0.88	1.11	0.06	1.21	0.72	0.72
Avail Cap(c_a), veh/h	311	0	436	68	159	135	189	1313	586	231	701	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	41.2	57.9	54.6	54.6	52.1	36.6	22.9	51.3	29.2	29.2
Incr Delay (d2), s/veh	139.6	0.0	7.8	8.6	88.0	89.4	33.7	60.3	0.0	128.3	3.7	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.9	0.0	9.6	1.0	8.6	7.3	6.5	28.8	0.7	14.9	12.1	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	187.9	0.0	49.0	66.5	142.6	144.0	85.7	96.9	23.0	179.6	33.0	32.9
LnGrp LOS	F	A	D	E	F	F	F	F	C	F	C	C
Approach Vol, veh/h		724			342			1660			1300	
Approach Delay, s/veh		124.0			136.1			94.1			64.5	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	53.0	7.9	37.1	18.8	56.2	28.0	17.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.4	46.8	5.1	29.1	14.2	50.0	23.4	10.8
Max Q Clear Time (g_c+I1), s	19.4	48.8	4.4	23.8	14.3	32.3	25.4	12.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	5.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	93.5
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	59.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	166	139	57	1320	838	68
Future Vol, veh/h	166	139	57	1320	838	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	189	158	65	1500	952	77

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1871	991	1029	0	-	0
Stage 1	991	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 71	298	673	-	-	-
Stage 1	358	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 30	298	673	-	-	-
Mov Cap-2 Maneuver	~ 133	-	-	-	-	-
Stage 1	~ 151	-	-	-	-	-
Stage 2	367	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 489.6	3.2	0
HCM LOS	F		

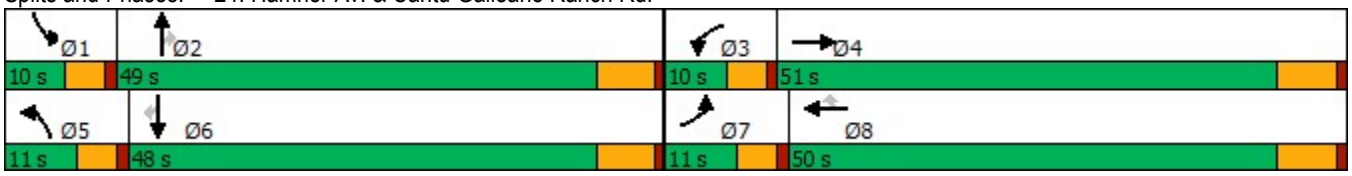
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	673	-	178	-	-
HCM Lane V/C Ratio	0.096	-	1.947	-	-
HCM Control Delay (s)	10.9	2.9	$ 489.6	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	26.1	-	-

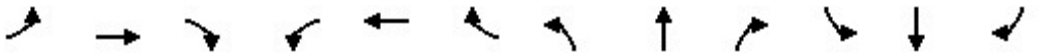
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	453	1494	311	1600	287	388	608	419	230	250	457
Future Volume (vph)	453	1494	311	1600	287	388	608	419	230	250	457
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.0	51.0	10.0	50.0	50.0	11.0	49.0	49.0	10.0	48.0	48.0
Total Split (%)	9.2%	42.5%	8.3%	41.7%	41.7%	9.2%	40.8%	40.8%	8.3%	40.0%	40.0%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	44.8	5.4	43.8	43.8	6.4	32.7	32.7	5.4	31.7	31.7
Actuated g/C Ratio	0.06	0.41	0.05	0.40	0.40	0.06	0.30	0.30	0.05	0.29	0.29
v/c Ratio	2.36	0.71	1.92	1.19	0.41	2.02	0.42	0.79	1.42	0.26	0.89
Control Delay	652.2	29.7	464.0	123.9	12.5	504.7	31.5	36.8	259.5	30.1	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	652.2	29.7	464.0	123.9	12.5	504.7	31.5	36.8	259.5	30.1	47.4
LOS	F	C	F	F	B	F	C	D	F	C	D
Approach Delay		157.4		157.4			162.9			95.0	
Approach LOS		F		F			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.36	
Intersection Signal Delay: 149.9	Intersection LOS: F
Intersection Capacity Utilization 98.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	453	1494	261	311	1600	287	388	608	419	230	250	457
Future Volume (veh/h)	453	1494	261	311	1600	287	388	608	419	230	250	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	472	1556	147	324	1667	164	404	633	306	240	260	257
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	2612	247	182	1506	672	216	1265	393	182	846	377
Arrive On Green	0.06	0.43	0.43	0.05	0.42	0.42	0.06	0.25	0.25	0.05	0.24	0.24
Sat Flow, veh/h	3456	6025	569	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	472	1246	457	324	1667	164	404	633	306	240	260	257
Grp Sat Flow(s),veh/h/ln	1728	1609	1768	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.4	20.2	20.3	5.4	43.5	6.8	6.4	10.9	18.5	5.4	6.2	15.1
Cycle Q Clear(g_c), s	6.4	20.2	20.3	5.4	43.5	6.8	6.4	10.9	18.5	5.4	6.2	15.1
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	2092	767	182	1506	672	216	1265	393	182	846	377
V/C Ratio(X)	2.19	0.60	0.60	1.78	1.11	0.24	1.87	0.50	0.78	1.32	0.31	0.68
Avail Cap(c_a), veh/h	216	2092	767	182	1506	672	216	2129	661	182	1447	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	22.2	22.2	48.6	29.6	19.0	48.1	33.1	36.0	48.6	32.1	35.6
Incr Delay (d2), s/veh	550.5	0.5	1.3	373.1	58.2	0.2	410.7	0.3	3.4	177.1	0.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.1	6.9	7.7	11.6	28.4	2.3	14.9	4.3	7.0	6.7	2.5	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	598.6	22.7	23.5	421.7	87.8	19.2	458.9	33.5	39.4	225.8	32.3	37.7
LnGrp LOS	F	C	C	F	F	B	F	C	D	F	C	D
Approach Vol, veh/h		2175			2155			1343			757	
Approach Delay, s/veh		147.8			132.8			162.8			95.5	
Approach LOS		F			F			F			F	

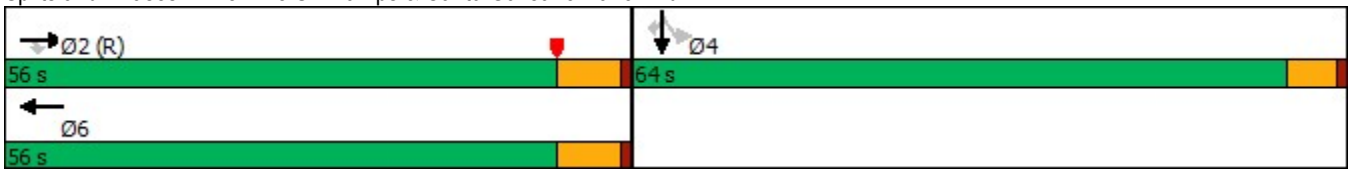
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	31.6	10.0	51.0	11.0	30.6	11.0	50.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	5.4	42.8	5.4	44.5	6.4	41.8	6.4	43.5
Max Q Clear Time (g_c+I1), s	7.4	20.5	7.4	22.3	8.4	17.1	8.4	45.5
Green Ext Time (p_c), s	0.0	5.0	0.0	11.2	0.0	2.3	0.0	0.0

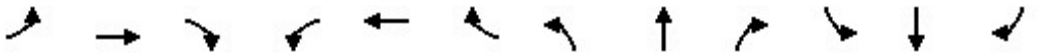
Intersection Summary	
HCM 6th Ctrl Delay	139.7
HCM 6th LOS	F

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1346	835	1327	168	258	0	1362
Future Volume (vph)	1346	835	1327	168	258	0	1362
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	56.0	56.0	56.0		64.0	64.0	64.0
Total Split (%)	46.7%	46.7%	46.7%		53.3%	53.3%	53.3%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	Min		Min	Min	Min
Act Effct Green (s)	49.2	49.2	49.2	120.0	58.5	58.5	58.5
Actuated g/C Ratio	0.41	0.41	0.41	1.00	0.49	0.49	0.49
v/c Ratio	0.70	0.77	0.99	0.07	0.31	1.04	1.01
Control Delay	31.6	6.7	65.5	0.0	19.8	74.5	64.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	6.7	65.5	0.0	19.8	74.5	64.2
LOS	C	A	E	A	B	E	E
Approach Delay	22.0		58.1			62.2	
Approach LOS	C		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 44.5	Intersection LOS: D
Intersection Capacity Utilization 103.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1346	835	0	1327	168	0	0	0	258	0	1362
Future Volume (veh/h)	0	1346	835	0	1327	168	0	0	0	258	0	1362
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1463	0	0	1442	0				187	0	1105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2601		0	1810					691	0	1231
Arrive On Green	0.00	0.51	0.00	0.00	1.00	0.00				0.39	0.00	0.39
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1463	0	0	1442	0				187	0	1105
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	23.6	0.0	0.0	0.0	0.0				8.6	0.0	39.3
Cycle Q Clear(g_c), s	0.0	23.6	0.0	0.0	0.0	0.0				8.6	0.0	39.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2601		0	1810					691	0	1231
V/C Ratio(X)	0.00	0.56		0.00	0.80					0.27	0.00	0.90
Avail Cap(c_a), veh/h	0	2601		0	1810					868	0	1545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.51	0.00	0.00	0.56	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	20.2	0.0	0.0	0.0	0.0				25.1	0.0	34.5
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	1.5	0.0				0.2	0.0	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.5	0.0	0.0	0.4	0.0				3.6	0.0	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.7	0.0	0.0	1.5	0.0				25.3	0.0	40.7
LnGrp LOS	A	C		A	A					C	A	D
Approach Vol, veh/h		1463	A		1442	A					1292	
Approach Delay, s/veh		20.7			1.5						38.5	
Approach LOS		C			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		67.9		52.1		67.9						
Change Period (Y+Rc), s		6.8		5.5		6.8						
Max Green Setting (Gmax), s		49.2		58.5		49.2						
Max Q Clear Time (g_c+I1), s		25.6		41.3		2.0						
Green Ext Time (p_c), s		10.2		5.3		13.1						

Intersection Summary		
HCM 6th Ctrl Delay		19.6
HCM 6th LOS		B

Notes

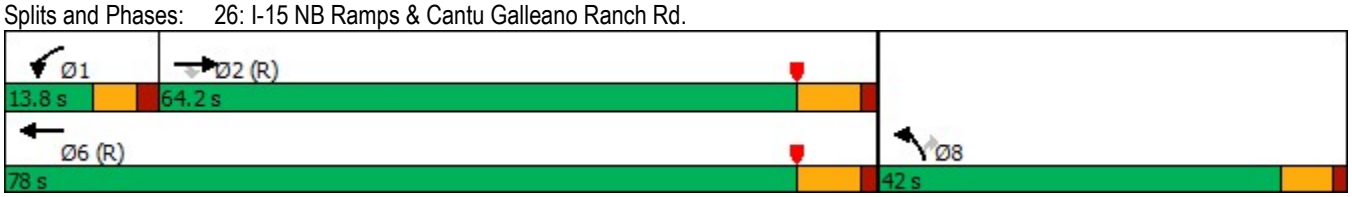
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	512	1102	194	488	1007	377
Future Volume (vph)	512	1102	194	488	1007	377
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.5	22.5	22.5	22.5
Total Split (s)	64.2	64.2	13.8	78.0	42.0	42.0
Total Split (%)	53.5%	53.5%	11.5%	65.0%	35.0%	35.0%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	54.5	54.5	7.8	68.3	38.4	38.4
Actuated g/C Ratio	0.45	0.45	0.06	0.57	0.32	0.32
v/c Ratio	0.24	0.99	0.95	0.18	1.03	0.54
Control Delay	10.4	48.4	103.9	12.3	76.5	9.3
Queue Delay	0.0	16.2	0.0	0.0	0.0	0.0
Total Delay	10.4	64.6	103.9	12.3	76.5	9.3
LOS	B	E	F	B	E	A
Approach Delay	47.4			38.4	60.0	
Approach LOS	D			D	E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 50.5	Intersection LOS: D
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	512	1102	194	488	1007	377
Future Volume (veh/h)	512	1102	194	488	1007	377
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	557	655	211	530	1095	225
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2421	752	225	3008	1069	476
Arrive On Green	0.79	0.79	0.07	0.59	0.30	0.30
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	557	655	211	530	1095	225
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	3.3	33.3	7.3	5.7	36.0	13.9
Cycle Q Clear(g_c), s	3.3	33.3	7.3	5.7	36.0	13.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2421	752	225	3008	1069	476
V/C Ratio(X)	0.23	0.87	0.94	0.18	1.02	0.47
Avail Cap(c_a), veh/h	2421	752	225	3008	1069	476
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.89	0.89	1.00	1.00
Uniform Delay (d), s/veh	6.9	10.0	55.9	11.3	42.0	34.3
Incr Delay (d2), s/veh	0.2	10.0	40.3	0.1	33.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.3	4.3	1.9	20.1	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1	20.0	96.2	11.4	75.9	35.0
LnGrp LOS	A	C	F	B	F	C
Approach Vol, veh/h	1212			741	1320	
Approach Delay, s/veh	14.1			35.6	69.0	
Approach LOS	B			D	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.8	64.2				78.0	42.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.8	56.9				70.7	36.0
Max Q Clear Time (g_c+I1), s	9.3	35.3				7.7	38.0
Green Ext Time (p_c), s	0.0	6.0				3.4	0.0

Intersection Summary			
HCM 6th Ctrl Delay		41.1	
HCM 6th LOS		D	

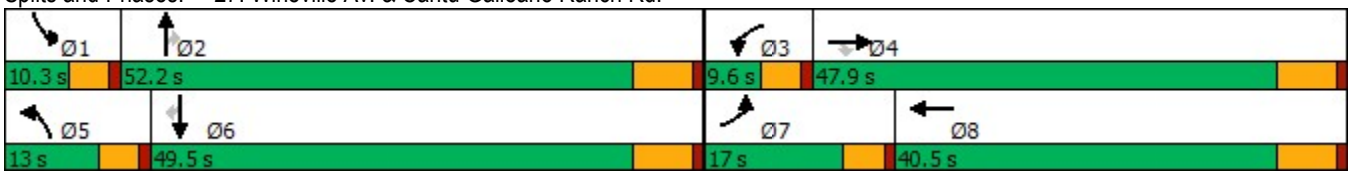
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	402	306	278	27	240	250	285	17	20	56	143
Future Volume (vph)	402	306	278	27	240	250	285	17	20	56	143
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	17.0	47.9	47.9	9.6	40.5	13.0	52.2	52.2	10.3	49.5	49.5
Total Split (%)	14.2%	39.9%	39.9%	8.0%	33.8%	10.8%	43.5%	43.5%	8.6%	41.3%	41.3%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.5	27.2	27.2	5.4	12.1	9.1	24.5	24.5	5.7	11.6	11.6
Actuated g/C Ratio	0.19	0.39	0.39	0.08	0.17	0.13	0.35	0.35	0.08	0.16	0.16
v/c Ratio	0.67	0.13	0.38	0.11	0.35	0.61	0.25	0.03	0.15	0.20	0.40
Control Delay	35.8	16.7	4.6	39.4	24.4	39.7	18.0	0.1	41.3	26.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	16.7	4.6	39.4	24.4	39.7	18.0	0.1	41.3	26.2	7.6
LOS	D	B	A	D	C	D	B	A	D	C	A
Approach Delay		21.1			25.7		27.3			15.5	
Approach LOS		C			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 70.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 22.8	Intersection LOS: C
Intersection Capacity Utilization 47.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	402	306	278	27	240	42	250	285	17	20	56	143
Future Volume (veh/h)	402	306	278	27	240	42	250	285	17	20	56	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	437	333	192	29	261	26	272	310	8	22	61	128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	585	1674	412	115	589	57	403	789	352	47	247	209
Arrive On Green	0.17	0.26	0.26	0.03	0.12	0.12	0.12	0.22	0.22	0.03	0.13	0.13
Sat Flow, veh/h	3456	6434	1585	3456	4730	461	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	437	333	192	29	186	101	272	310	8	22	61	128
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1787	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	5.8	2.0	4.9	0.4	2.5	2.5	3.7	3.6	0.2	0.6	1.4	3.7
Cycle Q Clear(g_c), s	5.8	2.0	4.9	0.4	2.5	2.5	3.7	3.6	0.2	0.6	1.4	3.7
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	585	1674	412	115	424	222	403	789	352	47	247	209
V/C Ratio(X)	0.75	0.20	0.47	0.25	0.44	0.45	0.67	0.39	0.02	0.47	0.25	0.61
Avail Cap(c_a), veh/h	884	5494	1353	356	2387	1253	599	3350	1494	209	1659	1406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	14.0	15.1	22.8	19.7	19.7	20.5	16.1	14.7	23.3	18.9	19.9
Incr Delay (d2), s/veh	0.7	0.1	0.8	0.4	0.7	1.4	0.7	0.3	0.0	2.7	0.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.5	1.4	0.1	0.8	0.9	1.3	1.2	0.1	0.2	0.5	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	14.0	15.9	23.3	20.4	21.1	21.3	16.4	14.8	25.9	19.4	22.8
LnGrp LOS	B	B	B	C	C	C	C	B	B	C	B	C
Approach Vol, veh/h		962			316			590			211	
Approach Delay, s/veh		17.1			20.9			18.6			22.1	
Approach LOS		B			C			B			C	

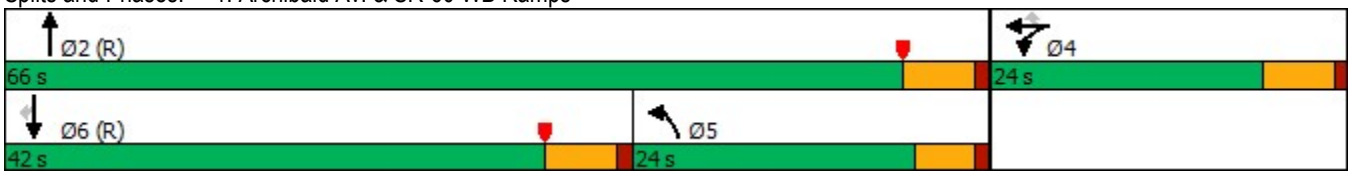
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	17.3	6.2	19.1	10.3	12.9	12.8	12.5
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	5.7	45.7	5.0	41.4	8.4	43.0	12.4	34.0
Max Q Clear Time (g_c+I1), s	2.6	5.6	2.4	6.9	5.7	5.7	7.8	4.5
Green Ext Time (p_c), s	0.0	2.0	0.0	2.6	0.1	0.7	0.4	1.5

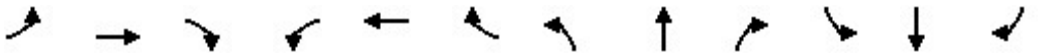
Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	380	1	176	493	539	1290	321
Future Volume (vph)	380	1	176	493	539	1290	321
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	24.0	24.0	24.0	24.0	66.0	42.0	42.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	15.6	15.6	15.6	16.8	62.8	41.0	41.0
Actuated g/C Ratio	0.17	0.17	0.17	0.19	0.70	0.46	0.46
v/c Ratio	0.71	0.72	0.41	0.79	0.16	0.45	0.37
Control Delay	48.3	48.2	8.6	39.5	1.2	18.3	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	48.2	8.6	39.5	1.2	18.3	3.5
LOS	D	D	A	D	A	B	A
Approach Delay		36.9			19.5	15.3	
Approach LOS		D			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	380	1	176	493	539	0	0	1290	321
Future Volume (veh/h)	0	0	0	380	1	176	493	539	0	0	1290	321
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				411	0	48	503	550	0	0	1316	228
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				512	0	228	1241	3714	0	0	1955	469
Arrive On Green				0.14	0.00	0.14	0.12	0.24	0.00	0.00	0.30	0.30
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1543
Grp Volume(v), veh/h				411	0	48	503	550	0	0	1316	228
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1543
Q Serve(g_s), s				10.0	0.0	2.4	12.1	7.6	0.0	0.0	16.1	10.9
Cycle Q Clear(g_c), s				10.0	0.0	2.4	12.1	7.6	0.0	0.0	16.1	10.9
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				512	0	228	1241	3714	0	0	1955	469
V/C Ratio(X)				0.80	0.00	0.21	0.41	0.15	0.00	0.00	0.67	0.49
Avail Cap(c_a), veh/h				720	0	321	1241	3714	0	0	2588	621
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.96	0.96	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				37.3	0.0	34.0	30.8	12.2	0.0	0.0	27.4	25.6
Incr Delay (d2), s/veh				4.4	0.0	0.5	0.1	0.1	0.0	0.0	1.9	3.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	2.3	5.4	2.4	0.0	0.0	6.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.7	0.0	34.5	30.8	12.3	0.0	0.0	29.3	29.2
LnGrp LOS				D	A	C	C	B	A	A	C	C
Approach Vol, veh/h					459			1053			1544	
Approach Delay, s/veh					41.0			21.2			29.3	
Approach LOS					D			C			C	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	71.3	18.7	38.1	33.1
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	18.2	19.0	* 36
Max Q Clear Time (g_c+I1), s	9.6	12.0	14.1	18.1
Green Ext Time (p_c), s	3.8	0.9	0.5	9.2

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

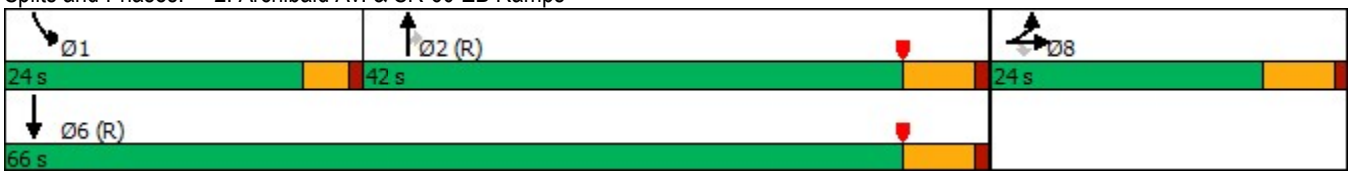
User approved volume balancing among the lanes for turning movement.

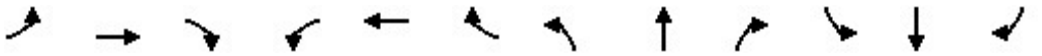
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	112	1	426	922	505	477	1193
Future Volume (vph)	112	1	426	922	505	477	1193
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	24.0	24.0	24.0	42.0	42.0	24.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	46.7%	46.7%	26.7%	73.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	13.2	13.2	13.2	44.7	44.7	16.6	65.2
Actuated g/C Ratio	0.15	0.15	0.15	0.50	0.50	0.18	0.72
v/c Ratio	0.42	0.75	0.72	0.29	0.49	0.76	0.33
Control Delay	38.6	35.2	32.4	14.9	3.6	53.2	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	35.2	32.4	14.9	3.6	53.2	1.1
LOS	D	D	C	B	A	D	A
Approach Delay		34.7		10.9			16.0
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	1	426	0	0	0	0	922	505	477	1193	0
Future Volume (veh/h)	112	1	426	0	0	0	0	922	505	477	1193	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	76	0	236				0	931	334	482	1205	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	183	0	326				0	3629	875	552	3923	0
Arrive On Green	0.10	0.00	0.10				0.00	0.56	0.56	0.32	1.00	0.00
Sat Flow, veh/h	1781	0	3170				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	76	0	236				0	931	334	482	1205	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1609	1551	1728	1702	0
Q Serve(g_s), s	3.6	0.0	6.5				0.0	6.6	10.8	11.8	0.0	0.0
Cycle Q Clear(g_c), s	3.6	0.0	6.5				0.0	6.6	10.8	11.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	183	0	326				0	3629	875	552	3923	0
V/C Ratio(X)	0.42	0.00	0.72				0.00	0.26	0.38	0.87	0.31	0.00
Avail Cap(c_a), veh/h	360	0	641				0	3629	875	768	3923	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.87	0.87	0.00
Uniform Delay (d), s/veh	37.8	0.0	39.1				0.0	10.0	10.9	29.7	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	3.1				0.0	0.2	1.3	5.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.5				0.0	2.0	3.3	4.2	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	0.0	42.2				0.0	10.2	12.2	35.3	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		312						1265			1687	
Approach Delay, s/veh		41.5						10.7			10.2	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	18.4	56.6				74.9		15.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	20.0	36.2				60.2		18.2				
Max Q Clear Time (g_c+I1), s	13.8	12.8				2.0		8.5				
Green Ext Time (p_c), s	0.5	7.5				10.0		0.8				

Intersection Summary		
HCM 6th Ctrl Delay		13.4
HCM 6th LOS		B

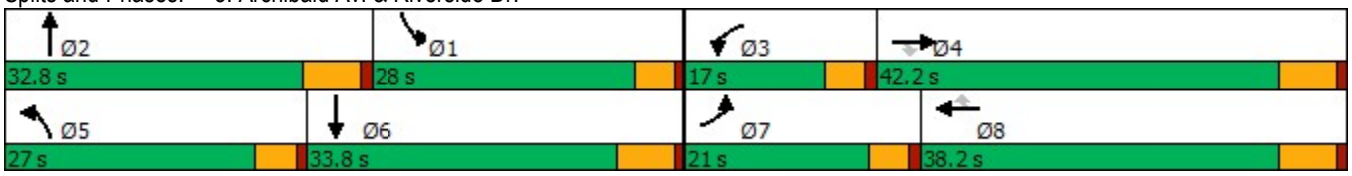
Notes

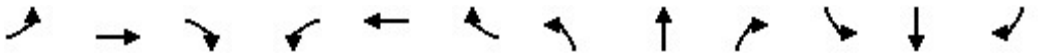
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	166	614	339	113	456	139	275	877	243	891
Future Volume (vph)	166	614	339	113	456	139	275	877	243	891
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	42.2	42.2	17.0	38.2	38.2	27.0	32.8	28.0	33.8
Total Split (%)	17.5%	35.2%	35.2%	14.2%	31.8%	31.8%	22.5%	27.3%	23.3%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.5	27.7	27.7	10.9	24.1	24.1	21.7	25.6	23.9	27.8
Actuated g/C Ratio	0.13	0.25	0.25	0.10	0.22	0.22	0.20	0.23	0.22	0.25
v/c Ratio	0.81	0.74	0.55	0.73	0.63	0.33	0.90	0.87	0.72	0.92
Control Delay	75.7	43.7	7.0	76.1	43.1	7.9	75.8	50.1	55.2	52.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	43.7	7.0	76.1	43.1	7.9	75.8	50.1	55.2	52.3
LOS	E	D	A	E	D	A	E	D	E	D
Approach Delay		37.3			41.4			55.9		52.8
Approach LOS		D			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 47.9	Intersection LOS: D
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	614	339	113	456	139	275	877	70	243	891	196
Future Volume (veh/h)	166	614	339	113	456	139	275	877	70	243	891	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	169	627	277	115	465	93	281	895	64	248	909	167
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	845	367	139	724	321	308	1083	77	316	1051	192
Arrive On Green	0.12	0.25	0.25	0.09	0.21	0.21	0.19	0.24	0.24	0.20	0.26	0.26
Sat Flow, veh/h	1594	3367	1465	1594	3367	1493	1594	4603	328	1594	4101	750
Grp Volume(v), veh/h	169	627	277	115	465	93	281	626	333	248	714	362
Grp Sat Flow(s),veh/h/ln	1594	1683	1465	1594	1683	1493	1594	1612	1706	1594	1612	1626
Q Serve(g_s), s	10.6	17.5	17.8	7.2	12.8	3.1	17.6	18.8	18.9	15.0	21.5	21.7
Cycle Q Clear(g_c), s	10.6	17.5	17.8	7.2	12.8	3.1	17.6	18.8	18.9	15.0	21.5	21.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.46
Lane Grp Cap(c), veh/h	197	845	367	139	724	321	308	759	402	316	826	417
V/C Ratio(X)	0.86	0.74	0.75	0.83	0.64	0.29	0.91	0.83	0.83	0.78	0.86	0.87
Avail Cap(c_a), veh/h	257	1190	518	194	1058	469	351	843	446	366	874	441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	35.1	35.2	45.7	36.4	11.7	40.2	36.9	37.0	38.7	36.2	36.2
Incr Delay (d2), s/veh	16.6	1.6	3.9	13.1	1.0	0.5	23.9	6.2	11.4	7.8	8.7	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.9	6.3	3.2	5.1	1.8	8.5	7.6	8.6	6.2	8.9	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	36.7	39.2	58.8	37.4	12.2	64.1	43.1	48.4	46.5	44.8	52.4
LnGrp LOS	E	D	D	E	D	B	E	D	D	D	D	D
Approach Vol, veh/h		1073			673			1240			1324	
Approach Delay, s/veh		41.0			37.5			49.3			47.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.4	30.2	13.5	31.7	24.3	32.3	17.2	28.1
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.4	* 27	12.4	36.0	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	17.0	20.9	9.2	19.8	19.6	23.7	12.6	14.8
Green Ext Time (p_c), s	0.2	2.7	0.0	4.3	0.1	2.2	0.1	2.7

Intersection Summary	
HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

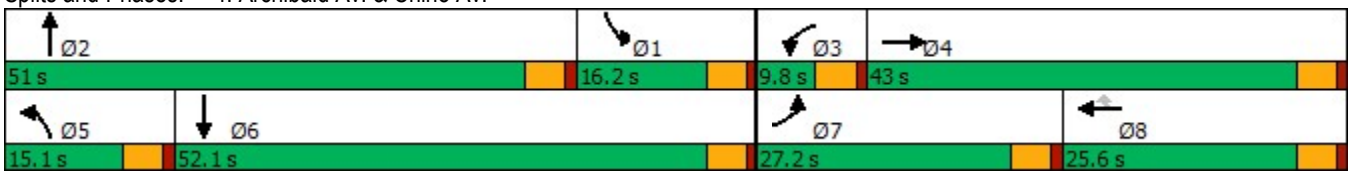
Notes

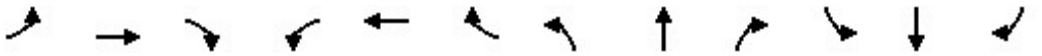
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	161	346	32	126	58	109	1063	68	1091
Future Volume (vph)	161	346	32	126	58	109	1063	68	1091
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	27.2	43.0	9.8	25.6	25.6	15.1	51.0	16.2	52.1
Total Split (%)	22.7%	35.8%	8.2%	21.3%	21.3%	12.6%	42.5%	13.5%	43.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.7	35.8	5.3	19.7	19.7	10.4	38.4	17.5	42.6
Actuated g/C Ratio	0.15	0.33	0.05	0.18	0.18	0.10	0.35	0.16	0.39
v/c Ratio	0.69	0.91	0.43	0.41	0.14	0.75	0.61	0.28	0.87
Control Delay	60.2	56.4	72.3	45.7	0.7	81.1	33.4	45.7	39.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	56.4	72.3	45.7	0.7	81.1	33.4	45.7	39.0
LOS	E	E	E	D	A	F	C	D	D
Approach Delay		57.3		37.5			37.7		39.3
Approach LOS		E		D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 42.2	Intersection LOS: D
Intersection Capacity Utilization 89.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	346	148	32	126	58	109	1063	39	68	1091	64
Future Volume (veh/h)	161	346	148	32	126	58	109	1063	39	68	1091	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	168	360	129	33	131	28	114	1107	40	71	1136	63
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	392	140	47	392	332	138	1455	53	305	1299	72
Arrive On Green	0.12	0.32	0.32	0.03	0.22	0.22	0.09	0.29	0.29	0.19	0.39	0.39
Sat Flow, veh/h	1594	1240	444	1594	1772	1502	1594	5095	184	1594	3326	184
Grp Volume(v), veh/h	168	0	489	33	131	28	114	770	377	71	605	594
Grp Sat Flow(s),veh/h/ln	1594	0	1684	1594	1772	1502	1594	1772	1735	1594	1772	1739
Q Serve(g_s), s	10.7	0.0	29.0	2.1	6.4	1.0	7.3	20.6	20.6	3.9	32.8	32.8
Cycle Q Clear(g_c), s	10.7	0.0	29.0	2.1	6.4	1.0	7.3	20.6	20.6	3.9	32.8	32.8
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.11	1.00		0.11
Lane Grp Cap(c), veh/h	198	0	532	47	392	332	138	1012	496	305	692	679
V/C Ratio(X)	0.85	0.00	0.92	0.70	0.33	0.08	0.83	0.76	0.76	0.23	0.87	0.88
Avail Cap(c_a), veh/h	347	0	624	80	392	332	161	1586	776	305	812	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	0.0	34.2	49.9	34.0	13.1	46.6	33.8	33.8	35.5	29.2	29.3
Incr Delay (d2), s/veh	9.6	0.0	17.2	17.1	0.5	0.1	25.3	1.2	2.4	0.4	9.3	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	13.8	1.1	2.8	0.5	3.7	8.3	8.3	1.5	14.4	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	0.0	51.4	66.9	34.4	13.2	71.9	35.0	36.3	35.9	38.6	38.8
LnGrp LOS	D	A	D	E	C	B	E	D	D	D	D	D
Approach Vol, veh/h		657			192			1261			1270	
Approach Delay, s/veh		52.1			36.9			38.7			38.5	
Approach LOS		D			D			D			D	

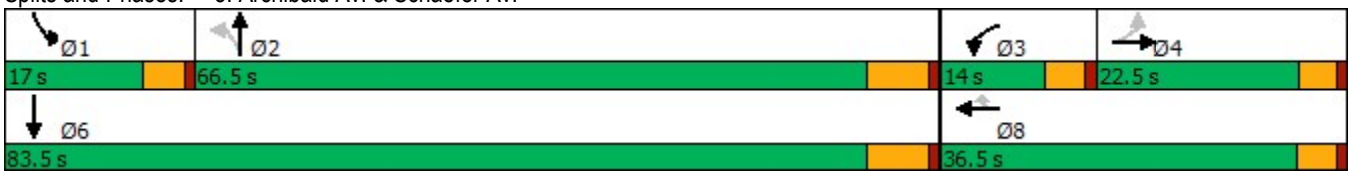
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	34.2	7.7	37.4	13.6	45.1	17.5	27.5
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	11.6	46.4	5.2	38.4	10.5	47.5	22.6	21.0
Max Q Clear Time (g_c+I1), s	5.9	22.6	4.1	31.0	9.3	34.8	12.7	8.4
Green Ext Time (p_c), s	0.1	7.0	0.0	1.7	0.0	5.7	0.3	0.5

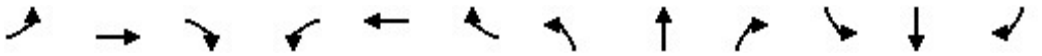
Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	30	15	1133	45	1232	
Future Volume (vph)	30	15	1133	45	1232	
Turn Type	Prot	Perm	NA	Prot	NA	
Protected Phases	3		2	1	6	4
Permitted Phases		8				
Detector Phase	3	8	2	1	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	10.0	5.0	10.0	5.0
Minimum Split (s)	9.6	32.6	37.5	9.6	23.5	22.5
Total Split (s)	14.0	36.5	66.5	17.0	83.5	22.5
Total Split (%)	11.7%	30.4%	55.4%	14.2%	69.6%	19%
Yellow Time (s)	3.6	3.6	5.5	3.6	5.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	4.6	6.5	4.6	6.5	
Lead/Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)	9.5	9.9	30.5	8.1	37.9	
Actuated g/C Ratio	0.21	0.22	0.68	0.18	0.85	
v/c Ratio	0.10	0.03	0.38	0.17	0.46	
Control Delay	20.9	0.1	9.8	27.5	5.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.9	0.1	9.8	27.5	5.8	
LOS	C	A	A	C	A	
Approach Delay			9.8		6.5	
Approach LOS			A		A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 44.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	30	0	15	0	1133	28	45	1232	0
Future Volume (veh/h)	0	0	0	30	0	15	0	1133	28	45	1232	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	0	0	0	32	0	10	0	1205	28	48	1311	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	5	0	60	122	102	189	2268	53	83	2154	0
Arrive On Green	0.00	0.00	0.00	0.04	0.00	0.07	0.00	0.47	0.47	0.05	0.64	0.00
Sat Flow, veh/h	1257	1772	0	1594	1772	1481	375	4860	113	1594	3455	0
Grp Volume(v), veh/h	0	0	0	32	0	10	0	799	434	48	1311	0
Grp Sat Flow(s),veh/h/ln	1257	1772	0	1594	1772	1481	375	1612	1748	1594	1683	0
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.2	0.0	6.7	6.7	1.1	8.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.8	0.0	0.2	0.0	6.7	6.7	1.1	8.8	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	189	5	0	60	122	102	189	1505	816	83	2154	0
V/C Ratio(X)	0.00	0.00	0.00	0.53	0.00	0.10	0.00	0.53	0.53	0.58	0.61	0.00
Avail Cap(c_a), veh/h	895	837	0	393	1483	1240	605	5078	2753	519	6803	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	18.0	0.0	16.6	0.0	7.2	7.2	17.6	4.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.7	0.0	0.4	0.0	0.3	0.5	2.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.3	0.0	0.1	0.0	0.9	1.1	0.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	20.7	0.0	17.0	0.0	7.5	7.7	20.0	4.3	0.0
LnGrp LOS	A	A	A	C	A	B	A	A	A	B	A	A
Approach Vol, veh/h		0			42			1233			1359	
Approach Delay, s/veh		0.0			19.8			7.6			4.9	
Approach LOS					B			A			A	

Timer - Assigned Phs	1	2	3	4	6	8
Phs Duration (G+Y+Rc), s	6.6	24.3	6.0	1.2	30.9	7.2
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6	6.5	4.6
Max Green Setting (Gmax), s	12.4	60.0	9.4	* 18	77.0	31.9
Max Q Clear Time (g_c+I1), s	3.1	8.7	2.8	0.0	10.8	2.2
Green Ext Time (p_c), s	0.0	8.9	0.0	0.0	11.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	6.4
HCM 6th LOS	A

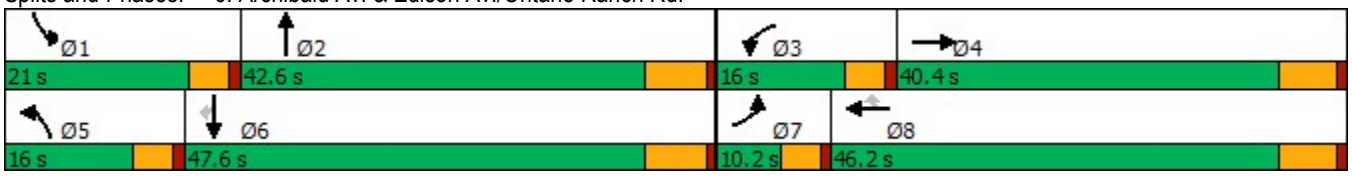
Notes

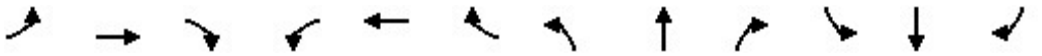
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	839	265	419	454	276	95	744	531	379	753	60
Future Volume (vph)	95	839	265	419	454	276	95	744	531	379	753	60
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.2	40.4		16.0	46.2	46.2	16.0	42.6		21.0	47.6	47.6
Total Split (%)	8.5%	33.7%		13.3%	38.5%	38.5%	13.3%	35.5%		17.5%	39.7%	39.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.6	31.8	112.0	11.5	37.6	37.6	10.0	30.2	112.0	16.5	36.6	36.6
Actuated g/C Ratio	0.05	0.28	1.00	0.10	0.34	0.34	0.09	0.27	1.00	0.15	0.33	0.33
v/c Ratio	0.67	0.88	0.19	1.45	0.81	0.43	0.71	0.82	0.37	1.71	0.69	0.11
Control Delay	76.1	50.2	0.3	255.2	46.5	6.7	77.5	46.7	0.7	369.6	36.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.1	50.2	0.3	255.2	46.5	6.7	77.5	46.7	0.7	369.6	36.7	0.4
LOS	E	D	A	F	D	A	E	D	A	F	D	A
Approach Delay		41.2			113.0			31.0			140.7	
Approach LOS		D			F			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.71	
Intersection Signal Delay: 79.3	Intersection LOS: E
Intersection Capacity Utilization 102.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	839	265	419	454	276	95	744	531	379	753	60
Future Volume (veh/h)	95	839	265	419	454	276	95	744	531	379	753	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	100	883	0	441	478	249	100	783	0	399	793	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	1001		314	600	508	122	923		240	1187	503
Arrive On Green	0.05	0.28	0.00	0.10	0.34	0.34	0.08	0.26	0.00	0.15	0.33	0.33
Sat Flow, veh/h	3000	3544	1502	3000	1772	1500	1594	3544	1502	1594	3544	1502
Grp Volume(v), veh/h	100	883	0	441	478	249	100	783	0	399	793	44
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	3.6	25.9	0.0	11.4	26.6	14.3	6.7	22.8	0.0	16.4	20.9	2.2
Cycle Q Clear(g_c), s	3.6	25.9	0.0	11.4	26.6	14.3	6.7	22.8	0.0	16.4	20.9	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	1001		314	600	508	122	923		240	1187	503
V/C Ratio(X)	0.68	0.88		1.40	0.80	0.49	0.82	0.85		1.66	0.67	0.09
Avail Cap(c_a), veh/h	154	1114		314	652	552	167	1176		240	1339	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	37.3	0.0	48.7	32.6	28.5	49.5	38.2	0.0	46.2	31.0	24.8
Incr Delay (d2), s/veh	8.8	7.9	0.0	199.3	6.4	0.7	14.9	4.8	0.0	315.0	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	11.6	0.0	12.8	11.7	4.9	3.1	9.8	0.0	27.1	8.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	45.2	0.0	248.0	39.0	29.3	64.4	43.0	0.0	361.2	32.1	24.9
LnGrp LOS	E	D		F	D	C	E	D		F	C	C
Approach Vol, veh/h		983	A		1168			883	A		1236	
Approach Delay, s/veh		46.7			115.8			45.4			138.1	
Approach LOS		D			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	34.8	16.0	36.9	12.9	42.9	9.9	43.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.4	36.1	11.4	34.2	11.4	41.1	5.6	40.0
Max Q Clear Time (g_c+I1), s	18.4	24.8	13.4	27.9	8.7	22.9	5.6	28.6
Green Ext Time (p_c), s	0.0	3.5	0.0	2.8	0.0	4.6	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	91.8
HCM 6th LOS	F

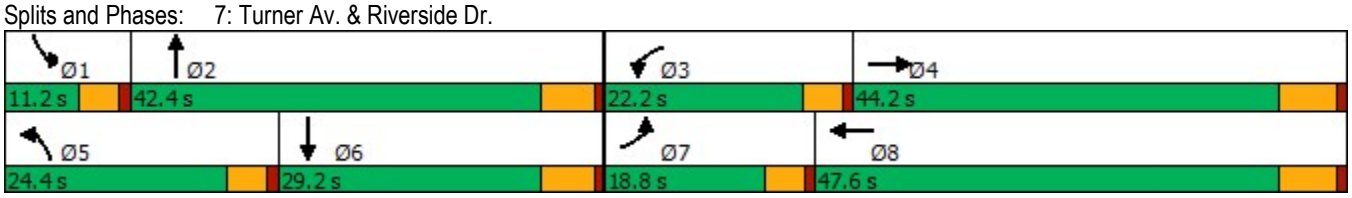
Notes

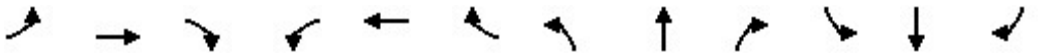
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	87	576	115	651	134	45	23	40
Future Volume (vph)	87	576	115	651	134	45	23	40
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	18.8	44.2	22.2	47.6	24.4	42.4	11.2	29.2
Total Split (%)	15.7%	36.8%	18.5%	39.7%	20.3%	35.3%	9.3%	24.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.5	26.4	11.2	30.9	12.3	25.8	6.0	12.4
Actuated g/C Ratio	0.11	0.31	0.13	0.37	0.15	0.30	0.07	0.15
v/c Ratio	0.51	0.77	0.57	0.58	0.60	0.18	0.22	0.20
Control Delay	50.8	31.8	49.6	25.9	48.8	9.5	50.1	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	31.8	49.6	25.9	48.8	9.5	50.1	19.9
LOS	D	C	D	C	D	A	D	B
Approach Delay		33.7		29.3		26.5		26.0
Approach LOS		C		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 65.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	576	186	115	651	35	134	45	131	23	40	53
Future Volume (veh/h)	87	576	186	115	651	35	134	45	131	23	40	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	90	594	110	119	671	23	138	46	83	24	41	29
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	818	151	148	1038	36	172	423	373	43	335	212
Arrive On Green	0.07	0.29	0.29	0.09	0.31	0.31	0.11	0.25	0.25	0.03	0.17	0.17
Sat Flow, veh/h	1594	2824	521	1594	3319	114	1594	1683	1487	1594	1962	1242
Grp Volume(v), veh/h	90	353	351	119	340	354	138	46	83	24	35	35
Grp Sat Flow(s),veh/h/ln	1594	1683	1662	1594	1683	1749	1594	1683	1487	1594	1683	1520
Q Serve(g_s), s	3.5	11.8	11.9	4.6	10.9	10.9	5.3	1.3	2.8	0.9	1.1	1.2
Cycle Q Clear(g_c), s	3.5	11.8	11.9	4.6	10.9	10.9	5.3	1.3	2.8	0.9	1.1	1.2
Prop In Lane	1.00		0.31	1.00		0.07	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	111	488	481	148	527	547	172	423	373	43	287	259
V/C Ratio(X)	0.81	0.72	0.73	0.80	0.65	0.65	0.80	0.11	0.22	0.55	0.12	0.14
Avail Cap(c_a), veh/h	362	1022	1009	448	1114	1157	504	985	870	168	630	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	20.0	20.0	27.8	18.5	18.5	27.3	18.0	18.6	30.1	22.0	22.0
Incr Delay (d2), s/veh	5.1	2.1	2.1	3.8	1.3	1.3	3.3	0.1	0.3	4.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.1	4.1	1.7	3.7	3.8	2.0	0.5	0.9	0.4	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	22.0	22.1	31.6	19.8	19.8	30.6	18.2	18.9	34.1	22.2	22.3
LnGrp LOS	C	C	C	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		794			813			267			94	
Approach Delay, s/veh		23.4			21.5			24.8			25.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	21.5	10.4	24.3	11.3	16.5	9.0	25.8
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	6.6	36.6	17.6	38.0	19.8	23.4	14.2	41.4
Max Q Clear Time (g_c+I1), s	2.9	4.8	6.6	13.9	7.3	3.2	5.5	12.9
Green Ext Time (p_c), s	0.0	0.7	0.1	3.9	0.1	0.2	0.1	3.9

Intersection Summary	
HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	206	54	29	124	45	20	120	32	36	186	43
Future Vol, veh/h	94	206	54	29	124	45	20	120	32	36	186	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	224	59	32	135	49	22	130	35	39	202	47
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

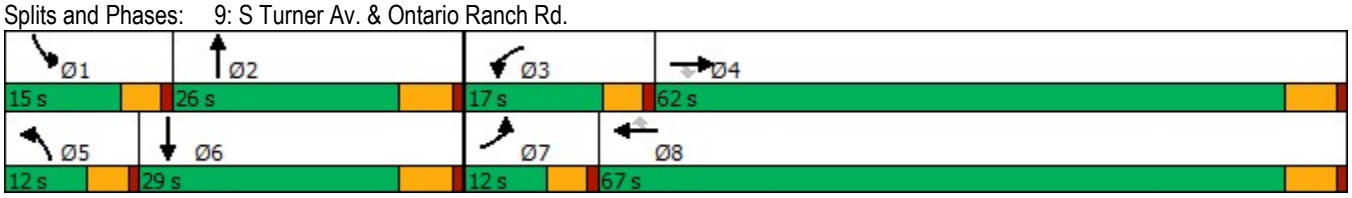
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	11.5	10.9	11	11.4
HCM LOS	B	B	B	B

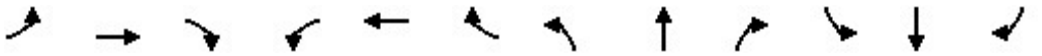
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	56%	0%	100%	56%	0%	100%	48%	0%	100%	59%
Vol Right, %	0%	0%	44%	0%	0%	44%	0%	0%	52%	0%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	80	72	94	137	123	29	83	86	36	124	105
LT Vol	20	0	0	94	0	0	29	0	0	36	0	0
Through Vol	0	80	40	0	137	69	0	83	41	0	124	62
RT Vol	0	0	32	0	0	54	0	0	45	0	0	43
Lane Flow Rate	22	87	78	102	149	133	32	90	94	39	135	114
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.045	0.17	0.146	0.201	0.273	0.232	0.065	0.173	0.171	0.079	0.255	0.207
Departure Headway (Hd)	7.534	7.034	6.722	7.084	6.584	6.276	7.431	6.931	6.566	7.312	6.812	6.525
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	473	507	531	505	543	569	480	515	543	488	524	547
Service Time	5.315	4.815	4.504	4.854	4.354	4.046	5.21	4.71	4.345	5.087	4.587	4.301
HCM Lane V/C Ratio	0.047	0.172	0.147	0.202	0.274	0.234	0.067	0.175	0.173	0.08	0.258	0.208
HCM Control Delay	10.7	11.3	10.7	11.6	11.8	11	10.7	11.2	10.7	10.7	11.9	11
HCM Lane LOS	B	B	B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.1	0.6	0.5	0.7	1.1	0.9	0.2	0.6	0.6	0.3	1	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	16	1749	44	83	1270	71	16	11	106	28
Future Volume (vph)	16	1749	44	83	1270	71	16	11	106	28
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	12.0	62.0	62.0	17.0	67.0	67.0	12.0	26.0	15.0	29.0
Total Split (%)	10.0%	51.7%	51.7%	14.2%	55.8%	55.8%	10.0%	21.7%	12.5%	24.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	5.8	56.8	56.8	9.2	64.1	64.1	5.8	8.4	9.5	18.4
Actuated g/C Ratio	0.06	0.55	0.55	0.09	0.63	0.63	0.06	0.08	0.09	0.18
v/c Ratio	0.17	0.96	0.05	0.56	0.62	0.07	0.17	0.44	0.70	0.12
Control Delay	53.8	36.9	0.1	61.0	15.2	1.2	53.8	20.6	69.7	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	36.9	0.1	61.0	15.2	1.2	53.8	20.6	69.7	32.8
LOS	D	D	A	E	B	A	D	C	E	C
Approach Delay		36.2			17.1			26.0		60.1
Approach LOS		D			B			C		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 79.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	1749	44	83	1270	71	16	11	72	106	28	9
Future Volume (veh/h)	16	1749	44	83	1270	71	16	11	72	106	28	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	1881	47	89	1366	76	17	12	77	114	30	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	2010	897	114	2170	968	34	17	108	142	185	62
Arrive On Green	0.02	0.57	0.57	0.06	0.61	0.61	0.02	0.08	0.08	0.08	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	218	1400	1781	1342	447
Grp Volume(v), veh/h	17	1881	47	89	1366	76	17	0	89	114	0	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1618	1781	0	1790
Q Serve(g_s), s	0.9	47.6	1.3	4.8	23.7	1.9	0.9	0.0	5.2	6.1	0.0	1.9
Cycle Q Clear(g_c), s	0.9	47.6	1.3	4.8	23.7	1.9	0.9	0.0	5.2	6.1	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.25
Lane Grp Cap(c), veh/h	34	2010	897	114	2170	968	34	0	125	142	0	247
V/C Ratio(X)	0.50	0.94	0.05	0.78	0.63	0.08	0.50	0.00	0.71	0.80	0.00	0.16
Avail Cap(c_a), veh/h	135	2051	915	227	2233	996	135	0	336	190	0	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.3	19.5	9.5	44.9	12.0	7.8	47.3	0.0	43.9	44.0	0.0	37.0
Incr Delay (d2), s/veh	4.3	8.7	0.0	4.4	0.5	0.0	4.3	0.0	7.4	11.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	18.8	0.4	2.2	7.9	0.6	0.4	0.0	2.3	3.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	28.2	9.5	49.3	12.5	7.8	51.6	0.0	51.3	55.9	0.0	37.3
LnGrp LOS	D	C	A	D	B	A	D	A	D	E	A	D
Approach Vol, veh/h		1945			1531			106			154	
Approach Delay, s/veh		28.0			14.4			51.3			51.1	
Approach LOS		C			B			D			D	

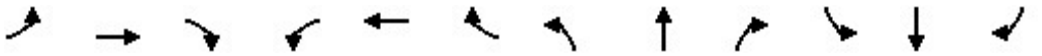
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	13.3	10.8	60.9	6.4	19.2	6.4	65.3
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	20.2	12.4	56.2	7.4	23.2	7.4	61.2
Max Q Clear Time (g_c+I1), s	8.1	7.2	6.8	49.6	2.9	3.9	2.9	25.7
Green Ext Time (p_c), s	0.0	0.3	0.0	5.5	0.0	0.1	0.0	12.5

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	272	10	562	507	1015	1593	695
Future Volume (vph)	272	10	562	507	1015	1593	695
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	18.1	18.1		22.0	71.9	49.9	49.9
Total Split (%)	20.1%	20.1%		24.4%	79.9%	55.4%	55.4%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	11.6	11.6	90.0	16.2	66.4	45.1	45.1
Actuated g/C Ratio	0.13	0.13	1.00	0.18	0.74	0.50	0.50
v/c Ratio	0.68	0.67	0.37	0.85	0.28	0.65	0.73
Control Delay	54.0	53.4	0.7	43.4	5.3	18.4	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	53.4	0.7	43.4	5.3	18.4	11.8
LOS	D	D	A	D	A	B	B
Approach Delay		18.4			18.0	16.4	
Approach LOS		B			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	272	10	562	507	1015	0	0	1593	695
Future Volume (veh/h)	0	0	0	272	10	562	507	1015	0	0	1593	695
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				290	0	0	528	1057	0	0	1659	412
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				396	0		589	3858	0	0	2705	829
Arrive On Green				0.11	0.00	0.00	0.34	1.00	0.00	0.00	0.53	0.53
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1564
Grp Volume(v), veh/h				290	0	0	528	1057	0	0	1659	412
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1564
Q Serve(g_s), s				7.1	0.0	0.0	13.1	0.0	0.0	0.0	20.4	15.1
Cycle Q Clear(g_c), s				7.1	0.0	0.0	13.1	0.0	0.0	0.0	20.4	15.1
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				396	0		589	3858	0	0	2705	829
V/C Ratio(X)				0.73	0.00		0.90	0.27	0.00	0.00	0.61	0.50
Avail Cap(c_a), veh/h				487	0		653	3858	0	0	2705	829
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.57	0.57	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				38.7	0.0	0.0	28.9	0.0	0.0	0.0	14.7	13.5
Incr Delay (d2), s/veh				4.4	0.0	0.0	8.4	0.1	0.0	0.0	1.0	2.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.2	0.0	0.0	4.8	0.0	0.0	0.0	7.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				43.1	0.0	0.0	37.3	0.1	0.0	0.0	15.8	15.6
LnGrp LOS				D	A		D	A	A	A	B	B
Approach Vol, veh/h					290	A		1585			2071	
Approach Delay, s/veh					43.1			12.5			15.8	
Approach LOS					D			B			B	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	74.2		20.3	53.9		15.8						
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8						
Max Green Setting (Gmax), s	65.7		17.0	43.7		12.3						
Max Q Clear Time (g_c+I1), s	2.0		15.1	22.4		9.1						
Green Ext Time (p_c), s	5.1		0.3	9.2		0.3						

Intersection Summary		
HCM 6th Ctrl Delay	16.5	
HCM 6th LOS	B	

Notes

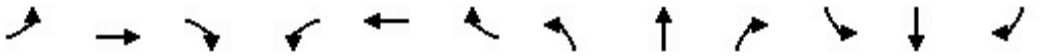
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	349	2	736	1165	609	1274
Future Volume (vph)	349	2	736	1165	609	1274
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	26.0	26.0	26.0	34.0	30.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	37.8%	33.3%	71.1%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	20.2	20.2	20.2	31.5	21.3	57.8
Actuated g/C Ratio	0.22	0.22	0.22	0.35	0.24	0.64
v/c Ratio	0.48	0.49	1.78	0.80	0.78	0.41
Control Delay	35.4	35.5	381.5	30.7	58.1	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	35.5	381.5	30.7	58.1	5.2
LOS	D	D	F	C	E	A
Approach Delay		269.7		30.7		22.3
Approach LOS		F		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.78	
Intersection Signal Delay: 87.3	Intersection LOS: F
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	2	736	0	0	0	0	1165	179	609	1274	0
Future Volume (veh/h)	349	2	736	0	0	0	0	1165	179	609	1274	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	365	0	507				0	1214	124	634	1327	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	800	0	356				0	1781	182	720	3279	0
Arrive On Green	0.22	0.00	0.22				0.00	0.38	0.38	0.42	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4875	481	3456	5274	0
Grp Volume(v), veh/h	365	0	507				0	878	460	634	1327	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1783	1728	1702	0
Q Serve(g_s), s	8.0	0.0	20.2				0.0	19.4	19.5	15.2	0.0	0.0
Cycle Q Clear(g_c), s	8.0	0.0	20.2				0.0	19.4	19.5	15.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.27	1.00		0.00
Lane Grp Cap(c), veh/h	800	0	356				0	1288	675	720	3279	0
V/C Ratio(X)	0.46	0.00	1.43				0.00	0.68	0.68	0.88	0.40	0.00
Avail Cap(c_a), veh/h	800	0	356				0	1288	675	960	3279	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.71	0.71	0.00
Uniform Delay (d), s/veh	30.2	0.0	34.9				0.0	23.4	23.4	25.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	207.0				0.0	2.9	5.5	5.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	27.7				0.0	7.6	8.5	4.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	0.0	241.9				0.0	26.4	28.9	30.8	0.3	0.0
LnGrp LOS	C	A	F				A	C	C	C	A	A
Approach Vol, veh/h		872						1338			1961	
Approach Delay, s/veh		153.4						27.2			10.1	
Approach LOS		F						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.7	40.3		26.0		64.0
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	25.0	27.8		20.2		57.8
Max Q Clear Time (g_c+I1), s	17.2	21.5		22.2		2.0
Green Ext Time (p_c), s	1.5	3.1		0.0		7.0

Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

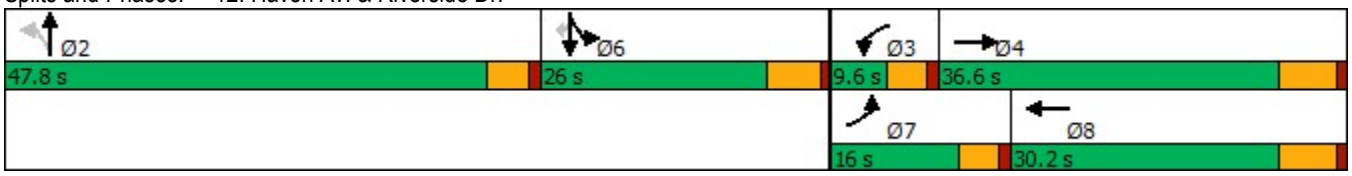
Notes

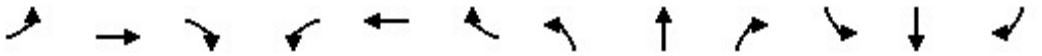
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	291	365	93	330	55	838	135	1103	334
Future Volume (vph)	291	365	93	330	55	838	135	1103	334
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	16.0	36.6	9.6	30.2	47.8	47.8	26.0	26.0	26.0
Total Split (%)	13.3%	30.5%	8.0%	25.2%	39.8%	39.8%	21.7%	21.7%	21.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.4	30.4	5.0	24.0		43.1	20.2	20.2	20.2
Actuated g/C Ratio	0.10	0.25	0.04	0.20		0.36	0.17	0.17	0.17
v/c Ratio	2.02	1.09	1.49	0.69		9.55	0.53	3.87	0.92
Control Delay	509.9	110.9	325.6	47.2		3872.9	53.7	1313.9	58.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	509.9	110.9	325.6	47.2		3872.9	53.7	1313.9	58.2
LOS	F	F	F	D		F	D	F	E
Approach Delay		266.1		95.4		3872.9		938.6	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 9.55	
Intersection Signal Delay: 1439.4	Intersection LOS: F
Intersection Capacity Utilization 146.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	365	92	93	330	114	55	838	88	135	1103	334
Future Volume (veh/h)	291	365	92	93	330	114	55	838	88	135	1103	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	303	380	95	97	344	99	57	873	86	141	1149	122
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	344	86	66	515	146	35	537	53	268	298	252
Arrive On Green	0.09	0.25	0.25	0.04	0.20	0.20	0.36	0.36	0.36	0.17	0.17	0.17
Sat Flow, veh/h	1594	1358	340	1594	2575	729	98	1496	147	1594	1772	1496
Grp Volume(v), veh/h	303	0	475	97	223	220	1016	0	0	141	1149	122
Grp Sat Flow(s),veh/h/ln	1594	0	1698	1594	1683	1620	1741	0	0	1594	1772	1496
Q Serve(g_s), s	11.4	0.0	30.4	5.0	14.6	15.1	43.1	0.0	0.0	9.7	20.2	8.9
Cycle Q Clear(g_c), s	11.4	0.0	30.4	5.0	14.6	15.1	43.1	0.0	0.0	9.7	20.2	8.9
Prop In Lane	1.00		0.20	1.00		0.45	0.06		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	151	0	430	66	337	324	625	0	0	268	298	252
V/C Ratio(X)	2.00	0.00	1.10	1.46	0.66	0.68	1.63	0.00	0.00	0.53	3.85	0.48
Avail Cap(c_a), veh/h	151	0	430	66	337	324	625	0	0	268	298	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	44.8	57.5	44.3	44.4	38.5	0.0	0.0	45.5	49.9	45.2
Incr Delay (d2), s/veh	473.2	0.0	74.8	272.6	4.8	5.6	288.7	0.0	0.0	1.9	1291.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.3	0.0	21.1	7.0	6.3	6.3	68.1	0.0	0.0	3.9	115.7	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	527.5	0.0	119.6	330.1	49.0	50.1	327.1	0.0	0.0	47.4	1341.5	46.6
LnGrp LOS	F	A	F	F	D	D	F	A	A	D	F	D
Approach Vol, veh/h		778			540			1016			1412	
Approach Delay, s/veh		278.5			99.9			327.1			1100.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		47.8	9.6	36.6		26.0	16.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 43	5.0	30.4		20.2	11.4	24.0				
Max Q Clear Time (g_c+I1), s		45.1	7.0	32.4		22.2	13.4	17.1				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	1.3				

Intersection Summary		
HCM 6th Ctrl Delay		575.7
HCM 6th LOS		F

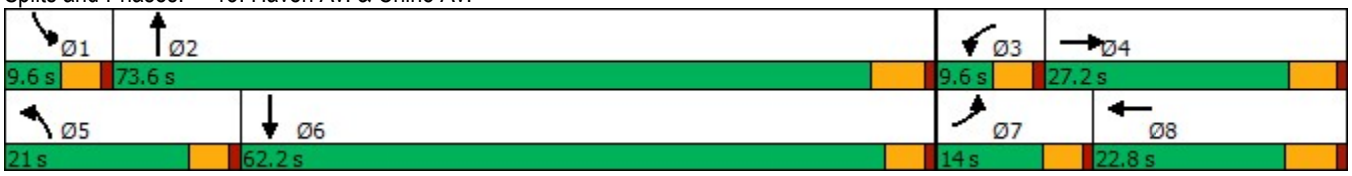
Notes

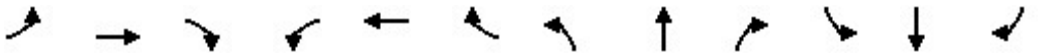
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	107	73	407	55	105	895	1248	
Future Volume (vph)	107	73	407	55	105	895	1248	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	14.0	27.2	9.6	22.8	21.0	73.6	62.2	9.6
Total Split (%)	11.7%	22.7%	8.0%	19.0%	17.5%	61.3%	51.8%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	11.9	15.6	5.0	11.9	11.7	73.0	57.8	
Actuated g/C Ratio	0.11	0.14	0.05	0.11	0.11	0.67	0.53	
v/c Ratio	0.66	0.68	5.46	0.30	0.66	1.05	1.50	
Control Delay	69.5	44.8	2055.4	50.2	66.4	60.7	254.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	69.5	44.8	2055.4	50.2	66.4	60.7	254.9	
LOS	E	D	F	D	E	E	F	
Approach Delay		53.8		1815.7		61.2	254.9	
Approach LOS		D		F		E	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 5.46	
Intersection Signal Delay: 388.1	Intersection LOS: F
Intersection Capacity Utilization 129.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	73	111	407	55	0	105	895	238	0	1248	68
Future Volume (veh/h)	107	73	111	407	55	0	105	895	238	0	1248	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	113	79	117	442	60	0	111	942	259	0	1314	72
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	93	138	83	184	0	135	889	245	2	894	49
Arrive On Green	0.09	0.14	0.14	0.05	0.10	0.00	0.08	0.66	0.66	0.00	0.54	0.54
Sat Flow, veh/h	1594	681	1008	1781	1870	0	1594	1338	368	1781	1664	91
Grp Volume(v), veh/h	113	0	196	442	60	0	111	0	1201	0	0	1386
Grp Sat Flow(s),veh/h/ln	1594	0	1689	1781	1870	0	1594	0	1706	1781	0	1756
Q Serve(g_s), s	7.5	0.0	12.1	5.0	3.2	0.0	7.3	0.0	71.2	0.0	0.0	57.5
Cycle Q Clear(g_c), s	7.5	0.0	12.1	5.0	3.2	0.0	7.3	0.0	71.2	0.0	0.0	57.5
Prop In Lane	1.00		0.60	1.00		0.00	1.00		0.22	1.00		0.05
Lane Grp Cap(c), veh/h	136	0	232	83	184	0	135	0	1134	2	0	943
V/C Ratio(X)	0.83	0.00	0.85	5.31	0.33	0.00	0.82	0.00	1.06	0.00	0.00	1.47
Avail Cap(c_a), veh/h	140	0	344	83	297	0	244	0	1134	83	0	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	48.2	0.0	45.1	51.0	44.9	0.0	48.2	0.0	17.9	0.0	0.0	24.8
Incr Delay (d2), s/veh	30.0	0.0	11.8	1966.8	1.0	0.0	4.7	0.0	43.9	0.0	0.0	217.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	5.7	47.6	1.5	0.0	3.0	0.0	35.5	0.0	0.0	79.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	0.0	56.9	2017.8	45.9	0.0	52.9	0.0	61.9	0.0	0.0	242.0
LnGrp LOS	E	A	E	F	D	A	D	A	F	A	A	F
Approach Vol, veh/h		309			502			1312			1386	
Approach Delay, s/veh		64.7			1782.2			61.1			242.0	
Approach LOS		E			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	77.0	9.6	20.5	13.7	63.3	13.7	16.4
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	67.8	5.0	* 22	16.4	* 58	9.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	73.2	7.0	14.1	9.3	59.5	9.5	5.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.1	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	379.1
HCM 6th LOS	F

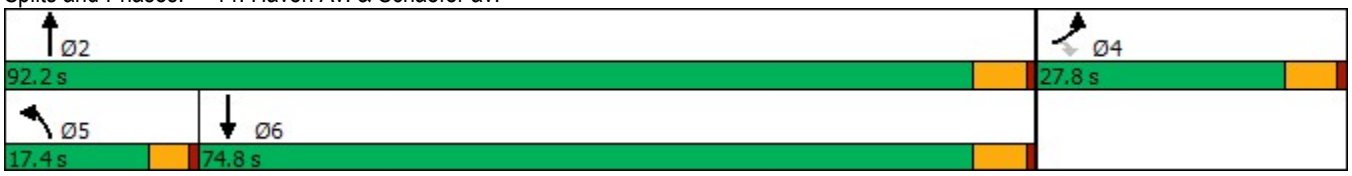
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	22	96	133	1216	1737
Future Volume (vph)	22	96	133	1216	1737
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	27.8	27.8	17.4	92.2	74.8
Total Split (%)	23.2%	23.2%	14.5%	76.8%	62.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.2	12.2	12.7	86.9	69.6
Actuated g/C Ratio	0.11	0.11	0.11	0.78	0.63
v/c Ratio	0.15	0.43	0.86	1.02	0.92
Control Delay	45.5	13.3	86.7	43.6	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	13.3	86.7	43.6	27.3
LOS	D	B	F	D	C
Approach Delay	19.3			47.9	27.3
Approach LOS	B			D	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 35.6	Intersection LOS: D
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	96	133	1216	1737	20
Future Volume (veh/h)	22	96	133	1216	1737	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	26	43	155	1414	2020	11
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	131	123	181	1433	2296	12
Arrive On Green	0.08	0.08	0.11	0.81	0.65	0.65
Sat Flow, veh/h	1594	1502	1594	1772	3521	19
Grp Volume(v), veh/h	26	43	155	1414	1015	1016
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1772	1768
Q Serve(g_s), s	1.6	2.9	10.1	80.2	49.5	49.8
Cycle Q Clear(g_c), s	1.6	2.9	10.1	80.2	49.5	49.8
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	131	123	181	1433	1155	1153
V/C Ratio(X)	0.20	0.35	0.86	0.99	0.88	0.88
Avail Cap(c_a), veh/h	331	312	192	1444	1155	1153
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	46.0	46.2	9.6	15.0	15.1
Incr Delay (d2), s/veh	0.7	1.7	27.2	20.5	8.0	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	5.2	22.7	18.5	18.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.2	47.7	73.3	30.1	23.1	23.2
LnGrp LOS	D	D	E	C	C	C
Approach Vol, veh/h	69			1569	2031	
Approach Delay, s/veh	47.1			34.3	23.1	
Approach LOS	D			C	C	

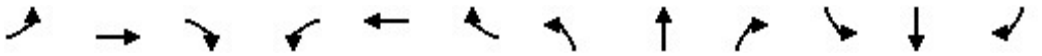
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		91.5		14.5	16.6	74.9
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	12.8	69.0
Max Q Clear Time (g_c+I1), s		82.2		4.9	12.1	51.8
Green Ext Time (p_c), s		3.6		0.1	0.0	12.9

Intersection Summary		
HCM 6th Ctrl Delay		28.4
HCM 6th LOS		C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	407	1464	35	227	1168	606	18	337	70	722	560	213
Future Volume (vph)	407	1464	35	227	1168	606	18	337	70	722	560	213
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.5	39.3	39.3	6.2	32.8	32.8	6.1	29.8	29.8	10.5	40.5	40.5
Actuated g/C Ratio	0.12	0.37	0.37	0.06	0.31	0.31	0.06	0.28	0.28	0.10	0.38	0.38
v/c Ratio	2.35	0.80	0.06	1.39	0.58	0.88	0.21	0.73	0.14	4.99	0.89	0.33
Control Delay	648.6	35.6	0.2	246.1	33.7	29.3	57.0	43.8	0.6	1817.3	49.5	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	648.6	35.6	0.2	246.1	33.7	29.3	57.0	43.8	0.6	1817.3	49.5	6.7
LOS	F	D	A	F	C	C	E	D	A	F	D	A
Approach Delay		165.9			56.4			37.3			896.7	
Approach LOS		F			E			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.99	
Intersection Signal Delay: 306.5	Intersection LOS: F
Intersection Capacity Utilization 124.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	407	1464	35	227	1168	606	18	337	70	722	560	213
Future Volume (veh/h)	407	1464	35	227	1168	606	18	337	70	722	560	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	433	1557	24	241	1243	600	19	359	24	768	596	194
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1921	543	172	2154	456	32	506	429	154	641	543
Arrive On Green	0.11	0.36	0.36	0.06	0.30	0.30	0.02	0.29	0.29	0.10	0.36	0.36
Sat Flow, veh/h	1594	5316	1502	3000	7088	1502	1594	1772	1502	1594	1772	1502
Grp Volume(v), veh/h	433	1557	24	241	1243	600	19	359	24	768	596	194
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1500	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	12.4	28.6	1.1	6.2	16.0	32.8	1.3	19.6	1.3	10.4	34.9	10.2
Cycle Q Clear(g_c), s	12.4	28.6	1.1	6.2	16.0	32.8	1.3	19.6	1.3	10.4	34.9	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	183	1921	543	172	2154	456	32	506	429	154	641	543
V/C Ratio(X)	2.36	0.81	0.04	1.40	0.58	1.31	0.59	0.71	0.06	5.00	0.93	0.36
Avail Cap(c_a), veh/h	183	1921	543	172	2154	456	159	709	601	154	703	595
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	31.1	22.4	50.9	31.7	37.6	52.4	34.5	28.0	48.8	33.1	25.2
Incr Delay (d2), s/veh	630.8	3.8	0.2	210.5	1.1	156.6	6.3	1.9	0.1	1815.0	18.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	36.8	12.0	0.4	7.3	6.5	30.9	0.6	8.3	0.4	81.4	17.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	678.5	35.0	22.5	261.4	32.8	194.2	58.8	36.5	28.0	1863.8	51.1	25.6
LnGrp LOS	F	C	C	F	C	F	E	D	C	F	D	C
Approach Vol, veh/h		2014			2084			402			1558	
Approach Delay, s/veh		173.2			105.7			37.0			941.5	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	36.6	10.8	45.5	6.8	44.9	17.0	39.3
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	12.4	21.6	8.2	30.6	3.3	36.9	14.4	34.8
Green Ext Time (p_c), s	0.0	1.9	0.0	5.7	0.0	2.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	338.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

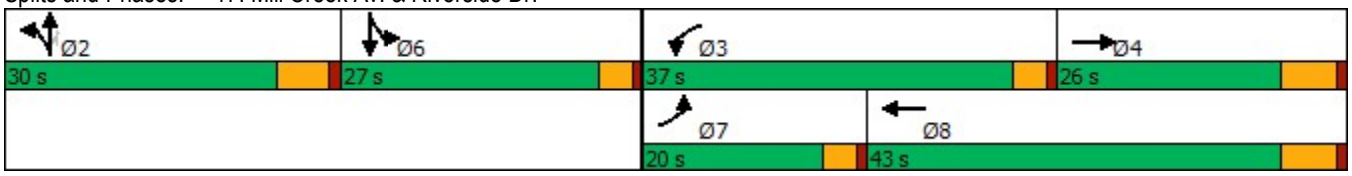
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	338	509	0	71
Demand Flow Rate, veh/h	344	519	0	73
Vehicles Circulating, veh/h	29	74	373	469
Vehicles Exiting, veh/h	513	299	0	124
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.0	6.8	0.0	5.2
Approach LOS	A	A	-	A

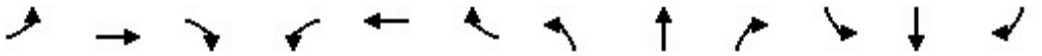
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	344	519	0	73
Cap Entry Lane, veh/h	1340	1280	943	855
Entry HV Adj Factor	0.982	0.980	1.000	0.973
Flow Entry, veh/h	338	509	0	71
Cap Entry, veh/h	1315	1254	943	832
V/C Ratio	0.257	0.406	0.000	0.085
Control Delay, s/veh	5.0	6.8	3.8	5.2
LOS	A	A	A	A
95th %tile Queue, veh	1	2	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	105	291	338	312	130	18	239	58	14
Future Volume (vph)	105	291	338	312	130	18	239	58	14
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	20.0	26.0	37.0	43.0	30.0	30.0	30.0	27.0	27.0
Total Split (%)	16.7%	21.7%	30.8%	35.8%	25.0%	25.0%	25.0%	22.5%	22.5%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	10.8	15.8	24.7	29.7	14.5	14.5	14.5	12.5	12.5
Actuated g/C Ratio	0.12	0.18	0.28	0.34	0.16	0.16	0.16	0.14	0.14
v/c Ratio	0.58	0.70	0.81	0.39	0.53	0.07	0.56	0.28	0.30
Control Delay	53.1	37.8	46.7	22.0	44.7	36.2	10.2	41.6	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	37.8	46.7	22.0	44.7	36.2	10.2	41.6	16.9
LOS	D	D	D	C	D	D	B	D	B
Approach Delay		40.9		33.0		23.0			27.4
Approach LOS		D		C		C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 88.2	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 32.7	Intersection LOS: C
Intersection Capacity Utilization 62.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	291	131	338	312	113	130	18	239	58	14	64
Future Volume (veh/h)	105	291	131	338	312	113	130	18	239	58	14	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	112	310	86	360	332	72	138	19	137	62	15	41
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	441	120	403	933	200	231	257	218	245	63	173
Arrive On Green	0.09	0.16	0.16	0.25	0.33	0.33	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1594	2676	729	1594	2829	606	1594	1772	1499	1594	411	1123
Grp Volume(v), veh/h	112	203	193	360	206	198	138	19	137	62	0	56
Grp Sat Flow(s),veh/h/ln	1594	1772	1633	1594	1772	1663	1594	1772	1499	1594	0	1534
Q Serve(g_s), s	4.8	7.6	7.8	15.2	6.2	6.3	5.7	0.6	6.0	2.4	0.0	2.2
Cycle Q Clear(g_c), s	4.8	7.6	7.8	15.2	6.2	6.3	5.7	0.6	6.0	2.4	0.0	2.2
Prop In Lane	1.00		0.45	1.00		0.36	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	139	292	269	403	585	549	231	257	218	245	0	236
V/C Ratio(X)	0.80	0.70	0.72	0.89	0.35	0.36	0.60	0.07	0.63	0.25	0.00	0.24
Avail Cap(c_a), veh/h	365	508	468	753	939	881	552	614	519	525	0	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.3	27.5	27.6	25.2	17.7	17.8	27.9	25.8	28.1	26.0	0.0	25.9
Incr Delay (d2), s/veh	4.1	3.0	3.6	2.9	0.4	0.4	2.5	0.1	3.0	0.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.1	3.0	5.3	2.2	2.1	2.1	0.3	2.1	0.9	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	30.5	31.2	28.0	18.1	18.2	30.4	25.9	31.1	26.5	0.0	26.5
LnGrp LOS	D	C	C	C	B	B	C	C	C	C	A	C
Approach Vol, veh/h		508			764			294			118	
Approach Delay, s/veh		31.8			22.8			30.4			26.5	
Approach LOS		C			C			C			C	

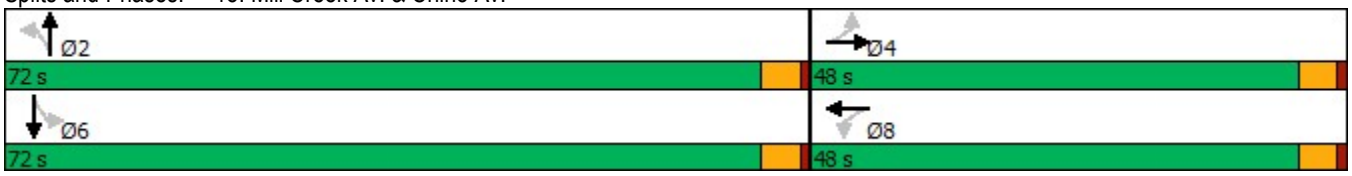
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.9	21.6	17.5		14.7	10.1	29.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		24.2	33.0	20.0		23.0	16.0	37.0				
Max Q Clear Time (g_c+I1), s		8.0	17.2	9.8		4.4	6.8	8.3				
Green Ext Time (p_c), s		0.8	0.4	1.4		0.4	0.1	2.1				

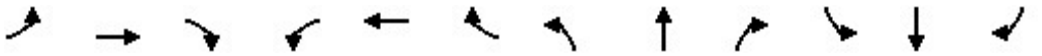
Intersection Summary												
HCM 6th Ctrl Delay			27.1									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	119	145	6	246	20	144	14	110
Future Volume (vph)	119	145	6	246	20	144	14	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	48.0	48.0	48.0	48.0	72.0	72.0	72.0	72.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	19.3	19.3	19.3	19.3	29.5	29.5	29.5	29.5
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.50	0.50	0.50	0.50
v/c Ratio	0.52	0.27	0.06	0.59	0.10	0.69	0.23	0.73
Control Delay	27.9	18.2	17.7	22.3	10.3	16.3	12.3	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	18.2	17.7	22.3	10.3	16.3	12.3	17.1
LOS	C	B	B	C	B	B	B	B
Approach Delay		22.4		22.0		16.1		16.7
Approach LOS		C		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 59.1	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 50.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: Mill Creek Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	145	7	6	246	22	20	144	16	14	110	202
Future Volume (veh/h)	119	145	7	6	246	22	20	144	16	14	110	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	158	5	24	267	48	22	576	40	56	440	138
Peak Hour Factor	0.92	0.92	0.92	0.25	0.92	0.25	0.92	0.25	0.25	0.25	0.25	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	362	592	19	485	507	91	343	811	56	326	641	201
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1065	1803	57	1223	1543	277	836	1729	120	807	1365	428
Grp Volume(v), veh/h	129	0	163	24	0	315	22	0	616	56	0	578
Grp Sat Flow(s),veh/h/ln	1065	0	1860	1223	0	1820	836	0	1849	807	0	1793
Q Serve(g_s), s	5.0	0.0	2.9	0.7	0.0	6.3	0.9	0.0	11.8	2.6	0.0	11.2
Cycle Q Clear(g_c), s	11.2	0.0	2.9	3.5	0.0	6.3	12.2	0.0	11.8	14.4	0.0	11.2
Prop In Lane	1.00		0.03	1.00		0.15	1.00		0.06	1.00		0.24
Lane Grp Cap(c), veh/h	362	0	611	485	0	598	343	0	867	326	0	841
V/C Ratio(X)	0.36	0.00	0.27	0.05	0.00	0.53	0.06	0.00	0.71	0.17	0.00	0.69
Avail Cap(c_a), veh/h	1053	0	1819	1279	0	1780	1219	0	2805	1172	0	2721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	11.0	12.3	0.0	12.1	14.0	0.0	9.4	15.1	0.0	9.2
Incr Delay (d2), s/veh	0.6	0.0	0.2	0.0	0.0	0.7	0.1	0.0	1.1	0.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.9	0.1	0.0	1.9	0.1	0.0	3.0	0.4	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	11.2	12.3	0.0	12.9	14.1	0.0	10.5	15.4	0.0	10.3
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		292			339			638			634	
Approach Delay, s/veh		13.9			12.8			10.6			10.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.4		19.1		25.4		19.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		67.5		43.5		67.5		43.5				
Max Q Clear Time (g_c+I1), s		14.2		13.2		16.4		8.3				
Green Ext Time (p_c), s		4.4		1.4		4.4		1.9				

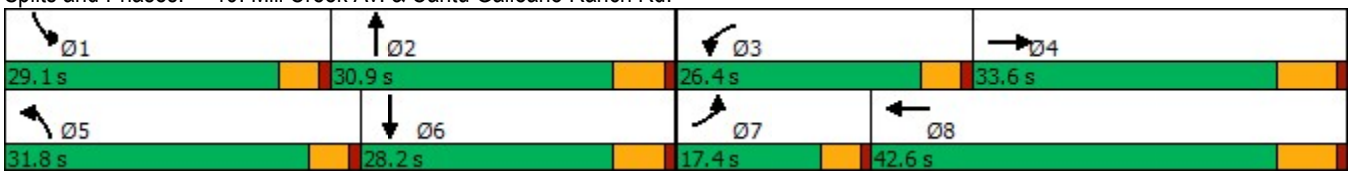
Intersection Summary												
HCM 6th Ctrl Delay			11.5									
HCM 6th LOS			B									

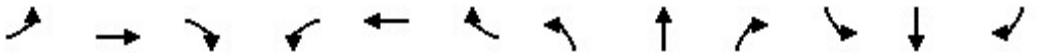
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	85	630	279	688	351	39	299	67
Future Volume (vph)	85	630	279	688	351	39	299	67
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	23.5	9.6	23.5	9.6	27.8	9.6	27.8
Total Split (s)	17.4	33.6	26.4	42.6	31.8	30.9	29.1	28.2
Total Split (%)	14.5%	28.0%	22.0%	35.5%	26.5%	25.8%	24.3%	23.5%
Yellow Time (s)	3.6	5.5	3.6	5.5	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.8	27.2	21.2	41.0	26.3	18.9	22.9	15.5
Actuated g/C Ratio	0.09	0.24	0.19	0.37	0.24	0.17	0.20	0.14
v/c Ratio	0.60	1.02dr	0.90	0.52	0.92	0.65	0.90	0.73
Control Delay	66.2	51.3	75.7	29.0	70.5	17.8	71.7	45.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	51.3	75.7	29.0	70.5	17.8	71.7	45.7
LOS	E	D	E	C	E	B	E	D
Approach Delay		52.4		40.3		47.0		61.4
Approach LOS		D		D		D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.8	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 48.6	Intersection LOS: D
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 19: Mill Creek Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	630	459	279	688	189	351	39	246	299	67	130
Future Volume (veh/h)	85	630	459	279	688	189	351	39	246	299	67	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	685	282	303	748	107	382	42	158	325	73	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	850	345	336	1631	231	415	51	193	359	92	109
Arrive On Green	0.07	0.24	0.24	0.19	0.36	0.36	0.23	0.15	0.15	0.20	0.12	0.12
Sat Flow, veh/h	1781	3568	1446	1781	4518	641	1781	344	1294	1781	777	926
Grp Volume(v), veh/h	92	653	314	303	562	293	382	0	200	325	0	160
Grp Sat Flow(s),veh/h/ln	1781	1702	1610	1781	1702	1755	1781	0	1638	1781	0	1704
Q Serve(g_s), s	4.9	17.5	17.8	16.1	12.2	12.4	20.3	0.0	11.4	17.2	0.0	8.8
Cycle Q Clear(g_c), s	4.9	17.5	17.8	16.1	12.2	12.4	20.3	0.0	11.4	17.2	0.0	8.8
Prop In Lane	1.00		0.90	1.00		0.37	1.00		0.79	1.00		0.54
Lane Grp Cap(c), veh/h	117	811	384	336	1229	634	415	0	245	359	0	201
V/C Ratio(X)	0.78	0.81	0.82	0.90	0.46	0.46	0.92	0.00	0.82	0.91	0.00	0.80
Avail Cap(c_a), veh/h	236	954	451	401	1270	655	501	0	425	451	0	394
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.5	34.7	34.9	38.4	23.7	23.7	36.2	0.0	39.9	37.7	0.0	41.6
Incr Delay (d2), s/veh	4.3	4.4	9.8	18.9	0.3	0.5	18.6	0.0	6.6	16.8	0.0	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	7.1	7.5	8.3	4.5	4.7	10.4	0.0	4.8	8.8	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.8	39.1	44.7	57.3	23.9	24.2	54.8	0.0	46.4	54.6	0.0	48.6
LnGrp LOS	D	D	D	E	C	C	D	A	D	D	A	D
Approach Vol, veh/h		1059			1158			582			485	
Approach Delay, s/veh		41.6			32.7			51.9			52.6	
Approach LOS		D			C			D			D	

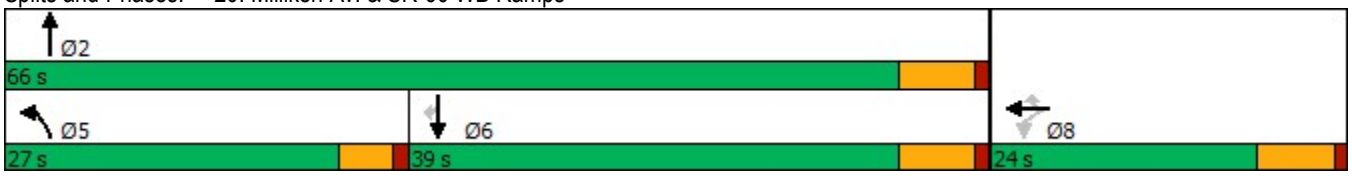
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.1	20.3	22.8	29.6	27.1	17.2	11.0	41.4
Change Period (Y+Rc), s	4.6	5.8	4.6	6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	24.5	25.1	21.8	27.1	27.2	22.4	12.8	36.1
Max Q Clear Time (g_c+I1), s	19.2	13.4	18.1	19.8	22.3	10.8	6.9	14.4
Green Ext Time (p_c), s	0.2	0.8	0.2	3.2	0.3	0.5	0.0	4.8

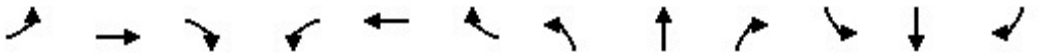
Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	319	359	902	1186	518
Future Volume (vph)	4	319	359	902	1186	518
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	9.6	16.2	16.2	16.2
Total Split (s)	24.0	24.0	27.0	66.0	39.0	39.0
Total Split (%)	26.7%	26.7%	30.0%	73.3%	43.3%	43.3%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	17.8	17.8	20.8	57.7	32.3	32.3
Actuated g/C Ratio	0.20	0.20	0.24	0.66	0.37	0.37
v/c Ratio	1.24	0.73	0.89	0.38	0.90	0.59
Control Delay	160.9	26.8	58.1	7.4	37.3	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	160.9	26.8	58.1	7.4	37.3	4.8
LOS	F	C	E	A	D	A
Approach Delay	103.5			21.9	27.4	
Approach LOS	F			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 88	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 40.8	Intersection LOS: D
Intersection Capacity Utilization 90.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	422	4	319	359	902	0	0	1186	518
Future Volume (veh/h)	0	0	0	422	4	319	359	902	0	0	1186	518
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				440	4	156	374	940	0	0	1235	456
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				363	3	326	409	2435	0	0	1376	583
Arrive On Green				0.21	0.21	0.21	0.23	0.65	0.00	0.00	0.37	0.37
Sat Flow, veh/h				1766	16	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				444	0	156	374	940	0	0	1235	456
Grp Sat Flow(s),veh/h/ln				1782	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				17.8	0.0	7.5	17.7	10.1	0.0	0.0	27.0	22.1
Cycle Q Clear(g_c), s				17.8	0.0	7.5	17.7	10.1	0.0	0.0	27.0	22.1
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				367	0	326	409	2435	0	0	1376	583
V/C Ratio(X)				1.21	0.00	0.48	0.91	0.39	0.00	0.00	0.90	0.78
Avail Cap(c_a), veh/h				367	0	326	461	2585	0	0	1418	601
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				34.4	0.0	30.3	32.5	7.0	0.0	0.0	25.8	24.3
Incr Delay (d2), s/veh				117.7	0.0	1.1	20.0	0.1	0.0	0.0	7.8	6.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				19.2	0.0	2.8	9.2	2.9	0.0	0.0	12.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				152.1	0.0	31.4	52.5	7.1	0.0	0.0	33.6	30.7
LnGrp LOS				F	A	C	D	A	A	A	C	C
Approach Vol, veh/h					600			1314			1691	
Approach Delay, s/veh					120.7			20.1			32.8	
Approach LOS					F			C			C	

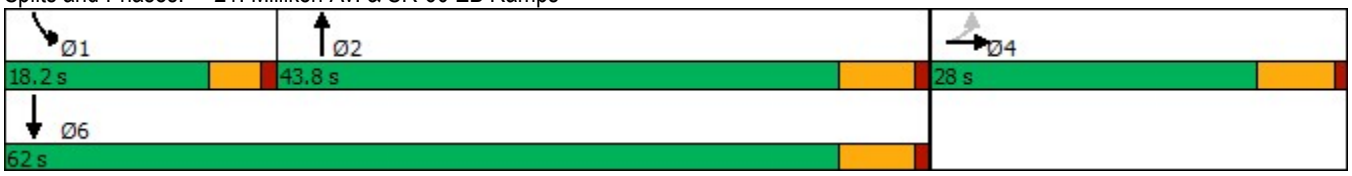
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	62.5		24.5	38.0		24.0						
Change Period (Y+Rc), s	6.2		4.6	6.2		6.2						
Max Green Setting (Gmax), s	59.8		22.4	32.8		17.8						
Max Q Clear Time (g_c+I1), s	12.1		19.7	29.0		19.8						
Green Ext Time (p_c), s	7.0		0.2	2.9		0.0						

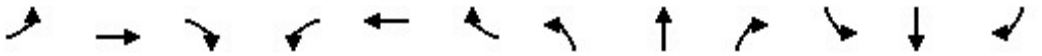
Intersection Summary		
HCM 6th Ctrl Delay	42.8	
HCM 6th LOS	D	

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	263	4	989	223	1385
Future Volume (vph)	263	4	989	223	1385
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	16.2	16.2	23.2	9.6	16.2
Total Split (s)	28.0	28.0	43.8	18.2	62.0
Total Split (%)	31.1%	31.1%	48.7%	20.2%	68.9%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	20.9	20.9	36.8	13.1	54.5
Actuated g/C Ratio	0.24	0.24	0.42	0.15	0.62
v/c Ratio	0.59	0.92	0.93	0.88	0.62
Control Delay	36.4	58.7	35.7	70.6	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	58.7	35.7	70.6	11.9
LOS	D	E	D	E	B
Approach Delay		50.0	35.7		20.1
Approach LOS		D	D		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 87.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 31.1	Intersection LOS: C
Intersection Capacity Utilization 90.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	4	340	0	0	0	0	989	396	223	1385	0
Future Volume (veh/h)	263	4	340	0	0	0	0	989	396	223	1385	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	233	62	187				0	1030	225	232	1443	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	341	79	237				0	1253	273	274	2387	0
Arrive On Green	0.19	0.19	0.19				0.00	0.42	0.42	0.15	0.64	0.00
Sat Flow, veh/h	1781	410	1237				0	2976	648	1781	3741	0
Grp Volume(v), veh/h	233	0	249				0	646	609	232	1443	0
Grp Sat Flow(s),veh/h/ln	1781	0	1648				0	1870	1754	1781	1870	0
Q Serve(g_s), s	8.9	0.0	10.5				0.0	22.2	22.4	9.2	16.5	0.0
Cycle Q Clear(g_c), s	8.9	0.0	10.5				0.0	22.2	22.4	9.2	16.5	0.0
Prop In Lane	1.00		0.75				0.00		0.37	1.00		0.00
Lane Grp Cap(c), veh/h	341	0	315				0	787	738	274	2387	0
V/C Ratio(X)	0.68	0.00	0.79				0.00	0.82	0.82	0.85	0.60	0.00
Avail Cap(c_a), veh/h	534	0	494				0	967	906	333	2869	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.4	0.0	28.0				0.0	18.6	18.7	29.9	7.8	0.0
Incr Delay (d2), s/veh	2.4	0.0	4.5				0.0	4.7	5.2	13.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	4.1				0.0	8.8	8.5	4.6	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	0.0	32.6				0.0	23.4	23.9	43.3	8.0	0.0
LnGrp LOS	C	A	C				A	C	C	D	A	A
Approach Vol, veh/h		482						1255			1675	
Approach Delay, s/veh		31.2						23.6			12.9	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.8	36.8		20.1		52.6
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	13.6	37.6		21.8		55.8
Max Q Clear Time (g_c+I1), s	11.2	24.4		12.5		18.5
Green Ext Time (p_c), s	0.1	6.2		1.5		12.9

Intersection Summary		
HCM 6th Ctrl Delay		19.4
HCM 6th LOS		B

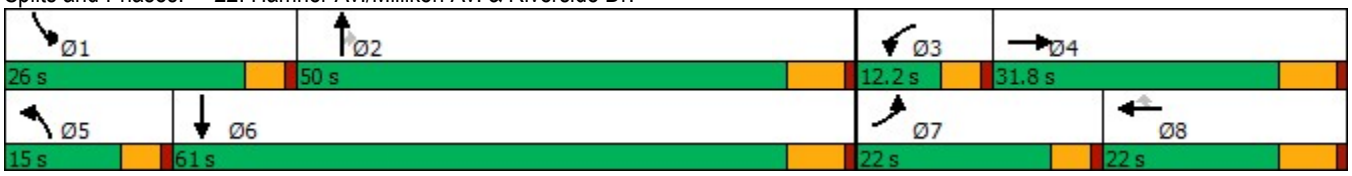
Notes

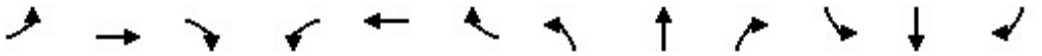
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	255	189	80	236	160	149	896	49	212	1164
Future Volume (vph)	255	189	80	236	160	149	896	49	212	1164
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	22.0	31.8	12.2	22.0	22.0	15.0	50.0	50.0	26.0	61.0
Total Split (%)	18.3%	26.5%	10.2%	18.3%	18.3%	12.5%	41.7%	41.7%	21.7%	50.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	17.4	25.6	7.6	15.8	15.8	10.4	45.8	45.8	19.4	54.8
Actuated g/C Ratio	0.14	0.21	0.06	0.13	0.13	0.09	0.38	0.38	0.16	0.46
v/c Ratio	1.17	0.96	0.84	1.07	0.46	1.15	0.74	0.08	0.87	1.09
Control Delay	158.3	80.8	111.0	128.0	8.1	170.1	36.7	0.2	79.9	81.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	158.3	80.8	111.0	128.0	8.1	170.1	36.7	0.2	79.9	81.4
LOS	F	F	F	F	A	F	D	A	E	F
Approach Delay		114.1		84.9			53.2			81.3
Approach LOS		F		F			D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 78.8	Intersection LOS: E
Intersection Capacity Utilization 102.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	189	148	80	236	160	149	896	49	212	1164	378
Future Volume (veh/h)	255	189	148	80	236	160	149	896	49	212	1164	378
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	268	199	82	84	248	89	157	943	31	223	1225	209
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	255	105	102	235	200	139	1294	576	247	1298	220
Arrive On Green	0.15	0.22	0.22	0.06	0.13	0.13	0.09	0.38	0.38	0.15	0.45	0.45
Sat Flow, veh/h	1594	1187	489	1594	1772	1502	1594	3367	1500	1594	2873	487
Grp Volume(v), veh/h	268	0	281	84	248	89	157	943	31	223	714	720
Grp Sat Flow(s),veh/h/ln	1594	0	1676	1594	1772	1502	1594	1683	1500	1594	1683	1677
Q Serve(g_s), s	17.4	0.0	18.8	6.2	15.8	6.5	10.4	28.5	1.5	16.3	48.0	49.1
Cycle Q Clear(g_c), s	17.4	0.0	18.8	6.2	15.8	6.5	10.4	28.5	1.5	16.3	48.0	49.1
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	233	0	361	102	235	200	139	1294	576	247	760	757
V/C Ratio(X)	1.15	0.00	0.78	0.82	1.05	0.45	1.13	0.73	0.05	0.90	0.94	0.95
Avail Cap(c_a), veh/h	233	0	361	102	235	200	139	1294	576	287	776	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	0.0	44.0	55.0	51.6	47.5	54.3	31.3	23.0	49.4	31.0	31.3
Incr Delay (d2), s/veh	105.1	0.0	10.4	38.0	73.4	1.6	114.2	2.1	0.0	25.3	18.9	21.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	0.0	8.5	3.5	11.5	2.4	8.4	11.2	0.5	8.0	21.8	22.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	155.9	0.0	54.4	93.0	125.0	49.1	168.5	33.4	23.1	74.7	49.9	52.3
LnGrp LOS	F	A	D	F	F	D	F	C	C	E	D	D
Approach Vol, veh/h		549			421			1131			1657	
Approach Delay, s/veh		103.9			102.6			51.9			54.3	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	51.9	12.2	31.8	15.0	59.9	22.0	22.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	43.8	7.6	25.6	10.4	54.8	17.4	15.8
Max Q Clear Time (g_c+I1), s	18.3	30.5	8.2	20.8	12.4	51.1	19.4	17.8
Green Ext Time (p_c), s	0.1	5.0	0.0	0.6	0.0	2.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	66.2
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	86.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	109	86	129	967	1210	164
Future Vol, veh/h	109	86	129	967	1210	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	95	142	1063	1330	180

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2236	1420	1510	0	-	0
Stage 1	1420	-	-	-	-	-
Stage 2	816	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 41	167	441	-	-	-
Stage 1	222	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 9	167	441	-	-	-
Mov Cap-2 Maneuver	~ 45	-	-	-	-	-
Stage 1	~ 48	-	-	-	-	-
Stage 2	396	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	1144.1	6.7	0
HCM LOS	F		

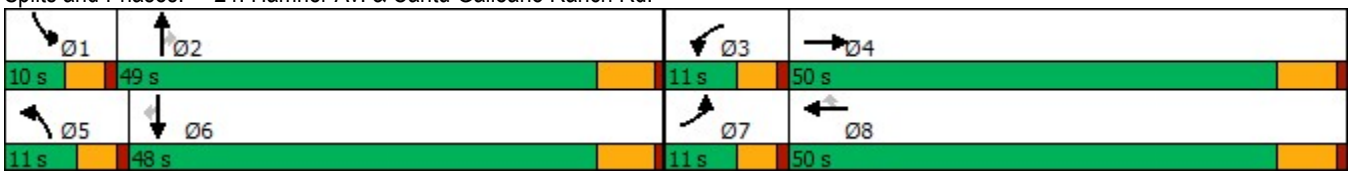
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	441	-	66	-	-
HCM Lane V/C Ratio	0.321	-	3.247	-	-
HCM Control Delay (s)	17	5.3	$ 1144.1	-	-
HCM Lane LOS	C	A	F	-	-
HCM 95th %tile Q(veh)	1.4	-	22.2	-	-

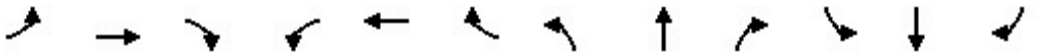
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	405	1521	478	1635	216	482	423	367	296	539	397
Future Volume (vph)	405	1521	478	1635	216	482	423	367	296	539	397
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.0	50.0	11.0	50.0	50.0	11.0	49.0	49.0	10.0	48.0	48.0
Total Split (%)	9.2%	41.7%	9.2%	41.7%	41.7%	9.2%	40.8%	40.8%	8.3%	40.0%	40.0%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	43.8	6.4	43.8	43.8	6.4	29.2	29.2	5.4	28.2	28.2
Actuated g/C Ratio	0.06	0.41	0.06	0.41	0.41	0.06	0.27	0.27	0.05	0.26	0.26
v/c Ratio	2.05	0.79	2.42	1.18	0.31	2.44	0.32	0.73	1.77	0.60	0.81
Control Delay	513.4	30.4	673.4	117.2	11.6	681.9	30.8	31.0	398.9	36.6	37.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	513.4	30.4	673.4	117.2	11.6	681.9	30.8	31.0	398.9	36.6	37.8
LOS	F	C	F	F	B	F	C	C	F	D	D
Approach Delay		113.7		221.6			277.5			124.0	
Approach LOS		F		F			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.44	
Intersection Signal Delay: 179.4	Intersection LOS: F
Intersection Capacity Utilization 103.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	405	1521	424	478	1635	216	482	423	367	296	539	397
Future Volume (veh/h)	405	1521	424	478	1635	216	482	423	367	296	539	397
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	422	1584	234	498	1703	121	502	441	226	308	561	258
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	2488	367	222	1551	692	222	1152	358	187	766	342
Arrive On Green	0.06	0.44	0.44	0.06	0.44	0.44	0.06	0.23	0.23	0.05	0.22	0.22
Sat Flow, veh/h	3456	5702	842	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	422	1340	478	498	1703	121	502	441	226	308	561	258
Grp Sat Flow(s),veh/h/ln	1728	1609	1719	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.4	21.6	21.6	6.4	43.5	4.6	6.4	7.3	12.8	5.4	14.7	15.2
Cycle Q Clear(g_c), s	6.4	21.6	21.6	6.4	43.5	4.6	6.4	7.3	12.8	5.4	14.7	15.2
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	2105	750	222	1551	692	222	1152	358	187	766	342
V/C Ratio(X)	1.90	0.64	0.64	2.24	1.10	0.17	2.26	0.38	0.63	1.65	0.73	0.75
Avail Cap(c_a), veh/h	222	2105	750	222	1551	692	222	2192	680	187	1490	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	21.9	21.9	46.6	28.1	17.1	46.6	32.7	34.9	47.1	36.4	36.6
Incr Delay (d2), s/veh	422.5	0.6	1.8	574.5	54.7	0.1	582.5	0.2	1.8	313.2	1.4	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.6	7.3	8.0	20.3	27.7	1.5	20.6	2.9	4.8	10.4	6.1	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	469.1	22.6	23.7	621.1	82.8	17.3	629.1	32.9	36.7	360.4	37.8	40.0
LnGrp LOS	F	C	C	F	F	B	F	C	D	F	D	D
Approach Vol, veh/h		2240			2322			1169			1127	
Approach Delay, s/veh		106.9			194.9			289.7			126.5	
Approach LOS		F			F			F			F	

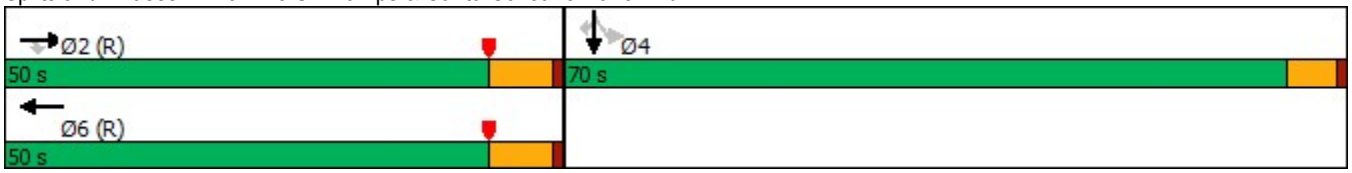
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	28.7	11.0	50.0	11.0	27.7	11.0	50.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	5.4	42.8	6.4	43.5	6.4	41.8	6.4	43.5
Max Q Clear Time (g_c+I1), s	7.4	14.8	8.4	23.6	8.4	17.2	8.4	45.5
Green Ext Time (p_c), s	0.0	3.5	0.0	11.3	0.0	4.3	0.0	0.0

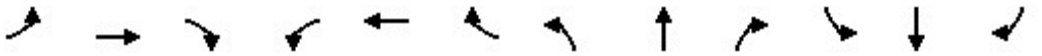
Intersection Summary	
HCM 6th Ctrl Delay	171.1
HCM 6th LOS	F

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1592	825	1260	137	290	1	1632
Future Volume (vph)	1592	825	1260	137	290	1	1632
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	50.0	50.0	50.0		70.0	70.0	70.0
Total Split (%)	41.7%	41.7%	41.7%		58.3%	58.3%	58.3%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min		Min	Min	Min
Act Effct Green (s)	43.2	43.2	43.2	120.0	64.5	64.5	64.5
Actuated g/C Ratio	0.36	0.36	0.36	1.00	0.54	0.54	0.54
v/c Ratio	0.95	0.86	1.08	0.05	0.31	1.16	1.10
Control Delay	49.1	16.8	89.5	0.0	16.6	112.3	88.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	16.8	89.5	0.0	16.6	112.3	88.9
LOS	D	B	F	A	B	F	F
Approach Delay	38.1		80.7			89.2	
Approach LOS	D		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 113.2 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 65.6	Intersection LOS: E
Intersection Capacity Utilization 112.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1592	825	0	1260	137	0	0	0	290	1	1632
Future Volume (veh/h)	0	1592	825	0	1260	137	0	0	0	290	1	1632
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1730	0	0	1370	0				210	0	1398
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2138		0	1488					853	0	1518
Arrive On Green	0.00	0.42	0.00	0.00	0.84	0.00				0.48	0.00	0.48
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1730	0	0	1370	0				210	0	1398
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	35.7	0.0	0.0	32.9	0.0				8.4	0.0	49.3
Cycle Q Clear(g_c), s	0.0	35.7	0.0	0.0	32.9	0.0				8.4	0.0	49.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2138		0	1488					853	0	1518
V/C Ratio(X)	0.00	0.81		0.00	0.92					0.25	0.00	0.92
Avail Cap(c_a), veh/h	0	2138		0	1488					957	0	1704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.33	0.00	0.00	0.63	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.7	0.0	0.0	8.4	0.0				18.5	0.0	29.1
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	7.4	0.0				0.1	0.0	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.6	0.0	0.0	4.8	0.0				3.3	0.0	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.8	0.0	0.0	15.7	0.0				18.6	0.0	37.2
LnGrp LOS	A	C		A	B					B	A	D
Approach Vol, veh/h		1730	A		1370	A					1608	
Approach Delay, s/veh		31.8			15.7						34.8	
Approach LOS		C			B						C	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		57.0		63.0		57.0						
Change Period (Y+Rc), s		6.8		5.5		6.8						
Max Green Setting (Gmax), s		43.2		64.5		43.2						
Max Q Clear Time (g_c+I1), s		37.7		51.3		34.9						
Green Ext Time (p_c), s		4.2		6.1		5.1						

Intersection Summary		
HCM 6th Ctrl Delay		28.2
HCM 6th LOS		C

Notes

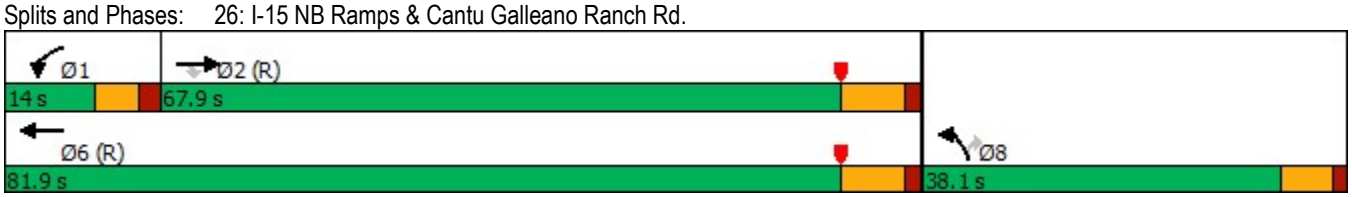
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	802	1112	219	498	879	154
Future Volume (vph)	802	1112	219	498	879	154
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.0	22.5	22.5	22.5
Total Split (s)	67.9	67.9	14.0	81.9	38.1	38.1
Total Split (%)	56.6%	56.6%	11.7%	68.3%	31.8%	31.8%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	59.1	59.1	8.0	73.1	33.6	33.6
Actuated g/C Ratio	0.49	0.49	0.07	0.61	0.28	0.28
v/c Ratio	0.35	0.99	1.04	0.17	1.01	0.30
Control Delay	9.2	43.1	125.5	10.2	75.1	8.4
Queue Delay	0.0	23.2	0.0	0.0	0.0	0.0
Total Delay	9.2	66.3	125.5	10.2	75.1	8.4
LOS	A	E	F	B	E	A
Approach Delay	42.4			45.4	66.2	
Approach LOS	D			D	E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 49.7	Intersection LOS: D
Intersection Capacity Utilization 86.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	802	1112	219	498	879	154
Future Volume (veh/h)	802	1112	219	498	879	154
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	872	666	238	541	955	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2579	800	230	3174	953	424
Arrive On Green	0.84	0.84	0.07	0.62	0.27	0.27
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	872	666	238	541	955	85
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	4.5	26.5	8.0	5.4	32.1	5.0
Cycle Q Clear(g_c), s	4.5	26.5	8.0	5.4	32.1	5.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2579	800	230	3174	953	424
V/C Ratio(X)	0.34	0.83	1.03	0.17	1.00	0.20
Avail Cap(c_a), veh/h	2579	800	230	3174	953	424
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.91	0.91	1.00	1.00
Uniform Delay (d), s/veh	5.0	6.7	56.0	9.6	44.0	34.0
Incr Delay (d2), s/veh	0.1	4.2	65.4	0.1	29.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.0	5.4	1.8	17.5	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.1	10.9	121.4	9.7	73.6	34.2
LnGrp LOS	A	B	F	A	F	C
Approach Vol, veh/h	1538			779	1040	
Approach Delay, s/veh	7.7			43.8	70.4	
Approach LOS	A			D	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	14.0	67.9				81.9	38.1
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	8.0	60.6				74.6	32.1
Max Q Clear Time (g_c+I1), s	10.0	28.5				7.4	34.1
Green Ext Time (p_c), s	0.0	9.5				3.5	0.0

Intersection Summary		
HCM 6th Ctrl Delay		35.5
HCM 6th LOS		D

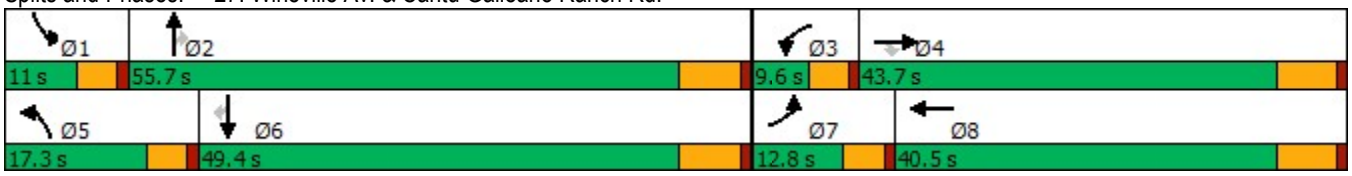
Notes

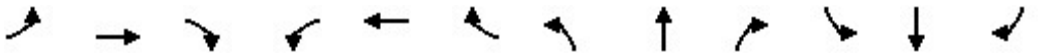
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	133	388	334	26	287	217	93	47	29	169	217
Future Volume (vph)	133	388	334	26	287	217	93	47	29	169	217
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	12.8	43.7	43.7	9.6	40.5	17.3	55.7	55.7	11.0	49.4	49.4
Total Split (%)	10.7%	36.4%	36.4%	8.0%	33.8%	14.4%	46.4%	46.4%	9.2%	41.2%	41.2%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.5	22.2	22.2	5.5	12.8	9.4	26.1	26.1	6.1	15.3	15.3
Actuated g/C Ratio	0.11	0.32	0.32	0.08	0.18	0.14	0.38	0.38	0.09	0.22	0.22
v/c Ratio	0.39	0.21	0.48	0.10	0.36	0.51	0.08	0.08	0.21	0.45	0.44
Control Delay	37.9	20.0	5.6	40.0	25.7	36.2	17.0	0.2	41.7	27.5	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	20.0	5.6	40.0	25.7	36.2	17.0	0.2	41.7	27.5	6.4
LOS	D	B	A	D	C	D	B	A	D	C	A
Approach Delay		17.2			26.8		26.5			17.5	
Approach LOS		B			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 69.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 48.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	388	334	26	287	21	217	93	47	29	169	217
Future Volume (veh/h)	133	388	334	26	287	21	217	93	47	29	169	217
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	422	225	28	312	13	236	101	25	32	184	171
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	1507	371	112	898	37	369	864	385	64	322	273
Arrive On Green	0.09	0.23	0.23	0.03	0.18	0.18	0.11	0.24	0.24	0.04	0.17	0.17
Sat Flow, veh/h	3456	6434	1585	3456	5029	208	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	145	422	225	28	210	115	236	101	25	32	184	171
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1833	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	2.0	2.6	6.2	0.4	2.6	2.7	3.2	1.1	0.6	0.9	4.4	4.9
Cycle Q Clear(g_c), s	2.0	2.6	6.2	0.4	2.6	2.7	3.2	1.1	0.6	0.9	4.4	4.9
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	304	1507	371	112	608	327	369	864	385	64	322	273
V/C Ratio(X)	0.48	0.28	0.61	0.25	0.35	0.35	0.64	0.12	0.06	0.50	0.57	0.63
Avail Cap(c_a), veh/h	580	4898	1207	354	2368	1275	898	3578	1596	233	1642	1391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	15.3	16.7	23.1	17.6	17.6	20.9	14.4	14.2	23.1	18.6	18.8
Incr Delay (d2), s/veh	0.4	0.1	1.6	0.4	0.3	0.6	0.7	0.1	0.1	2.2	1.6	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	1.8	0.1	0.8	0.9	1.1	0.4	0.2	0.4	1.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	15.4	18.3	23.5	17.9	18.2	21.6	14.5	14.3	25.3	20.2	21.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		792			353			362			387	
Approach Delay, s/veh		17.4			18.5			19.1			21.0	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	18.4	6.2	17.9	9.8	14.9	8.9	15.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	6.4	49.2	5.0	37.2	12.7	42.9	8.2	34.0
Max Q Clear Time (g_c+I1), s	2.9	3.1	2.4	8.2	5.2	6.9	4.0	4.7
Green Ext Time (p_c), s	0.0	0.7	0.0	3.3	0.2	1.5	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

APPENDIX 5.3: E+P (PHASE 1) CONDITIONS TRAFFIC SIGNAL WARRANT OPERATIONS ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

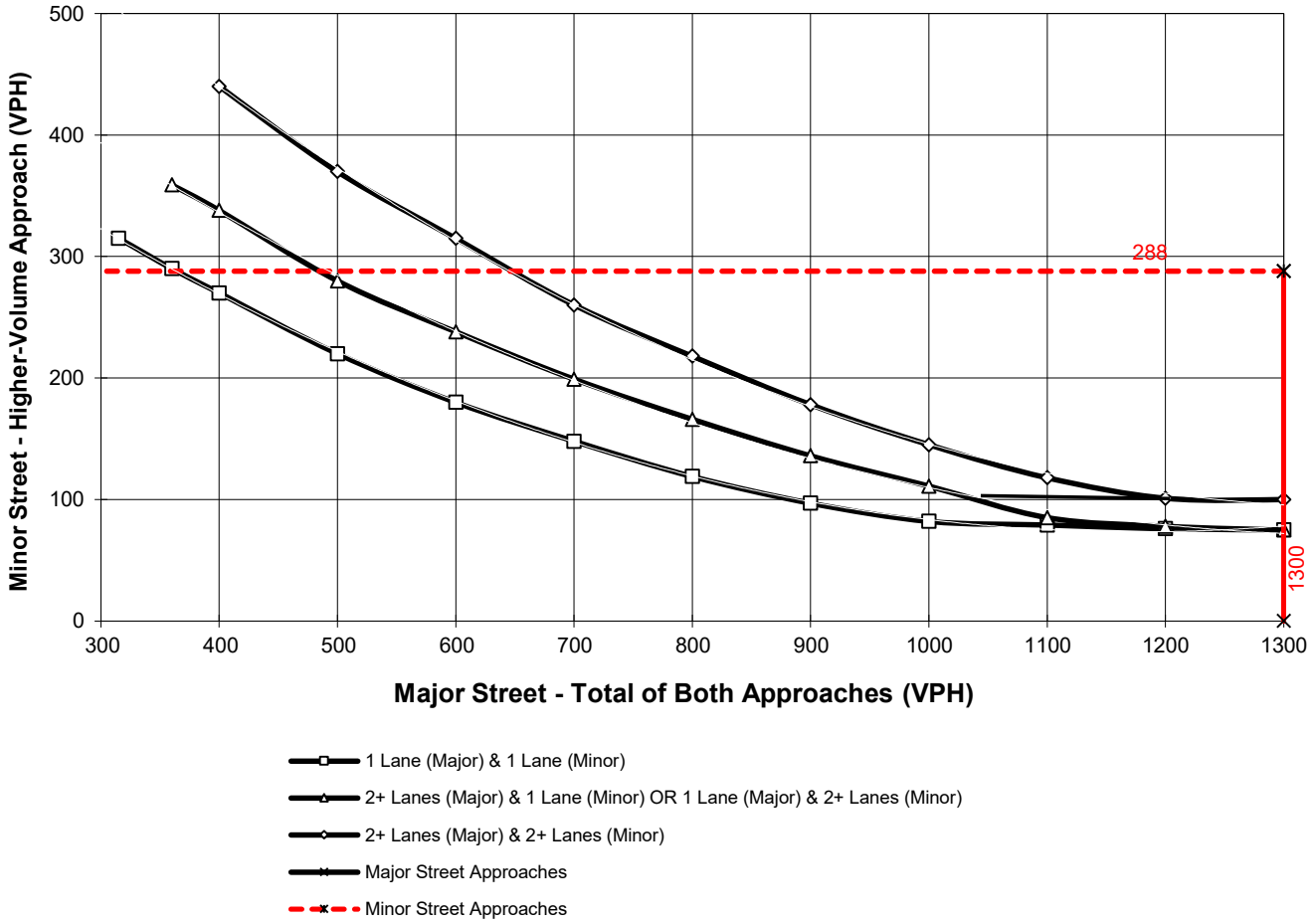
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase 1) Conditions - Weekday PM Peak Hour**

Major Street Name = **Haven Av.**
Total of Both Approaches (VPH) = **1702**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Chino Av.**
High Volume Approach (VPH) = **288**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	E+P (Phase 1)
				CALC JB	DATE 09/13/22
Jurisdiction: City of Ontario				CHK JB	DATE 09/13/22
Major Street: #REF!				Critical Approach Speed (Major)	55 mph
Minor Street: Mill Creek Av.				Critical Approach Speed (Minor)	45 mph

Major Street Approach Lanes = **2** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **12,136** vpd Minor Street Future ADT = **6,569** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... √

or

In built up area of isolated community of < 10,000 population .....

RURAL (R)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements EADT			
	XX				
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied	Urban	Rural	Urban	Rural
XX					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street				
1	*1*	8,000	5,600	2,400	1,680
2 + **12,136**	*1* **6,569**	9,600	6,720 *	2,400	1,680 *
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied	Urban	Rural	Urban	Rural
XX					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street				
1	*1*	12,000	8,400	1,200	850
2 + **12,136**	*1* **6,569**	14,400	10,080 *	1,200	850 *
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
XX		2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more	A / B				
	100% / 100%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

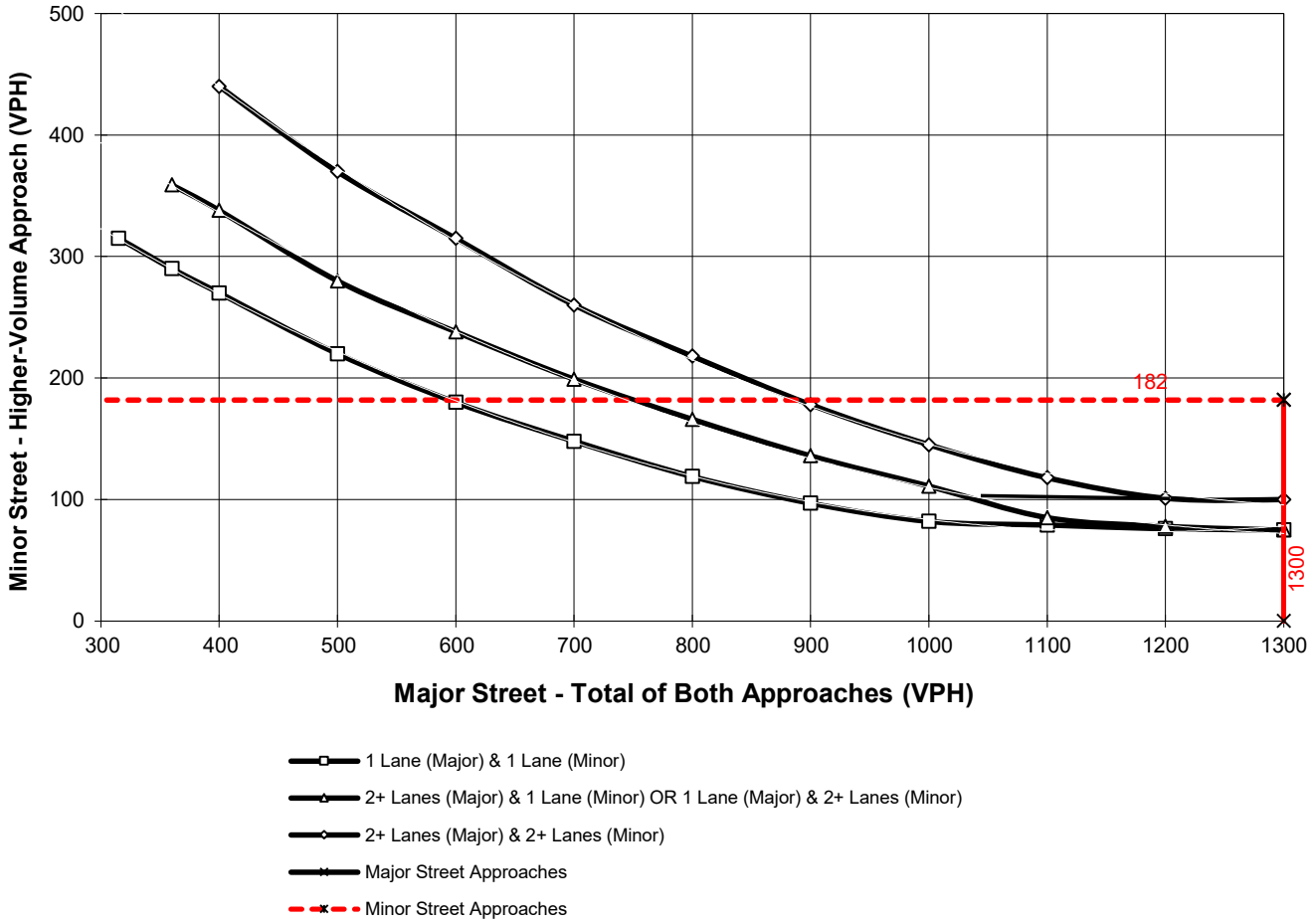
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P (Phase 1) Conditions - Weekday AM Peak Hour**

Major Street Name = **Hamner Av.** Total of Both Approaches (VPH) = **1821**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Chino Av.** High Volume Approach (VPH) = **182**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 5.4: E+P (PHASE 1) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	278	267	257	777	1035	433	163
v/c Ratio	0.74	0.62	0.58	0.85	0.31	0.21	0.26
Control Delay	46.2	22.5	19.0	36.4	4.0	23.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	22.5	19.0	36.4	4.0	23.1	4.9
Queue Length 50th (ft)	148	70	52	223	43	55	0
Queue Length 95th (ft)	#308	#178	146	#322	20	66	39
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	384	439	453	928	3485	2493	715
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.61	0.57	0.84	0.30	0.17	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	290	278	270	1527	596	162	677
v/c Ratio	0.71	0.62	0.51	0.48	0.55	0.53	0.21
Control Delay	40.7	22.1	9.7	16.6	3.7	54.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	22.1	9.7	16.6	3.7	54.0	3.8
Queue Length 50th (ft)	157	84	22	164	0	47	52
Queue Length 95th (ft)	228	160	84	221	60	m64	13
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	526	548	617	3182	1075	323	3201
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.51	0.44	0.48	0.55	0.50	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	372	376	746	598	1616	856	424
v/c Ratio	0.79	0.80	0.47	0.91	0.57	0.56	0.55
Control Delay	37.3	37.7	1.0	46.4	13.9	23.7	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	37.7	1.0	46.4	13.9	23.7	5.4
Queue Length 50th (ft)	162	164	0	~162	189	121	0
Queue Length 95th (ft)	52	256	0	m#233	m213	160	61
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	546	548	1583	657	2845	1532	766
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.69	0.47	0.91	0.57	0.56	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	378	383	325	1802	341	749
v/c Ratio	0.81	0.82	0.57	0.94	0.85	0.26
Control Delay	40.7	41.3	14.5	33.2	50.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	41.3	14.5	33.2	50.7	8.5
Queue Length 50th (ft)	167	169	53	282	91	71
Queue Length 95th (ft)	#302	#307	129	#396	#167	87
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	497	499	593	1920	402	2865
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.77	0.55	0.94	0.85	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	246	537	411	1284	472	267
v/c Ratio	0.41	0.91	0.89	0.71	0.68	0.51
Control Delay	24.6	43.4	54.1	18.4	37.5	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	43.4	54.1	18.4	37.5	7.9
Queue Length 50th (ft)	104	236	222	273	130	0
Queue Length 95th (ft)	172	#439	#394	350	182	62
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	670	656	507	2030	815	570
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.82	0.81	0.63	0.58	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	404	420	1612	88	612
v/c Ratio	0.86	0.68	1.00	0.61	0.30
Control Delay	48.5	16.3	47.1	59.0	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	16.3	47.1	59.0	10.2
Queue Length 50th (ft)	222	72	~535	49	90
Queue Length 95th (ft)	#380	184	#673	#113	122
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	538	670	1617	156	2149
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.63	1.00	0.56	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1158	587	1075	183	252	648	646
v/c Ratio	0.67	0.64	1.37	0.07	0.54	0.84	0.82
Control Delay	37.9	7.6	207.1	0.0	39.4	17.8	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	7.6	207.1	0.0	39.4	17.8	16.3
Queue Length 50th (ft)	267	8	~596	0	181	109	100
Queue Length 95th (ft)	#480	136	#694	m0	209	239	218
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1739	916	784	2787	707	908	931
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.64	1.37	0.07	0.36	0.71	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	496	963	211	484	819	365
v/c Ratio	0.21	0.83	0.63	0.16	0.86	0.55
Control Delay	31.1	36.5	60.4	10.2	51.4	7.1
Queue Delay	0.0	13.3	0.0	0.0	0.0	0.0
Total Delay	31.1	49.8	60.4	10.2	51.4	7.1
Queue Length 50th (ft)	88	369	81	59	296	0
Queue Length 95th (ft)	91	625	122	66	#447	89
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2476	1174	371	3250	951	662
Starvation Cap Reductn	0	209	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	1.00	0.57	0.15	0.86	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	206	201	162	503	516	1266	328
v/c Ratio	0.70	0.71	0.41	0.79	0.15	0.43	0.37
Control Delay	47.9	47.9	8.5	39.6	1.4	18.2	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	47.9	8.5	39.6	1.4	18.2	3.5
Queue Length 50th (ft)	114	114	0	151	10	143	0
Queue Length 95th (ft)	190	193	53	198	1	184	50
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	344	332	437	726	3557	2934	892
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.61	0.37	0.69	0.15	0.43	0.37

Intersection Summary

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	223	219	898	510	482	1156
v/c Ratio	0.43	0.74	0.71	0.28	0.49	0.76	0.31
Control Delay	39.3	33.1	30.5	14.5	3.5	52.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	33.1	30.5	14.5	3.5	52.5	1.0
Queue Length 50th (ft)	56	65	60	82	0	129	0
Queue Length 95th (ft)	101	143	133	126	60	173	17
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	339	381	392	3206	1036	762	3707
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.59	0.56	0.28	0.49	0.63	0.31

Intersection Summary

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	147	146	585	342	967	1541	724
v/c Ratio	0.59	0.59	0.37	0.74	0.26	0.57	0.63
Control Delay	45.4	45.1	0.7	42.7	5.1	15.5	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	45.1	0.7	42.7	5.1	15.5	4.4
Queue Length 50th (ft)	83	83	0	107	71	209	13
Queue Length 95th (ft)	141	140	0	#198	118	253	75
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	321	322	1583	462	3655	2688	1143
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.45	0.37	0.74	0.26	0.57	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	182	184	502	1122	634	1208
v/c Ratio	0.48	0.49	1.16	0.64	0.78	0.37
Control Delay	35.4	35.5	123.5	25.9	55.6	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	35.5	123.5	25.9	55.6	5.2
Queue Length 50th (ft)	94	96	~296	186	193	67
Queue Length 95th (ft)	163	165	#491	247	226	78
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	377	378	432	1761	953	3265
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.49	1.16	0.64	0.67	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	249	332	374	841	1095	540
v/c Ratio	0.76	0.72	0.88	0.36	0.84	0.58
Control Delay	49.3	22.6	54.6	6.8	32.1	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	22.6	54.6	6.8	32.1	4.8
Queue Length 50th (ft)	133	62	203	97	296	0
Queue Length 95th (ft)	#235	159	#356	128	#385	65
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	380	502	476	2545	1396	951
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.66	0.79	0.33	0.78	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	247	385	1192	232	1106
v/c Ratio	0.61	0.88	0.91	0.74	0.51
Control Delay	35.7	45.0	37.1	47.7	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.7	45.0	37.1	47.7	10.6
Queue Length 50th (ft)	121	154	316	120	172
Queue Length 95th (ft)	212	#332	#494	196	221
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	466	493	1311	418	2363
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.78	0.91	0.56	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1505	648	1000	149	283	786	783
v/c Ratio	0.97	0.75	0.92	0.05	0.28	0.92	0.87
Control Delay	57.6	12.6	62.7	0.0	12.7	38.2	31.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	12.6	62.7	0.0	12.7	38.2	31.3
Queue Length 50th (ft)	~434	58	425	0	103	537	470
Queue Length 95th (ft)	#545	217	#553	m0	154	#875	#734
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1558	865	1084	2787	1015	878	922
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.75	0.92	0.05	0.28	0.90	0.85

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	828	1033	238	482	662	150
v/c Ratio	0.32	0.91	0.65	0.14	0.86	0.34
Control Delay	21.2	39.3	60.3	7.3	57.6	9.1
Queue Delay	0.0	2.1	0.0	0.0	0.0	0.0
Total Delay	21.2	41.3	60.3	7.3	57.6	9.1
Queue Length 50th (ft)	81	462	91	42	262	0
Queue Length 95th (ft)	m64	m489	134	50	#420	63
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2784	1175	400	3631	774	440
Starvation Cap Reductn	0	59	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.93	0.59	0.13	0.86	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX 5.5: E+P (BUILDOUT) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	278	267	257	777	1086	462	163
v/c Ratio	0.74	0.62	0.59	0.85	0.33	0.22	0.26
Control Delay	46.2	22.5	20.9	36.2	3.9	23.2	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	22.5	20.9	36.2	3.9	23.2	4.9
Queue Length 50th (ft)	148	70	60	224	44	59	0
Queue Length 95th (ft)	#308	#178	155	#323	20	70	39
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	384	439	442	928	3485	2493	715
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.61	0.58	0.84	0.31	0.19	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	290	278	270	1581	596	162	709
v/c Ratio	0.71	0.62	0.53	0.50	0.55	0.53	0.22
Control Delay	40.7	22.1	11.1	16.8	3.7	54.5	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	22.1	11.1	16.8	3.7	54.5	3.7
Queue Length 50th (ft)	157	84	30	172	0	47	51
Queue Length 95th (ft)	228	160	94	230	60	m65	14
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	526	548	606	3182	1075	323	3201
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.51	0.45	0.50	0.55	0.50	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	372	376	746	867	1738	961	424
v/c Ratio	0.79	0.80	0.47	1.32	0.61	0.63	0.55
Control Delay	37.3	37.7	1.0	176.6	14.9	24.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	37.7	1.0	176.6	14.9	24.8	5.4
Queue Length 50th (ft)	162	164	0	~307	198	139	0
Queue Length 95th (ft)	52	256	0	m#315	m186	182	61
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	546	548	1583	657	2845	1532	766
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.69	0.47	1.32	0.61	0.63	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	378	383	519	2197	341	856
v/c Ratio	0.78	0.79	0.94	1.17	0.87	0.31
Control Delay	37.5	38.0	47.1	108.5	53.5	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	38.0	47.1	108.5	53.5	8.7
Queue Length 50th (ft)	167	169	177	~452	91	78
Queue Length 95th (ft)	#302	#307	#367	#549	#168	96
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	497	499	564	1872	392	2805
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.77	0.92	1.17	0.87	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	423	537	411	1424	569	267
v/c Ratio	0.71	0.90	0.91	0.78	0.78	0.50
Control Delay	32.9	43.7	57.1	20.6	41.5	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	43.7	57.1	20.6	41.5	7.6
Queue Length 50th (ft)	205	241	225	324	161	0
Queue Length 95th (ft)	313	#439	#394	413	221	62
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	651	640	493	1972	792	561
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.84	0.83	0.72	0.72	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	404	420	1953	88	890
v/c Ratio	0.86	0.80	1.21	0.61	0.44
Control Delay	48.5	32.0	125.2	59.0	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	32.0	125.2	59.0	11.6
Queue Length 50th (ft)	222	155	~750	49	144
Queue Length 95th (ft)	#380	#308	#891	#113	188
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	538	581	1614	156	2149
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.72	1.21	0.56	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1463	908	1442	183	252	753	755
v/c Ratio	0.70	0.77	0.99	0.07	0.31	1.04	1.01
Control Delay	31.6	6.7	62.0	0.0	19.8	74.5	64.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	6.7	62.0	0.0	19.8	74.5	64.2
Queue Length 50th (ft)	338	0	620	0	120	~676	~591
Queue Length 95th (ft)	394	96	m531	m0	183	#941	#883
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	2084	1184	1450	2787	819	723	751
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.77	0.99	0.07	0.31	1.04	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	557	1198	211	530	1136	369
v/c Ratio	0.22	1.02	0.63	0.16	1.32	0.63
Control Delay	9.2	55.6	60.4	8.9	189.9	14.0
Queue Delay	0.0	10.5	0.0	0.0	0.0	0.0
Total Delay	9.2	66.1	60.4	8.9	189.9	14.0
Queue Length 50th (ft)	36	~658	81	56	~589	48
Queue Length 95th (ft)	m46	m#876	122	72	#724	163
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2496	1177	371	3250	859	583
Starvation Cap Reductn	0	35	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	1.05	0.57	0.16	1.32	0.63

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	206	201	162	503	550	1316	328
v/c Ratio	0.71	0.72	0.41	0.79	0.16	0.45	0.37
Control Delay	48.3	48.2	8.6	39.5	1.2	18.3	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	48.2	8.6	39.5	1.2	18.3	3.5
Queue Length 50th (ft)	114	114	0	147	7	150	0
Queue Length 95th (ft)	190	193	53	200	2	193	50
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	342	330	436	726	3557	2934	892
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.61	0.37	0.69	0.15	0.45	0.37

Intersection Summary

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	223	219	931	510	482	1205
v/c Ratio	0.42	0.75	0.72	0.29	0.49	0.76	0.33
Control Delay	38.6	35.2	32.4	14.9	3.6	53.2	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	35.2	32.4	14.9	3.6	53.2	1.1
Queue Length 50th (ft)	55	72	66	87	0	126	0
Queue Length 95th (ft)	101	151	141	131	60	173	17
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	339	373	383	3179	1032	762	3686
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.60	0.57	0.29	0.49	0.63	0.33

Intersection Summary

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	147	146	585	528	1057	1659	724
v/c Ratio	0.59	0.59	0.37	1.08	0.29	0.63	0.64
Control Delay	45.4	45.1	0.7	91.8	6.2	16.7	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	45.1	0.7	91.8	6.2	16.7	4.5
Queue Length 50th (ft)	83	83	0	~178	70	233	14
Queue Length 95th (ft)	141	140	0	m#320	136	281	77
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	321	322	1583	491	3655	2644	1134
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.45	0.37	1.08	0.29	0.63	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	182	184	767	1400	634	1327
v/c Ratio	0.48	0.49	1.78	0.80	0.78	0.41
Control Delay	35.4	35.5	381.5	30.7	55.6	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	35.5	381.5	30.7	55.6	5.2
Queue Length 50th (ft)	94	96	~620	255	194	70
Queue Length 95th (ft)	163	165	#843	#358	228	82
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	377	378	432	1761	953	3265
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.49	1.78	0.80	0.67	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	444	332	374	940	1235	540
v/c Ratio	1.24	0.73	0.90	0.40	0.94	0.58
Control Delay	164.2	27.0	58.9	7.6	42.5	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	164.2	27.0	58.9	7.6	42.5	4.8
Queue Length 50th (ft)	~321	85	203	113	355	0
Queue Length 95th (ft)	#504	#208	#356	147	#501	65
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	357	454	448	2393	1312	927
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.73	0.83	0.39	0.94	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	247	385	1443	232	1443
v/c Ratio	0.57	0.91	1.12	0.75	0.69
Control Delay	34.1	54.7	93.6	48.8	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	54.7	93.6	48.8	13.9
Queue Length 50th (ft)	121	188	~476	120	260
Queue Length 95th (ft)	212	#384	#651	196	331
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	454	444	1283	407	2300
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.87	1.12	0.57	0.63

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1730	897	1370	149	283	902	905
v/c Ratio	1.16	0.96	1.32	0.05	0.28	1.03	0.98
Control Delay	118.6	33.5	187.4	0.0	12.2	63.6	48.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	4.1	0.0
Total Delay	118.6	33.5	187.4	0.0	12.2	67.7	48.7
Queue Length 50th (ft)	~580	235	~740	0	103	~823	660
Queue Length 95th (ft)	#678	#556	m#506	m0	154	#1101	#1004
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1491	931	1038	2787	1015	874	922
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	12	10	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.96	1.32	0.05	0.28	1.04	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	872	1209	238	541	972	150
v/c Ratio	0.31	1.02	0.65	0.15	1.62	0.42
Control Delay	9.4	47.4	60.3	5.6	318.5	15.3
Queue Delay	0.0	17.5	0.0	0.0	0.0	0.0
Total Delay	9.4	64.9	60.3	5.6	318.5	15.3
Queue Length 50th (ft)	60	~635	91	43	~562	18
Queue Length 95th (ft)	m55	m500	134	56	#694	86
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2838	1185	400	3631	601	354
Starvation Cap Reductn	0	54	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	1.07	0.59	0.15	1.62	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX 5.6: E+P (PHASE 1) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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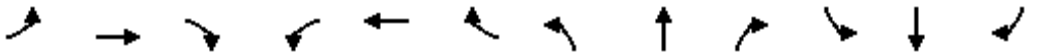
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	323	485	114	378	47	672	103	293	392	229
Future Volume (vph)	323	485	114	378	47	672	103	293	392	229
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8		2		6	6	
Permitted Phases					2		2			6
Detector Phase	7	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	35.4	13.8	30.2	39.8	39.8	39.8	31.0	31.0	31.0
Total Split (%)	15.8%	29.5%	11.5%	25.2%	33.2%	33.2%	33.2%	25.8%	25.8%	25.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	14.1	28.0	8.2	22.1	33.0	33.0	33.0	24.7	24.7	24.7
Actuated g/C Ratio	0.12	0.24	0.07	0.19	0.29	0.29	0.29	0.21	0.21	0.21
v/c Ratio	0.89	0.66	0.54	0.87	0.86	0.71	0.21	0.92	0.55	0.49
Control Delay	76.4	43.6	62.4	54.0	129.3	41.5	1.9	78.8	44.4	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.4	43.6	62.4	54.0	129.3	41.5	1.9	78.8	44.4	8.5
LOS	E	D	E	D	F	D	A	E	D	A
Approach Delay		56.1		55.4		41.6			46.5	
Approach LOS		E		E		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 49.6	Intersection LOS: D
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	485	39	114	378	185	47	672	103	293	392	229
Future Volume (veh/h)	323	485	39	114	378	185	47	672	103	293	392	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	344	516	25	121	402	133	50	715	67	312	417	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	925	45	175	521	170	397	883	370	350	777	324
Arrive On Green	0.13	0.28	0.28	0.05	0.21	0.21	0.25	0.25	0.25	0.22	0.22	0.22
Sat Flow, veh/h	3188	3344	162	3188	2527	823	1594	3544	1484	1594	3544	1477
Grp Volume(v), veh/h	344	273	268	121	280	255	50	715	67	312	417	68
Grp Sat Flow(s),veh/h/ln	1594	1772	1734	1594	1772	1579	1594	1772	1484	1594	1772	1477
Q Serve(g_s), s	11.3	14.0	14.1	4.0	15.9	16.3	2.6	20.2	3.8	20.3	11.1	4.0
Cycle Q Clear(g_c), s	11.3	14.0	14.1	4.0	15.9	16.3	2.6	20.2	3.8	20.3	11.1	4.0
Prop In Lane	1.00		0.09	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	490	480	175	365	326	397	883	370	350	777	324
V/C Ratio(X)	0.86	0.56	0.56	0.69	0.77	0.78	0.13	0.81	0.18	0.89	0.54	0.21
Avail Cap(c_a), veh/h	430	490	480	275	399	355	525	1166	488	377	837	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	33.0	33.0	49.5	39.9	40.1	31.0	37.6	31.5	40.4	36.8	34.1
Incr Delay (d2), s/veh	14.3	1.4	1.5	1.8	8.0	10.1	0.1	3.3	0.2	21.6	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	5.9	5.8	1.6	7.4	6.9	1.0	9.1	1.3	9.7	4.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	34.4	34.5	51.3	47.9	50.2	31.2	40.9	31.7	62.0	37.4	34.4
LnGrp LOS	E	C	C	D	D	D	C	D	C	E	D	C
Approach Vol, veh/h		885			656			832			797	
Approach Delay, s/veh		44.4			49.4			39.6			46.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.3	10.5	35.7		29.2	18.0	28.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 35	9.2	29.2		25.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		22.2	6.0	16.1		22.3	13.3	18.3				
Green Ext Time (p_c), s		4.3	0.0	2.3		1.1	0.1	1.4				

Intersection Summary												
HCM 6th Ctrl Delay			44.8									
HCM 6th LOS			D									

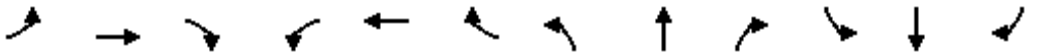
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	65	27	81	45	164	771	434	
Future Volume (vph)	65	27	81	45	164	771	434	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	19.0	32.2	9.6	22.8	33.0	68.6	45.2	9.6
Total Split (%)	15.8%	26.8%	8.0%	19.0%	27.5%	57.2%	37.7%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	11.3	14.3	7.3	11.7	12.9	35.2	18.5	
Actuated g/C Ratio	0.16	0.21	0.11	0.17	0.19	0.51	0.27	
v/c Ratio	0.27	0.28	0.47	0.15	0.59	0.62	0.62	
Control Delay	34.9	12.3	48.1	31.5	37.5	13.6	26.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.9	12.3	48.1	31.5	37.5	13.6	26.2	
LOS	C	B	D	C	D	B	C	
Approach Delay		20.8		42.2		16.9	26.2	
Approach LOS		C		D		B	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 68.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 59.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	27	80	81	45	0	164	771	250	0	434	86
Future Volume (veh/h)	65	27	80	81	45	0	164	771	250	0	434	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	69	29	85	88	49	0	174	820	272	0	462	91
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	73	214	119	341	0	216	1193	396	3	703	138
Arrive On Green	0.06	0.17	0.17	0.07	0.18	0.00	0.14	0.47	0.47	0.00	0.25	0.25
Sat Flow, veh/h	1594	419	1230	1781	1870	0	1594	2548	844	1781	2807	549
Grp Volume(v), veh/h	69	0	114	88	49	0	174	570	522	0	276	277
Grp Sat Flow(s),veh/h/ln	1594	0	1649	1781	1870	0	1594	1772	1620	1781	1683	1673
Q Serve(g_s), s	2.4	0.0	3.4	2.7	1.2	0.0	5.9	14.1	14.1	0.0	8.2	8.3
Cycle Q Clear(g_c), s	2.4	0.0	3.4	2.7	1.2	0.0	5.9	14.1	14.1	0.0	8.2	8.3
Prop In Lane	1.00		0.75	1.00		0.00	1.00		0.52	1.00		0.33
Lane Grp Cap(c), veh/h	94	0	288	119	341	0	216	830	759	3	422	419
V/C Ratio(X)	0.74	0.00	0.40	0.74	0.14	0.00	0.81	0.69	0.69	0.00	0.65	0.66
Avail Cap(c_a), veh/h	411	0	792	160	570	0	812	1995	1824	160	1222	1215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	0.0	20.4	25.6	19.2	0.0	23.4	11.6	11.6	0.0	18.7	18.8
Incr Delay (d2), s/veh	4.1	0.0	0.9	7.1	0.2	0.0	2.7	1.0	1.1	0.0	1.7	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.2	1.2	0.5	0.0	2.1	4.2	3.8	0.0	3.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	0.0	21.3	32.7	19.3	0.0	26.1	12.6	12.7	0.0	20.5	20.6
LnGrp LOS	C	A	C	C	B	A	C	B	B	A	C	C
Approach Vol, veh/h		183			137			1266			553	
Approach Delay, s/veh		24.6			27.9			14.5			20.5	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	31.9	8.3	15.5	12.2	19.8	7.9	16.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	62.8	5.0	* 27	28.4	* 41	14.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	16.1	4.7	5.4	7.9	10.3	4.4	3.2
Green Ext Time (p_c), s	0.0	8.3	0.0	0.5	0.2	3.7	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

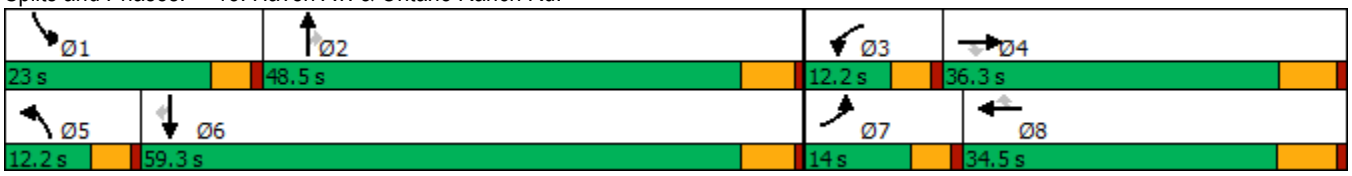
Notes

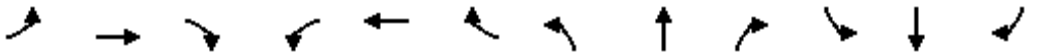
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	800	17	75	797	366	36	434	118	366	240	201
Future Volume (vph)	172	800	17	75	797	366	36	434	118	366	240	201
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	36.3	36.3	12.2	34.5	34.5	12.2	48.5	48.5	23.0	59.3	59.3
Total Split (%)	11.7%	30.3%	30.3%	10.2%	28.8%	28.8%	10.2%	40.4%	40.4%	19.2%	49.4%	49.4%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.9	33.3	33.3	6.7	28.5	28.5	6.5	21.0	21.0	15.7	34.7	34.7
Actuated g/C Ratio	0.09	0.35	0.35	0.07	0.30	0.30	0.07	0.22	0.22	0.16	0.36	0.36
v/c Ratio	0.63	0.47	0.03	0.39	0.41	0.56	0.36	0.60	0.28	0.76	0.20	0.32
Control Delay	54.7	28.4	0.1	52.0	29.5	8.2	56.9	36.7	4.0	50.1	22.0	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	28.4	0.1	52.0	29.5	8.2	56.9	36.7	4.0	50.1	22.0	4.3
LOS	D	C	A	D	C	A	E	D	A	D	C	A
Approach Delay		32.5			24.6			31.4			30.4	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 66.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	800	17	75	797	366	36	434	118	366	240	201
Future Volume (veh/h)	172	800	17	75	797	366	36	434	118	366	240	201
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	185	860	7	81	857	211	39	467	68	394	258	125
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1875	529	148	2286	484	56	716	303	472	1117	471
Arrive On Green	0.08	0.35	0.35	0.05	0.32	0.32	0.04	0.20	0.20	0.15	0.32	0.32
Sat Flow, veh/h	3188	5316	1500	3000	7088	1502	1594	3544	1499	3188	3544	1494
Grp Volume(v), veh/h	185	860	7	81	857	211	39	467	68	394	258	125
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1772	1499	1594	1772	1494
Q Serve(g_s), s	4.9	10.8	0.3	2.3	8.1	9.6	2.1	10.5	3.3	10.4	4.7	5.4
Cycle Q Clear(g_c), s	4.9	10.8	0.3	2.3	8.1	9.6	2.1	10.5	3.3	10.4	4.7	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	1875	529	148	2286	484	56	716	303	472	1117	471
V/C Ratio(X)	0.73	0.46	0.01	0.55	0.37	0.44	0.70	0.65	0.22	0.83	0.23	0.27
Avail Cap(c_a), veh/h	345	1875	529	263	2286	484	140	1743	737	676	2184	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	21.7	18.3	40.3	22.7	23.2	41.4	31.8	28.9	36.0	22.0	22.2
Incr Delay (d2), s/veh	2.7	0.8	0.0	1.2	0.5	2.8	5.7	1.0	0.4	4.3	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.2	0.1	0.8	3.1	0.4	0.9	4.3	1.1	4.1	1.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	22.5	18.3	41.5	23.1	26.0	47.1	32.8	29.3	40.2	22.1	22.5
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1052			1149			574			777	
Approach Delay, s/veh		25.9			25.0			33.4			31.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	23.3	8.9	37.1	7.6	33.2	11.5	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	18.4	42.7	7.6	* 30	7.6	53.5	9.4	28.0
Max Q Clear Time (g_c+I1), s	12.4	12.5	4.3	12.8	4.1	7.4	6.9	11.6
Green Ext Time (p_c), s	0.4	3.2	0.0	5.0	0.0	2.0	0.1	5.4

Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

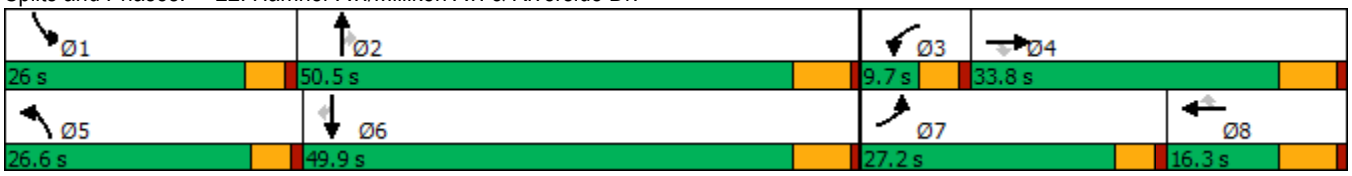
Notes

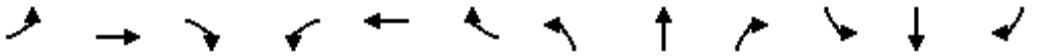
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	261	148	144	28	113	243	144	1016	58	244	532	185
Future Volume (vph)	261	148	144	28	113	243	144	1016	58	244	532	185
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	27.2	33.8	33.8	9.7	16.3	16.3	26.6	50.5	50.5	26.0	49.9	49.9
Total Split (%)	22.7%	28.2%	28.2%	8.1%	13.6%	13.6%	22.2%	42.1%	42.1%	21.7%	41.6%	41.6%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	14.1	23.7	23.7	5.2	10.3	10.3	9.8	39.2	39.2	13.4	42.8	42.8
Actuated g/C Ratio	0.14	0.24	0.24	0.05	0.10	0.10	0.10	0.40	0.40	0.14	0.43	0.43
v/c Ratio	0.67	0.40	0.34	0.39	0.71	0.69	0.53	0.84	0.10	0.65	0.40	0.28
Control Delay	49.2	38.9	8.0	64.3	68.3	15.6	50.7	33.9	0.3	49.5	20.5	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	38.9	8.0	64.3	68.3	15.6	50.7	33.9	0.3	49.5	20.5	3.6
LOS	D	D	A	E	E	B	D	C	A	D	C	A
Approach Delay		35.7			34.7			34.3			24.6	
Approach LOS		D			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 31.6	Intersection LOS: C
Intersection Capacity Utilization 72.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	148	144	28	113	243	144	1016	58	244	532	185
Future Volume (veh/h)	261	148	144	28	113	243	144	1016	58	244	532	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	300	170	86	32	130	141	166	1168	38	280	611	110
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	362	307	49	206	174	240	1420	602	360	1554	659
Arrive On Green	0.12	0.20	0.20	0.03	0.12	0.12	0.08	0.40	0.40	0.11	0.44	0.44
Sat Flow, veh/h	3188	1772	1502	1594	1772	1502	3188	3544	1502	3188	3544	1502
Grp Volume(v), veh/h	300	170	86	32	130	141	166	1168	38	280	611	110
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1594	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	7.9	7.3	4.2	1.7	6.0	7.9	4.4	25.4	1.3	7.4	10.1	3.8
Cycle Q Clear(g_c), s	7.9	7.3	4.2	1.7	6.0	7.9	4.4	25.4	1.3	7.4	10.1	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	362	307	49	206	174	240	1420	602	360	1554	659
V/C Ratio(X)	0.79	0.47	0.28	0.65	0.63	0.81	0.69	0.82	0.06	0.78	0.39	0.17
Avail Cap(c_a), veh/h	836	568	481	94	208	176	814	1822	772	792	1797	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	30.2	28.9	41.3	36.3	37.2	38.9	23.1	15.9	37.2	16.4	14.7
Incr Delay (d2), s/veh	1.4	0.9	0.5	5.2	6.0	23.6	1.3	2.5	0.0	1.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.0	1.4	0.7	2.8	3.8	1.6	9.7	0.4	2.7	3.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	31.1	29.4	46.4	42.3	60.8	40.2	25.6	15.9	38.6	16.6	14.8
LnGrp LOS	D	C	C	D	D	E	D	C	B	D	B	B
Approach Vol, veh/h		556			303			1372			1001	
Approach Delay, s/veh		34.7			51.3			27.1			22.5	
Approach LOS		C			D			C			C	

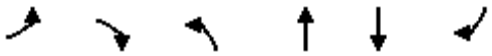
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	40.7	7.3	23.8	11.1	44.0	14.9	16.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	44.3	5.1	27.6	22.0	43.7	22.6	10.1
Max Q Clear Time (g_c+I1), s	9.4	27.4	3.7	9.3	6.4	12.1	9.9	9.9
Green Ext Time (p_c), s	0.4	7.2	0.0	1.0	0.2	4.3	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	105	28	1131	615
Future Volume (vph)	105	28	1131	615
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	35.0	85.0	85.0	85.0
Total Split (%)	29.2%	70.8%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	11.9		33.4	33.4
Actuated g/C Ratio	0.22		0.61	0.61
v/c Ratio	0.53		0.62	0.35
Control Delay	21.8		8.6	5.9
Queue Delay	0.0		0.0	0.0
Total Delay	21.8		8.6	5.9
LOS	C		A	A
Approach Delay	21.8		8.6	5.9
Approach LOS	C		A	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 54.5	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 8.9	Intersection LOS: A
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	78	28	1131	615	48
Future Volume (veh/h)	105	78	28	1131	615	48
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	119	89	32	1285	699	55
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	159	119	122	2062	1977	155
Arrive On Green	0.17	0.17	0.59	0.59	0.59	0.59
Sat Flow, veh/h	964	721	34	3482	3431	262
Grp Volume(v), veh/h	209	0	682	635	372	382
Grp Sat Flow(s),veh/h/ln	1692	0	1814	1702	1777	1823
Q Serve(g_s), s	4.4	0.0	0.0	9.0	4.0	4.0
Cycle Q Clear(g_c), s	4.4	0.0	8.7	9.0	4.0	4.0
Prop In Lane	0.57	0.43	0.05			0.14
Lane Grp Cap(c), veh/h	280	0	1176	1008	1052	1080
V/C Ratio(X)	0.75	0.00	0.58	0.63	0.35	0.35
Avail Cap(c_a), veh/h	1390	0	3914	3691	3853	3953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	4.9	4.9	3.9	3.9
Incr Delay (d2), s/veh	4.0	0.0	0.5	0.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.6	0.6	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.7	0.0	5.3	5.6	4.1	4.1
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	209			1317	754	
Approach Delay, s/veh	18.7			5.4	4.1	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.5		10.6		26.5
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		80.5		30.5		80.5
Max Q Clear Time (g_c+I1), s		11.0		6.4		6.0
Green Ext Time (p_c), s		11.0		0.6		4.6

Intersection Summary	
HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

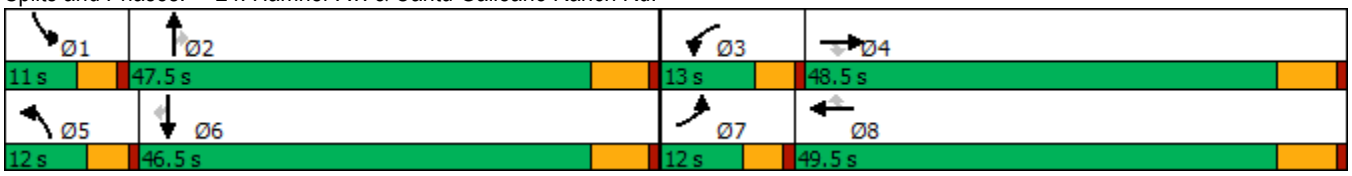
Notes

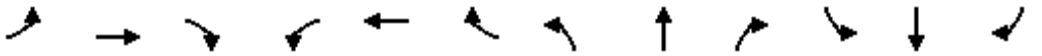
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	992	130	268	1113	281	233	599	363	212	223	199
Future Volume (vph)	235	992	130	268	1113	281	233	599	363	212	223	199
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.0	48.5	48.5	13.0	49.5	49.5	12.0	47.5	47.5	11.0	46.5	46.5
Total Split (%)	10.0%	40.4%	40.4%	10.8%	41.3%	41.3%	10.0%	39.6%	39.6%	9.2%	38.8%	38.8%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.8	23.7	23.7	8.8	24.7	24.7	7.8	21.6	21.6	6.7	20.6	20.6
Actuated g/C Ratio	0.09	0.28	0.28	0.11	0.29	0.29	0.09	0.26	0.26	0.08	0.25	0.25
v/c Ratio	0.75	0.49	0.25	0.75	0.53	0.48	0.74	0.43	0.72	0.78	0.13	0.22
Control Delay	55.9	25.9	5.9	53.6	25.7	11.2	55.5	26.7	24.4	61.3	24.7	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	25.9	5.9	53.6	25.7	11.2	55.5	26.7	24.4	61.3	24.7	4.5
LOS	E	C	A	D	C	B	E	C	C	E	C	A
Approach Delay		29.2			27.7			31.6			30.6	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 83.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	992	130	268	1113	281	233	599	363	212	223	199
Future Volume (veh/h)	235	992	130	268	1113	281	233	599	363	212	223	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	245	1033	83	279	1159	158	243	624	217	221	232	113
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	2075	440	373	2149	455	336	1236	349	312	1598	677
Arrive On Green	0.09	0.28	0.28	0.10	0.29	0.29	0.09	0.22	0.22	0.09	0.21	0.21
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	245	1033	83	279	1159	158	243	624	217	221	232	113
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.7	8.2	2.8	5.4	9.2	5.6	4.7	6.9	8.7	4.3	1.8	2.1
Cycle Q Clear(g_c), s	4.7	8.2	2.8	5.4	9.2	5.6	4.7	6.9	8.7	4.3	1.8	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	2075	440	373	2149	455	336	1236	349	312	1598	677
V/C Ratio(X)	0.73	0.50	0.19	0.75	0.54	0.35	0.72	0.50	0.62	0.71	0.15	0.17
Avail Cap(c_a), veh/h	373	4448	942	424	4553	965	373	3280	927	323	4268	1808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	21.4	19.5	30.7	21.2	19.9	31.1	24.2	24.9	31.4	22.5	22.7
Incr Delay (d2), s/veh	5.0	0.2	0.2	5.1	0.2	0.5	4.8	0.3	1.8	5.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.1	0.9	2.3	3.4	1.8	2.0	2.7	3.0	1.9	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	21.6	19.7	35.8	21.4	20.4	35.9	24.5	26.7	37.0	22.6	22.8
LnGrp LOS	D	C	B	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1361			1596			1084			566	
Approach Delay, s/veh		24.1			23.8			27.5			28.3	
Approach LOS		C			C			C			C	

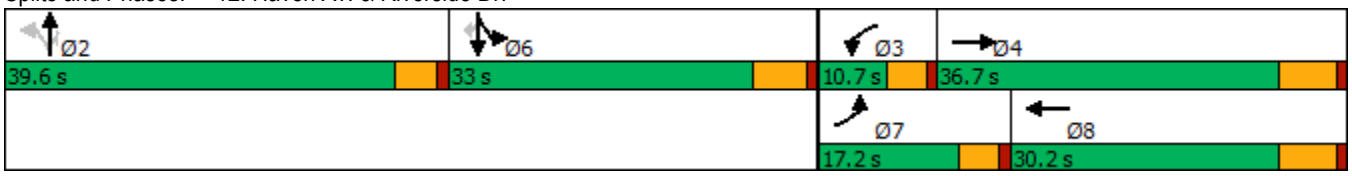
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	21.8	12.0	26.1	11.3	21.3	11.3	26.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	7.4	40.3	7.4	43.0
Max Q Clear Time (g_c+I1), s	6.3	10.7	7.4	10.2	6.7	4.1	6.7	11.2
Green Ext Time (p_c), s	0.0	4.8	0.1	7.5	0.0	1.8	0.0	9.1

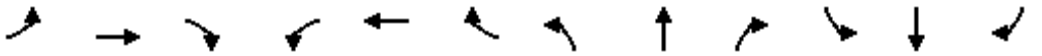
Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	291	347	65	320	45	561	64	135	722	334
Future Volume (vph)	291	347	65	320	45	561	64	135	722	334
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8		2		6	6	
Permitted Phases					2		2			6
Detector Phase	7	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	23.7	24.8	24.8	24.8
Total Split (s)	17.2	36.7	10.7	30.2	39.6	39.6	39.6	33.0	33.0	33.0
Total Split (%)	14.3%	30.6%	8.9%	25.2%	33.0%	33.0%	33.0%	27.5%	27.5%	27.5%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	12.4	27.7	5.9	18.7	31.4	31.4	31.4	26.6	26.6	26.6
Actuated g/C Ratio	0.11	0.25	0.05	0.17	0.28	0.28	0.28	0.24	0.24	0.24
v/c Ratio	0.85	0.50	0.40	0.75	0.78	0.58	0.12	0.37	0.89	0.56
Control Delay	72.5	37.7	61.5	48.5	108.7	36.9	0.5	40.7	55.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	37.7	61.5	48.5	108.7	36.9	0.5	40.7	55.6	7.9
LOS	E	D	E	D	F	D	A	D	E	A
Approach Delay		51.9		50.2		38.3			40.6	
Approach LOS		D		D		D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 44.3	Intersection LOS: D
Intersection Capacity Utilization 71.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	347	74	65	320	114	45	561	64	135	722	334
Future Volume (veh/h)	291	347	74	65	320	114	45	561	64	135	722	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	303	361	46	68	333	67	47	584	36	141	752	122
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	372	728	92	145	474	94	353	786	333	411	914	387
Arrive On Green	0.12	0.24	0.24	0.05	0.17	0.17	0.22	0.22	0.22	0.26	0.26	0.26
Sat Flow, veh/h	3188	3076	389	3188	2858	567	1594	3544	1502	1594	3544	1498
Grp Volume(v), veh/h	303	207	200	68	205	195	47	584	36	141	752	122
Grp Sat Flow(s),veh/h/ln	1594	1772	1693	1594	1772	1653	1594	1772	1502	1594	1772	1498
Q Serve(g_s), s	8.3	9.0	9.2	1.9	9.8	10.0	2.1	13.7	1.7	6.4	17.9	5.9
Cycle Q Clear(g_c), s	8.3	9.0	9.2	1.9	9.8	10.0	2.1	13.7	1.7	6.4	17.9	5.9
Prop In Lane	1.00		0.23	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	372	420	401	145	294	274	353	786	333	411	914	387
V/C Ratio(X)	0.81	0.49	0.50	0.47	0.70	0.71	0.13	0.74	0.11	0.34	0.82	0.32
Avail Cap(c_a), veh/h	449	604	577	217	475	443	621	1382	585	484	1077	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	29.5	29.6	41.7	35.2	35.3	27.9	32.5	27.8	27.0	31.3	26.8
Incr Delay (d2), s/veh	7.8	0.9	1.0	0.9	3.0	3.4	0.2	1.4	0.1	0.5	4.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	3.7	3.6	0.7	4.2	4.0	0.8	5.9	0.6	2.4	7.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	30.4	30.5	42.5	38.2	38.8	28.1	33.9	27.9	27.5	35.8	27.3
LnGrp LOS	D	C	C	D	D	D	C	C	C	C	D	C
Approach Vol, veh/h		710			468			667			1015	
Approach Delay, s/veh		37.3			39.1			33.2			33.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.5	8.7	27.4		28.9	15.0	21.0				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 35	6.1	30.5		27.2	12.6	24.0				
Max Q Clear Time (g_c+I1), s		15.7	3.9	11.2		19.9	10.3	12.0				
Green Ext Time (p_c), s		4.1	0.0	1.9		3.2	0.1	1.6				

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

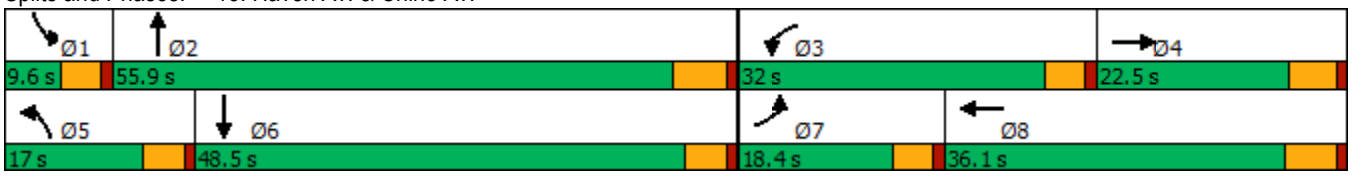
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	81	46	248	40	87	588	830	
Future Volume (vph)	81	46	248	40	87	588	830	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	18.4	22.5	32.0	36.1	17.0	55.9	48.5	9.6
Total Split (%)	15.3%	18.8%	26.7%	30.1%	14.2%	46.6%	40.4%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	14.9	12.4	19.2	23.1	9.7	44.2	34.1	
Actuated g/C Ratio	0.16	0.13	0.21	0.25	0.10	0.48	0.37	
v/c Ratio	0.33	0.51	0.74	0.09	0.56	0.47	0.76	
Control Delay	46.9	32.4	50.3	34.2	59.4	16.5	31.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	46.9	32.4	50.3	34.2	59.4	16.5	31.8	
LOS	D	C	D	C	E	B	C	
Approach Delay		37.8		48.1		21.0	31.8	
Approach LOS		D		D		C	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	46	89	248	40	0	87	588	145	0	830	52
Future Volume (veh/h)	81	46	89	248	40	0	87	588	145	0	830	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	85	50	52	270	43	0	92	619	158	0	874	55
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	109	113	315	448	0	114	1317	336	2	1131	71
Arrive On Green	0.07	0.13	0.13	0.18	0.24	0.00	0.07	0.48	0.48	0.00	0.35	0.35
Sat Flow, veh/h	1594	840	873	1781	1870	0	1594	2725	694	1781	3216	202
Grp Volume(v), veh/h	85	0	102	270	43	0	92	402	375	0	457	472
Grp Sat Flow(s),veh/h/ln	1594	0	1713	1781	1870	0	1594	1772	1647	1781	1683	1735
Q Serve(g_s), s	4.0	0.0	4.2	11.3	1.4	0.0	4.4	11.7	11.7	0.0	18.6	18.6
Cycle Q Clear(g_c), s	4.0	0.0	4.2	11.3	1.4	0.0	4.4	11.7	11.7	0.0	18.6	18.6
Prop In Lane	1.00		0.51	1.00		0.00	1.00		0.42	1.00		0.12
Lane Grp Cap(c), veh/h	106	0	221	315	448	0	114	856	796	2	592	610
V/C Ratio(X)	0.80	0.00	0.46	0.86	0.10	0.00	0.80	0.47	0.47	0.00	0.77	0.77
Avail Cap(c_a), veh/h	286	0	381	635	738	0	257	1156	1074	116	960	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	31.0	30.7	22.7	0.0	35.1	13.3	13.3	0.0	22.2	22.2
Incr Delay (d2), s/veh	5.3	0.0	1.5	2.7	0.1	0.0	4.9	0.4	0.4	0.0	2.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.7	4.7	0.6	0.0	1.7	4.0	3.7	0.0	7.2	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	0.0	32.5	33.4	22.8	0.0	40.1	13.7	13.7	0.0	24.3	24.3
LnGrp LOS	D	A	C	C	C	A	D	B	B	A	C	C
Approach Vol, veh/h		187			313			869			929	
Approach Delay, s/veh		36.2			31.9			16.5			24.3	
Approach LOS		D			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	42.9	18.2	15.7	10.1	32.8	9.7	24.2
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	50.1	27.4	* 17	12.4	* 44	13.8	30.3
Max Q Clear Time (g_c+I1), s	0.0	13.7	13.3	6.2	6.4	20.6	6.0	3.4
Green Ext Time (p_c), s	0.0	5.0	0.3	0.3	0.0	6.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

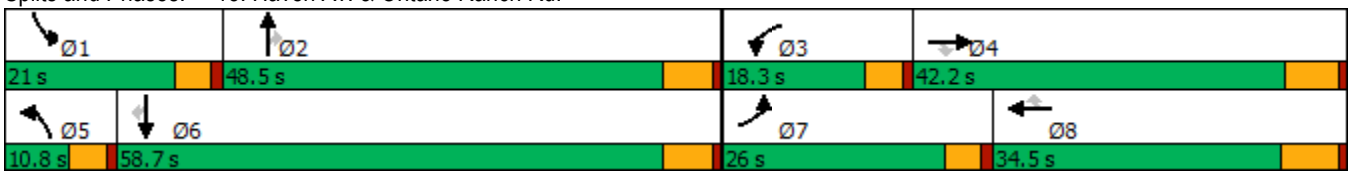
Notes

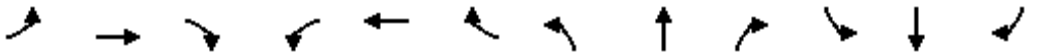
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	1075	35	227	857	360	18	267	70	414	451	138
Future Volume (vph)	291	1075	35	227	857	360	18	267	70	414	451	138
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	26.0	42.2	42.2	18.3	34.5	34.5	10.8	48.5	48.5	21.0	58.7	58.7
Total Split (%)	20.0%	32.5%	32.5%	14.1%	26.5%	26.5%	8.3%	37.3%	37.3%	16.2%	45.2%	45.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	14.3	36.5	36.5	12.0	33.9	33.9	5.6	17.3	17.3	16.6	34.7	34.7
Actuated g/C Ratio	0.14	0.35	0.35	0.12	0.33	0.33	0.05	0.17	0.17	0.16	0.33	0.33
v/c Ratio	0.71	0.62	0.06	0.70	0.40	0.51	0.22	0.48	0.18	0.87	0.41	0.25
Control Delay	53.3	31.4	0.2	57.3	30.0	6.4	58.2	41.1	1.0	62.4	28.4	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	31.4	0.2	57.3	30.0	6.4	58.2	41.1	1.0	62.4	28.4	5.4
LOS	D	C	A	E	C	A	E	D	A	E	C	A
Approach Delay		35.2			28.4			34.1			39.3	
Approach LOS		D			C			C			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 104	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 33.7	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	1075	35	227	857	360	18	267	70	414	451	138
Future Volume (veh/h)	291	1075	35	227	857	360	18	267	70	414	451	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	310	1144	20	241	912	192	19	284	24	440	480	78
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	2081	588	303	2643	560	33	412	175	501	896	380
Arrive On Green	0.18	0.59	0.59	0.15	0.56	0.56	0.03	0.17	0.17	0.24	0.38	0.38
Sat Flow, veh/h	3188	5316	1502	3000	7088	1502	1594	3544	1502	3188	3544	1502
Grp Volume(v), veh/h	310	1144	20	241	912	192	19	284	24	440	480	78
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1500	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	8.6	12.1	0.5	7.1	6.5	6.4	1.1	6.9	1.2	12.2	9.7	3.2
Cycle Q Clear(g_c), s	8.6	12.1	0.5	7.1	6.5	6.4	1.1	6.9	1.2	12.2	9.7	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	2081	588	303	2643	560	33	412	175	501	896	380
V/C Ratio(X)	0.81	0.55	0.03	0.80	0.35	0.34	0.57	0.69	0.14	0.88	0.54	0.21
Avail Cap(c_a), veh/h	742	2081	588	447	2643	560	107	1646	697	569	2039	864
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	14.0	11.7	38.1	14.1	14.1	44.1	36.4	34.0	34.3	24.3	22.3
Incr Delay (d2), s/veh	1.6	1.1	0.1	3.4	0.4	1.7	5.6	2.1	0.4	12.3	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.8	0.2	2.5	2.2	2.0	0.5	2.8	0.4	4.9	3.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	15.1	11.8	41.5	14.5	15.8	49.7	38.4	34.4	46.6	24.8	22.6
LnGrp LOS	D	B	B	D	B	B	D	D	C	D	C	C
Approach Vol, veh/h		1474			1345			327			998	
Approach Delay, s/veh		19.9			19.5			38.8			34.2	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.1	16.5	13.9	42.5	6.5	29.0	15.6	40.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	16.4	42.7	13.7	* 36	6.2	52.9	21.4	28.0
Max Q Clear Time (g_c+I1), s	14.2	8.9	9.1	14.1	3.1	11.7	10.6	8.5
Green Ext Time (p_c), s	0.2	1.8	0.2	7.6	0.0	3.4	0.4	6.1

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

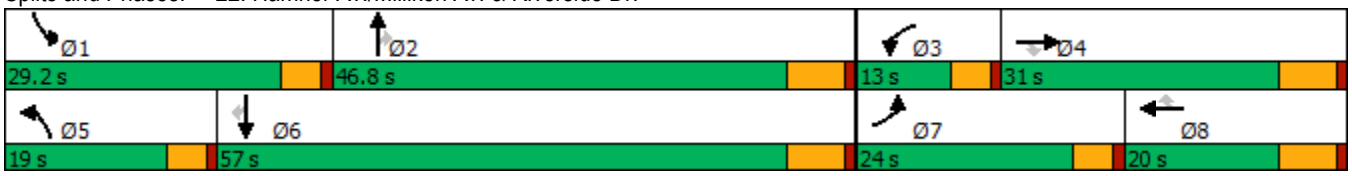
Notes

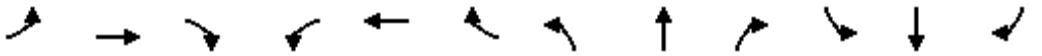
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	146	148	80	169	160	149	703	49	212	920	299
Future Volume (vph)	208	146	148	80	169	160	149	703	49	212	920	299
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	24.0	31.0	31.0	13.0	20.0	20.0	19.0	46.8	46.8	29.2	57.0	57.0
Total Split (%)	20.0%	25.8%	25.8%	10.8%	16.7%	16.7%	15.8%	39.0%	39.0%	24.3%	47.5%	47.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	10.9	16.3	16.3	8.1	13.5	13.5	9.2	31.5	31.5	11.1	33.5	33.5
Actuated g/C Ratio	0.12	0.18	0.18	0.09	0.15	0.15	0.10	0.35	0.35	0.12	0.38	0.38
v/c Ratio	0.56	0.48	0.39	0.59	0.67	0.43	0.48	0.59	0.08	0.57	0.73	0.42
Control Delay	45.2	41.0	9.5	61.5	53.2	7.7	46.0	26.0	0.2	45.0	27.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	41.0	9.5	61.5	53.2	7.7	46.0	26.0	0.2	45.0	27.8	4.1
LOS	D	D	A	E	D	A	D	C	A	D	C	A
Approach Delay		33.4			37.0			27.9			25.4	
Approach LOS		C			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 28.8	Intersection LOS: C
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	146	148	80	169	160	149	703	49	212	920	299
Future Volume (veh/h)	208	146	148	80	169	160	149	703	49	212	920	299
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	219	154	82	84	178	89	157	740	31	223	968	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	312	262	104	254	215	239	1239	524	318	1326	554
Arrive On Green	0.10	0.18	0.18	0.07	0.14	0.14	0.08	0.35	0.35	0.10	0.37	0.37
Sat Flow, veh/h	3188	1772	1486	1594	1772	1502	3188	3544	1500	3188	3544	1482
Grp Volume(v), veh/h	219	154	82	84	178	89	157	740	31	223	968	168
Grp Sat Flow(s),veh/h/ln	1594	1772	1486	1594	1772	1502	1594	1772	1500	1594	1772	1482
Q Serve(g_s), s	4.6	5.5	3.4	3.6	6.7	3.8	3.3	12.0	1.0	4.7	16.4	5.6
Cycle Q Clear(g_c), s	4.6	5.5	3.4	3.6	6.7	3.8	3.3	12.0	1.0	4.7	16.4	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	312	262	104	254	215	239	1239	524	318	1326	554
V/C Ratio(X)	0.70	0.49	0.31	0.81	0.70	0.41	0.66	0.60	0.06	0.70	0.73	0.30
Avail Cap(c_a), veh/h	886	630	528	192	350	297	658	2062	873	1124	2580	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	25.9	25.1	32.2	28.5	27.2	31.4	18.7	15.1	30.4	18.8	15.4
Incr Delay (d2), s/veh	1.1	1.2	0.7	5.6	3.7	1.3	1.1	0.5	0.0	1.1	0.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.2	1.1	1.4	2.8	1.3	1.2	4.2	0.3	1.7	5.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	27.1	25.7	37.8	32.2	28.5	32.5	19.1	15.1	31.5	19.6	15.7
LnGrp LOS	C	C	C	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		455			351			928			1359	
Approach Delay, s/veh		29.0			32.6			21.3			21.1	
Approach LOS		C			C			C			C	

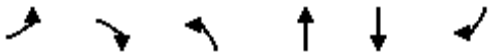
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	30.6	9.1	18.5	9.8	32.3	11.4	16.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	24.6	40.6	8.4	24.8	14.4	50.8	19.4	13.8
Max Q Clear Time (g_c+I1), s	6.7	14.0	5.6	7.5	5.3	18.4	6.6	8.7
Green Ext Time (p_c), s	0.3	4.9	0.0	0.8	0.2	7.7	0.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	73	73	811	1028
Future Volume (vph)	73	73	811	1028
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.8	23.8	23.8	23.8
Total Split (s)	30.0	90.0	90.0	90.0
Total Split (%)	25.0%	75.0%	75.0%	75.0%
Yellow Time (s)	4.8	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	5.8		5.8	5.8
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	10.1		34.4	34.4
Actuated g/C Ratio	0.18		0.61	0.61
v/c Ratio	0.40		0.57	0.58
Control Delay	20.8		8.8	8.4
Queue Delay	0.0		0.0	0.0
Total Delay	20.8		8.8	8.4
LOS	C		A	A
Approach Delay	20.8		8.8	8.4
Approach LOS	C		A	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 56.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 9.2	Intersection LOS: A
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	73	46	73	811	1028	103
Future Volume (veh/h)	73	46	73	811	1028	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	51	80	891	1130	113
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	106	68	192	1692	1845	184
Arrive On Green	0.10	0.10	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1031	657	125	2992	3356	326
Grp Volume(v), veh/h	132	0	453	518	615	628
Grp Sat Flow(s),veh/h/ln	1701	0	1415	1702	1777	1812
Q Serve(g_s), s	2.6	0.0	0.4	6.7	8.0	8.1
Cycle Q Clear(g_c), s	2.6	0.0	8.4	6.7	8.0	8.1
Prop In Lane	0.61	0.39	0.18			0.18
Lane Grp Cap(c), veh/h	176	0	921	962	1005	1024
V/C Ratio(X)	0.75	0.00	0.49	0.54	0.61	0.61
Avail Cap(c_a), veh/h	1175	0	3125	4093	4273	4357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	4.4	4.8	5.1	5.1
Incr Delay (d2), s/veh	6.3	0.0	0.4	0.5	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.4	0.5	0.6	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.6	0.0	4.8	5.2	5.7	5.7
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	132			971	1243	
Approach Delay, s/veh	21.6			5.0	5.7	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		25.6		9.4		25.6
Change Period (Y+Rc), s		5.8		5.8		5.8
Max Green Setting (Gmax), s		84.2		24.2		84.2
Max Q Clear Time (g_c+I1), s		10.4		4.6		10.1
Green Ext Time (p_c), s		8.1		0.3		9.7

Intersection Summary		
HCM 6th Ctrl Delay		6.3
HCM 6th LOS		A

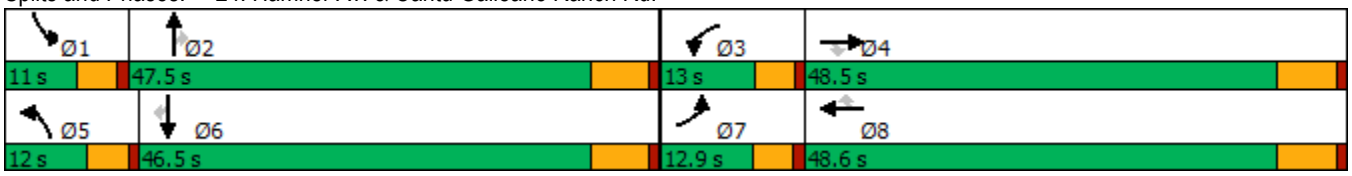
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	1135	315	424	1148	198	356	397	328	286	523	187
Future Volume (vph)	224	1135	315	424	1148	198	356	397	328	286	523	187
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.9	48.5	48.5	13.0	48.6	48.6	12.0	47.5	47.5	11.0	46.5	46.5
Total Split (%)	10.8%	40.4%	40.4%	10.8%	40.5%	40.5%	10.0%	39.6%	39.6%	9.2%	38.8%	38.8%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.7	24.8	24.8	8.8	24.9	24.9	7.8	18.6	18.6	6.7	17.6	17.6
Actuated g/C Ratio	0.11	0.30	0.30	0.11	0.30	0.30	0.10	0.23	0.23	0.08	0.21	0.21
v/c Ratio	0.62	0.53	0.52	1.16	0.53	0.33	1.11	0.33	0.70	1.03	0.34	0.23
Control Delay	47.0	24.8	11.7	133.5	24.8	5.2	119.0	26.8	22.7	101.0	27.4	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.0	24.8	11.7	133.5	24.8	5.2	119.0	26.8	22.7	101.0	27.4	4.8
LOS	D	C	B	F	C	A	F	C	C	F	C	A
Approach Delay		25.3			48.7			55.9			44.3	
Approach LOS		C			D			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 82	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 42.2	Intersection LOS: D
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	1135	315	424	1148	198	356	397	328	286	523	187
Future Volume (veh/h)	224	1135	315	424	1148	198	356	397	328	286	523	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	233	1182	172	442	1196	128	371	414	186	298	545	112
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	2196	465	427	2403	509	376	1025	290	325	1260	534
Arrive On Green	0.09	0.29	0.29	0.12	0.32	0.32	0.11	0.18	0.18	0.09	0.17	0.17
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	233	1182	172	442	1196	128	371	414	186	298	545	112
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.5	9.3	6.0	8.4	9.1	4.2	7.3	4.6	7.6	5.8	4.6	2.1
Cycle Q Clear(g_c), s	4.5	9.3	6.0	8.4	9.1	4.2	7.3	4.6	7.6	5.8	4.6	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	2196	465	427	2403	509	376	1025	290	325	1260	534
V/C Ratio(X)	0.71	0.54	0.37	1.03	0.50	0.25	0.99	0.40	0.64	0.92	0.43	0.21
Avail Cap(c_a), veh/h	422	4484	950	427	4495	952	376	3307	934	325	4303	1823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.9	20.8	19.6	30.8	19.2	17.6	31.3	25.3	26.5	31.6	26.1	25.1
Incr Delay (d2), s/veh	2.3	0.2	0.5	52.9	0.2	0.3	42.5	0.3	2.4	28.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.5	1.9	6.3	3.3	1.3	5.0	1.8	2.7	3.6	1.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	21.0	20.1	83.7	19.4	17.8	73.7	25.5	28.9	60.4	26.4	25.3
LnGrp LOS	C	C	C	F	B	B	E	C	C	E	C	C
Approach Vol, veh/h		1587			1766			971			955	
Approach Delay, s/veh		22.7			35.4			44.6			36.9	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	19.0	13.0	27.1	12.0	18.0	11.1	29.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	7.4	40.3	8.3	42.1
Max Q Clear Time (g_c+I1), s	7.8	9.6	10.4	11.3	9.3	6.6	6.5	11.1
Green Ext Time (p_c), s	0.0	3.2	0.0	9.3	0.0	4.0	0.1	9.2

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

APPENDIX 5.7: E+P (BUILDOUT) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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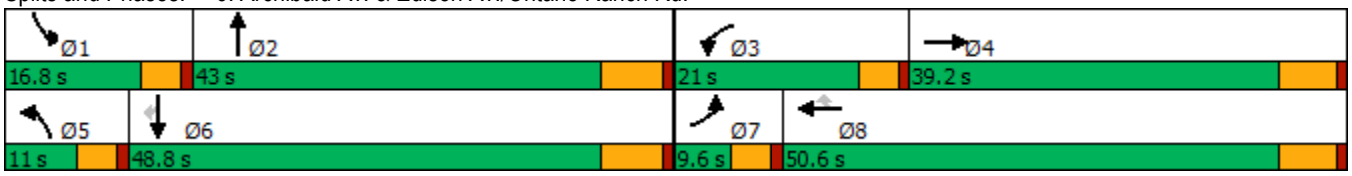
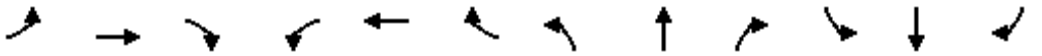
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	446	65	482	645	342	167	1045	455	273	499	62
Future Volume (vph)	35	446	65	482	645	342	167	1045	455	273	499	62
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		21.0	50.6	50.6	11.0	43.0		16.8	48.8	48.8
Total Split (%)	8.0%	32.7%		17.5%	42.2%	42.2%	9.2%	35.8%		14.0%	40.7%	40.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.0	21.2	108.5	16.5	36.7	36.7	6.4	36.6	108.5	12.2	42.4	42.4
Actuated g/C Ratio	0.05	0.20	1.00	0.15	0.34	0.34	0.06	0.34	1.00	0.11	0.39	0.39
v/c Ratio	0.28	0.71	0.05	1.18	0.59	0.59	1.98	0.96	0.34	0.87	0.40	0.10
Control Delay	57.5	46.5	0.1	140.8	32.6	17.3	504.5	55.2	0.6	72.8	25.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	46.5	0.1	140.8	32.6	17.3	504.5	55.2	0.6	72.8	25.8	0.3
LOS	E	D	A	F	C	B	F	E	A	E	C	A
Approach Delay		41.7			64.6			85.4			39.3	
Approach LOS		D			E			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.98	
Intersection Signal Delay: 64.8	Intersection LOS: E
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	446	65	482	645	342	167	1045	455	273	499	62
Future Volume (veh/h)	35	446	65	482	645	342	167	1045	455	273	499	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	38	490	0	530	709	200	184	1148	0	300	548	35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	615		475	1063	445	99	1214		352	1398	585
Arrive On Green	0.05	0.26	0.00	0.24	0.45	0.45	0.09	0.51	0.00	0.17	0.59	0.59
Sat Flow, veh/h	3000	3544	1502	3000	3544	1482	1594	3544	1502	3092	3544	1482
Grp Volume(v), veh/h	38	490	0	530	709	200	184	1148	0	300	548	35
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1482	1594	1772	1502	1546	1772	1482
Q Serve(g_s), s	1.3	13.4	0.0	16.4	16.3	9.6	6.4	31.7	0.0	9.7	8.5	1.0
Cycle Q Clear(g_c), s	1.3	13.4	0.0	16.4	16.3	9.6	6.4	31.7	0.0	9.7	8.5	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	615		475	1063	445	99	1214		352	1398	585
V/C Ratio(X)	0.39	0.80		1.12	0.67	0.45	1.87	0.95		0.85	0.39	0.06
Avail Cap(c_a), veh/h	145	1130		475	1520	636	99	1249		364	1448	606
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	36.6	0.0	39.5	24.4	22.6	47.0	24.2	0.0	42.1	14.5	13.0
Incr Delay (d2), s/veh	1.0	2.4	0.0	76.6	0.7	0.7	426.3	14.2	0.0	16.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.2	0.0	10.2	5.5	3.0	14.0	11.3	0.0	4.1	2.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	39.0	0.0	116.1	25.1	23.3	473.3	38.4	0.0	58.2	14.7	13.0
LnGrp LOS	D	D		F	C	C	F	D		E	B	B
Approach Vol, veh/h		528			1439			1332			883	
Approach Delay, s/veh		39.7			58.4			98.5			29.4	
Approach LOS		D			E			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	42.0	21.0	24.2	11.0	47.3	7.9	37.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	12.2	36.5	16.4	33.0	6.4	42.3	5.0	44.4
Max Q Clear Time (g_c+I1), s	11.7	33.7	18.4	15.4	8.4	10.5	3.3	18.3
Green Ext Time (p_c), s	0.0	1.8	0.0	2.6	0.0	3.4	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	62.7
HCM 6th LOS	E

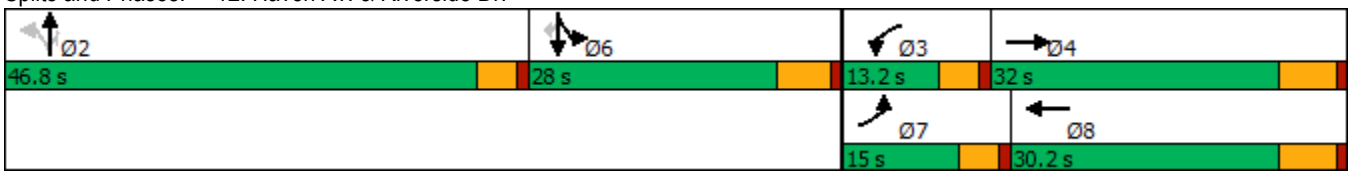
Notes

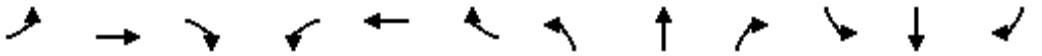
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	323	491	149	396	65	1061	132	293	693	229
Future Volume (vph)	323	491	149	396	65	1061	132	293	693	229
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8		2		6	6	
Permitted Phases					2		2			6
Detector Phase	7	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	23.7	24.8	24.8	24.8
Total Split (s)	15.0	32.0	13.2	30.2	46.8	46.8	46.8	28.0	28.0	28.0
Total Split (%)	12.5%	26.7%	11.0%	25.2%	39.0%	39.0%	39.0%	23.3%	23.3%	23.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	10.4	25.0	8.3	22.9	42.1	42.1	42.1	22.2	22.2	22.2
Actuated g/C Ratio	0.09	0.21	0.07	0.19	0.35	0.35	0.35	0.19	0.19	0.19
v/c Ratio	1.25	0.78	0.72	0.90	1.25	0.90	0.23	1.06	1.12	0.52
Control Delay	181.3	52.0	73.1	58.5	237.6	47.9	7.0	115.2	117.1	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	181.3	52.0	73.1	58.5	237.6	47.9	7.0	115.2	117.1	9.6
LOS	F	D	E	E	F	D	A	F	F	A
Approach Delay		100.7		61.5		53.4			96.4	
Approach LOS		F		E		D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.9	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 77.7	Intersection LOS: E
Intersection Capacity Utilization 96.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	323	491	45	149	396	185	65	1061	132	293	693	229
Future Volume (veh/h)	323	491	45	149	396	185	65	1061	132	293	693	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	344	522	27	159	421	133	69	1129	76	312	737	138
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	727	38	210	501	156	552	1228	516	300	668	278
Arrive On Green	0.09	0.22	0.22	0.07	0.20	0.20	0.35	0.35	0.35	0.19	0.19	0.19
Sat Flow, veh/h	3188	3329	172	3188	2558	797	1594	3544	1489	1594	3544	1473
Grp Volume(v), veh/h	344	277	272	159	290	264	69	1129	76	312	737	138
Grp Sat Flow(s),veh/h/ln	1594	1772	1729	1594	1772	1583	1594	1772	1489	1594	1772	1473
Q Serve(g_s), s	10.4	17.1	17.2	5.8	18.5	19.0	3.5	36.0	4.1	22.2	22.2	9.9
Cycle Q Clear(g_c), s	10.4	17.1	17.2	5.8	18.5	19.0	3.5	36.0	4.1	22.2	22.2	9.9
Prop In Lane	1.00		0.10	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	281	387	378	210	347	310	552	1228	516	300	668	278
V/C Ratio(X)	1.22	0.72	0.72	0.76	0.83	0.85	0.12	0.92	0.15	1.04	1.10	0.50
Avail Cap(c_a), veh/h	281	388	379	233	361	323	570	1267	532	300	668	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	42.6	42.7	54.1	45.5	45.7	26.3	36.9	26.5	47.8	47.8	42.8
Incr Delay (d2), s/veh	127.5	6.2	6.5	10.2	15.1	18.7	0.1	10.7	0.1	62.3	66.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	7.8	7.7	2.5	9.2	8.7	1.3	17.2	1.4	13.7	15.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	181.2	48.8	49.2	64.3	60.6	64.3	26.4	47.7	26.6	110.1	114.3	44.2
LnGrp LOS	F	D	D	E	E	E	C	D	C	F	F	D
Approach Vol, veh/h		893			713			1274			1187	
Approach Delay, s/veh		99.9			62.8			45.2			105.1	
Approach LOS		F			E			D			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.5	12.4	31.9		28.0	15.0	29.3				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 42	8.6	25.8		22.2	10.4	24.0				
Max Q Clear Time (g_c+I1), s		38.0	7.8	19.2		24.2	12.4	21.0				
Green Ext Time (p_c), s		2.8	0.0	1.6		0.0	0.0	0.9				

Intersection Summary												
HCM 6th Ctrl Delay			77.8									
HCM 6th LOS			E									

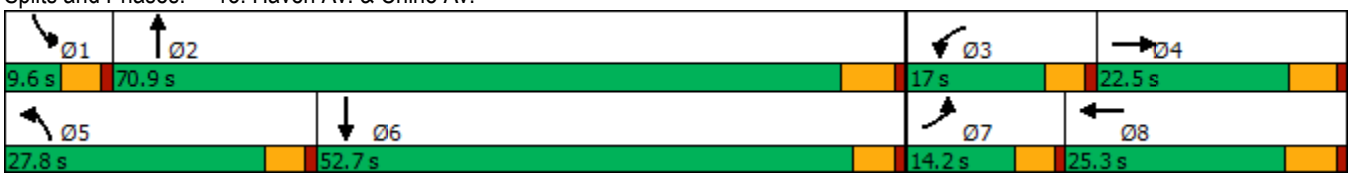
Notes

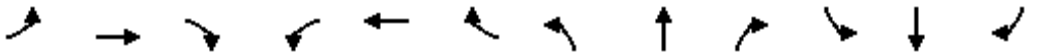
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	74	36	133	71	187	1198	772	
Future Volume (vph)	74	36	133	71	187	1198	772	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	14.2	22.5	17.0	25.3	27.8	70.9	52.7	9.6
Total Split (%)	11.8%	18.8%	14.2%	21.1%	23.2%	59.1%	43.9%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	8.5	11.6	11.5	16.9	16.7	57.8	37.5	
Actuated g/C Ratio	0.09	0.12	0.12	0.17	0.17	0.60	0.39	
v/c Ratio	0.57	0.52	0.69	0.24	0.73	0.84	0.74	
Control Delay	63.7	24.8	62.3	43.1	56.4	19.7	29.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	63.7	24.8	62.3	43.1	56.4	19.7	29.7	
LOS	E	C	E	D	E	B	C	
Approach Delay		38.5		55.7		23.5	29.7	
Approach LOS		D		E		C	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.1	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	36	100	133	71	0	187	1198	409	0	772	113
Future Volume (veh/h)	74	36	100	133	71	0	187	1198	409	0	772	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	79	39	106	145	77	0	199	1274	287	0	821	120
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	56	152	180	311	0	235	1595	354	2	1068	156
Arrive On Green	0.06	0.13	0.13	0.10	0.17	0.00	0.15	0.57	0.57	0.00	0.36	0.36
Sat Flow, veh/h	1594	445	1208	1781	1870	0	1594	2808	623	1781	2947	431
Grp Volume(v), veh/h	79	0	145	145	77	0	199	797	764	0	469	472
Grp Sat Flow(s),veh/h/ln	1594	0	1653	1781	1870	0	1594	1772	1660	1781	1683	1694
Q Serve(g_s), s	3.9	0.0	6.7	6.3	2.8	0.0	9.6	28.0	29.2	0.0	19.5	19.5
Cycle Q Clear(g_c), s	3.9	0.0	6.7	6.3	2.8	0.0	9.6	28.0	29.2	0.0	19.5	19.5
Prop In Lane	1.00		0.73	1.00		0.00	1.00		0.38	1.00		0.25
Lane Grp Cap(c), veh/h	98	0	208	180	311	0	235	1006	943	2	610	614
V/C Ratio(X)	0.81	0.00	0.70	0.80	0.25	0.00	0.85	0.79	0.81	0.00	0.77	0.77
Avail Cap(c_a), veh/h	193	0	357	279	461	0	467	1457	1364	112	1020	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	0.0	33.1	34.8	28.7	0.0	32.9	13.4	13.7	0.0	22.3	22.3
Incr Delay (d2), s/veh	5.8	0.0	4.1	4.5	0.4	0.0	3.2	1.9	2.5	0.0	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.8	2.8	1.2	0.0	3.7	9.2	9.1	0.0	7.6	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	0.0	37.3	39.3	29.1	0.0	36.1	15.4	16.2	0.0	24.4	24.4
LnGrp LOS	D	A	D	D	C	A	D	B	B	A	C	C
Approach Vol, veh/h		224			222			1760			941	
Approach Delay, s/veh		39.1			35.8			18.1			24.4	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	50.8	12.6	15.8	16.3	34.5	9.5	18.9
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	65.1	12.4	* 17	23.2	* 48	9.6	19.5
Max Q Clear Time (g_c+I1), s	0.0	31.2	8.3	8.7	11.6	21.5	5.9	4.8
Green Ext Time (p_c), s	0.0	13.8	0.1	0.4	0.2	6.9	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

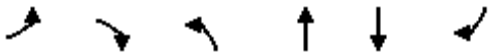
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	39	102	118	1728	1002
Future Volume (vph)	39	102	118	1728	1002
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	30.0	30.0	26.6	90.0	63.4
Total Split (%)	25.0%	25.0%	22.2%	75.0%	52.8%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.1	12.1	11.9	55.4	38.6
Actuated g/C Ratio	0.15	0.15	0.15	0.70	0.48
v/c Ratio	0.17	0.35	0.54	0.81	0.65
Control Delay	35.6	11.0	43.0	11.8	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	11.0	43.0	11.8	18.0
LOS	D	B	D	B	B
Approach Delay	17.8			13.8	18.0
Approach LOS	B			B	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 79.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	102	118	1728	1002	22
Future Volume (veh/h)	39	102	118	1728	1002	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	42	57	128	1878	1089	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	227	214	159	2169	1607	19
Arrive On Green	0.21	0.21	0.15	0.97	0.69	0.69
Sat Flow, veh/h	1594	1502	1594	3455	3493	42
Grp Volume(v), veh/h	42	57	128	1878	552	550
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1683	1772	1763
Q Serve(g_s), s	1.2	1.7	4.2	6.2	9.9	9.9
Cycle Q Clear(g_c), s	1.2	1.7	4.2	6.2	9.9	9.9
Prop In Lane	1.00	1.00	1.00			0.02
Lane Grp Cap(c), veh/h	227	214	159	2169	815	811
V/C Ratio(X)	0.18	0.27	0.80	0.87	0.68	0.68
Avail Cap(c_a), veh/h	709	668	644	5208	1875	1866
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	19.0	22.6	0.4	6.1	6.1
Incr Delay (d2), s/veh	0.4	0.7	3.6	1.1	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.5	0.5	2.0	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.2	19.7	26.2	1.6	7.1	7.1
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	99			2006	1102	
Approach Delay, s/veh	19.5			3.1	7.1	
Approach LOS	B			A	A	

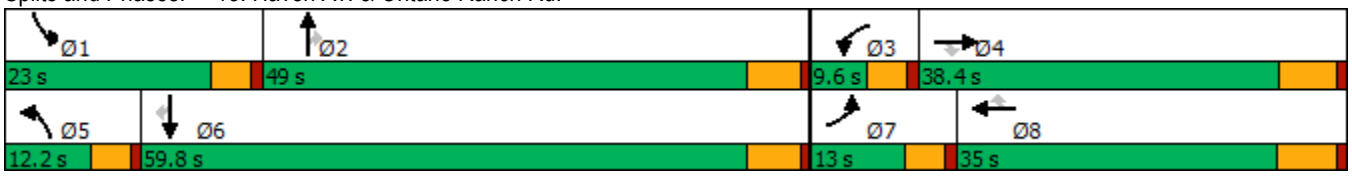
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		40.9		13.6	10.0	30.8
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		84.2		24.2	22.0	57.6
Max Q Clear Time (g_c+I1), s		8.2		3.7	6.2	11.9
Green Ext Time (p_c), s		26.8		0.2	0.1	8.0

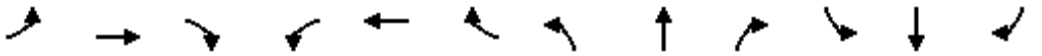
Intersection Summary		
HCM 6th Ctrl Delay		5.0
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	1198	17	75	1198	684	36	544	118	681	294	318
Future Volume (vph)	235	1198	17	75	1198	684	36	544	118	681	294	318
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	13.0	38.4	38.4	9.6	35.0	35.0	12.2	49.0	49.0	23.0	59.8	59.8
Total Split (%)	10.8%	32.0%	32.0%	8.0%	29.2%	29.2%	10.2%	40.8%	40.8%	19.2%	49.8%	49.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	8.5	34.5	34.5	5.0	28.7	28.7	6.5	24.6	24.6	18.5	40.9	40.9
Actuated g/C Ratio	0.08	0.34	0.34	0.05	0.28	0.28	0.06	0.24	0.24	0.18	0.40	0.40
v/c Ratio	0.97	0.72	0.03	0.55	0.65	1.11	0.39	0.69	0.27	1.27	0.22	0.47
Control Delay	95.9	34.1	0.1	64.5	35.0	91.1	59.8	39.1	3.7	172.0	21.2	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.9	34.1	0.1	64.5	35.0	91.1	59.8	39.1	3.7	172.0	21.2	10.3
LOS	F	C	A	E	C	F	E	D	A	F	C	B
Approach Delay		43.7			55.7			34.1			97.9	
Approach LOS		D			E			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 59.8	Intersection LOS: E
Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	1198	17	75	1198	684	36	544	118	681	294	318
Future Volume (veh/h)	235	1198	17	75	1198	684	36	544	118	681	294	318
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	253	1288	7	81	1288	369	39	585	68	732	316	175
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	269	1731	488	135	2028	430	53	812	344	589	1349	569
Arrive On Green	0.08	0.33	0.33	0.04	0.29	0.29	0.03	0.23	0.23	0.18	0.38	0.38
Sat Flow, veh/h	3188	5316	1500	3000	7088	1502	1594	3544	1500	3188	3544	1496
Grp Volume(v), veh/h	253	1288	7	81	1288	369	39	585	68	732	316	175
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1772	1500	1594	1772	1496
Q Serve(g_s), s	7.9	21.5	0.3	2.6	15.8	23.2	2.4	15.2	3.6	18.4	6.0	8.2
Cycle Q Clear(g_c), s	7.9	21.5	0.3	2.6	15.8	23.2	2.4	15.2	3.6	18.4	6.0	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	1731	488	135	2028	430	53	812	344	589	1349	569
V/C Ratio(X)	0.94	0.74	0.01	0.60	0.64	0.86	0.74	0.72	0.20	1.24	0.23	0.31
Avail Cap(c_a), veh/h	269	1731	488	151	2028	430	122	1537	650	589	1921	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	29.9	22.8	46.7	31.0	33.7	47.7	35.5	31.0	40.6	21.0	21.6
Incr Delay (d2), s/veh	38.8	3.0	0.1	3.0	1.5	19.5	7.3	1.2	0.3	123.4	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	8.9	0.1	1.0	6.4	10.0	1.0	6.4	1.3	16.9	2.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.2	32.9	22.8	49.7	32.6	53.2	55.0	36.7	31.3	164.0	21.1	21.9
LnGrp LOS	F	C	C	D	C	D	E	D	C	F	C	C
Approach Vol, veh/h		1548			1738			692			1223	
Approach Delay, s/veh		41.2			37.7			37.2			106.7	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	28.6	9.1	38.9	7.9	43.7	13.0	35.0
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	18.4	43.2	5.0	* 32	7.6	54.0	8.4	28.5
Max Q Clear Time (g_c+I1), s	20.4	17.2	4.6	23.5	4.4	10.2	9.9	25.2
Green Ext Time (p_c), s	0.0	3.9	0.0	5.0	0.0	2.6	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	54.9
HCM 6th LOS	D

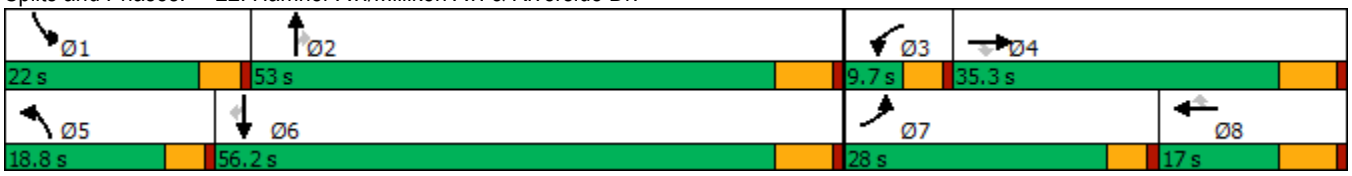
Notes

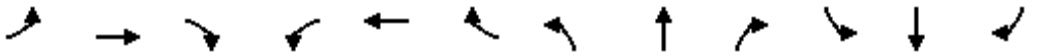
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	340	215	144	28	147	243	144	1267	58	244	776	211
Future Volume (vph)	340	215	144	28	147	243	144	1267	58	244	776	211
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	28.0	35.3	35.3	9.7	17.0	17.0	18.8	53.0	53.0	22.0	56.2	56.2
Total Split (%)	23.3%	29.4%	29.4%	8.1%	14.2%	14.2%	15.7%	44.2%	44.2%	18.3%	46.8%	46.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	17.8	27.7	27.7	5.1	10.8	10.8	10.2	47.0	47.0	13.8	50.5	50.5
Actuated g/C Ratio	0.16	0.25	0.25	0.05	0.10	0.10	0.09	0.42	0.42	0.12	0.45	0.45
v/c Ratio	0.77	0.56	0.33	0.44	0.98	0.82	0.57	0.98	0.09	0.71	0.56	0.30
Control Delay	55.7	43.7	7.5	73.4	116.5	33.9	57.0	51.1	0.3	57.8	24.6	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	43.7	7.5	73.4	116.5	33.9	57.0	51.1	0.3	57.8	24.6	3.7
LOS	E	D	A	E	F	C	E	D	A	E	C	A
Approach Delay		42.1			65.6			49.7			27.6	
Approach LOS		D			E			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 81.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	215	144	28	147	243	144	1267	58	244	776	211
Future Volume (veh/h)	340	215	144	28	147	243	144	1267	58	244	776	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	391	247	86	32	169	141	166	1456	38	280	892	128
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	458	387	328	46	183	155	226	1554	658	343	1684	714
Arrive On Green	0.14	0.22	0.22	0.03	0.10	0.10	0.07	0.44	0.44	0.11	0.48	0.48
Sat Flow, veh/h	3188	1772	1502	1594	1772	1502	3188	3544	1502	3188	3544	1502
Grp Volume(v), veh/h	391	247	86	32	169	141	166	1456	38	280	892	128
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1594	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	12.5	13.2	5.0	2.1	9.9	9.7	5.3	40.9	1.5	9.0	18.4	5.1
Cycle Q Clear(g_c), s	12.5	13.2	5.0	2.1	9.9	9.7	5.3	40.9	1.5	9.0	18.4	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	458	387	328	46	183	155	226	1554	658	343	1684	714
V/C Ratio(X)	0.85	0.64	0.26	0.69	0.92	0.91	0.73	0.94	0.06	0.82	0.53	0.18
Avail Cap(c_a), veh/h	714	494	418	78	183	155	433	1588	673	531	1696	719
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	37.1	33.9	50.3	46.4	46.3	47.6	28.0	16.9	45.6	19.2	15.7
Incr Delay (d2), s/veh	3.6	1.8	0.4	6.8	44.9	46.3	1.7	10.9	0.0	2.9	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	5.6	1.8	0.9	6.4	5.5	2.1	17.8	0.5	3.5	6.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	38.9	34.3	57.0	91.3	92.7	49.3	38.8	16.9	48.5	19.5	15.8
LnGrp LOS	D	D	C	E	F	F	D	D	B	D	B	B
Approach Vol, veh/h		724			342			1660			1300	
Approach Delay, s/veh		42.9			88.7			39.4			25.4	
Approach LOS		D			F			D			C	

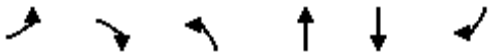
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	52.0	7.6	29.0	12.0	55.8	19.6	17.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.4	46.8	5.1	29.1	14.2	50.0	23.4	10.8
Max Q Clear Time (g_c+I1), s	11.0	42.9	4.1	15.2	7.3	20.4	14.5	11.9
Green Ext Time (p_c), s	0.3	2.9	0.0	1.2	0.1	6.6	0.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	166	57	1320	838
Future Volume (vph)	166	57	1320	838
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	38.6	81.4	81.4	81.4
Total Split (%)	32.2%	67.8%	67.8%	67.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	22.5		53.9	53.9
Actuated g/C Ratio	0.26		0.63	0.63
v/c Ratio	0.74		0.79	0.47
Control Delay	38.7		16.2	9.5
Queue Delay	0.0		0.0	0.0
Total Delay	38.7		16.2	9.5
LOS	D		B	A
Approach Delay	38.7		16.2	9.5
Approach LOS	D		B	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 86.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 92.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	166	139	57	1320	838	68
Future Volume (veh/h)	166	139	57	1320	838	68
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	158	65	1500	952	77
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	224	187	115	2006	2037	165
Arrive On Green	0.24	0.24	0.61	0.61	0.61	0.61
Sat Flow, veh/h	916	766	86	3279	3423	269
Grp Volume(v), veh/h	348	0	791	774	508	521
Grp Sat Flow(s),veh/h/ln	1687	0	1663	1702	1777	1822
Q Serve(g_s), s	12.3	0.0	7.2	20.2	9.7	9.7
Cycle Q Clear(g_c), s	12.3	0.0	19.9	20.2	9.7	9.7
Prop In Lane	0.54	0.45	0.08			0.15
Lane Grp Cap(c), veh/h	412	0	1080	1041	1087	1115
V/C Ratio(X)	0.84	0.00	0.73	0.74	0.47	0.47
Avail Cap(c_a), veh/h	921	0	2046	2095	2187	2243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	0.0	8.3	8.6	6.6	6.6
Incr Delay (d2), s/veh	4.8	0.0	1.0	1.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	4.3	4.5	2.2	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.3	0.0	9.3	9.7	6.9	6.9
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	348			1565	1029	
Approach Delay, s/veh	27.3			9.5	6.9	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		42.7		19.8		42.7
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		76.9		34.1		76.9
Max Q Clear Time (g_c+I1), s		22.2		14.3		11.7
Green Ext Time (p_c), s		16.0		1.0		7.1

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

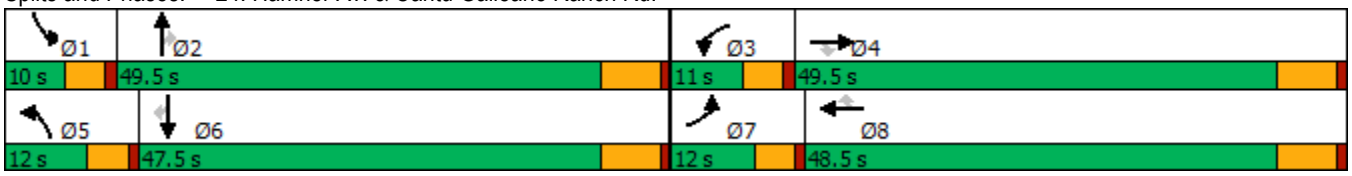
Notes

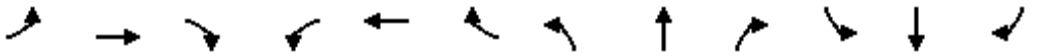
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	453	1494	261	311	1600	287	388	608	419	230	250	457
Future Volume (vph)	453	1494	261	311	1600	287	388	608	419	230	250	457
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.0	49.5	49.5	11.0	48.5	48.5	12.0	49.5	49.5	10.0	47.5	47.5
Total Split (%)	10.0%	41.3%	41.3%	9.2%	40.4%	40.4%	10.0%	41.3%	41.3%	8.3%	39.6%	39.6%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.6	36.4	36.4	6.6	35.4	35.4	7.6	28.3	28.3	5.6	26.2	26.2
Actuated g/C Ratio	0.08	0.37	0.37	0.07	0.36	0.36	0.08	0.28	0.28	0.06	0.26	0.26
v/c Ratio	1.74	0.57	0.36	1.38	0.63	0.43	1.49	0.40	0.80	1.21	0.13	0.46
Control Delay	378.4	26.7	4.6	233.8	28.3	11.6	273.6	29.1	34.6	176.1	27.7	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	378.4	26.7	4.6	233.8	28.3	11.6	273.6	29.1	34.6	176.1	27.7	14.4
LOS	F	C	A	F	C	B	F	C	C	F	C	B
Approach Delay		96.3			55.2			97.8			57.7	
Approach LOS		F			E			F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.74	
Intersection Signal Delay: 77.9	Intersection LOS: E
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	453	1494	261	311	1600	287	388	608	419	230	250	457
Future Volume (veh/h)	453	1494	261	311	1600	287	388	608	419	230	250	457
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	472	1556	147	324	1667	164	404	633	306	240	260	257
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	297	2709	574	257	2624	556	297	1447	409	217	1760	746
Arrive On Green	0.08	0.36	0.36	0.07	0.35	0.35	0.08	0.26	0.26	0.06	0.24	0.24
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	472	1556	147	324	1667	164	404	633	306	240	260	257
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	7.4	14.9	5.8	6.4	16.5	6.6	7.4	8.4	15.7	5.4	2.4	6.0
Cycle Q Clear(g_c), s	7.4	14.9	5.8	6.4	16.5	6.6	7.4	8.4	15.7	5.4	2.4	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	297	2709	574	257	2624	556	297	1447	409	217	1760	746
V/C Ratio(X)	1.59	0.57	0.26	1.26	0.64	0.29	1.36	0.44	0.75	1.11	0.15	0.34
Avail Cap(c_a), veh/h	297	3629	769	257	3544	751	297	2740	774	217	3485	1477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	22.8	19.9	41.1	24.0	20.8	40.6	27.5	30.3	41.6	26.9	28.2
Incr Delay (d2), s/veh	279.8	0.2	0.2	144.4	0.3	0.3	181.8	0.2	2.8	92.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	5.8	1.9	7.8	6.5	2.2	10.6	3.5	5.7	5.0	1.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	320.4	23.0	20.1	185.5	24.3	21.1	222.4	27.7	33.0	134.0	26.9	28.5
LnGrp LOS	F	C	C	F	C	C	F	C	C	F	C	C
Approach Vol, veh/h		2175			2155			1343			757	
Approach Delay, s/veh		87.3			48.3			87.5			61.4	
Approach LOS		F			D			F			E	

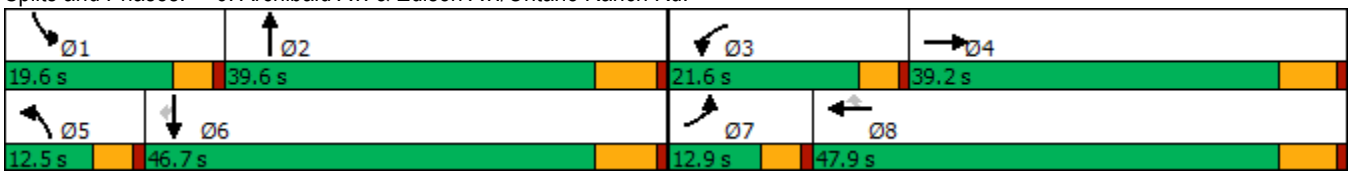
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.1	11.0	38.6	12.0	27.1	12.0	37.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	5.4	43.3	6.4	43.0	7.4	41.3	7.4	42.0
Max Q Clear Time (g_c+I1), s	7.4	17.7	8.4	16.9	9.4	8.0	9.4	18.5
Green Ext Time (p_c), s	0.0	5.1	0.0	12.2	0.0	2.6	0.0	12.6

Intersection Summary	
HCM 6th Ctrl Delay	71.2
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	839	265	419	454	276	95	744	531	379	753	60
Future Volume (vph)	95	839	265	419	454	276	95	744	531	379	753	60
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	12.9	39.2		21.6	47.9	47.9	12.5	39.6		19.6	46.7	46.7
Total Split (%)	10.8%	32.7%		18.0%	39.9%	39.9%	10.4%	33.0%		16.3%	38.9%	38.9%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	7.5	31.7	115.6	17.1	41.3	41.3	7.9	29.8	115.6	15.0	36.9	36.9
Actuated g/C Ratio	0.06	0.27	1.00	0.15	0.36	0.36	0.07	0.26	1.00	0.13	0.32	0.32
v/c Ratio	0.52	0.91	0.19	1.00	0.38	0.42	0.93	0.86	0.37	1.00	0.70	0.11
Control Delay	63.3	55.4	0.3	94.1	29.3	7.0	123.4	51.7	0.7	96.0	38.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	55.4	0.3	94.1	29.3	7.0	123.4	51.7	0.7	96.0	38.5	0.4
LOS	E	E	A	F	C	A	F	D	A	F	D	A
Approach Delay		43.8			47.5			36.9			54.9	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 45.4	Intersection LOS: D
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	839	265	419	454	276	95	744	531	379	753	60
Future Volume (veh/h)	95	839	265	419	454	276	95	744	531	379	753	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	100	883	0	441	478	249	100	783	0	399	793	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	145	972		448	1329	563	111	895		407	1115	473
Arrive On Green	0.05	0.27	0.00	0.15	0.38	0.38	0.07	0.25	0.00	0.13	0.31	0.31
Sat Flow, veh/h	3000	3544	1502	3000	3544	1500	1594	3544	1502	3092	3544	1502
Grp Volume(v), veh/h	100	883	0	441	478	249	100	783	0	399	793	44
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1546	1772	1502
Q Serve(g_s), s	3.7	27.4	0.0	16.7	11.1	14.2	7.1	24.1	0.0	14.6	22.5	2.4
Cycle Q Clear(g_c), s	3.7	27.4	0.0	16.7	11.1	14.2	7.1	24.1	0.0	14.6	22.5	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	972		448	1329	563	111	895		407	1115	473
V/C Ratio(X)	0.69	0.91		0.98	0.36	0.44	0.90	0.88		0.98	0.71	0.09
Avail Cap(c_a), veh/h	219	1027		448	1329	563	111	1030		407	1251	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	39.9	0.0	48.3	25.7	26.7	52.6	40.8	0.0	49.3	34.4	27.5
Incr Delay (d2), s/veh	2.2	11.3	0.0	38.3	0.2	0.5	55.5	7.7	0.0	39.0	1.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	12.8	0.0	8.4	4.4	4.9	4.4	10.8	0.0	7.6	9.3	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	51.2	0.0	86.6	25.9	27.2	108.1	48.6	0.0	88.3	36.1	27.6
LnGrp LOS	E	D		F	C	C	F	D		F	D	C
Approach Vol, veh/h		983			1168			883			1236	
Approach Delay, s/veh		51.6			49.1			55.3			52.6	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	35.2	21.6	37.4	12.5	42.3	10.1	48.9
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	15.0	33.1	17.0	33.0	7.9	40.2	8.3	41.7
Max Q Clear Time (g_c+I1), s	16.6	26.1	18.7	29.4	9.1	24.5	5.7	16.2
Green Ext Time (p_c), s	0.0	2.6	0.0	1.8	0.0	4.3	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	52.0
HCM 6th LOS	D

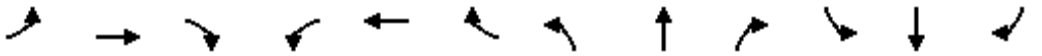
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	291	365	93	330	55	838	88	135	1103	334
Future Volume (vph)	291	365	93	330	55	838	88	135	1103	334
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8		2		6	6	
Permitted Phases					2		2			6
Detector Phase	7	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	23.7	24.8	24.8	24.8
Total Split (s)	15.0	36.0	9.6	30.6	33.4	33.4	33.4	41.0	41.0	41.0
Total Split (%)	12.5%	30.0%	8.0%	25.5%	27.8%	27.8%	27.8%	34.2%	34.2%	34.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.7	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	10.4	24.9	5.0	19.5	28.7	28.7	28.7	35.2	35.2	35.2
Actuated g/C Ratio	0.09	0.22	0.04	0.17	0.25	0.25	0.25	0.31	0.31	0.31
v/c Ratio	1.06	0.63	0.71	0.77	1.00	0.99	0.18	0.29	1.06	0.54
Control Delay	120.6	42.4	82.0	50.6	165.6	72.3	0.8	33.3	85.4	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	120.6	42.4	82.0	50.6	165.6	72.3	0.8	33.3	85.4	10.7
LOS	F	D	F	D	F	E	A	C	F	B
Approach Delay		72.8		56.1		71.1			65.0	
Approach LOS		E		E		E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 66.8	Intersection LOS: E
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	365	92	93	330	114	55	838	88	135	1103	334
Future Volume (veh/h)	291	365	92	93	330	114	55	838	88	135	1103	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	303	380	54	97	344	67	57	873	50	141	1149	122
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	618	87	141	449	86	404	898	380	495	1101	466
Arrive On Green	0.09	0.20	0.20	0.04	0.16	0.16	0.25	0.25	0.25	0.31	0.31	0.31
Sat Flow, veh/h	3188	3030	427	3188	2875	552	1594	3544	1502	1594	3544	1499
Grp Volume(v), veh/h	303	221	213	97	210	201	57	873	50	141	1149	122
Grp Sat Flow(s),veh/h/ln	1594	1772	1684	1594	1772	1655	1594	1772	1502	1594	1772	1499
Q Serve(g_s), s	10.4	12.8	13.1	3.4	12.9	13.2	3.1	27.7	2.9	7.6	35.2	6.9
Cycle Q Clear(g_c), s	10.4	12.8	13.1	3.4	12.9	13.2	3.1	27.7	2.9	7.6	35.2	6.9
Prop In Lane	1.00		0.25	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	293	361	343	141	277	259	404	898	380	495	1101	466
V/C Ratio(X)	1.04	0.61	0.62	0.69	0.76	0.78	0.14	0.97	0.13	0.28	1.04	0.26
Avail Cap(c_a), veh/h	293	466	443	141	382	356	404	898	380	495	1101	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	41.0	41.1	53.4	45.8	45.9	32.8	41.9	32.7	29.5	39.1	29.3
Incr Delay (d2), s/veh	62.2	1.7	1.8	11.3	5.8	7.1	0.2	23.5	0.2	0.3	39.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	5.5	5.4	1.5	5.9	5.7	1.2	14.9	1.0	2.8	20.5	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.6	42.7	42.9	64.7	51.5	53.0	32.9	65.4	32.8	29.8	78.3	29.6
LnGrp LOS	F	D	D	E	D	D	C	E	C	C	F	C
Approach Vol, veh/h		737			508			980			1412	
Approach Delay, s/veh		71.9			54.6			61.8			69.2	
Approach LOS		E			D			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		33.4	9.6	29.3		41.0	15.0	23.9				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 29	5.0	29.8		35.2	10.4	24.4				
Max Q Clear Time (g_c+I1), s		29.7	5.4	15.1		37.2	12.4	15.2				
Green Ext Time (p_c), s		0.0	0.0	1.9		0.0	0.0	1.4				

Intersection Summary		
HCM 6th Ctrl Delay		65.7
HCM 6th LOS		E

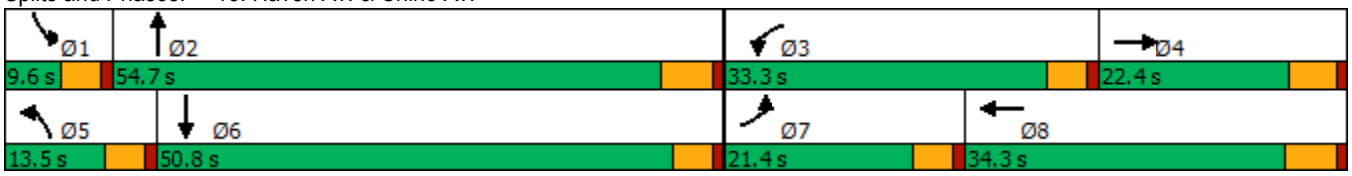
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	107	73	407	55	105	895	1248	
Future Volume (vph)	107	73	407	55	105	895	1248	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	21.4	22.4	33.3	34.3	13.5	54.7	50.8	9.6
Total Split (%)	17.8%	18.7%	27.8%	28.6%	11.3%	45.6%	42.3%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	20.1	14.5	28.7	26.0	8.9	58.5	46.1	
Actuated g/C Ratio	0.17	0.12	0.24	0.22	0.08	0.50	0.39	
v/c Ratio	0.42	0.77	1.02	0.15	0.93	0.70	1.06	
Control Delay	53.3	56.9	93.8	36.1	120.3	24.9	77.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.3	56.9	93.8	36.1	120.3	24.9	77.5	
LOS	D	E	F	D	F	C	E	
Approach Delay		55.6		86.9		33.0	77.5	
Approach LOS		E		F		C	E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 60.3	Intersection LOS: E
Intersection Capacity Utilization 94.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	73	111	407	55	0	105	895	238	0	1248	68
Future Volume (veh/h)	107	73	111	407	55	0	105	895	238	0	1248	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	113	79	117	442	60	0	111	942	123	0	1314	72
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	90	133	425	533	0	118	1521	199	1	1243	68
Arrive On Green	0.08	0.13	0.13	0.24	0.29	0.00	0.07	0.50	0.50	0.00	0.38	0.38
Sat Flow, veh/h	1594	681	1008	1781	1870	0	1594	3071	401	1781	3246	178
Grp Volume(v), veh/h	113	0	196	442	60	0	111	543	522	0	680	706
Grp Sat Flow(s),veh/h/ln	1594	0	1689	1781	1870	0	1594	1772	1700	1781	1683	1740
Q Serve(g_s), s	8.4	0.0	13.7	28.7	2.9	0.0	8.3	26.9	26.9	0.0	46.1	46.1
Cycle Q Clear(g_c), s	8.4	0.0	13.7	28.7	2.9	0.0	8.3	26.9	26.9	0.0	46.1	46.1
Prop In Lane	1.00		0.60	1.00		0.00	1.00		0.24	1.00		0.10
Lane Grp Cap(c), veh/h	135	0	222	425	533	0	118	878	842	1	645	667
V/C Ratio(X)	0.83	0.00	0.88	1.04	0.11	0.00	0.94	0.62	0.62	0.00	1.06	1.06
Avail Cap(c_a), veh/h	222	0	239	425	533	0	118	878	842	74	645	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	0.0	51.3	45.8	31.8	0.0	55.5	22.1	22.1	0.0	37.1	37.1
Incr Delay (d2), s/veh	5.9	0.0	28.3	54.6	0.1	0.0	64.0	1.3	1.4	0.0	50.9	51.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	7.4	18.7	1.3	0.0	5.4	10.8	10.3	0.0	27.7	28.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	0.0	79.7	100.4	31.9	0.0	119.5	23.4	23.5	0.0	88.0	88.5
LnGrp LOS	E	A	E	F	C	A	F	C	C	A	F	F
Approach Vol, veh/h		309			502			1176			1386	
Approach Delay, s/veh		72.5			92.2			32.5			88.3	
Approach LOS		E			F			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	65.4	33.3	21.6	13.5	51.9	14.8	40.1
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	48.9	28.7	* 17	8.9	* 46	16.8	28.5
Max Q Clear Time (g_c+I1), s	0.0	28.9	30.7	15.7	10.3	48.1	10.4	4.9
Green Ext Time (p_c), s	0.0	6.4	0.0	0.1	0.0	0.0	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	68.0
HCM 6th LOS	E

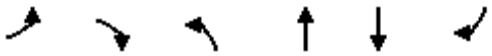
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	22	96	133	1216	1737
Future Volume (vph)	22	96	133	1216	1737
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	27.8	27.8	17.4	92.2	74.8
Total Split (%)	23.2%	23.2%	14.5%	76.8%	62.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.2	12.2	12.7	86.8	69.5
Actuated g/C Ratio	0.11	0.11	0.11	0.78	0.63
v/c Ratio	0.15	0.43	0.86	0.54	0.92
Control Delay	45.5	13.2	86.9	5.8	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	13.2	86.9	5.8	27.3
LOS	D	B	F	A	C
Approach Delay	19.3			13.8	27.3
Approach LOS	B			B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 21.4	Intersection LOS: C
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	96	133	1216	1737	20
Future Volume (veh/h)	22	96	133	1216	1737	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	26	43	155	1414	2020	11
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	135	128	182	2692	2253	12
Arrive On Green	0.08	0.08	0.11	0.80	0.64	0.64
Sat Flow, veh/h	1594	1502	1594	3455	3521	19
Grp Volume(v), veh/h	26	43	155	1414	1015	1016
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1683	1772	1768
Q Serve(g_s), s	1.5	2.7	9.6	14.6	48.6	48.8
Cycle Q Clear(g_c), s	1.5	2.7	9.6	14.6	48.6	48.8
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	135	128	182	2692	1134	1131
V/C Ratio(X)	0.19	0.34	0.85	0.53	0.90	0.90
Avail Cap(c_a), veh/h	349	329	203	2894	1216	1214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	43.3	43.7	3.5	15.3	15.3
Incr Delay (d2), s/veh	0.7	1.5	23.8	0.2	8.6	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	4.8	2.5	18.2	18.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.5	44.9	67.5	3.6	23.8	24.0
LnGrp LOS	D	D	E	A	C	C
Approach Vol, veh/h	69			1569	2031	
Approach Delay, s/veh	44.3			10.0	23.9	
Approach LOS	D			A	C	

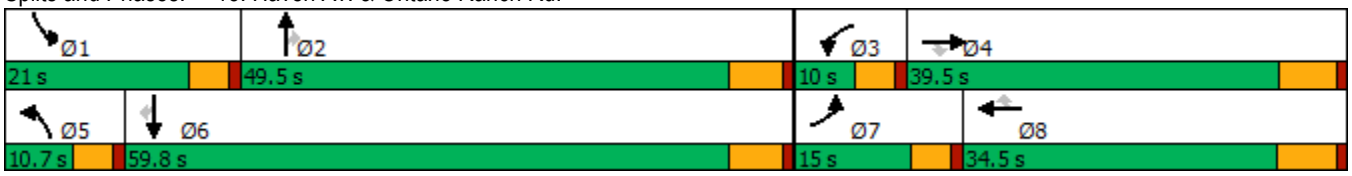
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.2		14.3	16.1	70.1
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	12.8	69.0
Max Q Clear Time (g_c+I1), s		16.6		4.7	11.6	50.8
Green Ext Time (p_c), s		14.6		0.1	0.0	13.5

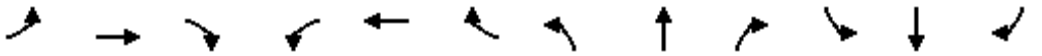
Intersection Summary		
HCM 6th Ctrl Delay		18.3
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	407	1464	35	227	1168	606	18	337	70	722	560	213
Future Volume (vph)	407	1464	35	227	1168	606	18	337	70	722	560	213
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	15.0	39.5	39.5	10.0	34.5	34.5	10.7	49.5	49.5	21.0	59.8	59.8
Total Split (%)	12.5%	32.9%	32.9%	8.3%	28.8%	28.8%	8.9%	41.3%	41.3%	17.5%	49.8%	49.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.5	33.7	33.7	5.5	28.4	28.4	5.6	18.2	18.2	16.6	35.6	35.6
Actuated g/C Ratio	0.11	0.35	0.35	0.06	0.30	0.30	0.06	0.19	0.19	0.17	0.37	0.37
v/c Ratio	1.24	0.83	0.06	1.42	0.59	0.87	0.21	0.53	0.17	1.40	0.45	0.32
Control Delay	167.7	34.4	0.2	253.3	31.3	25.1	52.5	36.7	0.8	221.0	24.2	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.7	34.4	0.2	253.3	31.3	25.1	52.5	36.7	0.8	221.0	24.2	4.2
LOS	F	C	A	F	C	C	D	D	A	F	C	A
Approach Delay		62.3			54.6			31.5			116.4	
Approach LOS		E			D			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay: 71.3	Intersection LOS: E
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	407	1464	35	227	1168	606	18	337	70	722	560	213
Future Volume (veh/h)	407	1464	35	227	1168	606	18	337	70	722	560	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	433	1557	24	241	1243	600	19	359	24	768	596	194
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	1977	559	181	2240	475	34	512	217	584	1086	460
Arrive On Green	0.12	0.37	0.37	0.06	0.32	0.32	0.02	0.14	0.14	0.18	0.31	0.31
Sat Flow, veh/h	3188	5316	1502	3000	7088	1502	1594	3544	1502	3188	3544	1502
Grp Volume(v), veh/h	433	1557	24	241	1243	600	19	359	24	768	596	194
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1500	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	10.4	23.3	0.9	5.4	13.0	28.3	1.1	8.6	1.2	16.4	12.6	9.2
Cycle Q Clear(g_c), s	10.4	23.3	0.9	5.4	13.0	28.3	1.1	8.6	1.2	16.4	12.6	9.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	1977	559	181	2240	475	34	512	217	584	1086	460
V/C Ratio(X)	1.17	0.79	0.04	1.33	0.55	1.26	0.57	0.70	0.11	1.32	0.55	0.42
Avail Cap(c_a), veh/h	370	1977	559	181	2240	475	109	1730	733	584	2138	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	25.0	17.9	42.1	25.4	30.6	43.4	36.5	33.3	36.6	25.9	24.7
Incr Delay (d2), s/veh	101.4	3.3	0.1	182.1	1.0	134.8	5.5	1.8	0.2	153.7	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	9.3	0.3	6.4	5.0	26.8	0.5	3.7	0.4	18.5	5.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	141.0	28.2	18.1	224.1	26.4	165.4	48.9	38.2	33.5	190.3	26.3	25.3
LnGrp LOS	F	C	B	F	C	F	D	D	C	F	C	C
Approach Vol, veh/h		2014			2084			402			1558	
Approach Delay, s/veh		52.4			89.3			38.5			107.0	
Approach LOS		D			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	18.7	10.0	39.8	6.5	33.2	15.0	34.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	16.4	43.7	5.4	* 33	6.1	54.0	10.4	28.0
Max Q Clear Time (g_c+I1), s	18.4	10.6	7.4	25.3	3.1	14.6	12.4	30.3
Green Ext Time (p_c), s	0.0	2.3	0.0	5.5	0.0	4.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	78.2
HCM 6th LOS	E

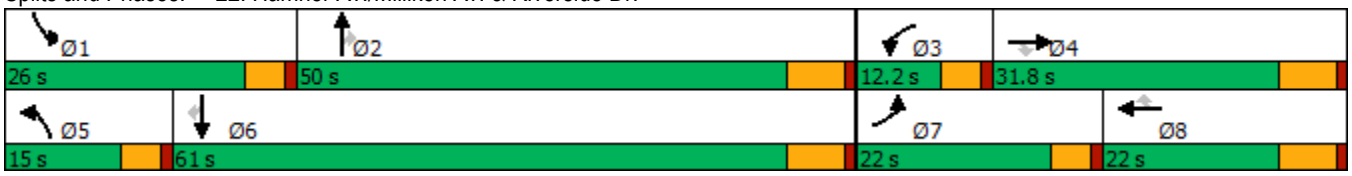
Notes

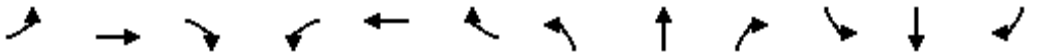
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	189	148	80	236	160	149	896	49	212	1164	378
Future Volume (vph)	255	189	148	80	236	160	149	896	49	212	1164	378
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	22.0	31.8	31.8	12.2	22.0	22.0	15.0	50.0	50.0	26.0	61.0	61.0
Total Split (%)	18.3%	26.5%	26.5%	10.2%	18.3%	18.3%	12.5%	41.7%	41.7%	21.7%	50.8%	50.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.3	21.7	21.7	7.6	16.1	16.1	9.0	42.9	42.9	12.0	45.9	45.9
Actuated g/C Ratio	0.13	0.20	0.20	0.07	0.15	0.15	0.08	0.40	0.40	0.11	0.43	0.43
v/c Ratio	0.68	0.55	0.37	0.74	0.93	0.43	0.59	0.66	0.07	0.62	0.80	0.46
Control Delay	55.0	46.3	8.9	88.3	87.7	7.5	58.6	28.7	0.2	54.6	31.1	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	46.3	8.9	88.3	87.7	7.5	58.6	28.7	0.2	54.6	31.1	3.9
LOS	D	D	A	F	F	A	E	C	A	D	C	A
Approach Delay		40.7			60.9			31.5			28.1	
Approach LOS		D			E			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	189	148	80	236	160	149	896	49	212	1164	378
Future Volume (veh/h)	255	189	148	80	236	160	149	896	49	212	1164	378
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	268	199	82	84	248	89	157	943	31	223	1225	209
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	358	301	104	284	241	222	1439	609	296	1521	636
Arrive On Green	0.11	0.20	0.20	0.07	0.16	0.16	0.07	0.41	0.41	0.09	0.43	0.43
Sat Flow, veh/h	3188	1772	1488	1594	1772	1502	3188	3544	1501	3188	3544	1482
Grp Volume(v), veh/h	268	199	82	84	248	89	157	943	31	223	1225	209
Grp Sat Flow(s),veh/h/ln	1594	1772	1488	1594	1772	1502	1594	1772	1501	1594	1772	1482
Q Serve(g_s), s	7.6	9.3	4.3	4.8	12.6	4.9	4.4	19.9	1.2	6.3	27.8	8.6
Cycle Q Clear(g_c), s	7.6	9.3	4.3	4.8	12.6	4.9	4.4	19.9	1.2	6.3	27.8	8.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	340	358	301	104	284	241	222	1439	609	296	1521	636
V/C Ratio(X)	0.79	0.56	0.27	0.81	0.87	0.37	0.71	0.66	0.05	0.75	0.81	0.33
Avail Cap(c_a), veh/h	601	492	413	131	303	257	359	1682	712	739	2104	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	33.1	31.1	42.6	37.8	34.6	42.0	22.2	16.6	40.8	23.0	17.5
Incr Delay (d2), s/veh	1.5	1.4	0.5	20.1	22.3	0.9	1.6	0.7	0.0	1.5	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.9	1.5	2.4	6.9	1.7	1.7	7.5	0.4	2.4	10.5	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	34.5	31.6	62.6	60.1	35.5	43.6	22.9	16.7	42.3	24.6	17.8
LnGrp LOS	D	C	C	E	E	D	D	C	B	D	C	B
Approach Vol, veh/h		549			421			1131			1657	
Approach Delay, s/veh		37.6			55.4			25.6			26.1	
Approach LOS		D			E			C			C	

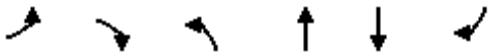
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	43.7	10.6	24.8	11.0	45.8	14.5	21.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	43.8	7.6	25.6	10.4	54.8	17.4	15.8
Max Q Clear Time (g_c+I1), s	8.3	21.9	6.8	11.3	6.4	29.8	9.6	14.6
Green Ext Time (p_c), s	0.3	6.2	0.0	1.0	0.1	9.8	0.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	109	129	967	1210
Future Volume (vph)	109	129	967	1210
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	26.0	94.0	94.0	94.0
Total Split (%)	21.7%	78.3%	78.3%	78.3%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	14.8		60.4	60.4
Actuated g/C Ratio	0.17		0.71	0.71
v/c Ratio	0.67		0.80	0.61
Control Delay	42.5		13.4	7.2
Queue Delay	0.0		0.0	0.0
Total Delay	42.5		13.4	7.2
LOS	D		B	A
Approach Delay	42.5		13.4	7.2
Approach LOS	D		B	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84.8	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 91.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	109	86	129	967	1210	164
Future Volume (veh/h)	109	86	129	967	1210	164
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	95	142	1063	1330	180
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	145	115	200	1575	2282	307
Arrive On Green	0.15	0.15	0.72	0.72	0.72	0.72
Sat Flow, veh/h	939	743	186	2173	3242	423
Grp Volume(v), veh/h	216	0	404	801	747	763
Grp Sat Flow(s),veh/h/ln	1690	0	656	1702	1777	1794
Q Serve(g_s), s	9.3	0.0	22.8	18.3	14.9	15.2
Cycle Q Clear(g_c), s	9.3	0.0	38.0	18.3	14.9	15.2
Prop In Lane	0.56	0.44	0.35			0.24
Lane Grp Cap(c), veh/h	261	0	541	1234	1288	1301
V/C Ratio(X)	0.83	0.00	0.75	0.65	0.58	0.59
Avail Cap(c_a), veh/h	486	0	889	2039	2129	2150
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	0.0	8.4	5.3	4.9	4.9
Incr Delay (d2), s/veh	6.5	0.0	2.1	0.6	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	1.6	3.1	2.6	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.2	0.0	10.5	5.9	5.3	5.3
LnGrp LOS	D	A	B	A	A	A
Approach Vol, veh/h	216			1205	1510	
Approach Delay, s/veh	37.2			7.4	5.3	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		58.6		16.1		58.6
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		89.5		21.5		89.5
Max Q Clear Time (g_c+I1), s		40.0		11.3		17.2
Green Ext Time (p_c), s		14.1		0.4		14.3

Intersection Summary	
HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

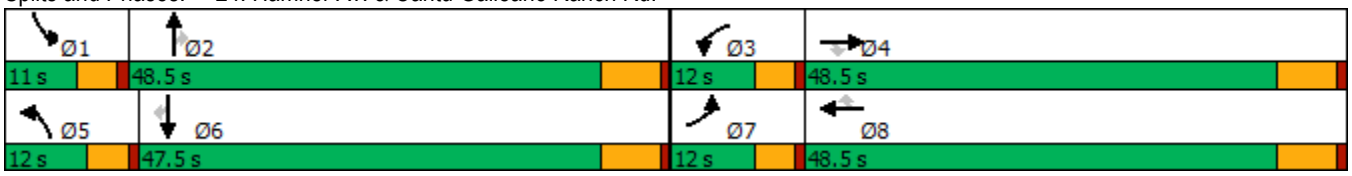
Notes

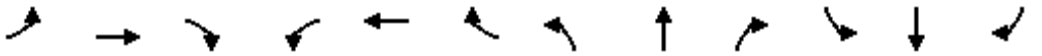
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	405	1521	424	478	1635	216	482	423	367	296	539	397
Future Volume (vph)	405	1521	424	478	1635	216	482	423	367	296	539	397
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.0	48.5	48.5	12.0	48.5	48.5	12.0	48.5	48.5	11.0	47.5	47.5
Total Split (%)	10.0%	40.4%	40.4%	10.0%	40.4%	40.4%	10.0%	40.4%	40.4%	9.2%	39.6%	39.6%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.6	34.8	34.8	7.6	34.8	34.8	7.6	23.1	23.1	6.6	22.1	22.1
Actuated g/C Ratio	0.08	0.37	0.37	0.08	0.37	0.37	0.08	0.24	0.24	0.07	0.23	0.23
v/c Ratio	1.48	0.58	0.61	1.75	0.62	0.31	1.76	0.32	0.77	1.25	0.32	0.43
Control Delay	268.5	25.6	16.5	380.3	26.3	4.6	386.3	29.7	31.2	181.5	30.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	268.5	25.6	16.5	380.3	26.3	4.6	386.3	29.7	31.2	181.5	30.2	10.6
LOS	F	C	B	F	C	A	F	C	C	F	C	B
Approach Delay		65.8			97.0			165.3			60.2	
Approach LOS		E			F			F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.76	
Intersection Signal Delay: 92.6	Intersection LOS: F
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	405	1521	424	478	1635	216	482	423	367	296	539	397
Future Volume (veh/h)	405	1521	424	478	1635	216	482	423	367	296	539	397
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	422	1584	234	498	1703	121	502	441	189	308	561	258
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	2805	594	330	2805	594	330	1002	283	285	1242	526
Arrive On Green	0.09	0.37	0.37	0.09	0.37	0.37	0.09	0.18	0.18	0.08	0.17	0.17
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	422	1584	234	498	1703	121	502	441	189	308	561	258
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	7.4	13.4	8.7	7.4	14.7	4.1	7.4	5.6	8.9	6.4	5.4	5.9
Cycle Q Clear(g_c), s	7.4	13.4	8.7	7.4	14.7	4.1	7.4	5.6	8.9	6.4	5.4	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	2805	594	330	2805	594	330	1002	283	285	1242	526
V/C Ratio(X)	1.28	0.56	0.39	1.51	0.61	0.20	1.52	0.44	0.67	1.08	0.45	0.49
Avail Cap(c_a), veh/h	330	3930	833	330	3930	833	330	2969	839	285	3865	1638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	19.8	18.3	36.3	20.2	16.9	36.3	29.3	30.6	36.8	30.1	30.3
Incr Delay (d2), s/veh	147.3	0.2	0.4	244.8	0.2	0.2	250.0	0.3	2.7	76.2	0.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	5.0	2.8	14.1	5.5	1.3	14.4	2.3	3.3	5.6	2.3	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	183.5	20.0	18.7	281.1	20.4	17.1	286.3	29.6	33.3	113.0	30.3	31.0
LnGrp LOS	F	B	B	F	C	B	F	C	C	F	C	C
Approach Vol, veh/h		2240			2322			1132			1127	
Approach Delay, s/veh		50.7			76.2			144.1			53.1	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	20.5	12.0	36.5	12.0	19.5	12.0	36.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	42.3	7.4	42.0	7.4	41.3	7.4	42.0
Max Q Clear Time (g_c+I1), s	8.4	10.9	9.4	15.4	9.4	7.9	9.4	16.7
Green Ext Time (p_c), s	0.0	3.4	0.0	13.0	0.0	4.8	0.0	13.2

Intersection Summary	
HCM 6th Ctrl Delay	75.2
HCM 6th LOS	E

APPENDIX 6.1: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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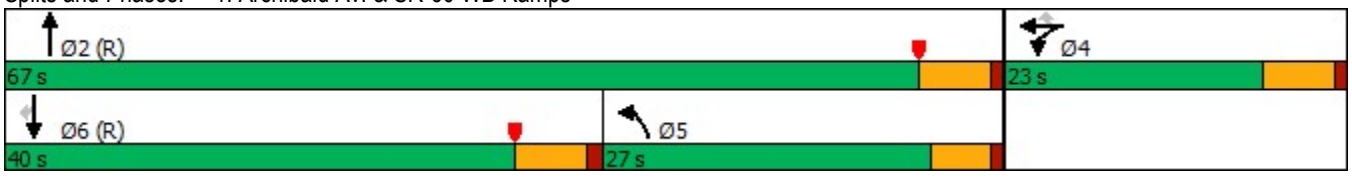
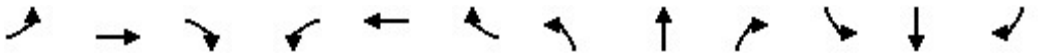
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	416	8	488	889	1188	513	176
Future Volume (vph)	416	8	488	889	1188	513	176
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	23.0	23.0	23.0	27.0	67.0	40.0	40.0
Total Split (%)	25.6%	25.6%	25.6%	30.0%	74.4%	44.4%	44.4%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	24.4	24.4	24.4	30.0	54.0	19.1	19.1
Actuated g/C Ratio	0.27	0.27	0.27	0.33	0.60	0.21	0.21
v/c Ratio	0.71	0.66	0.63	0.79	0.40	0.39	0.38
Control Delay	41.0	29.5	26.4	30.7	4.8	30.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	29.5	26.4	30.7	4.8	30.7	6.2
LOS	D	C	C	C	A	C	A
Approach Delay		32.5			15.9	24.4	
Approach LOS		C			B	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 21.6	Intersection LOS: C
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	416	8	488	889	1188	0	0	513	176
Future Volume (veh/h)	0	0	0	416	8	488	889	1188	0	0	513	176
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				578	0	305	907	1212	0	0	523	83
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				681	0	302	1649	3472	0	0	890	219
Arrive On Green				0.19	0.00	0.19	0.95	1.00	0.00	0.00	0.14	0.14
Sat Flow, veh/h				3563	0	1583	3456	5274	0	0	6696	1585
Grp Volume(v), veh/h				578	0	305	907	1212	0	0	523	83
Grp Sat Flow(s),veh/h/ln				1781	0	1583	1728	1702	0	0	1609	1585
Q Serve(g_s), s				14.1	0.0	17.2	2.3	0.0	0.0	0.0	6.9	4.3
Cycle Q Clear(g_c), s				14.1	0.0	17.2	2.3	0.0	0.0	0.0	6.9	4.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				681	0	302	1649	3472	0	0	890	219
V/C Ratio(X)				0.85	0.00	1.01	0.55	0.35	0.00	0.00	0.59	0.38
Avail Cap(c_a), veh/h				681	0	302	1649	3472	0	0	2445	602
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.75	0.75	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.1	0.0	36.4	1.1	0.0	0.0	0.0	36.4	35.3
Incr Delay (d2), s/veh				9.9	0.0	53.9	0.2	0.2	0.0	0.0	2.8	4.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.7	0.0	18.2	0.4	0.1	0.0	0.0	2.7	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.0	0.0	90.3	1.3	0.2	0.0	0.0	39.2	40.2
LnGrp LOS				D	A	F	A	A	A	A	D	D
Approach Vol, veh/h					883			2119			606	
Approach Delay, s/veh					60.7			0.7			39.3	
Approach LOS					E			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.0	23.0	48.8	18.2
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	61.2	17.2	22.0	* 34
Max Q Clear Time (g_c+I1), s	2.0	19.2	4.3	8.9
Green Ext Time (p_c), s	10.6	0.0	1.7	3.6

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

Notes

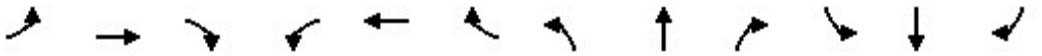
User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	386	5	509	1685	637	166	785
Future Volume (vph)	386	5	509	1685	637	166	785
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	34.0	34.0	34.0	44.0	44.0	12.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	48.9%	48.9%	13.3%	62.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	23.7	23.7	23.7	42.8	42.8	7.8	54.7
Actuated g/C Ratio	0.26	0.26	0.26	0.48	0.48	0.09	0.61
v/c Ratio	0.76	0.64	0.62	0.59	0.62	0.60	0.27
Control Delay	41.5	20.8	19.9	19.1	4.3	53.4	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	20.8	19.9	19.1	4.3	53.4	2.4
LOS	D	C	B	B	A	D	A
Approach Delay		27.7		15.1			11.3
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	386	5	509	0	0	0	0	1685	637	166	785	0
Future Volume (veh/h)	386	5	509	0	0	0	0	1685	637	166	785	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	521	0	224				0	1812	505	178	844	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	666	0	292				0	3658	882	246	3493	0
Arrive On Green	0.19	0.00	0.19				0.00	0.57	0.57	0.14	1.00	0.00
Sat Flow, veh/h	3563	0	1562				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	521	0	224				0	1812	505	178	844	0
Grp Sat Flow(s),veh/h/ln	1781	0	1562				0	1609	1551	1728	1702	0
Q Serve(g_s), s	12.5	0.0	12.3				0.0	15.2	18.7	4.4	0.0	0.0
Cycle Q Clear(g_c), s	12.5	0.0	12.3				0.0	15.2	18.7	4.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	666	0	292				0	3658	882	246	3493	0
V/C Ratio(X)	0.78	0.00	0.77				0.00	0.50	0.57	0.72	0.24	0.00
Avail Cap(c_a), veh/h	1116	0	489				0	3658	882	307	3493	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.85	0.85	0.00
Uniform Delay (d), s/veh	34.8	0.0	34.7				0.0	11.7	12.4	37.8	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	4.2				0.0	0.5	2.7	3.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	4.7				0.0	4.6	5.9	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	0.0	38.9				0.0	12.1	15.1	41.3	0.1	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		745						2317			1022	
Approach Delay, s/veh		37.5						12.8			7.3	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	10.4	57.0				67.4		22.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	8.0	38.2				50.2		28.2				
Max Q Clear Time (g_c+I1), s	6.4	20.7				2.0		14.5				
Green Ext Time (p_c), s	0.0	12.7				6.0		2.3				

Intersection Summary			
HCM 6th Ctrl Delay			15.9
HCM 6th LOS			B

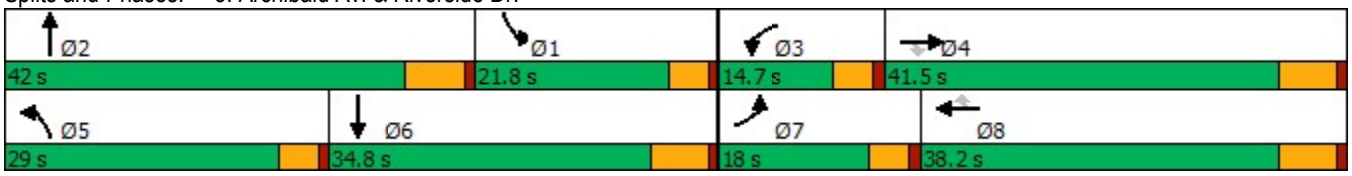
Notes

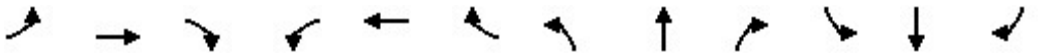
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	164	377	154	131	514	289	288	1551	242	676
Future Volume (vph)	164	377	154	131	514	289	288	1551	242	676
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	41.5	41.5	14.7	38.2	38.2	29.0	42.0	21.8	34.8
Total Split (%)	15.0%	34.6%	34.6%	12.3%	31.8%	31.8%	24.2%	35.0%	18.2%	29.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	27.7	27.7	10.1	24.4	24.4	23.5	35.9	17.2	29.6
Actuated g/C Ratio	0.12	0.25	0.25	0.09	0.22	0.22	0.21	0.32	0.15	0.26
v/c Ratio	0.91	0.48	0.33	0.96	0.74	0.54	0.91	1.18	1.04	0.72
Control Delay	95.8	38.0	6.1	118.2	47.5	7.9	75.6	123.7	116.7	39.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.8	38.0	6.1	118.2	47.5	7.9	75.6	123.7	116.7	39.9
LOS	F	D	A	F	D	A	E	F	F	D
Approach Delay		44.6			45.1			116.8		56.7
Approach LOS		D			D			F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 78.1	Intersection LOS: E
Intersection Capacity Utilization 95.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	377	154	131	514	289	288	1551	173	242	676	192
Future Volume (veh/h)	164	377	154	131	514	289	288	1551	173	242	676	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	171	393	102	136	535	237	300	1616	177	252	704	160
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	789	346	143	690	302	324	1403	153	243	1108	248
Arrive On Green	0.12	0.23	0.23	0.09	0.21	0.21	0.20	0.32	0.32	0.15	0.28	0.28
Sat Flow, veh/h	1594	3367	1477	1594	3367	1472	1594	4418	483	1594	3940	883
Grp Volume(v), veh/h	171	393	102	136	535	237	300	1179	614	252	575	289
Grp Sat Flow(s),veh/h/ln	1594	1683	1477	1594	1683	1472	1594	1612	1676	1594	1612	1598
Q Serve(g_s), s	11.9	11.4	6.4	9.6	16.9	11.5	20.8	35.8	35.8	17.2	17.6	17.9
Cycle Q Clear(g_c), s	11.9	11.4	6.4	9.6	16.9	11.5	20.8	35.8	35.8	17.2	17.6	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		0.55
Lane Grp Cap(c), veh/h	189	789	346	143	690	302	324	1024	532	243	907	449
V/C Ratio(X)	0.90	0.50	0.29	0.95	0.78	0.79	0.93	1.15	1.15	1.04	0.63	0.64
Avail Cap(c_a), veh/h	189	1054	463	143	956	418	345	1024	532	243	907	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	37.4	35.5	51.1	42.3	19.0	44.1	38.5	38.5	47.8	35.4	35.6
Incr Delay (d2), s/veh	38.4	0.5	0.5	60.3	2.7	6.6	28.5	79.3	89.0	67.4	1.4	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	4.5	2.3	6.1	7.0	4.2	10.4	24.5	26.9	11.1	6.7	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.5	37.9	36.0	111.3	45.1	25.6	72.6	117.7	127.5	115.2	36.9	38.7
LnGrp LOS	F	D	D	F	D	C	E	F	F	F	D	D
Approach Vol, veh/h		666			908			2093			1116	
Approach Delay, s/veh		50.3			49.9			114.1			55.0	
Approach LOS		D			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	42.0	14.7	32.6	27.5	37.9	18.0	29.3
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.2	* 36	10.1	35.3	24.4	28.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	19.2	37.8	11.6	13.4	22.8	19.9	13.9	18.9
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.1	3.3	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	79.3
HCM 6th LOS	E

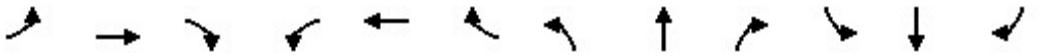
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	124	106	139	142	195	171	1571	62	791
Future Volume (vph)	124	106	139	142	195	171	1571	62	791
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	20.4	23.0	22.0	24.6	24.6	25.0	61.8	13.2	50.0
Total Split (%)	17.0%	19.2%	18.3%	20.5%	20.5%	20.8%	51.5%	11.0%	41.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.9	15.3	15.2	16.6	16.6	17.7	52.6	8.3	40.0
Actuated g/C Ratio	0.13	0.14	0.14	0.15	0.15	0.17	0.49	0.08	0.37
v/c Ratio	0.72	0.73	0.74	0.61	0.60	0.77	0.79	0.60	0.79
Control Delay	68.1	60.1	67.1	55.2	19.5	65.7	26.4	73.6	35.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	60.1	67.1	55.2	19.5	65.7	26.4	73.6	35.2
LOS	E	E	E	E	B	E	C	E	D
Approach Delay		63.6		44.1			30.0		37.7
Approach LOS		E		D			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	106	52	139	142	195	171	1571	147	62	791	78
Future Volume (veh/h)	124	106	52	139	142	195	171	1571	147	62	791	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	146	125	53	164	167	135	201	1848	165	73	931	84
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	152	65	195	250	212	234	2387	212	91	1301	117
Arrive On Green	0.11	0.13	0.13	0.12	0.14	0.14	0.15	0.50	0.50	0.06	0.41	0.41
Sat Flow, veh/h	1594	1181	501	1594	1772	1502	1594	4806	427	1594	3196	288
Grp Volume(v), veh/h	146	0	178	164	167	135	201	1360	653	73	516	499
Grp Sat Flow(s),veh/h/ln	1594	0	1682	1594	1772	1502	1594	1772	1689	1594	1772	1713
Q Serve(g_s), s	8.5	0.0	9.7	9.5	8.4	6.6	11.6	29.5	29.9	4.3	23.0	23.0
Cycle Q Clear(g_c), s	8.5	0.0	9.7	9.5	8.4	6.6	11.6	29.5	29.9	4.3	23.0	23.0
Prop In Lane	1.00		0.30	1.00		1.00	1.00		0.25	1.00		0.17
Lane Grp Cap(c), veh/h	175	0	217	195	250	212	234	1760	839	91	721	697
V/C Ratio(X)	0.83	0.00	0.82	0.84	0.67	0.64	0.86	0.77	0.78	0.81	0.72	0.72
Avail Cap(c_a), veh/h	267	0	328	294	376	319	345	2151	1025	145	854	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	0.0	40.0	40.5	38.4	25.7	39.3	19.4	19.5	43.9	23.4	23.4
Incr Delay (d2), s/veh	12.6	0.0	9.6	12.7	3.1	3.2	13.5	1.5	3.1	15.3	2.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	4.4	4.3	3.7	3.0	5.1	10.5	10.5	2.0	9.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.6	0.0	49.6	53.2	41.4	28.8	52.8	20.8	22.6	59.2	25.7	25.8
LnGrp LOS	D	A	D	D	D	C	D	C	C	E	C	C
Approach Vol, veh/h		324			466			2214			1088	
Approach Delay, s/veh		51.4			41.9			24.3			28.0	
Approach LOS		D			D			C			C	

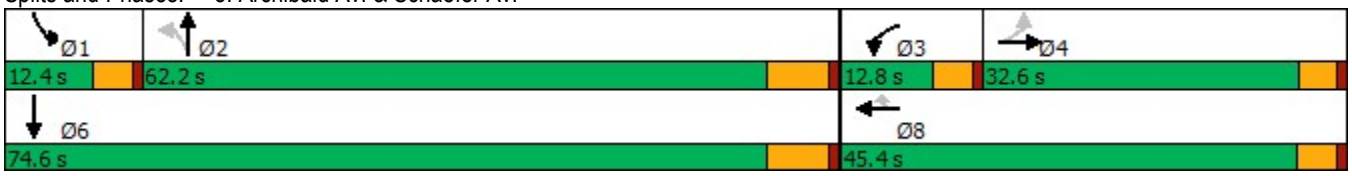
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	51.4	16.1	16.7	18.4	42.9	15.0	17.9
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	8.6	57.2	17.4	18.4	20.4	45.4	15.8	20.0
Max Q Clear Time (g_c+I1), s	6.3	31.9	11.5	11.7	13.6	25.0	10.5	10.4
Green Ext Time (p_c), s	0.0	14.9	0.2	0.4	0.3	5.8	0.2	0.9

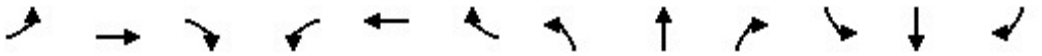
Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	17	23	55	25	68	1693	50	1007
Future Volume (vph)	17	23	55	25	68	1693	50	1007
Turn Type	Perm	NA	Prot	NA	Perm	NA	Prot	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4				8			
Detector Phase	4	4	3	8	8	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	32.5	32.5	9.6	32.6	32.6	37.5	9.6	23.5
Total Split (s)	32.6	32.6	12.8	45.4	45.4	62.2	12.4	74.6
Total Split (%)	27.2%	27.2%	10.7%	37.8%	37.8%	51.8%	10.3%	62.2%
Yellow Time (s)	3.5	3.5	3.6	3.6	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.6	4.6	4.6	6.5	4.6	6.5
Lead/Lag	Lag	Lag	Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.3	9.3	8.4	15.6	15.6	52.4	8.1	60.9
Actuated g/C Ratio	0.11	0.11	0.10	0.19	0.19	0.65	0.10	0.75
v/c Ratio	0.13	0.13	0.40	0.09	0.24	0.67	0.38	0.49
Control Delay	43.4	42.8	52.0	31.8	9.4	16.3	51.9	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	42.8	52.0	31.8	9.4	16.3	51.9	7.9
LOS	D	D	D	C	A	B	D	A
Approach Delay		43.1		28.9		16.3		10.0
Approach LOS		D		C		B		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 81.2	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 73.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	23	0	55	25	68	0	1693	45	50	1007	19
Future Volume (veh/h)	17	23	0	55	25	68	0	1693	45	50	1007	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.86		1.00	1.00		0.93	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	20	27	0	65	30	81	0	2015	42	60	1199	23
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	133	0	80	329	260	95	2728	57	75	2255	43
Arrive On Green	0.08	0.08	0.00	0.05	0.19	0.19	0.00	0.56	0.56	0.05	0.67	0.67
Sat Flow, veh/h	982	1772	0	1594	1772	1400	408	4874	101	1594	3377	65
Grp Volume(v), veh/h	20	27	0	65	30	81	0	1332	725	60	597	625
Grp Sat Flow(s),veh/h/ln	982	1772	0	1594	1772	1400	408	1612	1751	1594	1683	1759
Q Serve(g_s), s	1.5	1.1	0.0	3.1	1.1	3.8	0.0	23.5	23.6	2.8	13.8	13.9
Cycle Q Clear(g_c), s	1.5	1.1	0.0	3.1	1.1	3.8	0.0	23.5	23.6	2.8	13.8	13.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.06	1.00		0.04
Lane Grp Cap(c), veh/h	169	133	0	80	329	260	95	1805	980	75	1124	1174
V/C Ratio(X)	0.12	0.20	0.00	0.82	0.09	0.31	0.00	0.74	0.74	0.80	0.53	0.53
Avail Cap(c_a), veh/h	459	657	0	173	955	754	167	2372	1288	164	1514	1581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	32.9	0.0	35.6	25.5	26.7	0.0	12.5	12.5	35.7	6.5	6.5
Incr Delay (d2), s/veh	0.3	0.7	0.0	7.4	0.1	0.7	0.0	0.9	1.6	6.9	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.5	0.0	1.3	0.4	1.2	0.0	6.2	6.9	1.1	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	33.6	0.0	43.1	25.7	27.3	0.0	13.4	14.1	42.6	6.9	6.9
LnGrp LOS	C	C	A	D	C	C	A	B	B	D	A	A
Approach Vol, veh/h		47			176			2057			1282	
Approach Delay, s/veh		33.5			32.9			13.7			8.5	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	8.2	48.9	8.4	10.3		57.1		18.7				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	7.8	55.7	8.2	* 28		68.1		40.8				
Max Q Clear Time (g_c+I1), s	4.8	25.6	5.1	3.5		15.9		5.8				
Green Ext Time (p_c), s	0.0	16.8	0.0	0.1		8.7		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		13.0	
HCM 6th LOS		B	

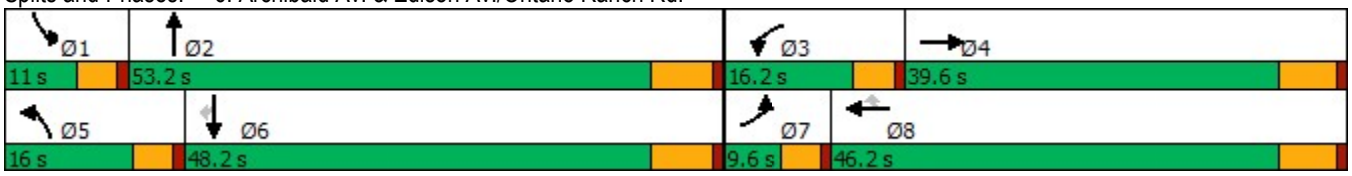
Notes

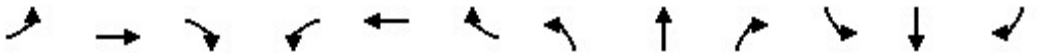
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	233	72	267	454	117	184	1400	309	99	700	68
Future Volume (vph)	38	233	72	267	454	117	184	1400	309	99	700	68
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.6		16.2	46.2	46.2	16.0	53.2		11.0	48.2	48.2
Total Split (%)	8.0%	33.0%		13.5%	38.5%	38.5%	13.3%	44.3%		9.2%	40.2%	40.2%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.0	26.9	114.1	11.7	35.8	35.8	11.5	47.0	114.1	6.4	42.0	42.0
Actuated g/C Ratio	0.04	0.24	1.00	0.10	0.31	0.31	0.10	0.41	1.00	0.06	0.37	0.37
v/c Ratio	0.32	0.31	0.05	0.96	0.90	0.23	1.27	1.06	0.23	1.22	0.59	0.11
Control Delay	62.3	36.0	0.1	95.2	58.5	3.4	205.0	74.6	0.4	214.9	32.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	36.0	0.1	95.2	58.5	3.4	205.0	74.6	0.4	214.9	32.7	0.4
LOS	E	D	A	F	E	A	F	E	A	F	C	A
Approach Delay		31.4			62.5			75.1			51.0	
Approach LOS		C			E			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 63.3	Intersection LOS: E
Intersection Capacity Utilization 94.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	233	72	267	454	117	184	1400	309	99	700	68
Future Volume (veh/h)	38	233	72	267	454	117	184	1400	309	99	700	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	42	256	0	293	499	74	202	1538	0	109	769	42
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	819		309	534	447	161	1470		91	1312	544
Arrive On Green	0.05	0.35	0.00	0.15	0.45	0.45	0.15	0.62	0.00	0.09	0.56	0.56
Sat Flow, veh/h	3000	3544	1502	3000	1772	1483	1594	3544	1502	1594	3544	1469
Grp Volume(v), veh/h	42	256	0	293	499	74	202	1538	0	109	769	42
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1483	1594	1772	1502	1594	1772	1469
Q Serve(g_s), s	1.5	6.0	0.0	10.9	30.1	3.3	11.4	46.7	0.0	6.4	16.1	1.5
Cycle Q Clear(g_c), s	1.5	6.0	0.0	10.9	30.1	3.3	11.4	46.7	0.0	6.4	16.1	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	819		309	534	447	161	1470		91	1312	544
V/C Ratio(X)	0.43	0.31		0.95	0.93	0.17	1.25	1.05		1.20	0.59	0.08
Avail Cap(c_a), veh/h	133	1051		309	629	527	161	1470		91	1312	544
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	30.2	0.0	47.3	29.8	22.5	47.8	21.3	0.0	51.5	19.3	16.1
Incr Delay (d2), s/veh	1.1	0.2	0.0	37.1	19.5	0.2	154.2	36.7	0.0	159.1	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	0.0	5.3	12.8	1.1	11.0	18.8	0.0	6.4	5.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	30.5	0.0	84.5	49.2	22.6	201.9	57.9	0.0	210.6	20.0	16.2
LnGrp LOS	D	C		F	D	C	F	F		F	C	B
Approach Vol, veh/h		298	A		866			1740	A		920	
Approach Delay, s/veh		33.7			58.9			74.7			42.4	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	53.2	16.2	32.2	16.0	48.2	8.3	40.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	46.7	11.6	33.4	11.4	41.7	5.0	40.0
Max Q Clear Time (g_c+I1), s	8.4	48.7	12.9	8.0	13.4	18.1	3.5	32.1
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4	0.0	4.8	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	60.1
HCM 6th LOS	E

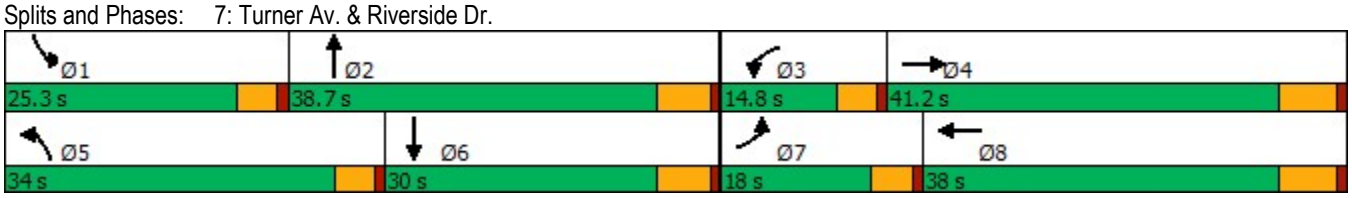
Notes

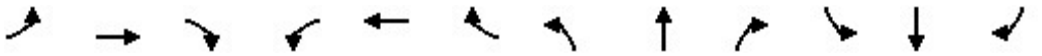
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	131	513	93	577	305	246	122	187
Future Volume (vph)	131	513	93	577	305	246	122	187
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	18.0	41.2	14.8	38.0	34.0	38.7	25.3	30.0
Total Split (%)	15.0%	34.3%	12.3%	31.7%	28.3%	32.3%	21.1%	25.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	13.4	35.2	10.0	31.8	29.4	30.4	14.8	15.8
Actuated g/C Ratio	0.12	0.32	0.09	0.28	0.26	0.27	0.13	0.14
v/c Ratio	0.88	0.83	0.83	0.97	0.93	0.64	0.73	0.73
Control Delay	89.9	43.0	92.6	62.1	70.6	27.4	66.9	40.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.9	43.0	92.6	62.1	70.6	27.4	66.9	40.7
LOS	F	D	F	E	E	C	E	D
Approach Delay		50.6		65.6		44.0		48.1
Approach LOS		D		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 52.7	Intersection LOS: D
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	513	165	93	577	142	305	246	242	122	187	121
Future Volume (veh/h)	131	513	165	93	577	142	305	246	242	122	187	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.95	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	166	649	148	118	730	122	386	311	272	154	237	131
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	824	188	141	788	132	408	514	434	180	341	181
Arrive On Green	0.12	0.30	0.30	0.09	0.27	0.27	0.26	0.31	0.31	0.11	0.16	0.16
Sat Flow, veh/h	1594	2704	616	1594	2880	481	1594	1683	1422	1594	2108	1119
Grp Volume(v), veh/h	166	404	393	118	427	425	386	311	272	154	187	181
Grp Sat Flow(s),veh/h/ln	1594	1683	1636	1594	1683	1678	1594	1683	1422	1594	1683	1543
Q Serve(g_s), s	11.5	24.6	24.7	8.2	27.7	27.7	26.7	17.7	18.4	10.7	11.8	12.5
Cycle Q Clear(g_c), s	11.5	24.6	24.7	8.2	27.7	27.7	26.7	17.7	18.4	10.7	11.8	12.5
Prop In Lane	1.00		0.38	1.00		0.29	1.00		1.00	1.00		0.72
Lane Grp Cap(c), veh/h	190	513	498	141	461	459	408	514	434	180	273	250
V/C Ratio(X)	0.87	0.79	0.79	0.84	0.93	0.93	0.95	0.61	0.63	0.86	0.69	0.72
Avail Cap(c_a), veh/h	190	525	510	145	477	475	417	514	434	294	363	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	35.7	35.7	50.4	39.7	39.7	41.0	33.2	33.5	48.9	44.3	44.6
Incr Delay (d2), s/veh	31.8	7.7	8.0	30.6	23.8	24.0	29.8	2.0	2.8	6.7	3.4	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	10.6	10.4	4.3	13.8	13.8	13.4	7.2	6.4	4.4	5.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.4	43.4	43.7	80.9	63.4	63.7	70.8	35.2	36.3	55.6	47.8	49.8
LnGrp LOS	F	D	D	F	E	E	E	D	D	E	D	D
Approach Vol, veh/h		963			970			969			522	
Approach Delay, s/veh		49.9			65.7			49.7			50.8	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	40.1	14.5	40.4	33.3	24.0	18.0	36.9
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	20.7	32.9	10.2	35.0	29.4	24.2	13.4	31.8
Max Q Clear Time (g_c+I1), s	12.7	20.4	10.2	26.7	28.7	14.5	13.5	29.7
Green Ext Time (p_c), s	0.1	2.7	0.0	2.8	0.1	1.4	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	54.4
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	54.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	107	154	107	44	203	134	142	448	46	84	209	82
Future Vol, veh/h	107	154	107	44	203	134	142	448	46	84	209	82
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	145	208	145	59	274	181	192	605	62	114	282	111
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

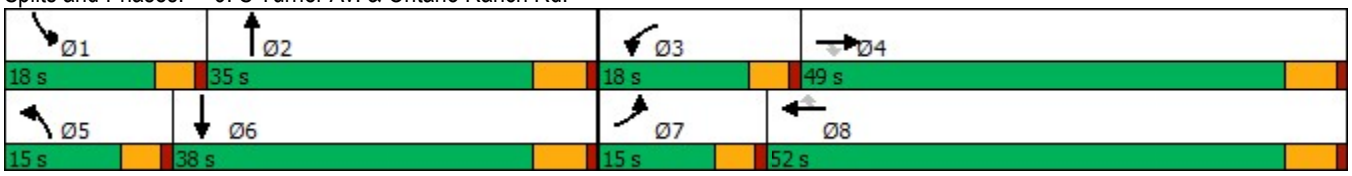
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	29.1	41	92.9	30.1
HCM LOS	D	E	F	D

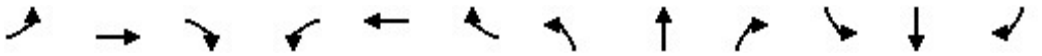
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	76%	0%	100%	32%	0%	100%	34%	0%	100%	46%
Vol Right, %	0%	0%	24%	0%	0%	68%	0%	0%	66%	0%	0%	54%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	299	195	107	103	158	44	135	202	84	139	152
LT Vol	142	0	0	107	0	0	44	0	0	84	0	0
Through Vol	0	299	149	0	103	51	0	135	68	0	139	70
RT Vol	0	0	46	0	0	107	0	0	134	0	0	82
Lane Flow Rate	192	404	264	145	139	214	59	183	273	114	188	205
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.606	1.219	0.785	0.486	0.448	0.664	0.199	0.588	0.842	0.383	0.61	0.643
Departure Headway (Hd)	11.374	10.874	10.709	12.454	11.954	11.481	12.387	11.887	11.422	12.417	11.917	11.538
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	317	335	338	291	304	317	291	305	319	292	305	316
Service Time	9.174	8.674	8.509	10.154	9.654	9.181	10.087	9.587	9.122	10.117	9.617	9.238
HCM Lane V/C Ratio	0.606	1.206	0.781	0.498	0.457	0.675	0.203	0.6	0.856	0.39	0.616	0.649
HCM Control Delay	30.3	154.9	43.6	26.4	24	34.2	18.1	30.2	53.3	22.6	31.6	32.9
HCM Lane LOS	D	F	E	D	C	D	C	D	F	C	D	D
HCM 95th-tile Q	3.7	17.5	6.4	2.5	2.2	4.4	0.7	3.5	7.3	1.7	3.7	4.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	35	610	17	57	866	26	37	142	59	70
Future Volume (vph)	35	610	17	57	866	26	37	142	59	70
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	15.0	49.0	49.0	18.0	52.0	52.0	15.0	35.0	18.0	38.0
Total Split (%)	12.5%	40.8%	40.8%	15.0%	43.3%	43.3%	12.5%	29.2%	15.0%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	7.4	26.8	26.8	8.3	30.2	30.2	7.4	15.0	8.4	18.4
Actuated g/C Ratio	0.10	0.36	0.36	0.11	0.40	0.40	0.10	0.20	0.11	0.25
v/c Ratio	0.22	0.53	0.03	0.32	0.67	0.04	0.23	0.54	0.33	0.22
Control Delay	44.1	22.6	0.1	43.8	23.0	0.1	44.2	36.7	43.8	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	22.6	0.1	43.8	23.0	0.1	44.2	36.7	43.8	27.8
LOS	D	C	A	D	C	A	D	D	D	C
Approach Delay		23.1			23.6			38.0		34.1
Approach LOS		C			C			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	610	17	57	866	26	37	142	38	59	70	21
Future Volume (veh/h)	35	610	17	57	866	26	37	142	38	59	70	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	678	15	63	962	21	41	158	36	66	78	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	1315	587	99	1369	610	75	225	51	101	265	41
Arrive On Green	0.04	0.37	0.37	0.06	0.39	0.39	0.04	0.15	0.15	0.06	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1474	336	1781	1583	244
Grp Volume(v), veh/h	39	678	15	63	962	21	41	0	194	66	0	90
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1810	1781	0	1827
Q Serve(g_s), s	1.2	8.5	0.3	2.0	13.0	0.5	1.3	0.0	5.8	2.1	0.0	2.5
Cycle Q Clear(g_c), s	1.2	8.5	0.3	2.0	13.0	0.5	1.3	0.0	5.8	2.1	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.13
Lane Grp Cap(c), veh/h	72	1315	587	99	1369	610	75	0	276	101	0	306
V/C Ratio(X)	0.54	0.52	0.03	0.64	0.70	0.03	0.55	0.00	0.70	0.65	0.00	0.29
Avail Cap(c_a), veh/h	325	2693	1201	419	2880	1285	325	0	927	419	0	1032
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	14.0	11.4	26.4	14.8	10.9	26.8	0.0	22.9	26.3	0.0	20.8
Incr Delay (d2), s/veh	2.3	0.3	0.0	2.5	0.7	0.0	2.3	0.0	3.2	2.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.6	0.1	0.8	4.0	0.1	0.5	0.0	2.4	0.9	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	14.3	11.4	28.9	15.4	10.9	29.1	0.0	26.2	29.0	0.0	21.3
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	A	C
Approach Vol, veh/h		732			1046			235			156	
Approach Delay, s/veh		15.0			16.2			26.7			24.5	
Approach LOS		B			B			C			C	

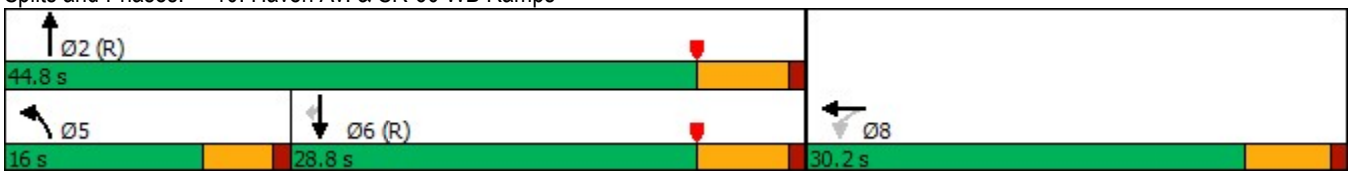
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	14.5	7.8	26.9	7.0	15.4	6.9	27.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.4	29.2	13.4	43.2	10.4	32.2	10.4	46.2
Max Q Clear Time (g_c+I1), s	4.1	7.8	4.0	10.5	3.3	4.5	3.2	15.0
Green Ext Time (p_c), s	0.0	0.9	0.0	4.5	0.0	0.4	0.0	6.9

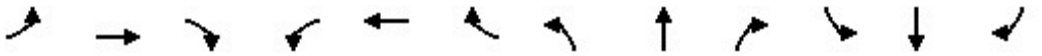
Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	251	4	790	335	1724	910	449
Future Volume (vph)	251	4	790	335	1724	910	449
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	30.2	30.2		16.0	44.8	28.8	28.8
Total Split (%)	40.3%	40.3%		21.3%	59.7%	38.4%	38.4%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	24.1	24.1	75.0	10.4	38.9	23.5	23.5
Actuated g/C Ratio	0.32	0.32	1.00	0.14	0.52	0.31	0.31
v/c Ratio	0.93	0.94	0.52	0.73	0.68	0.59	0.58
Control Delay	51.8	52.5	1.2	35.4	16.1	23.8	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	52.5	1.2	35.4	16.1	23.8	5.5
LOS	D	D	A	D	B	C	A
Approach Delay		29.3			19.2	17.8	
Approach LOS		C			B	B	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 45 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 22.3	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	251	4	790	335	1724	0	0	910	449
Future Volume (veh/h)	0	0	0	251	4	790	335	1724	0	0	910	449
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				1007	0	0	349	1796	0	0	948	400
Peak Hour Factor				0.25	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1107	0		428	2703	0	0	1730	530
Arrive On Green				0.31	0.00	0.00	0.25	1.00	0.00	0.00	0.34	0.34
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1564
Grp Volume(v), veh/h				1007	0	0	349	1796	0	0	948	400
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1564
Q Serve(g_s), s				20.4	0.0	0.0	7.1	0.0	0.0	0.0	11.3	17.0
Cycle Q Clear(g_c), s				20.4	0.0	0.0	7.1	0.0	0.0	0.0	11.3	17.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1107	0		428	2703	0	0	1730	530
V/C Ratio(X)				0.91	0.00		0.82	0.66	0.00	0.00	0.55	0.75
Avail Cap(c_a), veh/h				1159	0		507	2703	0	0	1730	530
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.28	0.28	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.8	0.0	0.0	27.4	0.0	0.0	0.0	20.1	22.0
Incr Delay (d2), s/veh				10.4	0.0	0.0	2.2	0.4	0.0	0.0	1.3	9.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.2	0.0	0.0	2.5	0.1	0.0	0.0	4.2	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				35.2	0.0	0.0	29.6	0.4	0.0	0.0	21.4	31.6
LnGrp LOS				D	A		C	A	A	A	C	C
Approach Vol, veh/h					1007	A		2145			1348	
Approach Delay, s/veh					35.2			5.1			24.4	
Approach LOS					D			A			C	

Timer - Assigned Phs	2		5	6		8				
Phs Duration (G+Y+Rc), s	45.9		14.3	31.6		29.1				
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8				
Max Green Setting (Gmax), s	38.6		11.0	22.6		24.4				
Max Q Clear Time (g_c+I1), s	2.0		9.1	19.0		22.4				
Green Ext Time (p_c), s	10.9		0.1	1.8		0.9				

Intersection Summary		
HCM 6th Ctrl Delay	17.6	
HCM 6th LOS	B	

Notes

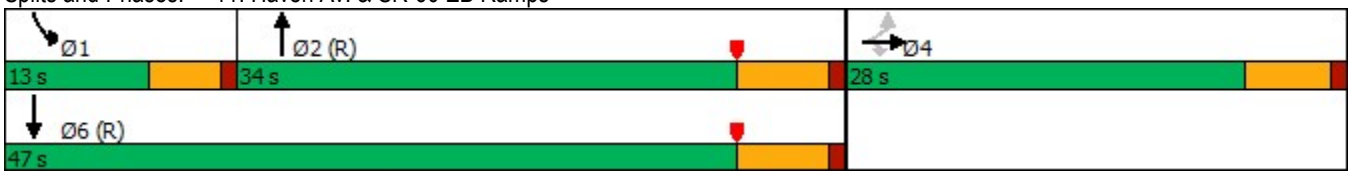
User approved volume balancing among the lanes for turning movement.

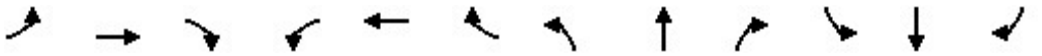
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	792	5	183	1249	357	835
Future Volume (vph)	792	5	183	1249	357	835
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	28.0	28.0	28.0	34.0	13.0	47.0
Total Split (%)	37.3%	37.3%	37.3%	45.3%	17.3%	62.7%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	21.2	21.2	21.2	27.8	9.0	41.8
Actuated g/C Ratio	0.28	0.28	0.28	0.37	0.12	0.56
v/c Ratio	0.88	0.88	0.36	0.92	0.92	0.31
Control Delay	46.9	47.8	9.9	30.9	54.1	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	47.8	9.9	30.9	54.1	8.8
LOS	D	D	A	C	D	A
Approach Delay		40.3		30.9		22.4
Approach LOS		D		C		C

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 48 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	792	5	183	0	0	0	0	1249	405	357	835	0
Future Volume (veh/h)	792	5	183	0	0	0	0	1249	405	357	835	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	838	0	87				0	1315	345	376	879	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	957	0	426				0	1599	419	369	2918	0
Arrive On Green	0.27	0.00	0.27				0.00	0.40	0.40	0.21	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4184	1052	3456	5274	0
Grp Volume(v), veh/h	838	0	87				0	1114	546	376	879	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1664	1728	1702	0
Q Serve(g_s), s	16.9	0.0	3.2				0.0	22.0	22.0	8.0	0.0	0.0
Cycle Q Clear(g_c), s	16.9	0.0	3.2				0.0	22.0	22.0	8.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.63	1.00		0.00
Lane Grp Cap(c), veh/h	957	0	426				0	1355	662	369	2918	0
V/C Ratio(X)	0.88	0.00	0.20				0.00	0.82	0.82	1.02	0.30	0.00
Avail Cap(c_a), veh/h	1055	0	469				0	1355	662	369	2918	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.63	0.63	0.00
Uniform Delay (d), s/veh	26.2	0.0	21.2				0.0	20.2	20.2	29.5	0.0	0.0
Incr Delay (d2), s/veh	7.9	0.0	0.2				0.0	5.7	11.2	42.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	1.1				0.0	8.5	9.4	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	0.0	21.5				0.0	25.9	31.4	71.9	0.2	0.0
LnGrp LOS	C	A	C				A	C	C	F	A	A
Approach Vol, veh/h		925						1660			1255	
Approach Delay, s/veh		32.9						27.7			21.6	
Approach LOS		C						C			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.0	36.1		25.9		49.1
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	8.0	27.8		22.2		40.8
Max Q Clear Time (g_c+I1), s	10.0	24.0		18.9		2.0
Green Ext Time (p_c), s	0.0	2.5		1.3		4.0

Intersection Summary	
HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

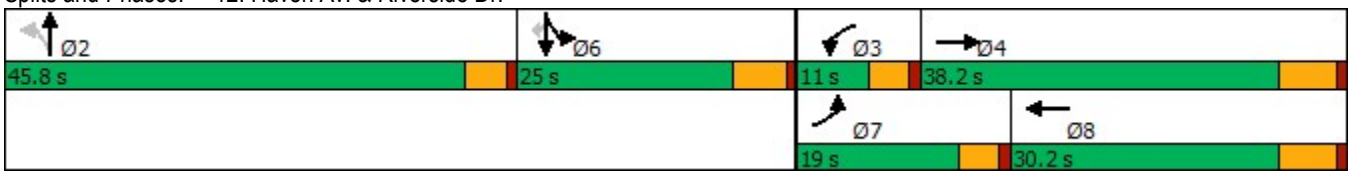
Notes

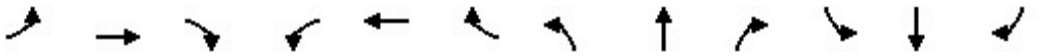
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	388	575	202	414	22	481	289	326	281
Future Volume (vph)	388	575	202	414	22	481	289	326	281
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	38.2	11.0	30.2	45.8	45.8	25.0	25.0	25.0
Total Split (%)	15.8%	31.8%	9.2%	25.2%	38.2%	38.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.4	32.0	6.4	24.0		41.1	19.2	19.2	19.2
Actuated g/C Ratio	0.12	0.27	0.05	0.20		0.34	0.16	0.16	0.16
v/c Ratio	2.19	1.39	2.56	0.96		3.36	1.21	1.23	0.62
Control Delay	576.3	223.7	758.3	69.4		1088.6	169.7	173.2	11.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	576.3	223.7	758.3	69.4		1088.6	169.7	173.2	11.2
LOS	F	F	F	E		F	F	F	B
Approach Delay		361.1		241.2		1088.6		121.3	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.36	
Intersection Signal Delay: 419.9	Intersection LOS: F
Intersection Capacity Utilization 123.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	388	575	33	202	414	195	22	481	201	289	326	281
Future Volume (veh/h)	388	575	33	202	414	195	22	481	201	289	326	281
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	413	612	32	215	440	171	23	512	197	307	347	123
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	443	23	85	469	180	18	402	155	255	284	235
Arrive On Green	0.12	0.27	0.27	0.05	0.20	0.20	0.34	0.34	0.34	0.16	0.16	0.16
Sat Flow, veh/h	1594	1661	87	1594	2343	900	53	1175	452	1594	1772	1468
Grp Volume(v), veh/h	413	0	644	215	315	296	732	0	0	307	347	123
Grp Sat Flow(s),veh/h/ln	1594	0	1747	1594	1683	1559	1680	0	0	1594	1772	1468
Q Serve(g_s), s	14.4	0.0	32.0	6.4	22.1	22.5	41.1	0.0	0.0	19.2	19.2	9.2
Cycle Q Clear(g_c), s	14.4	0.0	32.0	6.4	22.1	22.5	41.1	0.0	0.0	19.2	19.2	9.2
Prop In Lane	1.00		0.05	1.00		0.58	0.03		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	191	0	466	85	337	312	575	0	0	255	284	235
V/C Ratio(X)	2.16	0.00	1.38	2.53	0.93	0.95	1.27	0.00	0.00	1.20	1.22	0.52
Avail Cap(c_a), veh/h	191	0	466	85	337	312	575	0	0	255	284	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	44.0	56.8	47.2	47.4	39.5	0.0	0.0	50.4	50.4	46.2
Incr Delay (d2), s/veh	538.7	0.0	184.9	721.6	32.5	37.8	135.7	0.0	0.0	122.9	128.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.2	0.0	37.1	19.5	11.9	11.6	38.3	0.0	0.0	16.1	18.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	591.5	0.0	228.9	778.4	79.8	85.2	175.1	0.0	0.0	173.3	178.5	48.3
LnGrp LOS	F	A	F	F	E	F	F	A	A	F	F	D
Approach Vol, veh/h		1057			826			732			777	
Approach Delay, s/veh		370.6			263.6			175.1			155.8	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.8	11.0	38.2		25.0	19.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 41	6.4	32.0		19.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		43.1	8.4	34.0		21.2	16.4	24.5				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		253.1
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	152	75	158	569	357	135
Future Vol, veh/h	152	75	158	569	357	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	162	80	168	605	380	144

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1393	452	524	0	-	0
Stage 1	452	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 156	608	1043	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 131	608	1043	-	-	-
Mov Cap-2 Maneuver	261	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	380	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.9	2	0
HCM LOS	D		

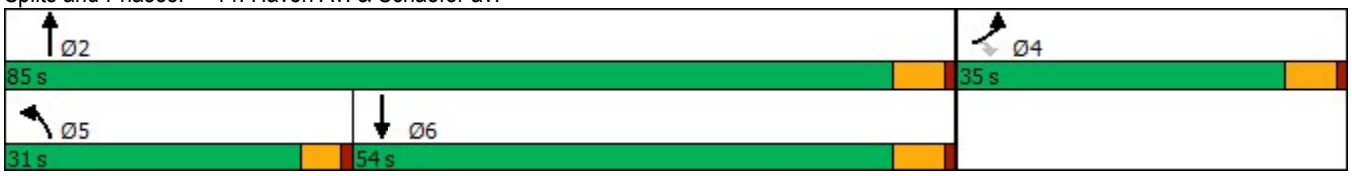
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1043	-	261	608	-	-
HCM Lane V/C Ratio	0.161	-	0.62	0.131	-	-
HCM Control Delay (s)	9.1	-	38.9	11.8	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.6	-	3.8	0.5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	81	118	136	577	366
Future Volume (vph)	81	118	136	577	366
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	35.0	35.0	31.0	85.0	54.0
Total Split (%)	29.2%	29.2%	25.8%	70.8%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.1	12.1	9.8	28.2	16.3
Actuated g/C Ratio	0.23	0.23	0.19	0.54	0.31
v/c Ratio	0.24	0.29	0.50	0.66	0.45
Control Delay	20.5	6.6	27.8	12.9	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	6.6	27.8	12.9	17.6
LOS	C	A	C	B	B
Approach Delay	12.3			15.8	17.6
Approach LOS	B			B	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 52.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 50.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	81	118	136	577	366	58
Future Volume (veh/h)	81	118	136	577	366	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	88	74	148	627	398	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	337	318	186	871	754	113
Arrive On Green	0.21	0.21	0.12	0.49	0.26	0.26
Sat Flow, veh/h	1594	1502	1594	1772	3015	437
Grp Volume(v), veh/h	88	74	148	627	228	230
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1683	1680
Q Serve(g_s), s	1.8	1.6	3.5	10.9	4.5	4.6
Cycle Q Clear(g_c), s	1.8	1.6	3.5	10.9	4.5	4.6
Prop In Lane	1.00	1.00	1.00			0.26
Lane Grp Cap(c), veh/h	337	318	186	871	434	433
V/C Ratio(X)	0.26	0.23	0.80	0.72	0.52	0.53
Avail Cap(c_a), veh/h	1190	1121	1076	3588	2074	2070
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	12.8	16.8	7.8	12.5	12.5
Incr Delay (d2), s/veh	0.4	0.4	2.9	1.1	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.1	2.2	1.3	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.3	13.2	19.8	9.0	13.5	13.5
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	162			775	458	
Approach Delay, s/veh	13.2			11.0	13.5	
Approach LOS	B			B	B	

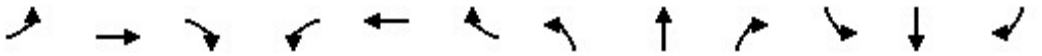
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		25.0		14.1	9.2	15.9
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		79.2		29.2	26.4	48.2
Max Q Clear Time (g_c+I1), s		12.9		3.8	5.5	6.6
Green Ext Time (p_c), s		4.3		0.4	0.2	2.6

Intersection Summary		
HCM 6th Ctrl Delay		12.1
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	665	19	82	660	190	40	329	125	240	216	116
Future Volume (vph)	198	665	19	82	660	190	40	329	125	240	216	116
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	15.0	38.0	38.0	11.5	34.5	34.5	11.7	48.5	48.5	22.0	58.8	58.8
Total Split (%)	12.5%	31.7%	31.7%	9.6%	28.8%	28.8%	9.8%	40.4%	40.4%	18.3%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.5	34.6	34.6	6.5	28.2	28.2	6.4	26.8	26.8	17.5	42.2	42.2
Actuated g/C Ratio	0.10	0.33	0.33	0.06	0.27	0.27	0.06	0.26	0.26	0.17	0.40	0.40
v/c Ratio	1.35	0.45	0.03	0.49	0.43	0.37	0.44	0.78	0.27	0.98	0.33	0.19
Control Delay	231.2	30.7	0.1	59.4	33.7	7.0	64.7	48.4	4.2	95.4	23.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	231.2	30.7	0.1	59.4	33.7	7.0	64.7	48.4	4.2	95.4	23.7	4.4
LOS	F	C	A	E	C	A	E	D	A	F	C	A
Approach Delay		75.1			30.5			38.6			49.8	
Approach LOS		E			C			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 104.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 49.4	Intersection LOS: D
Intersection Capacity Utilization 74.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	665	19	82	660	190	40	329	125	240	216	116
Future Volume (veh/h)	198	665	19	82	660	190	40	329	125	240	216	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	213	715	9	88	710	152	43	354	83	258	232	102
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	1597	495	132	1669	411	55	432	366	271	673	568
Arrive On Green	0.10	0.33	0.33	0.05	0.27	0.27	0.03	0.24	0.24	0.17	0.38	0.38
Sat Flow, veh/h	1594	4837	1500	2910	6095	1502	1594	1772	1500	1594	1772	1496
Grp Volume(v), veh/h	213	715	9	88	710	152	43	354	83	258	232	102
Grp Sat Flow(s),veh/h/ln	1594	1612	1500	1455	1524	1502	1594	1772	1500	1594	1772	1496
Q Serve(g_s), s	10.4	11.9	0.4	3.0	9.8	8.4	2.7	19.3	4.5	16.4	9.6	4.6
Cycle Q Clear(g_c), s	10.4	11.9	0.4	3.0	9.8	8.4	2.7	19.3	4.5	16.4	9.6	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	162	1597	495	132	1669	411	55	432	366	271	673	568
V/C Ratio(X)	1.31	0.45	0.02	0.67	0.43	0.37	0.78	0.82	0.23	0.95	0.34	0.18
Avail Cap(c_a), veh/h	162	1597	495	196	1669	411	111	740	626	271	918	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	26.9	23.1	48.0	30.5	30.0	49.0	36.5	30.9	42.0	22.6	21.1
Incr Delay (d2), s/veh	178.1	0.9	0.1	2.1	0.8	2.5	8.7	3.9	0.3	41.1	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	4.4	0.1	1.1	3.4	3.1	1.2	8.4	1.6	9.2	3.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	224.1	27.8	23.1	50.2	31.3	32.5	57.7	40.4	31.2	83.1	22.9	21.3
LnGrp LOS	F	C	C	D	C	C	E	D	C	F	C	C
Approach Vol, veh/h		937			950			480			592	
Approach Delay, s/veh		72.4			33.3			40.4			48.9	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	30.7	9.2	40.3	8.1	44.6	15.0	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.4	42.7	6.9	* 32	7.1	53.0	10.4	28.0
Max Q Clear Time (g_c+I1), s	18.4	21.3	5.0	13.9	4.7	11.6	12.4	11.8
Green Ext Time (p_c), s	0.0	2.1	0.0	4.1	0.0	1.6	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	49.9
HCM 6th LOS	D

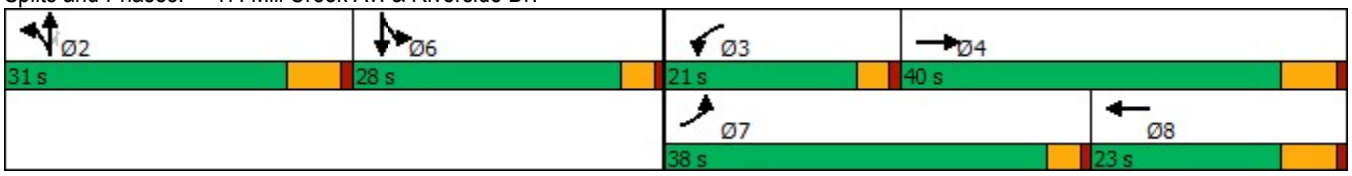
Notes

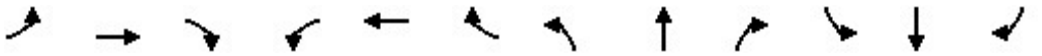
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	353	349	109	319	210	83	81	91	171
Future Volume (vph)	353	349	109	319	210	83	81	91	171
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	38.0	40.0	21.0	23.0	31.0	31.0	31.0	28.0	28.0
Total Split (%)	31.7%	33.3%	17.5%	19.2%	25.8%	25.8%	25.8%	23.3%	23.3%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	34.0	37.3	13.7	17.0	22.8	22.8	22.8	24.0	24.0
Actuated g/C Ratio	0.29	0.32	0.12	0.14	0.19	0.19	0.19	0.20	0.20
v/c Ratio	0.98	0.71	0.75	1.09	0.87	0.31	0.26	0.36	1.01
Control Delay	79.4	33.1	74.4	110.8	73.1	43.0	4.5	44.7	94.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.4	33.1	74.4	110.8	73.1	43.0	4.5	44.7	94.5
LOS	E	C	E	F	E	D	A	D	F
Approach Delay		50.1		103.3		51.5			82.0
Approach LOS		D		F		D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 68.1	Intersection LOS: E
Intersection Capacity Utilization 83.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	353	349	259	109	319	99	210	83	81	91	171	100
Future Volume (veh/h)	353	349	259	109	319	99	210	83	81	91	171	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	447	442	176	138	404	74	266	105	57	115	216	76
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	467	798	315	162	420	76	299	332	280	317	240	85
Arrive On Green	0.29	0.34	0.34	0.10	0.15	0.15	0.19	0.19	0.19	0.20	0.20	0.20
Sat Flow, veh/h	1594	2351	927	1594	2834	514	1594	1772	1492	1594	1208	425
Grp Volume(v), veh/h	447	315	303	138	238	240	266	105	57	115	0	292
Grp Sat Flow(s),veh/h/ln	1594	1683	1595	1594	1683	1665	1594	1772	1492	1594	0	1633
Q Serve(g_s), s	31.6	17.5	17.8	9.8	16.1	16.4	18.7	5.9	3.7	7.2	0.0	20.0
Cycle Q Clear(g_c), s	31.6	17.5	17.8	9.8	16.1	16.4	18.7	5.9	3.7	7.2	0.0	20.0
Prop In Lane	1.00		0.58	1.00		0.31	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	467	571	541	162	249	246	299	332	280	317	0	325
V/C Ratio(X)	0.96	0.55	0.56	0.85	0.96	0.97	0.89	0.32	0.20	0.36	0.00	0.90
Avail Cap(c_a), veh/h	472	571	541	236	249	246	350	389	327	333	0	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.9	30.8	30.9	50.7	48.5	48.7	45.5	40.3	39.4	39.7	0.0	44.9
Incr Delay (d2), s/veh	30.1	1.1	1.3	12.5	45.0	49.3	21.4	0.5	0.4	0.7	0.0	24.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.6	6.9	6.6	4.3	9.6	9.9	8.9	2.5	1.3	2.9	0.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.0	32.0	32.2	63.2	93.5	98.0	66.9	40.8	39.8	40.4	0.0	69.6
LnGrp LOS	E	C	C	E	F	F	E	D	D	D	A	E
Approach Vol, veh/h		1065			616			428			407	
Approach Delay, s/veh		48.0			88.5			56.9			61.3	
Approach LOS		D			F			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.3	15.7	45.0		26.8	37.7	23.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		25.2	17.0	34.0		24.0	34.0	17.0				
Max Q Clear Time (g_c+I1), s		20.7	11.8	19.8		22.0	33.6	18.4				
Green Ext Time (p_c), s		0.7	0.1	2.9		0.4	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			61.6									
HCM 6th LOS			E									

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	3	2
Future Vol, veh/h	0	0	0	0	3	2
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	6	4
Number of Lanes	0	1	1	0	1	0

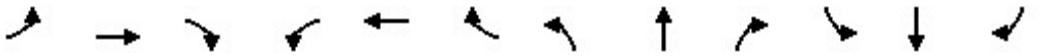
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	0	0	7.1
HCM LOS	-	-	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	60%
Vol Thru, %	100%	100%	40%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	0	5
LT Vol	0	0	3
Through Vol	0	0	2
RT Vol	0	0	0
Lane Flow Rate	0	0	10
Geometry Grp	1	1	1
Degree of Util (X)	0	0	0.011
Departure Headway (Hd)	3.941	3.952	4.054
Convergence, Y/N	Yes	Yes	Yes
Cap	0	0	888
Service Time	1.943	1.956	2.054
HCM Lane V/C Ratio	0	0	0.011
HCM Control Delay	6.9	7	7.1
HCM Lane LOS	N	N	A
HCM 95th-tile Q	0	0	0

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	580	415	1287	445	289
Future Volume (vph)	4	580	415	1287	445	289
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	22.5	22.5	11.2	22.5	22.5	22.5
Total Split (s)	37.0	37.0	28.0	53.0	25.0	25.0
Total Split (%)	41.1%	41.1%	31.1%	58.9%	27.8%	27.8%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	30.7	30.7	22.4	43.0	16.0	16.0
Actuated g/C Ratio	0.36	0.36	0.26	0.50	0.19	0.19
v/c Ratio	0.23	0.95	0.92	0.71	0.66	0.55
Control Delay	21.7	50.6	59.0	19.0	37.6	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	50.6	59.0	19.0	37.6	8.2
LOS	C	D	E	B	D	A
Approach Delay	44.9			28.8	26.0	
Approach LOS	D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 86.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 31.8	Intersection LOS: C
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	136	4	580	415	1287	0	0	445	289
Future Volume (veh/h)	0	0	0	136	4	580	415	1287	0	0	445	289
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				139	4	337	423	1313	0	0	454	152
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				454	13	415	478	1982	0	0	689	292
Arrive On Green				0.26	0.26	0.26	0.27	0.53	0.00	0.00	0.18	0.18
Sat Flow, veh/h				1734	50	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				143	0	337	423	1313	0	0	454	152
Grp Sat Flow(s),veh/h/ln				1784	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				3.8	0.0	11.9	13.6	15.1	0.0	0.0	6.7	5.1
Cycle Q Clear(g_c), s				3.8	0.0	11.9	13.6	15.1	0.0	0.0	6.7	5.1
Prop In Lane				0.97		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				467	0	415	478	1982	0	0	689	292
V/C Ratio(X)				0.31	0.00	0.81	0.89	0.66	0.00	0.00	0.66	0.52
Avail Cap(c_a), veh/h				923	0	820	700	2942	0	0	1182	501
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				17.6	0.0	20.6	20.9	10.1	0.0	0.0	22.5	21.9
Incr Delay (d2), s/veh				0.4	0.0	3.9	6.9	0.4	0.0	0.0	1.1	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	4.1	5.5	4.1	0.0	0.0	2.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				18.0	0.0	24.5	27.8	10.5	0.0	0.0	23.6	23.3
LnGrp LOS				B	A	C	C	B	A	A	C	C
Approach Vol, veh/h					480			1736			606	
Approach Delay, s/veh					22.5			14.7			23.5	
Approach LOS					C			B			C	

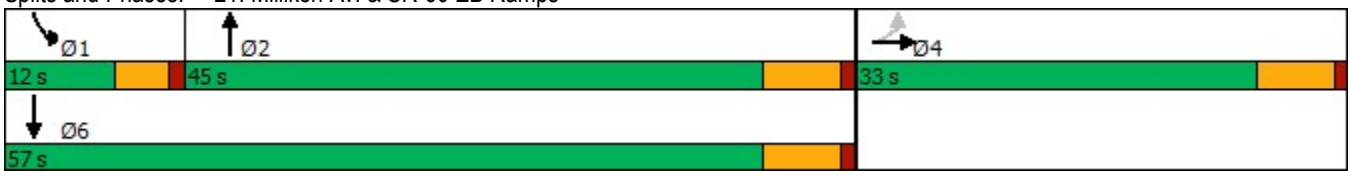
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	37.7		20.6	17.2		21.8						
Change Period (Y+Rc), s	6.2		4.6	6.2		6.2						
Max Green Setting (Gmax), s	46.8		23.4	18.8		30.8						
Max Q Clear Time (g_c+I1), s	17.1		15.6	8.7		13.9						
Green Ext Time (p_c), s	10.4		0.4	2.3		1.7						

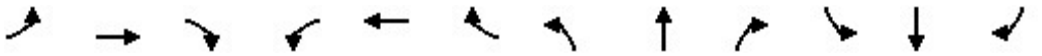
Intersection Summary		
HCM 6th Ctrl Delay	18.0	
HCM 6th LOS	B	

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	481	3	1283	93	464
Future Volume (vph)	481	3	1283	93	464
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	22.5	9.6	22.5
Total Split (s)	33.0	33.0	45.0	12.0	57.0
Total Split (%)	36.7%	36.7%	50.0%	13.3%	63.3%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	24.0	24.0	36.7	7.1	45.5
Actuated g/C Ratio	0.29	0.29	0.45	0.09	0.55
v/c Ratio	0.84	0.59	0.89	0.63	0.23
Control Delay	44.8	12.3	30.8	60.0	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	12.3	30.8	60.0	9.8
LOS	D	B	C	E	A
Approach Delay		29.4	30.8		18.2
Approach LOS		C	C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 82.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 27.9	Intersection LOS: C
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	481	3	316	0	0	0	0	1283	140	93	464	0
Future Volume (veh/h)	481	3	316	0	0	0	0	1283	140	93	464	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	335	228	171				0	1323	77	96	478	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	482	269	202				0	1546	90	123	2131	0
Arrive On Green	0.27	0.27	0.27				0.00	0.44	0.44	0.07	0.57	0.00
Sat Flow, veh/h	1781	992	744				0	3501	203	1781	3741	0
Grp Volume(v), veh/h	335	0	399				0	706	694	96	478	0
Grp Sat Flow(s),veh/h/ln	1781	0	1736				0	1870	1834	1781	1870	0
Q Serve(g_s), s	13.1	0.0	16.9				0.0	26.3	26.5	4.1	4.9	0.0
Cycle Q Clear(g_c), s	13.1	0.0	16.9				0.0	26.3	26.5	4.1	4.9	0.0
Prop In Lane	1.00		0.43				0.00		0.11	1.00		0.00
Lane Grp Cap(c), veh/h	482	0	470				0	826	810	123	2131	0
V/C Ratio(X)	0.69	0.00	0.85				0.00	0.85	0.86	0.78	0.22	0.00
Avail Cap(c_a), veh/h	614	0	598				0	933	914	169	2442	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.5	0.0	26.9				0.0	19.5	19.5	35.6	8.3	0.0
Incr Delay (d2), s/veh	2.4	0.0	9.0				0.0	7.1	7.5	9.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	7.5				0.0	11.0	10.9	2.0	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	0.0	35.9				0.0	26.6	27.0	45.3	8.3	0.0
LnGrp LOS	C	A	D				A	C	C	D	A	A
Approach Vol, veh/h		734						1400			574	
Approach Delay, s/veh		32.2						26.8			14.5	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	40.6		27.3		50.5
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	7.4	38.8		26.8		50.8
Max Q Clear Time (g_c+I1), s	6.1	28.5		18.9		6.9
Green Ext Time (p_c), s	0.0	5.9		2.1		3.0

Intersection Summary		
HCM 6th Ctrl Delay		25.7
HCM 6th LOS		C

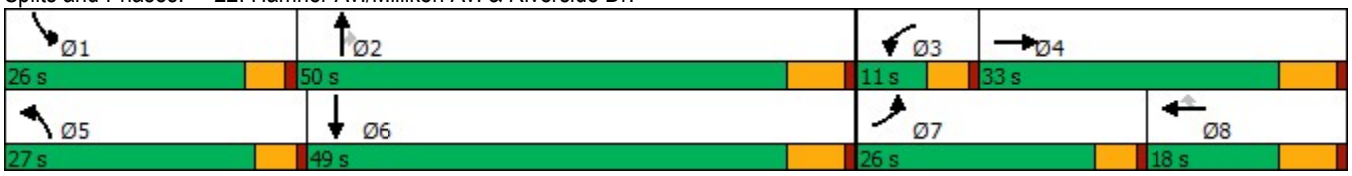
Notes

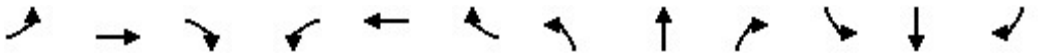
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	212	136	31	128	268	181	895	64	269	351
Future Volume (vph)	212	136	31	128	268	181	895	64	269	351
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	26.0	33.0	11.0	18.0	18.0	27.0	50.0	50.0	26.0	49.0
Total Split (%)	21.7%	27.5%	9.2%	15.0%	15.0%	22.5%	41.7%	41.7%	21.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	19.9	29.7	6.0	11.6	11.6	18.5	40.1	40.1	21.5	43.2
Actuated g/C Ratio	0.17	0.26	0.05	0.10	0.10	0.16	0.35	0.35	0.19	0.38
v/c Ratio	0.89	0.80	0.44	0.83	0.72	0.82	0.88	0.12	1.04	0.48
Control Delay	80.3	50.7	71.6	86.8	16.1	71.9	44.9	0.4	110.5	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.3	50.7	71.6	86.8	16.1	71.9	44.9	0.4	110.5	25.9
LOS	F	D	E	F	B	E	D	A	F	C
Approach Delay		62.5		41.3			46.6			54.9
Approach LOS		E		D			D			D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 51.0	Intersection LOS: D
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	136	184	31	128	268	181	895	64	269	351	165
Future Volume (veh/h)	212	136	184	31	128	268	181	895	64	269	351	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	244	156	158	36	147	274	208	1029	63	309	403	168
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	269	196	199	48	185	157	234	1162	518	303	903	372
Arrive On Green	0.17	0.24	0.24	0.03	0.10	0.10	0.15	0.35	0.35	0.19	0.39	0.39
Sat Flow, veh/h	1594	807	818	1594	1772	1502	1594	3367	1502	1594	2325	958
Grp Volume(v), veh/h	244	0	314	36	147	274	208	1029	63	309	290	281
Grp Sat Flow(s),veh/h/ln	1594	0	1625	1594	1772	1502	1594	1683	1502	1594	1683	1600
Q Serve(g_s), s	16.9	0.0	20.4	2.5	9.1	11.8	14.4	32.5	3.2	21.4	14.4	14.7
Cycle Q Clear(g_c), s	16.9	0.0	20.4	2.5	9.1	11.8	14.4	32.5	3.2	21.4	14.4	14.7
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.60
Lane Grp Cap(c), veh/h	269	0	395	48	185	157	234	1162	518	303	654	621
V/C Ratio(X)	0.91	0.00	0.79	0.75	0.79	1.74	0.89	0.89	0.12	1.02	0.44	0.45
Avail Cap(c_a), veh/h	303	0	395	90	185	157	317	1308	583	303	654	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	0.0	40.0	54.3	49.3	50.5	47.2	34.8	25.2	45.7	25.5	25.6
Incr Delay (d2), s/veh	26.0	0.0	10.7	8.6	20.5	359.5	17.0	7.0	0.1	57.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	8.9	1.1	4.9	20.0	6.6	13.5	1.1	12.9	5.5	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.0	0.0	50.7	62.8	69.8	410.0	64.2	41.8	25.3	103.0	26.0	26.1
LnGrp LOS	E	A	D	E	E	F	E	D	C	F	C	C
Approach Vol, veh/h		558			457			1300			880	
Approach Delay, s/veh		60.0			273.2			44.6			53.1	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	45.1	8.0	33.6	21.2	50.0	23.6	18.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	43.8	6.4	26.8	22.4	42.8	21.4	11.8
Max Q Clear Time (g_c+I1), s	23.4	34.5	4.5	22.4	16.4	16.7	18.9	13.8
Green Ext Time (p_c), s	0.0	4.4	0.0	0.6	0.1	3.2	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	82.3
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	0	1155	517	3
Future Vol, veh/h	5	2	0	1155	517	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	2	0	1313	588	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1247	590	591	0	-	0
Stage 1	590	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	178	507	983	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	178	507	983	-	-	-
Mov Cap-2 Maneuver	379	-	-	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	478	-	-	-	-	-

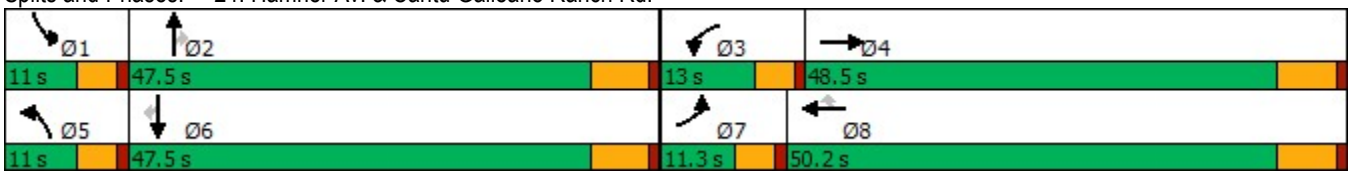
Approach	EB	NB	SB
HCM Control Delay, s	14	0	0
HCM LOS	B		

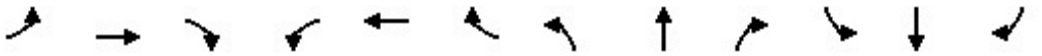
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	983	-	408	-	-
HCM Lane V/C Ratio	-	-	0.019	-	-
HCM Control Delay (s)	0	-	14	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	156	805	265	1131	269	173	675	342	187	230	93
Future Volume (vph)	156	805	265	1131	269	173	675	342	187	230	93
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.3	48.5	13.0	50.2	50.2	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (%)	9.4%	40.4%	10.8%	41.8%	41.8%	9.2%	39.6%	39.6%	9.2%	39.6%	39.6%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	37.6	8.6	39.4	39.4	6.5	23.7	23.7	6.5	23.7	23.7
Actuated g/C Ratio	0.07	0.38	0.09	0.40	0.40	0.07	0.24	0.24	0.07	0.24	0.24
v/c Ratio	0.69	0.38	0.93	0.84	0.38	0.80	0.58	0.70	0.86	0.28	0.21
Control Delay	63.6	22.7	84.8	34.0	9.6	73.3	34.8	25.7	81.5	31.3	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	22.7	84.8	34.0	9.6	73.3	34.8	25.7	81.5	31.3	4.8
LOS	E	C	F	C	A	E	C	C	F	C	A
Approach Delay		28.9		38.1			37.8			44.9	
Approach LOS		C		D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	805	79	265	1131	269	173	675	342	187	230	93
Future Volume (veh/h)	156	805	79	265	1131	269	173	675	342	187	230	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	839	46	276	1178	152	180	703	200	195	240	26
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	233	2344	128	331	1424	635	252	1069	332	252	745	332
Arrive On Green	0.07	0.37	0.37	0.10	0.40	0.40	0.07	0.21	0.21	0.07	0.21	0.21
Sat Flow, veh/h	3456	6292	342	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	162	642	243	276	1178	152	180	703	200	195	240	26
Grp Sat Flow(s),veh/h/ln	1728	1609	1809	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	4.0	8.5	8.5	6.9	26.1	5.6	4.5	11.1	10.0	4.9	5.0	1.2
Cycle Q Clear(g_c), s	4.0	8.5	8.5	6.9	26.1	5.6	4.5	11.1	10.0	4.9	5.0	1.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	1798	674	331	1424	635	252	1069	332	252	745	332
V/C Ratio(X)	0.69	0.36	0.36	0.83	0.83	0.24	0.72	0.66	0.60	0.77	0.32	0.08
Avail Cap(c_a), veh/h	264	2309	865	331	1769	789	252	2402	746	252	1672	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	19.9	20.0	39.0	23.6	17.4	39.8	31.8	31.4	40.0	29.4	27.9
Incr Delay (d2), s/veh	4.9	0.1	0.3	15.8	2.8	0.2	8.0	0.7	1.8	12.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.8	3.2	3.4	9.9	1.8	2.1	4.3	3.7	2.4	2.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	20.1	20.3	54.8	26.4	17.6	47.8	32.5	33.2	52.7	29.7	28.0
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1047			1606			1083			461	
Approach Delay, s/veh		24.0			30.4			35.2			39.3	
Approach LOS		C			C			D			D	

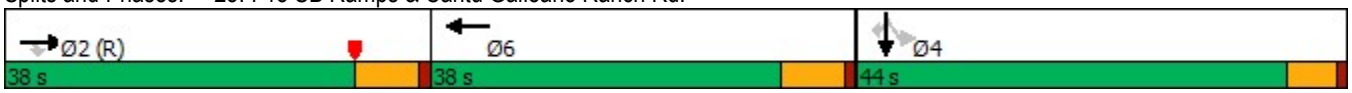
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	24.6	13.0	39.2	11.0	24.6	10.5	41.7
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	6.4	41.3	6.7	43.7
Max Q Clear Time (g_c+I1), s	6.9	13.1	8.9	10.5	6.5	7.0	6.0	28.1
Green Ext Time (p_c), s	0.0	5.3	0.0	5.5	0.0	1.5	0.0	7.1

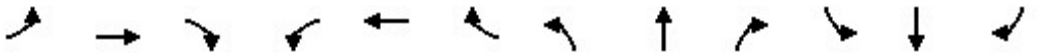
Intersection Summary	
HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1035	340	796	185	285	0	1411
Future Volume (vph)	1035	340	796	185	285	0	1411
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	38.0	38.0	38.0		44.0	44.0	44.0
Total Split (%)	31.7%	31.7%	31.7%		36.7%	36.7%	36.7%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	Min		Min	Min	Min
Act Effct Green (s)	34.4	34.4	31.0	120.0	35.5	35.5	35.5
Actuated g/C Ratio	0.29	0.29	0.26	1.00	0.30	0.30	0.30
v/c Ratio	0.77	0.52	0.95	0.07	0.56	0.96	0.94
Control Delay	44.4	6.4	57.0	0.0	39.8	35.6	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	6.4	57.0	0.0	39.8	35.6	31.7
LOS	D	A	E	A	D	D	C
Approach Delay	35.0		46.3			34.6	
Approach LOS	C		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 37.6	Intersection LOS: D
Intersection Capacity Utilization 90.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1035	340	0	796	185	0	0	0	285	0	1411
Future Volume (veh/h)	0	1035	340	0	796	185	0	0	0	285	0	1411
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1125	0	0	865	0				207	0	884
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	3041		0	2116					538	0	957
Arrive On Green	0.00	0.60	0.00	0.00	0.20	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1125	0	0	865	0				207	0	884
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	13.7	0.0	0.0	25.5	0.0				11.0	0.0	32.4
Cycle Q Clear(g_c), s	0.0	13.7	0.0	0.0	25.5	0.0				11.0	0.0	32.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3041		0	2116					538	0	957
V/C Ratio(X)	0.00	0.37		0.00	0.41					0.38	0.00	0.92
Avail Cap(c_a), veh/h	0	3041		0	2116					571	0	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.84	0.00	0.00	0.82	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.6	0.0	0.0	29.7	0.0				33.1	0.0	40.5
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.1	0.0				0.5	0.0	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	0.0	0.0	12.0	0.0				4.7	0.0	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.9	0.0	0.0	29.9	0.0				33.5	0.0	53.6
LnGrp LOS	A	B		A	C					C	A	D
Approach Vol, veh/h		1125	A		865	A					1091	
Approach Delay, s/veh		12.9			29.9						49.8	
Approach LOS		B			C						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	78.3	41.7	78.3
Change Period (Y+Rc), s	6.8	5.5	6.8
Max Green Setting (Gmax), s	31.2	38.5	31.2
Max Q Clear Time (g_c+I1), s	15.7	34.4	27.5
Green Ext Time (p_c), s	6.1	1.8	1.8

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

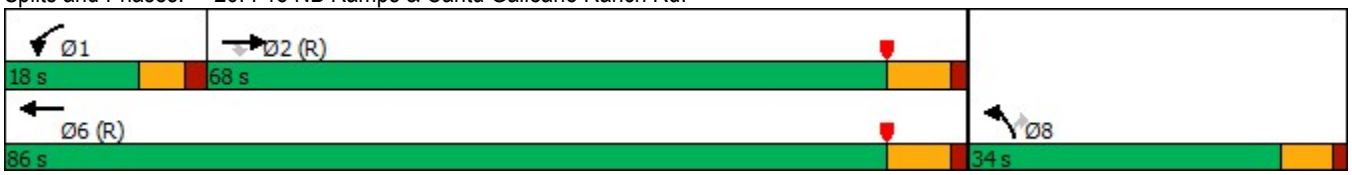
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	507	850	214	490	492	416
Future Volume (vph)	507	850	214	490	492	416
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.5	22.5	22.5	22.5
Total Split (s)	68.0	68.0	18.0	86.0	34.0	34.0
Total Split (%)	56.7%	56.7%	15.0%	71.7%	28.3%	28.3%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	60.5	60.5	12.4	78.9	27.8	27.8
Actuated g/C Ratio	0.50	0.50	0.10	0.66	0.23	0.23
v/c Ratio	0.21	0.78	0.66	0.16	0.84	0.54
Control Delay	28.2	29.9	61.1	8.2	52.8	7.9
Queue Delay	0.0	2.1	0.0	0.0	0.0	0.0
Total Delay	28.2	32.0	61.1	8.2	52.8	7.9
LOS	C	C	E	A	D	A
Approach Delay	30.6			24.3	38.6	
Approach LOS	C			C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 31.6	Intersection LOS: C
Intersection Capacity Utilization 69.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	507	850	214	490	492	416
Future Volume (veh/h)	507	850	214	490	492	416
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	551	489	233	533	535	235
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2946	915	291	3631	634	282
Arrive On Green	0.19	0.19	0.08	0.71	0.18	0.18
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	551	489	233	533	535	235
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	10.9	33.4	7.9	4.0	17.4	17.2
Cycle Q Clear(g_c), s	10.9	33.4	7.9	4.0	17.4	17.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2946	915	291	3631	634	282
V/C Ratio(X)	0.19	0.53	0.80	0.15	0.84	0.83
Avail Cap(c_a), veh/h	2946	915	346	3631	831	370
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.88	0.88	1.00	1.00
Uniform Delay (d), s/veh	24.9	34.1	54.0	5.6	47.7	47.6
Incr Delay (d2), s/veh	0.1	1.4	9.7	0.1	6.2	11.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	14.3	3.7	1.1	8.1	7.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.0	35.4	63.7	5.7	53.9	59.4
LnGrp LOS	C	D	E	A	D	E
Approach Vol, veh/h	1040			766	770	
Approach Delay, s/veh	29.9			23.3	55.6	
Approach LOS	C			C	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	16.1	76.5				92.6	27.4
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	12.0	60.7				78.7	28.0
Max Q Clear Time (g_c+I1), s	9.9	35.4				6.0	19.4
Green Ext Time (p_c), s	0.1	5.2				3.4	1.9

Intersection Summary			
HCM 6th Ctrl Delay		35.6	
HCM 6th LOS		D	

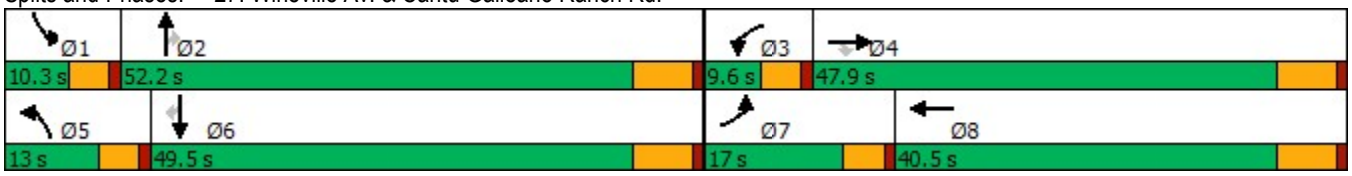
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	396	351	282	30	260	266	315	18	22	61	123
Future Volume (vph)	396	351	282	30	260	266	315	18	22	61	123
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	17.0	47.9	47.9	9.6	40.5	13.0	52.2	52.2	10.3	49.5	49.5
Total Split (%)	14.2%	39.9%	39.9%	8.0%	33.8%	10.8%	43.5%	43.5%	8.6%	41.3%	41.3%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.4	27.5	27.5	5.4	12.4	9.1	24.7	24.7	5.7	11.8	11.8
Actuated g/C Ratio	0.19	0.39	0.39	0.08	0.18	0.13	0.35	0.35	0.08	0.17	0.17
v/c Ratio	0.66	0.15	0.38	0.13	0.37	0.66	0.28	0.03	0.17	0.21	0.34
Control Delay	35.9	16.7	4.5	39.7	24.7	41.1	18.3	0.1	41.6	26.5	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	16.7	4.5	39.7	24.7	41.1	18.3	0.1	41.6	26.5	5.6
LOS	D	B	A	D	C	D	B	A	D	C	A
Approach Delay		20.7			26.1		27.9			15.6	
Approach LOS		C			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 70.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 23.0	Intersection LOS: C
Intersection Capacity Utilization 48.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	351	282	30	260	46	266	315	18	22	61	123
Future Volume (veh/h)	396	351	282	30	260	46	266	315	18	22	61	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	430	382	197	33	283	30	289	342	10	24	66	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	578	1690	416	128	622	65	422	754	336	51	222	188
Arrive On Green	0.17	0.26	0.26	0.04	0.13	0.13	0.12	0.21	0.21	0.03	0.12	0.12
Sat Flow, veh/h	3456	6434	1585	3456	4699	488	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	430	382	197	33	203	110	289	342	10	24	66	107
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1783	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	5.7	2.2	5.1	0.4	2.7	2.7	3.9	4.1	0.2	0.6	1.6	3.1
Cycle Q Clear(g_c), s	5.7	2.2	5.1	0.4	2.7	2.7	3.9	4.1	0.2	0.6	1.6	3.1
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	578	1690	416	128	451	236	422	754	336	51	222	188
V/C Ratio(X)	0.74	0.23	0.47	0.26	0.45	0.46	0.69	0.45	0.03	0.47	0.30	0.57
Avail Cap(c_a), veh/h	887	5514	1358	358	2396	1255	601	3362	1500	210	1665	1411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	14.0	15.0	22.6	19.3	19.4	20.3	16.6	15.1	23.1	19.4	20.1
Incr Delay (d2), s/veh	0.7	0.1	0.8	0.4	0.7	1.4	0.7	0.4	0.0	2.5	0.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.6	1.4	0.2	0.9	1.0	1.3	1.4	0.1	0.3	0.6	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	14.0	15.8	23.0	20.0	20.8	21.1	17.0	15.1	25.6	20.2	22.8
LnGrp LOS	B	B	B	C	C	C	C	B	B	C	C	C
Approach Vol, veh/h		1009			346			641			197	
Approach Delay, s/veh		16.9			20.6			18.8			22.3	
Approach LOS		B			C			B			C	

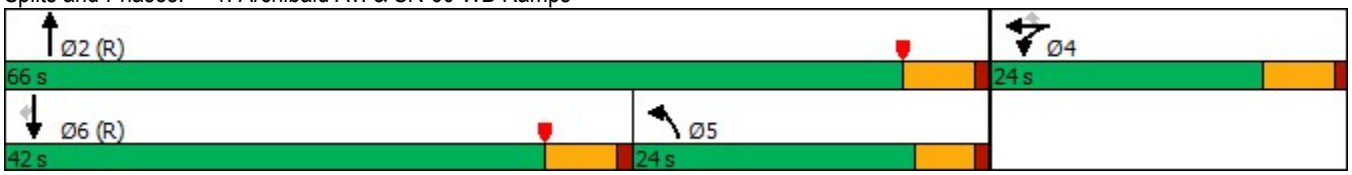
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	16.8	6.4	19.2	10.5	12.2	12.7	12.9
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	5.7	45.7	5.0	41.4	8.4	43.0	12.4	34.0
Max Q Clear Time (g_c+I1), s	2.6	6.1	2.4	7.1	5.9	5.1	7.7	4.7
Green Ext Time (p_c), s	0.0	2.2	0.0	2.9	0.1	0.7	0.4	1.6

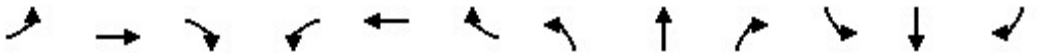
Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	450	1	194	592	623	1449	354
Future Volume (vph)	450	1	194	592	623	1449	354
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	24.0	24.0	24.0	24.0	66.0	42.0	42.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	16.5	16.5	16.5	18.3	61.9	38.6	38.6
Actuated g/C Ratio	0.18	0.18	0.18	0.20	0.69	0.43	0.43
v/c Ratio	0.79	0.80	0.42	0.87	0.18	0.54	0.42
Control Delay	54.1	54.8	8.3	43.3	0.6	20.5	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	54.8	8.3	43.3	0.6	20.5	4.4
LOS	D	D	A	D	A	C	A
Approach Delay		42.0			21.4	17.3	
Approach LOS		D			C	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 23.0	Intersection LOS: C
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	450	1	194	592	623	0	0	1449	354
Future Volume (veh/h)	0	0	0	450	1	194	592	623	0	0	1449	354
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				487	0	60	604	636	0	0	1479	261
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				584	0	260	1080	3610	0	0	2124	510
Arrive On Green				0.16	0.00	0.16	0.10	0.23	0.00	0.00	0.33	0.33
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1544
Grp Volume(v), veh/h				487	0	60	604	636	0	0	1479	261
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1544
Q Serve(g_s), s				11.9	0.0	3.0	15.0	9.0	0.0	0.0	18.0	12.3
Cycle Q Clear(g_c), s				11.9	0.0	3.0	15.0	9.0	0.0	0.0	18.0	12.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				584	0	260	1080	3610	0	0	2124	510
V/C Ratio(X)				0.83	0.00	0.23	0.56	0.18	0.00	0.00	0.70	0.51
Avail Cap(c_a), veh/h				720	0	321	1080	3610	0	0	2588	621
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.93	0.93	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				36.4	0.0	32.7	34.5	13.5	0.0	0.0	26.2	24.3
Incr Delay (d2), s/veh				6.9	0.0	0.4	0.4	0.1	0.0	0.0	1.9	3.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.5	0.0	2.8	6.9	3.1	0.0	0.0	6.6	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				43.4	0.0	33.1	34.8	13.6	0.0	0.0	28.1	28.0
LnGrp LOS				D	A	C	C	B	A	A	C	C
Approach Vol, veh/h					547			1240			1740	
Approach Delay, s/veh					42.2			24.0			28.1	
Approach LOS					D			C			C	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	69.4	20.6	33.9	35.5
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	18.2	19.0	* 36
Max Q Clear Time (g_c+I1), s	11.0	13.9	17.0	20.0
Green Ext Time (p_c), s	4.5	0.9	0.3	9.7

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

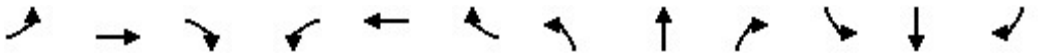
User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	124	1	524	1093	607	527	1372
Future Volume (vph)	124	1	524	1093	607	527	1372
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	24.0	24.0	24.0	42.0	42.0	24.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	46.7%	46.7%	26.7%	73.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	16.2	16.2	16.2	40.6	40.6	17.6	62.2
Actuated g/C Ratio	0.18	0.18	0.18	0.45	0.45	0.20	0.69
v/c Ratio	0.37	0.86	0.80	0.38	0.61	0.80	0.39
Control Delay	35.3	52.1	42.4	17.7	6.1	53.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	52.1	42.4	17.7	6.1	53.6	1.4
LOS	D	D	D	B	A	D	A
Approach Delay		45.2		13.5			15.9
Approach LOS		D		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	1	524	0	0	0	0	1093	607	527	1372	0
Future Volume (veh/h)	124	1	524	0	0	0	0	1093	607	527	1372	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	84	0	340				0	1104	437	532	1386	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	243	0	432				0	3327	802	600	3753	0
Arrive On Green	0.14	0.00	0.14				0.00	0.52	0.52	0.35	1.00	0.00
Sat Flow, veh/h	1781	0	3170				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	84	0	340				0	1104	437	532	1386	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1609	1551	1728	1702	0
Q Serve(g_s), s	3.8	0.0	9.3				0.0	9.0	17.1	13.1	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	9.3				0.0	9.0	17.1	13.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	243	0	432				0	3327	802	600	3753	0
V/C Ratio(X)	0.35	0.00	0.79				0.00	0.33	0.55	0.89	0.37	0.00
Avail Cap(c_a), veh/h	360	0	641				0	3327	802	768	3753	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.79	0.79	0.00
Uniform Delay (d), s/veh	35.2	0.0	37.6				0.0	12.7	14.6	28.6	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	3.9				0.0	0.3	2.7	7.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	3.7				0.0	2.8	5.6	4.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	0.0	41.5				0.0	12.9	17.3	35.7	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		424						1541			1918	
Approach Delay, s/veh		40.5						14.2			10.1	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.6	52.3				71.9		18.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	20.0	36.2				60.2		18.2				
Max Q Clear Time (g_c+I1), s	15.1	19.1				2.0		11.3				
Green Ext Time (p_c), s	0.5	8.1				12.5		0.9				

Intersection Summary			
HCM 6th Ctrl Delay			15.0
HCM 6th LOS			B

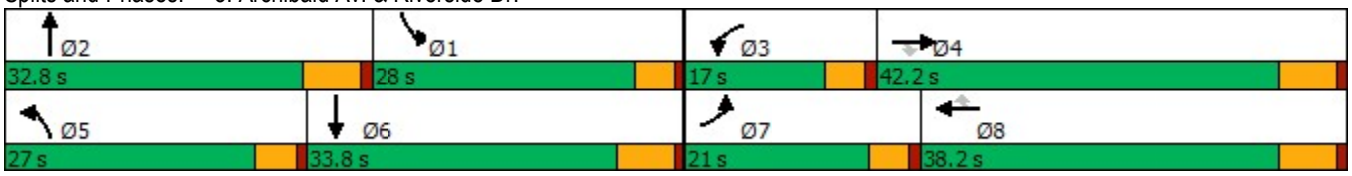
Notes

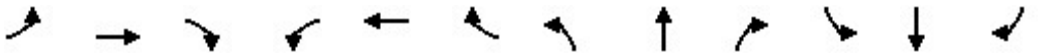
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	183	584	308	222	430	202	255	1044	322	1035
Future Volume (vph)	183	584	308	222	430	202	255	1044	322	1035
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	42.2	42.2	17.0	38.2	38.2	27.0	32.8	28.0	33.8
Total Split (%)	17.5%	35.2%	35.2%	14.2%	31.8%	31.8%	22.5%	27.3%	23.3%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.5	26.7	26.7	12.4	23.6	23.6	20.7	26.7	23.5	29.4
Actuated g/C Ratio	0.14	0.24	0.24	0.11	0.21	0.21	0.19	0.24	0.21	0.27
v/c Ratio	0.85	0.74	0.53	1.28	0.61	0.43	0.88	1.05	0.99	1.01
Control Delay	79.2	44.7	7.1	203.8	43.5	7.8	74.1	82.0	90.4	68.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.2	44.7	7.1	203.8	43.5	7.8	74.1	82.0	90.4	68.2
LOS	E	D	A	F	D	A	E	F	F	E
Approach Delay		39.8			76.8			80.6		72.8
Approach LOS		D			E			F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 68.6	Intersection LOS: E
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	584	308	222	430	202	255	1044	141	322	1035	216
Future Volume (veh/h)	183	584	308	222	430	202	255	1044	141	322	1035	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	187	596	245	227	439	157	260	1065	137	329	1056	187
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	781	340	177	708	314	285	1033	133	335	1172	207
Arrive On Green	0.13	0.23	0.23	0.11	0.21	0.21	0.18	0.24	0.24	0.21	0.28	0.28
Sat Flow, veh/h	1594	3367	1463	1594	3367	1493	1594	4329	556	1594	4127	730
Grp Volume(v), veh/h	187	596	245	227	439	157	260	793	409	329	825	418
Grp Sat Flow(s),veh/h/ln	1594	1683	1463	1594	1683	1493	1594	1612	1660	1594	1612	1631
Q Serve(g_s), s	12.8	18.4	17.2	12.4	13.2	6.1	17.8	26.6	26.6	22.9	27.4	27.5
Cycle Q Clear(g_c), s	12.8	18.4	17.2	12.4	13.2	6.1	17.8	26.6	26.6	22.9	27.4	27.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.45
Lane Grp Cap(c), veh/h	212	781	340	177	708	314	285	770	396	335	916	463
V/C Ratio(X)	0.88	0.76	0.72	1.28	0.62	0.50	0.91	1.03	1.03	0.98	0.90	0.90
Avail Cap(c_a), veh/h	234	1087	473	177	966	429	320	770	396	335	916	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	39.9	39.5	49.5	40.0	13.7	44.9	42.4	42.4	43.8	38.4	38.4
Incr Delay (d2), s/veh	26.5	2.1	3.3	162.2	0.9	1.2	25.9	40.5	53.8	44.4	11.9	20.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	7.5	6.2	12.7	5.3	3.5	8.8	14.3	16.2	12.7	11.7	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.9	42.1	42.8	211.7	40.9	14.9	70.8	82.9	96.3	88.3	50.3	59.0
LnGrp LOS	E	D	D	F	D	B	E	F	F	F	D	E
Approach Vol, veh/h		1028			823			1462			1572	
Approach Delay, s/veh		48.0			83.1			84.5			60.5	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.6	32.8	17.0	32.1	24.5	37.9	19.4	29.6
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.4	* 27	12.4	36.0	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	24.9	28.6	14.4	20.4	19.8	29.5	14.8	15.2
Green Ext Time (p_c), s	0.0	0.0	0.0	3.9	0.1	0.0	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	68.9
HCM 6th LOS	E

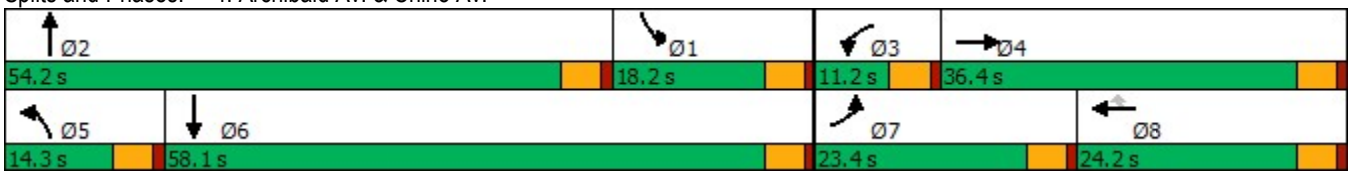
Notes

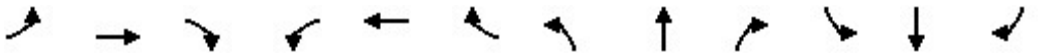
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	178	285	64	85	70	101	1258	81	1281
Future Volume (vph)	178	285	64	85	70	101	1258	81	1281
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	23.4	36.4	11.2	24.2	24.2	14.3	54.2	18.2	58.1
Total Split (%)	19.5%	30.3%	9.3%	20.2%	20.2%	11.9%	45.2%	15.2%	48.4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.0	31.6	6.6	21.2	21.2	9.6	46.1	17.3	51.3
Actuated g/C Ratio	0.14	0.27	0.06	0.18	0.18	0.08	0.39	0.15	0.44
v/c Ratio	0.81	0.96	0.75	0.28	0.17	0.82	0.67	0.36	0.92
Control Delay	75.1	74.7	100.9	46.3	0.9	96.3	32.5	50.1	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.1	74.7	100.9	46.3	0.9	96.3	32.5	50.1	41.7
LOS	E	E	F	D	A	F	C	D	D
Approach Delay		74.8		47.8			37.0		42.2
Approach LOS		E		D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 45.8	Intersection LOS: D
Intersection Capacity Utilization 90.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	285	141	64	85	70	101	1258	77	81	1281	71
Future Volume (veh/h)	178	285	141	64	85	70	101	1258	77	81	1281	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	185	297	122	67	89	41	105	1310	79	84	1334	70
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	317	130	83	330	280	127	1645	99	298	1466	77
Arrive On Green	0.13	0.27	0.27	0.05	0.19	0.19	0.08	0.33	0.33	0.19	0.44	0.44
Sat Flow, veh/h	1594	1188	488	1594	1772	1502	1594	4957	299	1594	3338	175
Grp Volume(v), veh/h	185	0	419	67	89	41	105	936	453	84	707	697
Grp Sat Flow(s),veh/h/ln	1594	0	1675	1594	1772	1502	1594	1772	1712	1594	1772	1740
Q Serve(g_s), s	12.9	0.0	27.7	4.7	4.9	1.7	7.4	27.2	27.2	5.1	42.2	42.5
Cycle Q Clear(g_c), s	12.9	0.0	27.7	4.7	4.9	1.7	7.4	27.2	27.2	5.1	42.2	42.5
Prop In Lane	1.00		0.29	1.00		1.00	1.00		0.17	1.00		0.10
Lane Grp Cap(c), veh/h	211	0	447	83	330	280	127	1176	568	298	779	765
V/C Ratio(X)	0.88	0.00	0.94	0.81	0.27	0.15	0.83	0.80	0.80	0.28	0.91	0.91
Avail Cap(c_a), veh/h	264	0	470	93	330	280	136	1550	749	298	836	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	40.7	53.2	39.5	17.4	51.4	34.4	34.4	39.6	29.7	29.7
Incr Delay (d2), s/veh	22.6	0.0	26.1	36.2	0.4	0.2	31.1	2.2	4.5	0.5	13.2	13.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	14.3	2.7	2.1	0.9	3.9	11.2	11.2	2.0	19.2	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.8	0.0	66.7	89.4	40.0	17.6	82.6	36.6	38.9	40.1	42.8	43.5
LnGrp LOS	E	A	E	F	D	B	F	D	D	D	D	D
Approach Vol, veh/h		604			197			1494			1488	
Approach Delay, s/veh		68.0			52.1			40.5			43.0	
Approach LOS		E			D			D			D	

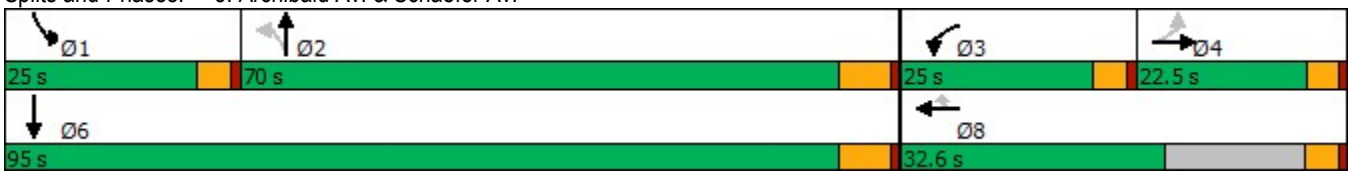
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.8	42.2	10.5	34.8	13.6	54.4	19.6	25.7
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	13.6	49.6	6.6	31.8	9.7	53.5	18.8	19.6
Max Q Clear Time (g_c+I1), s	7.1	29.2	6.7	29.7	9.4	44.5	14.9	6.9
Green Ext Time (p_c), s	0.1	8.4	0.0	0.5	0.0	5.4	0.2	0.4

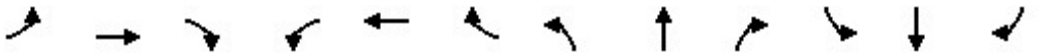
Intersection Summary	
HCM 6th Ctrl Delay	46.5
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	18	25	33	23	17	1332	50	1429
Future Volume (vph)	18	25	33	23	17	1332	50	1429
Turn Type	Perm	NA	Prot	NA	Perm	NA	Prot	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4				8			
Detector Phase	4	4	3	8	8	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	9.6	32.6	32.6	37.5	9.6	23.5
Total Split (s)	22.5	22.5	25.0	32.6	32.6	70.0	25.0	95.0
Total Split (%)	15.8%	15.8%	17.5%	22.9%	22.9%	49.1%	17.5%	66.7%
Yellow Time (s)	3.5	3.5	3.6	3.6	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.6	4.6	4.6	6.5	4.6	6.5
Lead/Lag	Lag	Lag	Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.4	9.4	8.3	14.8	14.8	41.6	9.1	47.7
Actuated g/C Ratio	0.15	0.15	0.13	0.24	0.24	0.67	0.15	0.77
v/c Ratio	0.08	0.10	0.17	0.06	0.05	0.45	0.23	0.60
Control Delay	36.6	36.6	39.0	25.4	0.2	13.8	37.7	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	36.6	39.0	25.4	0.2	13.8	37.7	10.0
LOS	D	D	D	C	A	B	D	A
Approach Delay		36.6		25.7		13.8		10.9
Approach LOS		D		C		B		B

Intersection Summary	
Cycle Length: 142.5	
Actuated Cycle Length: 62.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	25	0	33	23	17	0	1332	37	50	1429	17
Future Volume (veh/h)	18	25	0	33	23	17	0	1332	37	50	1429	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	19	27	0	35	24	12	0	1417	37	53	1520	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	116	0	60	333	280	133	2286	60	81	2069	24
Arrive On Green	0.07	0.07	0.00	0.04	0.19	0.19	0.00	0.47	0.47	0.05	0.61	0.61
Sat Flow, veh/h	1196	1772	0	1594	1772	1487	302	4844	126	1594	3407	40
Grp Volume(v), veh/h	19	27	0	35	24	12	0	943	511	53	750	788
Grp Sat Flow(s),veh/h/ln	1196	1772	0	1594	1772	1487	302	1612	1746	1594	1683	1764
Q Serve(g_s), s	0.8	0.8	0.0	1.2	0.6	0.4	0.0	11.8	11.8	1.8	17.1	17.2
Cycle Q Clear(g_c), s	0.8	0.8	0.0	1.2	0.6	0.4	0.0	11.8	11.8	1.8	17.1	17.2
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.07	1.00		0.02
Lane Grp Cap(c), veh/h	211	116	0	60	333	280	133	1522	824	81	1022	1071
V/C Ratio(X)	0.09	0.23	0.00	0.58	0.07	0.04	0.00	0.62	0.62	0.66	0.73	0.74
Avail Cap(c_a), veh/h	529	588	0	599	915	768	344	3775	2043	599	2746	2877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	24.1	0.0	25.7	18.1	18.0	0.0	10.7	10.7	25.3	7.5	7.6
Incr Delay (d2), s/veh	0.2	1.0	0.0	3.3	0.1	0.1	0.0	0.4	0.8	3.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.0	0.4	0.2	0.1	0.0	2.7	3.0	0.6	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	25.1	0.0	28.9	18.2	18.1	0.0	11.1	11.5	28.6	8.6	8.6
LnGrp LOS	C	C	A	C	B	B	A	B	B	C	A	A
Approach Vol, veh/h		46			71			1454			1591	
Approach Delay, s/veh		24.7			23.5			11.2			9.2	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	7.4	32.1	6.6	8.1		39.4		14.8				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	20.4	63.5	20.4	* 18		88.5		28.0				
Max Q Clear Time (g_c+I1), s	3.8	13.8	3.2	2.8		19.2		2.6				
Green Ext Time (p_c), s	0.0	11.6	0.0	0.1		13.8		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

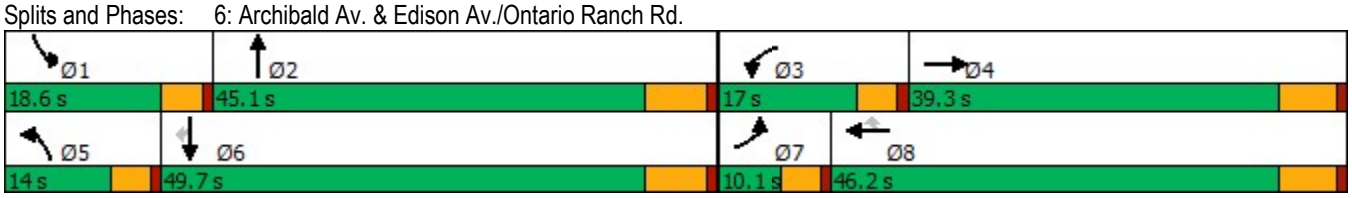
Notes

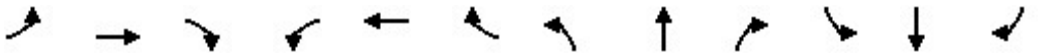
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	697	293	268	299	116	105	1047	323	162	1111	66
Future Volume (vph)	105	697	293	268	299	116	105	1047	323	162	1111	66
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.1	39.3		17.0	46.2	46.2	14.0	45.1		18.6	49.7	49.7
Total Split (%)	8.4%	32.8%		14.2%	38.5%	38.5%	11.7%	37.6%		15.5%	41.4%	41.4%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.5	28.8	115.1	12.4	35.6	35.6	9.4	38.2	115.1	13.9	42.6	42.6
Actuated g/C Ratio	0.05	0.25	1.00	0.11	0.31	0.31	0.08	0.33	1.00	0.12	0.37	0.37
v/c Ratio	0.78	0.83	0.21	0.88	0.58	0.23	0.86	0.94	0.23	0.90	0.90	0.11
Control Delay	89.5	50.0	0.3	79.7	38.1	6.1	102.4	53.9	0.3	95.2	44.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.5	50.0	0.3	79.7	38.1	6.1	102.4	53.9	0.3	95.2	44.9	0.3
LOS	F	D	A	E	D	A	F	D	A	F	D	A
Approach Delay		40.5			49.0			45.7			48.8	
Approach LOS		D			D			D			D	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 115.1		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.94		
Intersection Signal Delay: 45.9	Intersection LOS: D	
Intersection Capacity Utilization 88.2%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	697	293	268	299	116	105	1047	323	162	1111	66
Future Volume (veh/h)	105	697	293	268	299	116	105	1047	323	162	1111	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	111	734	0	282	315	64	111	1102	0	171	1169	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	858		329	537	454	132	1178		195	1319	559
Arrive On Green	0.05	0.24	0.00	0.11	0.30	0.30	0.08	0.33	0.00	0.12	0.37	0.37
Sat Flow, veh/h	3000	3544	1502	3000	1772	1500	1594	3544	1502	1594	3544	1502
Grp Volume(v), veh/h	111	734	0	282	315	64	111	1102	0	171	1169	37
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	4.1	22.4	0.0	10.5	17.1	3.5	7.8	34.1	0.0	11.9	35.0	1.8
Cycle Q Clear(g_c), s	4.1	22.4	0.0	10.5	17.1	3.5	7.8	34.1	0.0	11.9	35.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	858		329	537	454	132	1178		195	1319	559
V/C Ratio(X)	0.76	0.86		0.86	0.59	0.14	0.84	0.94		0.88	0.89	0.07
Avail Cap(c_a), veh/h	146	1036		329	626	530	132	1208		197	1352	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	41.0	0.0	49.5	33.5	28.7	51.2	36.6	0.0	48.8	33.3	22.9
Incr Delay (d2), s/veh	18.9	6.2	0.0	18.9	1.0	0.1	33.9	13.1	0.0	31.4	7.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	10.0	0.0	4.6	7.1	1.2	4.2	15.7	0.0	6.2	15.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.1	47.2	0.0	68.5	34.5	28.9	85.1	49.7	0.0	80.2	40.7	22.9
LnGrp LOS	E	D		E	C	C	F	D		F	D	C
Approach Vol, veh/h		845	A		661			1213	A		1377	
Approach Delay, s/veh		50.5			48.4			53.0			45.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	44.1	17.0	33.6	14.0	48.6	10.1	40.5
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	14.0	38.6	12.4	33.1	9.4	43.2	5.5	40.0
Max Q Clear Time (g_c+I1), s	13.9	36.1	12.5	24.4	9.8	37.0	6.1	19.1
Green Ext Time (p_c), s	0.0	1.5	0.0	2.9	0.0	3.6	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	49.1
HCM 6th LOS	D

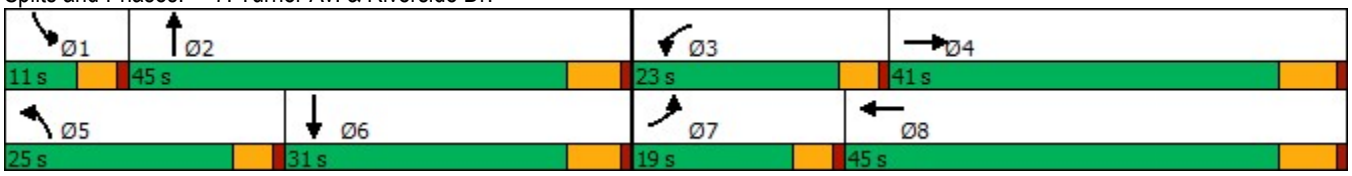
Notes

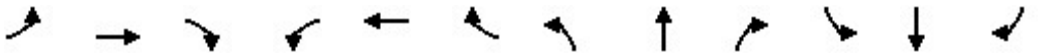
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	96	618	127	752	187	63	25	62
Future Volume (vph)	96	618	127	752	187	63	25	62
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	19.0	41.0	23.0	45.0	25.0	45.0	11.0	31.0
Total Split (%)	15.8%	34.2%	19.2%	37.5%	20.8%	37.5%	9.2%	25.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.1	31.4	12.2	36.3	15.7	29.0	5.9	12.4
Actuated g/C Ratio	0.11	0.34	0.13	0.39	0.17	0.31	0.06	0.13
v/c Ratio	0.58	0.81	0.64	0.63	0.73	0.21	0.26	0.27
Control Delay	57.2	34.9	55.6	28.2	56.0	10.2	55.0	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	34.9	55.6	28.2	56.0	10.2	55.0	23.6
LOS	E	C	E	C	E	B	D	C
Approach Delay		37.2		32.0		31.9		29.0
Approach LOS		D		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 33.9	Intersection LOS: C
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	618	248	127	752	38	187	63	145	25	62	59
Future Volume (veh/h)	96	618	248	127	752	38	187	63	145	25	62	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	99	637	200	131	775	26	193	65	124	26	64	53
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	797	250	162	1138	38	230	443	392	45	269	198
Arrive On Green	0.08	0.32	0.32	0.10	0.34	0.34	0.14	0.26	0.26	0.03	0.15	0.15
Sat Flow, veh/h	1594	2505	786	1594	3322	111	1594	1683	1487	1594	1831	1349
Grp Volume(v), veh/h	99	428	409	131	393	408	193	65	124	26	58	59
Grp Sat Flow(s),veh/h/ln	1594	1683	1607	1594	1683	1750	1594	1683	1487	1594	1683	1497
Q Serve(g_s), s	4.5	17.1	17.1	5.9	14.7	14.7	8.7	2.2	4.9	1.2	2.2	2.6
Cycle Q Clear(g_c), s	4.5	17.1	17.1	5.9	14.7	14.7	8.7	2.2	4.9	1.2	2.2	2.6
Prop In Lane	1.00		0.49	1.00		0.06	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	123	536	511	162	577	599	230	443	392	45	247	220
V/C Ratio(X)	0.80	0.80	0.80	0.81	0.68	0.68	0.84	0.15	0.32	0.58	0.24	0.27
Avail Cap(c_a), veh/h	313	798	762	399	890	925	443	899	794	139	578	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	22.9	22.9	32.3	20.7	20.7	30.6	20.7	21.7	35.3	27.7	27.8
Incr Delay (d2), s/veh	4.6	3.5	3.7	3.6	1.4	1.4	3.1	0.2	0.5	4.4	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.3	6.1	2.2	5.1	5.3	3.2	0.8	1.6	0.5	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	26.4	26.6	35.9	22.1	22.1	33.7	20.9	22.2	39.7	28.2	28.5
LnGrp LOS	D	C	C	D	C	C	C	C	C	D	C	C
Approach Vol, veh/h		936			932			382			143	
Approach Delay, s/veh		27.7			24.0			27.8			30.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	25.1	12.1	29.6	15.2	16.6	10.3	31.3
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	6.4	39.2	18.4	34.8	20.4	25.2	14.4	38.8
Max Q Clear Time (g_c+I1), s	3.2	6.9	7.9	19.1	10.7	4.6	6.5	16.7
Green Ext Time (p_c), s	0.0	1.0	0.1	4.3	0.2	0.5	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	191	59	41	140	78	22	139	40	63	217	47
Future Vol, veh/h	103	191	59	41	140	78	22	139	40	63	217	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	208	64	45	152	85	24	151	43	68	236	51
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

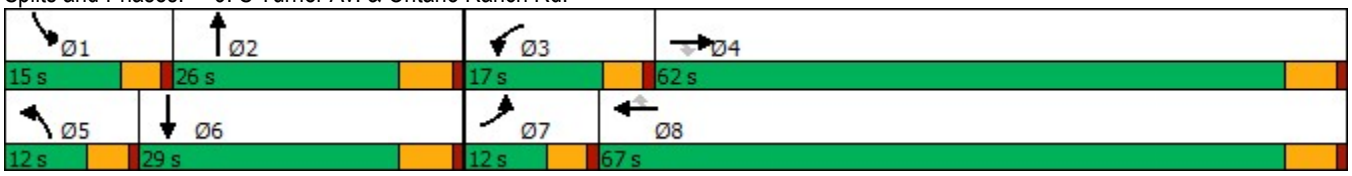
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	12.5	12.1	12	12.6
HCM LOS	B	B	B	B

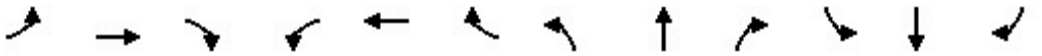
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	54%	0%	100%	52%	0%	100%	37%	0%	100%	61%
Vol Right, %	0%	0%	46%	0%	0%	48%	0%	0%	63%	0%	0%	39%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	93	86	103	127	123	41	93	125	63	145	119
LT Vol	22	0	0	103	0	0	41	0	0	63	0	0
Through Vol	0	93	46	0	127	64	0	93	47	0	145	72
RT Vol	0	0	40	0	0	59	0	0	78	0	0	47
Lane Flow Rate	24	101	94	112	138	133	45	101	136	68	157	130
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.054	0.213	0.19	0.24	0.277	0.254	0.098	0.21	0.263	0.148	0.318	0.253
Departure Headway (Hd)	8.105	7.605	7.28	7.707	7.207	6.87	7.938	7.438	7	7.787	7.287	7.011
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	442	472	493	467	500	523	452	483	514	461	494	512
Service Time	5.846	5.346	5.022	5.445	4.945	4.608	5.678	5.178	4.74	5.525	5.025	4.75
HCM Lane V/C Ratio	0.054	0.214	0.191	0.24	0.276	0.254	0.1	0.209	0.265	0.148	0.318	0.254
HCM Control Delay	11.3	12.4	11.7	12.9	12.7	11.9	11.5	12.2	12.2	11.9	13.4	12.1
HCM Lane LOS	B	B	B	B	B	B	B	B	B	B	B	B
HCM 95th-tile Q	0.2	0.8	0.7	0.9	1.1	1	0.3	0.8	1	0.5	1.4	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	18	1161	48	60	800	27	18	12	45	30
Future Volume (vph)	18	1161	48	60	800	27	18	12	45	30
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	12.0	62.0	62.0	17.0	67.0	67.0	12.0	26.0	15.0	29.0
Total Split (%)	10.0%	51.7%	51.7%	14.2%	55.8%	55.8%	10.0%	21.7%	12.5%	24.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	6.6	36.3	36.3	8.5	42.7	42.7	6.6	8.7	7.8	11.7
Actuated g/C Ratio	0.09	0.48	0.48	0.11	0.57	0.57	0.09	0.12	0.10	0.16
v/c Ratio	0.12	0.73	0.06	0.33	0.43	0.03	0.12	0.20	0.26	0.15
Control Delay	46.4	20.2	0.1	44.4	11.7	0.1	46.4	22.0	45.0	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.4	20.2	0.1	44.4	11.7	0.1	46.4	22.0	45.0	29.6
LOS	D	C	A	D	B	A	D	C	D	C
Approach Delay		19.8			13.6			29.3		37.7
Approach LOS		B			B			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 75	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1161	48	60	800	27	18	12	30	45	30	10
Future Volume (veh/h)	18	1161	48	60	800	27	18	12	30	45	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	1248	52	65	860	29	19	13	32	48	32	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	1728	771	97	1841	821	40	38	95	81	137	47
Arrive On Green	0.02	0.49	0.49	0.05	0.52	0.52	0.02	0.08	0.08	0.05	0.10	0.10
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	479	1179	1781	1331	457
Grp Volume(v), veh/h	19	1248	52	65	860	29	19	0	45	48	0	43
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1658	1781	0	1788
Q Serve(g_s), s	0.7	17.3	1.1	2.2	9.6	0.6	0.7	0.0	1.6	1.6	0.0	1.4
Cycle Q Clear(g_c), s	0.7	17.3	1.1	2.2	9.6	0.6	0.7	0.0	1.6	1.6	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	1.00		0.26
Lane Grp Cap(c), veh/h	40	1728	771	97	1841	821	40	0	133	81	0	184
V/C Ratio(X)	0.47	0.72	0.07	0.67	0.47	0.04	0.47	0.00	0.34	0.59	0.00	0.23
Avail Cap(c_a), veh/h	212	3207	1430	355	3492	1558	212	0	538	297	0	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	12.7	8.5	28.9	9.5	7.4	30.1	0.0	27.1	29.2	0.0	25.7
Incr Delay (d2), s/veh	3.2	0.6	0.0	3.0	0.2	0.0	3.2	0.0	1.5	2.6	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.2	0.3	0.9	2.8	0.1	0.3	0.0	0.6	0.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	13.3	8.5	31.9	9.7	7.4	33.3	0.0	28.6	31.8	0.0	26.3
LnGrp LOS	C	B	A	C	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1319			954			64			91	
Approach Delay, s/veh		13.4			11.2			30.0			29.2	
Approach LOS		B			B			C			C	

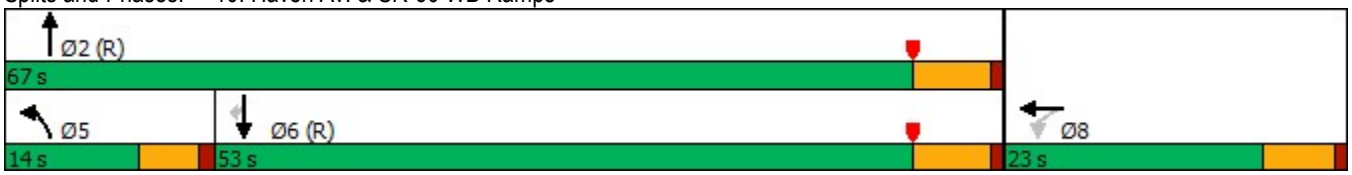
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	10.8	8.0	36.1	6.0	12.2	6.0	38.1
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	20.2	12.4	56.2	7.4	23.2	7.4	61.2
Max Q Clear Time (g_c+I1), s	3.6	3.6	4.2	19.3	2.7	3.4	2.7	11.6
Green Ext Time (p_c), s	0.0	0.1	0.0	11.0	0.0	0.1	0.0	6.6

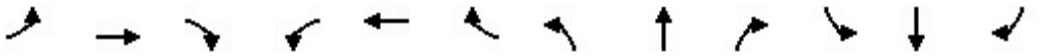
Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	349	10	620	157	1025	1638	767
Future Volume (vph)	349	10	620	157	1025	1638	767
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	23.0	23.0		14.0	67.0	53.0	53.0
Total Split (%)	25.6%	25.6%		15.6%	74.4%	58.9%	58.9%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	14.5	14.5	90.0	8.1	63.5	50.5	50.5
Actuated g/C Ratio	0.16	0.16	1.00	0.09	0.71	0.56	0.56
v/c Ratio	0.69	0.69	0.41	0.53	0.30	0.60	0.67
Control Delay	48.8	49.0	0.8	36.2	5.9	14.8	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	49.0	0.8	36.2	5.9	14.8	5.2
LOS	D	D	A	D	A	B	A
Approach Delay		18.4			9.9	11.7	
Approach LOS		B			A	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	349	10	620	157	1025	0	0	1638	767
Future Volume (veh/h)	0	0	0	349	10	620	157	1025	0	0	1638	767
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				371	0	0	164	1068	0	0	1706	651
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				466	0		232	3757	0	0	3130	959
Arrive On Green				0.13	0.00	0.00	0.13	1.00	0.00	0.00	0.61	0.61
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1565
Grp Volume(v), veh/h				371	0	0	164	1068	0	0	1706	651
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1565
Q Serve(g_s), s				9.1	0.0	0.0	4.1	0.0	0.0	0.0	17.5	24.8
Cycle Q Clear(g_c), s				9.1	0.0	0.0	4.1	0.0	0.0	0.0	17.5	24.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				466	0		232	3757	0	0	3130	959
V/C Ratio(X)				0.80	0.00		0.71	0.28	0.00	0.00	0.55	0.68
Avail Cap(c_a), veh/h				681	0		346	3757	0	0	3130	959
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.79	0.79	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				37.9	0.0	0.0	38.1	0.0	0.0	0.0	10.1	11.5
Incr Delay (d2), s/veh				4.1	0.0	0.0	1.2	0.2	0.0	0.0	0.7	3.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.0	0.0	0.0	1.6	0.1	0.0	0.0	5.4	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.1	0.0	0.0	39.3	0.2	0.0	0.0	10.8	15.4
LnGrp LOS				D	A		D	A	A	A	B	B
Approach Vol, veh/h					371	A		1232			2357	
Approach Delay, s/veh					42.1			5.4			12.1	
Approach LOS					D			A			B	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	72.4		11.1	61.4		17.6						
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8						
Max Green Setting (Gmax), s	60.8		9.0	46.8		17.2						
Max Q Clear Time (g_c+I1), s	2.0		6.1	26.8		11.1						
Green Ext Time (p_c), s	5.2		0.1	10.0		0.7						

Intersection Summary		
HCM 6th Ctrl Delay	12.8	
HCM 6th LOS	B	

Notes

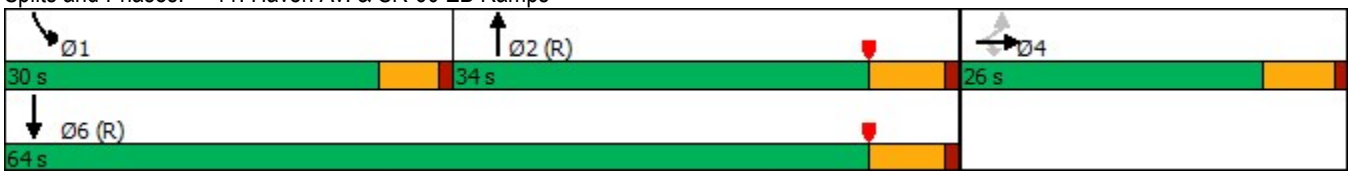
User approved volume balancing among the lanes for turning movement.

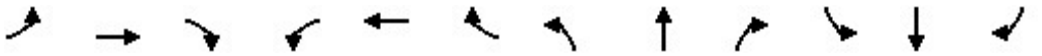
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	385	2	234	788	672	1336
Future Volume (vph)	385	2	234	788	672	1336
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	26.0	26.0	26.0	34.0	30.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	37.8%	33.3%	71.1%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	16.2	16.2	16.2	34.3	22.5	61.8
Actuated g/C Ratio	0.18	0.18	0.18	0.38	0.25	0.69
v/c Ratio	0.66	0.67	0.67	0.56	0.82	0.40
Control Delay	44.7	45.1	28.9	22.5	53.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	45.1	28.9	22.5	53.4	4.6
LOS	D	D	C	C	D	A
Approach Delay		38.8		22.5		20.9
Approach LOS		D		C		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 24.4	Intersection LOS: C
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	385	2	234	0	0	0	0	788	243	672	1336	0
Future Volume (veh/h)	385	2	234	0	0	0	0	788	243	672	1336	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	402	0	130				0	821	195	700	1392	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	516	0	230				0	1817	429	780	3685	0
Arrive On Green	0.14	0.00	0.14				0.00	0.44	0.44	0.45	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4294	973	3456	5274	0
Grp Volume(v), veh/h	402	0	130				0	676	340	700	1392	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1694	1728	1702	0
Q Serve(g_s), s	9.8	0.0	6.9				0.0	12.5	12.6	16.8	0.0	0.0
Cycle Q Clear(g_c), s	9.8	0.0	6.9				0.0	12.5	12.6	16.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	516	0	230				0	1500	746	780	3685	0
V/C Ratio(X)	0.78	0.00	0.57				0.00	0.45	0.45	0.90	0.38	0.00
Avail Cap(c_a), veh/h	800	0	356				0	1500	746	960	3685	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.76	0.76	0.00
Uniform Delay (d), s/veh	37.1	0.0	35.8				0.0	17.6	17.6	23.7	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.0	2.2				0.0	1.0	2.0	7.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	2.7				0.0	4.6	4.8	5.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.7	0.0	38.0				0.0	18.6	19.6	31.3	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	C	A	A
Approach Vol, veh/h		532						1016			2092	
Approach Delay, s/veh		39.3						18.9			10.6	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.3	45.8		18.8		71.2
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	25.0	27.8		20.2		57.8
Max Q Clear Time (g_c+I1), s	18.8	14.6		11.8		2.0
Green Ext Time (p_c), s	1.5	3.5		1.3		7.5

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

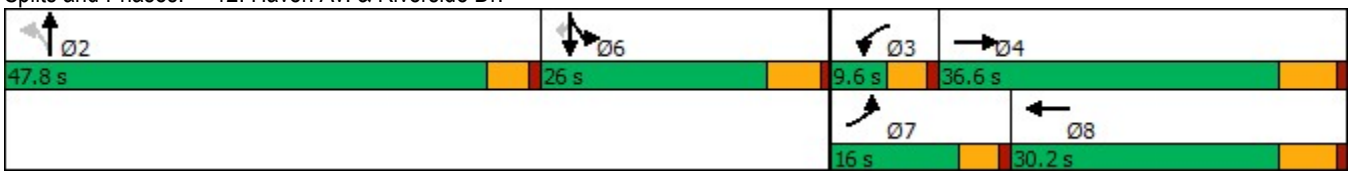
Notes

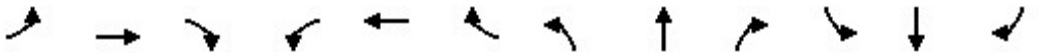
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	349	396	157	392	31	470	135	536	399
Future Volume (vph)	349	396	157	392	31	470	135	536	399
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	16.0	36.6	9.6	30.2	47.8	47.8	26.0	26.0	26.0
Total Split (%)	13.3%	30.5%	8.0%	25.2%	39.8%	39.8%	21.7%	21.7%	21.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.4	30.4	5.0	24.0		43.1	20.2	20.2	20.2
Actuated g/C Ratio	0.10	0.25	0.04	0.20		0.36	0.17	0.17	0.17
v/c Ratio	2.43	1.06	2.52	0.75		3.53	0.53	1.88	0.84
Control Delay	685.6	101.6	751.9	51.3		1164.7	53.7	437.1	30.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	685.6	101.6	751.9	51.3		1164.7	53.7	437.1	30.7
LOS	F	F	F	D		F	D	F	C
Approach Delay		357.7		224.6		1164.7		237.0	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.53	
Intersection Signal Delay: 456.2	Intersection LOS: F
Intersection Capacity Utilization 122.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	396	51	157	392	87	31	470	149	135	536	399
Future Volume (veh/h)	349	396	51	157	392	87	31	470	149	135	536	399
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	364	412	52	164	408	71	32	490	149	141	558	190
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	389	49	66	572	99	29	446	136	268	298	252
Arrive On Green	0.09	0.25	0.25	0.04	0.20	0.20	0.36	0.36	0.36	0.17	0.17	0.17
Sat Flow, veh/h	1594	1536	194	1594	2860	493	81	1241	377	1594	1772	1496
Grp Volume(v), veh/h	364	0	464	164	239	240	671	0	0	141	558	190
Grp Sat Flow(s),veh/h/ln	1594	0	1729	1594	1683	1669	1700	0	0	1594	1772	1496
Q Serve(g_s), s	11.4	0.0	30.4	5.0	15.9	16.1	43.1	0.0	0.0	9.7	20.2	14.5
Cycle Q Clear(g_c), s	11.4	0.0	30.4	5.0	15.9	16.1	43.1	0.0	0.0	9.7	20.2	14.5
Prop In Lane	1.00		0.11	1.00		0.30	0.05		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	151	0	438	66	337	334	611	0	0	268	298	252
V/C Ratio(X)	2.40	0.00	1.06	2.47	0.71	0.72	1.10	0.00	0.00	0.53	1.87	0.75
Avail Cap(c_a), veh/h	151	0	438	66	337	334	611	0	0	268	298	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	44.8	57.5	44.7	44.9	38.5	0.0	0.0	45.5	49.9	47.5
Incr Delay (d2), s/veh	651.6	0.0	59.5	704.1	6.7	7.3	66.5	0.0	0.0	1.9	404.4	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.8	0.0	19.6	14.9	7.0	7.1	28.9	0.0	0.0	3.9	42.2	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	705.9	0.0	104.3	761.6	51.5	52.2	104.9	0.0	0.0	47.4	454.3	59.7
LnGrp LOS	F	A	F	F	D	D	F	A	A	D	F	E
Approach Vol, veh/h		828			643			671			889	
Approach Delay, s/veh		368.8			232.9			104.9			305.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		47.8	9.6	36.6		26.0	16.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 43	5.0	30.4		20.2	11.4	24.0				
Max Q Clear Time (g_c+I1), s		45.1	7.0	32.4		22.2	13.4	18.1				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	1.3				

Intersection Summary		
HCM 6th Ctrl Delay		262.9
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	129	76	82	486	633	123
Future Vol, veh/h	129	76	82	486	633	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	80	86	512	666	129

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1415	731	795	0	-	0
Stage 1	731	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	151	422	826	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 135	422	826	-	-	-
Mov Cap-2 Maneuver	271	-	-	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	501	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.2	1.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	826	-	271	422	-	-
HCM Lane V/C Ratio	0.104	-	0.501	0.19	-	-
HCM Control Delay (s)	9.9	-	30.9	15.5	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.3	-	2.6	0.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	58	112	159	479	603
Future Volume (vph)	58	112	159	479	603
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	34.0	34.0	34.0	86.0	52.0
Total Split (%)	28.3%	28.3%	28.3%	71.7%	43.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.2	12.2	13.0	40.0	22.2
Actuated g/C Ratio	0.19	0.19	0.20	0.62	0.34
v/c Ratio	0.22	0.34	0.58	0.51	0.67
Control Delay	27.6	8.6	33.3	8.7	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	8.6	33.3	8.7	21.8
LOS	C	A	C	A	C
Approach Delay	15.0			14.8	21.8
Approach LOS	B			B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 64.4	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 51.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	112	159	479	603	59
Future Volume (veh/h)	58	112	159	479	603	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	67	61	185	557	701	69
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	275	259	231	1029	1047	103
Arrive On Green	0.17	0.17	0.15	0.58	0.34	0.34
Sat Flow, veh/h	1594	1502	1594	1772	3185	305
Grp Volume(v), veh/h	67	61	185	557	381	389
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1683	1717
Q Serve(g_s), s	1.7	1.6	5.3	9.0	9.1	9.1
Cycle Q Clear(g_c), s	1.7	1.6	5.3	9.0	9.1	9.1
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	275	259	231	1029	569	581
V/C Ratio(X)	0.24	0.24	0.80	0.54	0.67	0.67
Avail Cap(c_a), veh/h	955	900	995	3019	1652	1685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	16.8	19.5	6.0	13.3	13.3
Incr Delay (d2), s/veh	0.5	0.5	2.4	0.4	1.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.5	1.8	1.7	2.7	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.3	17.3	21.9	6.5	14.7	14.7
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	128			742	770	
Approach Delay, s/veh	17.3			10.3	14.7	
Approach LOS	B			B	B	

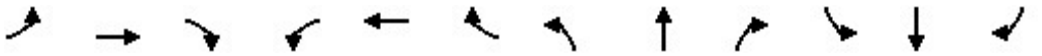
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		33.1		13.9	11.4	21.7
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		80.2		28.2	29.4	46.2
Max Q Clear Time (g_c+I1), s		11.0		3.7	7.3	11.1
Green Ext Time (p_c), s		3.7		0.3	0.2	4.8

Intersection Summary		
HCM 6th Ctrl Delay		12.9
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	980	38	243	742	237	19	210	75	239	348	129
Future Volume (vph)	226	980	38	243	742	237	19	210	75	239	348	129
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.5	39.4	39.4	6.3	32.9	32.9	6.0	21.3	21.3	10.5	32.2	32.2
Actuated g/C Ratio	0.13	0.40	0.40	0.06	0.33	0.33	0.06	0.22	0.22	0.11	0.33	0.33
v/c Ratio	1.20	0.54	0.06	1.42	0.39	0.38	0.21	0.59	0.18	1.51	0.64	0.23
Control Delay	167.5	25.8	0.2	253.1	27.6	5.8	53.4	40.2	0.9	292.3	35.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.5	25.8	0.2	253.1	27.6	5.8	53.4	40.2	0.9	292.3	35.0	3.8
LOS	F	C	A	F	C	A	D	D	A	F	C	A
Approach Delay		50.7			68.3			31.3			115.3	
Approach LOS		D			E			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.51	
Intersection Signal Delay: 68.4	Intersection LOS: E
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	980	38	243	742	237	19	210	75	239	348	129
Future Volume (veh/h)	226	980	38	243	742	237	19	210	75	239	348	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	240	1043	27	259	789	207	20	223	30	254	370	104
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	2063	640	197	2186	539	35	278	236	181	441	374
Arrive On Green	0.14	0.43	0.43	0.07	0.36	0.36	0.02	0.16	0.16	0.11	0.25	0.25
Sat Flow, veh/h	1594	4837	1502	2910	6095	1502	1594	1772	1502	1594	1772	1502
Grp Volume(v), veh/h	240	1043	27	259	789	207	20	223	30	254	370	104
Grp Sat Flow(s),veh/h/ln	1594	1612	1502	1455	1524	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	12.4	14.4	1.0	6.2	8.7	9.4	1.1	11.1	1.6	10.4	18.1	5.1
Cycle Q Clear(g_c), s	12.4	14.4	1.0	6.2	8.7	9.4	1.1	11.1	1.6	10.4	18.1	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	2063	640	197	2186	539	35	278	236	181	441	374
V/C Ratio(X)	1.11	0.51	0.04	1.31	0.36	0.38	0.58	0.80	0.13	1.40	0.84	0.28
Avail Cap(c_a), veh/h	216	2063	640	197	2186	539	188	837	709	181	829	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	19.2	15.3	42.6	21.6	21.8	44.3	37.2	33.2	40.5	32.6	27.7
Incr Delay (d2), s/veh	94.0	0.9	0.1	172.0	0.5	2.1	5.5	5.4	0.2	210.3	4.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	4.9	0.3	6.8	2.8	3.3	0.5	5.0	0.5	14.5	7.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	133.5	20.1	15.4	214.6	22.1	23.9	49.8	42.5	33.4	250.9	37.0	28.1
LnGrp LOS	F	C	B	F	C	C	D	D	C	F	D	C
Approach Vol, veh/h		1310			1255			273			728	
Approach Delay, s/veh		40.8			62.1			42.1			110.3	
Approach LOS		D			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	20.1	10.8	45.5	6.6	28.6	17.0	39.3
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	12.4	13.1	8.2	16.4	3.1	20.1	14.4	11.4
Green Ext Time (p_c), s	0.0	1.2	0.0	6.9	0.0	2.3	0.0	5.4

Intersection Summary	
HCM 6th Ctrl Delay	62.6
HCM 6th LOS	E

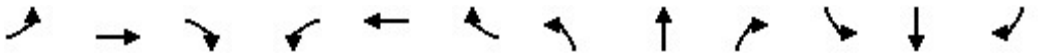
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	120	419	14	469	64	20	23	63	15
Future Volume (vph)	120	419	14	469	64	20	23	63	15
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	22.0	43.0	11.0	32.0	37.0	37.0	37.0	29.0	29.0
Total Split (%)	18.3%	35.8%	9.2%	26.7%	30.8%	30.8%	30.8%	24.2%	24.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.0	34.0	5.7	20.4	12.4	12.4	12.4	12.3	12.3
Actuated g/C Ratio	0.14	0.44	0.07	0.27	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.56	0.39	0.13	0.72	0.27	0.07	0.07	0.26	0.31
Control Delay	43.7	16.5	43.2	31.4	34.2	31.8	0.4	34.5	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	16.5	43.2	31.4	34.2	31.8	0.4	34.5	14.1
LOS	D	B	D	C	C	C	A	C	B
Approach Delay		21.6		31.7		26.6			22.5
Approach LOS		C		C		C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 76.7	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 26.1	Intersection LOS: C
Intersection Capacity Utilization 49.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	419	110	14	469	124	64	20	23	63	15	74
Future Volume (veh/h)	120	419	110	14	469	124	64	20	23	63	15	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	128	446	64	15	499	84	68	21	11	67	16	52
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	942	134	29	684	115	263	293	248	277	63	203
Arrive On Green	0.10	0.32	0.32	0.02	0.24	0.24	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1594	2955	422	1594	2885	483	1594	1772	1499	1594	359	1168
Grp Volume(v), veh/h	128	253	257	15	290	293	68	21	11	67	0	68
Grp Sat Flow(s),veh/h/ln	1594	1683	1694	1594	1683	1685	1594	1772	1499	1594	0	1527
Q Serve(g_s), s	4.8	7.4	7.5	0.6	9.7	9.8	2.3	0.6	0.4	2.2	0.0	2.4
Cycle Q Clear(g_c), s	4.8	7.4	7.5	0.6	9.7	9.8	2.3	0.6	0.4	2.2	0.0	2.4
Prop In Lane	1.00		0.25	1.00		0.29	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	160	537	540	29	399	400	263	293	248	277	0	266
V/C Ratio(X)	0.80	0.47	0.48	0.51	0.73	0.73	0.26	0.07	0.04	0.24	0.00	0.26
Avail Cap(c_a), veh/h	469	1017	1023	182	715	715	812	903	764	651	0	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	16.7	16.7	29.8	21.5	21.6	22.3	21.6	21.5	21.8	0.0	21.9
Incr Delay (d2), s/veh	3.5	0.6	0.7	5.1	2.5	2.6	0.5	0.1	0.1	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.4	2.5	0.2	3.5	3.5	0.8	0.2	0.1	0.8	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	17.4	17.4	34.8	24.1	24.2	22.8	21.7	21.6	22.2	0.0	22.4
LnGrp LOS	C	B	B	C	C	C	C	C	C	C	A	C
Approach Vol, veh/h		638			598			100			135	
Approach Delay, s/veh		20.0			24.4			22.4			22.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.9	5.1	25.5		14.7	10.1	20.5				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		31.2	7.0	37.0		25.0	18.0	26.0				
Max Q Clear Time (g_c+I1), s		4.3	2.6	9.5		4.4	6.8	11.8				
Green Ext Time (p_c), s		0.3	0.0	2.7		0.5	0.1	2.6				

Intersection Summary												
HCM 6th Ctrl Delay			22.2									
HCM 6th LOS			C									

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	1	0
Future Vol, veh/h	0	0	0	0	1	0
Peak Hour Factor	0.25	0.25	0.25	0.25	0.25	0.25
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	4	0
Number of Lanes	0	1	1	0	1	0

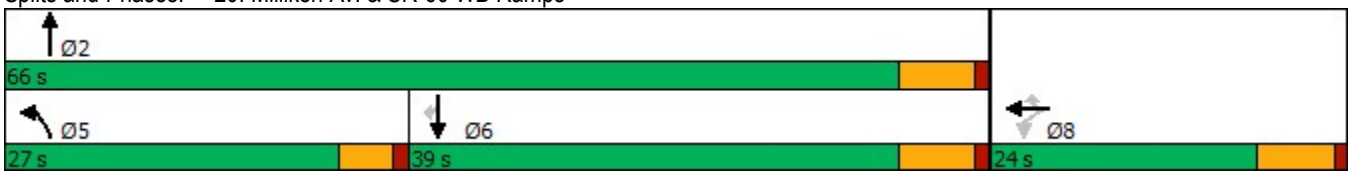
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	0	0	7.2
HCM LOS	-	-	A

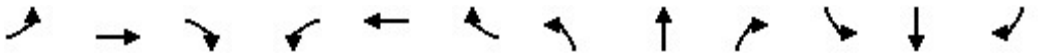
Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	100%
Vol Thru, %	100%	100%	0%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	0	1
LT Vol	0	0	1
Through Vol	0	0	0
RT Vol	0	0	0
Lane Flow Rate	0	0	4
Geometry Grp	1	1	1
Degree of Util (X)	0	0	0.005
Departure Headway (Hd)	3.937	3.942	4.134
Convergence, Y/N	Yes	Yes	Yes
Cap	0	0	871
Service Time	1.938	1.944	2.134
HCM Lane V/C Ratio	0	0	0.005
HCM Control Delay	6.9	6.9	7.2
HCM Lane LOS	N	N	A
HCM 95th-tile Q	0	0	0

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	352	309	812	1062	572
Future Volume (vph)	4	352	309	812	1062	572
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	9.6	16.2	16.2	16.2
Total Split (s)	24.0	24.0	27.0	66.0	39.0	39.0
Total Split (%)	26.7%	26.7%	30.0%	73.3%	43.3%	43.3%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	14.4	14.4	18.1	53.2	30.4	30.4
Actuated g/C Ratio	0.18	0.18	0.23	0.66	0.38	0.38
v/c Ratio	0.30	0.81	0.81	0.34	0.79	0.62
Control Delay	33.2	30.1	47.0	6.5	27.9	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	30.1	47.0	6.5	27.9	5.4
LOS	C	C	D	A	C	A
Approach Delay	30.8			17.6	20.0	
Approach LOS	C			B	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 80.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	87	4	352	309	812	0	0	1062	572
Future Volume (veh/h)	0	0	0	87	4	352	309	812	0	0	1062	572
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				91	4	191	322	846	0	0	1106	304
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				264	12	245	371	2477	0	0	1444	612
Arrive On Green				0.15	0.15	0.15	0.21	0.66	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1710	75	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				95	0	191	322	846	0	0	1106	304
Grp Sat Flow(s),veh/h/ln				1785	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				3.2	0.0	7.8	11.8	6.7	0.0	0.0	17.4	9.9
Cycle Q Clear(g_c), s				3.2	0.0	7.8	11.8	6.7	0.0	0.0	17.4	9.9
Prop In Lane				0.96		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				276	0	245	371	2477	0	0	1444	612
V/C Ratio(X)				0.34	0.00	0.78	0.87	0.34	0.00	0.00	0.77	0.50
Avail Cap(c_a), veh/h				470	0	417	590	3307	0	0	1814	769
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.5	0.0	27.5	25.9	5.0	0.0	0.0	18.1	15.8
Incr Delay (d2), s/veh				0.7	0.0	5.4	4.8	0.1	0.0	0.0	1.6	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	3.0	4.9	1.4	0.0	0.0	6.4	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				26.3	0.0	32.9	30.7	5.1	0.0	0.0	19.7	16.4
LnGrp LOS				C	A	C	C	A	A	A	B	B
Approach Vol, veh/h					286			1168			1410	
Approach Delay, s/veh					30.7			12.1			19.0	
Approach LOS					C			B			B	

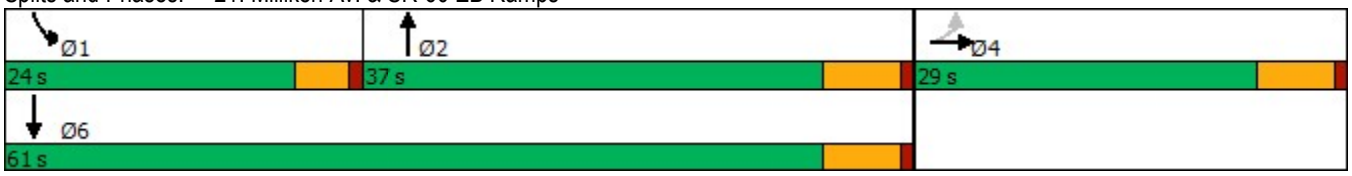
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	51.0		18.7	32.3		16.6						
Change Period (Y+Rc), s	6.2		4.6	6.2		6.2						
Max Green Setting (Gmax), s	59.8		22.4	32.8		17.8						
Max Q Clear Time (g_c+I1), s	8.7		13.8	19.4		9.8						
Green Ext Time (p_c), s	6.1		0.3	6.7		0.7						

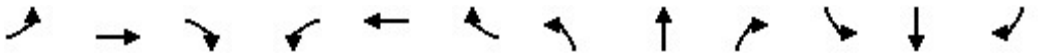
Intersection Summary		
HCM 6th Ctrl Delay		17.3
HCM 6th LOS		B

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	290	4	822	246	902
Future Volume (vph)	290	4	822	246	902
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	16.2	16.2	23.2	9.6	16.2
Total Split (s)	29.0	29.0	37.0	24.0	61.0
Total Split (%)	32.2%	32.2%	41.1%	26.7%	67.8%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	17.4	17.4	25.9	15.0	45.7
Actuated g/C Ratio	0.23	0.23	0.34	0.20	0.60
v/c Ratio	0.67	0.79	0.80	0.74	0.42
Control Delay	37.3	30.8	28.6	44.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	30.8	28.6	44.3	9.0
LOS	D	C	C	D	A
Approach Delay		33.5	28.6		16.6
Approach LOS		C	C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 76.1	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	4	327	0	0	0	0	822	141	246	902	0
Future Volume (veh/h)	290	4	327	0	0	0	0	822	141	246	902	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	245	83	185				0	856	79	256	940	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	379	110	244				0	1131	104	308	2184	0
Arrive On Green	0.21	0.21	0.21				0.00	0.34	0.34	0.17	0.58	0.00
Sat Flow, veh/h	1781	515	1148				0	3373	311	1781	3741	0
Grp Volume(v), veh/h	245	0	268				0	475	460	256	940	0
Grp Sat Flow(s),veh/h/ln	1781	0	1664				0	1870	1814	1781	1870	0
Q Serve(g_s), s	7.7	0.0	9.2				0.0	13.8	13.8	8.5	8.5	0.0
Cycle Q Clear(g_c), s	7.7	0.0	9.2				0.0	13.8	13.8	8.5	8.5	0.0
Prop In Lane	1.00		0.69				0.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h	379	0	354				0	627	608	308	2184	0
V/C Ratio(X)	0.65	0.00	0.76				0.00	0.76	0.76	0.83	0.43	0.00
Avail Cap(c_a), veh/h	666	0	622				0	945	917	567	3364	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	0.0	22.5				0.0	18.0	18.0	24.3	7.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	3.3				0.0	1.9	2.0	2.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	3.4				0.0	5.1	4.9	3.2	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	25.8				0.0	20.0	20.0	26.6	7.2	0.0
LnGrp LOS	C	A	C				A	B	C	C	A	A
Approach Vol, veh/h		513						935			1196	
Approach Delay, s/veh		24.8						20.0			11.3	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.1	26.6		19.2		41.8
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	19.4	30.8		22.8		54.8
Max Q Clear Time (g_c+I1), s	10.5	15.8		11.2		10.5
Green Ext Time (p_c), s	0.2	4.7		1.8		7.0

Intersection Summary		
HCM 6th Ctrl Delay		17.0
HCM 6th LOS		B

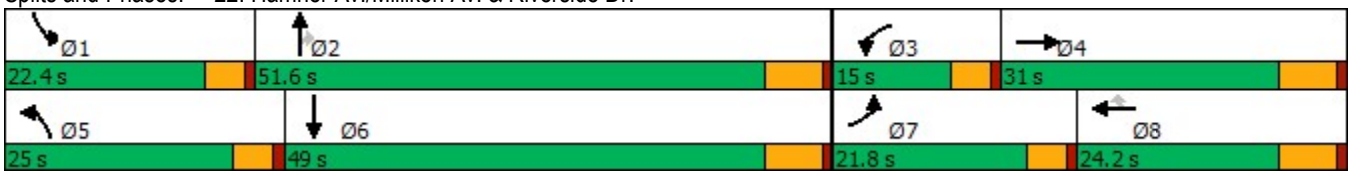
Notes

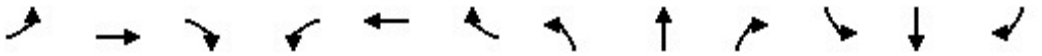
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	171	147	88	158	176	189	534	54	234	770
Future Volume (vph)	171	147	88	158	176	189	534	54	234	770
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	21.8	31.0	15.0	24.2	24.2	25.0	51.6	51.6	22.4	49.0
Total Split (%)	18.2%	25.8%	12.5%	20.2%	20.2%	20.8%	43.0%	43.0%	18.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	15.5	24.4	9.4	18.3	18.3	17.4	40.2	40.2	18.0	40.7
Actuated g/C Ratio	0.14	0.21	0.08	0.16	0.16	0.15	0.35	0.35	0.16	0.36
v/c Ratio	0.84	0.93	0.72	0.59	0.47	0.82	0.47	0.09	0.99	0.92
Control Delay	80.0	71.5	81.5	55.6	10.7	73.7	29.8	0.3	103.6	47.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.0	71.5	81.5	55.6	10.7	73.7	29.8	0.3	103.6	47.0
LOS	F	E	F	E	B	E	C	A	F	D
Approach Delay		74.4		42.3			38.4			57.5
Approach LOS		E		D			D			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 53.2	Intersection LOS: D
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	147	186	88	158	176	189	534	54	234	770	256
Future Volume (veh/h)	171	147	186	88	158	176	189	534	54	234	770	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	180	155	155	93	166	147	199	562	52	246	811	255
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	171	171	114	272	231	227	1131	504	272	915	287
Arrive On Green	0.13	0.21	0.21	0.07	0.15	0.15	0.14	0.34	0.34	0.17	0.36	0.36
Sat Flow, veh/h	1594	807	807	1594	1772	1502	1594	3367	1499	1594	2511	789
Grp Volume(v), veh/h	180	0	310	93	166	147	199	562	52	246	543	523
Grp Sat Flow(s),veh/h/ln	1594	0	1613	1594	1772	1502	1594	1683	1499	1594	1683	1617
Q Serve(g_s), s	11.4	0.0	19.3	5.9	9.0	9.5	12.6	13.7	2.5	15.6	31.2	31.3
Cycle Q Clear(g_c), s	11.4	0.0	19.3	5.9	9.0	9.5	12.6	13.7	2.5	15.6	31.2	31.3
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	207	0	342	114	272	231	227	1131	504	272	613	589
V/C Ratio(X)	0.87	0.00	0.91	0.81	0.61	0.64	0.88	0.50	0.10	0.90	0.89	0.89
Avail Cap(c_a), veh/h	266	0	388	161	309	262	315	1483	660	275	699	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	0.0	39.6	47.2	40.7	40.9	43.3	27.3	23.5	41.9	30.8	30.8
Incr Delay (d2), s/veh	17.8	0.0	22.7	13.3	2.8	4.2	14.3	0.3	0.1	29.7	12.1	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	9.4	2.7	4.0	3.6	5.6	5.2	0.8	8.1	13.6	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	0.0	62.3	60.5	43.5	45.1	57.7	27.6	23.6	71.7	42.8	43.3
LnGrp LOS	E	A	E	E	D	D	E	C	C	E	D	D
Approach Vol, veh/h		490			406			813			1312	
Approach Delay, s/veh		62.1			48.0			34.7			48.4	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.2	40.8	12.0	28.1	19.3	43.8	18.0	22.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.8	45.4	10.4	24.8	20.4	42.8	17.2	18.0
Max Q Clear Time (g_c+I1), s	17.6	15.7	7.9	21.3	14.6	33.3	13.4	11.5
Green Ext Time (p_c), s	0.0	3.7	0.0	0.5	0.1	4.3	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	757	1023	2
Future Vol, veh/h	1	0	0	757	1023	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	832	1124	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1541	1125	1126	0	-	0
Stage 1	1125	-	-	-	-	-
Stage 2	416	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	116	249	618	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	635	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	116	249	618	-	-	-
Mov Cap-2 Maneuver	276	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	635	-	-	-	-	-

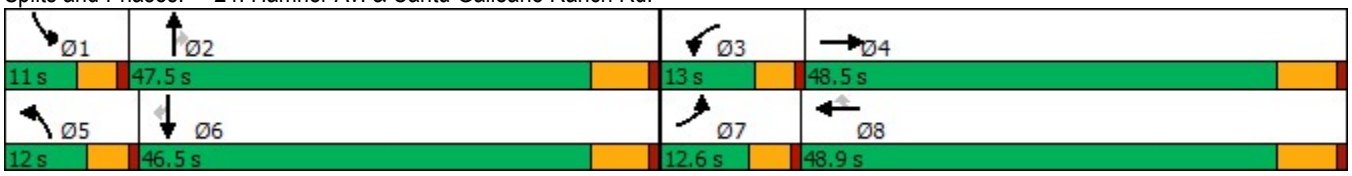
Approach	EB	NB	SB
HCM Control Delay, s	18.1	0	0
HCM LOS	C		

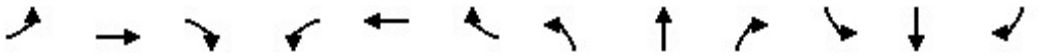
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	618	-	276	-	-
HCM Lane V/C Ratio	-	-	0.004	-	-
HCM Control Delay (s)	0	-	18.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	154	1181	410	964	166	329	424	323	265	581	104
Future Volume (vph)	154	1181	410	964	166	329	424	323	265	581	104
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.6	48.5	13.0	48.9	48.9	12.0	47.5	47.5	11.0	46.5	46.5
Total Split (%)	10.5%	40.4%	10.8%	40.8%	40.8%	10.0%	39.6%	39.6%	9.2%	38.8%	38.8%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.8	33.4	8.6	34.3	34.3	7.6	25.4	25.4	6.6	24.4	24.4
Actuated g/C Ratio	0.08	0.35	0.09	0.36	0.36	0.08	0.26	0.26	0.07	0.25	0.25
v/c Ratio	0.58	0.69	1.40	0.80	0.26	1.27	0.33	0.63	1.18	0.68	0.22
Control Delay	55.1	28.3	232.6	34.3	5.3	186.7	29.4	21.6	159.5	36.7	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	28.3	232.6	34.3	5.3	186.7	29.4	21.6	159.5	36.7	6.0
LOS	E	C	F	C	A	F	C	C	F	D	A
Approach Delay		30.9		84.0			75.2			67.6	
Approach LOS		C		F			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.40	
Intersection Signal Delay: 62.6	Intersection LOS: E
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	1181	281	410	964	166	329	424	323	265	581	104
Future Volume (veh/h)	154	1181	281	410	964	166	329	424	323	265	581	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	1230	168	427	1004	107	343	442	180	276	605	67
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	1859	253	346	1259	561	305	1229	381	263	813	362
Arrive On Green	0.07	0.32	0.32	0.10	0.35	0.35	0.09	0.24	0.24	0.08	0.23	0.23
Sat Flow, veh/h	3456	5771	784	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	160	1028	370	427	1004	107	343	442	180	276	605	67
Grp Sat Flow(s),veh/h/ln	1728	1609	1729	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	3.8	15.4	15.5	8.4	21.3	3.9	7.4	6.0	8.2	6.4	13.3	2.9
Cycle Q Clear(g_c), s	3.8	15.4	15.5	8.4	21.3	3.9	7.4	6.0	8.2	6.4	13.3	2.9
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	1555	557	346	1259	561	305	1229	381	263	813	362
V/C Ratio(X)	0.68	0.66	0.66	1.23	0.80	0.19	1.13	0.36	0.47	1.05	0.74	0.18
Avail Cap(c_a), veh/h	329	2414	865	346	1795	801	305	2512	780	263	1706	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	24.5	24.5	37.8	24.4	18.8	38.3	26.5	27.3	38.8	30.1	26.1
Incr Delay (d2), s/veh	1.3	0.5	1.4	128.2	1.7	0.2	90.0	0.2	0.9	68.5	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.2	5.8	9.4	8.0	1.3	6.7	2.3	2.9	5.0	5.3	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	25.0	25.9	166.0	26.1	18.9	128.2	26.7	28.2	107.2	31.5	26.3
LnGrp LOS	D	C	C	F	C	B	F	C	C	F	C	C
Approach Vol, veh/h		1558			1538			965			948	
Approach Delay, s/veh		26.7			64.4			63.1			53.2	
Approach LOS		C			E			E			D	

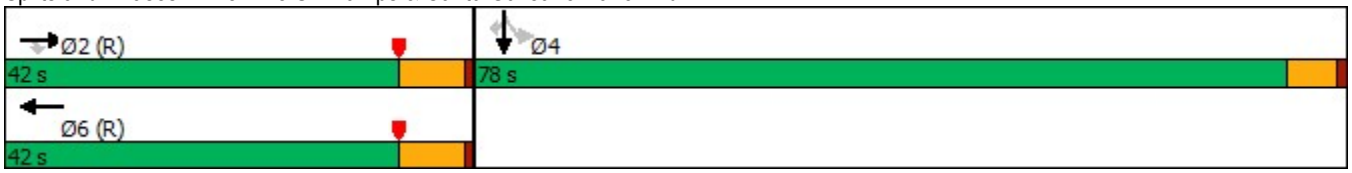
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	26.4	13.0	33.5	12.0	25.4	10.3	36.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	7.4	40.3	8.0	42.4
Max Q Clear Time (g_c+I1), s	8.4	10.2	10.4	17.5	9.4	15.3	5.8	23.3
Green Ext Time (p_c), s	0.0	3.4	0.0	9.2	0.0	3.9	0.1	6.4

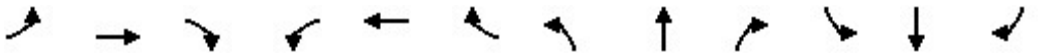
Intersection Summary	
HCM 6th Ctrl Delay	50.3
HCM 6th LOS	D

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1663	363	732	151	320	1	1429
Future Volume (vph)	1663	363	732	151	320	1	1429
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0		78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%		65.0%	65.0%	65.0%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min		Min	Min	Min
Act Effct Green (s)	36.8	36.8	36.8	120.0	70.9	70.9	70.9
Actuated g/C Ratio	0.31	0.31	0.31	1.00	0.59	0.59	0.59
v/c Ratio	1.16	0.58	0.73	0.06	0.32	0.92	0.88
Control Delay	118.1	14.4	50.4	0.0	13.1	38.0	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.5	0.0
Total Delay	118.1	14.4	50.4	0.0	13.1	41.5	32.3
LOS	F	B	D	A	B	D	C
Approach Delay	99.5		41.8			33.0	
Approach LOS	F		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 113.2 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 63.6	Intersection LOS: E
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1663	363	0	732	151	0	0	0	320	1	1429
Future Volume (veh/h)	0	1663	363	0	732	151	0	0	0	320	1	1429
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1808	0	0	796	0				232	0	1243
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2343		0	1631					781	0	1390
Arrive On Green	0.00	0.46	0.00	0.00	0.61	0.00				0.44	0.00	0.44
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1808	0	0	796	0				232	0	1243
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	35.6	0.0	0.0	14.9	0.0				10.1	0.0	43.5
Cycle Q Clear(g_c), s	0.0	35.6	0.0	0.0	14.9	0.0				10.1	0.0	43.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2343		0	1631					781	0	1390
V/C Ratio(X)	0.00	0.77		0.00	0.49					0.30	0.00	0.89
Avail Cap(c_a), veh/h	0	2343		0	1631					1076	0	1915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.58	0.00	0.00	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.2	0.0	0.0	15.6	0.0				21.7	0.0	31.1
Incr Delay (d2), s/veh	0.0	1.5	0.0	0.0	1.0	0.0				0.2	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.4	0.0	0.0	5.0	0.0				4.1	0.0	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.7	0.0	0.0	16.5	0.0				22.0	0.0	35.6
LnGrp LOS	A	C		A	B					C	A	D
Approach Vol, veh/h		1808	A		796	A					1475	
Approach Delay, s/veh		28.7			16.5						33.5	
Approach LOS		C			B						C	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		61.9		58.1		61.9						
Change Period (Y+Rc), s		6.8		5.5		6.8						
Max Green Setting (Gmax), s		35.2		72.5		35.2						
Max Q Clear Time (g_c+I1), s		37.6		45.5		16.9						
Green Ext Time (p_c), s		0.0		7.2		4.5						

Intersection Summary		
HCM 6th Ctrl Delay		28.0
HCM 6th LOS		C

Notes

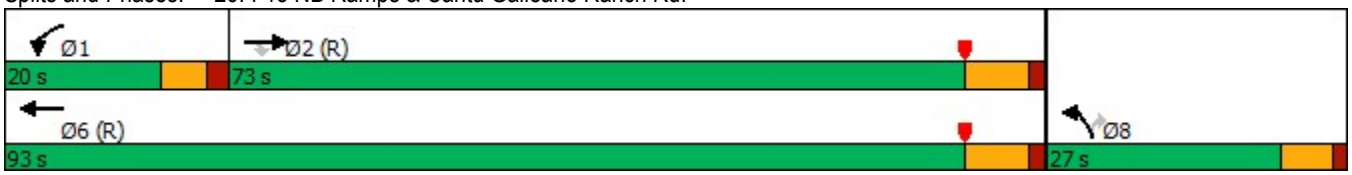
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	844	1187	241	491	370	169
Future Volume (vph)	844	1187	241	491	370	169
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.0	22.5	22.5	22.5
Total Split (s)	73.0	73.0	20.0	93.0	27.0	27.0
Total Split (%)	60.8%	60.8%	16.7%	77.5%	22.5%	22.5%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	68.7	68.7	13.1	87.9	18.8	18.8
Actuated g/C Ratio	0.57	0.57	0.11	0.73	0.16	0.16
v/c Ratio	0.31	1.08	0.70	0.14	0.78	0.45
Control Delay	8.9	70.2	61.8	5.1	58.6	10.7
Queue Delay	0.0	8.5	0.0	0.0	0.0	0.0
Total Delay	8.9	78.7	61.8	5.1	58.6	10.7
LOS	A	E	E	A	E	B
Approach Delay	49.7			23.8	45.0	
Approach LOS	D			C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 43.2	Intersection LOS: D
Intersection Capacity Utilization 91.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	844	1187	241	491	370	169
Future Volume (veh/h)	844	1187	241	491	370	169
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	917	747	262	534	402	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	3122	969	322	3853	480	213
Arrive On Green	1.00	1.00	0.09	0.75	0.13	0.13
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	917	747	262	534	402	102
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	0.0	0.0	8.9	3.4	13.2	7.1
Cycle Q Clear(g_c), s	0.0	0.0	8.9	3.4	13.2	7.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3122	969	322	3853	480	213
V/C Ratio(X)	0.29	0.77	0.81	0.14	0.84	0.48
Avail Cap(c_a), veh/h	3122	969	403	3853	623	277
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.91	0.91	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	53.4	4.0	50.6	48.0
Incr Delay (d2), s/veh	0.0	0.6	9.1	0.1	7.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	4.1	0.9	6.2	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.6	62.5	4.1	58.4	49.7
LnGrp LOS	A	A	E	A	E	D
Approach Vol, veh/h	1664			796	504	
Approach Delay, s/veh	0.3			23.3	56.7	
Approach LOS	A			C	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.2	80.7				97.8	22.2
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	14.0	65.7				85.7	21.0
Max Q Clear Time (g_c+I1), s	10.9	2.0				5.4	15.2
Green Ext Time (p_c), s	0.2	11.8				3.4	0.9

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

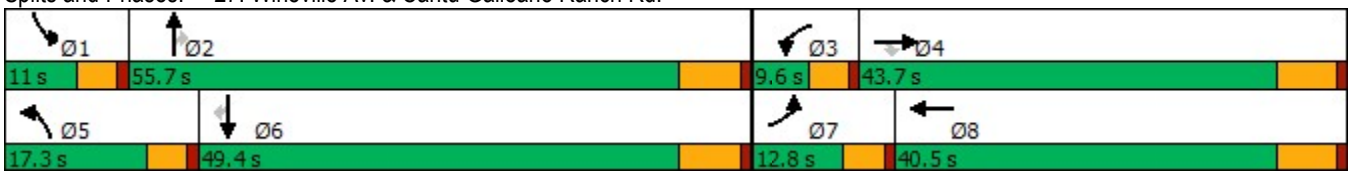
Notes

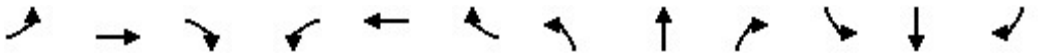
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	112	438	352	29	332	214	102	51	32	186	193
Future Volume (vph)	112	438	352	29	332	214	102	51	32	186	193
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	12.8	43.7	43.7	9.6	40.5	17.3	55.7	55.7	11.0	49.4	49.4
Total Split (%)	10.7%	36.4%	36.4%	8.0%	33.8%	14.4%	46.4%	46.4%	9.2%	41.2%	41.2%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.3	19.7	19.7	5.7	13.6	9.6	27.4	27.4	6.3	16.0	16.0
Actuated g/C Ratio	0.11	0.29	0.29	0.08	0.20	0.14	0.40	0.40	0.09	0.23	0.23
v/c Ratio	0.33	0.26	0.53	0.11	0.38	0.48	0.08	0.08	0.21	0.46	0.39
Control Delay	38.2	20.7	6.1	40.4	25.8	36.1	16.9	0.2	42.0	27.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.2	20.7	6.1	40.4	25.8	36.1	16.9	0.2	42.0	27.6	6.2
LOS	D	C	A	D	C	D	B	A	D	C	A
Approach Delay		17.2			26.9		25.8			18.7	
Approach LOS		B			C		C			B	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 68.4		
Natural Cycle: 110		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.53		
Intersection Signal Delay: 20.8	Intersection LOS: C	
Intersection Capacity Utilization 50.4%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	438	352	29	332	23	214	102	51	32	186	193
Future Volume (veh/h)	112	438	352	29	332	23	214	102	51	32	186	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	476	245	32	361	15	233	111	29	35	202	145
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	1607	396	124	1028	42	363	842	375	68	319	270
Arrive On Green	0.08	0.25	0.25	0.04	0.20	0.20	0.10	0.24	0.24	0.04	0.17	0.17
Sat Flow, veh/h	3456	6434	1585	3456	5030	207	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	122	476	245	32	243	133	233	111	29	35	202	145
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1833	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	1.7	3.0	6.9	0.5	3.1	3.1	3.3	1.2	0.7	1.0	5.1	4.2
Cycle Q Clear(g_c), s	1.7	3.0	6.9	0.5	3.1	3.1	3.3	1.2	0.7	1.0	5.1	4.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	1607	396	124	696	375	363	842	375	68	319	270
V/C Ratio(X)	0.44	0.30	0.62	0.26	0.35	0.35	0.64	0.13	0.08	0.51	0.63	0.54
Avail Cap(c_a), veh/h	561	4735	1167	342	2290	1233	868	3459	1543	226	1587	1345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	15.4	16.8	23.7	17.2	17.2	21.7	15.2	15.0	23.8	19.5	19.1
Incr Delay (d2), s/veh	0.4	0.1	1.6	0.4	0.3	0.6	0.7	0.1	0.1	2.2	2.1	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.8	2.1	0.2	1.0	1.1	1.2	0.4	0.2	0.4	2.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	15.5	18.4	24.1	17.5	17.8	22.4	15.3	15.1	26.0	21.6	20.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		843			408			373			382	
Approach Delay, s/veh		17.3			18.1			19.7			21.7	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	18.5	6.4	19.1	9.9	15.1	8.7	16.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	6.4	49.2	5.0	37.2	12.7	42.9	8.2	34.0
Max Q Clear Time (g_c+I1), s	3.0	3.2	2.5	8.9	5.3	7.1	3.7	5.1
Green Ext Time (p_c), s	0.0	0.7	0.0	3.7	0.2	1.5	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

APPENDIX 6.2: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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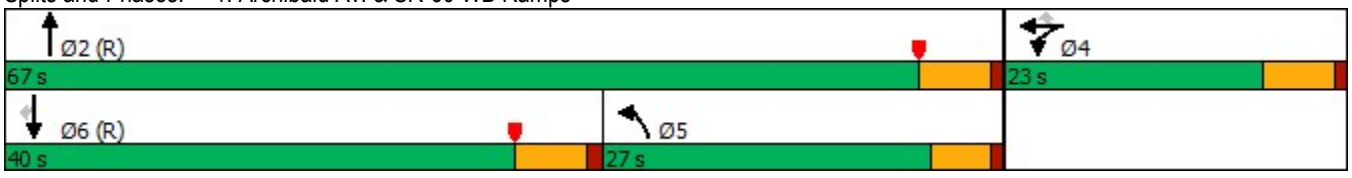
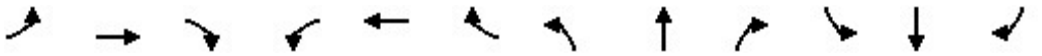
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	416	8	488	889	1299	569	176
Future Volume (vph)	416	8	488	889	1299	569	176
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	23.0	23.0	23.0	27.0	67.0	40.0	40.0
Total Split (%)	25.6%	25.6%	25.6%	30.0%	74.4%	44.4%	44.4%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	24.0	24.0	24.0	30.0	54.4	19.5	19.5
Actuated g/C Ratio	0.27	0.27	0.27	0.33	0.60	0.22	0.22
v/c Ratio	0.72	0.68	0.63	0.79	0.43	0.42	0.37
Control Delay	42.0	31.5	26.9	30.1	4.5	30.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	31.5	26.9	30.1	4.5	30.8	6.1
LOS	D	C	C	C	A	C	A
Approach Delay		33.7			14.9	24.9	
Approach LOS		C			B	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	416	8	488	889	1299	0	0	569	176
Future Volume (veh/h)	0	0	0	416	8	488	889	1299	0	0	569	176
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				578	0	305	907	1326	0	0	581	83
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				681	0	302	1607	3472	0	0	969	239
Arrive On Green				0.19	0.00	0.19	0.93	1.00	0.00	0.00	0.15	0.15
Sat Flow, veh/h				3563	0	1583	3456	5274	0	0	6696	1585
Grp Volume(v), veh/h				578	0	305	907	1326	0	0	581	83
Grp Sat Flow(s),veh/h/ln				1781	0	1583	1728	1702	0	0	1609	1585
Q Serve(g_s), s				14.1	0.0	17.2	3.5	0.0	0.0	0.0	7.6	4.2
Cycle Q Clear(g_c), s				14.1	0.0	17.2	3.5	0.0	0.0	0.0	7.6	4.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				681	0	302	1607	3472	0	0	969	239
V/C Ratio(X)				0.85	0.00	1.01	0.56	0.38	0.00	0.00	0.60	0.35
Avail Cap(c_a), veh/h				681	0	302	1607	3472	0	0	2445	602
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.71	0.71	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.1	0.0	36.4	1.8	0.0	0.0	0.0	35.7	34.3
Incr Delay (d2), s/veh				9.9	0.0	53.9	0.2	0.2	0.0	0.0	2.7	4.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.7	0.0	18.2	0.6	0.1	0.0	0.0	3.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.0	0.0	90.3	2.0	0.2	0.0	0.0	38.4	38.2
LnGrp LOS				D	A	F	A	A	A	A	D	D
Approach Vol, veh/h					883			2233			664	
Approach Delay, s/veh					60.7			1.0			38.4	
Approach LOS					E			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.0	23.0	47.6	19.4
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	61.2	17.2	22.0	* 34
Max Q Clear Time (g_c+I1), s	2.0	19.2	5.5	9.6
Green Ext Time (p_c), s	12.2	0.0	1.7	4.0

Intersection Summary	
HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Notes

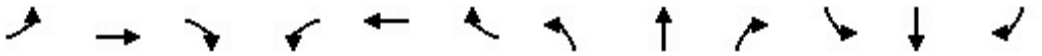
User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	386	5	509	1796	637	166	841
Future Volume (vph)	386	5	509	1796	637	166	841
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	34.0	34.0	34.0	44.0	44.0	12.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	48.9%	48.9%	13.3%	62.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	23.7	23.7	23.7	42.8	42.8	7.8	54.7
Actuated g/C Ratio	0.26	0.26	0.26	0.48	0.48	0.09	0.61
v/c Ratio	0.76	0.66	0.64	0.63	0.62	0.60	0.29
Control Delay	41.5	23.5	22.6	19.8	4.3	54.3	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	23.5	22.6	19.8	4.3	54.3	2.2
LOS	D	C	C	B	A	D	A
Approach Delay		29.5		15.7			10.7
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	386	5	509	0	0	0	0	1796	637	166	841	0
Future Volume (veh/h)	386	5	509	0	0	0	0	1796	637	166	841	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	521	0	224				0	1931	505	178	904	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	666	0	292				0	3658	882	246	3493	0
Arrive On Green	0.19	0.00	0.19				0.00	0.57	0.57	0.14	1.00	0.00
Sat Flow, veh/h	3563	0	1562				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	521	0	224				0	1931	505	178	904	0
Grp Sat Flow(s),veh/h/ln	1781	0	1562				0	1609	1551	1728	1702	0
Q Serve(g_s), s	12.5	0.0	12.3				0.0	16.7	18.7	4.4	0.0	0.0
Cycle Q Clear(g_c), s	12.5	0.0	12.3				0.0	16.7	18.7	4.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	666	0	292				0	3658	882	246	3493	0
V/C Ratio(X)	0.78	0.00	0.77				0.00	0.53	0.57	0.72	0.26	0.00
Avail Cap(c_a), veh/h	1116	0	489				0	3658	882	307	3493	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.84	0.84	0.00
Uniform Delay (d), s/veh	34.8	0.0	34.7				0.0	12.0	12.4	37.8	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	4.2				0.0	0.5	2.7	3.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	4.7				0.0	5.0	5.9	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	0.0	38.9				0.0	12.5	15.1	41.3	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		745						2436			1082	
Approach Delay, s/veh		37.5						13.1			6.9	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	10.4	57.0				67.4		22.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	8.0	38.2				50.2		28.2				
Max Q Clear Time (g_c+I1), s	6.4	20.7				2.0		14.5				
Green Ext Time (p_c), s	0.0	13.2				6.6		2.3				

Intersection Summary			
HCM 6th Ctrl Delay			15.8
HCM 6th LOS			B

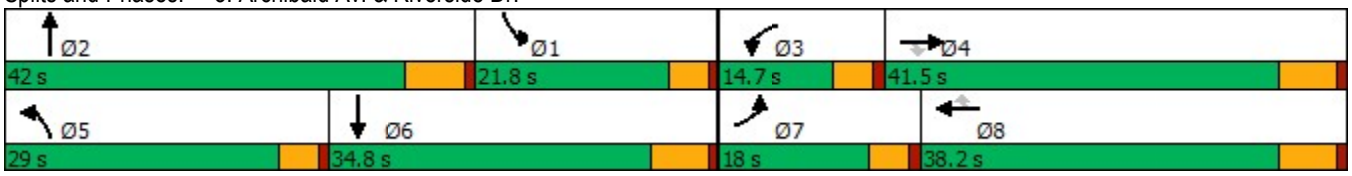
Notes

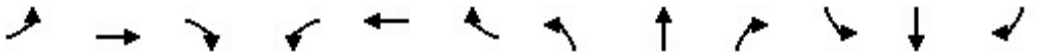
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	164	439	210	131	612	289	352	1662	244	730
Future Volume (vph)	164	439	210	131	612	289	352	1662	244	730
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	41.5	41.5	14.7	38.2	38.2	29.0	42.0	21.8	34.8
Total Split (%)	15.0%	34.6%	34.6%	12.3%	31.8%	31.8%	24.2%	35.0%	18.2%	29.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	31.1	31.1	10.1	27.8	27.8	24.4	35.9	17.2	28.6
Actuated g/C Ratio	0.12	0.27	0.27	0.09	0.24	0.24	0.21	0.31	0.15	0.25
v/c Ratio	0.93	0.51	0.39	0.99	0.79	0.52	1.10	1.29	1.08	0.81
Control Delay	103.9	37.9	6.4	127.5	49.4	7.3	122.9	171.4	129.3	45.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.9	37.9	6.4	127.5	49.4	7.3	122.9	171.4	129.3	45.4
LOS	F	D	A	F	D	A	F	F	F	D
Approach Delay		43.1			47.5			163.6		63.0
Approach LOS		D			D			F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 99.1	Intersection LOS: F
Intersection Capacity Utilization 100.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	439	210	131	612	289	352	1662	173	244	730	192
Future Volume (veh/h)	164	439	210	131	612	289	352	1662	173	244	730	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	171	457	161	136	638	237	367	1731	177	254	760	160
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	867	381	138	772	338	335	1371	140	236	1039	217
Arrive On Green	0.12	0.26	0.26	0.09	0.23	0.23	0.21	0.31	0.31	0.15	0.26	0.26
Sat Flow, veh/h	1594	3367	1478	1594	3367	1473	1594	4453	454	1594	3999	833
Grp Volume(v), veh/h	171	457	161	136	638	237	367	1252	656	254	611	309
Grp Sat Flow(s),veh/h/ln	1594	1683	1478	1594	1683	1473	1594	1612	1682	1594	1612	1608
Q Serve(g_s), s	12.4	13.6	10.6	9.9	20.9	11.5	24.4	35.8	35.8	17.2	20.1	20.4
Cycle Q Clear(g_c), s	12.4	13.6	10.6	9.9	20.9	11.5	24.4	35.8	35.8	17.2	20.1	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.27	1.00		0.52
Lane Grp Cap(c), veh/h	184	867	381	138	772	338	335	993	518	236	838	418
V/C Ratio(X)	0.93	0.53	0.42	0.98	0.83	0.70	1.10	1.26	1.27	1.08	0.73	0.74
Avail Cap(c_a), veh/h	184	1022	449	138	927	405	335	993	518	236	838	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	37.1	36.0	53.0	42.6	18.5	45.9	40.2	40.2	49.5	39.3	39.4
Incr Delay (d2), s/veh	46.3	0.5	0.7	70.6	5.3	4.2	77.8	125.5	134.7	80.6	3.3	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	5.4	3.7	6.5	8.9	4.0	16.4	30.6	33.3	11.8	8.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.2	37.6	36.7	123.6	47.9	22.7	123.7	165.7	174.9	130.1	42.5	46.2
LnGrp LOS	F	D	D	F	D	C	F	F	F	F	D	D
Approach Vol, veh/h		789			1011			2275			1174	
Approach Delay, s/veh		50.3			52.2			161.6			62.5	
Approach LOS		D			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	42.0	14.7	36.1	29.0	36.4	18.0	32.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.2	* 36	10.1	35.3	24.4	28.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	19.2	37.8	11.9	15.6	26.4	22.4	14.4	22.9
Green Ext Time (p_c), s	0.0	0.0	0.0	3.0	0.0	2.7	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	101.6
HCM 6th LOS	F

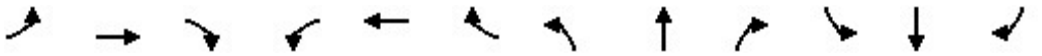
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	124	150	164	257	195	192	1745	62	901
Future Volume (vph)	124	150	164	257	195	192	1745	62	901
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	17.0	24.0	21.0	28.0	28.0	23.4	63.4	11.6	51.6
Total Split (%)	14.2%	20.0%	17.5%	23.3%	23.3%	19.5%	52.8%	9.7%	43.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.4	19.1	16.0	22.7	22.7	18.4	57.6	7.0	46.2
Actuated g/C Ratio	0.10	0.16	0.14	0.19	0.19	0.16	0.49	0.06	0.39
v/c Ratio	0.88	0.93	0.90	0.89	0.57	0.91	0.88	0.78	0.84
Control Delay	97.6	84.0	91.3	75.0	23.4	89.3	32.1	102.7	39.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.6	84.0	91.3	75.0	23.4	89.3	32.1	102.7	39.5
LOS	F	F	F	E	C	F	C	F	D
Approach Delay		88.9		63.0			37.3		43.3
Approach LOS		F		E			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 47.1	Intersection LOS: D
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	150	76	164	257	195	192	1745	169	62	901	78
Future Volume (veh/h)	124	150	76	164	257	195	192	1745	169	62	901	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	146	176	81	193	302	135	226	2053	191	73	1060	84
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	190	88	217	347	294	250	2321	214	90	1244	99
Arrive On Green	0.11	0.17	0.17	0.14	0.20	0.20	0.16	0.48	0.48	0.06	0.38	0.38
Sat Flow, veh/h	1594	1148	528	1594	1772	1502	1594	4789	441	1594	3235	256
Grp Volume(v), veh/h	146	0	257	193	302	135	226	1514	730	73	580	564
Grp Sat Flow(s),veh/h/ln	1594	0	1677	1594	1772	1502	1594	1772	1686	1594	1772	1719
Q Serve(g_s), s	10.6	0.0	17.7	13.9	19.3	7.7	16.3	45.0	46.1	5.3	35.1	35.2
Cycle Q Clear(g_c), s	10.6	0.0	17.7	13.9	19.3	7.7	16.3	45.0	46.1	5.3	35.1	35.2
Prop In Lane	1.00		0.32	1.00		1.00	1.00		0.26	1.00		0.15
Lane Grp Cap(c), veh/h	169	0	278	217	347	294	250	1717	817	90	681	661
V/C Ratio(X)	0.87	0.00	0.93	0.89	0.87	0.46	0.91	0.88	0.89	0.81	0.85	0.85
Avail Cap(c_a), veh/h	169	0	278	223	354	300	256	1779	847	95	711	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	0.0	48.1	49.7	45.6	28.8	48.5	27.2	27.4	54.6	33.0	33.0
Incr Delay (d2), s/veh	34.4	0.0	34.8	32.1	20.0	1.1	32.1	5.4	11.7	37.5	9.5	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	9.9	7.4	10.2	2.8	8.4	18.1	19.1	3.0	15.8	15.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.9	0.0	82.9	81.8	65.6	29.9	80.7	32.6	39.1	92.1	42.4	42.8
LnGrp LOS	F	A	F	F	E	C	F	C	D	F	D	D
Approach Vol, veh/h		403			630			2470			1217	
Approach Delay, s/veh		84.0			62.9			38.9			45.6	
Approach LOS		F			E			D			D	

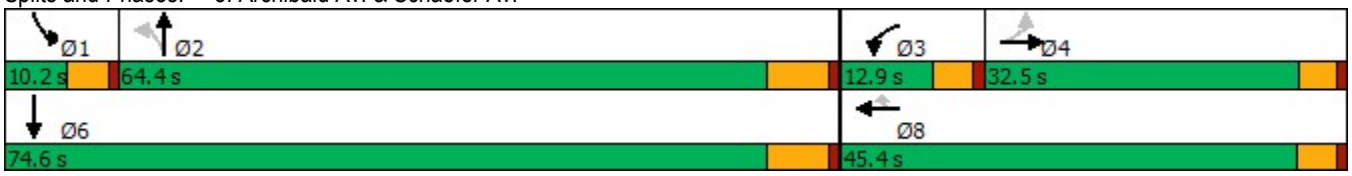
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	61.3	20.5	24.0	22.9	49.6	17.0	27.5
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	7.0	58.8	16.4	19.4	18.8	47.0	12.4	23.4
Max Q Clear Time (g_c+I1), s	7.3	48.1	15.9	19.7	18.3	37.2	12.6	21.3
Green Ext Time (p_c), s	0.0	8.6	0.0	0.0	0.0	4.6	0.0	0.5

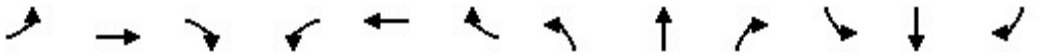
Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	17	23	79	25	68	1909	50	1166
Future Volume (vph)	17	23	79	25	68	1909	50	1166
Turn Type	Perm	NA	Prot	NA	Perm	NA	Prot	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4				8			
Detector Phase	4	4	3	8	8	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	32.5	32.5	9.6	32.6	32.6	37.5	9.6	23.5
Total Split (s)	32.5	32.5	12.9	45.4	45.4	64.4	10.2	74.6
Total Split (%)	27.1%	27.1%	10.8%	37.8%	37.8%	53.7%	8.5%	62.2%
Yellow Time (s)	3.5	3.5	3.6	3.6	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.6	4.6	4.6	6.5	4.6	6.5
Lead/Lag	Lag	Lag	Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	8.2	8.2	8.2	16.4	16.4	58.3	5.6	68.6
Actuated g/C Ratio	0.09	0.09	0.09	0.17	0.17	0.61	0.06	0.71
v/c Ratio	0.19	0.18	0.70	0.10	0.26	0.81	0.65	0.59
Control Delay	46.2	44.5	71.9	32.4	9.6	19.0	78.9	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	44.5	71.9	32.4	9.6	19.0	78.9	9.4
LOS	D	D	E	C	A	B	E	A
Approach Delay		45.3		41.5		19.0		12.2
Approach LOS		D		D		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	23	0	79	25	68	0	1909	66	50	1166	19
Future Volume (veh/h)	17	23	0	79	25	68	0	1909	66	50	1166	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.81		1.00	1.00		0.93	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	20	27	0	94	30	81	0	2273	67	60	1388	23
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	100	0	116	324	256	83	2843	83	74	2333	39
Arrive On Green	0.06	0.06	0.00	0.07	0.18	0.18	0.00	0.59	0.59	0.05	0.69	0.69
Sat Flow, veh/h	928	1772	0	1594	1772	1398	341	4826	142	1594	3388	56
Grp Volume(v), veh/h	20	27	0	94	30	81	0	1516	824	60	689	722
Grp Sat Flow(s),veh/h/ln	928	1772	0	1594	1772	1398	341	1612	1743	1594	1683	1760
Q Serve(g_s), s	1.8	1.3	0.0	5.0	1.2	4.3	0.0	31.4	31.8	3.2	18.6	18.7
Cycle Q Clear(g_c), s	1.8	1.3	0.0	5.0	1.2	4.3	0.0	31.4	31.8	3.2	18.6	18.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.08	1.00		0.03
Lane Grp Cap(c), veh/h	136	100	0	116	324	256	83	1900	1027	74	1159	1212
V/C Ratio(X)	0.15	0.27	0.00	0.81	0.09	0.32	0.00	0.80	0.80	0.82	0.59	0.60
Avail Cap(c_a), veh/h	385	575	0	153	838	661	111	2164	1169	103	1329	1389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	39.0	0.0	39.4	29.3	30.6	0.0	13.7	13.8	40.8	7.1	7.1
Incr Delay (d2), s/veh	0.5	1.4	0.0	16.0	0.1	0.7	0.0	1.9	3.7	19.9	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.6	0.0	2.4	0.5	1.4	0.0	8.9	10.2	1.6	4.2	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.7	40.4	0.0	55.4	29.4	31.3	0.0	15.7	17.5	60.7	7.6	7.6
LnGrp LOS	D	D	A	E	C	C	A	B	B	E	A	A
Approach Vol, veh/h		47			205			2340			1471	
Approach Delay, s/veh		40.1			42.1			16.3			9.8	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	8.6	57.3	10.9	9.5		65.9		20.4				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	5.6	57.9	8.3	* 28		68.1		40.8				
Max Q Clear Time (g_c+I1), s	5.2	33.8	7.0	3.8		20.7		6.3				
Green Ext Time (p_c), s	0.0	17.0	0.0	0.1		11.2		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

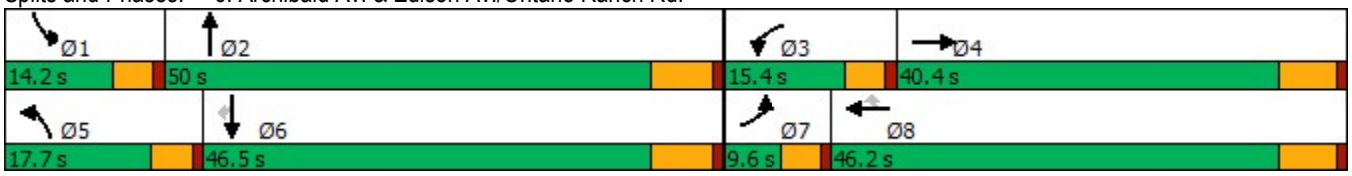
Notes

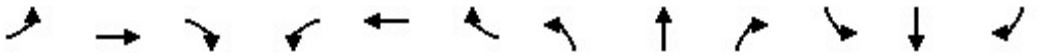
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	550	72	507	787	353	184	1400	484	282	700	68
Future Volume (vph)	38	550	72	507	787	353	184	1400	484	282	700	68
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	40.4		15.4	46.2	46.2	17.7	50.0		14.2	46.5	46.5
Total Split (%)	8.0%	33.7%		12.8%	38.5%	38.5%	14.8%	41.7%		11.8%	38.8%	38.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.0	32.2	118.1	10.8	40.1	40.1	13.1	43.6	118.1	9.6	40.1	40.1
Actuated g/C Ratio	0.04	0.27	1.00	0.09	0.34	0.34	0.11	0.37	1.00	0.08	0.34	0.34
v/c Ratio	0.33	0.63	0.05	2.04	1.45	0.60	1.15	1.18	0.36	2.42	0.64	0.12
Control Delay	63.3	40.9	0.1	509.9	241.4	17.9	162.5	124.6	0.7	685.1	36.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	40.9	0.1	509.9	241.4	17.9	162.5	124.6	0.7	685.1	36.4	0.4
LOS	E	D	A	F	F	B	F	F	A	F	D	A
Approach Delay		37.7			276.1			99.0			208.3	
Approach LOS		D			F			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.42	
Intersection Signal Delay: 166.5	Intersection LOS: F
Intersection Capacity Utilization 124.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	550	72	507	787	353	184	1400	484	282	700	68
Future Volume (veh/h)	38	550	72	507	787	353	184	1400	484	282	700	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	42	604	0	557	865	365	202	1538	0	310	769	64
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	983		273	597	499	176	1298		129	1194	495
Arrive On Green	0.03	0.28	0.00	0.09	0.34	0.34	0.11	0.37	0.00	0.08	0.34	0.34
Sat Flow, veh/h	3000	3544	1502	3000	1772	1483	1594	3544	1502	1594	3544	1468
Grp Volume(v), veh/h	42	604	0	557	865	365	202	1538	0	310	769	64
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1483	1594	1772	1502	1594	1772	1468
Q Serve(g_s), s	1.6	17.6	0.0	10.8	40.0	25.7	13.1	43.5	0.0	9.6	21.8	3.6
Cycle Q Clear(g_c), s	1.6	17.6	0.0	10.8	40.0	25.7	13.1	43.5	0.0	9.6	21.8	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	983		273	597	499	176	1298		129	1194	495
V/C Ratio(X)	0.44	0.61		2.04	1.45	0.73	1.15	1.18		2.41	0.64	0.13
Avail Cap(c_a), veh/h	126	1021		273	597	499	176	1298		129	1194	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.5	37.4	0.0	54.0	39.4	34.6	52.8	37.6	0.0	54.6	33.3	27.3
Incr Delay (d2), s/veh	1.2	1.0	0.0	481.2	211.5	5.4	113.6	91.2	0.0	655.7	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	7.4	0.0	22.2	51.3	9.5	10.6	33.8	0.0	27.2	9.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	38.4	0.0	535.2	250.8	40.1	166.4	128.9	0.0	710.3	34.5	27.4
LnGrp LOS	E	D		F	F	D	F	F		F	C	C
Approach Vol, veh/h		646	A		1787			1740	A		1143	
Approach Delay, s/veh		39.7			296.4			133.2			217.4	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	50.0	15.4	39.1	17.7	46.5	8.3	46.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	9.6	43.5	10.8	34.2	13.1	40.0	5.0	40.0
Max Q Clear Time (g_c+I1), s	11.6	45.5	12.8	19.6	15.1	23.8	3.6	42.0
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	4.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	194.8
HCM 6th LOS	F

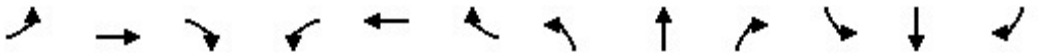
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	131	576	93	675	305	246	122	187
Future Volume (vph)	131	576	93	675	305	246	122	187
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	17.2	42.8	14.6	40.2	32.4	42.0	20.6	30.2
Total Split (%)	14.3%	35.7%	12.2%	33.5%	27.0%	35.0%	17.2%	25.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	12.6	36.7	10.0	34.1	27.9	29.8	13.9	15.8
Actuated g/C Ratio	0.11	0.33	0.09	0.31	0.25	0.27	0.12	0.14
v/c Ratio	0.93	0.87	0.84	1.03	0.98	0.65	0.78	0.73
Control Delay	101.6	44.7	93.6	74.1	83.0	26.9	74.1	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.6	44.7	93.6	74.1	83.0	26.9	74.1	40.5
LOS	F	D	F	E	F	C	E	D
Approach Delay		53.3		76.1		48.5		50.0
Approach LOS		D		E		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 58.4	Intersection LOS: E
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	576	165	93	675	142	305	246	242	122	187	121
Future Volume (veh/h)	131	576	165	93	675	142	305	246	242	122	187	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.94	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	166	729	108	118	854	91	386	311	179	154	237	90
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	941	139	141	911	97	396	587	327	179	364	134
Arrive On Green	0.11	0.32	0.32	0.09	0.30	0.30	0.25	0.29	0.29	0.11	0.15	0.15
Sat Flow, veh/h	1594	2927	433	1594	3065	327	1594	2038	1135	1594	2394	880
Grp Volume(v), veh/h	166	419	418	118	469	476	386	255	235	154	164	163
Grp Sat Flow(s),veh/h/ln	1594	1683	1677	1594	1683	1708	1594	1683	1490	1594	1683	1590
Q Serve(g_s), s	11.5	25.2	25.2	8.2	30.4	30.4	26.9	14.2	14.9	10.6	10.3	10.8
Cycle Q Clear(g_c), s	11.5	25.2	25.2	8.2	30.4	30.4	26.9	14.2	14.9	10.6	10.3	10.8
Prop In Lane	1.00		0.26	1.00		0.19	1.00		0.76	1.00		0.55
Lane Grp Cap(c), veh/h	180	541	539	141	500	508	396	485	429	179	256	242
V/C Ratio(X)	0.92	0.77	0.78	0.84	0.94	0.94	0.97	0.53	0.55	0.86	0.64	0.67
Avail Cap(c_a), veh/h	180	551	549	142	512	519	396	545	482	228	367	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	34.3	34.3	50.2	38.3	38.3	41.7	33.4	33.6	48.8	44.6	44.8
Incr Delay (d2), s/veh	45.3	6.7	6.8	31.4	24.8	24.6	38.2	0.9	1.1	19.1	2.7	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	10.6	10.6	4.4	15.2	15.4	14.3	5.7	5.3	5.0	4.3	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.5	41.0	41.1	81.6	63.1	62.9	79.9	34.3	34.7	67.8	47.3	48.0
LnGrp LOS	F	D	D	F	E	E	E	C	C	E	D	D
Approach Vol, veh/h		1003			1063			876			481	
Approach Delay, s/veh		49.9			65.1			54.5			54.1	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.2	38.0	14.5	42.2	32.4	22.8	17.2	39.4
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	16.0	36.2	10.0	36.6	27.8	24.4	12.6	34.0
Max Q Clear Time (g_c+I1), s	12.6	16.9	10.2	27.2	28.9	12.8	13.5	32.4
Green Ext Time (p_c), s	0.1	2.6	0.0	3.2	0.0	1.3	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	56.4
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	84
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	107	199	107	67	318	157	142	448	57	93	209	82
Future Vol, veh/h	107	199	107	67	318	157	142	448	57	93	209	82
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	145	269	145	91	430	212	192	605	77	126	282	111
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

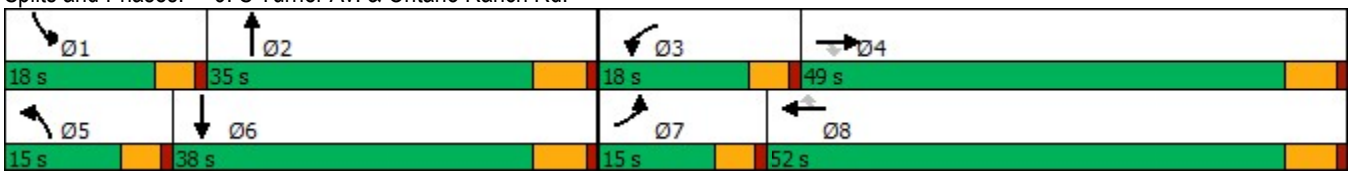
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	39.9	101.9	125.7	35.9
HCM LOS	E	F	F	E

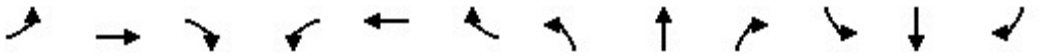
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	72%	0%	100%	38%	0%	100%	40%	0%	100%	46%
Vol Right, %	0%	0%	28%	0%	0%	62%	0%	0%	60%	0%	0%	54%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	299	206	107	133	173	67	212	263	93	139	152
LT Vol	142	0	0	107	0	0	67	0	0	93	0	0
Through Vol	0	299	149	0	133	66	0	212	106	0	139	70
RT Vol	0	0	57	0	0	107	0	0	157	0	0	82
Lane Flow Rate	192	404	279	145	179	234	91	286	355	126	188	205
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.664	1.343	0.914	0.527	0.629	0.795	0.318	0.968	1.161	0.46	0.664	0.702
Departure Headway (Hd)	12.691	12.191	11.997	13.302	12.802	12.37	12.985	12.485	12.067	13.313	12.813	12.435
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	286	303	304	273	283	295	279	292	302	273	284	293
Service Time	10.391	9.891	9.697	11.002	10.502	10.07	10.685	10.185	9.767	11.013	10.513	10.135
HCM Lane V/C Ratio	0.671	1.333	0.918	0.531	0.633	0.793	0.326	0.979	1.175	0.462	0.662	0.7
HCM Control Delay	37.3	207.5	68.2	29.9	34.9	49.9	21.6	82.1	138.3	26.9	37.6	39.9
HCM Lane LOS	E	F	F	D	D	E	C	F	F	D	E	E
HCM 95th-tile Q	4.3	20.1	8.7	2.8	3.9	6.3	1.3	9.7	14.8	2.3	4.3	4.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	35	1309	17	103	1697	92	37	142	100	70
Future Volume (vph)	35	1309	17	103	1697	92	37	142	100	70
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	15.0	49.0	49.0	18.0	52.0	52.0	15.0	35.0	18.0	38.0
Total Split (%)	12.5%	40.8%	40.8%	15.0%	43.3%	43.3%	12.5%	29.2%	15.0%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	6.9	43.7	43.7	10.4	51.6	51.6	7.0	17.0	10.3	24.8
Actuated g/C Ratio	0.07	0.43	0.43	0.10	0.50	0.50	0.07	0.17	0.10	0.24
v/c Ratio	0.33	0.96	0.03	0.63	1.06	0.12	0.34	0.71	0.62	0.23
Control Delay	55.9	46.9	0.1	62.2	66.5	3.9	56.1	51.0	61.7	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	46.9	0.1	62.2	66.5	3.9	56.1	51.0	61.7	31.0
LOS	E	D	A	E	E	A	E	D	E	C
Approach Delay		46.6			63.2			51.8		47.1
Approach LOS		D			E			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 55.5	Intersection LOS: E
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1309	17	103	1697	92	37	142	54	100	70	21
Future Volume (veh/h)	35	1309	17	103	1697	92	37	142	54	100	70	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1454	15	114	1886	94	41	158	54	111	78	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1649	735	144	1813	808	63	196	67	140	301	46
Arrive On Green	0.03	0.46	0.46	0.08	0.51	0.51	0.04	0.15	0.15	0.08	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1333	456	1781	1583	244
Grp Volume(v), veh/h	39	1454	15	114	1886	94	41	0	212	111	0	90
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1788	1781	0	1827
Q Serve(g_s), s	2.0	33.6	0.5	5.7	46.2	2.8	2.1	0.0	10.4	5.5	0.0	3.8
Cycle Q Clear(g_c), s	2.0	33.6	0.5	5.7	46.2	2.8	2.1	0.0	10.4	5.5	0.0	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.13
Lane Grp Cap(c), veh/h	61	1649	735	144	1813	808	63	0	263	140	0	348
V/C Ratio(X)	0.63	0.88	0.02	0.79	1.04	0.12	0.65	0.00	0.81	0.79	0.00	0.26
Avail Cap(c_a), veh/h	205	1695	756	264	1813	808	205	0	577	264	0	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.2	22.0	13.1	40.9	22.2	11.6	43.1	0.0	37.4	41.0	0.0	31.2
Incr Delay (d2), s/veh	4.0	5.7	0.0	3.7	32.5	0.1	4.1	0.0	5.8	3.7	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	13.2	0.1	2.5	24.0	0.9	0.9	0.0	4.7	2.5	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	27.8	13.2	44.6	54.7	11.6	47.2	0.0	43.2	44.7	0.0	31.6
LnGrp LOS	D	C	B	D	F	B	D	A	D	D	A	C
Approach Vol, veh/h		1508			2094			253			201	
Approach Delay, s/veh		28.1			52.2			43.8			38.9	
Approach LOS		C			D			D			D	

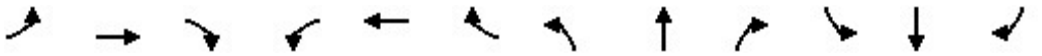
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	19.1	11.9	47.8	7.8	23.0	7.7	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.4	29.2	13.4	43.2	10.4	32.2	10.4	46.2
Max Q Clear Time (g_c+I1), s	7.5	12.4	7.7	35.6	4.1	5.8	4.0	48.2
Green Ext Time (p_c), s	0.1	0.9	0.1	5.1	0.0	0.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	251	4	790	864	1947	1099	449
Future Volume (vph)	251	4	790	864	1947	1099	449
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	25.0	25.0		21.0	50.0	29.0	29.0
Total Split (%)	33.3%	33.3%		28.0%	66.7%	38.7%	38.7%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.2	19.2	75.0	16.0	43.8	22.8	22.8
Actuated g/C Ratio	0.26	0.26	1.00	0.21	0.58	0.30	0.30
v/c Ratio	1.17	1.17	0.52	1.23	0.68	0.74	0.58
Control Delay	126.8	129.2	1.2	137.4	11.8	27.0	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.8	129.2	1.2	137.4	11.8	27.0	5.6
LOS	F	F	A	F	B	C	A
Approach Delay		71.0			50.4	20.8	
Approach LOS		E			D	C	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 45 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 48.8	Intersection LOS: D
Intersection Capacity Utilization 94.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	251	4	790	864	1947	0	0	1099	449
Future Volume (veh/h)	0	0	0	251	4	790	864	1947	0	0	1099	449
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				1007	0	0	900	2028	0	0	1145	239
Peak Hour Factor				0.25	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				912	0		737	2982	0	0	1552	475
Arrive On Green				0.26	0.00	0.00	0.43	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1563
Grp Volume(v), veh/h				1007	0	0	900	2028	0	0	1145	239
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1563
Q Serve(g_s), s				19.2	0.0	0.0	16.0	0.0	0.0	0.0	15.1	9.4
Cycle Q Clear(g_c), s				19.2	0.0	0.0	16.0	0.0	0.0	0.0	15.1	9.4
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				912	0		737	2982	0	0	1552	475
V/C Ratio(X)				1.10	0.00		1.22	0.68	0.00	0.00	0.74	0.50
Avail Cap(c_a), veh/h				912	0		737	2982	0	0	1552	475
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				27.9	0.0	0.0	21.5	0.0	0.0	0.0	23.4	21.4
Incr Delay (d2), s/veh				62.5	0.0	0.0	100.6	0.1	0.0	0.0	3.2	3.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.2	0.0	0.0	14.4	0.0	0.0	0.0	5.8	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				90.4	0.0	0.0	122.1	0.1	0.0	0.0	26.6	25.2
LnGrp LOS				F	A		F	A	A	A	C	C
Approach Vol, veh/h					1007	A		2928			1384	
Approach Delay, s/veh					90.4			37.6			26.4	
Approach LOS					F			D			C	

Timer - Assigned Phs	2		5	6		8				
Phs Duration (G+Y+Rc), s	50.0		21.0	29.0		25.0				
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8				
Max Green Setting (Gmax), s	43.8		16.0	22.8		19.2				
Max Q Clear Time (g_c+I1), s	2.0		18.0	17.1		21.2				
Green Ext Time (p_c), s	13.9		0.0	2.8		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

Notes

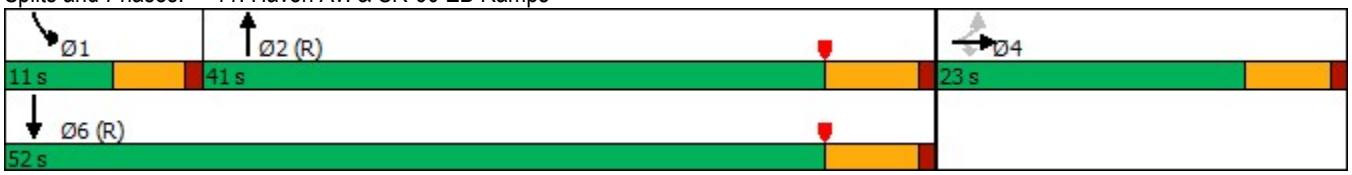
User approved volume balancing among the lanes for turning movement.

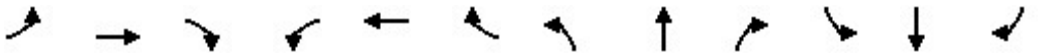
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	792	5	510	2001	357	1024
Future Volume (vph)	792	5	510	2001	357	1024
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	23.0	23.0	23.0	41.0	11.0	52.0
Total Split (%)	30.7%	30.7%	30.7%	54.7%	14.7%	69.3%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	17.2	17.2	17.2	34.8	6.0	45.8
Actuated g/C Ratio	0.23	0.23	0.23	0.46	0.08	0.61
v/c Ratio	1.08	1.09	1.18	1.08	1.37	0.35
Control Delay	101.0	104.2	126.9	67.2	202.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.0	104.2	126.9	67.2	202.1	7.8
LOS	F	F	F	E	F	A
Approach Delay		112.1		67.2		58.1
Approach LOS		F		E		E

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 48 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.37	
Intersection Signal Delay: 76.2	Intersection LOS: E
Intersection Capacity Utilization 94.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	792	5	510	0	0	0	0	2001	405	357	1024	0
Future Volume (veh/h)	792	5	510	0	0	0	0	2001	405	357	1024	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	838	0	305				0	2106	215	376	1078	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	817	0	364				0	2184	220	276	3118	0
Arrive On Green	0.23	0.00	0.23				0.00	0.46	0.46	0.16	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4875	474	3456	5274	0
Grp Volume(v), veh/h	838	0	305				0	1516	805	376	1078	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1777	1728	1702	0
Q Serve(g_s), s	17.2	0.0	13.8				0.0	32.3	33.3	6.0	0.0	0.0
Cycle Q Clear(g_c), s	17.2	0.0	13.8				0.0	32.3	33.3	6.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.27	1.00		0.00
Lane Grp Cap(c), veh/h	817	0	364				0	1579	825	276	3118	0
V/C Ratio(X)	1.03	0.00	0.84				0.00	0.96	0.98	1.36	0.35	0.00
Avail Cap(c_a), veh/h	817	0	364				0	1579	825	276	3118	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.37	0.37	0.00
Uniform Delay (d), s/veh	28.9	0.0	27.6				0.0	19.4	19.7	31.5	0.0	0.0
Incr Delay (d2), s/veh	38.2	0.0	15.8				0.0	14.9	26.1	170.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	0.0	6.3				0.0	13.6	17.2	8.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.1	0.0	43.4				0.0	34.3	45.8	202.2	0.1	0.0
LnGrp LOS	F	A	D				A	C	D	F	A	A
Approach Vol, veh/h		1143						2321			1454	
Approach Delay, s/veh		60.8						38.3			52.4	
Approach LOS		E						D			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.0	41.0		23.0		52.0
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	6.0	34.8		17.2		45.8
Max Q Clear Time (g_c+I1), s	8.0	35.3		19.2		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		5.2

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

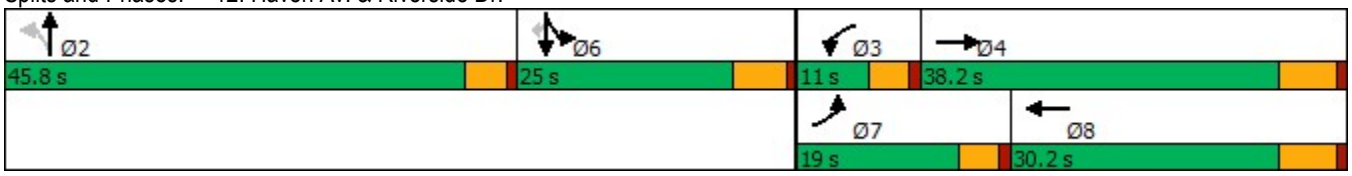
Notes

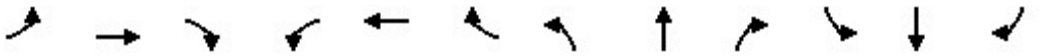
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	388	624	251	467	67	1245	320	835	281
Future Volume (vph)	388	624	251	467	67	1245	320	835	281
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	38.2	11.0	30.2	45.8	45.8	25.0	25.0	25.0
Total Split (%)	15.8%	31.8%	9.2%	25.2%	38.2%	38.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.4	32.0	6.4	24.0		41.1	19.2	19.2	19.2
Actuated g/C Ratio	0.12	0.27	0.05	0.20		0.34	0.16	0.16	0.16
v/c Ratio	2.19	1.54	3.18	1.06		22.94	1.34	3.15	0.83
Control Delay	576.3	287.5	1029.2	94.8		9903.6	218.2	994.4	42.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	576.3	287.5	1029.2	94.8		9903.6	218.2	994.4	42.9
LOS	F	F	F	F		F	F	F	D
Approach Delay		393.2		349.4		9903.6		635.2	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 22.94	
Intersection Signal Delay: 3426.7	Intersection LOS: F
Intersection Capacity Utilization 206.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	388	624	48	251	467	203	67	1245	242	320	835	281
Future Volume (veh/h)	388	624	48	251	467	203	67	1245	242	320	835	281
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	413	664	48	267	497	180	71	1324	240	340	888	123
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	432	31	85	478	172	26	477	86	255	284	235
Arrive On Green	0.12	0.27	0.27	0.05	0.20	0.20	0.34	0.34	0.34	0.16	0.16	0.16
Sat Flow, veh/h	1594	1622	117	1594	2392	860	75	1392	252	1594	1772	1468
Grp Volume(v), veh/h	413	0	712	267	349	328	1635	0	0	340	888	123
Grp Sat Flow(s),veh/h/ln	1594	0	1739	1594	1683	1569	1718	0	0	1594	1772	1468
Q Serve(g_s), s	14.4	0.0	32.0	6.4	24.0	24.0	41.1	0.0	0.0	19.2	19.2	9.2
Cycle Q Clear(g_c), s	14.4	0.0	32.0	6.4	24.0	24.0	41.1	0.0	0.0	19.2	19.2	9.2
Prop In Lane	1.00		0.07	1.00		0.55	0.04		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	191	0	464	85	337	314	589	0	0	255	284	235
V/C Ratio(X)	2.16	0.00	1.54	3.14	1.04	1.05	2.78	0.00	0.00	1.33	3.13	0.52
Avail Cap(c_a), veh/h	191	0	464	85	337	314	589	0	0	255	284	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	44.0	56.8	48.0	48.0	39.5	0.0	0.0	50.4	50.4	46.2
Incr Delay (d2), s/veh	538.7	0.0	251.6	993.6	58.5	63.5	804.9	0.0	0.0	174.3	968.7	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.2	0.0	45.5	26.0	15.1	14.5	148.6	0.0	0.0	19.8	84.5	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	591.5	0.0	295.6	1050.4	106.5	111.5	844.3	0.0	0.0	224.7	1019.1	48.3
LnGrp LOS	F	A	F	F	F	F	F	A	A	F	F	D
Approach Vol, veh/h		1125			944			1635			1351	
Approach Delay, s/veh		404.2			375.2			844.3			730.8	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.8	11.0	38.2		25.0	19.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 41	6.4	32.0		19.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		43.1	8.4	34.0		21.2	16.4	26.0				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		628.4
HCM 6th LOS		F

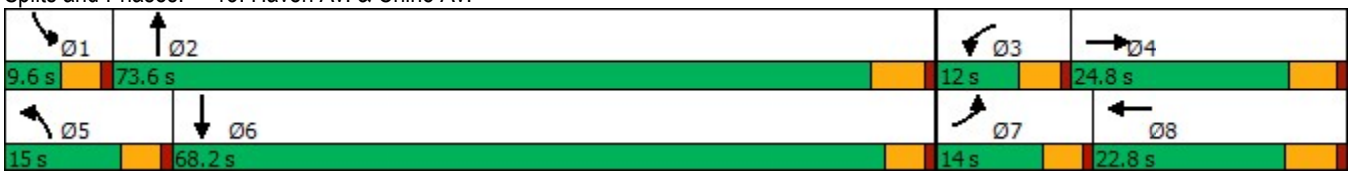
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	174	98	156	121	201	1397	922	
Future Volume (vph)	174	98	156	121	201	1397	922	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	14.0	24.8	12.0	22.8	15.0	73.6	68.2	9.6
Total Split (%)	11.7%	20.7%	10.0%	19.0%	12.5%	61.3%	56.8%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	9.4	16.9	7.4	14.5	10.4	77.4	63.5	
Actuated g/C Ratio	0.08	0.14	0.06	0.12	0.09	0.66	0.54	
v/c Ratio	1.47	0.79	1.53	0.58	1.53	1.74	1.28	
Control Delay	285.0	60.7	315.2	59.0	308.0	356.1	161.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	285.0	60.7	315.2	59.0	308.0	356.1	161.4	
LOS	F	E	F	E	F	F	F	
Approach Delay		162.9		203.2		351.4	161.4	
Approach LOS		F		F		F	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.74	
Intersection Signal Delay: 265.9	Intersection LOS: F
Intersection Capacity Utilization 147.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	98	107	156	121	0	201	1397	434	0	922	203
Future Volume (veh/h)	174	98	107	156	121	0	201	1397	434	0	922	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	185	107	61	170	132	0	214	1486	255	0	981	110
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	127	72	114	180	0	144	1004	172	2	863	97
Arrive On Green	0.12	0.17	0.17	0.10	0.14	0.00	0.14	1.00	1.00	0.00	0.83	0.83
Sat Flow, veh/h	1594	1118	637	1781	1870	0	1594	1474	253	1781	1565	175
Grp Volume(v), veh/h	185	0	168	170	132	0	214	0	1741	0	0	1091
Grp Sat Flow(s),veh/h/ln	1594	0	1756	1781	1870	0	1594	0	1726	1781	0	1740
Q Serve(g_s), s	9.4	0.0	10.7	7.4	7.8	0.0	10.4	0.0	75.2	0.0	0.0	63.5
Cycle Q Clear(g_c), s	9.4	0.0	10.7	7.4	7.8	0.0	10.4	0.0	75.2	0.0	0.0	63.5
Prop In Lane	1.00		0.36	1.00		0.00	1.00		0.15	1.00		0.10
Lane Grp Cap(c), veh/h	130	0	199	114	180	0	144	0	1177	2	0	959
V/C Ratio(X)	1.42	0.00	0.84	1.49	0.73	0.00	1.49	0.00	1.48	0.00	0.00	1.14
Avail Cap(c_a), veh/h	130	0	296	114	276	0	144	0	1177	77	0	959
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	46.8	52.0	47.9	0.0	49.8	0.0	0.0	0.0	0.0	10.0
Incr Delay (d2), s/veh	228.8	0.0	13.2	259.0	5.7	0.0	252.4	0.0	220.5	0.0	0.0	74.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.8	0.0	5.0	11.3	3.7	0.0	13.9	0.0	72.1	0.0	0.0	26.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	279.3	0.0	59.9	311.1	53.5	0.0	302.1	0.0	220.5	0.0	0.0	84.5
LnGrp LOS	F	A	E	F	D	A	F	A	F	A	A	F
Approach Vol, veh/h		353			302			1955			1091	
Approach Delay, s/veh		174.9			198.5			229.4			84.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	84.3	12.0	18.9	15.0	69.3	14.0	16.9
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	67.8	7.4	* 19	10.4	* 64	9.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	77.2	9.4	12.7	12.4	65.5	11.4	9.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	179.0
HCM 6th LOS	F

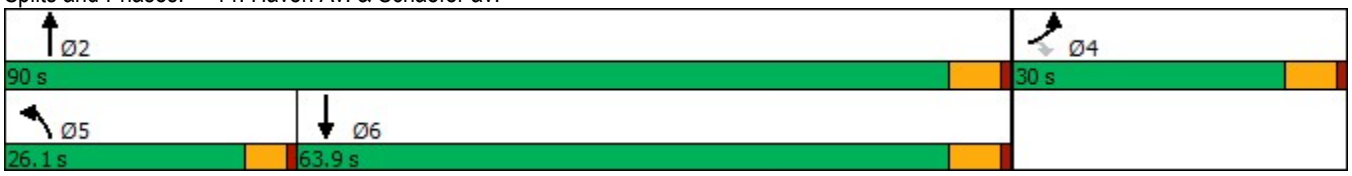
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	81	142	157	1854	1095
Future Volume (vph)	81	142	157	1854	1095
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	30.0	30.0	26.1	90.0	63.9
Total Split (%)	25.0%	25.0%	21.8%	75.0%	53.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	13.1	13.1	15.5	84.4	64.2
Actuated g/C Ratio	0.12	0.12	0.14	0.77	0.59
v/c Ratio	0.46	0.49	0.76	1.48	0.61
Control Delay	52.4	12.3	66.1	237.5	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	12.3	66.1	237.5	17.4
LOS	D	B	E	F	B
Approach Delay	26.9			224.1	17.4
Approach LOS	C			F	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 140.8	Intersection LOS: F
Intersection Capacity Utilization 121.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	81	142	157	1854	1095	58
Future Volume (veh/h)	81	142	157	1854	1095	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	88	78	171	2015	1190	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	150	141	197	1410	2150	65
Arrive On Green	0.14	0.14	0.19	1.00	0.94	0.94
Sat Flow, veh/h	1594	1502	1594	1772	3419	103
Grp Volume(v), veh/h	88	78	171	2015	616	610
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1772	1751
Q Serve(g_s), s	5.4	5.1	11.0	83.9	4.4	4.4
Cycle Q Clear(g_c), s	5.4	5.1	11.0	83.9	4.4	4.4
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	150	141	197	1410	1114	1101
V/C Ratio(X)	0.59	0.55	0.87	1.43	0.55	0.55
Avail Cap(c_a), veh/h	366	345	325	1415	1114	1101
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	43.2	42.1	0.0	1.2	1.2
Incr Delay (d2), s/veh	3.6	3.3	7.0	197.2	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.1	4.3	77.2	0.9	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.0	46.5	49.1	197.2	1.8	1.8
LnGrp LOS	D	D	D	F	A	A
Approach Vol, veh/h	166			2186	1226	
Approach Delay, s/veh	46.8			185.6	1.8	
Approach LOS	D			F	A	

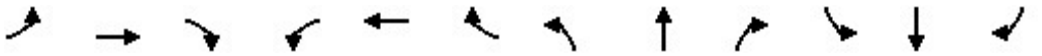
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		89.8		15.7	17.6	72.2
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		84.2		24.2	21.5	58.1
Max Q Clear Time (g_c+I1), s		85.9		7.4	13.0	6.4
Green Ext Time (p_c), s		0.0		0.4	0.1	9.7

Intersection Summary	
HCM 6th Ctrl Delay	116.2
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	1311	19	83	1346	723	40	585	130	726	326	382
Future Volume (vph)	320	1311	19	83	1346	723	40	585	130	726	326	382
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	15.0	38.0	38.0	11.5	34.5	34.5	11.7	48.5	48.5	22.0	58.8	58.8
Total Split (%)	12.5%	31.7%	31.7%	9.6%	28.8%	28.8%	9.8%	40.4%	40.4%	18.3%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.4	32.1	32.1	6.6	28.0	28.0	6.5	42.7	42.7	17.4	55.5	55.5
Actuated g/C Ratio	0.09	0.27	0.27	0.06	0.23	0.23	0.05	0.36	0.36	0.14	0.46	0.46
v/c Ratio	2.51	1.00	0.04	0.54	0.88	1.35	0.51	1.00	0.22	3.41	0.43	0.50
Control Delay	724.2	67.1	0.2	67.8	51.6	192.1	75.4	75.4	3.9	1112.6	24.5	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	724.2	67.1	0.2	67.8	51.6	192.1	75.4	75.4	3.9	1112.6	24.5	11.0
LOS	F	E	A	E	D	F	E	E	A	F	C	B
Approach Delay		193.8			99.4			63.1			571.7	
Approach LOS		F			F			E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.41	
Intersection Signal Delay: 233.9	Intersection LOS: F
Intersection Capacity Utilization 135.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1311	19	83	1346	723	40	585	130	726	326	382
Future Volume (veh/h)	320	1311	19	83	1346	723	40	585	130	726	326	382
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	344	1410	9	89	1447	725	43	629	89	781	351	388
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	1469	415	131	1654	350	53	631	534	231	829	700
Arrive On Green	0.09	0.28	0.28	0.04	0.23	0.23	0.03	0.36	0.36	0.14	0.47	0.47
Sat Flow, veh/h	1594	5316	1500	3000	7088	1502	1594	1772	1500	1594	1772	1497
Grp Volume(v), veh/h	344	1410	9	89	1447	725	43	629	89	781	351	388
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1772	1500	1594	1772	1497
Q Serve(g_s), s	10.4	31.3	0.5	3.5	23.6	28.0	3.2	42.5	4.9	17.4	15.8	22.4
Cycle Q Clear(g_c), s	10.4	31.3	0.5	3.5	23.6	28.0	3.2	42.5	4.9	17.4	15.8	22.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	1469	415	131	1654	350	53	631	534	231	829	700
V/C Ratio(X)	2.49	0.96	0.02	0.68	0.87	2.07	0.81	1.00	0.17	3.38	0.42	0.55
Avail Cap(c_a), veh/h	138	1469	415	173	1654	350	94	631	534	231	829	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	42.8	31.6	56.6	44.3	46.0	57.6	38.6	26.5	51.3	21.2	22.9
Incr Delay (d2), s/veh	691.8	15.7	0.1	3.1	6.8	490.9	10.6	35.2	0.1	1081.7	0.3	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.6	15.1	0.2	1.3	10.6	57.6	1.4	23.6	1.7	76.2	6.3	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	746.6	58.4	31.7	59.7	51.1	536.9	68.3	73.8	26.6	1133.0	21.5	23.9
LnGrp LOS	F	E	C	E	D	F	E	E	C	F	C	C
Approach Vol, veh/h		1763			2261			761			1520	
Approach Delay, s/veh		192.6			207.2			68.0			593.2	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	48.5	9.8	39.7	8.6	61.9	15.0	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.4	42.7	6.9	* 32	7.1	53.0	10.4	28.0
Max Q Clear Time (g_c+I1), s	19.4	44.5	5.5	33.3	5.2	24.4	12.4	30.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	279.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	5.4
Intersection LOS	A

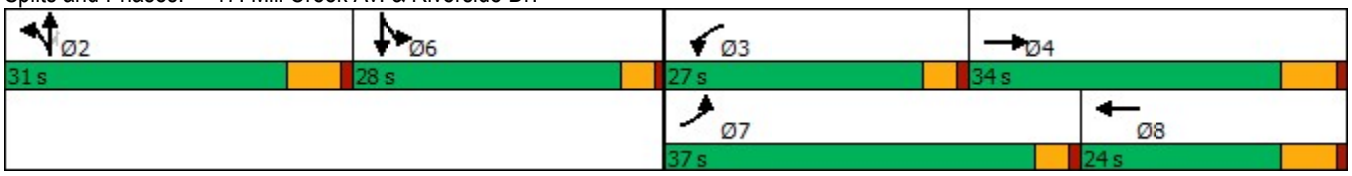
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	484	165	0	123
Demand Flow Rate, veh/h	493	168	0	125
Vehicles Circulating, veh/h	50	24	543	152
Vehicles Exiting, veh/h	227	519	0	40
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	3.7	0.0	4.0
Approach LOS	A	A	-	A

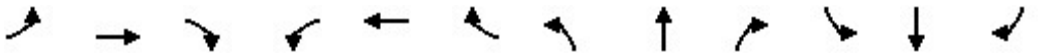
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	493	168	0	125
Cap Entry Lane, veh/h	1311	1346	793	1182
Entry HV Adj Factor	0.981	0.982	1.000	0.984
Flow Entry, veh/h	484	165	0	123
Cap Entry, veh/h	1287	1323	793	1163
V/C Ratio	0.376	0.125	0.000	0.106
Control Delay, s/veh	6.4	3.7	4.5	4.0
LOS	A	A	A	A
95th %tile Queue, veh	2	0	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	374	392	241	351	226	83	404	91	171
Future Volume (vph)	374	392	241	351	226	83	404	91	171
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	37.0	34.0	27.0	24.0	31.0	31.0	31.0	28.0	28.0
Total Split (%)	30.8%	28.3%	22.5%	20.0%	25.8%	25.8%	25.8%	23.3%	23.3%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	33.0	28.0	23.0	18.0	24.2	24.2	24.2	24.0	24.0
Actuated g/C Ratio	0.28	0.24	0.19	0.15	0.20	0.20	0.20	0.20	0.20
v/c Ratio	1.08	1.02	1.00	1.06	0.89	0.29	0.72	0.36	1.10
Control Delay	106.9	73.7	99.7	103.0	75.7	42.6	10.2	45.1	121.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.9	73.7	99.7	103.0	75.7	42.6	10.2	45.1	121.6
LOS	F	E	F	F	E	D	B	D	F
Approach Delay		85.1		101.9		34.7			103.5
Approach LOS		F		F		C			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 79.1	Intersection LOS: E
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	374	392	324	241	351	99	226	83	404	91	171	124
Future Volume (veh/h)	374	392	324	241	351	99	226	83	404	91	171	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	473	496	258	305	444	74	286	105	258	115	216	106
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	520	269	311	451	75	313	348	294	324	219	107
Arrive On Green	0.42	0.36	0.36	0.29	0.23	0.23	0.29	0.29	0.29	0.31	0.31	0.31
Sat Flow, veh/h	1594	2190	1133	1594	2954	489	1594	1772	1492	1594	1075	527
Grp Volume(v), veh/h	473	401	353	305	265	253	286	105	258	115	0	322
Grp Sat Flow(s),veh/h/ln	1594	1772	1551	1594	1772	1670	1594	1772	1492	1594	0	1602
Q Serve(g_s), s	33.0	26.0	26.3	22.4	17.5	17.8	20.4	5.4	19.4	6.6	0.0	23.6
Cycle Q Clear(g_c), s	33.0	26.0	26.3	22.4	17.5	17.8	20.4	5.4	19.4	6.6	0.0	23.6
Prop In Lane	1.00		0.73	1.00		0.29	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	446	420	368	311	270	255	313	348	294	324	0	326
V/C Ratio(X)	1.06	0.95	0.96	0.98	0.98	0.99	0.91	0.30	0.88	0.35	0.00	0.99
Avail Cap(c_a), veh/h	446	420	368	311	270	255	340	378	319	324	0	326
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.3	37.4	37.5	41.5	45.3	45.4	40.6	35.3	40.3	35.0	0.0	40.9
Incr Delay (d2), s/veh	59.8	32.1	36.3	45.8	49.2	54.3	26.7	0.5	22.2	0.7	0.0	46.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.7	13.1	12.0	11.4	10.4	10.3	9.3	2.3	7.9	2.5	0.0	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.1	69.5	73.8	87.4	94.5	99.7	67.4	35.8	62.5	35.6	0.0	87.4
LnGrp LOS	F	E	E	F	F	F	E	D	E	D	A	F
Approach Vol, veh/h		1227			823			649			437	
Approach Delay, s/veh		80.2			93.5			60.3			73.8	
Approach LOS		F			F			E			E	

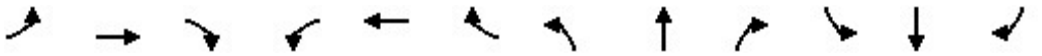
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.0	27.0	34.0		28.0	37.0	24.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		25.2	23.0	28.0		24.0	33.0	18.0				
Max Q Clear Time (g_c+I1), s		22.4	24.4	28.3		25.6	35.0	19.8				
Green Ext Time (p_c), s		0.7	0.0	0.0		0.0	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			78.7									
HCM 6th LOS			E									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	203	248	14	81	5	92	26	118
Future Volume (vph)	203	248	14	81	5	92	26	118
Turn Type	Perm	NA	Split	NA	Perm	NA	Perm	NA
Protected Phases		4	8	8		2		6
Permitted Phases	4				2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	73.0	73.0	22.5	22.5	24.5	24.5	24.5	24.5
Total Split (%)	60.8%	60.8%	18.8%	18.8%	20.4%	20.4%	20.4%	20.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	68.6	68.6	11.7	11.7	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.60	0.60	0.10	0.10	0.18	0.18	0.18	0.18
v/c Ratio	3.40	0.26	0.15	0.53	0.08	0.59	0.38	0.95
Control Delay	1141.8	11.7	47.6	55.5	44.6	51.6	51.8	84.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1141.8	11.7	47.6	55.5	44.6	51.6	51.8	84.1
LOS	F	B	D	E	D	D	D	F
Approach Delay		502.4		53.8		51.4		79.4
Approach LOS		F		D		D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.40	
Intersection Signal Delay: 252.0	Intersection LOS: F
Intersection Capacity Utilization 35.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: Mill Creek Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	248	17	14	81	7	5	92	4	26	118	66
Future Volume (veh/h)	203	248	17	14	81	7	5	92	4	26	118	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	221	270	9	28	88	8	5	184	4	52	236	39
Peak Hour Factor	0.92	0.92	0.92	0.50	0.92	0.50	0.92	0.50	0.50	0.50	0.50	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	455	459	15	183	173	16	327	430	9	396	369	61
Arrive On Green	0.26	0.26	0.26	0.10	0.10	0.10	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	1800	60	1781	1689	154	1104	1824	40	1195	1565	259
Grp Volume(v), veh/h	221	0	279	28	0	96	5	0	188	52	0	275
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	0	1843	1104	0	1863	1195	0	1824
Q Serve(g_s), s	3.5	0.0	4.4	0.5	0.0	1.6	0.1	0.0	2.8	1.3	0.0	4.5
Cycle Q Clear(g_c), s	3.5	0.0	4.4	0.5	0.0	1.6	4.6	0.0	2.8	4.1	0.0	4.5
Prop In Lane	1.00		0.03	1.00		0.08	1.00		0.02	1.00		0.14
Lane Grp Cap(c), veh/h	455	0	474	183	0	189	327	0	439	396	0	430
V/C Ratio(X)	0.49	0.00	0.59	0.15	0.00	0.51	0.02	0.00	0.43	0.13	0.00	0.64
Avail Cap(c_a), veh/h	3676	0	3837	966	0	999	732	0	1123	835	0	1099
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	10.8	13.6	0.0	14.1	13.5	0.0	10.8	12.5	0.0	11.4
Incr Delay (d2), s/veh	0.8	0.0	1.2	0.4	0.0	2.1	0.0	0.0	0.7	0.1	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.2	0.2	0.0	0.6	0.0	0.0	0.8	0.3	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	0.0	12.0	14.0	0.0	16.2	13.5	0.0	11.4	12.7	0.0	13.0
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		500			124			193			327	
Approach Delay, s/veh		11.7			15.7			11.5			13.0	
Approach LOS		B			B			B			B	

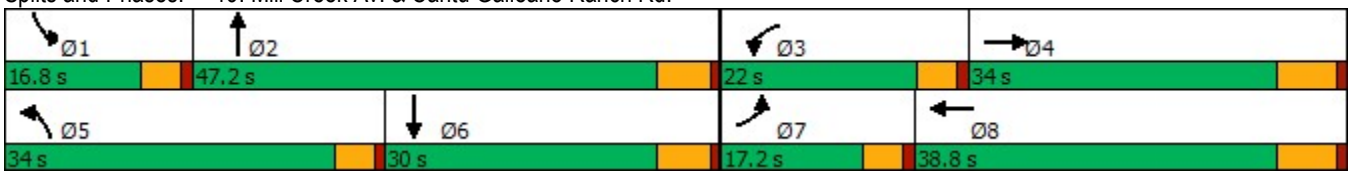
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.3		13.0		12.3		7.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.0		68.5		20.0		18.0				
Max Q Clear Time (g_c+I1), s		6.6		6.4		6.5		3.6				
Green Ext Time (p_c), s		0.7		2.2		1.3		0.4				

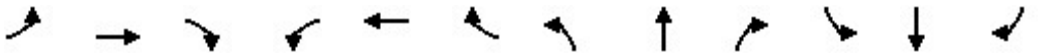
Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	121	934	274	644	462	67	115	22
Future Volume (vph)	121	934	274	644	462	67	115	22
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	23.5	9.6	23.5	9.6	27.8	9.6	27.8
Total Split (s)	17.2	34.0	22.0	38.8	34.0	47.2	16.8	30.0
Total Split (%)	14.3%	28.3%	18.3%	32.3%	28.3%	39.3%	14.0%	25.0%
Yellow Time (s)	3.6	5.5	3.6	5.5	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	11.3	27.6	17.4	33.7	29.5	30.8	10.9	12.2
Actuated g/C Ratio	0.10	0.26	0.16	0.31	0.27	0.28	0.10	0.11
v/c Ratio	0.72	1.06	1.05	0.66	1.04	0.63	0.70	0.47
Control Delay	69.1	81.0	110.7	32.1	92.3	21.3	68.7	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	81.0	110.7	32.1	92.3	21.3	68.7	18.0
LOS	E	F	F	C	F	C	E	B
Approach Delay		79.9		49.7		61.7		42.8
Approach LOS		E		D		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 63.4	Intersection LOS: E
Intersection Capacity Utilization 92.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Mill Creek Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	934	333	274	644	308	462	67	282	115	22	98
Future Volume (veh/h)	121	934	333	274	644	308	462	67	282	115	22	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	1015	199	298	700	172	502	73	177	125	24	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1103	216	294	1362	330	497	139	338	153	43	114
Arrive On Green	0.09	0.26	0.26	0.17	0.33	0.33	0.28	0.29	0.29	0.09	0.09	0.09
Sat Flow, veh/h	1781	4285	839	1781	4101	995	1781	484	1175	1781	451	1203
Grp Volume(v), veh/h	132	806	408	298	580	292	502	0	250	125	0	88
Grp Sat Flow(s),veh/h/ln	1781	1702	1719	1781	1702	1691	1781	0	1659	1781	0	1654
Q Serve(g_s), s	7.7	24.3	24.4	17.4	14.4	14.7	29.4	0.0	13.3	7.3	0.0	5.4
Cycle Q Clear(g_c), s	7.7	24.3	24.4	17.4	14.4	14.7	29.4	0.0	13.3	7.3	0.0	5.4
Prop In Lane	1.00		0.49	1.00		0.59	1.00		0.71	1.00		0.73
Lane Grp Cap(c), veh/h	161	876	442	294	1131	562	497	0	477	153	0	157
V/C Ratio(X)	0.82	0.92	0.92	1.01	0.51	0.52	1.01	0.00	0.52	0.82	0.00	0.56
Avail Cap(c_a), veh/h	213	888	448	294	1131	562	497	0	651	206	0	380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.1	38.1	38.1	44.0	28.3	28.4	38.0	0.0	31.5	47.4	0.0	45.6
Incr Delay (d2), s/veh	13.3	14.4	24.4	56.0	0.4	0.9	43.1	0.0	0.9	12.5	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	11.1	12.5	11.8	5.5	5.6	18.0	0.0	5.2	3.6	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	52.5	62.5	100.0	28.7	29.3	81.1	0.0	32.4	59.8	0.0	48.7
LnGrp LOS	E	D	E	F	C	C	F	A	C	E	A	D
Approach Vol, veh/h		1346			1170			752			213	
Approach Delay, s/veh		56.3			47.0			64.9			55.2	
Approach LOS		E			D			E			E	

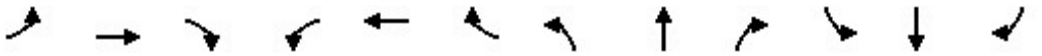
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	36.1	22.0	33.6	34.0	15.8	14.1	41.5
Change Period (Y+Rc), s	4.6	5.8	4.6	6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	12.2	41.4	17.4	27.5	29.4	24.2	12.6	32.3
Max Q Clear Time (g_c+I1), s	9.3	15.3	19.4	26.4	31.4	7.4	9.7	16.7
Green Ext Time (p_c), s	0.0	1.4	0.0	0.8	0.0	0.3	0.0	4.4

Intersection Summary	
HCM 6th Ctrl Delay	55.0
HCM 6th LOS	D

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	580	442	1577	626	289
Future Volume (vph)	4	580	442	1577	626	289
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	22.5	22.5	11.2	22.5	22.5	22.5
Total Split (s)	37.0	37.0	28.0	53.0	25.0	25.0
Total Split (%)	41.1%	41.1%	31.1%	58.9%	27.8%	27.8%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	30.8	30.8	23.4	46.4	18.4	18.4
Actuated g/C Ratio	0.34	0.34	0.26	0.52	0.21	0.21
v/c Ratio	0.72	0.98	0.98	0.83	0.84	0.53
Control Delay	33.5	57.5	71.2	23.2	45.4	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	57.5	71.2	23.3	45.4	7.7
LOS	C	E	E	C	D	A
Approach Delay	47.3			33.7	33.5	
Approach LOS	D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 89.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 37.2	Intersection LOS: D
Intersection Capacity Utilization 104.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	424	4	580	442	1577	0	0	626	289
Future Volume (veh/h)	0	0	0	424	4	580	442	1577	0	0	626	289
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				433	4	337	451	1609	0	0	639	152
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				518	5	465	489	2040	0	0	789	334
Arrive On Green				0.29	0.29	0.29	0.27	0.55	0.00	0.00	0.21	0.21
Sat Flow, veh/h				1766	16	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				437	0	337	451	1609	0	0	639	152
Grp Sat Flow(s),veh/h/ln				1782	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				17.7	0.0	14.7	18.9	26.4	0.0	0.0	12.5	6.4
Cycle Q Clear(g_c), s				17.7	0.0	14.7	18.9	26.4	0.0	0.0	12.5	6.4
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				523	0	465	489	2040	0	0	789	334
V/C Ratio(X)				0.84	0.00	0.73	0.92	0.79	0.00	0.00	0.81	0.45
Avail Cap(c_a), veh/h				714	0	635	542	2277	0	0	915	388
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.4	0.0	24.4	27.1	13.9	0.0	0.0	28.9	26.5
Incr Delay (d2), s/veh				6.3	0.0	2.6	19.3	1.7	0.0	0.0	4.8	1.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.6	0.0	5.3	9.7	8.9	0.0	0.0	5.6	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				31.8	0.0	27.0	46.4	15.7	0.0	0.0	33.7	27.4
LnGrp LOS				C	A	C	D	B	A	A	C	C
Approach Vol, veh/h					774			2060			791	
Approach Delay, s/veh					29.7			22.4			32.5	
Approach LOS					C			C			C	

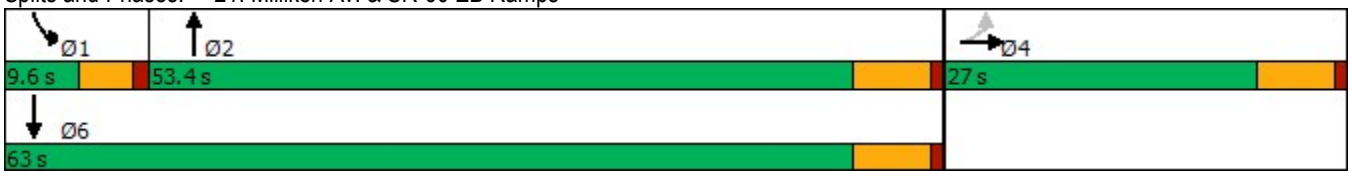
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	48.1		25.7	22.4		28.7						
Change Period (Y+Rc), s	6.2		4.6	6.2		6.2						
Max Green Setting (Gmax), s	46.8		23.4	18.8		30.8						
Max Q Clear Time (g_c+I1), s	28.4		20.9	14.5		19.7						
Green Ext Time (p_c), s	10.7		0.2	1.7		2.9						

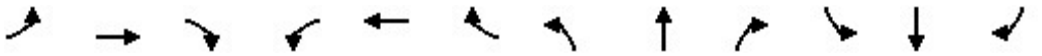
Intersection Summary		
HCM 6th Ctrl Delay		26.2
HCM 6th LOS		C

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	481	3	1600	93	933
Future Volume (vph)	481	3	1600	93	933
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	22.5	9.6	22.5
Total Split (s)	27.0	27.0	53.4	9.6	63.0
Total Split (%)	30.0%	30.0%	59.3%	10.7%	70.0%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	20.8	20.8	47.2	5.0	56.8
Actuated g/C Ratio	0.23	0.23	0.52	0.06	0.63
v/c Ratio	1.09	0.94	1.12	0.98	0.41
Control Delay	106.0	53.6	84.4	131.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	106.0	53.6	84.4	131.7	8.9
LOS	F	D	F	F	A
Approach Delay		79.5	84.4		20.0
Approach LOS		E	F		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 66.7	Intersection LOS: E
Intersection Capacity Utilization 104.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	481	3	391	0	0	0	0	1600	488	93	933	0
Future Volume (veh/h)	481	3	391	0	0	0	0	1600	488	93	933	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	353	203	207				0	1649	256	96	962	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	412	196	200				0	1665	252	99	2361	0
Arrive On Green	0.23	0.23	0.23				0.00	0.68	0.68	0.07	0.82	0.00
Sat Flow, veh/h	1781	849	866				0	3174	480	1781	3741	0
Grp Volume(v), veh/h	353	0	410				0	954	951	96	962	0
Grp Sat Flow(s),veh/h/ln	1781	0	1715				0	1870	1784	1781	1870	0
Q Serve(g_s), s	17.1	0.0	20.8				0.0	43.4	47.2	4.8	6.2	0.0
Cycle Q Clear(g_c), s	17.1	0.0	20.8				0.0	43.4	47.2	4.8	6.2	0.0
Prop In Lane	1.00		0.50				0.00		0.27	1.00		0.00
Lane Grp Cap(c), veh/h	412	0	396				0	981	936	99	2361	0
V/C Ratio(X)	0.86	0.00	1.03				0.00	0.97	1.02	0.97	0.41	0.00
Avail Cap(c_a), veh/h	412	0	396				0	981	936	99	2361	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.30	1.30	1.30	1.30	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.2	0.0	34.6				0.0	13.7	14.3	41.7	3.5	0.0
Incr Delay (d2), s/veh	16.3	0.0	54.5				0.0	22.3	33.5	80.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	14.1				0.0	14.7	17.6	4.2	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	0.0	89.1				0.0	36.0	47.8	121.8	3.7	0.0
LnGrp LOS	D	A	F				A	D	F	F	A	A
Approach Vol, veh/h		763						1905			1058	
Approach Delay, s/veh		70.7						41.9			14.4	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.6	53.4		27.0		63.0
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	5.0	47.2		20.8		56.8
Max Q Clear Time (g_c+I1), s	6.8	49.2		22.8		8.2
Green Ext Time (p_c), s	0.0	0.0		0.0		7.3

Intersection Summary		
HCM 6th Ctrl Delay		40.0
HCM 6th LOS		D

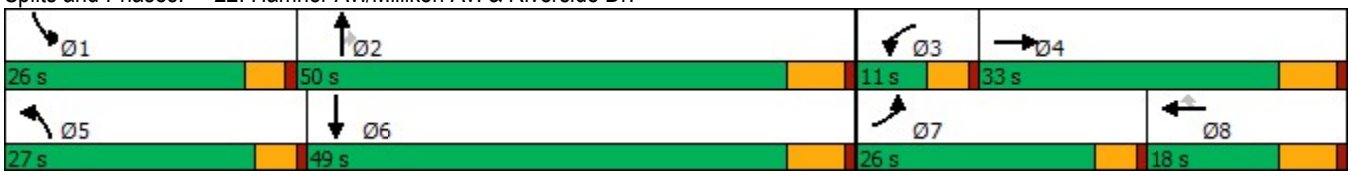
Notes

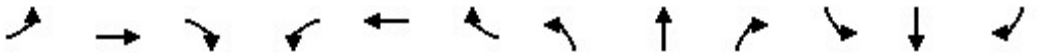
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	420	294	31	205	268	181	1351	64	269	809
Future Volume (vph)	420	294	31	205	268	181	1351	64	269	809
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	26.0	33.0	11.0	18.0	18.0	27.0	50.0	50.0	26.0	49.0
Total Split (%)	21.7%	27.5%	9.2%	15.0%	15.0%	22.5%	41.7%	41.7%	21.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	21.4	31.2	6.0	11.8	11.8	19.0	43.8	43.8	21.4	46.2
Actuated g/C Ratio	0.18	0.26	0.05	0.10	0.10	0.16	0.36	0.36	0.18	0.38
v/c Ratio	1.71	1.22	0.46	1.36	0.75	0.83	1.27	0.11	1.10	0.96
Control Delay	366.8	155.9	73.7	237.2	19.0	75.1	161.6	0.4	127.7	53.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	366.8	155.9	73.7	237.2	19.0	75.1	161.6	0.4	127.7	53.6
LOS	F	F	E	F	B	E	F	A	F	D
Approach Delay		254.6		111.2			145.3			68.5
Approach LOS		F		F			F			E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.71	
Intersection Signal Delay: 140.4	Intersection LOS: F
Intersection Capacity Utilization 111.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	294	184	31	205	268	181	1351	64	269	809	252
Future Volume (veh/h)	420	294	184	31	205	268	181	1351	64	269	809	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	483	338	158	36	236	274	208	1553	63	309	930	268
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	283	132	46	174	148	232	1229	548	284	1026	295
Arrive On Green	0.18	0.25	0.25	0.03	0.10	0.10	0.15	0.37	0.37	0.18	0.40	0.40
Sat Flow, veh/h	1594	1142	534	1594	1772	1502	1594	3367	1502	1594	2580	742
Grp Volume(v), veh/h	483	0	496	36	236	274	208	1553	63	309	606	592
Grp Sat Flow(s),veh/h/ln	1594	0	1676	1594	1772	1502	1594	1683	1502	1594	1683	1638
Q Serve(g_s), s	21.4	0.0	29.7	2.7	11.8	11.8	15.4	43.8	3.3	21.4	40.7	40.9
Cycle Q Clear(g_c), s	21.4	0.0	29.7	2.7	11.8	11.8	15.4	43.8	3.3	21.4	40.7	40.9
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	284	0	415	46	174	148	232	1229	548	284	669	651
V/C Ratio(X)	1.70	0.00	1.20	0.78	1.35	1.86	0.90	1.26	0.11	1.09	0.91	0.91
Avail Cap(c_a), veh/h	284	0	415	85	174	148	298	1229	548	284	669	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	45.1	57.9	54.1	54.1	50.4	38.1	25.3	49.3	34.0	34.1
Incr Delay (d2), s/veh	329.4	0.0	109.4	9.8	192.3	409.9	20.6	125.4	0.1	78.6	15.9	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.2	0.0	24.3	1.2	14.4	21.1	7.2	38.2	1.2	14.4	18.4	18.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	378.7	0.0	154.5	67.7	246.4	464.0	71.0	163.5	25.3	127.9	50.0	50.9
LnGrp LOS	F	A	F	E	F	F	E	F	C	F	D	D
Approach Vol, veh/h		979			546			1824			1507	
Approach Delay, s/veh		265.1			343.8			148.1			66.3	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	50.0	8.1	35.9	22.1	53.9	26.0	18.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	43.8	6.4	26.8	22.4	42.8	21.4	11.8
Max Q Clear Time (g_c+I1), s	23.4	45.8	4.7	31.7	17.4	42.9	23.4	13.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	168.3
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	24.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	166	139	57	1450	909	68
Future Vol, veh/h	166	139	57	1450	909	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	189	158	65	1648	1033	77

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2026	1072	1110	0	-	0
Stage 1	1072	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 56	267	627	-	-	-
Stage 1	328	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	267	627	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	336	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	196.8	5.5	0
HCM LOS	F		

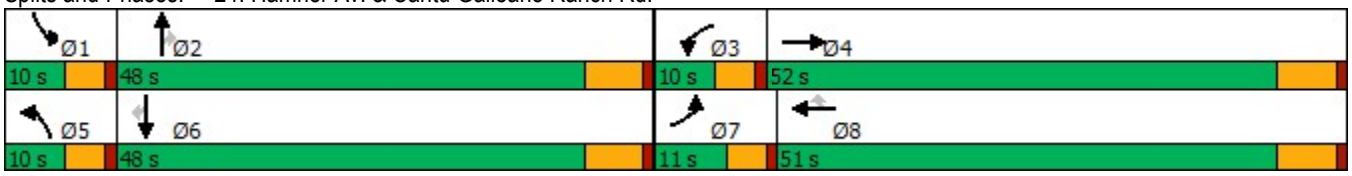
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	627	-	267	-	-
HCM Lane V/C Ratio	0.103	-	1.298	-	-
HCM Control Delay (s)	11.4	5.3	196.8	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	17.4	-	-

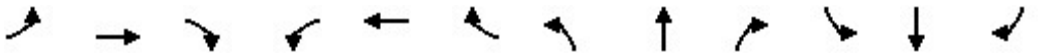
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	471	1721	336	2085	312	405	697	451	248	298	477
Future Volume (vph)	471	1721	336	2085	312	405	697	451	248	298	477
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.0	52.0	10.0	51.0	51.0	10.0	48.0	48.0	10.0	48.0	48.0
Total Split (%)	9.2%	43.3%	8.3%	42.5%	42.5%	8.3%	40.0%	40.0%	8.3%	40.0%	40.0%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	45.8	5.4	44.8	44.8	5.4	33.7	33.7	5.4	33.7	33.7
Actuated g/C Ratio	0.06	0.41	0.05	0.40	0.40	0.05	0.30	0.30	0.05	0.30	0.30
v/c Ratio	2.49	0.80	2.11	1.54	0.45	2.54	0.48	0.85	1.55	0.29	0.90
Control Delay	711.6	32.7	547.8	274.6	16.3	736.7	32.7	42.2	314.4	30.3	48.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	711.6	32.7	547.8	274.6	16.3	736.7	32.7	42.2	314.4	30.3	48.3
LOS	F	C	F	F	B	F	C	D	F	C	D
Approach Delay		162.8		278.7			219.1			107.5	
Approach LOS		F		F			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.54	
Intersection Signal Delay: 207.5	Intersection LOS: F
Intersection Capacity Utilization 113.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	471	1721	268	336	2085	312	405	697	451	248	298	477
Future Volume (veh/h)	471	1721	268	336	2085	312	405	697	451	248	298	477
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	491	1793	154	350	2172	190	422	726	262	258	310	289
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	2732	235	184	1562	697	184	1162	361	184	809	361
Arrive On Green	0.06	0.45	0.45	0.05	0.44	0.44	0.05	0.23	0.23	0.05	0.23	0.23
Sat Flow, veh/h	3456	6080	522	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	491	1423	524	350	2172	190	422	726	262	258	310	289
Grp Sat Flow(s),veh/h/ln	1728	1609	1776	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.4	23.3	23.3	5.4	44.5	7.7	5.4	13.0	15.5	5.4	7.5	17.4
Cycle Q Clear(g_c), s	6.4	23.3	23.3	5.4	44.5	7.7	5.4	13.0	15.5	5.4	7.5	17.4
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	2169	798	184	1562	697	184	1162	361	184	809	361
V/C Ratio(X)	2.25	0.66	0.66	1.90	1.39	0.27	2.29	0.62	0.73	1.40	0.38	0.80
Avail Cap(c_a), veh/h	218	2169	798	184	1562	697	184	2108	654	184	1467	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	21.8	21.8	47.9	28.4	18.1	47.9	35.2	36.2	47.9	33.1	36.9
Incr Delay (d2), s/veh	576.0	0.7	2.0	424.2	179.8	0.2	597.2	0.6	2.8	209.3	0.3	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.1	7.9	9.0	13.1	55.4	2.6	17.5	5.1	5.8	7.6	3.1	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	623.4	22.5	23.7	472.2	208.2	18.3	645.1	35.8	39.0	257.2	33.4	41.1
LnGrp LOS	F	C	C	F	F	B	F	D	D	F	C	D
Approach Vol, veh/h		2438			2712			1410			857	
Approach Delay, s/veh		143.8			228.9			218.7			103.4	
Approach LOS		F			F			F			F	

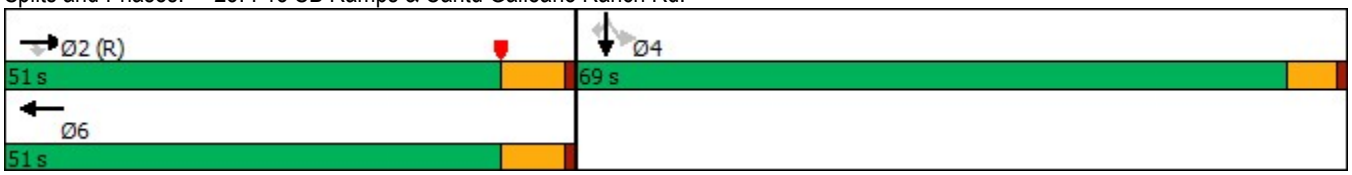
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	29.2	10.0	52.0	10.0	29.2	11.0	51.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	5.4	41.8	5.4	45.5	5.4	41.8	6.4	44.5
Max Q Clear Time (g_c+I1), s	7.4	17.5	7.4	25.3	7.4	19.4	8.4	46.5
Green Ext Time (p_c), s	0.0	5.6	0.0	12.2	0.0	2.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	184.5
HCM 6th LOS	F

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1594	867	1446	185	285	0	1829
Future Volume (vph)	1594	867	1446	185	285	0	1829
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	51.0	51.0	51.0		69.0	69.0	69.0
Total Split (%)	42.5%	42.5%	42.5%		57.5%	57.5%	57.5%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	Min		Min	Min	Min
Act Effct Green (s)	44.2	44.2	44.2	120.0	63.5	63.5	63.5
Actuated g/C Ratio	0.37	0.37	0.37	1.00	0.53	0.53	0.53
v/c Ratio	0.93	0.88	1.21	0.07	0.31	1.29	1.25
Control Delay	46.0	17.1	139.3	0.0	17.2	165.3	149.0
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.4	0.0
Total Delay	46.0	17.1	139.3	0.0	17.2	165.8	149.0
LOS	D	B	F	A	B	F	F
Approach Delay	35.8		123.5			140.4	
Approach LOS	D		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 94.5	Intersection LOS: F
Intersection Capacity Utilization 125.7%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1594	867	0	1446	185	0	0	0	285	0	1829
Future Volume (veh/h)	0	1594	867	0	1446	185	0	0	0	285	0	1829
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1733	0	0	1572	0				207	0	1229
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2390		0	1664					765	0	1361
Arrive On Green	0.00	0.47	0.00	0.00	0.94	0.00				0.43	0.00	0.43
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1733	0	0	1572	0				207	0	1229
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	32.8	0.0	0.0	29.4	0.0				9.0	0.0	43.4
Cycle Q Clear(g_c), s	0.0	32.8	0.0	0.0	29.4	0.0				9.0	0.0	43.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2390		0	1664					765	0	1361
V/C Ratio(X)	0.00	0.73		0.00	0.94					0.27	0.00	0.90
Avail Cap(c_a), veh/h	0	2390		0	1664					943	0	1678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.36	0.00	0.00	0.41	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	25.7	0.0	0.0	3.0	0.0				22.1	0.0	31.9
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	5.7	0.0				0.2	0.0	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.2	0.0	0.0	2.7	0.0				3.7	0.0	16.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.4	0.0	0.0	8.6	0.0				22.3	0.0	38.2
LnGrp LOS	A	C		A	A					C	A	D
Approach Vol, veh/h		1733	A		1572	A					1436	
Approach Delay, s/veh		26.4			8.6						35.9	
Approach LOS		C			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	63.0	57.0	63.0
Change Period (Y+Rc), s	6.8	5.5	6.8
Max Green Setting (Gmax), s	44.2	63.5	44.2
Max Q Clear Time (g_c+I1), s	34.8	45.4	31.4
Green Ext Time (p_c), s	6.6	6.2	8.0

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Notes

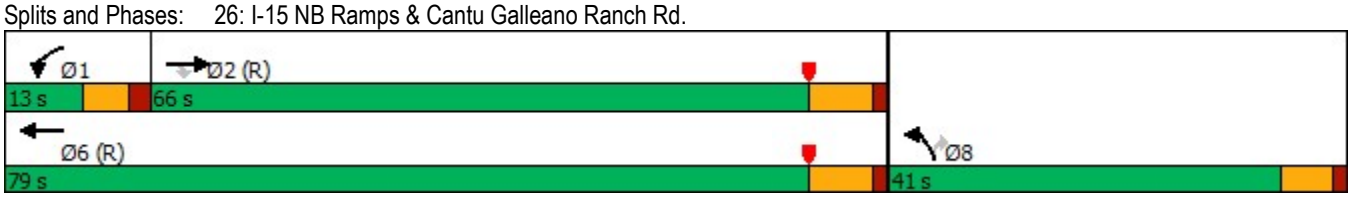
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	620	1273	214	579	1053	416
Future Volume (vph)	620	1273	214	579	1053	416
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.5	22.5	22.5	22.5
Total Split (s)	66.0	66.0	13.0	79.0	41.0	41.0
Total Split (%)	55.0%	55.0%	10.8%	65.8%	34.2%	34.2%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	58.7	58.7	7.0	71.7	35.0	35.0
Actuated g/C Ratio	0.49	0.49	0.06	0.60	0.29	0.29
v/c Ratio	0.27	1.12	1.17	0.21	1.19	0.66
Control Delay	14.2	88.9	164.2	11.3	133.1	17.5
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	14.2	89.2	164.2	11.3	133.1	17.5
LOS	B	F	F	B	F	B
Approach Delay	64.6			52.6	103.6	
Approach LOS	E			D	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 76.1	Intersection LOS: E
Intersection Capacity Utilization 96.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	620	1273	214	579	1053	416
Future Volume (veh/h)	620	1273	214	579	1053	416
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	674	705	233	629	1145	235
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2498	775	202	3051	1039	462
Arrive On Green	0.82	0.82	0.06	0.60	0.29	0.29
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	674	705	233	629	1145	235
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	3.7	38.0	7.0	6.8	35.0	14.8
Cycle Q Clear(g_c), s	3.7	38.0	7.0	6.8	35.0	14.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2498	775	202	3051	1039	462
V/C Ratio(X)	0.27	0.91	1.16	0.21	1.10	0.51
Avail Cap(c_a), veh/h	2498	775	202	3051	1039	462
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.43	0.43	0.85	0.85	1.00	1.00
Uniform Delay (d), s/veh	6.0	9.1	56.5	11.1	42.5	35.3
Incr Delay (d2), s/veh	0.1	8.3	107.0	0.1	60.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.7	5.9	2.3	23.4	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.1	17.4	163.5	11.2	102.6	36.3
LnGrp LOS	A	B	F	B	F	D
Approach Vol, veh/h	1379			862	1380	
Approach Delay, s/veh	11.9			52.4	91.3	
Approach LOS	B			D	F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	13.0	66.0				79.0	41.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	7.0	58.7				71.7	35.0
Max Q Clear Time (g_c+I1), s	9.0	40.0				8.8	37.0
Green Ext Time (p_c), s	0.0	6.7				4.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

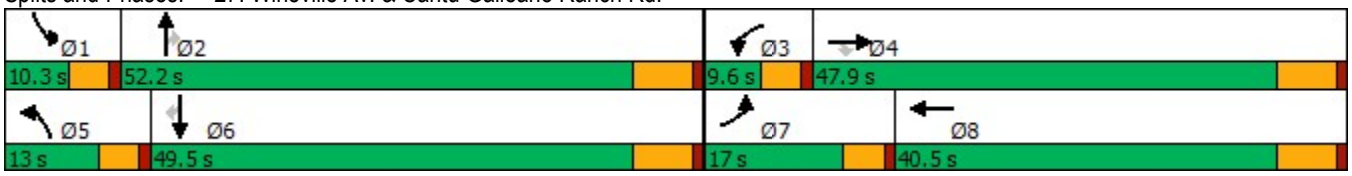
Notes

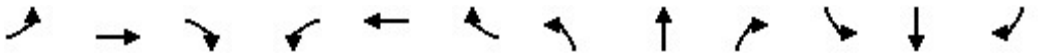
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	439	398	305	30	308	275	315	18	22	61	155
Future Volume (vph)	439	398	305	30	308	275	315	18	22	61	155
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	17.0	47.9	47.9	9.6	40.5	13.0	52.2	52.2	10.3	49.5	49.5
Total Split (%)	14.2%	39.9%	39.9%	8.0%	33.8%	10.8%	43.5%	43.5%	8.6%	41.3%	41.3%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.4	28.1	28.1	5.4	13.1	9.1	24.7	24.7	5.7	11.9	11.9
Actuated g/C Ratio	0.19	0.39	0.39	0.08	0.18	0.13	0.35	0.35	0.08	0.17	0.17
v/c Ratio	0.74	0.17	0.40	0.13	0.41	0.69	0.28	0.03	0.17	0.21	0.42
Control Delay	38.7	16.6	4.5	39.9	25.6	42.5	18.5	0.1	42.0	26.7	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	16.6	4.5	39.9	25.6	42.5	18.5	0.1	42.0	26.7	7.8
LOS	D	B	A	D	C	D	B	A	D	C	A
Approach Delay		21.9			26.8		28.8			15.8	
Approach LOS		C			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 71.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 50.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	439	398	305	30	308	46	275	315	18	22	61	155
Future Volume (veh/h)	439	398	305	30	308	46	275	315	18	22	61	155
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	477	433	222	33	335	30	299	342	10	24	66	141
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	611	1810	446	126	674	59	422	821	366	50	256	217
Arrive On Green	0.18	0.28	0.28	0.04	0.14	0.14	0.12	0.23	0.23	0.03	0.14	0.14
Sat Flow, veh/h	3456	6434	1585	3456	4778	421	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	477	433	222	33	237	128	299	342	10	24	66	141
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1795	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	6.9	2.7	6.1	0.5	3.4	3.5	4.4	4.3	0.3	0.7	1.7	4.4
Cycle Q Clear(g_c), s	6.9	2.7	6.1	0.5	3.4	3.5	4.4	4.3	0.3	0.7	1.7	4.4
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	611	1810	446	126	480	253	422	821	366	50	256	217
V/C Ratio(X)	0.78	0.24	0.50	0.26	0.49	0.51	0.71	0.42	0.03	0.48	0.26	0.65
Avail Cap(c_a), veh/h	817	5077	1251	329	2206	1163	553	3095	1381	194	1533	1299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	14.5	15.8	24.6	20.8	20.8	22.1	17.2	15.6	25.1	20.3	21.4
Incr Delay (d2), s/veh	2.4	0.1	0.9	0.4	0.8	1.6	1.6	0.3	0.0	2.6	0.5	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.8	1.8	0.2	1.1	1.3	1.6	1.5	0.1	0.3	0.7	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	14.6	16.6	25.0	21.6	22.4	23.7	17.5	15.6	27.7	20.8	24.7
LnGrp LOS	C	B	B	C	C	C	C	B	B	C	C	C
Approach Vol, veh/h		1132			398			651			231	
Approach Delay, s/veh		18.5			22.1			20.3			23.9	
Approach LOS		B			C			C			C	

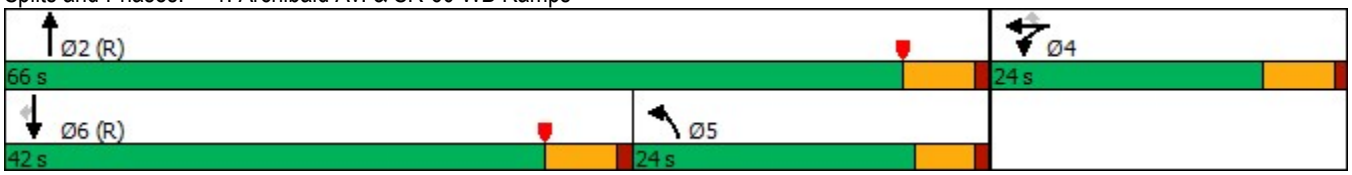
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	18.6	6.5	21.3	11.0	13.7	13.9	13.9
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	5.7	45.7	5.0	41.4	8.4	43.0	12.4	34.0
Max Q Clear Time (g_c+I1), s	2.7	6.3	2.5	8.1	6.4	6.4	8.9	5.5
Green Ext Time (p_c), s	0.0	2.2	0.0	3.4	0.1	0.8	0.4	1.9

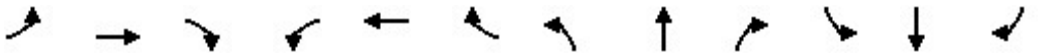
Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	450	1	194	592	695	1559	354
Future Volume (vph)	450	1	194	592	695	1559	354
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	24.0	24.0	24.0	24.0	66.0	42.0	42.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	16.5	16.5	16.5	18.2	61.9	38.8	38.8
Actuated g/C Ratio	0.18	0.18	0.18	0.20	0.69	0.43	0.43
v/c Ratio	0.79	0.80	0.42	0.87	0.20	0.58	0.43
Control Delay	54.1	54.8	8.3	44.1	0.6	21.0	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	54.8	8.3	44.1	0.6	21.0	5.2
LOS	D	D	A	D	A	C	A
Approach Delay		42.0			20.6	18.1	
Approach LOS		D			C	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	450	1	194	592	695	0	0	1559	354
Future Volume (veh/h)	0	0	0	450	1	194	592	695	0	0	1559	354
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				487	0	60	604	709	0	0	1591	261
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				584	0	260	1028	3610	0	0	2221	533
Arrive On Green				0.16	0.00	0.16	0.10	0.23	0.00	0.00	0.35	0.35
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1544
Grp Volume(v), veh/h				487	0	60	604	709	0	0	1591	261
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1544
Q Serve(g_s), s				11.9	0.0	3.0	15.1	10.0	0.0	0.0	19.4	12.0
Cycle Q Clear(g_c), s				11.9	0.0	3.0	15.1	10.0	0.0	0.0	19.4	12.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				584	0	260	1028	3610	0	0	2221	533
V/C Ratio(X)				0.83	0.00	0.23	0.59	0.20	0.00	0.00	0.72	0.49
Avail Cap(c_a), veh/h				720	0	321	1028	3610	0	0	2588	621
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.92	0.92	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				36.4	0.0	32.7	35.3	14.0	0.0	0.0	25.6	23.2
Incr Delay (d2), s/veh				6.9	0.0	0.4	0.6	0.1	0.0	0.0	2.0	3.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.5	0.0	2.8	6.9	3.7	0.0	0.0	7.1	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				43.4	0.0	33.1	35.9	14.1	0.0	0.0	27.6	26.4
LnGrp LOS				D	A	C	D	B	A	A	C	C
Approach Vol, veh/h					547			1313			1852	
Approach Delay, s/veh					42.2			24.1			27.5	
Approach LOS					D			C			C	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	69.4	20.6	32.6	36.9
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	18.2	19.0	* 36
Max Q Clear Time (g_c+I1), s	12.0	13.9	17.1	21.4
Green Ext Time (p_c), s	5.1	0.9	0.3	9.7

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Notes

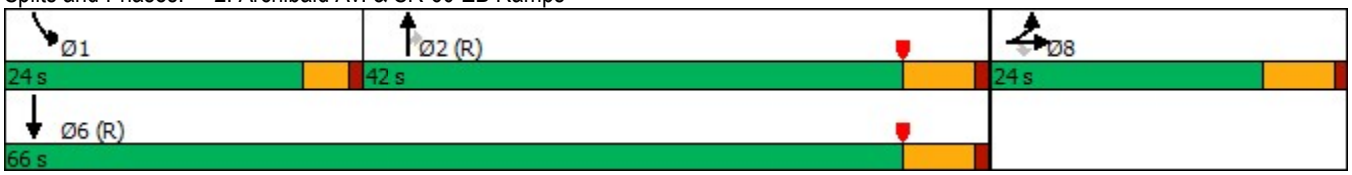
User approved volume balancing among the lanes for turning movement.

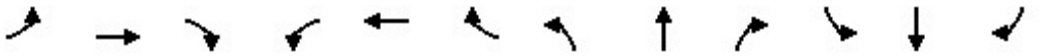
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	124	1	524	1165	607	527	1482
Future Volume (vph)	124	1	524	1165	607	527	1482
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	24.0	24.0	24.0	42.0	42.0	24.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	46.7%	46.7%	26.7%	73.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	16.7	16.7	16.7	40.1	40.1	17.6	61.7
Actuated g/C Ratio	0.19	0.19	0.19	0.45	0.45	0.20	0.69
v/c Ratio	0.36	0.87	0.78	0.41	0.62	0.80	0.43
Control Delay	34.9	56.1	40.5	18.2	6.2	53.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	56.1	40.5	18.2	6.2	53.4	1.5
LOS	C	E	D	B	A	D	A
Approach Delay		46.0		14.1			15.1
Approach LOS		D		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 19.2	Intersection LOS: B
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	1	524	0	0	0	0	1165	607	527	1482	0
Future Volume (veh/h)	124	1	524	0	0	0	0	1165	607	527	1482	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	84	0	340				0	1177	437	532	1497	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	243	0	432				0	3327	802	600	3753	0
Arrive On Green	0.14	0.00	0.14				0.00	0.52	0.52	0.35	1.00	0.00
Sat Flow, veh/h	1781	0	3170				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	84	0	340				0	1177	437	532	1497	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1609	1551	1728	1702	0
Q Serve(g_s), s	3.8	0.0	9.3				0.0	9.7	17.1	13.1	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	9.3				0.0	9.7	17.1	13.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	243	0	432				0	3327	802	600	3753	0
V/C Ratio(X)	0.35	0.00	0.79				0.00	0.35	0.55	0.89	0.40	0.00
Avail Cap(c_a), veh/h	360	0	641				0	3327	802	768	3753	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.76	0.76	0.00
Uniform Delay (d), s/veh	35.2	0.0	37.6				0.0	12.8	14.6	28.6	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	3.9				0.0	0.3	2.7	6.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	3.7				0.0	3.0	5.6	4.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	0.0	41.5				0.0	13.1	17.3	35.4	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		424						1614			2029	
Approach Delay, s/veh		40.5						14.3			9.5	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	19.6	52.3				71.9		18.1				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	20.0	36.2				60.2		18.2				
Max Q Clear Time (g_c+I1), s	15.1	19.1				2.0		11.3				
Green Ext Time (p_c), s	0.5	8.6				14.2		0.9				

Intersection Summary			
HCM 6th Ctrl Delay			14.6
HCM 6th LOS			B

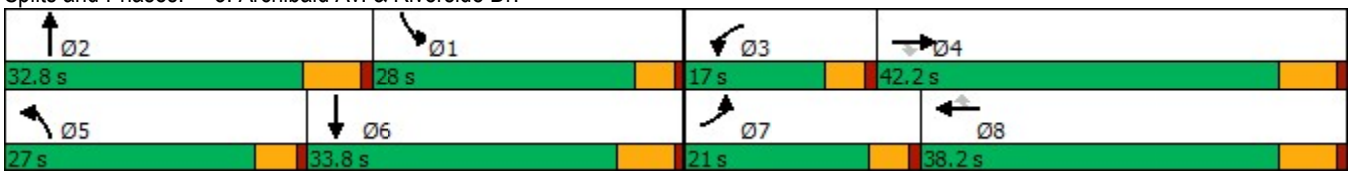
Notes

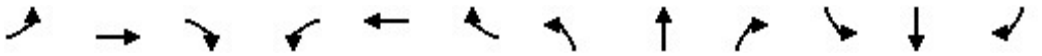
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	183	692	370	222	517	204	303	1114	323	1145
Future Volume (vph)	183	692	370	222	517	204	303	1114	323	1145
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	42.2	42.2	17.0	38.2	38.2	27.0	32.8	28.0	33.8
Total Split (%)	17.5%	35.2%	35.2%	14.2%	31.8%	31.8%	22.5%	27.3%	23.3%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.6	30.6	30.6	12.4	27.5	27.5	22.4	26.6	23.4	27.7
Actuated g/C Ratio	0.14	0.27	0.27	0.11	0.24	0.24	0.20	0.23	0.20	0.24
v/c Ratio	0.87	0.79	0.57	1.33	0.66	0.41	1.00	1.15	1.02	1.21
Control Delay	85.7	46.0	6.8	223.7	43.7	7.2	98.7	119.7	102.1	139.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	46.0	6.8	223.7	43.7	7.2	98.7	119.7	102.1	139.1
LOS	F	D	A	F	D	A	F	F	F	F
Approach Delay		40.2			78.2			115.6		132.0
Approach LOS		D			E			F		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay: 96.9	Intersection LOS: F
Intersection Capacity Utilization 101.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	692	370	222	517	204	303	1114	141	323	1145	216
Future Volume (veh/h)	183	692	370	222	517	204	303	1114	141	323	1145	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	187	706	309	227	528	159	309	1137	137	330	1168	187
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	865	376	172	781	346	310	1008	121	324	1063	170
Arrive On Green	0.13	0.26	0.26	0.11	0.23	0.23	0.19	0.23	0.23	0.20	0.25	0.25
Sat Flow, veh/h	1594	3367	1465	1594	3367	1494	1594	4365	526	1594	4195	671
Grp Volume(v), veh/h	187	706	309	227	528	159	309	840	434	330	898	457
Grp Sat Flow(s),veh/h/ln	1594	1683	1465	1594	1683	1494	1594	1612	1666	1594	1612	1642
Q Serve(g_s), s	13.3	22.7	22.9	12.4	16.5	6.3	22.3	26.6	26.6	23.4	29.2	29.2
Cycle Q Clear(g_c), s	13.3	22.7	22.9	12.4	16.5	6.3	22.3	26.6	26.6	23.4	29.2	29.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.41
Lane Grp Cap(c), veh/h	211	865	376	172	781	346	310	745	385	324	818	416
V/C Ratio(X)	0.88	0.82	0.82	1.32	0.68	0.46	1.00	1.13	1.13	1.02	1.10	1.10
Avail Cap(c_a), veh/h	227	1052	458	172	935	415	310	745	385	324	818	416
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	40.2	40.3	51.4	40.3	13.5	46.4	44.3	44.3	45.9	43.0	43.0
Incr Delay (d2), s/veh	28.6	4.3	9.6	180.1	1.5	0.9	50.2	74.0	85.6	55.0	61.8	73.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	9.4	8.8	13.3	6.7	3.6	12.8	17.7	19.6	13.8	18.0	19.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	44.5	49.9	231.5	41.8	14.4	96.6	118.3	129.9	100.9	104.8	116.5
LnGrp LOS	E	D	D	F	D	B	F	F	F	F	F	F
Approach Vol, veh/h		1202			914			1583			1685	
Approach Delay, s/veh		51.1			84.1			117.2			107.2	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.6	32.8	17.0	35.8	27.0	35.4	19.9	32.9
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.4	* 27	12.4	36.0	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	25.4	28.6	14.4	24.9	24.3	31.2	15.3	18.5
Green Ext Time (p_c), s	0.0	0.0	0.0	4.1	0.0	0.0	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	93.7
HCM 6th LOS	F

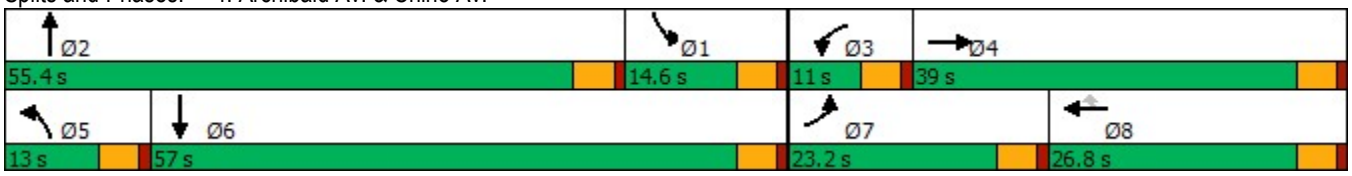
Notes

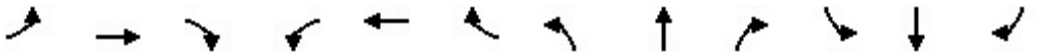
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	178	400	86	159	70	118	1376	81	1453
Future Volume (vph)	178	400	86	159	70	118	1376	81	1453
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	23.2	39.0	11.0	26.8	26.8	13.0	55.4	14.6	57.0
Total Split (%)	19.3%	32.5%	9.2%	22.3%	22.3%	10.8%	46.2%	12.2%	47.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.1	34.4	6.4	23.7	23.7	8.4	50.5	12.6	52.4
Actuated g/C Ratio	0.14	0.29	0.05	0.20	0.20	0.07	0.42	0.10	0.44
v/c Ratio	0.82	1.18	1.07	0.48	0.17	1.12	0.69	0.51	1.04
Control Delay	77.8	139.4	172.5	48.6	0.8	171.7	31.0	62.1	66.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.8	139.4	172.5	48.6	0.8	171.7	31.0	62.1	66.4
LOS	E	F	F	D	A	F	C	E	E
Approach Delay		124.6		71.9			41.4		66.2
Approach LOS		F		E			D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 67.5	Intersection LOS: E
Intersection Capacity Utilization 105.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	400	161	86	159	70	118	1376	95	81	1453	71
Future Volume (veh/h)	178	400	161	86	159	70	118	1376	95	81	1453	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	185	417	143	90	166	41	123	1433	98	84	1514	70
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	360	123	85	369	313	112	1739	119	243	1468	68
Arrive On Green	0.13	0.29	0.29	0.05	0.21	0.21	0.07	0.35	0.35	0.15	0.44	0.44
Sat Flow, veh/h	1594	1256	431	1594	1772	1502	1594	4913	336	1594	3361	155
Grp Volume(v), veh/h	185	0	560	90	166	41	123	1034	497	84	796	788
Grp Sat Flow(s),veh/h/ln	1594	0	1687	1594	1772	1502	1594	1772	1705	1594	1772	1744
Q Serve(g_s), s	13.7	0.0	34.4	6.4	9.8	1.9	8.4	31.9	31.9	5.7	52.4	52.4
Cycle Q Clear(g_c), s	13.7	0.0	34.4	6.4	9.8	1.9	8.4	31.9	31.9	5.7	52.4	52.4
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.20	1.00		0.09
Lane Grp Cap(c), veh/h	210	0	484	85	369	313	112	1255	604	243	774	762
V/C Ratio(X)	0.88	0.00	1.16	1.06	0.45	0.13	1.10	0.82	0.82	0.35	1.03	1.03
Avail Cap(c_a), veh/h	247	0	484	85	369	313	112	1500	722	243	774	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	0.0	42.8	56.8	41.5	19.5	55.8	35.3	35.4	45.5	33.8	33.8
Incr Delay (d2), s/veh	26.2	0.0	92.2	114.5	0.9	0.2	115.5	3.3	6.6	0.8	39.9	42.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	26.2	5.2	4.3	1.0	6.8	13.4	13.4	2.2	29.1	29.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	0.0	135.0	171.3	42.3	19.7	171.3	38.7	42.0	46.3	73.7	75.8
LnGrp LOS	E	A	F	F	D	B	F	D	D	D	F	F
Approach Vol, veh/h		745			297			1654			1668	
Approach Delay, s/veh		120.7			78.3			49.5			73.3	
Approach LOS		F			E			D			E	

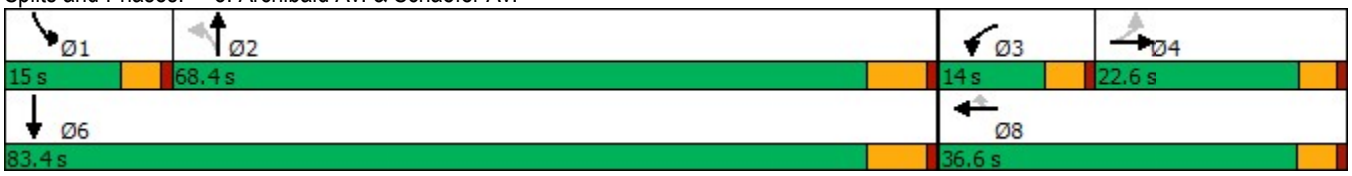
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.9	47.1	11.0	39.0	13.0	57.0	20.4	29.6
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	10.0	50.8	6.4	34.4	8.4	52.4	18.6	22.2
Max Q Clear Time (g_c+I1), s	7.7	33.9	8.4	36.4	10.4	54.4	15.7	11.8
Green Ext Time (p_c), s	0.0	8.6	0.0	0.0	0.0	0.0	0.1	0.6

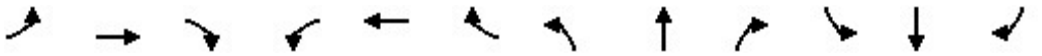
Intersection Summary	
HCM 6th Ctrl Delay	72.7
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	18	25	53	23	17	1485	50	1641
Future Volume (vph)	18	25	53	23	17	1485	50	1641
Turn Type	Perm	NA	Prot	NA	Perm	NA	Prot	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4				8			
Detector Phase	4	4	3	8	8	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	9.6	32.6	32.6	37.5	9.6	23.5
Total Split (s)	22.6	22.6	14.0	36.6	36.6	68.4	15.0	83.4
Total Split (%)	18.8%	18.8%	11.7%	30.5%	30.5%	57.0%	12.5%	69.5%
Yellow Time (s)	3.5	3.5	3.6	3.6	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.6	4.6	4.6	6.5	4.6	6.5
Lead/Lag	Lag	Lag	Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	9.4	9.4	8.9	15.3	15.3	50.9	9.0	57.0
Actuated g/C Ratio	0.13	0.13	0.12	0.21	0.21	0.71	0.12	0.79
v/c Ratio	0.09	0.12	0.29	0.06	0.05	0.48	0.27	0.67
Control Delay	43.3	43.3	46.3	31.2	0.2	13.1	45.8	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	43.3	46.3	31.2	0.2	13.1	45.8	10.9
LOS	D	D	D	C	A	B	D	B
Approach Delay		43.3		34.2		13.1		11.9
Approach LOS		D		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 72.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	25	0	53	23	17	0	1485	54	50	1641	17
Future Volume (veh/h)	18	25	0	53	23	17	0	1485	54	50	1641	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	19	27	0	56	24	12	0	1580	55	53	1746	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	104	0	77	312	262	108	2592	90	75	2241	23
Arrive On Green	0.06	0.06	0.00	0.05	0.18	0.18	0.00	0.54	0.54	0.05	0.66	0.66
Sat Flow, veh/h	1192	1772	0	1594	1772	1486	243	4795	167	1594	3413	35
Grp Volume(v), veh/h	19	27	0	56	24	12	0	1062	573	53	860	904
Grp Sat Flow(s),veh/h/ln	1192	1772	0	1594	1772	1486	243	1612	1737	1594	1683	1765
Q Serve(g_s), s	1.0	1.0	0.0	2.3	0.8	0.4	0.0	15.0	15.0	2.2	23.8	24.0
Cycle Q Clear(g_c), s	1.0	1.0	0.0	2.3	0.8	0.4	0.0	15.0	15.0	2.2	23.8	24.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.10	1.00		0.02
Lane Grp Cap(c), veh/h	178	104	0	77	312	262	108	1743	939	75	1105	1159
V/C Ratio(X)	0.11	0.26	0.00	0.72	0.08	0.05	0.00	0.61	0.61	0.71	0.78	0.78
Avail Cap(c_a), veh/h	433	483	0	225	853	716	203	3003	1618	249	1948	2042
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	29.9	0.0	31.2	22.9	22.7	0.0	10.5	10.5	31.2	8.0	8.0
Incr Delay (d2), s/veh	0.3	1.3	0.0	4.7	0.1	0.1	0.0	0.3	0.6	4.5	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.4	0.0	0.9	0.3	0.1	0.0	3.6	4.0	0.8	4.5	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	31.2	0.0	35.9	23.0	22.8	0.0	10.8	11.1	35.8	9.2	9.2
LnGrp LOS	C	C	A	D	C	C	A	B	B	D	A	A
Approach Vol, veh/h		46			92			1635			1817	
Approach Delay, s/veh		30.8			30.8			10.9			10.0	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	7.7	42.4	7.8	8.5		50.1		16.3				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	10.4	61.9	9.4	* 18		76.9		32.0				
Max Q Clear Time (g_c+I1), s	4.2	17.0	4.3	3.0		26.0		2.8				
Green Ext Time (p_c), s	0.0	13.8	0.0	0.1		17.7		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		11.2
HCM 6th LOS		B

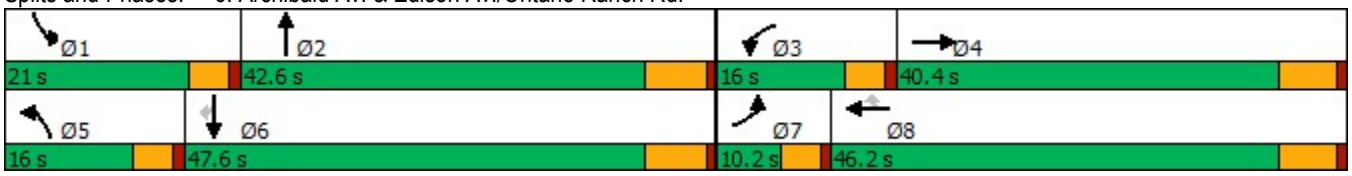
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1028	293	444	577	286	105	1047	561	394	1111	66
Future Volume (vph)	105	1028	293	444	577	286	105	1047	561	394	1111	66
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.2	40.4		16.0	46.2	46.2	16.0	42.6		21.0	47.6	47.6
Total Split (%)	8.5%	33.7%		13.3%	38.5%	38.5%	13.3%	35.5%		17.5%	39.7%	39.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.6	34.2	120.0	11.4	40.0	40.0	10.7	36.1	120.0	16.4	41.8	41.8
Actuated g/C Ratio	0.05	0.28	1.00	0.10	0.33	0.33	0.09	0.30	1.00	0.14	0.35	0.35
v/c Ratio	0.80	1.08	0.21	1.65	1.03	0.46	0.79	1.04	0.39	1.92	0.95	0.11
Control Delay	93.6	92.4	0.3	342.2	85.4	9.2	89.3	79.3	0.8	460.3	54.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.6	92.4	0.3	342.2	85.4	9.2	89.3	79.3	0.8	460.3	54.9	0.4
LOS	F	F	A	F	F	A	F	E	A	F	D	A
Approach Delay		73.6			155.9			54.2			154.4	
Approach LOS		E			F			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.92	
Intersection Signal Delay: 107.0	Intersection LOS: F
Intersection Capacity Utilization 118.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1028	293	444	577	286	105	1047	561	394	1111	66
Future Volume (veh/h)	105	1028	293	444	577	286	105	1047	561	394	1111	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	111	1082	0	467	607	259	111	1102	0	415	1169	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	1010		285	591	500	133	1066		218	1255	532
Arrive On Green	0.05	0.29	0.00	0.09	0.33	0.33	0.08	0.30	0.00	0.14	0.35	0.35
Sat Flow, veh/h	3000	3544	1502	3000	1772	1500	1594	3544	1502	1594	3544	1502
Grp Volume(v), veh/h	111	1082	0	467	607	259	111	1102	0	415	1169	50
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	4.4	34.2	0.0	11.4	40.0	16.7	8.2	36.1	0.0	16.4	38.1	2.7
Cycle Q Clear(g_c), s	4.4	34.2	0.0	11.4	40.0	16.7	8.2	36.1	0.0	16.4	38.1	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	1010		285	591	500	133	1066		218	1255	532
V/C Ratio(X)	0.79	1.07		1.64	1.03	0.52	0.84	1.03		1.91	0.93	0.09
Avail Cap(c_a), veh/h	140	1010		285	591	500	151	1066		218	1255	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	42.9	0.0	54.3	40.0	32.2	54.2	41.9	0.0	51.8	37.3	25.9
Incr Delay (d2), s/veh	24.2	49.5	0.0	302.7	44.3	0.9	26.0	36.6	0.0	424.1	12.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	21.1	0.0	16.1	23.6	5.9	4.1	20.1	0.0	31.9	17.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.8	92.4	0.0	357.0	84.3	33.2	80.2	78.6	0.0	475.9	49.7	26.0
LnGrp LOS	F	F		F	F	C	F	F		F	D	C
Approach Vol, veh/h		1193	A		1333			1213	A		1634	
Approach Delay, s/veh		91.3			169.9			78.7			157.2	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	42.6	16.0	40.4	14.6	49.0	10.2	46.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.4	36.1	11.4	34.2	11.4	41.1	5.6	40.0
Max Q Clear Time (g_c+I1), s	18.4	38.1	13.4	36.2	10.2	40.1	6.4	42.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	128.0
HCM 6th LOS	F

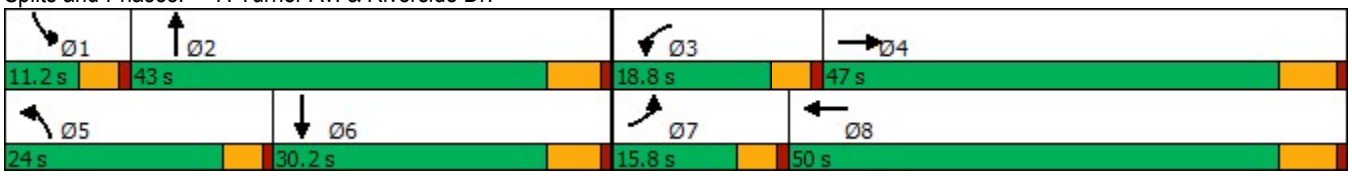
Notes

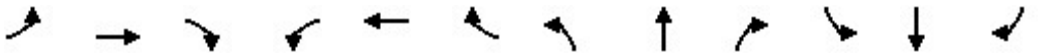
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	96	726	127	841	187	63	25	62
Future Volume (vph)	96	726	127	841	187	63	25	62
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	15.8	47.0	18.8	50.0	24.0	43.0	11.2	30.2
Total Split (%)	13.2%	39.2%	15.7%	41.7%	20.0%	35.8%	9.3%	25.2%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.8	35.7	11.9	37.9	16.0	27.1	5.9	12.4
Actuated g/C Ratio	0.10	0.37	0.12	0.39	0.16	0.28	0.06	0.13
v/c Ratio	0.63	0.84	0.68	0.70	0.75	0.23	0.27	0.28
Control Delay	64.4	35.6	62.5	29.3	59.9	11.5	57.0	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	35.6	62.5	29.3	59.9	11.5	57.0	24.6
LOS	E	D	E	C	E	B	E	C
Approach Delay		38.2		33.5		34.5		30.2
Approach LOS		D		C		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 75.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	726	248	127	841	38	187	63	145	25	62	59
Future Volume (veh/h)	96	726	248	127	841	38	187	63	145	25	62	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	99	748	153	131	867	26	193	65	77	26	64	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	935	191	161	1205	36	229	433	383	44	304	153
Arrive On Green	0.08	0.34	0.34	0.10	0.36	0.36	0.14	0.26	0.26	0.03	0.14	0.14
Sat Flow, veh/h	1594	2770	567	1594	3335	100	1594	1683	1487	1594	2151	1083
Grp Volume(v), veh/h	99	454	447	131	438	455	193	65	77	26	49	50
Grp Sat Flow(s),veh/h/ln	1594	1683	1654	1594	1683	1752	1594	1683	1487	1594	1683	1550
Q Serve(g_s), s	4.7	18.8	18.8	6.2	17.2	17.2	9.0	2.3	3.1	1.2	2.0	2.2
Cycle Q Clear(g_c), s	4.7	18.8	18.8	6.2	17.2	17.2	9.0	2.3	3.1	1.2	2.0	2.2
Prop In Lane	1.00		0.34	1.00		0.06	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	123	568	558	161	608	633	229	433	383	44	238	219
V/C Ratio(X)	0.81	0.80	0.80	0.81	0.72	0.72	0.84	0.15	0.20	0.59	0.21	0.23
Avail Cap(c_a), veh/h	233	897	881	295	963	1002	404	818	722	137	536	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	23.0	23.0	33.7	21.1	21.1	31.9	22.0	22.3	36.8	29.1	29.2
Incr Delay (d2), s/veh	4.6	2.8	2.9	3.8	1.6	1.6	3.2	0.2	0.3	4.6	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.9	6.8	2.4	6.1	6.3	3.4	0.8	1.0	0.5	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	25.8	25.9	37.5	22.7	22.7	35.2	22.1	22.5	41.4	29.5	29.7
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		1000			1024			335			125	
Approach Delay, s/veh		27.2			24.6			29.7			32.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	25.5	12.3	32.0	15.6	16.6	10.5	33.9
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	6.6	37.2	14.2	40.8	19.4	24.4	11.2	43.8
Max Q Clear Time (g_c+I1), s	3.2	5.1	8.2	20.8	11.0	4.2	6.7	19.2
Green Ext Time (p_c), s	0.0	0.7	0.1	5.1	0.2	0.4	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	306	59	58	216	93	22	139	64	86	217	47
Future Vol, veh/h	103	306	59	58	216	93	22	139	64	86	217	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	112	333	64	63	235	101	24	151	70	93	236	51
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

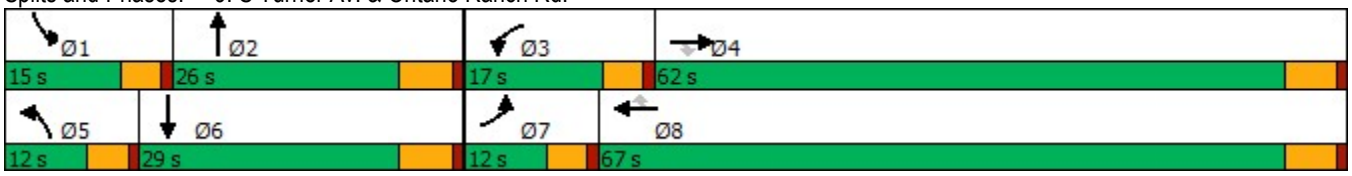
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	16.2	15.1	13.9	14.7
HCM LOS	C	C	B	B

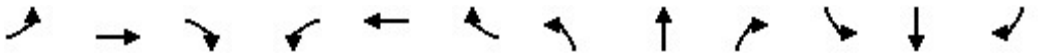
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	42%	0%	100%	63%	0%	100%	44%	0%	100%	61%
Vol Right, %	0%	0%	58%	0%	0%	37%	0%	0%	56%	0%	0%	39%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	93	110	103	204	161	58	144	165	86	145	119
LT Vol	22	0	0	103	0	0	58	0	0	86	0	0
Through Vol	0	93	46	0	204	102	0	144	72	0	145	72
RT Vol	0	0	64	0	0	59	0	0	93	0	0	47
Lane Flow Rate	24	101	120	112	222	175	63	157	179	93	157	130
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.061	0.241	0.273	0.262	0.488	0.373	0.152	0.355	0.388	0.227	0.36	0.287
Departure Headway (Hd)	9.114	8.614	8.208	8.424	7.924	7.668	8.673	8.173	7.779	8.75	8.25	7.975
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	392	415	435	425	452	467	412	438	461	408	434	449
Service Time	6.902	6.402	5.995	6.199	5.699	5.443	6.452	5.952	5.557	6.533	6.033	5.757
HCM Lane V/C Ratio	0.061	0.243	0.276	0.264	0.491	0.375	0.153	0.358	0.388	0.228	0.362	0.29
HCM Control Delay	12.5	14.1	14.1	14.2	18.1	15	13	15.4	15.5	14.1	15.6	14
HCM Lane LOS	B	B	B	B	C	B	B	C	C	B	C	B
HCM 95th-tile Q	0.2	0.9	1.1	1	2.6	1.7	0.5	1.6	1.8	0.9	1.6	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	18	1981	48	88	1441	73	18	12	110	30
Future Volume (vph)	18	1981	48	88	1441	73	18	12	110	30
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	12.0	62.0	62.0	17.0	67.0	67.0	12.0	26.0	15.0	29.0
Total Split (%)	10.0%	51.7%	51.7%	14.2%	55.8%	55.8%	10.0%	21.7%	12.5%	24.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	5.8	56.8	56.8	9.5	64.2	64.2	5.8	8.4	9.8	18.6
Actuated g/C Ratio	0.06	0.55	0.55	0.09	0.62	0.62	0.06	0.08	0.10	0.18
v/c Ratio	0.19	1.09	0.06	0.58	0.70	0.08	0.19	0.46	0.71	0.13
Control Delay	54.4	75.4	0.1	61.7	17.2	1.3	54.4	20.7	70.4	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	75.4	0.1	61.7	17.2	1.3	54.4	20.7	70.4	32.7
LOS	D	E	A	E	B	A	D	C	E	C
Approach Delay		73.4			19.0			26.4		60.3
Approach LOS		E			B			C		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 49.3	Intersection LOS: D
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1981	48	88	1441	73	18	12	75	110	30	10
Future Volume (veh/h)	18	1981	48	88	1441	73	18	12	75	110	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	19	2130	52	95	1549	78	19	13	81	118	32	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	1999	891	121	2166	966	37	18	111	146	188	65
Arrive On Green	0.02	0.56	0.56	0.07	0.61	0.61	0.02	0.08	0.08	0.08	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	224	1395	1781	1331	457
Grp Volume(v), veh/h	19	2130	52	95	1549	78	19	0	94	118	0	43
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1619	1781	0	1788
Q Serve(g_s), s	1.1	56.2	1.5	5.2	30.1	2.0	1.1	0.0	5.7	6.5	0.0	2.1
Cycle Q Clear(g_c), s	1.1	56.2	1.5	5.2	30.1	2.0	1.1	0.0	5.7	6.5	0.0	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		0.26
Lane Grp Cap(c), veh/h	37	1999	891	121	2166	966	37	0	129	146	0	253
V/C Ratio(X)	0.52	1.07	0.06	0.79	0.72	0.08	0.52	0.00	0.73	0.81	0.00	0.17
Avail Cap(c_a), veh/h	132	1999	891	221	2176	971	132	0	327	185	0	415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.5	21.9	9.9	45.9	13.5	8.0	48.5	0.0	44.9	45.1	0.0	37.8
Incr Delay (d2), s/veh	4.2	40.3	0.0	4.3	1.1	0.0	4.2	0.0	7.6	14.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	30.8	0.5	2.4	10.3	0.6	0.5	0.0	2.5	3.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	62.2	9.9	50.1	14.6	8.0	52.7	0.0	52.6	59.6	0.0	38.1
LnGrp LOS	D	F	A	D	B	A	D	A	D	E	A	D
Approach Vol, veh/h		2201			1722			113			161	
Approach Delay, s/veh		60.9			16.3			52.6			53.9	
Approach LOS		E			B			D			D	

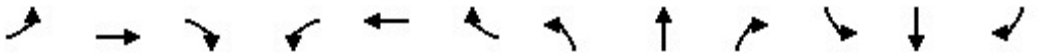
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	13.8	11.4	62.0	6.6	19.9	6.6	66.7
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	20.2	12.4	56.2	7.4	23.2	7.4	61.2
Max Q Clear Time (g_c+I1), s	8.5	7.7	7.2	58.2	3.1	4.1	3.1	32.1
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	0.1	0.0	13.9

Intersection Summary	
HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	349	10	620	522	1211	1864	767
Future Volume (vph)	349	10	620	522	1211	1864	767
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	20.0	20.0		22.0	70.0	48.0	48.0
Total Split (%)	22.2%	22.2%		24.4%	77.8%	53.3%	53.3%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.2	13.2	90.0	16.4	64.8	43.4	43.4
Actuated g/C Ratio	0.15	0.15	1.00	0.18	0.72	0.48	0.48
v/c Ratio	0.76	0.76	0.41	0.87	0.34	0.79	0.80
Control Delay	57.1	57.5	0.8	40.6	8.0	22.9	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	57.5	0.8	40.6	8.0	22.9	15.5
LOS	E	E	A	D	A	C	B
Approach Delay		21.5			17.8	20.8	
Approach LOS		C			B	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 87.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	349	10	620	522	1211	0	0	1864	767
Future Volume (veh/h)	0	0	0	349	10	620	522	1211	0	0	1864	767
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				371	0	0	544	1261	0	0	1942	651
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				456	0		603	3771	0	0	2597	796
Arrive On Green				0.13	0.00	0.00	0.35	1.00	0.00	0.00	0.51	0.51
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1564
Grp Volume(v), veh/h				371	0	0	544	1261	0	0	1942	651
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1564
Q Serve(g_s), s				9.1	0.0	0.0	13.5	0.0	0.0	0.0	27.1	31.5
Cycle Q Clear(g_c), s				9.1	0.0	0.0	13.5	0.0	0.0	0.0	27.1	31.5
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				456	0		603	3771	0	0	2597	796
V/C Ratio(X)				0.81	0.00		0.90	0.33	0.00	0.00	0.75	0.82
Avail Cap(c_a), veh/h				562	0		653	3771	0	0	2597	796
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.14	0.14	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				38.2	0.0	0.0	28.6	0.0	0.0	0.0	17.5	18.6
Incr Delay (d2), s/veh				7.4	0.0	0.0	2.5	0.0	0.0	0.0	2.0	9.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	0.0	0.0	4.4	0.0	0.0	0.0	9.6	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				45.5	0.0	0.0	31.1	0.0	0.0	0.0	19.6	27.8
LnGrp LOS				D	A		C	A	A	A	B	C
Approach Vol, veh/h					371	A		1805			2593	
Approach Delay, s/veh					45.5			9.4			21.6	
Approach LOS					D			A			C	

Timer - Assigned Phs	2		5	6		8				
Phs Duration (G+Y+Rc), s	72.7		20.7	52.0		17.3				
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8				
Max Green Setting (Gmax), s	63.8		17.0	41.8		14.2				
Max Q Clear Time (g_c+I1), s	2.0		15.5	33.5		11.1				
Green Ext Time (p_c), s	6.5		0.2	6.1		0.4				

Intersection Summary		
HCM 6th Ctrl Delay	18.9	
HCM 6th LOS	B	

Notes

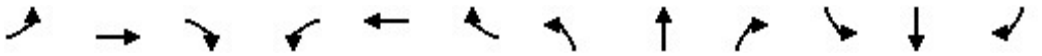
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	385	2	758	1339	672	1562
Future Volume (vph)	385	2	758	1339	672	1562
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	37.0	37.0	37.0	34.0	19.0	53.0
Total Split (%)	41.1%	41.1%	41.1%	37.8%	21.1%	58.9%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	31.2	31.2	31.2	27.8	14.0	46.8
Actuated g/C Ratio	0.35	0.35	0.35	0.31	0.16	0.52
v/c Ratio	0.34	0.35	1.29	1.06	1.31	0.62
Control Delay	23.9	24.0	167.4	70.0	191.8	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	24.0	167.4	70.0	191.8	9.5
LOS	C	C	F	E	F	A
Approach Delay		118.9		70.0		64.3
Approach LOS		F		E		E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 78.7	Intersection LOS: E
Intersection Capacity Utilization 87.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	385	2	758	0	0	0	0	1339	243	672	1562	0
Future Volume (veh/h)	385	2	758	0	0	0	0	1339	243	672	1562	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	402	0	405				0	1395	128	700	1627	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1024	0	455				0	1752	161	538	2958	0
Arrive On Green	0.29	0.00	0.29				0.00	0.37	0.37	0.31	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4927	437	3456	5274	0
Grp Volume(v), veh/h	402	0	405				0	998	525	700	1627	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1791	1728	1702	0
Q Serve(g_s), s	8.2	0.0	22.0				0.0	23.6	23.6	14.0	0.0	0.0
Cycle Q Clear(g_c), s	8.2	0.0	22.0				0.0	23.6	23.6	14.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.24	1.00		0.00
Lane Grp Cap(c), veh/h	1024	0	455				0	1253	660	538	2958	0
V/C Ratio(X)	0.39	0.00	0.89				0.00	0.80	0.80	1.30	0.55	0.00
Avail Cap(c_a), veh/h	1235	0	549				0	1253	660	538	2958	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.52	0.52	0.00
Uniform Delay (d), s/veh	25.8	0.0	30.7				0.0	25.4	25.4	31.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	14.5				0.0	5.3	9.6	143.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	9.6				0.0	9.5	10.8	15.1	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	0.0	45.2				0.0	30.7	35.1	174.1	0.4	0.0
LnGrp LOS	C	A	D				A	C	D	F	A	A
Approach Vol, veh/h		807						1523			2327	
Approach Delay, s/veh		35.6						32.2			52.6	
Approach LOS		D						C			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	19.0	39.3		31.7		58.3
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	14.0	27.8		31.2		46.8
Max Q Clear Time (g_c+I1), s	16.0	25.6		24.0		2.0
Green Ext Time (p_c), s	0.0	1.4		1.8		9.5

Intersection Summary		
HCM 6th Ctrl Delay		43.0
HCM 6th LOS		D

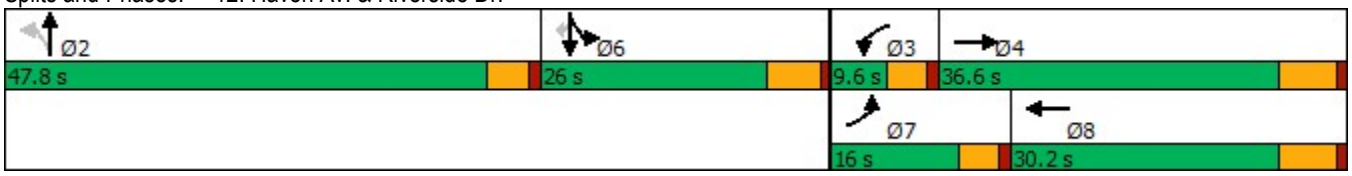
Notes

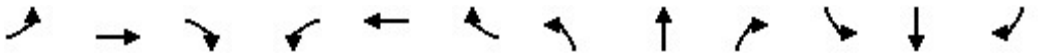
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	349	460	197	455	57	1003	147	1293	399
Future Volume (vph)	349	460	197	455	57	1003	147	1293	399
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	16.0	36.6	9.6	30.2	47.8	47.8	26.0	26.0	26.0
Total Split (%)	13.3%	30.5%	8.0%	25.2%	39.8%	39.8%	21.7%	21.7%	21.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.4	30.4	5.0	24.0		43.1	20.2	20.2	20.2
Actuated g/C Ratio	0.10	0.25	0.04	0.20		0.36	0.17	0.17	0.17
v/c Ratio	2.43	1.32	3.15	0.90		12.58	0.58	4.54	1.10
Control Delay	685.6	196.3	1027.0	63.0		5235.7	55.5	1611.4	106.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	685.6	196.3	1027.0	63.0		5235.7	55.5	1611.4	106.7
LOS	F	F	F	E		F	E	F	F
Approach Delay		385.2		308.2		5235.7		1160.4	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 12.58	
Intersection Signal Delay: 1939.2	Intersection LOS: F
Intersection Capacity Utilization 174.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	460	96	197	455	122	57	1003	184	147	1293	399
Future Volume (veh/h)	349	460	96	197	455	122	57	1003	184	147	1293	399
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	364	479	99	205	474	107	59	1045	186	153	1347	190
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	359	74	66	544	122	28	501	89	268	298	252
Arrive On Green	0.09	0.25	0.25	0.04	0.20	0.20	0.36	0.36	0.36	0.17	0.17	0.17
Sat Flow, veh/h	1594	1415	293	1594	2719	609	79	1396	248	1594	1772	1496
Grp Volume(v), veh/h	364	0	578	205	292	289	1290	0	0	153	1347	190
Grp Sat Flow(s),veh/h/ln	1594	0	1708	1594	1683	1645	1723	0	0	1594	1772	1496
Q Serve(g_s), s	11.4	0.0	30.4	5.0	20.2	20.4	43.1	0.0	0.0	10.6	20.2	14.5
Cycle Q Clear(g_c), s	11.4	0.0	30.4	5.0	20.2	20.4	43.1	0.0	0.0	10.6	20.2	14.5
Prop In Lane	1.00		0.17	1.00		0.37	0.05		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	151	0	433	66	337	329	619	0	0	268	298	252
V/C Ratio(X)	2.40	0.00	1.34	3.09	0.87	0.88	2.08	0.00	0.00	0.57	4.52	0.75
Avail Cap(c_a), veh/h	151	0	433	66	337	329	619	0	0	268	298	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	44.8	57.5	46.5	46.6	38.5	0.0	0.0	45.9	49.9	47.5
Incr Delay (d2), s/veh	651.6	0.0	166.2	977.7	20.6	22.5	493.4	0.0	0.0	2.9	1589.9	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.8	0.0	32.2	20.0	10.0	10.1	102.7	0.0	0.0	4.3	140.4	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	705.9	0.0	211.0	1035.2	67.1	69.1	531.9	0.0	0.0	48.8	1639.8	59.7
LnGrp LOS	F	A	F	F	E	E	F	A	A	D	F	E
Approach Vol, veh/h		942			786			1290			1690	
Approach Delay, s/veh		402.2			320.3			531.9			1318.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		47.8	9.6	36.6		26.0	16.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 43	5.0	30.4		20.2	11.4	24.0				
Max Q Clear Time (g_c+I1), s		45.1	7.0	32.4		22.2	13.4	22.4				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.5				

Intersection Summary		
HCM 6th Ctrl Delay		752.9
HCM 6th LOS		F

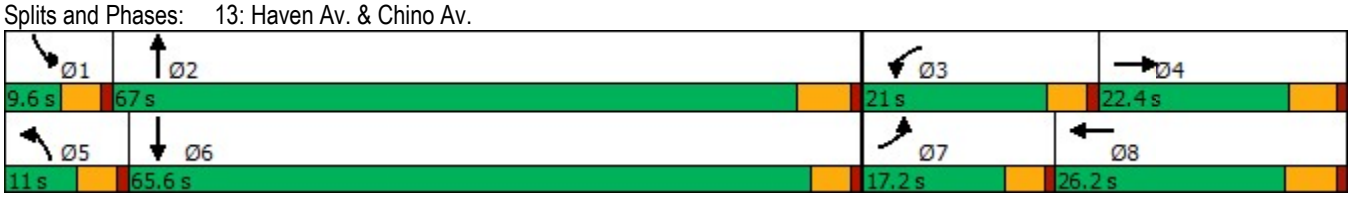
Notes

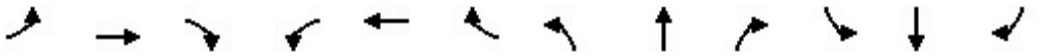
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	196	125	432	116	113	1067	1453	
Future Volume (vph)	196	125	432	116	113	1067	1453	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	17.2	22.4	21.0	26.2	11.0	67.0	65.6	9.6
Total Split (%)	14.3%	18.7%	17.5%	21.8%	9.2%	55.8%	54.7%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	12.6	17.0	16.4	20.4	6.4	70.8	60.9	
Actuated g/C Ratio	0.10	0.14	0.14	0.17	0.05	0.59	0.51	
v/c Ratio	1.24	0.96	1.95	0.40	1.42	1.38	1.92	
Control Delay	193.4	89.6	471.0	48.7	284.4	204.0	442.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	193.4	89.6	471.0	48.7	284.4	204.0	442.0	
LOS	F	F	F	D	F	F	F	
Approach Delay		135.5		381.7		210.3	442.0	
Approach LOS		F		F		F	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.95	
Intersection Signal Delay: 317.9	Intersection LOS: F
Intersection Capacity Utilization 152.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	125	118	432	116	0	113	1067	261	0	1453	163
Future Volume (veh/h)	196	125	118	432	116	0	113	1067	261	0	1453	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	206	136	66	470	126	0	119	1123	143	0	1529	88
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	154	75	243	301	0	85	923	118	1	842	48
Arrive On Green	0.16	0.19	0.19	0.20	0.24	0.00	0.08	0.90	0.90	0.00	0.76	0.76
Sat Flow, veh/h	1594	1189	577	1781	1870	0	1594	1540	196	1781	1659	95
Grp Volume(v), veh/h	206	0	202	470	126	0	119	0	1266	0	0	1617
Grp Sat Flow(s),veh/h/ln	1594	0	1766	1781	1870	0	1594	0	1737	1781	0	1755
Q Serve(g_s), s	12.6	0.0	13.4	16.4	6.8	0.0	6.4	0.0	71.9	0.0	0.0	60.9
Cycle Q Clear(g_c), s	12.6	0.0	13.4	16.4	6.8	0.0	6.4	0.0	71.9	0.0	0.0	60.9
Prop In Lane	1.00		0.33	1.00		0.00	1.00		0.11	1.00		0.05
Lane Grp Cap(c), veh/h	167	0	228	243	301	0	85	0	1040	1	0	890
V/C Ratio(X)	1.23	0.00	0.88	1.93	0.42	0.00	1.40	0.00	1.22	0.00	0.00	1.82
Avail Cap(c_a), veh/h	167	0	250	243	318	0	85	0	1040	74	0	890
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	50.6	0.0	47.5	47.7	40.8	0.0	55.2	0.0	6.1	0.0	0.0	14.3
Incr Delay (d2), s/veh	145.1	0.0	27.6	433.7	0.9	0.0	236.5	0.0	106.5	0.0	0.0	371.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	0.0	7.1	35.8	3.0	0.0	8.0	0.0	33.8	0.0	0.0	105.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	195.6	0.0	75.1	481.4	41.7	0.0	291.7	0.0	112.5	0.0	0.0	385.9
LnGrp LOS	F	A	E	F	D	A	F	A	F	A	A	F
Approach Vol, veh/h		408			596			1385			1617	
Approach Delay, s/veh		135.9			388.4			127.9			385.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	77.7	21.0	21.3	11.0	66.7	17.2	25.1
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	61.2	16.4	* 17	6.4	* 61	12.6	20.4
Max Q Clear Time (g_c+I1), s	0.0	73.9	18.4	15.4	8.4	62.9	14.6	8.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	271.6
HCM 6th LOS	F

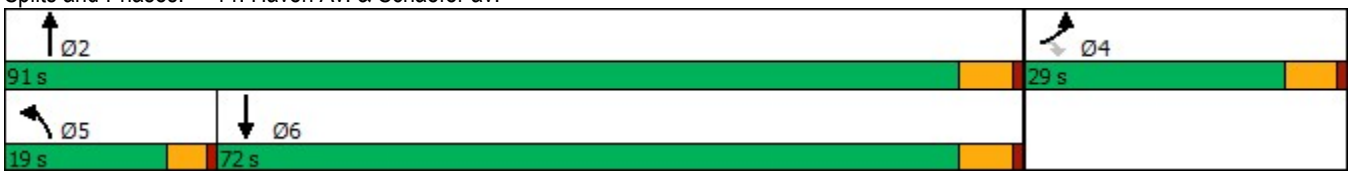
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	58	132	176	1328	1868
Future Volume (vph)	58	132	176	1328	1868
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	29.0	29.0	19.0	91.0	72.0
Total Split (%)	24.2%	24.2%	15.8%	75.8%	60.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.5	12.5	14.4	85.3	66.3
Actuated g/C Ratio	0.11	0.11	0.13	0.78	0.61
v/c Ratio	0.37	0.50	0.99	1.12	1.05
Control Delay	50.3	12.8	107.6	81.0	57.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	12.8	107.6	81.0	57.9
LOS	D	B	F	F	E
Approach Delay	24.2			84.1	57.9
Approach LOS	C			F	E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 67.1	Intersection LOS: E
Intersection Capacity Utilization 92.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	132	176	1328	1868	59
Future Volume (veh/h)	58	132	176	1328	1868	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	67	84	205	1544	2172	46
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	148	139	215	1415	2146	45
Arrive On Green	0.09	0.09	0.13	0.80	0.62	0.62
Sat Flow, veh/h	1594	1502	1594	1772	3458	73
Grp Volume(v), veh/h	67	84	205	1544	1109	1109
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1772	1759
Q Serve(g_s), s	4.2	5.7	13.6	85.2	66.2	66.2
Cycle Q Clear(g_c), s	4.2	5.7	13.6	85.2	66.2	66.2
Prop In Lane	1.00	1.00	1.00			0.04
Lane Grp Cap(c), veh/h	148	139	215	1415	1099	1091
V/C Ratio(X)	0.45	0.60	0.95	1.09	1.01	1.02
Avail Cap(c_a), veh/h	347	327	215	1415	1099	1091
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	46.5	45.8	10.7	20.2	20.2
Incr Delay (d2), s/veh	2.2	4.2	47.6	52.8	29.3	31.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.9	8.0	37.7	31.2	31.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.0	50.7	93.4	63.6	49.5	51.6
LnGrp LOS	D	D	F	F	F	F
Approach Vol, veh/h	151			1749	2218	
Approach Delay, s/veh	49.5			67.1	50.6	
Approach LOS	D			E	D	

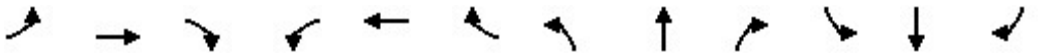
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		91.0		15.7	19.0	72.0
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		85.2		23.2	14.4	66.2
Max Q Clear Time (g_c+I1), s		87.2		7.7	15.6	68.2
Green Ext Time (p_c), s		0.0		0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.5
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	490	1657	38	249	1299	651	19	368	77	765	602	295
Future Volume (vph)	490	1657	38	249	1299	651	19	368	77	765	602	295
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.4	39.1	39.1	6.2	32.6	32.6	6.1	32.7	32.7	10.4	43.3	43.3
Actuated g/C Ratio	0.11	0.36	0.36	0.06	0.30	0.30	0.06	0.30	0.30	0.09	0.39	0.39
v/c Ratio	2.91	0.93	0.07	1.58	0.66	0.98	0.23	0.74	0.15	5.43	0.92	0.42
Control Delay	894.1	45.1	0.2	319.6	36.1	48.5	57.6	44.0	0.6	2017.3	52.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	894.1	45.1	0.2	319.6	36.1	48.5	57.6	44.0	0.6	2017.3	52.8	7.8
LOS	F	D	A	F	D	D	E	D	A	F	D	A
Approach Delay		234.7			71.9			37.3			949.3	
Approach LOS		F			E			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 5.43	
Intersection Signal Delay: 348.1	Intersection LOS: F
Intersection Capacity Utilization 135.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	1657	38	249	1299	651	19	368	77	765	602	295
Future Volume (veh/h)	490	1657	38	249	1299	651	19	368	77	765	602	295
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	521	1763	27	265	1382	648	20	391	32	814	640	281
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	1869	528	168	2096	444	33	540	458	149	670	568
Arrive On Green	0.11	0.35	0.35	0.06	0.30	0.30	0.02	0.30	0.30	0.09	0.38	0.38
Sat Flow, veh/h	1594	5316	1502	3000	7088	1502	1594	1772	1502	1594	1772	1502
Grp Volume(v), veh/h	521	1763	27	265	1382	648	20	391	32	814	640	281
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1500	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	12.4	35.7	1.3	6.2	18.9	32.8	1.4	21.8	1.7	10.4	39.0	15.9
Cycle Q Clear(g_c), s	12.4	35.7	1.3	6.2	18.9	32.8	1.4	21.8	1.7	10.4	39.0	15.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1869	528	168	2096	444	33	540	458	149	670	568
V/C Ratio(X)	2.92	0.94	0.05	1.58	0.66	1.46	0.61	0.72	0.07	5.45	0.96	0.50
Avail Cap(c_a), veh/h	178	1869	528	168	2096	444	155	690	585	149	684	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	34.9	23.7	52.4	34.2	39.1	53.9	34.4	27.4	50.3	33.6	26.4
Incr Delay (d2), s/veh	881.0	11.1	0.2	287.7	1.6	218.9	6.5	2.7	0.1	2015.9	23.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	48.3	16.2	0.5	8.9	7.8	38.1	0.6	9.4	0.6	87.7	20.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	930.2	46.0	23.9	340.0	35.8	257.9	60.3	37.1	27.4	2066.2	57.4	27.1
LnGrp LOS	F	D	C	F	D	F	E	D	C	F	E	C
Approach Vol, veh/h		2311			2295			443			1735	
Approach Delay, s/veh		245.1			133.7			37.5			994.9	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	39.6	10.8	45.5	6.9	47.7	17.0	39.3
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	12.4	23.8	8.2	37.7	3.4	41.0	14.4	34.8
Green Ext Time (p_c), s	0.0	2.1	0.0	1.1	0.0	0.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	385.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

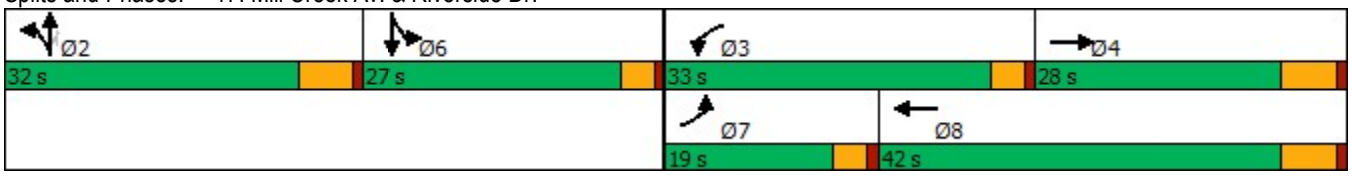
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	338	509	0	71
Demand Flow Rate, veh/h	344	519	0	73
Vehicles Circulating, veh/h	29	74	373	469
Vehicles Exiting, veh/h	513	299	0	124
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.0	6.8	0.0	5.2
Approach LOS	A	A	-	A

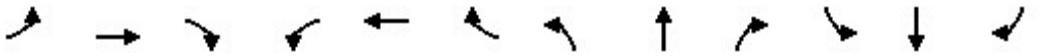
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	344	519	0	73
Cap Entry Lane, veh/h	1340	1280	943	855
Entry HV Adj Factor	0.982	0.980	1.000	0.973
Flow Entry, veh/h	338	509	0	71
Cap Entry, veh/h	1315	1254	943	832
V/C Ratio	0.257	0.406	0.000	0.085
Control Delay, s/veh	5.0	6.8	3.8	5.2
LOS	A	A	A	A
95th %tile Queue, veh	1	2	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	137	450	339	511	136	20	241	63	15
Future Volume (vph)	137	450	339	511	136	20	241	63	15
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	19.0	28.0	33.0	42.0	32.0	32.0	32.0	27.0	27.0
Total Split (%)	15.8%	23.3%	27.5%	35.0%	26.7%	26.7%	26.7%	22.5%	22.5%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	12.6	21.8	26.9	36.1	14.8	14.8	14.8	12.5	12.5
Actuated g/C Ratio	0.13	0.23	0.28	0.38	0.15	0.15	0.15	0.13	0.13
v/c Ratio	0.71	0.80	0.81	0.52	0.59	0.08	0.58	0.33	0.41
Control Delay	61.1	43.4	49.8	25.8	49.6	37.0	10.5	44.5	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	43.4	49.8	25.8	49.6	37.0	10.5	44.5	15.7
LOS	E	D	D	C	D	D	B	D	B
Approach Delay		46.7		34.1		25.3			26.3
Approach LOS		D		C		C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 36.0	Intersection LOS: D
Intersection Capacity Utilization 67.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	450	141	339	511	124	136	20	241	63	15	94
Future Volume (veh/h)	137	450	141	339	511	124	136	20	241	63	15	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	146	479	97	361	544	84	145	21	128	67	16	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	608	122	400	1055	162	213	237	200	227	39	176
Arrive On Green	0.11	0.21	0.21	0.25	0.35	0.35	0.13	0.13	0.13	0.14	0.14	0.14
Sat Flow, veh/h	1594	2860	575	1594	2999	462	1594	1772	1498	1594	271	1237
Grp Volume(v), veh/h	146	296	280	361	321	307	145	21	128	67	0	89
Grp Sat Flow(s),veh/h/ln	1594	1772	1664	1594	1772	1689	1594	1772	1498	1594	0	1508
Q Serve(g_s), s	6.8	12.0	12.1	16.7	10.9	11.0	6.6	0.8	6.1	2.9	0.0	4.1
Cycle Q Clear(g_c), s	6.8	12.0	12.1	16.7	10.9	11.0	6.6	0.8	6.1	2.9	0.0	4.1
Prop In Lane	1.00		0.35	1.00		0.27	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	178	377	354	400	623	594	213	237	200	227	0	215
V/C Ratio(X)	0.82	0.78	0.79	0.90	0.51	0.52	0.68	0.09	0.64	0.30	0.00	0.41
Avail Cap(c_a), veh/h	315	513	482	609	840	800	550	611	517	483	0	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.0	28.3	28.3	27.6	19.5	19.5	31.4	28.8	31.2	29.2	0.0	29.7
Incr Delay (d2), s/veh	3.6	5.5	6.3	8.8	0.7	0.7	3.8	0.2	3.4	0.7	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.1	4.9	6.6	4.0	3.8	2.6	0.3	2.2	1.1	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	33.8	34.6	36.4	20.1	20.2	35.2	29.0	34.5	29.9	0.0	31.0
LnGrp LOS	D	C	C	D	C	C	D	C	C	C	A	C
Approach Vol, veh/h		722			989			294			156	
Approach Delay, s/veh		34.7			26.1			34.4			30.5	
Approach LOS		C			C			C			C	

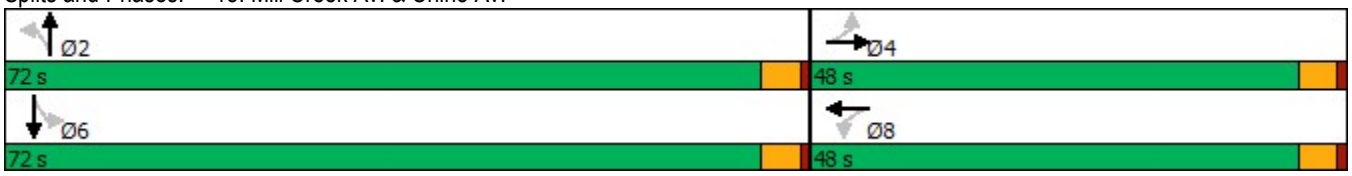
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.9	23.0	22.2		14.8	12.5	32.7				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		26.2	29.0	22.0		23.0	15.0	36.0				
Max Q Clear Time (g_c+I1), s		8.6	18.7	14.1		6.1	8.8	13.0				
Green Ext Time (p_c), s		0.8	0.4	1.9		0.6	0.1	3.4				

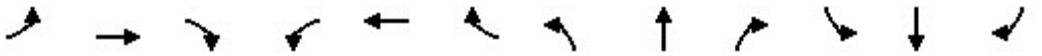
Intersection Summary												
HCM 6th Ctrl Delay			30.4									
HCM 6th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	119	145	6	246	20	144	14	110
Future Volume (vph)	119	145	6	246	20	144	14	110
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	48.0	48.0	48.0	48.0	72.0	72.0	72.0	72.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	19.3	19.3	19.3	19.3	29.5	29.5	29.5	29.5
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.50	0.50	0.50	0.50
v/c Ratio	0.52	0.27	0.06	0.59	0.10	0.69	0.23	0.73
Control Delay	27.9	18.2	17.7	22.3	10.3	16.3	12.3	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	18.2	17.7	22.3	10.3	16.3	12.3	17.1
LOS	C	B	B	C	B	B	B	B
Approach Delay		22.4		22.0		16.1		16.7
Approach LOS		C		C		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 59.1	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 50.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: Mill Creek Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	145	7	6	246	22	20	144	16	14	110	202
Future Volume (veh/h)	119	145	7	6	246	22	20	144	16	14	110	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	158	5	24	267	48	22	576	40	56	440	138
Peak Hour Factor	0.92	0.92	0.92	0.25	0.92	0.25	0.92	0.25	0.25	0.25	0.25	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	362	592	19	485	507	91	343	811	56	326	641	201
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1065	1803	57	1223	1543	277	836	1729	120	807	1365	428
Grp Volume(v), veh/h	129	0	163	24	0	315	22	0	616	56	0	578
Grp Sat Flow(s),veh/h/ln	1065	0	1860	1223	0	1820	836	0	1849	807	0	1793
Q Serve(g_s), s	5.0	0.0	2.9	0.7	0.0	6.3	0.9	0.0	11.8	2.6	0.0	11.2
Cycle Q Clear(g_c), s	11.2	0.0	2.9	3.5	0.0	6.3	12.2	0.0	11.8	14.4	0.0	11.2
Prop In Lane	1.00		0.03	1.00		0.15	1.00		0.06	1.00		0.24
Lane Grp Cap(c), veh/h	362	0	611	485	0	598	343	0	867	326	0	841
V/C Ratio(X)	0.36	0.00	0.27	0.05	0.00	0.53	0.06	0.00	0.71	0.17	0.00	0.69
Avail Cap(c_a), veh/h	1053	0	1819	1279	0	1780	1219	0	2805	1172	0	2721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	11.0	12.3	0.0	12.1	14.0	0.0	9.4	15.1	0.0	9.2
Incr Delay (d2), s/veh	0.6	0.0	0.2	0.0	0.0	0.7	0.1	0.0	1.1	0.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.9	0.1	0.0	1.9	0.1	0.0	3.0	0.4	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	11.2	12.3	0.0	12.9	14.1	0.0	10.5	15.4	0.0	10.3
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		292			339			638			634	
Approach Delay, s/veh		13.9			12.8			10.6			10.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.4		19.1		25.4		19.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		67.5		43.5		67.5		43.5				
Max Q Clear Time (g_c+I1), s		14.2		13.2		16.4		8.3				
Green Ext Time (p_c), s		4.4		1.4		4.4		1.9				

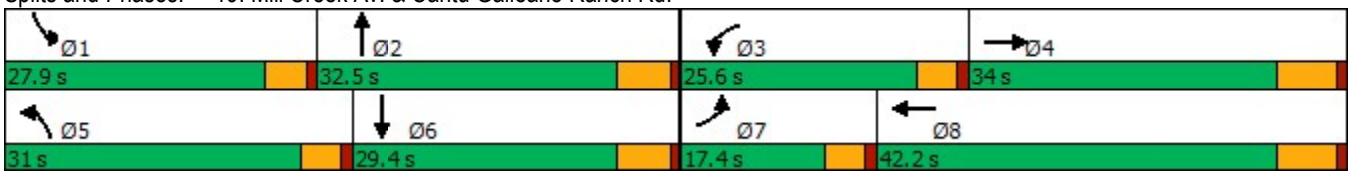
Intersection Summary												
HCM 6th Ctrl Delay			11.5									
HCM 6th LOS			B									

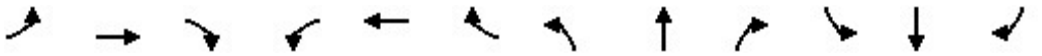
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	85	674	279	748	351	39	299	67
Future Volume (vph)	85	674	279	748	351	39	299	67
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	23.5	9.6	23.5	9.6	27.8	9.6	27.8
Total Split (s)	17.4	34.0	25.6	42.2	31.0	32.5	27.9	29.4
Total Split (%)	14.5%	28.3%	21.3%	35.2%	25.8%	27.1%	23.3%	24.5%
Yellow Time (s)	3.6	5.5	3.6	5.5	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.8	27.6	21.0	38.8	26.4	19.3	22.7	15.5
Actuated g/C Ratio	0.09	0.25	0.19	0.35	0.24	0.17	0.20	0.14
v/c Ratio	0.60	1.02dr	0.91	0.58	0.92	0.64	0.91	0.73
Control Delay	66.0	56.5	77.7	31.1	70.6	16.7	74.1	44.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	56.5	77.7	31.1	70.6	16.7	74.1	44.8
LOS	E	E	E	C	E	B	E	D
Approach Delay		57.2		41.8		46.5		62.5
Approach LOS		E		D		D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 50.8	Intersection LOS: D
Intersection Capacity Utilization 90.5%	ICU Level of Service E
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 19: Mill Creek Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	674	459	279	748	189	351	39	246	299	67	130
Future Volume (veh/h)	85	674	459	279	748	189	351	39	246	299	67	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	733	282	303	813	107	382	42	137	325	73	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	891	339	335	1676	219	414	58	188	357	91	109
Arrive On Green	0.07	0.24	0.24	0.19	0.37	0.37	0.23	0.15	0.15	0.20	0.12	0.12
Sat Flow, veh/h	1781	3641	1384	1781	4569	598	1781	386	1258	1781	777	926
Grp Volume(v), veh/h	92	685	330	303	604	316	382	0	179	325	0	160
Grp Sat Flow(s),veh/h/ln	1781	1702	1621	1781	1702	1763	1781	0	1644	1781	0	1704
Q Serve(g_s), s	5.0	18.8	19.1	16.4	13.5	13.6	20.7	0.0	10.3	17.6	0.0	9.0
Cycle Q Clear(g_c), s	5.0	18.8	19.1	16.4	13.5	13.6	20.7	0.0	10.3	17.6	0.0	9.0
Prop In Lane	1.00		0.85	1.00		0.34	1.00		0.77	1.00		0.54
Lane Grp Cap(c), veh/h	117	833	397	335	1248	646	414	0	245	357	0	200
V/C Ratio(X)	0.79	0.82	0.83	0.91	0.48	0.49	0.92	0.00	0.73	0.91	0.00	0.80
Avail Cap(c_a), veh/h	231	948	451	379	1248	646	476	0	444	420	0	407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.4	35.3	35.4	39.2	24.1	24.1	37.1	0.0	40.1	38.6	0.0	42.4
Incr Delay (d2), s/veh	4.3	5.3	11.4	21.6	0.3	0.6	20.8	0.0	4.1	19.9	0.0	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	7.8	8.2	8.7	5.0	5.2	10.9	0.0	4.3	9.3	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	40.6	46.7	60.8	24.4	24.7	57.9	0.0	44.2	58.5	0.0	49.6
LnGrp LOS	D	D	D	E	C	C	E	A	D	E	A	D
Approach Vol, veh/h		1107			1223			561			485	
Approach Delay, s/veh		43.2			33.5			53.5			55.6	
Approach LOS		D			C			D			E	

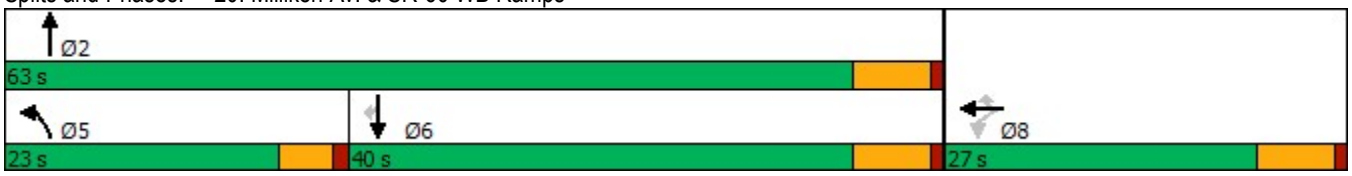
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	20.5	23.2	30.7	27.5	17.4	11.1	42.7
Change Period (Y+Rc), s	4.6	5.8	4.6	6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	23.3	26.7	21.0	27.5	26.4	23.6	12.8	35.7
Max Q Clear Time (g_c+I1), s	19.6	12.3	18.4	21.1	22.7	11.0	7.0	15.6
Green Ext Time (p_c), s	0.2	0.7	0.1	3.1	0.2	0.6	0.0	5.2

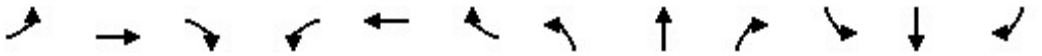
Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	352	388	1020	1350	572
Future Volume (vph)	4	352	388	1020	1350	572
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	9.6	16.2	16.2	16.2
Total Split (s)	27.0	27.0	23.0	63.0	40.0	40.0
Total Split (%)	30.0%	30.0%	25.6%	70.0%	44.4%	44.4%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	20.8	20.8	18.4	56.8	33.8	33.8
Actuated g/C Ratio	0.23	0.23	0.20	0.63	0.38	0.38
v/c Ratio	1.10	0.80	1.12	0.45	1.01	0.62
Control Delay	109.8	37.2	119.0	9.3	54.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.8	37.2	119.0	9.3	54.7	4.9
LOS	F	D	F	A	D	A
Approach Delay	77.3			39.5	39.9	
Approach LOS	E			D	D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 46.9	Intersection LOS: D
Intersection Capacity Utilization 97.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	430	4	352	388	1020	0	0	1350	572
Future Volume (veh/h)	0	0	0	430	4	352	388	1020	0	0	1350	572
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				448	4	191	404	1062	0	0	1406	304
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				408	4	366	364	2361	0	0	1405	595
Arrive On Green				0.23	0.23	0.23	0.20	0.63	0.00	0.00	0.38	0.38
Sat Flow, veh/h				1766	16	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				452	0	191	404	1062	0	0	1406	304
Grp Sat Flow(s),veh/h/ln				1782	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				20.8	0.0	9.5	18.4	13.2	0.0	0.0	33.8	13.3
Cycle Q Clear(g_c), s				20.8	0.0	9.5	18.4	13.2	0.0	0.0	33.8	13.3
Prop In Lane				0.99		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				412	0	366	364	2361	0	0	1405	595
V/C Ratio(X)				1.10	0.00	0.52	1.11	0.45	0.00	0.00	1.00	0.51
Avail Cap(c_a), veh/h				412	0	366	364	2361	0	0	1405	595
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				34.6	0.0	30.2	35.8	8.6	0.0	0.0	28.1	21.7
Incr Delay (d2), s/veh				73.3	0.0	1.3	80.0	0.1	0.0	0.0	24.2	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				16.8	0.0	3.5	15.5	4.1	0.0	0.0	18.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				107.9	0.0	31.6	115.8	8.7	0.0	0.0	52.3	22.4
LnGrp LOS				F	A	C	F	A	A	A	F	C
Approach Vol, veh/h					643			1466			1710	
Approach Delay, s/veh					85.2			38.2			47.0	
Approach LOS					F			D			D	

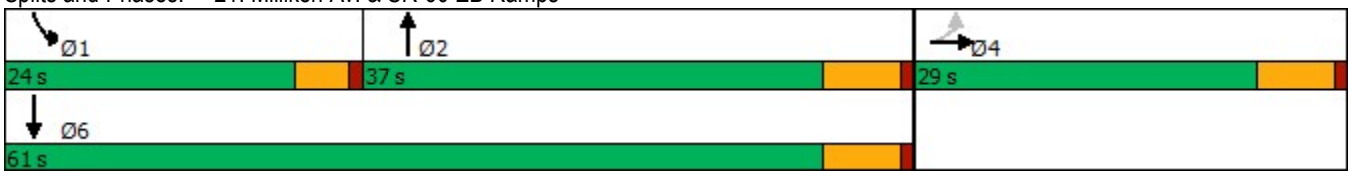
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	63.0			23.0	40.0		27.0					
Change Period (Y+Rc), s	6.2			4.6	6.2		6.2					
Max Green Setting (Gmax), s	56.8			18.4	33.8		20.8					
Max Q Clear Time (g_c+I1), s	15.2			20.4	35.8		22.8					
Green Ext Time (p_c), s	8.3			0.0	0.0		0.0					

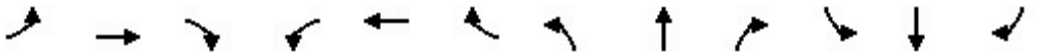
Intersection Summary		
HCM 6th Ctrl Delay	50.1	
HCM 6th LOS	D	

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	290	4	1108	246	1534
Future Volume (vph)	290	4	1108	246	1534
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	16.2	16.2	23.2	9.6	16.2
Total Split (s)	29.0	29.0	37.0	24.0	61.0
Total Split (%)	32.2%	32.2%	41.1%	26.7%	67.8%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	22.8	22.8	30.9	15.8	51.3
Actuated g/C Ratio	0.26	0.26	0.36	0.18	0.59
v/c Ratio	0.58	0.95	1.20	0.79	0.72
Control Delay	34.4	62.7	123.3	51.8	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.2
Total Delay	34.4	62.7	123.3	51.8	15.0
LOS	C	E	F	D	B
Approach Delay		51.6	123.3		20.1
Approach LOS		D	F		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 86.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 64.9	Intersection LOS: E
Intersection Capacity Utilization 97.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	4	371	0	0	0	0	1108	409	246	1534	0
Future Volume (veh/h)	290	4	371	0	0	0	0	1108	409	246	1534	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	252	74	198				0	1154	218	256	1598	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	363	92	246				0	1234	232	299	2364	0
Arrive On Green	0.20	0.20	0.20				0.00	0.40	0.40	0.17	0.63	0.00
Sat Flow, veh/h	1781	450	1204				0	3062	575	1781	3741	0
Grp Volume(v), veh/h	252	0	272				0	702	670	256	1598	0
Grp Sat Flow(s),veh/h/ln	1781	0	1654				0	1870	1767	1781	1870	0
Q Serve(g_s), s	9.9	0.0	11.8				0.0	27.1	27.5	10.6	20.7	0.0
Cycle Q Clear(g_c), s	9.9	0.0	11.8				0.0	27.1	27.5	10.6	20.7	0.0
Prop In Lane	1.00		0.73				0.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	363	0	337				0	754	712	299	2364	0
V/C Ratio(X)	0.69	0.00	0.81				0.00	0.93	0.94	0.86	0.68	0.00
Avail Cap(c_a), veh/h	537	0	499				0	762	720	457	2712	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.9	0.0	28.7				0.0	21.6	21.7	30.6	8.9	0.0
Incr Delay (d2), s/veh	2.4	0.0	6.0				0.0	18.0	20.2	6.2	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	4.8				0.0	13.6	13.4	4.6	5.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	34.6				0.0	39.5	41.9	36.8	9.5	0.0
LnGrp LOS	C	A	C				A	D	D	D	A	A
Approach Vol, veh/h		524						1372			1854	
Approach Delay, s/veh		32.5						40.7			13.3	
Approach LOS		C						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.3	36.7		21.6		54.0
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	19.4	30.8		22.8		54.8
Max Q Clear Time (g_c+I1), s	12.6	29.5		13.8		22.7
Green Ext Time (p_c), s	0.2	0.9		1.6		14.3

Intersection Summary	
HCM 6th Ctrl Delay	26.0
HCM 6th LOS	C

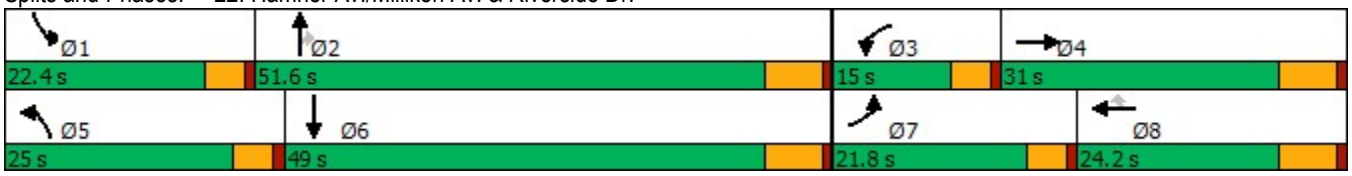
Notes

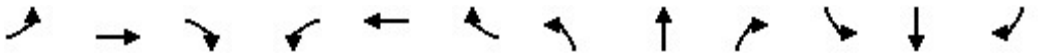
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	313	253	88	316	176	189	946	54	234	1236
Future Volume (vph)	313	253	88	316	176	189	946	54	234	1236
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	21.8	31.0	15.0	24.2	24.2	25.0	51.6	51.6	22.4	49.0
Total Split (%)	18.2%	25.8%	12.5%	20.2%	20.2%	20.8%	43.0%	43.0%	18.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	17.2	25.8	9.4	18.0	18.0	17.7	42.7	42.7	17.8	42.8
Actuated g/C Ratio	0.15	0.22	0.08	0.15	0.15	0.15	0.36	0.36	0.15	0.36
v/c Ratio	1.42	1.22	0.73	1.23	0.48	0.84	0.82	0.09	1.03	1.49
Control Delay	250.0	157.9	84.6	174.6	11.0	76.6	40.1	0.3	115.1	255.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	250.0	157.9	84.6	174.6	11.0	76.6	40.1	0.3	115.1	255.0
LOS	F	F	F	F	B	E	D	A	F	F
Approach Delay		196.2		111.3			44.1			238.1
Approach LOS		F		F			D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.4	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.49	
Intersection Signal Delay: 162.8	Intersection LOS: F
Intersection Capacity Utilization 118.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	313	253	186	88	316	176	189	946	54	234	1236	466
Future Volume (veh/h)	313	253	186	88	316	176	189	946	54	234	1236	466
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	329	266	155	93	333	147	199	996	52	246	1301	477
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	243	142	113	275	233	224	1199	534	245	899	315
Arrive On Green	0.15	0.23	0.23	0.07	0.16	0.16	0.14	0.36	0.36	0.15	0.37	0.37
Sat Flow, veh/h	1594	1044	609	1594	1772	1502	1594	3367	1500	1594	2435	853
Grp Volume(v), veh/h	329	0	421	93	333	147	199	996	52	246	881	897
Grp Sat Flow(s),veh/h/ln	1594	0	1653	1594	1772	1502	1594	1683	1500	1594	1683	1605
Q Serve(g_s), s	17.2	0.0	27.0	6.7	18.0	10.6	14.2	31.3	2.7	17.8	42.8	42.8
Cycle Q Clear(g_c), s	17.2	0.0	27.0	6.7	18.0	10.6	14.2	31.3	2.7	17.8	42.8	42.8
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	237	0	384	113	275	233	224	1199	534	245	622	593
V/C Ratio(X)	1.39	0.00	1.10	0.82	1.21	0.63	0.89	0.83	0.10	1.00	1.42	1.51
Avail Cap(c_a), veh/h	237	0	384	143	275	233	281	1319	587	245	622	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	44.5	53.1	48.9	45.8	48.9	34.1	24.9	49.0	36.5	36.5
Incr Delay (d2), s/veh	199.7	0.0	74.0	20.5	123.3	5.4	21.0	4.3	0.1	58.8	196.7	240.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.7	0.0	18.4	3.2	17.1	4.2	6.7	12.7	0.9	10.8	50.3	55.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	249.0	0.0	118.4	73.6	172.3	51.2	69.9	38.4	25.0	107.8	233.3	276.5
LnGrp LOS	F	A	F	E	F	D	E	D	C	F	F	F
Approach Vol, veh/h		750			573			1247			2024	
Approach Delay, s/veh		175.7			125.2			42.9			237.2	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	47.5	12.8	33.2	20.9	49.0	21.8	24.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.8	45.4	10.4	24.8	20.4	42.8	17.2	18.0
Max Q Clear Time (g_c+I1), s	19.8	33.3	8.7	29.0	16.2	44.8	19.2	20.0
Green Ext Time (p_c), s	0.0	5.0	0.0	0.0	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	160.4
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	26

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	109	86	129	1061	1327	164
Future Vol, veh/h	109	86	129	1061	1327	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	95	142	1166	1458	180

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2415	1548	1638	0	-	0
Stage 1	1548	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 31	140	394	-	-	-
Stage 1	192	-	-	-	-	-
Stage 2	373	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	140	394	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	373	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 328.9	8.9	0
HCM LOS	F		

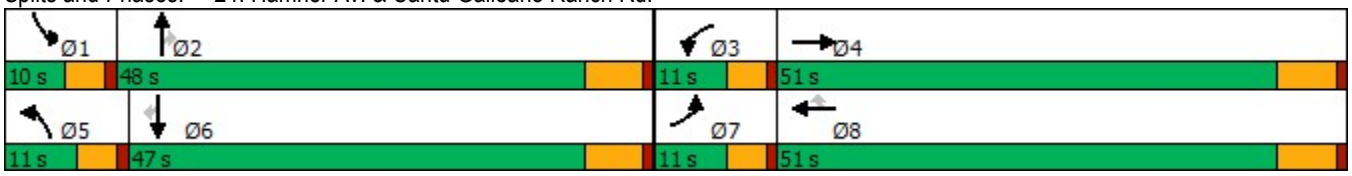
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	394	-	140	-	-
HCM Lane V/C Ratio	0.36	-	1.531	-	-
HCM Control Delay (s)	19.2	7.7	$ 328.9	-	-
HCM Lane LOS	C	A	F	-	-
HCM 95th %tile Q(veh)	1.6	-	14.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	433	2047	517	1915	231	513	491	397	321	621	411
Future Volume (vph)	433	2047	517	1915	231	513	491	397	321	621	411
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.0	51.0	11.0	51.0	51.0	11.0	48.0	48.0	10.0	47.0	47.0
Total Split (%)	9.2%	42.5%	9.2%	42.5%	42.5%	9.2%	40.0%	40.0%	8.3%	39.2%	39.2%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	44.7	6.4	44.7	44.7	6.4	30.6	30.6	5.4	29.6	29.6
Actuated g/C Ratio	0.06	0.41	0.06	0.41	0.41	0.06	0.28	0.28	0.05	0.27	0.27
v/c Ratio	2.23	1.01	2.67	1.38	0.34	2.64	0.36	0.78	1.96	0.68	0.82
Control Delay	596.4	51.8	787.1	202.6	13.3	776.2	31.6	35.3	483.0	38.8	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	596.4	51.8	787.1	202.6	13.3	776.2	31.6	35.3	483.0	38.8	39.8
LOS	F	D	F	F	B	F	C	D	F	D	D
Approach Delay		132.2		299.7			305.2			144.4	
Approach LOS		F		F			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.67	
Intersection Signal Delay: 216.7	Intersection LOS: F
Intersection Capacity Utilization 115.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	433	2047	451	517	1915	231	513	491	397	321	621	411
Future Volume (veh/h)	433	2047	451	517	1915	231	513	491	397	321	621	411
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	451	2132	262	539	1995	137	534	511	232	334	647	246
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	2515	308	214	1528	681	214	1249	388	180	835	372
Arrive On Green	0.06	0.43	0.43	0.06	0.43	0.43	0.06	0.24	0.24	0.05	0.23	0.23
Sat Flow, veh/h	3456	5850	717	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	451	1757	637	539	1995	137	534	511	232	334	647	246
Grp Sat Flow(s),veh/h/ln	1728	1609	1741	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.4	33.8	34.0	6.4	44.5	5.6	6.4	8.7	13.4	5.4	17.6	14.6
Cycle Q Clear(g_c), s	6.4	33.8	34.0	6.4	44.5	5.6	6.4	8.7	13.4	5.4	17.6	14.6
Prop In Lane	1.00		0.41	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	2074	749	214	1528	681	214	1249	388	180	835	372
V/C Ratio(X)	2.11	0.85	0.85	2.52	1.31	0.20	2.50	0.41	0.60	1.85	0.77	0.66
Avail Cap(c_a), veh/h	214	2074	749	214	1528	681	214	2062	640	180	1401	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	26.5	26.5	48.6	29.5	18.4	48.6	32.8	34.6	49.1	37.0	35.9
Incr Delay (d2), s/veh	515.5	3.5	9.2	699.0	142.6	0.1	688.6	0.2	1.5	404.4	1.6	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	12.1	14.3	23.4	46.8	1.9	23.1	3.4	5.0	12.4	7.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	564.1	30.0	35.7	747.6	172.1	18.6	737.1	33.0	36.1	453.5	38.6	37.9
LnGrp LOS	F	C	D	F	F	B	F	C	D	F	D	D
Approach Vol, veh/h		2845			2671			1277			1227	
Approach Delay, s/veh		115.9			280.3			328.0			151.4	
Approach LOS		F			F			F			F	

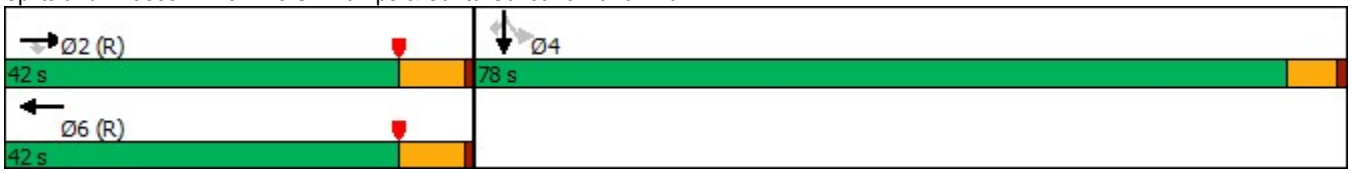
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	31.5	11.0	51.0	11.0	30.5	11.0	51.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	5.4	41.8	6.4	44.5	6.4	40.8	6.4	44.5
Max Q Clear Time (g_c+I1), s	7.4	15.4	8.4	36.0	8.4	19.6	8.4	46.5
Green Ext Time (p_c), s	0.0	4.0	0.0	7.2	0.0	4.7	0.0	0.0

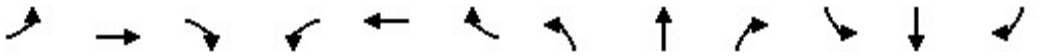
Intersection Summary	
HCM 6th Ctrl Delay	209.9
HCM 6th LOS	F

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	2163	859	1393	151	320	1	1891
Future Volume (vph)	2163	859	1393	151	320	1	1891
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0		78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%		65.0%	65.0%	65.0%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min		Min	Min	Min
Act Effct Green (s)	35.2	35.2	35.2	120.0	72.5	72.5	72.5
Actuated g/C Ratio	0.29	0.29	0.29	1.00	0.60	0.60	0.60
v/c Ratio	1.58	1.14	1.46	0.06	0.31	1.19	1.14
Control Delay	293.8	95.1	246.3	0.0	12.6	123.1	99.0
Queue Delay	0.1	0.0	0.0	0.0	0.2	1.5	0.0
Total Delay	293.9	95.1	246.3	0.0	12.8	124.6	99.0
LOS	F	F	F	A	B	F	F
Approach Delay	237.3		222.2			98.9	
Approach LOS	F		F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 113.2 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.58	
Intersection Signal Delay: 188.7	Intersection LOS: F
Intersection Capacity Utilization 126.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	2163	859	0	1393	151	0	0	0	320	1	1891
Future Volume (veh/h)	0	2163	859	0	1393	151	0	0	0	320	1	1891
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	2351	0	0	1514	0				232	0	1152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2493		0	1735					729	0	1297
Arrive On Green	0.00	0.49	0.00	0.00	0.98	0.00				0.41	0.00	0.41
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	2351	0	0	1514	0				232	0	1152
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	52.4	0.0	0.0	8.1	0.0				10.6	0.0	40.5
Cycle Q Clear(g_c), s	0.0	52.4	0.0	0.0	8.1	0.0				10.6	0.0	40.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2493		0	1735					729	0	1297
V/C Ratio(X)	0.00	0.94		0.00	0.87					0.32	0.00	0.89
Avail Cap(c_a), veh/h	0	2493		0	1735					1076	0	1915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.00	0.00	0.55	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.1	0.0	0.0	0.8	0.0				24.1	0.0	32.9
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	3.7	0.0				0.2	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	19.2	0.0	0.0	1.3	0.0				4.4	0.0	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.2	0.0	0.0	4.5	0.0				24.3	0.0	36.7
LnGrp LOS	A	C		A	A					C	A	D
Approach Vol, veh/h		2351	A		1514	A					1384	
Approach Delay, s/veh		30.2			4.5						34.7	
Approach LOS		C			A						C	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	65.4	54.6	65.4
Change Period (Y+Rc), s	6.8	5.5	6.8
Max Green Setting (Gmax), s	35.2	72.5	35.2
Max Q Clear Time (g_c+I1), s	54.4	42.5	10.1
Green Ext Time (p_c), s	0.0	6.6	11.5

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Notes

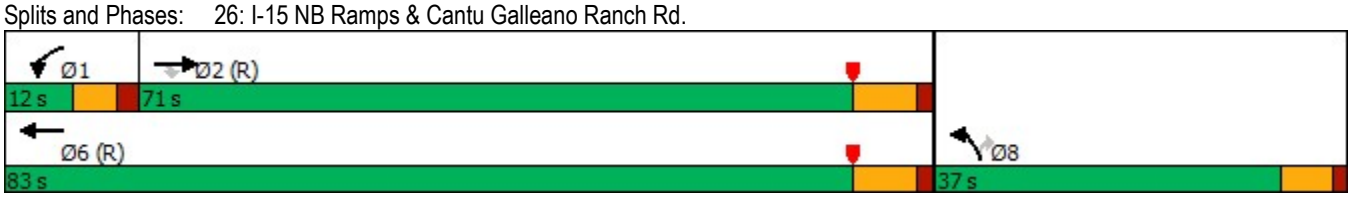
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	938	1581	241	608	914	169
Future Volume (vph)	938	1581	241	608	914	169
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.0	22.5	22.5	22.5
Total Split (s)	71.0	71.0	12.0	83.0	37.0	37.0
Total Split (%)	59.2%	59.2%	10.0%	69.2%	30.8%	30.8%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	63.7	63.7	6.0	75.7	31.0	31.0
Actuated g/C Ratio	0.53	0.53	0.05	0.63	0.26	0.26
v/c Ratio	0.38	1.35	1.53	0.21	1.14	0.35
Control Delay	9.9	190.8	304.6	9.6	117.2	9.8
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	9.9	191.1	304.6	9.6	117.2	9.8
LOS	A	F	F	A	F	A
Approach Delay	123.6			93.3	102.0	
Approach LOS	F			F	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.53	
Intersection Signal Delay: 112.6	Intersection LOS: F
Intersection Capacity Utilization 115.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	938	1581	241	608	914	169
Future Volume (veh/h)	938	1581	241	608	914	169
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1020	859	262	661	993	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2710	841	173	3221	920	409
Arrive On Green	0.89	0.89	0.05	0.63	0.26	0.26
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	1020	859	262	661	993	102
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	4.1	63.7	6.0	6.6	31.0	6.1
Cycle Q Clear(g_c), s	4.1	63.7	6.0	6.6	31.0	6.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2710	841	173	3221	920	409
V/C Ratio(X)	0.38	1.02	1.52	0.21	1.08	0.25
Avail Cap(c_a), veh/h	2710	841	173	3221	920	409
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.87	0.87	1.00	1.00
Uniform Delay (d), s/veh	3.4	6.8	57.0	9.4	44.5	35.3
Incr Delay (d2), s/veh	0.0	15.2	256.5	0.1	53.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.3	8.7	2.1	19.9	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.5	22.0	313.5	9.5	97.8	35.6
LnGrp LOS	A	F	F	A	F	D
Approach Vol, veh/h	1879			923	1095	
Approach Delay, s/veh	12.0			95.8	92.0	
Approach LOS	B			F	F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	12.0	71.0				83.0	37.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	6.0	63.7				75.7	31.0
Max Q Clear Time (g_c+I1), s	8.0	65.7				8.6	33.0
Green Ext Time (p_c), s	0.0	0.0				4.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

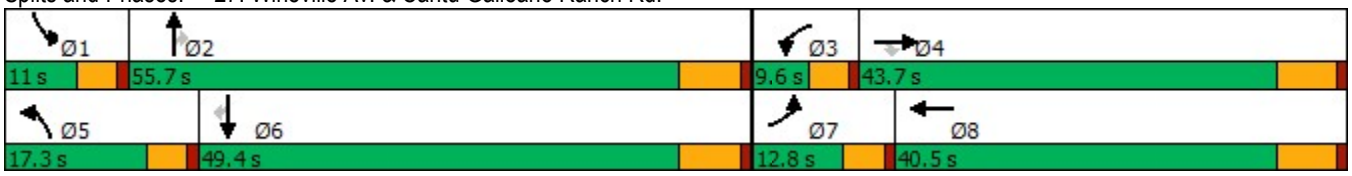
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	143	486	367	29	383	237	102	51	32	186	235
Future Volume (vph)	143	486	367	29	383	237	102	51	32	186	235
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	12.8	43.7	43.7	9.6	40.5	17.3	55.7	55.7	11.0	49.4	49.4
Total Split (%)	10.7%	36.4%	36.4%	8.0%	33.8%	14.4%	46.4%	46.4%	9.2%	41.2%	41.2%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.7	23.7	23.7	5.4	14.1	10.0	27.4	27.4	6.1	16.1	16.1
Actuated g/C Ratio	0.11	0.33	0.33	0.07	0.20	0.14	0.38	0.38	0.08	0.22	0.22
v/c Ratio	0.42	0.25	0.51	0.12	0.44	0.54	0.08	0.08	0.23	0.49	0.47
Control Delay	39.4	20.4	5.5	41.2	27.1	37.5	17.2	0.2	43.2	28.9	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	20.4	5.5	41.2	27.1	37.5	17.2	0.2	43.2	28.9	7.7
LOS	D	C	A	D	C	D	B	A	D	C	A
Approach Delay		17.6			28.1		27.4			19.0	
Approach LOS		B			C		C			B	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 72.1		
Natural Cycle: 110		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.54		
Intersection Signal Delay: 21.6	Intersection LOS: C	
Intersection Capacity Utilization 51.3%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	486	367	29	383	23	237	102	51	32	186	235
Future Volume (veh/h)	143	486	367	29	383	23	237	102	51	32	186	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	528	261	32	416	15	258	111	29	35	202	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1669	411	122	1067	38	385	902	402	67	337	286
Arrive On Green	0.08	0.26	0.26	0.04	0.21	0.21	0.11	0.25	0.25	0.04	0.18	0.18
Sat Flow, veh/h	3456	6434	1585	3456	5060	181	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	155	528	261	32	279	152	258	111	29	35	202	190
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1838	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	2.3	3.6	7.8	0.5	3.8	3.8	3.8	1.3	0.7	1.0	5.3	6.0
Cycle Q Clear(g_c), s	2.3	3.6	7.8	0.5	3.8	3.8	3.8	1.3	0.7	1.0	5.3	6.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	1669	411	122	718	388	385	902	402	67	337	286
V/C Ratio(X)	0.53	0.32	0.63	0.26	0.39	0.39	0.67	0.12	0.07	0.52	0.60	0.66
Avail Cap(c_a), veh/h	528	4457	1098	322	2155	1164	817	3256	1452	212	1494	1266
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	16.0	17.6	25.2	18.2	18.2	22.9	15.4	15.2	25.4	20.2	20.5
Incr Delay (d2), s/veh	0.6	0.1	1.6	0.4	0.3	0.6	0.8	0.1	0.1	2.3	1.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.0	2.4	0.2	1.2	1.4	1.4	0.4	0.2	0.4	2.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	16.1	19.3	25.6	18.6	18.9	23.7	15.5	15.3	27.6	21.9	23.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		944			463			398			427	
Approach Delay, s/veh		18.3			19.1			20.8			22.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	20.1	6.5	20.4	10.6	16.2	9.1	17.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	6.4	49.2	5.0	37.2	12.7	42.9	8.2	34.0
Max Q Clear Time (g_c+I1), s	3.0	3.3	2.5	9.8	5.8	8.0	4.3	5.8
Green Ext Time (p_c), s	0.0	0.7	0.0	4.1	0.3	1.7	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

APPENDIX 6.3: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	322	309	299	907	1212	523	180
v/c Ratio	0.71	0.66	0.63	0.79	0.40	0.39	0.38
Control Delay	41.0	29.5	26.4	30.7	4.8	30.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	29.5	26.4	30.7	4.8	30.7	6.2
Queue Length 50th (ft)	161	112	92	266	43	80	0
Queue Length 95th (ft)	#373	#300	#257	#412	26	79	41
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	455	469	477	1143	3457	2435	713
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.66	0.63	0.79	0.35	0.21	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	336	319	312	1812	685	178	844
v/c Ratio	0.76	0.64	0.62	0.59	0.62	0.60	0.27
Control Delay	41.5	20.8	19.9	19.1	4.3	53.4	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	20.8	19.9	19.1	4.3	53.4	2.4
Queue Length 50th (ft)	180	89	81	224	0	47	38
Queue Length 95th (ft)	269	180	164	275	63	m70	16
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	526	563	566	3050	1102	313	3088
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.57	0.55	0.59	0.62	0.57	0.27

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	502	506	823	349	1796	948	468
v/c Ratio	0.93	0.94	0.52	0.73	0.68	0.59	0.58
Control Delay	51.8	52.5	1.2	35.4	16.1	23.8	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	52.5	1.2	35.4	16.1	23.8	5.5
Queue Length 50th (ft)	233	235	0	92	216	137	0
Queue Length 95th (ft)	69	#427	0	m101	m250	179	64
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	546	548	1583	503	2637	1594	810
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.92	0.52	0.69	0.68	0.59	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	417	422	193	1741	376	879
v/c Ratio	0.88	0.88	0.36	0.92	0.92	0.31
Control Delay	46.9	47.8	9.9	30.9	54.1	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	47.8	9.9	30.9	54.1	8.8
Queue Length 50th (ft)	189	192	22	260	~103	91
Queue Length 95th (ft)	#349	#353	69	#366	m#154	m108
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	497	499	559	1886	410	2831
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.85	0.35	0.92	0.92	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	143	592	423	1313	454	295
v/c Ratio	0.23	0.95	0.92	0.74	0.68	0.55
Control Delay	21.8	51.2	59.7	20.1	38.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	51.2	59.7	20.1	38.5	8.2
Queue Length 50th (ft)	56	279	228	283	124	0
Queue Length 95th (ft)	103	#514	#410	362	175	65
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	636	627	481	1924	773	576
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.94	0.88	0.68	0.59	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	432	393	1467	96	478
v/c Ratio	0.87	0.61	0.93	0.65	0.24
Control Delay	49.4	12.8	35.8	62.1	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	12.8	35.8	62.1	10.1
Queue Length 50th (ft)	243	52	413	54	67
Queue Length 95th (ft)	#418	150	#580	#126	93
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	545	685	1644	158	2175
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.57	0.89	0.61	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1125	370	865	201	279	783	782
v/c Ratio	0.77	0.52	0.95	0.07	0.56	0.96	0.94
Control Delay	44.4	6.4	57.0	0.0	39.8	35.6	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	6.4	57.0	0.0	39.8	35.6	31.7
Queue Length 50th (ft)	304	0	365	0	184	236	215
Queue Length 95th (ft)	361	77	#457	m0	276	#568	#526
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1458	718	920	2787	539	838	856
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.52	0.94	0.07	0.52	0.93	0.91

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	551	924	233	533	675	312
v/c Ratio	0.21	0.78	0.66	0.16	0.84	0.54
Control Delay	28.2	29.9	61.1	8.2	52.8	7.9
Queue Delay	0.0	2.1	0.0	0.0	0.0	0.0
Total Delay	28.2	32.0	61.1	8.2	52.8	7.9
Queue Length 50th (ft)	134	468	90	55	245	0
Queue Length 95th (ft)	m65	m425	135	68	#328	83
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2649	1197	368	3391	838	586
Starvation Cap Reductn	0	149	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.88	0.63	0.16	0.81	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	243	237	178	604	636	1479	361
v/c Ratio	0.79	0.80	0.42	0.87	0.18	0.54	0.42
Control Delay	54.1	54.8	8.3	43.3	0.6	20.5	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	54.8	8.3	43.3	0.6	20.5	4.4
Queue Length 50th (ft)	136	136	0	179	1	188	8
Queue Length 95th (ft)	#245	#251	55	m#260	2	221	62
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	339	327	446	729	3498	2759	863
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.72	0.40	0.83	0.18	0.54	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

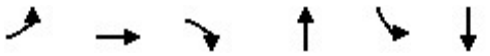
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	112	273	270	1104	613	532	1386
v/c Ratio	0.37	0.86	0.80	0.38	0.61	0.80	0.39
Control Delay	35.3	52.1	42.4	17.7	6.1	53.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	52.1	42.4	17.7	6.1	53.6	1.4
Queue Length 50th (ft)	57	121	106	124	25	135	15
Queue Length 95th (ft)	109	#261	#225	158	119	194	20
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	339	348	369	2890	1000	762	3512
Starvation Cap Reductn	0	0	0	0	0	0	153
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.78	0.73	0.38	0.61	0.70	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	186	188	646	164	1068	1706	799
v/c Ratio	0.69	0.69	0.41	0.53	0.30	0.60	0.67
Control Delay	48.8	49.0	0.8	36.2	5.9	14.8	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	49.0	0.8	36.2	5.9	14.8	5.2
Queue Length 50th (ft)	105	106	0	51	97	228	22
Queue Length 95th (ft)	174	176	0	81	134	292	110
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	321	322	1583	343	3589	2851	1189
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.58	0.41	0.48	0.30	0.60	0.67

Intersection Summary



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	200	203	244	1074	700	1392
v/c Ratio	0.66	0.67	0.67	0.56	0.82	0.40
Control Delay	44.7	45.1	28.9	22.5	53.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	45.1	28.9	22.5	53.4	4.6
Queue Length 50th (ft)	111	113	75	162	211	82
Queue Length 95th (ft)	178	181	149	227	250	95
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	377	378	432	1921	954	3494
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.54	0.56	0.56	0.73	0.40

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	95	367	322	846	1106	596
v/c Ratio	0.30	0.81	0.81	0.36	0.82	0.62
Control Delay	33.4	30.5	47.6	6.6	29.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	30.5	47.6	6.6	29.5	5.3
Queue Length 50th (ft)	45	82	163	90	276	4
Queue Length 95th (ft)	90	#220	#284	129	#396	78
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	397	514	498	2661	1459	995
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.71	0.65	0.32	0.76	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	272	375	1003	256	940
v/c Ratio	0.70	0.81	0.82	0.74	0.44
Control Delay	39.5	33.6	30.6	45.4	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	33.6	30.6	45.4	9.3
Queue Length 50th (ft)	138	123	243	130	127
Queue Length 95th (ft)	234	#272	349	217	177
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	512	563	1438	459	2581
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.67	0.70	0.56	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1808	395	796	164	313	797	792
v/c Ratio	1.16	0.58	0.73	0.06	0.32	0.92	0.88
Control Delay	118.1	14.4	50.4	0.0	13.1	38.0	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	3.5	0.0
Total Delay	118.1	14.4	50.4	0.0	13.1	41.5	32.3
Queue Length 50th (ft)	~627	69	321	0	116	538	482
Queue Length 95th (ft)	#723	176	393	m0	172	#881	#802
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1557	678	1084	2787	1015	887	922
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	53	45	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.58	0.73	0.06	0.33	0.95	0.86

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	917	1290	262	534	420	166
v/c Ratio	0.31	1.08	0.70	0.14	0.78	0.45
Control Delay	8.9	70.2	61.8	5.1	58.6	10.7
Queue Delay	0.0	8.5	0.0	0.0	0.0	0.0
Total Delay	8.9	78.7	61.8	5.1	58.6	10.7
Queue Length 50th (ft)	65	~788	101	41	160	0
Queue Length 95th (ft)	m59	m#570	146	55	214	67
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2912	1195	402	3723	602	389
Starvation Cap Reductn	0	26	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	1.10	0.65	0.14	0.70	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX 6.4: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	322	309	299	907	1326	581	180
v/c Ratio	0.72	0.68	0.63	0.79	0.43	0.42	0.37
Control Delay	42.0	31.5	26.9	30.1	4.5	30.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	31.5	26.9	30.1	4.5	30.8	6.1
Queue Length 50th (ft)	164	119	94	267	40	88	0
Queue Length 95th (ft)	#373	#308	#257	#413	27	87	41
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	447	457	471	1143	3457	2435	713
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.68	0.63	0.79	0.38	0.24	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	336	319	312	1931	685	178	904
v/c Ratio	0.76	0.66	0.64	0.63	0.62	0.60	0.29
Control Delay	41.5	23.5	22.6	19.8	4.3	54.3	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	23.5	22.6	19.8	4.3	54.3	2.2
Queue Length 50th (ft)	180	101	92	245	0	45	26
Queue Length 95th (ft)	269	193	177	299	63	m71	16
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	526	549	552	3050	1102	313	3088
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.58	0.57	0.63	0.62	0.57	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

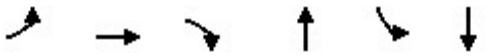
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	502	506	823	900	2028	1145	468
v/c Ratio	0.93	0.94	0.52	1.74	0.77	0.75	0.59
Control Delay	51.8	52.5	1.2	360.6	17.2	27.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	52.5	1.2	360.6	17.2	27.3	5.6
Queue Length 50th (ft)	233	235	0	~347	231	174	0
Queue Length 95th (ft)	69	#427	0	m#284	m196	223	64
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	546	548	1583	517	2637	1532	797
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.92	0.52	1.74	0.77	0.75	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	417	422	537	2532	376	1078
v/c Ratio	0.84	0.85	0.97	1.35	1.03	0.39
Control Delay	42.1	42.7	55.2	185.6	75.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	42.7	55.2	185.6	75.8	9.9
Queue Length 50th (ft)	189	192	198	~575	~103	104
Queue Length 95th (ft)	#349	#353	#400	#672	m#148	m138
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	497	499	552	1874	366	2766
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.85	0.97	1.35	1.03	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	437	592	451	1609	639	295
v/c Ratio	0.72	0.98	0.98	0.88	0.87	0.53
Control Delay	33.7	58.0	71.8	26.0	49.0	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	58.0	71.8	26.0	49.0	7.6
Queue Length 50th (ft)	214	287	255	401	185	0
Queue Length 95th (ft)	325	#514	#448	511	#278	65
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	609	605	461	1845	741	565
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.98	0.98	0.87	0.86	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	446	456	2152	96	962
v/c Ratio	0.90	0.86	1.36	0.67	0.48
Control Delay	53.9	40.0	190.6	63.8	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	40.0	190.6	63.8	12.5
Queue Length 50th (ft)	253	196	~879	54	160
Queue Length 95th (ft)	#438	#381	#1021	#126	208
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	527	557	1581	153	2104
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.82	1.36	0.63	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1733	942	1572	201	279	1005	1014
v/c Ratio	0.93	0.88	1.21	0.07	0.31	1.29	1.25
Control Delay	46.0	17.1	139.3	0.0	17.2	165.3	149.0
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.4	0.0
Total Delay	46.0	17.1	139.3	0.0	17.2	165.8	149.0
Queue Length 50th (ft)	466	121	~799	0	123	~1079	~1023
Queue Length 95th (ft)	#548	#496	m#626	m0	185	#1362	#1293
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1872	1072	1303	2787	889	781	812
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	59	51	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.88	1.21	0.07	0.34	1.38	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	674	1384	233	629	1190	407
v/c Ratio	0.28	1.18	0.67	0.20	1.34	0.67
Control Delay	14.6	117.0	62.0	9.5	197.3	15.2
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	14.6	117.1	62.0	9.5	197.3	15.2
Queue Length 50th (ft)	60	~916	90	69	~623	59
Queue Length 95th (ft)	m78	m#654	134	88	#759	189
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2439	1169	371	3207	887	608
Starvation Cap Reductn	0	29	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	1.21	0.63	0.20	1.34	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	243	237	178	604	709	1591	361
v/c Ratio	0.79	0.80	0.42	0.87	0.20	0.58	0.43
Control Delay	54.1	54.8	8.3	44.1	0.6	21.0	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	54.8	8.3	44.1	0.6	21.0	5.2
Queue Length 50th (ft)	136	136	0	184	1	204	16
Queue Length 95th (ft)	#245	#251	55	#261	2	242	74
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	339	327	446	724	3498	2759	849
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.72	0.40	0.83	0.20	0.58	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	112	273	270	1177	613	532	1497
v/c Ratio	0.36	0.87	0.78	0.41	0.62	0.80	0.43
Control Delay	34.9	56.1	40.5	18.2	6.2	53.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	56.1	40.5	18.2	6.2	53.4	1.5
Queue Length 50th (ft)	57	132	106	134	25	137	19
Queue Length 95th (ft)	109	#278	#225	170	119	195	21
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	339	336	369	2855	994	762	3483
Starvation Cap Reductn	0	0	0	0	0	0	123
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.81	0.73	0.41	0.62	0.70	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	186	188	646	544	1261	1942	799
v/c Ratio	0.69	0.69	0.41	1.22	0.35	0.73	0.70
Control Delay	48.8	49.0	0.8	141.1	8.1	18.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	49.0	0.8	141.1	8.1	18.9	6.5
Queue Length 50th (ft)	105	106	0	~214	129	297	36
Queue Length 95th (ft)	174	176	0	m#271	m144	355	144
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	321	322	1583	447	3589	2644	1134
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.58	0.41	1.22	0.35	0.73	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	200	203	790	1648	700	1627
v/c Ratio	0.53	0.54	1.83	0.97	0.82	0.50
Control Delay	36.7	36.9	404.8	46.3	53.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	36.9	404.8	46.3	53.8	5.4
Queue Length 50th (ft)	106	107	~648	332	207	90
Queue Length 95th (ft)	178	181	#873	#470	253	102
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	377	378	432	1698	953	3265
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.54	1.83	0.97	0.73	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	452	367	404	1063	1406	596
v/c Ratio	1.28	0.87	0.94	0.45	1.08	0.65
Control Delay	178.0	45.3	65.5	8.0	79.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	178.0	45.3	65.5	8.0	79.5	6.8
Queue Length 50th (ft)	~330	134	224	134	~478	20
Queue Length 95th (ft)	#514	#294	#396	173	#611	110
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	354	420	443	2369	1299	924
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.28	0.87	0.91	0.45	1.08	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	272	420	1580	256	1598
v/c Ratio	0.61	0.99	1.26	0.79	0.76
Control Delay	35.7	74.5	151.2	51.8	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.1
Total Delay	35.7	74.5	151.2	51.8	16.1
Queue Length 50th (ft)	138	~230	~578	134	311
Queue Length 95th (ft)	234	#449	#744	217	396
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	443	423	1252	397	2244
Starvation Cap Reductn	0	0	0	0	87
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.99	1.26	0.64	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	2351	934	1514	164	313	1043	1048
v/c Ratio	1.58	1.14	1.46	0.06	0.31	1.19	1.14
Control Delay	293.8	95.1	246.3	0.0	12.6	123.1	99.0
Queue Delay	0.1	0.0	0.0	0.0	0.2	1.5	0.0
Total Delay	293.9	95.1	246.3	0.0	12.8	124.6	99.0
Queue Length 50th (ft)	~947	~547	~865	0	116	~1078	~987
Queue Length 95th (ft)	#1041	#799	m#828	m0	172	#1362	#1260
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1491	822	1038	2787	1015	874	922
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	39	0	0	0	222	191	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.62	1.14	1.46	0.06	0.39	1.53	1.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1020	1718	262	661	1011	166
v/c Ratio	0.38	1.35	1.53	0.21	1.14	0.35
Control Delay	9.9	190.8	304.6	9.6	117.2	9.8
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	9.9	191.1	304.6	9.6	117.2	9.8
Queue Length 50th (ft)	67	~659	~146	73	~472	12
Queue Length 95th (ft)	m46	m619	#233	93	#604	73
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2699	1269	171	3207	887	481
Starvation Cap Reductn	0	91	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	1.46	1.53	0.21	1.14	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX 6.5: OPENING YEAR CUMULATIVE (2027) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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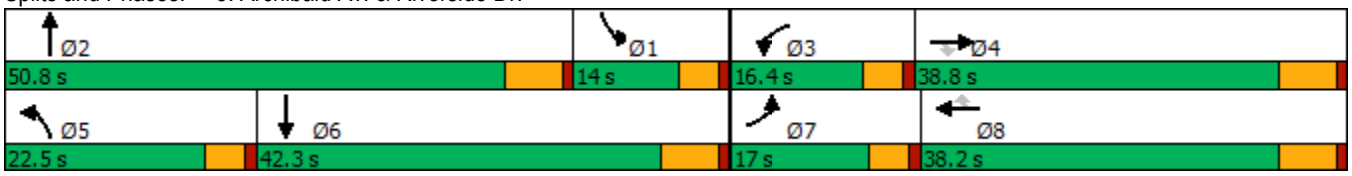
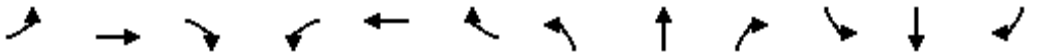
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	164	377	154	131	514	289	288	1551	242	676
Future Volume (vph)	164	377	154	131	514	289	288	1551	242	676
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	17.0	38.8	38.8	16.4	38.2	38.2	22.5	50.8	14.0	42.3
Total Split (%)	14.2%	32.3%	32.3%	13.7%	31.8%	31.8%	18.8%	42.3%	11.7%	35.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.4	25.3	25.3	11.5	24.4	24.4	14.7	44.7	9.4	39.4
Actuated g/C Ratio	0.11	0.22	0.22	0.10	0.22	0.22	0.13	0.40	0.08	0.35
v/c Ratio	0.98	0.52	0.35	0.84	0.74	0.67	0.75	0.95	0.98	0.54
Control Delay	115.2	40.7	6.6	90.5	47.5	24.6	59.7	45.2	104.5	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.2	40.7	6.6	90.5	47.5	24.6	59.7	45.2	104.5	29.9
LOS	F	D	A	F	D	C	E	D	F	C
Approach Delay		50.8			46.4			47.3		46.2
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 112.6	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	377	154	131	514	289	288	1551	173	242	676	192
Future Volume (veh/h)	164	377	154	131	514	289	288	1551	173	242	676	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	171	393	56	136	535	155	300	1616	91	252	704	106
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	729	320	160	689	301	357	1813	102	264	1575	235
Arrive On Green	0.11	0.22	0.22	0.10	0.20	0.20	0.12	0.39	0.39	0.09	0.37	0.37
Sat Flow, veh/h	1594	3367	1476	1594	3367	1472	3092	4681	263	3092	4241	632
Grp Volume(v), veh/h	171	393	56	136	535	155	300	1113	594	252	534	276
Grp Sat Flow(s),veh/h/ln	1594	1683	1476	1594	1683	1472	1546	1612	1720	1546	1612	1648
Q Serve(g_s), s	11.8	11.4	3.4	9.3	16.6	7.8	10.5	35.6	35.6	8.9	13.7	14.0
Cycle Q Clear(g_c), s	11.8	11.4	3.4	9.3	16.6	7.8	10.5	35.6	35.6	8.9	13.7	14.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.38
Lane Grp Cap(c), veh/h	179	729	320	160	689	301	357	1249	666	264	1198	612
V/C Ratio(X)	0.95	0.54	0.18	0.85	0.78	0.51	0.84	0.89	0.89	0.96	0.45	0.45
Avail Cap(c_a), veh/h	179	995	437	171	977	427	502	1305	696	264	1198	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	38.3	35.2	48.8	41.5	22.0	47.7	31.6	31.6	50.2	26.1	26.2
Incr Delay (d2), s/veh	53.3	0.6	0.3	28.0	2.6	1.4	6.3	7.8	13.5	43.0	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	4.6	1.2	4.8	6.8	3.6	4.2	14.1	16.1	4.9	5.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.9	38.9	35.4	76.8	44.0	23.4	54.0	39.4	45.1	93.2	26.4	26.7
LnGrp LOS	F	D	D	E	D	C	D	D	D	F	C	C
Approach Vol, veh/h		620			826			2007			1062	
Approach Delay, s/veh		56.0			45.5			43.3			42.3	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	48.9	15.7	30.1	17.3	47.1	17.0	28.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	9.4	* 45	11.8	32.6	17.9	36.1	12.4	32.0
Max Q Clear Time (g_c+I1), s	10.9	37.6	11.3	13.4	12.5	16.0	13.8	18.6
Green Ext Time (p_c), s	0.0	5.0	0.0	2.3	0.3	4.6	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	45.2
HCM 6th LOS	D

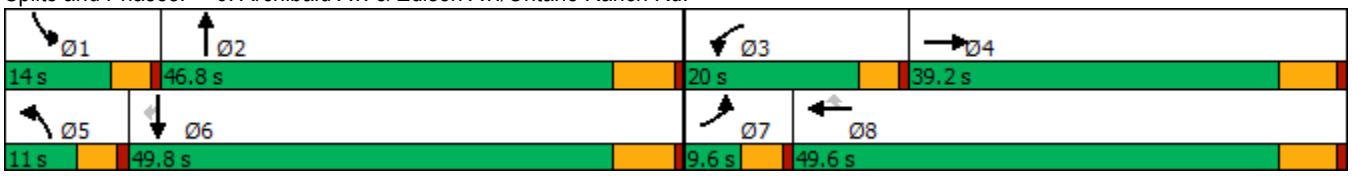
Notes

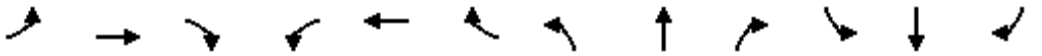
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	233	72	267	454	117	184	1400	309	99	700	68
Future Volume (vph)	38	233	72	267	454	117	184	1400	309	99	700	68
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		20.0	49.6	49.6	11.0	46.8		14.0	49.8	49.8
Total Split (%)	8.0%	32.7%		16.7%	41.3%	41.3%	9.2%	39.0%		11.7%	41.5%	41.5%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.1	14.1	92.8	13.3	26.8	26.8	6.6	35.3	92.8	7.6	36.3	36.3
Actuated g/C Ratio	0.05	0.15	1.00	0.14	0.29	0.29	0.07	0.38	1.00	0.08	0.39	0.39
v/c Ratio	0.25	0.32	0.05	0.69	0.49	0.25	0.90	0.76	0.23	0.43	0.37	0.11
Control Delay	51.9	36.6	0.1	49.3	30.6	6.3	86.0	29.3	0.4	49.9	21.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	36.6	0.1	49.3	30.6	6.3	86.0	29.3	0.4	49.9	21.4	0.3
LOS	D	D	A	D	C	A	F	C	A	D	C	A
Approach Delay		30.7			33.1			30.0			23.0	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	233	72	267	454	117	184	1400	309	99	700	68
Future Volume (veh/h)	38	233	72	267	454	117	184	1400	309	99	700	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	42	256	0	293	499	106	202	1538	0	109	769	64
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	695		373	768	321	267	2123		182	1991	555
Arrive On Green	0.04	0.13	0.00	0.12	0.22	0.22	0.08	0.40	0.00	0.06	0.37	0.37
Sat Flow, veh/h	3000	5316	1502	3000	3544	1482	3188	5316	1502	3092	5316	1482
Grp Volume(v), veh/h	42	256	0	293	499	106	202	1538	0	109	769	64
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1482	1594	1772	1502	1546	1772	1482
Q Serve(g_s), s	1.0	3.4	0.0	7.2	9.8	4.6	4.7	18.7	0.0	2.6	8.1	2.2
Cycle Q Clear(g_c), s	1.0	3.4	0.0	7.2	9.8	4.6	4.7	18.7	0.0	2.6	8.1	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	695		373	768	321	267	2123		182	1991	555
V/C Ratio(X)	0.36	0.37		0.78	0.65	0.33	0.76	0.72		0.60	0.39	0.12
Avail Cap(c_a), veh/h	196	2294		604	2012	841	267	2802		380	3011	839
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	30.3	0.0	32.5	27.3	25.3	34.3	19.4	0.0	35.1	17.5	15.6
Incr Delay (d2), s/veh	0.7	0.3	0.0	1.4	0.9	0.6	10.6	0.6	0.0	1.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.3	0.0	2.5	3.8	1.5	2.1	6.4	0.0	0.9	2.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	30.7	0.0	33.9	28.2	25.9	44.9	20.1	0.0	36.3	17.6	15.7
LnGrp LOS	D	C		C	C	C	D	C		D	B	B
Approach Vol, veh/h		298			898			1740			942	
Approach Delay, s/veh		31.5			29.8			22.9			19.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	37.0	14.1	16.2	11.0	35.1	7.6	22.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	9.4	40.3	15.4	33.0	6.4	43.3	5.0	43.4
Max Q Clear Time (g_c+I1), s	4.6	20.7	9.2	5.4	6.7	10.1	3.0	11.8
Green Ext Time (p_c), s	0.1	9.8	0.3	1.5	0.0	5.3	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

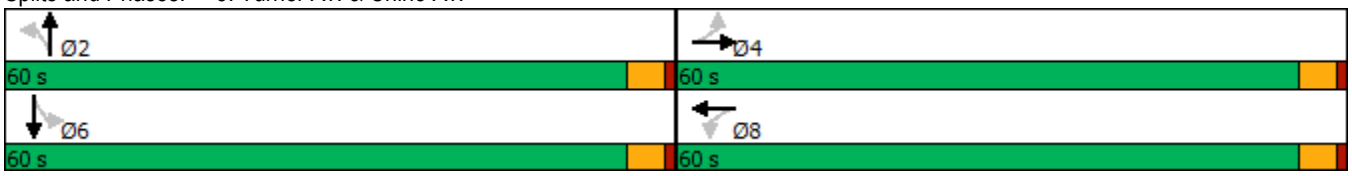
Notes

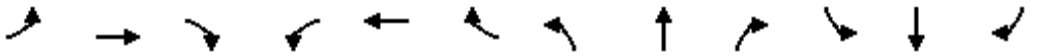
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	107	154	44	203	142	448	84	209
Future Volume (vph)	107	154	44	203	142	448	84	209
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	22.6	22.6	22.6	22.6	23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.41	0.41	0.41	0.41
v/c Ratio	0.46	0.26	0.16	0.34	0.54	0.49	0.49	0.29
Control Delay	19.6	7.7	14.0	8.2	21.8	14.5	23.5	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	7.7	14.0	8.2	21.8	14.5	23.5	10.9
LOS	B	A	B	A	C	B	C	B
Approach Delay		11.2		8.9		16.1		13.8
Approach LOS		B		A		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 56.9	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 52.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Turner Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	154	107	44	203	134	142	448	46	84	209	82
Future Volume (veh/h)	107	154	107	44	203	134	142	448	46	84	209	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	145	208	145	59	274	181	192	605	62	114	282	111
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	384	725	482	431	733	468	467	1310	134	356	1010	387
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	837	1936	1287	920	1958	1250	886	3072	314	687	2368	908
Grp Volume(v), veh/h	145	180	173	59	234	221	192	331	336	114	198	195
Grp Sat Flow(s),veh/h/ln	837	1683	1540	920	1683	1525	886	1683	1703	687	1683	1593
Q Serve(g_s), s	6.9	3.4	3.6	2.2	4.6	4.8	8.2	6.3	6.4	6.4	3.5	3.6
Cycle Q Clear(g_c), s	11.7	3.4	3.6	5.8	4.6	4.8	11.8	6.3	6.4	12.8	3.5	3.6
Prop In Lane	1.00		0.84	1.00		0.82	1.00		0.18	1.00		0.57
Lane Grp Cap(c), veh/h	384	630	576	431	630	571	467	718	726	356	718	679
V/C Ratio(X)	0.38	0.28	0.30	0.14	0.37	0.39	0.41	0.46	0.46	0.32	0.28	0.29
Avail Cap(c_a), veh/h	1099	2069	1893	1217	2069	1874	1178	2069	2092	907	2069	1958
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	9.9	10.0	12.0	10.3	10.3	12.3	9.2	9.3	13.8	8.4	8.5
Incr Delay (d2), s/veh	0.6	0.2	0.3	0.1	0.4	0.4	0.6	0.5	0.5	0.5	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.9	0.9	0.4	1.3	1.2	1.2	1.6	1.6	0.8	0.9	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	10.1	10.3	12.1	10.6	10.8	12.9	9.7	9.7	14.3	8.6	8.7
LnGrp LOS	B	B	B	B	B	B	B	A	A	B	A	A
Approach Vol, veh/h		498			514			859			507	
Approach Delay, s/veh		11.7			10.9			10.4			9.9	
Approach LOS		B			B			B			A	

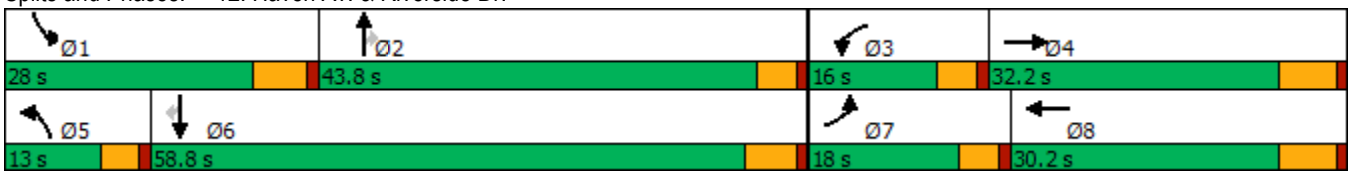
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.8		21.4		23.8		21.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		55.5		55.5		55.5		55.5				
Max Q Clear Time (g_c+I1), s		13.8		13.7		14.8		7.8				
Green Ext Time (p_c), s		5.5		3.2		3.4		3.2				

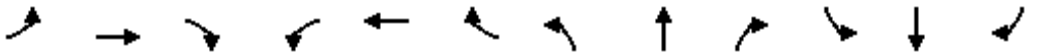
Intersection Summary												
HCM 6th Ctrl Delay			10.7									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	388	575	202	414	22	481	201	289	326	281
Future Volume (vph)	388	575	202	414	22	481	201	289	326	281
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	9.5	23.7	23.7	15.8	24.8	24.8
Total Split (s)	18.0	32.2	16.0	30.2	13.0	43.8	43.8	28.0	58.8	58.8
Total Split (%)	15.0%	26.8%	13.3%	25.2%	10.8%	36.5%	36.5%	23.3%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.5	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.5	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	13.5	25.5	10.3	22.4	6.9	21.4	21.4	22.3	43.7	43.7
Actuated g/C Ratio	0.13	0.25	0.10	0.22	0.07	0.21	0.21	0.22	0.43	0.43
v/c Ratio	0.98	0.73	0.67	0.82	0.21	0.68	0.45	0.88	0.23	0.38
Control Delay	84.3	40.9	55.3	44.0	51.5	41.7	7.7	66.3	19.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.3	40.9	55.3	44.0	51.5	41.7	7.7	66.3	19.8	4.1
LOS	F	D	E	D	D	D	A	E	B	A
Approach Delay		57.8		46.9		32.3			29.8	
Approach LOS		E		D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 42.6	Intersection LOS: D
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	388	575	33	202	414	195	22	481	201	289	326	281
Future Volume (veh/h)	388	575	33	202	414	195	22	481	201	289	326	281
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	413	612	14	215	440	63	23	512	86	307	347	123
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	922	21	279	639	91	38	694	289	334	1401	588
Arrive On Green	0.21	0.40	0.40	0.13	0.32	0.32	0.04	0.29	0.29	0.31	0.59	0.59
Sat Flow, veh/h	3188	3446	79	3188	3015	428	1594	3544	1479	1594	3544	1488
Grp Volume(v), veh/h	413	314	312	215	257	246	23	512	86	307	347	123
Grp Sat Flow(s),veh/h/ln	1594	1772	1753	1594	1772	1672	1594	1772	1479	1594	1772	1488
Q Serve(g_s), s	11.8	13.5	13.6	6.1	11.8	12.0	1.3	12.2	4.2	17.4	4.4	3.6
Cycle Q Clear(g_c), s	11.8	13.5	13.6	6.1	11.8	12.0	1.3	12.2	4.2	17.4	4.4	3.6
Prop In Lane	1.00		0.04	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	456	474	469	279	375	354	38	694	289	334	1401	588
V/C Ratio(X)	0.90	0.66	0.66	0.77	0.68	0.69	0.60	0.74	0.30	0.92	0.25	0.21
Avail Cap(c_a), veh/h	456	492	487	388	454	429	145	1481	618	378	2007	843
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	24.6	24.6	39.7	29.2	29.3	44.7	30.9	28.1	31.3	12.4	12.2
Incr Delay (d2), s/veh	20.8	3.2	3.2	3.8	3.3	3.7	14.1	1.6	0.6	25.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	5.0	5.0	2.3	4.6	4.4	0.7	4.8	1.4	7.8	1.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	27.7	27.8	43.5	32.4	33.0	58.8	32.4	28.6	56.5	12.5	12.4
LnGrp LOS	E	C	C	D	C	C	E	C	C	E	B	B
Approach Vol, veh/h		1039			718			621			777	
Approach Delay, s/veh		39.4			35.9			32.9			29.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.4	24.1	12.8	31.2	6.8	42.8	18.0	26.0
Change Period (Y+Rc), s	5.8	* 5.8	4.6	6.2	4.5	5.8	4.6	6.2
Max Green Setting (Gmax), s	22.2	* 39	11.4	26.0	8.5	53.0	13.4	24.0
Max Q Clear Time (g_c+I1), s	19.4	14.2	8.1	15.6	3.3	6.4	13.8	14.0
Green Ext Time (p_c), s	0.3	3.9	0.1	2.4	0.0	2.6	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	35.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT	Ø1
Lane Configurations									
Traffic Volume (vph)	152	62	23	50	158	569	25	357	
Future Volume (vph)	152	62	23	50	158	569	25	357	
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	NA	
Protected Phases	7	4	3	8	5	2		6	1
Permitted Phases							2		
Detector Phase	7	4	3	8	5	2	2	6	
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	22.8	21.7	9.6
Total Split (s)	15.0	23.8	14.0	22.8	17.0	72.6	72.6	65.2	9.6
Total Split (%)	12.5%	19.8%	11.7%	19.0%	14.2%	60.5%	60.5%	54.3%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	None
Act Effct Green (s)	11.1	15.8	5.8	11.5	13.0	32.3	32.3	15.7	
Actuated g/C Ratio	0.17	0.25	0.09	0.18	0.20	0.51	0.51	0.25	
v/c Ratio	0.59	0.32	0.16	0.16	0.52	0.34	0.03	0.62	
Control Delay	40.2	18.3	34.4	27.1	34.7	11.4	0.1	23.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.2	18.3	34.4	27.1	34.7	11.4	0.1	23.1	
LOS	D	B	C	C	C	B	A	C	
Approach Delay		29.8		29.4		15.9		23.1	
Approach LOS		C		C		B		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 63.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	62	75	23	50	0	158	569	25	0	357	135
Future Volume (veh/h)	152	62	75	23	50	0	158	569	25	0	357	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	162	67	27	25	54	0	168	605	-207	0	380	38
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	336	136	52	319	0	205	1445	646	3	602	60
Arrive On Green	0.19	0.40	0.40	0.04	0.26	0.00	0.19	0.61	0.00	0.00	0.29	0.29
Sat Flow, veh/h	1594	1268	511	1781	1870	0	1594	3544	1585	1781	3092	308
Grp Volume(v), veh/h	162	0	94	25	54	0	168	605	-207	0	206	212
Grp Sat Flow(s),veh/h/ln	1594	0	1778	1781	1870	0	1594	1772	1585	1781	1683	1717
Q Serve(g_s), s	5.3	0.0	1.9	0.7	1.2	0.0	5.5	4.8	0.0	0.0	5.8	5.8
Cycle Q Clear(g_c), s	5.3	0.0	1.9	0.7	1.2	0.0	5.5	4.8	0.0	0.0	5.8	5.8
Prop In Lane	1.00		0.29	1.00		0.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	197	0	472	52	319	0	205	1445	646	3	328	334
V/C Ratio(X)	0.82	0.00	0.20	0.49	0.17	0.00	0.82	0.42	-0.32	0.00	0.63	0.63
Avail Cap(c_a), veh/h	305	0	602	308	585	0	363	4354	1947	164	1873	1910
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	12.6	25.6	17.2	0.0	21.3	7.2	0.0	0.0	17.5	17.6
Incr Delay (d2), s/veh	5.4	0.0	0.2	2.6	0.2	0.0	3.1	0.2	0.0	0.0	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.7	0.3	0.5	0.0	1.8	1.2	0.0	0.0	2.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	0.0	12.8	28.2	17.5	0.0	24.5	7.4	0.0	0.0	19.5	19.6
LnGrp LOS	C	A	B	C	B	A	C	A	A	A	B	B
Approach Vol, veh/h		256			79			566			418	
Approach Delay, s/veh		21.8			20.9			15.2			19.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	28.0	6.2	20.2	11.6	16.4	11.3	15.1
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	66.8	9.4	* 18	12.4	* 61	10.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	6.8	2.7	3.9	7.5	7.8	7.3	3.2
Green Ext Time (p_c), s	0.0	4.2	0.0	0.3	0.1	2.8	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

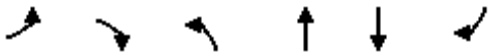
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	81	118	136	577	366
Future Volume (vph)	81	118	136	577	366
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	27.8	27.8	27.3	92.2	64.9
Total Split (%)	23.2%	23.2%	22.8%	76.8%	54.1%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.2	12.2	9.7	26.9	15.2
Actuated g/C Ratio	0.24	0.24	0.19	0.52	0.30
v/c Ratio	0.23	0.29	0.49	0.36	0.44
Control Delay	20.2	6.5	27.6	7.7	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	6.5	27.6	7.7	17.3
LOS	C	A	C	A	B
Approach Delay	12.1			11.5	17.3
Approach LOS	B			B	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 51.4	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 43.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	81	118	136	577	366	58
Future Volume (veh/h)	81	118	136	577	366	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	88	74	148	627	398	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	337	318	185	1655	773	116
Arrive On Green	0.21	0.21	0.12	0.49	0.26	0.26
Sat Flow, veh/h	1594	1502	1594	3455	3001	448
Grp Volume(v), veh/h	88	74	148	627	234	224
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1683	1772	1678
Q Serve(g_s), s	1.8	1.6	3.5	4.5	4.4	4.5
Cycle Q Clear(g_c), s	1.8	1.6	3.5	4.5	4.4	4.5
Prop In Lane	1.00	1.00	1.00			0.27
Lane Grp Cap(c), veh/h	337	318	185	1655	457	432
V/C Ratio(X)	0.26	0.23	0.80	0.38	0.51	0.52
Avail Cap(c_a), veh/h	897	845	925	7438	2678	2535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	12.8	16.8	6.2	12.4	12.4
Incr Delay (d2), s/veh	0.4	0.4	3.0	0.1	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.1	0.8	1.3	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.3	13.2	19.8	6.4	13.3	13.4
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	162			775	458	
Approach Delay, s/veh	13.2			8.9	13.4	
Approach LOS	B			A	B	

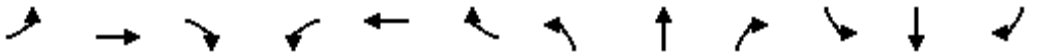
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		25.0		14.1	9.2	15.9
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	22.7	59.1
Max Q Clear Time (g_c+I1), s		6.5		3.8	5.5	6.5
Green Ext Time (p_c), s		4.4		0.4	0.2	2.6

Intersection Summary		
HCM 6th Ctrl Delay		10.9
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	198	665	19	82	660	190	40	329	125	240	216	116
Future Volume (vph)	198	665	19	82	660	190	40	329	125	240	216	116
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	9.6	9.6	34.5	34.5	9.6	47.8	9.6	9.6	45.8	45.8
Total Split (s)	13.0	41.3	12.5	9.7	38.0	38.0	12.5	49.0	9.7	20.0	56.5	56.5
Total Split (%)	10.8%	34.4%	10.4%	8.1%	31.7%	31.7%	10.4%	40.8%	8.1%	16.7%	47.1%	47.1%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.5	5.5	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	4.6	6.5	6.5	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	8.9	19.7	28.1	5.4	15.9	15.9	6.6	16.5	23.2	10.7	25.5	25.5
Actuated g/C Ratio	0.12	0.26	0.38	0.07	0.21	0.21	0.09	0.22	0.31	0.14	0.34	0.34
v/c Ratio	0.56	0.51	0.03	0.41	0.47	0.43	0.31	0.46	0.25	0.57	0.19	0.21
Control Delay	42.2	26.0	0.1	45.5	27.7	7.7	44.5	27.0	6.1	38.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	26.0	0.1	45.5	27.7	7.7	44.5	27.0	6.1	38.2	19.3	5.0
LOS	D	C	A	D	C	A	D	C	A	D	B	A
Approach Delay		29.1			25.2			23.1			24.3	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.8	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	665	19	82	660	190	40	329	125	240	216	116
Future Volume (veh/h)	198	665	19	82	660	190	40	329	125	240	216	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	213	715	9	88	710	-468	43	354	69	258	232	-79
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	1257	420	198	1450	307	69	718	403	371	977	414
Arrive On Green	0.10	0.24	0.24	0.07	0.20	0.00	0.04	0.20	0.20	0.12	0.28	0.00
Sat Flow, veh/h	3188	5316	1500	3000	7088	1502	1594	3544	1499	3188	3544	1502
Grp Volume(v), veh/h	213	715	9	88	710	-468	43	354	69	258	232	-79
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1772	1499	1594	1772	1502
Q Serve(g_s), s	3.7	6.7	0.2	1.6	5.0	0.0	1.5	5.0	2.0	4.4	2.9	0.0
Cycle Q Clear(g_c), s	3.7	6.7	0.2	1.6	5.0	0.0	1.5	5.0	2.0	4.4	2.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	312	1257	420	198	1450	307	69	718	403	371	977	414
V/C Ratio(X)	0.68	0.57	0.02	0.44	0.49	-1.52	0.62	0.49	0.17	0.70	0.24	-0.19
Avail Cap(c_a), veh/h	471	3285	992	269	3930	833	222	2695	1239	864	3163	1340
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.8	19.1	14.8	25.5	20.0	0.0	26.7	20.1	15.9	24.1	15.9	0.0
Incr Delay (d2), s/veh	1.0	0.4	0.0	0.6	0.3	0.0	3.4	0.5	0.2	0.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.3	0.1	0.5	1.7	0.0	0.6	1.8	0.6	1.5	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	19.5	14.8	26.1	20.2	0.0	30.1	20.6	16.1	25.0	16.1	0.0
LnGrp LOS	C	B	B	C	C	A	C	C	B	C	B	A
Approach Vol, veh/h		937			330			466			411	
Approach Delay, s/veh		20.9			50.5			20.8			24.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	17.3	8.4	19.9	7.1	21.5	10.2	18.1
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.2	5.1	* 35	7.9	50.7	8.4	31.5
Max Q Clear Time (g_c+I1), s	6.4	7.0	3.6	8.7	3.5	4.9	5.7	7.0
Green Ext Time (p_c), s	0.3	2.4	0.0	4.6	0.0	1.4	0.1	4.3

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

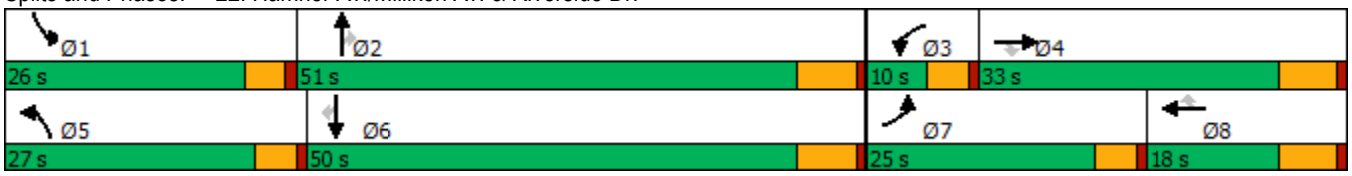
Notes

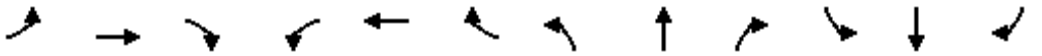
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	136	184	31	128	268	181	895	64	269	351	165
Future Volume (vph)	212	136	184	31	128	268	181	895	64	269	351	165
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	25.0	33.0	33.0	10.0	18.0	18.0	27.0	51.0	51.0	26.0	50.0	50.0
Total Split (%)	20.8%	27.5%	27.5%	8.3%	15.0%	15.0%	22.5%	42.5%	42.5%	21.7%	41.7%	41.7%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.1	23.1	23.1	5.4	11.6	11.6	11.1	34.8	34.8	14.1	37.9	37.9
Actuated g/C Ratio	0.13	0.24	0.24	0.06	0.12	0.12	0.12	0.37	0.37	0.15	0.40	0.40
v/c Ratio	0.60	0.36	0.40	0.40	0.68	0.68	0.57	0.79	0.11	0.66	0.29	0.27
Control Delay	47.7	37.4	7.9	62.3	60.6	13.9	48.1	32.6	0.4	46.9	20.2	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	37.4	7.9	62.3	60.6	13.9	48.1	32.6	0.4	46.9	20.2	4.0
LOS	D	D	A	E	E	B	D	C	A	D	C	A
Approach Delay		31.3			31.4			33.2			25.9	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	136	184	31	128	268	181	895	64	269	351	165
Future Volume (veh/h)	212	136	184	31	128	268	181	895	64	269	351	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	244	156	158	36	147	84	208	1029	63	309	403	46
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	332	353	300	56	231	196	294	1271	539	400	1389	588
Arrive On Green	0.10	0.20	0.20	0.03	0.13	0.13	0.09	0.54	0.36	0.13	0.59	0.39
Sat Flow, veh/h	3188	1772	1502	1594	1772	1502	3188	3544	1502	3188	3544	1502
Grp Volume(v), veh/h	244	156	158	36	147	84	208	1029	63	309	403	46
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1594	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	5.7	5.9	7.2	1.7	6.0	4.0	4.9	18.2	2.2	7.2	4.3	1.5
Cycle Q Clear(g_c), s	5.7	5.9	7.2	1.7	6.0	4.0	4.9	18.2	2.2	7.2	4.3	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	332	353	300	56	231	196	294	1271	539	400	1389	588
V/C Ratio(X)	0.74	0.44	0.53	0.65	0.64	0.43	0.71	0.81	0.12	0.77	0.29	0.08
Avail Cap(c_a), veh/h	848	619	525	112	273	231	931	2069	877	889	2023	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	27.0	27.5	36.6	31.6	30.7	33.8	15.6	16.5	32.5	10.5	14.6
Incr Delay (d2), s/veh	1.2	0.9	1.4	4.6	3.7	1.5	1.2	1.3	0.1	1.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.4	2.5	0.7	2.6	1.4	1.8	4.9	0.7	2.6	1.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	27.8	28.9	41.2	35.3	32.2	35.0	16.9	16.6	33.7	10.6	14.7
LnGrp LOS	C	C	C	D	D	C	D	B	B	C	B	B
Approach Vol, veh/h		558			267			1300			758	
Approach Delay, s/veh		31.1			35.1			19.8			20.3	
Approach LOS		C			D			B			C	

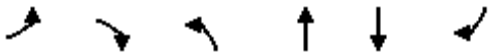
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	33.7	7.3	21.5	11.7	36.3	12.6	16.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	44.8	5.4	26.8	22.4	43.8	20.4	11.8
Max Q Clear Time (g_c+I1), s	9.2	20.2	3.7	9.2	6.9	6.3	7.7	8.0
Green Ext Time (p_c), s	0.4	7.3	0.0	1.1	0.3	2.6	0.3	0.3

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Lane Group	EBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	5	1155	517
Future Volume (vph)	5	1155	517
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5
Total Split (s)	35.0	85.0	85.0
Total Split (%)	29.2%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Min	Min
Act Effct Green (s)	7.6	39.2	39.2
Actuated g/C Ratio	0.18	0.93	0.93
v/c Ratio	0.03	0.38	0.18
Control Delay	16.6	2.5	1.8
Queue Delay	0.0	0.0	0.0
Total Delay	16.6	2.5	1.8
LOS	B	A	A
Approach Delay	16.6	2.5	1.8
Approach LOS	B	A	A

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 42.2			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 2.3		Intersection LOS: A	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	2	0	1155	517	3
Future Volume (veh/h)	5	2	0	1155	517	3
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	6	2	0	1312	588	3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	14	5	0	2518	2440	12
Arrive On Green	0.01	0.01	0.00	0.67	0.67	0.67
Sat Flow, veh/h	1162	387	0	3741	3719	18
Grp Volume(v), veh/h	9	0	0	1312	288	303
Grp Sat Flow(s),veh/h/ln	1743	0	0	1870	1777	1867
Q Serve(g_s), s	0.1	0.0	0.0	5.0	1.8	1.8
Cycle Q Clear(g_c), s	0.1	0.0	0.0	5.0	1.8	1.8
Prop In Lane	0.67	0.22	0.00			0.01
Lane Grp Cap(c), veh/h	21	0	0	2518	1196	1257
V/C Ratio(X)	0.43	0.00	0.00	0.52	0.24	0.24
Avail Cap(c_a), veh/h	1860	0	0	10536	5004	5258
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	0.0	2.4	1.8	1.8
Incr Delay (d2), s/veh	13.2	0.0	0.0	0.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.2	0.0	0.0	2.5	1.9	1.9
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	9			1312	591	
Approach Delay, s/veh	27.2			2.5	1.9	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		23.7		4.8		23.7
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		80.5		30.5		80.5
Max Q Clear Time (g_c+I1), s		7.0		2.1		3.8
Green Ext Time (p_c), s		12.2		0.0		3.3

Intersection Summary	
HCM 6th Ctrl Delay	2.5
HCM 6th LOS	A

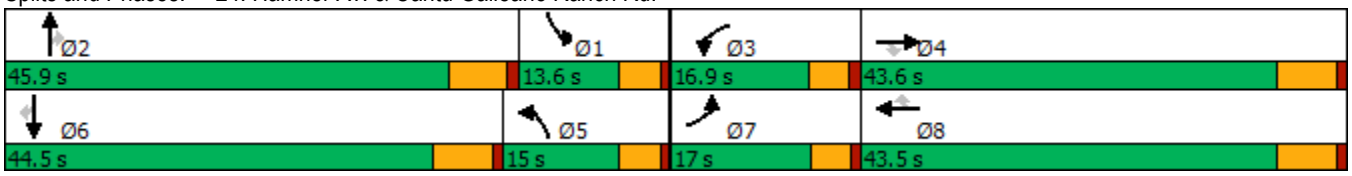
Notes

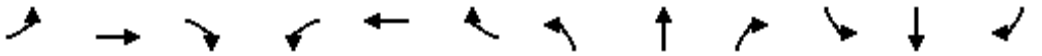
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	805	79	265	1131	269	173	675	342	187	230	93
Future Volume (vph)	156	805	79	265	1131	269	173	675	342	187	230	93
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	43.5	43.5	9.6	43.5	43.5	9.6	43.2	43.2	9.6	43.2	43.2
Total Split (s)	17.0	43.6	43.6	16.9	43.5	43.5	15.0	45.9	45.9	13.6	44.5	44.5
Total Split (%)	14.2%	36.3%	36.3%	14.1%	36.3%	36.3%	12.5%	38.3%	38.3%	11.3%	37.1%	37.1%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.7	22.4	22.4	10.8	24.6	24.6	16.9	20.4	20.4	8.8	12.3	12.3
Actuated g/C Ratio	0.10	0.26	0.26	0.13	0.29	0.29	0.20	0.24	0.24	0.10	0.14	0.14
v/c Ratio	0.45	0.43	0.16	0.61	0.55	0.45	0.26	0.53	0.62	0.54	0.22	0.18
Control Delay	43.9	27.2	3.1	44.9	27.3	8.7	35.1	30.1	14.6	46.0	32.8	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	27.2	3.1	44.9	27.3	8.7	35.1	30.1	14.6	46.0	32.8	5.1
LOS	D	C	A	D	C	A	D	C	B	D	C	A
Approach Delay		27.9			27.1			26.4			32.6	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 85.3	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 27.7	Intersection LOS: C
Intersection Capacity Utilization 57.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	805	79	265	1131	269	173	675	342	187	230	93
Future Volume (veh/h)	156	805	79	265	1131	269	173	675	342	187	230	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	839	81	276	1178	279	180	703	44	195	240	-111
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1989	421	384	2253	477	765	1203	340	294	614	260
Arrive On Green	0.07	0.27	0.27	0.11	0.30	0.30	0.21	0.21	0.21	0.08	0.08	0.00
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	162	839	81	276	1178	279	180	703	44	195	240	-111
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.9	6.2	1.3	5.0	8.7	6.4	2.8	7.5	1.0	3.5	2.0	0.0
Cycle Q Clear(g_c), s	2.9	6.2	1.3	5.0	8.7	6.4	2.8	7.5	1.0	3.5	2.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1989	421	384	2253	477	765	1203	340	294	614	260
V/C Ratio(X)	0.63	0.42	0.19	0.72	0.52	0.58	0.24	0.58	0.13	0.66	0.39	-0.43
Avail Cap(c_a), veh/h	665	4176	885	659	4165	882	765	3351	947	482	4311	1827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.9	20.2	4.4	28.7	19.3	8.1	21.6	23.5	9.1	29.6	28.9	0.0
Incr Delay (d2), s/veh	0.9	0.1	0.2	1.0	0.2	1.1	0.1	0.5	0.2	1.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.3	0.8	1.9	3.1	2.9	1.0	2.9	0.5	1.4	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	20.3	4.6	29.6	19.5	9.3	21.6	23.9	9.2	30.6	29.3	0.0
LnGrp LOS	C	C	A	C	B	A	C	C	A	C	C	A
Approach Vol, veh/h		1082			1733			927			324	
Approach Delay, s/veh		20.7			19.4			22.8			40.1	
Approach LOS		C			B			C			D	

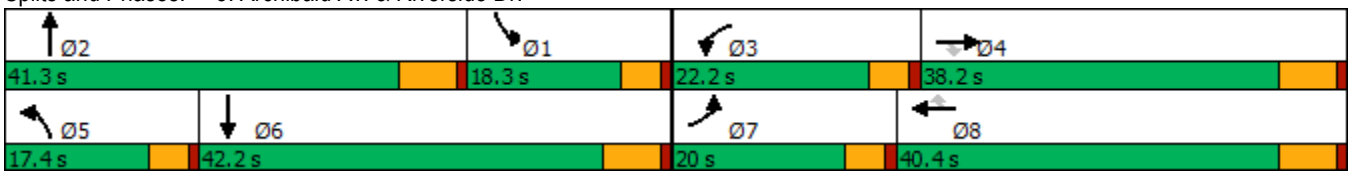
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	20.4	11.8	24.2	18.9	11.7	9.4	26.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	9.0	39.7	12.3	37.1	10.4	38.3	12.4	37.0
Max Q Clear Time (g_c+I1), s	5.5	9.5	7.0	8.2	4.8	4.0	4.9	10.7
Green Ext Time (p_c), s	0.1	4.8	0.2	5.7	0.1	1.4	0.1	9.3

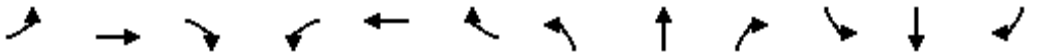
Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	183	584	308	222	430	202	255	1044	322	1035
Future Volume (vph)	183	584	308	222	430	202	255	1044	322	1035
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	20.0	38.2	38.2	22.2	40.4	40.4	17.4	41.3	18.3	42.2
Total Split (%)	16.7%	31.8%	31.8%	18.5%	33.7%	33.7%	14.5%	34.4%	15.3%	35.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.0	26.5	26.5	17.7	29.1	29.1	12.1	33.4	13.9	35.1
Actuated g/C Ratio	0.13	0.23	0.23	0.16	0.26	0.26	0.11	0.30	0.12	0.31
v/c Ratio	0.89	0.76	0.56	0.92	0.51	0.39	0.79	0.86	0.88	0.86
Control Delay	89.1	47.4	10.4	88.5	38.3	6.7	68.1	44.6	73.9	43.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.1	47.4	10.4	88.5	38.3	6.7	68.1	44.6	73.9	43.4
LOS	F	D	B	F	D	A	E	D	E	D
Approach Delay		43.9			43.9			48.8		49.6
Approach LOS		D			D			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 47.1	Intersection LOS: D
Intersection Capacity Utilization 86.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	584	308	222	430	202	255	1044	141	322	1035	216
Future Volume (veh/h)	183	584	308	222	430	202	255	1044	141	322	1035	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	187	596	130	227	439	104	260	1065	73	329	1056	118
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	770	335	252	854	379	314	1279	88	380	1381	154
Arrive On Green	0.13	0.23	0.23	0.16	0.25	0.25	0.10	0.28	0.28	0.12	0.31	0.31
Sat Flow, veh/h	1594	3367	1463	1594	3367	1495	3092	4617	316	3092	4411	492
Grp Volume(v), veh/h	187	596	130	227	439	104	260	743	395	329	772	402
Grp Sat Flow(s),veh/h/ln	1594	1683	1463	1594	1683	1495	1546	1612	1709	1546	1612	1678
Q Serve(g_s), s	12.5	18.1	8.2	15.2	12.2	4.1	9.0	23.6	23.6	11.4	23.5	23.6
Cycle Q Clear(g_c), s	12.5	18.1	8.2	15.2	12.2	4.1	9.0	23.6	23.6	11.4	23.5	23.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.29
Lane Grp Cap(c), veh/h	212	770	335	252	854	379	314	893	473	380	1009	525
V/C Ratio(X)	0.88	0.77	0.39	0.90	0.51	0.27	0.83	0.83	0.83	0.86	0.76	0.77
Avail Cap(c_a), veh/h	225	989	430	258	1058	469	364	1040	551	389	1066	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	39.3	35.5	45.0	34.9	15.2	48.0	37.0	37.0	46.9	33.8	33.8
Incr Delay (d2), s/veh	28.1	2.9	0.7	30.2	0.5	0.4	11.4	5.2	9.4	17.0	3.2	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	7.4	0.1	7.8	4.8	2.1	3.8	9.4	10.5	5.1	9.1	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	42.3	36.3	75.2	35.4	15.6	59.3	42.2	46.4	63.8	37.0	39.8
LnGrp LOS	E	D	D	E	D	B	E	D	D	E	D	D
Approach Vol, veh/h		913			770			1398			1503	
Approach Delay, s/veh		48.0			44.4			46.6			43.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	36.4	21.8	31.1	15.7	40.3	19.1	33.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	13.7	* 35	17.6	32.0	12.8	36.0	15.4	34.2
Max Q Clear Time (g_c+I1), s	13.4	25.6	17.2	20.1	11.0	25.6	14.5	14.2
Green Ext Time (p_c), s	0.0	4.5	0.0	3.1	0.1	5.0	0.0	2.7

Intersection Summary	
HCM 6th Ctrl Delay	45.5
HCM 6th LOS	D

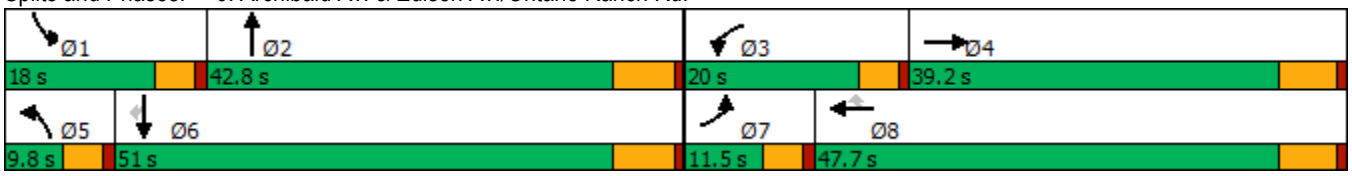
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	697	293	268	299	116	105	1047	323	162	1111	66
Future Volume (vph)	105	697	293	268	299	116	105	1047	323	162	1111	66
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	11.5	39.2		20.0	47.7	47.7	9.8	42.8		18.0	51.0	51.0
Total Split (%)	9.6%	32.7%		16.7%	39.8%	39.8%	8.2%	35.7%		15.0%	42.5%	42.5%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.8	20.7	93.7	13.0	26.9	26.9	5.4	27.5	93.7	9.8	31.9	31.9
Actuated g/C Ratio	0.07	0.22	1.00	0.14	0.29	0.29	0.06	0.29	1.00	0.10	0.34	0.34
v/c Ratio	0.51	0.63	0.21	0.68	0.31	0.23	0.61	0.71	0.23	0.53	0.65	0.11
Control Delay	55.8	36.2	0.3	50.2	27.4	2.9	63.0	33.3	0.3	49.3	28.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	36.2	0.3	50.2	27.4	2.9	63.0	33.3	0.3	49.3	28.3	0.4
LOS	E	D	A	D	C	A	E	C	A	D	C	A
Approach Delay		28.5			32.2			28.2			29.5	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	697	293	268	299	116	105	1047	323	162	1111	66
Future Volume (veh/h)	105	697	293	268	299	116	105	1047	323	162	1111	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	111	734	0	282	315	80	111	1102	0	171	1169	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	1129		361	971	411	187	1615		246	1725	487
Arrive On Green	0.06	0.21	0.00	0.12	0.27	0.27	0.06	0.30	0.00	0.08	0.32	0.32
Sat Flow, veh/h	3000	5316	1502	3000	3544	1500	3188	5316	1502	3092	5316	1502
Grp Volume(v), veh/h	111	734	0	282	315	80	111	1102	0	171	1169	50
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1546	1772	1502
Q Serve(g_s), s	2.8	9.7	0.0	7.0	5.5	3.2	2.6	14.1	0.0	4.2	14.7	1.8
Cycle Q Clear(g_c), s	2.8	9.7	0.0	7.0	5.5	3.2	2.6	14.1	0.0	4.2	14.7	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	1129		361	971	411	187	1615		246	1725	487
V/C Ratio(X)	0.63	0.65		0.78	0.32	0.19	0.59	0.68		0.69	0.68	0.10
Avail Cap(c_a), veh/h	268	2273		599	1906	807	215	2501		537	3066	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	27.8	0.0	32.9	22.3	21.5	35.4	23.6	0.0	34.6	22.6	18.2
Incr Delay (d2), s/veh	1.4	0.6	0.0	1.4	0.2	0.2	1.5	0.5	0.0	1.3	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.8	0.0	2.4	2.1	1.0	1.0	5.1	0.0	1.5	5.3	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.9	28.4	0.0	34.3	22.5	21.7	36.9	24.1	0.0	35.9	23.0	18.3
LnGrp LOS	D	C		C	C	C	D	C		D	C	B
Approach Vol, veh/h		845			677			1213			1390	
Approach Delay, s/veh		29.5			27.3			25.3			24.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	29.9	13.9	22.6	9.1	31.5	9.1	27.3
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	13.4	36.3	15.4	33.0	5.2	44.5	6.9	41.5
Max Q Clear Time (g_c+I1), s	6.2	16.1	9.0	11.7	4.6	16.7	4.8	7.5
Green Ext Time (p_c), s	0.1	6.8	0.3	4.5	0.0	8.4	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

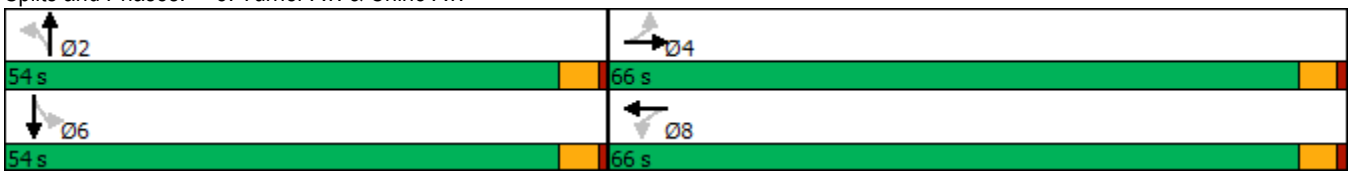
Notes

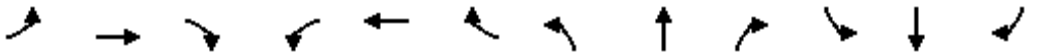
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	103	191	41	140	22	139	63	217
Future Volume (vph)	103	191	41	140	22	139	63	217
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	66.0	66.0	66.0	66.0	54.0	54.0	54.0	54.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	10.0	10.0	10.0	10.0	9.2	9.2	9.2	9.2
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.32	0.32	0.32	0.32
v/c Ratio	0.32	0.24	0.13	0.21	0.08	0.19	0.20	0.27
Control Delay	10.5	6.3	8.3	5.2	8.4	6.7	9.5	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	6.3	8.3	5.2	8.4	6.7	9.5	7.7
LOS	B	A	A	A	A	A	A	A
Approach Delay		7.5		5.7		6.8		8.0
Approach LOS		A		A		A		A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 28.8	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 41.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Turner Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	191	59	41	140	78	22	139	40	63	217	47
Future Volume (veh/h)	103	191	59	41	140	78	22	139	40	63	217	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	112	208	64	45	152	85	24	151	43	68	236	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	582	817	245	567	680	361	530	752	206	567	804	171
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1023	2553	765	991	2125	1127	977	2581	706	1044	2763	586
Grp Volume(v), veh/h	112	135	137	45	119	118	24	96	98	68	142	145
Grp Sat Flow(s),veh/h/ln	1023	1683	1634	991	1683	1569	977	1683	1604	1044	1683	1666
Q Serve(g_s), s	2.1	1.4	1.4	0.8	1.2	1.3	0.5	1.0	1.1	1.2	1.5	1.6
Cycle Q Clear(g_c), s	3.4	1.4	1.4	2.3	1.2	1.3	2.0	1.0	1.1	2.3	1.5	1.6
Prop In Lane	1.00		0.47	1.00		0.72	1.00		0.44	1.00		0.35
Lane Grp Cap(c), veh/h	582	539	523	567	539	502	530	490	467	567	490	485
V/C Ratio(X)	0.19	0.25	0.26	0.08	0.22	0.24	0.05	0.20	0.21	0.12	0.29	0.30
Avail Cap(c_a), veh/h	2972	4472	4342	2881	4472	4169	2335	3599	3430	2496	3599	3563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.0	5.8	5.8	6.7	5.8	5.8	7.2	6.2	6.2	7.1	6.4	6.4
Incr Delay (d2), s/veh	0.2	0.2	0.3	0.1	0.2	0.2	0.0	0.2	0.2	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.2	0.1	0.2	0.2	0.0	0.1	0.1	0.1	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	6.1	6.1	6.7	6.0	6.0	7.2	6.4	6.4	7.1	6.7	6.7
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		384			282			218			355	
Approach Delay, s/veh		6.4			6.1			6.5			6.8	
Approach LOS		A			A			A			A	

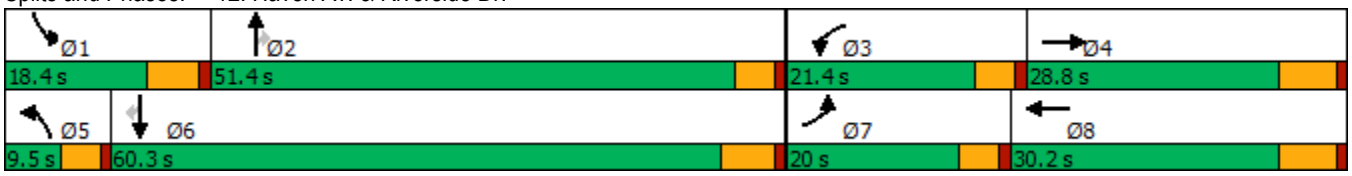
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.2		11.9		11.2		11.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		49.5		61.5		49.5		61.5				
Max Q Clear Time (g_c+I1), s		4.0		5.4		4.3		4.3				
Green Ext Time (p_c), s		1.2		2.1		1.9		1.6				

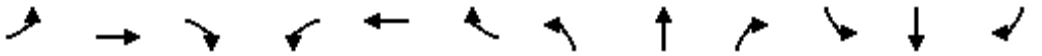
Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	349	396	157	392	31	470	149	135	536	399
Future Volume (vph)	349	396	157	392	31	470	149	135	536	399
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	9.5	23.7	23.7	15.8	24.8	24.8
Total Split (s)	20.0	28.8	21.4	30.2	9.5	51.4	51.4	18.4	60.3	60.3
Total Split (%)	16.7%	24.0%	17.8%	25.2%	7.9%	42.8%	42.8%	15.3%	50.3%	50.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.5	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.5	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.2	22.5	8.9	17.3	5.1	18.7	18.7	12.2	30.4	30.4
Actuated g/C Ratio	0.17	0.27	0.11	0.21	0.06	0.22	0.22	0.15	0.36	0.36
v/c Ratio	0.68	0.50	0.49	0.69	0.33	0.62	0.34	0.62	0.44	0.52
Control Delay	41.7	28.3	42.4	35.8	52.1	33.9	6.4	49.6	23.3	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	28.3	42.4	35.8	52.1	33.9	6.4	49.6	23.3	5.1
LOS	D	C	D	D	D	C	A	D	C	A
Approach Delay		34.2		37.4		28.5			19.9	
Approach LOS		C		D		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 84	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 28.8	Intersection LOS: C
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	396	51	157	392	87	31	470	149	135	536	399
Future Volume (veh/h)	349	396	51	157	392	87	31	470	149	135	536	399
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	364	412	11	164	408	29	32	490	82	141	558	190
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	454	856	23	247	601	43	53	734	311	229	1193	504
Arrive On Green	0.21	0.37	0.37	0.12	0.28	0.28	0.05	0.31	0.31	0.22	0.50	0.50
Sat Flow, veh/h	3188	3434	92	3188	3265	231	1594	3544	1502	1594	3544	1499
Grp Volume(v), veh/h	364	212	211	164	221	216	32	490	82	141	558	190
Grp Sat Flow(s),veh/h/ln	1594	1772	1753	1594	1772	1724	1594	1772	1502	1594	1772	1499
Q Serve(g_s), s	7.5	6.4	6.4	3.4	7.7	7.8	1.4	8.4	2.8	5.6	7.1	5.4
Cycle Q Clear(g_c), s	7.5	6.4	6.4	3.4	7.7	7.8	1.4	8.4	2.8	5.6	7.1	5.4
Prop In Lane	1.00		0.05	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	442	437	247	326	318	53	734	311	229	1193	504
V/C Ratio(X)	0.80	0.48	0.48	0.67	0.68	0.68	0.61	0.67	0.26	0.61	0.47	0.38
Avail Cap(c_a), veh/h	707	576	570	771	612	595	115	2382	1009	289	2780	1176
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	18.3	18.3	29.8	23.3	23.3	32.6	21.9	20.0	25.5	13.2	12.7
Incr Delay (d2), s/veh	1.7	0.8	0.8	1.2	2.4	2.6	10.7	1.1	0.4	2.7	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.2	2.2	1.2	2.8	2.8	0.7	3.1	0.9	2.0	2.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	19.1	19.2	31.0	25.7	25.9	43.2	22.9	20.4	28.2	13.5	13.2
LnGrp LOS	C	B	B	C	C	C	D	C	C	C	B	B
Approach Vol, veh/h		787			601			604			889	
Approach Delay, s/veh		23.3			27.2			23.7			15.7	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	20.2	10.0	23.5	6.8	29.2	14.5	19.0
Change Period (Y+Rc), s	5.8	* 5.8	4.6	6.2	4.5	5.8	4.6	6.2
Max Green Setting (Gmax), s	12.6	* 47	16.8	22.6	5.0	54.5	15.4	24.0
Max Q Clear Time (g_c+I1), s	7.6	10.4	5.4	8.4	3.4	9.1	9.5	9.8
Green Ext Time (p_c), s	0.1	3.9	0.2	1.8	0.0	4.5	0.4	1.9

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

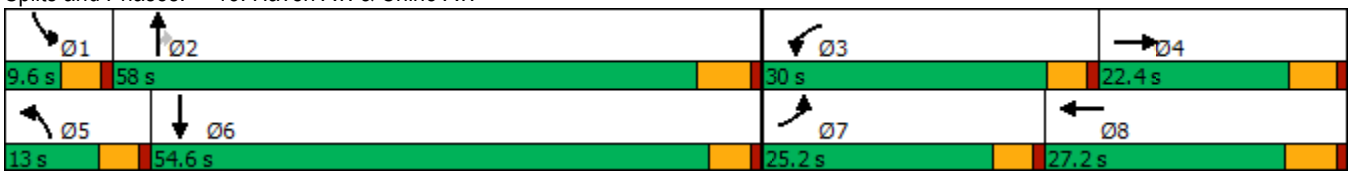
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT	Ø1
Lane Configurations									
Traffic Volume (vph)	129	52	25	61	82	486	23	633	
Future Volume (vph)	129	52	25	61	82	486	23	633	
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	NA	
Protected Phases	7	4	3	8	5	2		6	1
Permitted Phases							2		
Detector Phase	7	4	3	8	5	2	2	6	
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	22.8	21.7	9.6
Total Split (s)	25.2	22.4	30.0	27.2	13.0	58.0	58.0	54.6	9.6
Total Split (%)	21.0%	18.7%	25.0%	22.7%	10.8%	48.3%	48.3%	45.5%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	None
Act Effct Green (s)	11.4	21.1	6.2	11.7	8.3	37.2	37.2	25.2	
Actuated g/C Ratio	0.15	0.28	0.08	0.16	0.11	0.50	0.50	0.34	
v/c Ratio	0.56	0.26	0.18	0.22	0.49	0.29	0.03	0.71	
Control Delay	42.5	18.5	41.4	35.0	48.0	12.3	0.0	25.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.5	18.5	41.4	35.0	48.0	12.3	0.0	25.3	
LOS	D	B	D	C	D	B	A	C	
Approach Delay		30.4		36.9		16.8		25.3	
Approach LOS		C		D		B		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 60.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	52	76	25	61	0	82	486	23	0	633	123
Future Volume (veh/h)	129	52	76	25	61	0	82	486	23	0	633	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	136	57	22	27	66	0	86	512	-116	0	666	45
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	309	119	54	309	0	105	1565	700	3	942	64
Arrive On Green	0.16	0.36	0.36	0.05	0.25	0.00	0.10	0.66	0.00	0.00	0.44	0.44
Sat Flow, veh/h	1594	1285	496	1781	1870	0	1594	3544	1585	1781	3200	216
Grp Volume(v), veh/h	136	0	79	27	66	0	86	512	-116	0	350	361
Grp Sat Flow(s),veh/h/ln	1594	0	1781	1781	1870	0	1594	1772	1585	1781	1683	1733
Q Serve(g_s), s	4.6	0.0	1.7	0.8	1.6	0.0	3.0	3.5	0.0	0.0	9.5	9.5
Cycle Q Clear(g_c), s	4.6	0.0	1.7	0.8	1.6	0.0	3.0	3.5	0.0	0.0	9.5	9.5
Prop In Lane	1.00		0.28	1.00		0.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	169	0	428	54	309	0	105	1565	700	3	496	510
V/C Ratio(X)	0.81	0.00	0.18	0.50	0.21	0.00	0.82	0.33	-0.17	0.00	0.71	0.71
Avail Cap(c_a), veh/h	582	0	537	802	709	0	237	3279	1467	158	1489	1533
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	14.2	26.5	18.3	0.0	25.1	5.9	0.0	0.0	13.8	13.8
Incr Delay (d2), s/veh	3.4	0.0	0.2	2.6	0.3	0.0	5.9	0.1	0.0	0.0	1.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.6	0.4	0.6	0.0	1.1	0.9	0.0	0.0	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	0.0	14.4	29.1	18.6	0.0	31.0	6.0	0.0	0.0	15.6	15.6
LnGrp LOS	C	A	B	C	B	A	C	A	A	A	B	B
Approach Vol, veh/h		215			93			482			711	
Approach Delay, s/veh		22.1			21.7			11.9			15.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	30.7	6.3	19.4	8.3	22.4	10.6	15.1
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	52.2	25.4	* 17	8.4	* 50	20.6	21.4
Max Q Clear Time (g_c+I1), s	0.0	5.5	2.8	3.7	5.0	11.5	6.6	3.6
Green Ext Time (p_c), s	0.0	3.4	0.0	0.2	0.0	5.1	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

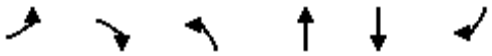
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	58	112	159	479	603
Future Volume (vph)	58	112	159	479	603
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	27.8	27.8	19.0	92.2	73.2
Total Split (%)	23.2%	23.2%	15.8%	76.8%	61.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.1	12.1	14.5	39.3	20.1
Actuated g/C Ratio	0.19	0.19	0.23	0.62	0.32
v/c Ratio	0.22	0.34	0.51	0.27	0.69
Control Delay	24.6	7.6	30.1	6.2	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	7.6	30.1	6.2	22.2
LOS	C	A	C	A	C
Approach Delay	13.4			12.1	22.2
Approach LOS	B			B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 63.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 16.8	Intersection LOS: B
Intersection Capacity Utilization 51.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	112	159	479	603	59
Future Volume (veh/h)	58	112	159	479	603	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	67	61	185	557	701	69
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	276	260	229	1947	1068	105
Arrive On Green	0.17	0.17	0.14	0.58	0.34	0.34
Sat Flow, veh/h	1594	1502	1594	3455	3175	312
Grp Volume(v), veh/h	67	61	185	557	391	379
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1683	1772	1716
Q Serve(g_s), s	1.7	1.6	5.3	3.9	8.8	8.8
Cycle Q Clear(g_c), s	1.7	1.6	5.3	3.9	8.8	8.8
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	276	260	229	1947	596	577
V/C Ratio(X)	0.24	0.23	0.81	0.29	0.66	0.66
Avail Cap(c_a), veh/h	750	707	491	6224	2555	2474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	16.6	19.4	5.0	13.2	13.2
Incr Delay (d2), s/veh	0.5	0.5	2.6	0.1	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.7	0.7	2.7	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.1	17.1	21.9	5.1	14.4	14.5
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	128			742	770	
Approach Delay, s/veh	17.1			9.3	14.5	
Approach LOS	B			A	B	

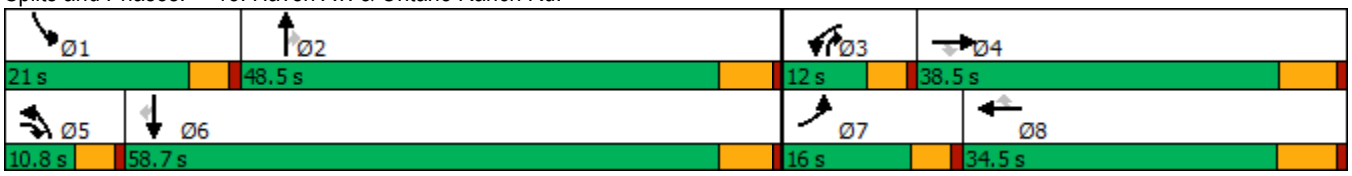
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		32.8		13.9	11.3	21.5
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	14.4	67.4
Max Q Clear Time (g_c+I1), s		5.9		3.7	7.3	10.8
Green Ext Time (p_c), s		3.8		0.3	0.1	4.9

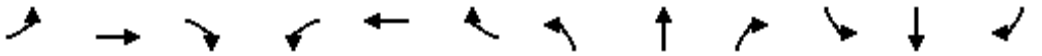
Intersection Summary		
HCM 6th Ctrl Delay		12.3
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	980	38	243	742	237	19	210	75	239	348	129
Future Volume (vph)	226	980	38	243	742	237	19	210	75	239	348	129
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	9.6	9.6	34.5	34.5	9.6	47.8	9.6	9.6	45.8	45.8
Total Split (s)	16.0	38.5	10.8	12.0	34.5	34.5	10.8	48.5	12.0	21.0	58.7	58.7
Total Split (%)	13.3%	32.1%	9.0%	10.0%	28.8%	28.8%	9.0%	40.4%	10.0%	17.5%	48.9%	48.9%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.5	5.5	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	4.6	6.5	6.5	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	10.5	23.5	35.8	7.8	20.4	20.4	5.8	15.3	29.2	11.2	25.5	25.5
Actuated g/C Ratio	0.13	0.29	0.45	0.10	0.25	0.25	0.07	0.19	0.36	0.14	0.32	0.32
v/c Ratio	0.58	0.67	0.05	0.90	0.44	0.44	0.18	0.33	0.13	0.57	0.33	0.24
Control Delay	42.2	28.7	0.1	72.0	27.4	7.1	46.6	29.1	1.7	40.3	22.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	28.7	0.1	72.0	27.4	7.1	46.6	29.1	1.7	40.3	22.5	5.1
LOS	D	C	A	E	C	A	D	C	A	D	C	A
Approach Delay		30.3			32.3			23.4			25.3	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 80.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 29.4	Intersection LOS: C
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	980	38	243	742	237	19	210	75	239	348	129
Future Volume (veh/h)	226	980	38	243	742	237	19	210	75	239	348	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	240	1043	27	259	789	-253	20	223	30	254	370	-12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	333	1593	485	336	2177	461	37	537	396	353	848	359
Arrive On Green	0.10	0.30	0.30	0.11	0.31	0.00	0.02	0.15	0.15	0.11	0.24	0.00
Sat Flow, veh/h	3188	5316	1502	3000	7088	1502	1594	3544	1502	3188	3544	1502
Grp Volume(v), veh/h	240	1043	27	259	789	-253	20	223	30	254	370	-12
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1500	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	4.8	11.3	0.8	5.5	5.7	0.0	0.8	3.8	1.0	5.1	5.9	0.0
Cycle Q Clear(g_c), s	4.8	11.3	0.8	5.5	5.7	0.0	0.8	3.8	1.0	5.1	5.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	333	1593	485	336	2177	461	37	537	396	353	848	359
V/C Ratio(X)	0.72	0.65	0.06	0.77	0.36	-0.55	0.54	0.42	0.08	0.72	0.44	-0.03
Avail Cap(c_a), veh/h	551	2602	770	336	3008	637	150	2293	1140	792	2841	1204
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.6	20.1	15.4	28.5	17.8	0.0	31.9	25.3	18.3	28.3	21.3	0.0
Incr Delay (d2), s/veh	1.1	0.5	0.0	9.5	0.1	0.0	4.5	0.5	0.1	1.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.0	0.2	2.2	1.9	0.0	0.3	1.5	0.3	1.8	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	20.6	15.5	37.9	17.9	0.0	36.3	25.9	18.3	29.4	21.7	0.0
LnGrp LOS	C	C	B	D	B	A	D	C	B	C	C	A
Approach Vol, veh/h		1310			795			273			612	
Approach Delay, s/veh		22.2			30.1			25.8			25.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	15.8	12.0	26.3	6.1	21.6	11.5	26.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	16.4	42.7	7.4	* 32	6.2	52.9	11.4	28.0
Max Q Clear Time (g_c+I1), s	7.1	5.8	7.5	13.3	2.8	7.9	6.8	7.7
Green Ext Time (p_c), s	0.3	1.4	0.0	6.5	0.0	2.4	0.2	4.6

Intersection Summary	
HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

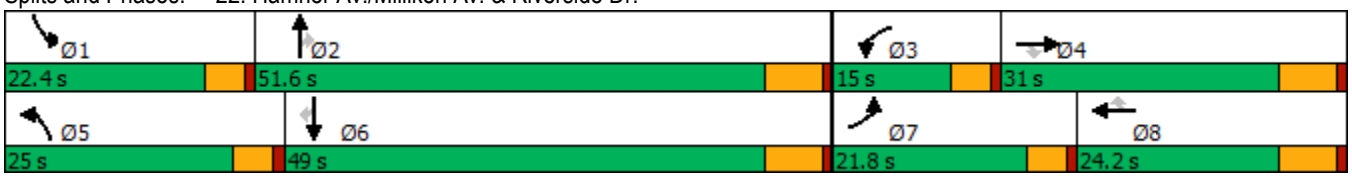
Notes

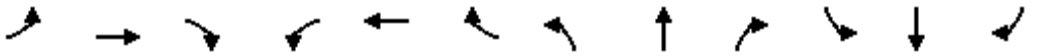
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	147	186	88	158	176	189	534	54	234	770	256
Future Volume (vph)	171	147	186	88	158	176	189	534	54	234	770	256
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	21.8	31.0	31.0	15.0	24.2	24.2	25.0	51.6	51.6	22.4	49.0	49.0
Total Split (%)	18.2%	25.8%	25.8%	12.5%	20.2%	20.2%	20.8%	43.0%	43.0%	18.7%	40.8%	40.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.6	17.3	17.3	9.1	13.8	13.8	10.2	26.2	26.2	11.5	27.4	27.4
Actuated g/C Ratio	0.11	0.21	0.21	0.11	0.17	0.17	0.12	0.31	0.31	0.14	0.33	0.33
v/c Ratio	0.49	0.42	0.43	0.54	0.57	0.46	0.52	0.51	0.10	0.57	0.70	0.40
Control Delay	42.5	37.7	8.6	52.8	43.6	10.0	42.1	25.8	0.4	41.5	28.6	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	37.7	8.6	52.8	43.6	10.0	42.1	25.8	0.4	41.5	28.6	4.9
LOS	D	D	A	D	D	A	D	C	A	D	C	A
Approach Delay		28.6			31.5			28.0			26.2	
Approach LOS		C			C			C			C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 83.6		
Natural Cycle: 75		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.70		
Intersection Signal Delay: 27.8	Intersection LOS: C	
Intersection Capacity Utilization 60.7%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	147	186	88	158	176	189	534	54	234	770	256
Future Volume (veh/h)	171	147	186	88	158	176	189	534	54	234	770	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	180	155	155	93	166	147	199	562	52	246	811	255
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	299	251	115	276	234	296	1112	471	348	1169	489
Arrive On Green	0.09	0.17	0.17	0.07	0.16	0.16	0.09	0.31	0.31	0.11	0.33	0.33
Sat Flow, veh/h	3188	1772	1486	1594	1772	1502	3188	3544	1500	3188	3544	1481
Grp Volume(v), veh/h	180	155	155	93	166	147	199	562	52	246	811	255
Grp Sat Flow(s),veh/h/ln	1594	1772	1486	1594	1772	1502	1594	1772	1500	1594	1772	1481
Q Serve(g_s), s	3.5	5.1	6.2	3.7	5.6	5.9	3.9	8.3	1.6	4.8	12.8	9.0
Cycle Q Clear(g_c), s	3.5	5.1	6.2	3.7	5.6	5.9	3.9	8.3	1.6	4.8	12.8	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	299	251	115	276	234	296	1112	471	348	1169	489
V/C Ratio(X)	0.66	0.52	0.62	0.81	0.60	0.63	0.67	0.51	0.11	0.71	0.69	0.52
Avail Cap(c_a), veh/h	853	683	573	258	496	420	1011	2502	1059	882	2359	986
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	24.3	24.8	29.4	25.3	25.4	28.2	18.0	15.7	27.6	18.7	17.4
Incr Delay (d2), s/veh	1.0	1.4	2.5	5.0	2.1	2.8	1.0	0.4	0.1	1.0	0.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.0	2.1	1.4	2.2	2.0	1.4	2.9	0.5	1.7	4.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	25.7	27.3	34.4	27.4	28.2	29.2	18.3	15.8	28.6	19.5	18.3
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		490			406			813			1312	
Approach Delay, s/veh		27.6			29.3			20.8			21.0	
Approach LOS		C			C			C			C	

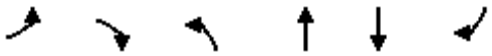
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	26.4	9.2	17.1	10.6	27.4	10.1	16.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.8	45.4	10.4	24.8	20.4	42.8	17.2	18.0
Max Q Clear Time (g_c+I1), s	6.8	10.3	5.7	8.2	5.9	14.8	5.5	7.9
Green Ext Time (p_c), s	0.3	3.7	0.0	1.1	0.3	6.4	0.2	0.9

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Lane Group	EBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	1	757	1023
Future Volume (vph)	1	757	1023
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5
Total Split (s)	23.0	97.0	97.0
Total Split (%)	19.2%	80.8%	80.8%
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Min	Min
Act Effct Green (s)	7.5	36.9	36.9
Actuated g/C Ratio	0.19	0.92	0.92
v/c Ratio	0.00	0.24	0.34
Control Delay	17.0	2.1	2.5
Queue Delay	0.0	0.0	0.0
Total Delay	17.0	2.1	2.5
LOS	B	A	A
Approach Delay	17.0	2.1	2.5
Approach LOS	B	A	A

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 39.9		
Natural Cycle: 50		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.34		
Intersection Signal Delay: 2.3	Intersection LOS: A	
Intersection Capacity Utilization 40.0%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	0	0	757	1023	2
Future Volume (veh/h)	1	0	0	757	1023	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	832	1	0	832	1124	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	9999	9999	0	2014	1960	3
Arrive On Green	0.16	0.16	0.00	0.54	0.54	0.54
Sat Flow, veh/h	1897708650498	8781184	0	3741	3733	6
Grp Volume(v), veh/h	832	1	0	832	549	577
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1870	1777	1869
Q Serve(g_s), s	0.0	0.0	0.0	4.0	6.3	6.3
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.0	6.3	6.3
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	3126395207768	3391488	0	2014	957	1006
V/C Ratio(X)	0.00	0.00	0.00	0.41	0.57	0.57
Avail Cap(c_a), veh/h	1157804984267	15832832	0	11411	5420	5702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	4.2	4.7	4.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.0	0.0	4.3	5.2	5.2
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	833			832	1126	
Approach Delay, s/veh	0.0			4.3	5.2	
Approach LOS	A			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		20.8		9.5		20.8
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		92.5		18.5		92.5
Max Q Clear Time (g_c+I1), s		6.0		2.0		8.3
Green Ext Time (p_c), s		6.0		3.0		8.1

Intersection Summary	
HCM 6th Ctrl Delay	3.4
HCM 6th LOS	A

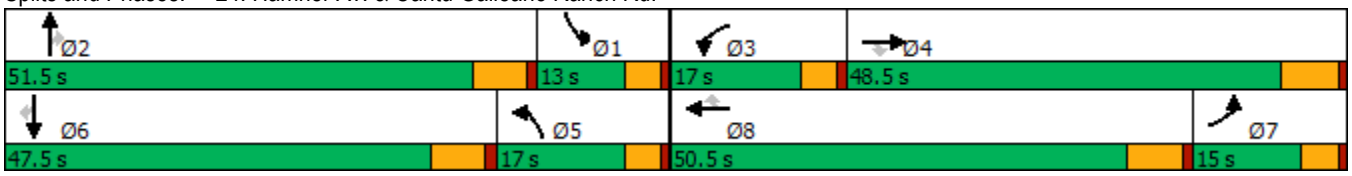
Notes

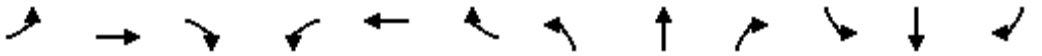
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	1181	281	410	964	166	329	424	323	265	581	104
Future Volume (vph)	154	1181	281	410	964	166	329	424	323	265	581	104
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	15.0	48.5	48.5	17.0	50.5	50.5	17.0	51.5	51.5	13.0	47.5	47.5
Total Split (%)	11.5%	37.3%	37.3%	13.1%	38.8%	38.8%	13.1%	39.6%	39.6%	10.0%	36.5%	36.5%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	16.4	26.6	26.6	12.8	23.0	23.0	12.8	17.4	17.4	12.5	17.1	17.1
Actuated g/C Ratio	0.18	0.29	0.29	0.14	0.25	0.25	0.14	0.19	0.19	0.14	0.19	0.19
v/c Ratio	0.25	0.57	0.49	0.87	0.54	0.33	0.70	0.42	0.68	0.57	0.44	0.15
Control Delay	38.6	29.2	11.9	59.3	30.9	6.3	48.7	33.6	17.4	45.9	33.7	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	29.2	11.9	59.3	30.9	6.3	48.7	33.6	17.4	45.9	33.7	1.5
LOS	D	C	B	E	C	A	D	C	B	D	C	A
Approach Delay		27.1			35.8			33.3			33.6	
Approach LOS		C			D			C			C	

Intersection Summary		
Cycle Length: 130		
Actuated Cycle Length: 92		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.87		
Intersection Signal Delay: 32.2	Intersection LOS: C	
Intersection Capacity Utilization 64.9%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	1181	281	410	964	166	329	424	323	265	581	104
Future Volume (veh/h)	154	1181	281	410	964	166	329	424	323	265	581	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	1230	85	427	1004	69	343	442	154	276	605	-74
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	599	2159	457	517	1799	381	438	806	228	472	1146	486
Arrive On Green	0.17	0.29	0.29	0.15	0.24	0.24	0.12	0.14	0.14	0.13	0.15	0.00
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	160	1230	85	427	1004	69	343	442	154	276	605	-74
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.0	10.6	1.9	8.8	8.9	2.6	7.1	5.5	4.6	5.5	5.6	0.0
Cycle Q Clear(g_c), s	3.0	10.6	1.9	8.8	8.9	2.6	7.1	5.5	4.6	5.5	5.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	599	2159	457	517	1799	381	438	806	228	472	1146	486
V/C Ratio(X)	0.27	0.57	0.19	0.83	0.56	0.18	0.78	0.55	0.68	0.58	0.53	-0.15
Avail Cap(c_a), veh/h	599	4163	882	585	4361	924	585	3367	951	472	4093	1734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.3	22.9	7.8	31.3	25.2	22.8	32.1	30.0	13.5	30.8	29.4	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.2	7.6	0.3	0.2	3.4	0.6	3.5	1.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.0	1.0	3.9	3.5	0.9	3.0	2.3	2.5	2.2	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	23.1	8.0	38.9	25.4	23.0	35.6	30.6	17.0	32.1	29.8	0.0
LnGrp LOS	C	C	A	D	C	C	D	C	B	C	C	A
Approach Vol, veh/h		1475			1500			939			807	
Approach Delay, s/veh		22.7			29.2			30.2			33.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	17.0	15.6	28.3	13.9	17.8	19.2	24.6
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	6.5	* 6.5
Max Green Setting (Gmax), s	8.4	45.3	12.4	42.0	12.4	41.3	10.4	* 44
Max Q Clear Time (g_c+I1), s	7.5	7.5	10.8	12.6	9.1	7.6	5.0	10.9
Green Ext Time (p_c), s	0.1	3.3	0.2	9.2	0.2	3.9	0.1	7.3

Intersection Summary	
HCM 6th Ctrl Delay	28.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

APPENDIX 6.6: OPENING YEAR CUMULATIVE (2027) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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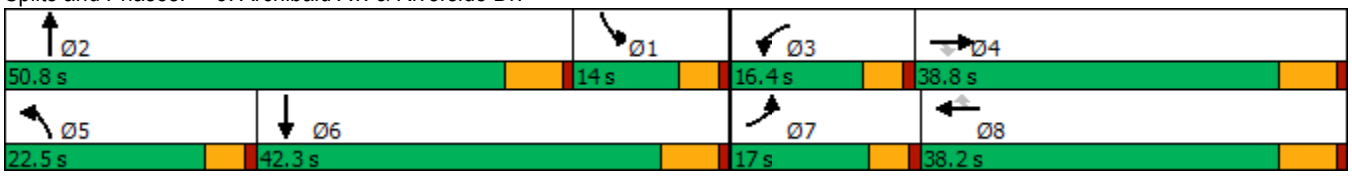
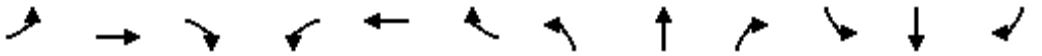
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	164	439	210	131	612	289	352	1662	244	730
Future Volume (vph)	164	439	210	131	612	289	352	1662	244	730
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	17.0	38.8	38.8	16.4	38.2	38.2	22.5	50.8	14.0	42.3
Total Split (%)	14.2%	32.3%	32.3%	13.7%	31.8%	31.8%	18.8%	42.3%	11.7%	35.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.4	28.7	28.7	11.5	27.8	27.8	16.5	44.7	9.4	37.6
Actuated g/C Ratio	0.11	0.25	0.25	0.10	0.24	0.24	0.14	0.39	0.08	0.32
v/c Ratio	1.01	0.55	0.41	0.87	0.79	0.63	0.84	1.04	1.02	0.62
Control Delay	124.5	40.6	7.0	96.5	49.4	22.7	66.3	67.3	115.4	34.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	124.5	40.6	7.0	96.5	49.4	22.7	66.3	67.3	115.4	34.0
LOS	F	D	A	F	D	C	E	E	F	C
Approach Delay		48.9			47.9			67.2		51.0
Approach LOS		D			D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 56.8	Intersection LOS: E
Intersection Capacity Utilization 92.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	439	210	131	612	289	352	1662	173	244	730	192
Future Volume (veh/h)	164	439	210	131	612	289	352	1662	173	244	730	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	171	457	115	136	638	155	367	1731	91	254	760	106
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	171	791	347	159	768	336	419	1804	95	251	1472	204
Arrive On Green	0.11	0.24	0.24	0.10	0.23	0.23	0.14	0.38	0.38	0.08	0.34	0.34
Sat Flow, veh/h	1594	3367	1477	1594	3367	1473	3092	4701	247	3092	4287	593
Grp Volume(v), veh/h	171	457	115	136	638	155	367	1187	635	254	570	296
Grp Sat Flow(s),veh/h/ln	1594	1683	1477	1594	1683	1473	1546	1612	1723	1546	1612	1656
Q Serve(g_s), s	12.4	13.9	7.5	9.7	20.9	8.0	13.5	41.6	41.7	9.4	16.3	16.6
Cycle Q Clear(g_c), s	12.4	13.9	7.5	9.7	20.9	8.0	13.5	41.6	41.7	9.4	16.3	16.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.36
Lane Grp Cap(c), veh/h	171	791	347	159	768	336	419	1237	661	251	1107	568
V/C Ratio(X)	1.00	0.58	0.33	0.85	0.83	0.46	0.88	0.96	0.96	1.01	0.52	0.52
Avail Cap(c_a), veh/h	171	947	415	162	929	407	477	1241	663	251	1107	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	39.2	36.8	51.3	42.6	22.1	49.2	34.8	34.9	53.3	30.4	30.4
Incr Delay (d2), s/veh	69.7	0.7	0.6	31.4	5.5	1.0	14.0	16.7	25.5	60.2	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	5.6	2.7	5.1	8.9	3.6	5.8	17.9	20.8	5.6	6.1	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	121.4	39.9	37.3	82.7	48.1	23.1	63.2	51.5	60.3	113.5	30.8	31.3
LnGrp LOS	F	D	D	F	D	C	E	D	E	F	C	C
Approach Vol, veh/h		743			929			2189			1120	
Approach Delay, s/veh		58.3			49.0			56.0			49.7	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	50.7	16.2	33.4	20.3	46.0	17.0	32.6
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	9.4	* 45	11.8	32.6	17.9	36.1	12.4	32.0
Max Q Clear Time (g_c+I1), s	11.4	43.7	11.7	15.9	15.5	18.6	14.4	22.9
Green Ext Time (p_c), s	0.0	0.8	0.0	2.7	0.2	4.7	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	53.6
HCM 6th LOS	D

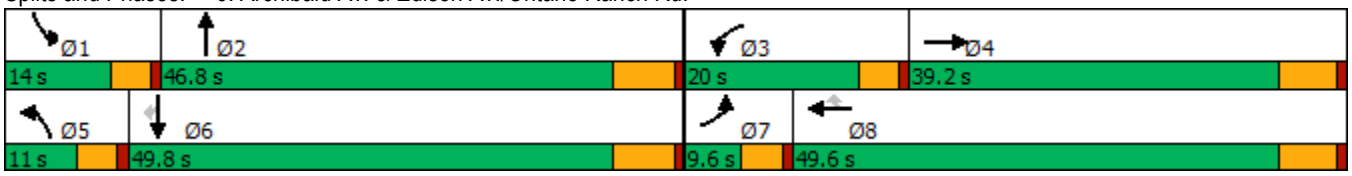
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	550	72	507	787	353	184	1400	484	282	700	68
Future Volume (vph)	38	550	72	507	787	353	184	1400	484	282	700	68
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.2		20.0	49.6	49.6	11.0	46.8		14.0	49.8	49.8
Total Split (%)	8.0%	32.7%		16.7%	41.3%	41.3%	9.2%	39.0%		11.7%	41.5%	41.5%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.1	22.9	107.8	15.6	37.8	37.8	6.5	37.6	107.8	9.5	40.6	40.6
Actuated g/C Ratio	0.05	0.21	1.00	0.14	0.35	0.35	0.06	0.35	1.00	0.09	0.38	0.38
v/c Ratio	0.30	0.54	0.05	1.29	0.70	0.62	1.06	0.83	0.36	1.14	0.39	0.11
Control Delay	59.6	39.2	0.1	186.9	34.6	21.8	133.9	37.7	0.7	144.9	25.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	39.2	0.1	186.9	34.6	21.8	133.9	37.7	0.7	144.9	25.8	0.4
LOS	E	D	A	F	C	C	F	D	A	F	C	A
Approach Delay		36.1			78.7			37.6			56.2	
Approach LOS		D			E			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 53.5	Intersection LOS: D
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	550	72	507	787	353	184	1400	484	282	700	68
Future Volume (veh/h)	38	550	72	507	787	353	184	1400	484	282	700	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	42	604	0	557	865	365	202	1538	0	310	769	64
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	1021		452	1094	458	199	1867		284	2023	564
Arrive On Green	0.03	0.19	0.00	0.15	0.31	0.31	0.06	0.35	0.00	0.09	0.38	0.38
Sat Flow, veh/h	3000	5316	1502	3000	3544	1483	3188	5316	1502	3092	5316	1482
Grp Volume(v), veh/h	42	604	0	557	865	365	202	1538	0	310	769	64
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1483	1594	1772	1502	1546	1772	1482
Q Serve(g_s), s	1.4	10.6	0.0	15.4	22.8	23.1	6.4	27.0	0.0	9.4	10.7	2.9
Cycle Q Clear(g_c), s	1.4	10.6	0.0	15.4	22.8	23.1	6.4	27.0	0.0	9.4	10.7	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	1021		452	1094	458	199	1867		284	2023	564
V/C Ratio(X)	0.41	0.59		1.23	0.79	0.80	1.01	0.82		1.09	0.38	0.11
Avail Cap(c_a), veh/h	147	1715		452	1504	629	199	2095		284	2251	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	37.6	0.0	43.4	32.3	32.4	47.9	30.3	0.0	46.4	22.9	20.5
Incr Delay (d2), s/veh	1.0	0.5	0.0	122.8	2.0	5.0	67.0	2.5	0.0	79.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.4	0.0	13.1	9.4	8.3	4.3	10.8	0.0	6.6	4.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	38.2	0.0	166.3	34.4	37.4	115.0	32.8	0.0	126.2	23.1	20.6
LnGrp LOS	D	D		F	C	D	F	C		F	C	C
Approach Vol, veh/h		646			1787			1740			1143	
Approach Delay, s/veh		38.9			76.1			42.4			50.9	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	42.4	20.0	25.8	11.0	45.4	8.1	37.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	9.4	40.3	15.4	33.0	6.4	43.3	5.0	43.4
Max Q Clear Time (g_c+I1), s	11.4	29.0	17.4	12.6	8.4	12.7	3.4	25.1
Green Ext Time (p_c), s	0.0	6.9	0.0	3.5	0.0	5.2	0.0	6.5

Intersection Summary	
HCM 6th Ctrl Delay	55.1
HCM 6th LOS	E

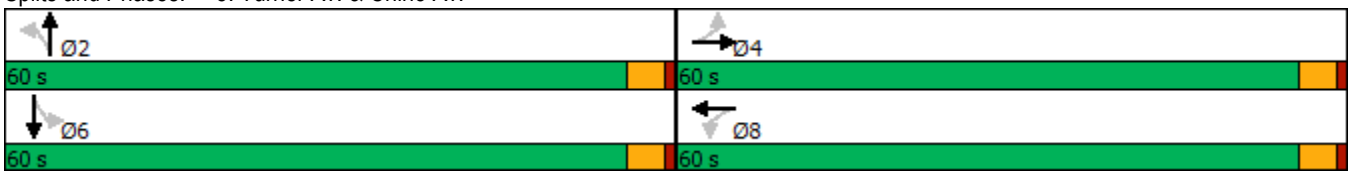
Notes

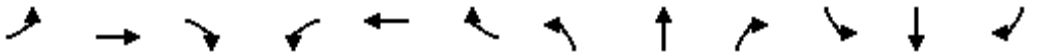
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	107	199	67	318	142	448	93	209
Future Volume (vph)	107	199	67	318	142	448	93	209
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	23.7	23.7	23.7	23.7	24.4	24.4	24.4	24.4
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.41	0.41	0.41	0.41
v/c Ratio	0.62	0.31	0.27	0.48	0.54	0.50	0.55	0.29
Control Delay	29.2	9.8	16.1	12.8	22.1	14.9	26.9	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	9.8	16.1	12.8	22.1	14.9	26.9	11.2
LOS	C	A	B	B	C	B	C	B
Approach Delay		14.8		13.2		16.5		15.0
Approach LOS		B		B		B		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 59.1	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Turner Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	199	107	67	318	157	142	448	57	93	209	82
Future Volume (veh/h)	107	199	107	67	318	157	142	448	57	93	209	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	145	269	145	91	430	212	192	605	77	126	282	111
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	917	480	426	937	457	420	1235	157	305	978	375
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	704	2136	1118	870	2181	1064	886	2991	380	678	2368	908
Grp Volume(v), veh/h	145	210	204	91	331	311	192	340	342	126	198	195
Grp Sat Flow(s),veh/h/ln	704	1683	1571	870	1683	1562	886	1683	1688	678	1683	1593
Q Serve(g_s), s	10.5	4.6	4.9	4.4	8.0	8.1	10.6	8.5	8.5	9.6	4.5	4.7
Cycle Q Clear(g_c), s	18.7	4.6	4.9	9.2	8.0	8.1	15.2	8.5	8.5	18.1	4.5	4.7
Prop In Lane	1.00		0.71	1.00		0.68	1.00		0.23	1.00		0.57
Lane Grp Cap(c), veh/h	329	723	674	426	723	671	420	695	697	305	695	658
V/C Ratio(X)	0.44	0.29	0.30	0.21	0.46	0.46	0.46	0.49	0.49	0.41	0.29	0.30
Avail Cap(c_a), veh/h	711	1636	1527	898	1636	1518	915	1636	1641	684	1636	1549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	10.6	10.7	13.7	11.6	11.6	16.3	12.3	12.3	19.0	11.2	11.2
Incr Delay (d2), s/veh	0.9	0.2	0.2	0.2	0.5	0.5	0.8	0.5	0.5	0.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.4	1.4	0.7	2.4	2.3	1.8	2.6	2.6	1.3	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	10.8	10.9	14.0	12.0	12.1	17.1	12.9	12.9	19.9	11.4	11.5
LnGrp LOS	B	B	B	B	B	B	B	B	B	B	B	B
Approach Vol, veh/h		559			733			874			519	
Approach Delay, s/veh		13.0			12.3			13.8			13.5	
Approach LOS		B			B			B			B	

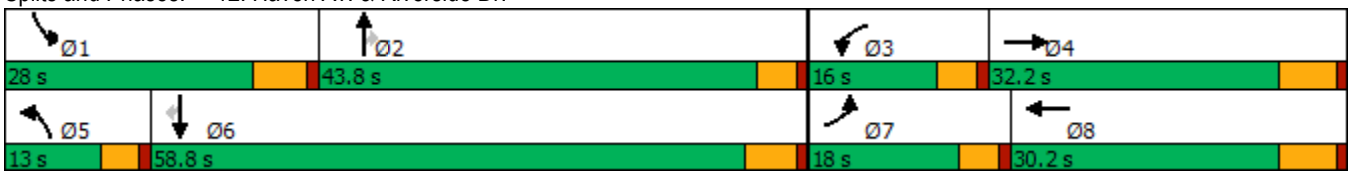
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.1		29.0		28.1		29.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		55.5		55.5		55.5		55.5				
Max Q Clear Time (g_c+I1), s		17.2		20.7		20.1		11.2				
Green Ext Time (p_c), s		5.6		3.9		3.5		4.9				

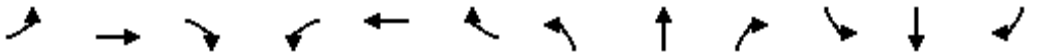
Intersection Summary												
HCM 6th Ctrl Delay			13.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	388	624	251	467	67	1245	242	320	835	281
Future Volume (vph)	388	624	251	467	67	1245	242	320	835	281
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	9.5	23.7	23.7	15.8	24.8	24.8
Total Split (s)	18.0	32.2	16.0	30.2	13.0	43.8	43.8	28.0	58.8	58.8
Total Split (%)	15.0%	26.8%	13.3%	25.2%	10.8%	36.5%	36.5%	23.3%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.5	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.5	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	13.4	26.0	11.4	24.0	8.1	39.1	39.1	22.2	55.6	55.6
Actuated g/C Ratio	0.11	0.22	0.10	0.20	0.07	0.33	0.33	0.18	0.46	0.46
v/c Ratio	1.17	0.94	0.89	1.00	0.66	1.15	0.43	1.16	0.54	0.36
Control Delay	149.1	67.7	84.4	79.0	82.9	116.2	11.3	148.3	25.3	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	149.1	67.7	84.4	79.0	82.9	116.2	11.3	148.3	25.3	3.6
LOS	F	E	F	E	F	F	B	F	C	A
Approach Delay		97.5		80.5		98.4			48.4	
Approach LOS		F		F		F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 80.5	Intersection LOS: F
Intersection Capacity Utilization 107.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	388	624	48	251	467	203	67	1245	242	320	835	281
Future Volume (veh/h)	388	624	48	251	467	203	67	1245	242	320	835	281
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	413	664	30	267	497	72	71	1324	129	340	888	123
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	354	710	32	301	587	85	87	1149	482	293	1644	691
Arrive On Green	0.17	0.32	0.32	0.14	0.29	0.29	0.08	0.49	0.49	0.28	0.70	0.70
Sat Flow, veh/h	3188	3354	151	3188	3008	433	1594	3544	1488	1594	3544	1490
Grp Volume(v), veh/h	413	350	344	267	292	277	71	1324	129	340	888	123
Grp Sat Flow(s),veh/h/ln	1594	1772	1734	1594	1772	1669	1594	1772	1488	1594	1772	1490
Q Serve(g_s), s	13.4	23.2	23.2	9.9	18.6	18.9	5.3	39.1	6.2	22.2	14.7	3.5
Cycle Q Clear(g_c), s	13.4	23.2	23.2	9.9	18.6	18.9	5.3	39.1	6.2	22.2	14.7	3.5
Prop In Lane	1.00		0.09	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	375	367	301	346	326	87	1149	482	293	1644	691
V/C Ratio(X)	1.17	0.93	0.94	0.89	0.84	0.85	0.81	1.15	0.27	1.16	0.54	0.18
Avail Cap(c_a), veh/h	354	382	374	301	353	332	112	1149	482	293	1644	691
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	40.4	40.4	51.1	40.9	41.0	54.7	31.0	22.5	43.7	12.1	10.4
Incr Delay (d2), s/veh	101.3	29.7	30.4	24.8	16.5	18.5	28.2	79.0	0.3	102.8	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	11.7	11.5	4.7	8.6	8.3	2.8	27.0	2.0	16.0	4.3	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	151.5	70.0	70.8	76.0	57.5	59.5	82.9	110.0	22.8	146.5	12.4	10.5
LnGrp LOS	F	E	E	E	E	E	F	F	C	F	B	B
Approach Vol, veh/h		1107			836			1524			1351	
Approach Delay, s/veh		100.7			64.0			101.4			46.0	
Approach LOS		F			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	44.9	16.0	31.7	11.1	61.8	18.0	29.7
Change Period (Y+Rc), s	5.8	* 5.8	4.6	6.2	4.5	5.8	4.6	6.2
Max Green Setting (Gmax), s	22.2	* 39	11.4	26.0	8.5	53.0	13.4	24.0
Max Q Clear Time (g_c+I1), s	24.2	41.1	11.9	25.2	7.3	16.7	15.4	20.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	7.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	79.2
HCM 6th LOS	E

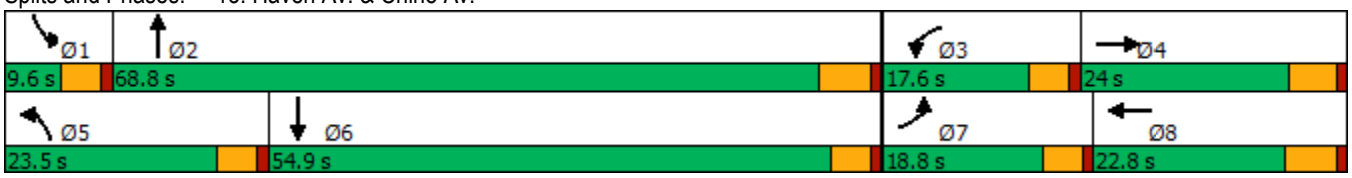
Notes

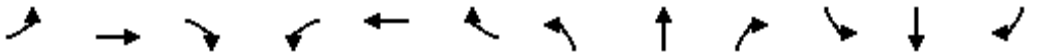
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	174	98	156	121	201	1397	922	
Future Volume (vph)	174	98	156	121	201	1397	922	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	18.8	24.0	17.6	22.8	23.5	68.8	54.9	9.6
Total Split (%)	15.7%	20.0%	14.7%	19.0%	19.6%	57.3%	45.8%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	14.2	16.8	12.6	14.8	17.7	69.9	48.7	
Actuated g/C Ratio	0.12	0.15	0.11	0.13	0.15	0.61	0.42	
v/c Ratio	0.95	0.78	0.88	0.55	0.88	0.94	0.86	
Control Delay	103.7	59.2	91.5	56.9	82.9	30.6	37.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	103.7	59.2	91.5	56.9	82.9	30.6	37.5	
LOS	F	E	F	E	F	C	D	
Approach Delay		79.5		76.4		35.8	37.5	
Approach LOS		E		E		D	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 43.6	Intersection LOS: D
Intersection Capacity Utilization 96.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	98	107	156	121	0	201	1397	434	0	922	203
Future Volume (veh/h)	174	98	107	156	121	0	201	1397	434	0	922	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	185	107	61	170	132	0	214	1486	238	0	981	110
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	140	80	203	196	0	244	1767	278	2	1190	133
Arrive On Green	0.13	0.13	0.13	0.11	0.10	0.00	0.15	0.59	0.59	0.00	0.39	0.39
Sat Flow, veh/h	1594	1118	637	1781	1870	0	1594	2989	471	1781	3052	342
Grp Volume(v), veh/h	185	0	168	170	132	0	214	871	853	0	541	550
Grp Sat Flow(s),veh/h/ln	1594	0	1756	1781	1870	0	1594	1772	1687	1781	1683	1710
Q Serve(g_s), s	10.8	0.0	8.8	8.9	6.5	0.0	12.5	37.7	39.9	0.0	27.5	27.6
Cycle Q Clear(g_c), s	10.8	0.0	8.8	8.9	6.5	0.0	12.5	37.7	39.9	0.0	27.5	27.6
Prop In Lane	1.00		0.36	1.00		0.00	1.00		0.28	1.00		0.20
Lane Grp Cap(c), veh/h	214	0	220	203	196	0	244	1047	997	2	656	667
V/C Ratio(X)	0.87	0.00	0.76	0.84	0.67	0.00	0.88	0.83	0.86	0.00	0.82	0.82
Avail Cap(c_a), veh/h	237	0	343	243	334	0	316	1171	1115	93	886	901
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	40.3	41.4	41.1	0.0	39.5	15.7	16.1	0.0	26.2	26.2
Incr Delay (d2), s/veh	23.3	0.0	5.4	16.9	4.0	0.0	16.5	4.8	6.2	0.0	4.7	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	4.0	4.7	3.1	0.0	5.8	13.8	14.2	0.0	11.4	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.7	0.0	45.8	58.3	45.1	0.0	56.0	20.4	22.3	0.0	30.9	30.8
LnGrp LOS	E	A	D	E	D	A	E	C	C	A	C	C
Approach Vol, veh/h		353			302			1938			1091	
Approach Delay, s/veh		55.2			52.5			25.2			30.9	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	62.1	15.4	17.7	19.2	43.0	17.4	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	63.0	13.0	* 19	18.9	* 50	14.2	17.0
Max Q Clear Time (g_c+I1), s	0.0	41.9	10.9	10.8	14.5	29.6	12.8	8.5
Green Ext Time (p_c), s	0.0	12.5	0.0	0.5	0.1	7.6	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

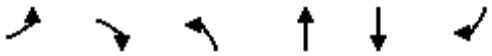
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	81	142	157	1854	1095
Future Volume (vph)	81	142	157	1854	1095
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	27.8	27.8	27.3	92.2	64.9
Total Split (%)	23.2%	23.2%	22.8%	76.8%	54.1%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	13.0	13.0	14.8	62.1	42.5
Actuated g/C Ratio	0.15	0.15	0.17	0.71	0.49
v/c Ratio	0.37	0.44	0.64	0.85	0.73
Control Delay	43.1	11.1	48.5	13.4	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	11.1	48.5	13.4	21.4
LOS	D	B	D	B	C
Approach Delay	22.7			16.2	21.4
Approach LOS	C			B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 87.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	81	142	157	1854	1095	58
Future Volume (veh/h)	81	142	157	1854	1095	58
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	88	100	171	2015	1190	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	191	180	205	2491	1857	94
Arrive On Green	0.12	0.12	0.13	0.74	0.56	0.56
Sat Flow, veh/h	1594	1502	1594	3455	3341	168
Grp Volume(v), veh/h	88	100	171	2015	631	619
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1683	1772	1737
Q Serve(g_s), s	4.2	5.2	8.6	32.0	20.3	20.3
Cycle Q Clear(g_c), s	4.2	5.2	8.6	32.0	20.3	20.3
Prop In Lane	1.00	1.00	1.00			0.10
Lane Grp Cap(c), veh/h	191	180	205	2491	985	965
V/C Ratio(X)	0.46	0.56	0.84	0.81	0.64	0.64
Avail Cap(c_a), veh/h	425	400	438	3525	1269	1244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	34.3	35.1	7.0	12.6	12.7
Incr Delay (d2), s/veh	1.7	2.7	3.4	1.0	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.1	3.3	6.4	6.7	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.6	37.0	38.6	7.9	13.3	13.4
LnGrp LOS	D	D	D	A	B	B
Approach Vol, veh/h	188			2186	1250	
Approach Delay, s/veh	36.3			10.3	13.4	
Approach LOS	D			B	B	

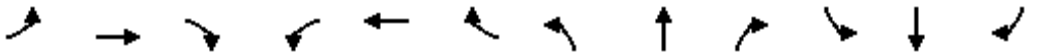
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		66.9		15.7	15.2	51.7
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	22.7	59.1
Max Q Clear Time (g_c+I1), s		34.0		7.2	10.6	22.3
Green Ext Time (p_c), s		27.1		0.4	0.2	9.6

Intersection Summary		
HCM 6th Ctrl Delay	12.7	
HCM 6th LOS	B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	320	1311	19	83	1346	723	40	585	130	726	326	382
Future Volume (vph)	320	1311	19	83	1346	723	40	585	130	726	326	382
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	9.6	9.6	34.5	34.5	9.6	47.8	9.6	9.6	45.8	45.8
Total Split (s)	13.0	41.3	12.5	9.7	38.0	38.0	12.5	49.0	9.7	20.0	56.5	56.5
Total Split (%)	10.8%	34.4%	10.4%	8.1%	31.7%	31.7%	10.4%	40.8%	8.1%	16.7%	47.1%	47.1%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.5	5.5	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	4.6	6.5	6.5	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	8.5	35.3	43.7	5.1	31.7	31.7	6.7	25.5	31.9	15.5	36.4	36.4
Actuated g/C Ratio	0.08	0.34	0.43	0.05	0.31	0.31	0.07	0.25	0.31	0.15	0.35	0.35
v/c Ratio	1.32	0.78	0.03	0.60	0.66	1.19	0.42	0.72	0.26	1.64	0.28	0.63
Control Delay	208.4	34.8	0.1	67.3	33.7	121.9	61.0	39.8	7.1	326.9	24.9	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	208.4	34.8	0.1	67.3	33.7	121.9	61.0	39.8	7.1	326.9	24.9	17.9
LOS	F	C	A	E	C	F	E	D	A	F	C	B
Approach Delay		68.1			64.6			35.3			175.9	
Approach LOS		E			E			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 102.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.64	
Intersection Signal Delay: 88.5	Intersection LOS: F
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1311	19	83	1346	723	40	585	130	726	326	382
Future Volume (veh/h)	320	1311	19	83	1346	723	40	585	130	726	326	382
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	344	1410	9	89	1447	105	43	629	75	781	351	207
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	1728	541	141	2019	428	57	867	438	510	1308	552
Arrive On Green	0.09	0.32	0.32	0.05	0.28	0.28	0.04	0.24	0.24	0.16	0.37	0.37
Sat Flow, veh/h	3188	5316	1500	3000	7088	1502	1594	3544	1500	3188	3544	1496
Grp Volume(v), veh/h	344	1410	9	89	1447	105	43	629	75	781	351	207
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1772	1500	1594	1772	1496
Q Serve(g_s), s	8.4	23.5	0.4	2.8	17.7	5.2	2.6	15.7	3.6	15.4	6.7	9.8
Cycle Q Clear(g_c), s	8.4	23.5	0.4	2.8	17.7	5.2	2.6	15.7	3.6	15.4	6.7	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	1728	541	141	2019	428	57	867	438	510	1308	552
V/C Ratio(X)	1.24	0.82	0.02	0.63	0.72	0.25	0.76	0.73	0.17	1.53	0.27	0.38
Avail Cap(c_a), veh/h	278	1938	600	159	2319	491	131	1590	744	510	1866	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	29.9	19.8	45.0	30.9	26.5	46.0	33.4	25.4	40.4	21.3	22.2
Incr Delay (d2), s/veh	133.6	2.6	0.0	4.0	0.9	0.3	7.6	1.2	0.2	249.1	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	9.5	0.1	1.1	7.0	1.7	1.1	6.5	1.2	23.4	2.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	177.5	32.4	19.8	49.1	31.9	26.8	53.6	34.6	25.6	289.5	21.4	22.7
LnGrp LOS	F	C	B	D	C	C	D	C	C	F	C	C
Approach Vol, veh/h		1763			1641			747			1339	
Approach Delay, s/veh		60.7			32.5			34.8			178.0	
Approach LOS		E			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	29.3	9.1	37.8	8.0	41.3	13.0	33.9
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	15.4	43.2	5.1	* 35	7.9	50.7	8.4	31.5
Max Q Clear Time (g_c+I1), s	17.4	17.7	4.8	25.5	4.6	11.8	10.4	19.7
Green Ext Time (p_c), s	0.0	4.3	0.0	5.8	0.0	2.9	0.0	7.0

Intersection Summary	
HCM 6th Ctrl Delay	77.3
HCM 6th LOS	E

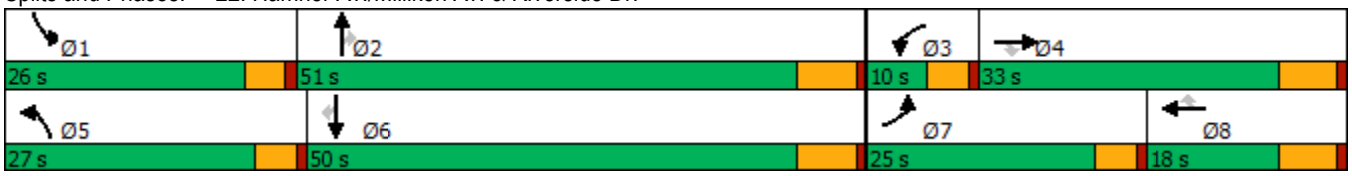
Notes

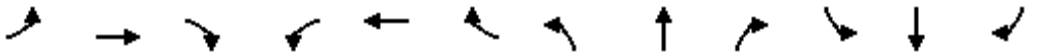
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	420	294	184	31	205	268	181	1351	64	269	809	252
Future Volume (vph)	420	294	184	31	205	268	181	1351	64	269	809	252
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	25.0	33.0	33.0	10.0	18.0	18.0	27.0	51.0	51.0	26.0	50.0	50.0
Total Split (%)	20.8%	27.5%	27.5%	8.3%	15.0%	15.0%	22.5%	42.5%	42.5%	21.7%	41.7%	41.7%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	19.6	30.2	30.2	5.3	11.8	11.8	11.8	44.9	44.9	15.3	48.4	48.4
Actuated g/C Ratio	0.17	0.27	0.27	0.05	0.10	0.10	0.10	0.40	0.40	0.14	0.43	0.43
v/c Ratio	0.88	0.72	0.38	0.49	1.28	0.74	0.63	1.11	0.11	0.72	0.62	0.36
Control Delay	64.7	49.5	7.2	76.2	204.6	18.3	57.7	94.1	0.3	57.1	27.9	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	49.5	7.2	76.2	204.6	18.3	57.7	94.1	0.3	57.1	27.9	3.8
LOS	E	D	A	E	F	B	E	F	A	E	C	A
Approach Delay		48.0			97.7			86.2			29.2	
Approach LOS		D			F			F			C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 113.3		
Natural Cycle: 120		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 1.28		
Intersection Signal Delay: 62.1	Intersection LOS: E	
Intersection Capacity Utilization 90.8%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	294	184	31	205	268	181	1351	64	269	809	252
Future Volume (veh/h)	420	294	184	31	205	268	181	1351	64	269	809	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	483	338	158	36	236	84	208	1553	63	309	930	146
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	539	437	370	48	191	162	269	1450	615	372	1564	663
Arrive On Green	0.17	0.25	0.25	0.03	0.11	0.11	0.08	0.61	0.41	0.12	0.66	0.44
Sat Flow, veh/h	3188	1772	1502	1594	1772	1502	3188	3544	1502	3188	3544	1502
Grp Volume(v), veh/h	483	338	158	36	236	84	208	1553	63	309	930	146
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1594	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	16.2	19.4	9.7	2.5	11.8	5.8	7.0	44.8	2.8	10.4	16.0	6.6
Cycle Q Clear(g_c), s	16.2	19.4	9.7	2.5	11.8	5.8	7.0	44.8	2.8	10.4	16.0	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	539	437	370	48	191	162	269	1450	615	372	1564	663
V/C Ratio(X)	0.90	0.77	0.43	0.74	1.24	0.52	0.77	1.07	0.10	0.83	0.59	0.22
Avail Cap(c_a), veh/h	594	437	370	79	191	162	652	1450	615	623	1564	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	38.4	34.7	52.6	48.8	46.1	49.1	21.1	19.9	47.3	13.0	18.9
Incr Delay (d2), s/veh	14.5	8.4	0.8	8.1	142.7	2.9	1.8	45.1	0.1	1.9	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	9.0	3.5	1.1	12.6	2.2	2.7	20.5	0.9	4.0	4.5	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	46.8	35.5	60.7	191.5	49.1	50.9	66.2	20.0	49.2	13.7	19.1
LnGrp LOS	E	D	D	E	F	D	D	F	C	D	B	B
Approach Vol, veh/h		979			356			1824			1385	
Approach Delay, s/veh		51.0			144.7			62.9			22.2	
Approach LOS		D			F			E			C	

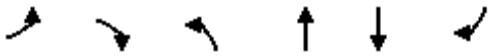
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	51.0	7.9	33.2	13.9	54.5	23.1	18.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	44.8	5.4	26.8	22.4	43.8	20.4	11.8
Max Q Clear Time (g_c+I1), s	12.4	46.8	4.5	21.4	9.0	18.0	18.2	13.8
Green Ext Time (p_c), s	0.4	0.0	0.0	1.1	0.3	6.8	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	166	57	1450	909
Future Volume (vph)	166	57	1450	909
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	35.0	85.0	85.0	85.0
Total Split (%)	29.2%	70.8%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	23.3		62.7	62.7
Actuated g/C Ratio	0.24		0.66	0.66
v/c Ratio	0.79		0.84	0.48
Control Delay	46.8		17.5	9.1
Queue Delay	0.0		0.0	0.0
Total Delay	46.8		17.5	9.1
LOS	D		B	A
Approach Delay	46.8		17.5	9.1
Approach LOS	D		B	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.7	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 98.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	166	139	57	1450	909	68
Future Volume (veh/h)	166	139	57	1450	909	68
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	189	158	65	1648	1033	77
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	217	181	104	2108	2161	161
Arrive On Green	0.24	0.24	0.64	0.64	0.64	0.64
Sat Flow, veh/h	916	766	82	3269	3446	250
Grp Volume(v), veh/h	348	0	874	839	547	563
Grp Sat Flow(s),veh/h/ln	1687	0	1650	1702	1777	1825
Q Serve(g_s), s	15.0	0.0	13.7	26.2	12.0	12.0
Cycle Q Clear(g_c), s	15.0	0.0	27.9	26.2	12.0	12.0
Prop In Lane	0.54	0.45	0.07			0.14
Lane Grp Cap(c), veh/h	399	0	1115	1097	1146	1177
V/C Ratio(X)	0.87	0.00	0.78	0.76	0.48	0.48
Avail Cap(c_a), veh/h	678	0	1764	1807	1886	1938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	9.3	9.4	6.9	6.9
Incr Delay (d2), s/veh	6.5	0.0	1.3	1.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	6.5	6.5	3.0	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.4	0.0	10.5	10.6	7.2	7.2
LnGrp LOS	C	A	B	B	A	A
Approach Vol, veh/h	348			1713	1110	
Approach Delay, s/veh	34.4			10.6	7.2	
Approach LOS	C			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		53.4		22.4		53.4
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		80.5		30.5		80.5
Max Q Clear Time (g_c+I1), s		29.9		17.0		14.0
Green Ext Time (p_c), s		19.0		0.9		8.0

Intersection Summary		
HCM 6th Ctrl Delay		12.0
HCM 6th LOS		B

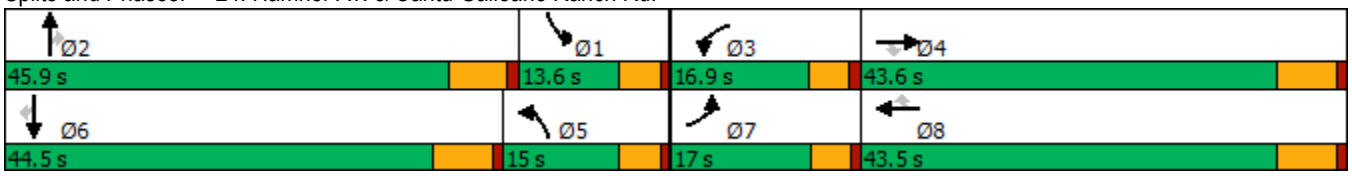
Notes

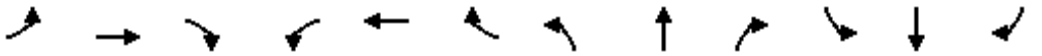
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	471	1721	268	336	2085	312	405	697	451	248	298	477
Future Volume (vph)	471	1721	268	336	2085	312	405	697	451	248	298	477
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	43.5	43.5	9.6	43.5	43.5	9.6	43.2	43.2	9.6	43.2	43.2
Total Split (s)	17.0	43.6	43.6	16.9	43.5	43.5	15.0	45.9	45.9	13.6	44.5	44.5
Total Split (%)	14.2%	36.3%	36.3%	14.1%	36.3%	36.3%	12.5%	38.3%	38.3%	11.3%	37.1%	37.1%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.5	37.3	37.3	12.4	37.2	37.2	21.1	27.3	27.3	9.1	15.3	15.3
Actuated g/C Ratio	0.12	0.35	0.35	0.11	0.34	0.34	0.20	0.25	0.25	0.08	0.14	0.14
v/c Ratio	1.20	0.70	0.38	0.86	0.85	0.48	0.61	0.51	0.82	0.87	0.29	0.59
Control Delay	154.6	33.3	5.2	69.9	37.7	14.0	45.4	35.4	30.9	78.7	41.4	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	154.6	33.3	5.2	69.9	37.7	14.0	45.4	35.4	30.9	78.7	41.4	8.0
LOS	F	C	A	E	D	B	D	D	C	E	D	A
Approach Delay		53.5			39.0			36.7			34.9	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.1	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 42.6	Intersection LOS: D
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	471	1721	268	336	2085	312	405	697	451	248	298	477
Future Volume (veh/h)	471	1721	268	336	2085	312	405	697	451	248	298	477
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	491	1793	278	350	2172	324	422	726	158	258	310	289
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	2795	592	418	2724	577	601	1087	307	325	871	369
Arrive On Green	0.13	0.37	0.37	0.12	0.36	0.36	0.17	0.19	0.19	0.09	0.12	0.12
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	491	1793	278	350	2172	324	422	726	158	258	310	289
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	12.4	19.3	7.2	9.4	25.4	10.8	10.9	11.7	6.3	6.9	3.7	6.3
Cycle Q Clear(g_c), s	12.4	19.3	7.2	9.4	25.4	10.8	10.9	11.7	6.3	6.9	3.7	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	452	2795	592	418	2724	577	601	1087	307	325	871	369
V/C Ratio(X)	1.09	0.64	0.47	0.84	0.80	0.56	0.70	0.67	0.51	0.79	0.36	0.78
Avail Cap(c_a), veh/h	452	2839	601	448	2831	600	601	2278	644	328	2931	1242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	25.2	7.0	42.2	27.9	11.4	38.3	36.5	18.2	43.5	39.8	22.5
Incr Delay (d2), s/veh	67.8	0.5	0.6	11.4	1.6	1.1	3.1	0.7	1.3	11.5	0.2	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	7.8	4.0	4.5	10.4	5.1	4.8	5.1	3.1	3.4	1.6	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.4	25.7	7.6	53.7	29.5	12.5	41.5	37.2	19.5	55.0	40.1	26.1
LnGrp LOS	F	C	A	D	C	B	D	D	B	D	D	C
Approach Vol, veh/h		2562			2846			1306			857	
Approach Delay, s/veh		40.0			30.5			36.4			39.8	
Approach LOS		D			C			D			D	

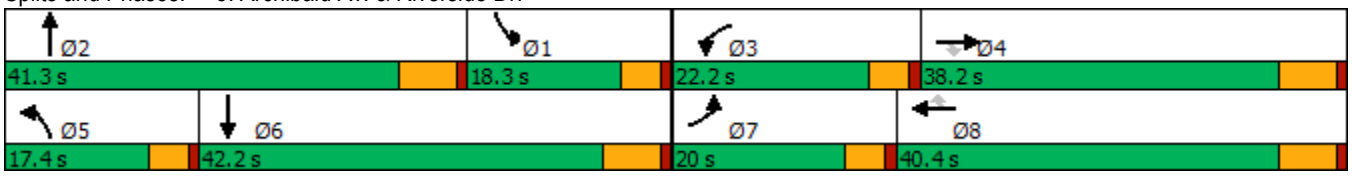
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	25.1	16.1	43.0	21.1	17.6	17.0	42.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	9.0	39.7	12.3	37.1	10.4	38.3	12.4	37.0
Max Q Clear Time (g_c+I1), s	8.9	13.7	11.4	21.3	12.9	8.3	14.4	27.4
Green Ext Time (p_c), s	0.0	5.2	0.1	10.8	0.0	3.0	0.0	8.2

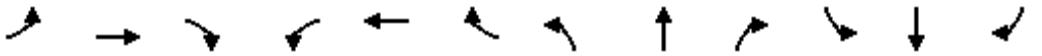
Intersection Summary	
HCM 6th Ctrl Delay	35.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	183	692	370	222	517	204	303	1114	323	1145
Future Volume (vph)	183	692	370	222	517	204	303	1114	323	1145
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	20.0	38.2	38.2	22.2	40.4	40.4	17.4	41.3	18.3	42.2
Total Split (%)	16.7%	31.8%	31.8%	18.5%	33.7%	33.7%	14.5%	34.4%	15.3%	35.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.1	29.6	29.6	17.6	32.1	32.1	12.8	34.4	14.5	36.0
Actuated g/C Ratio	0.13	0.25	0.25	0.15	0.27	0.27	0.11	0.29	0.12	0.31
v/c Ratio	0.92	0.84	0.65	0.96	0.58	0.38	0.93	0.92	0.88	0.95
Control Delay	97.2	51.6	16.2	99.7	39.7	6.5	86.3	51.3	75.5	54.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.2	51.6	16.2	99.7	39.7	6.5	86.3	51.3	75.5	54.4
LOS	F	D	B	F	D	A	F	D	E	D
Approach Delay		47.8			46.7			58.1		58.4
Approach LOS		D			D			E		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 53.9	Intersection LOS: D
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	692	370	222	517	204	303	1114	141	323	1145	216
Future Volume (veh/h)	183	692	370	222	517	204	303	1114	141	323	1145	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	187	706	194	227	528	106	309	1137	73	330	1168	118
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	835	363	242	902	401	342	1303	84	366	1349	136
Arrive On Green	0.13	0.25	0.25	0.15	0.27	0.27	0.11	0.28	0.28	0.12	0.30	0.30
Sat Flow, veh/h	1594	3367	1464	1594	3367	1495	3092	4640	298	3092	4460	450
Grp Volume(v), veh/h	187	706	194	227	528	106	309	790	420	330	844	442
Grp Sat Flow(s),veh/h/ln	1594	1683	1464	1594	1683	1495	1546	1612	1712	1546	1612	1686
Q Serve(g_s), s	13.3	23.1	13.3	16.3	15.8	4.5	11.4	27.0	27.0	12.2	28.6	28.7
Cycle Q Clear(g_c), s	13.3	23.1	13.3	16.3	15.8	4.5	11.4	27.0	27.0	12.2	28.6	28.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		0.27
Lane Grp Cap(c), veh/h	211	835	363	242	902	401	342	906	481	366	975	510
V/C Ratio(X)	0.89	0.85	0.53	0.94	0.59	0.26	0.90	0.87	0.87	0.90	0.87	0.87
Avail Cap(c_a), veh/h	212	931	405	242	995	442	342	978	520	366	1003	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	41.4	37.7	48.5	36.8	16.0	50.8	39.6	39.6	50.3	38.1	38.1
Incr Delay (d2), s/veh	32.1	6.7	1.2	40.1	0.7	0.3	25.5	8.3	14.4	23.9	7.9	14.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	9.9	4.7	8.9	6.3	2.2	5.5	11.2	12.7	5.7	11.7	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.4	48.0	38.9	88.6	37.5	16.3	76.3	47.9	54.1	74.2	46.1	52.1
LnGrp LOS	F	D	D	F	D	B	E	D	D	E	D	D
Approach Vol, veh/h		1087			861			1519			1616	
Approach Delay, s/veh		52.2			48.4			55.4			53.5	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	38.7	22.2	34.9	17.4	41.2	19.9	37.2
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	13.7	* 35	17.6	32.0	12.8	36.0	15.4	34.2
Max Q Clear Time (g_c+I1), s	14.2	29.0	18.3	25.1	13.4	30.7	15.3	17.8
Green Ext Time (p_c), s	0.0	3.4	0.0	2.8	0.0	3.3	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	52.9
HCM 6th LOS	D

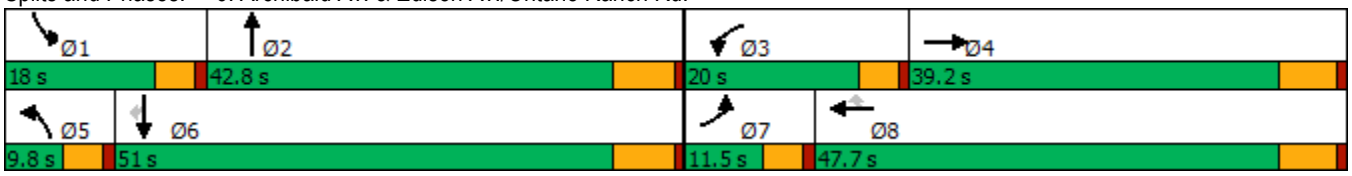
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	1028	293	444	577	286	105	1047	561	394	1111	66
Future Volume (vph)	105	1028	293	444	577	286	105	1047	561	394	1111	66
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	11.5	39.2		20.0	47.7	47.7	9.8	42.8		18.0	51.0	51.0
Total Split (%)	9.6%	32.7%		16.7%	39.8%	39.8%	8.2%	35.7%		15.0%	42.5%	42.5%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.7	29.0	110.2	15.5	37.8	37.8	5.2	30.2	110.2	13.5	38.5	38.5
Actuated g/C Ratio	0.06	0.26	1.00	0.14	0.34	0.34	0.05	0.27	1.00	0.12	0.35	0.35
v/c Ratio	0.62	0.78	0.21	1.11	0.50	0.47	0.74	0.76	0.39	1.10	0.63	0.11
Control Delay	67.8	42.4	0.3	123.7	30.9	12.4	82.1	40.6	0.8	123.5	31.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	42.4	0.3	123.7	30.9	12.4	82.1	40.6	0.8	123.5	31.9	0.4
LOS	E	D	A	F	C	B	F	D	A	F	C	A
Approach Delay		35.6			58.4			30.1			53.6	
Approach LOS		D			E			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 43.7	Intersection LOS: D
Intersection Capacity Utilization 88.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1028	293	444	577	286	105	1047	561	394	1111	66
Future Volume (veh/h)	105	1028	293	444	577	286	105	1047	561	394	1111	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	111	1082	0	467	607	259	111	1102	0	415	1169	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	1363		436	1235	523	157	1408		391	1820	514
Arrive On Green	0.05	0.26	0.00	0.15	0.35	0.35	0.05	0.26	0.00	0.13	0.34	0.34
Sat Flow, veh/h	3000	5316	1502	3000	3544	1500	3188	5316	1502	3092	5316	1502
Grp Volume(v), veh/h	111	1082	0	467	607	259	111	1102	0	415	1169	50
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1546	1772	1502
Q Serve(g_s), s	3.9	20.1	0.0	15.4	14.3	14.4	3.6	20.4	0.0	13.4	19.6	2.4
Cycle Q Clear(g_c), s	3.9	20.1	0.0	15.4	14.3	14.4	3.6	20.4	0.0	13.4	19.6	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	160	1363		436	1235	523	157	1408		391	1820	514
V/C Ratio(X)	0.69	0.79		1.07	0.49	0.50	0.71	0.78		1.06	0.64	0.10
Avail Cap(c_a), veh/h	195	1656		436	1389	588	157	1822		391	2234	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	36.8	0.0	45.3	27.1	27.2	49.6	36.1	0.0	46.3	29.4	23.7
Incr Delay (d2), s/veh	5.1	2.3	0.0	63.2	0.3	0.7	12.0	1.7	0.0	62.5	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.5	0.0	9.3	5.7	4.9	1.6	8.4	0.0	8.3	7.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	39.0	0.0	108.4	27.4	27.9	61.6	37.8	0.0	108.7	29.8	23.8
LnGrp LOS	D	D		F	C	C	E	D		F	C	C
Approach Vol, veh/h		1193			1333			1213			1634	
Approach Delay, s/veh		40.5			55.9			40.0			49.7	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	34.5	20.0	33.4	9.8	42.7	10.2	43.1
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	13.4	36.3	15.4	33.0	5.2	44.5	6.9	41.5
Max Q Clear Time (g_c+I1), s	15.4	22.4	17.4	22.1	5.6	21.6	5.9	16.4
Green Ext Time (p_c), s	0.0	5.7	0.0	4.9	0.0	7.8	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

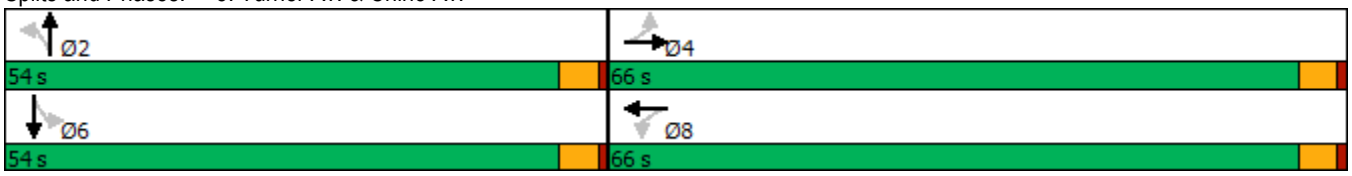
Notes

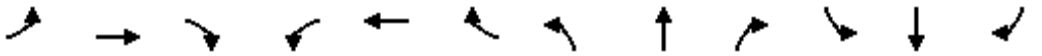
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	103	306	58	216	22	139	86	217
Future Volume (vph)	103	306	58	216	22	139	86	217
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	66.0	66.0	66.0	66.0	54.0	54.0	54.0	54.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	10.4	10.4	10.4	10.4	9.5	9.5	9.5	9.5
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.32	0.32	0.32	0.32
v/c Ratio	0.35	0.34	0.21	0.28	0.08	0.21	0.28	0.27
Control Delay	11.2	7.7	9.4	6.2	8.5	6.0	10.7	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	7.7	9.4	6.2	8.5	6.0	10.7	7.8
LOS	B	A	A	A	A	A	B	A
Approach Delay		8.5		6.7		6.2		8.5
Approach LOS		A		A		A		A

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 29.5		
Natural Cycle: 45		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.35		
Intersection Signal Delay: 7.7	Intersection LOS: A	
Intersection Capacity Utilization 46.1%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 8: Turner Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	306	59	58	216	93	22	139	64	86	217	47
Future Volume (veh/h)	103	306	59	58	216	93	22	139	64	86	217	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	112	333	64	63	235	101	24	151	70	93	236	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	537	1018	193	512	835	348	500	677	296	523	834	177
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	934	2822	536	883	2316	965	977	2244	980	1021	2763	586
Grp Volume(v), veh/h	112	197	200	63	169	167	24	111	110	93	142	145
Grp Sat Flow(s),veh/h/ln	934	1683	1675	883	1683	1598	977	1683	1540	1021	1683	1666
Q Serve(g_s), s	2.6	2.3	2.3	1.5	1.9	2.0	0.5	1.3	1.4	2.0	1.7	1.8
Cycle Q Clear(g_c), s	4.6	2.3	2.3	3.8	1.9	2.0	2.3	1.3	1.4	3.4	1.7	1.8
Prop In Lane	1.00		0.32	1.00		0.60	1.00		0.64	1.00		0.35
Lane Grp Cap(c), veh/h	537	607	604	512	607	576	500	508	465	523	508	503
V/C Ratio(X)	0.21	0.32	0.33	0.12	0.28	0.29	0.05	0.22	0.24	0.18	0.28	0.29
Avail Cap(c_a), veh/h	2356	3883	3865	2232	3883	3687	2019	3125	2860	2110	3125	3094
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	6.2	6.2	7.6	6.1	6.1	8.0	7.0	7.0	8.3	7.1	7.1
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.1	0.2	0.3	0.0	0.2	0.3	0.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.4	0.4	0.2	0.3	0.3	0.1	0.2	0.2	0.2	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	6.5	6.5	7.7	6.3	6.4	8.0	7.2	7.3	8.5	7.4	7.4
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		509			399			245			380	
Approach Delay, s/veh		6.8			6.5			7.3			7.7	
Approach LOS		A			A			A			A	

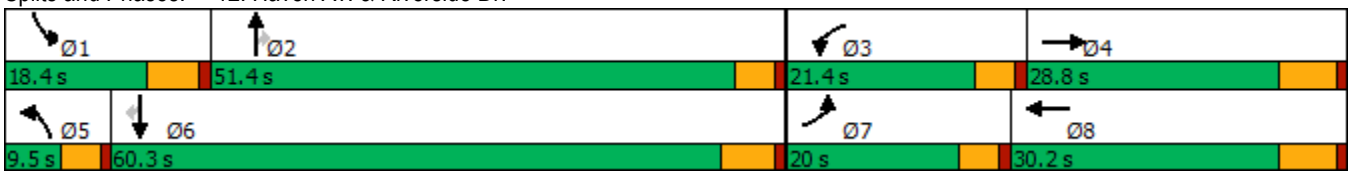
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.5		14.1		12.5		14.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		49.5		61.5		49.5		61.5				
Max Q Clear Time (g_c+I1), s		4.3		6.6		5.4		5.8				
Green Ext Time (p_c), s		1.4		3.0		2.0		2.4				

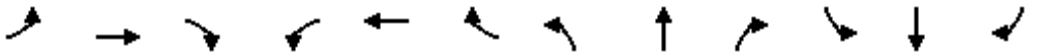
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	349	460	197	455	57	1003	184	147	1293	399
Future Volume (vph)	349	460	197	455	57	1003	184	147	1293	399
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	9.5	23.7	23.7	15.8	24.8	24.8
Total Split (s)	20.0	28.8	21.4	30.2	9.5	51.4	51.4	18.4	60.3	60.3
Total Split (%)	16.7%	24.0%	17.8%	25.2%	7.9%	42.8%	42.8%	15.3%	50.3%	50.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.5	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.5	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.9	25.6	11.8	22.5	5.0	42.8	42.8	12.7	50.6	50.6
Actuated g/C Ratio	0.13	0.22	0.10	0.20	0.04	0.37	0.37	0.11	0.44	0.44
v/c Ratio	0.88	0.74	0.63	0.87	0.86	0.79	0.28	0.87	0.86	0.48
Control Delay	72.9	47.7	58.8	57.6	130.3	37.0	4.5	93.5	35.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	47.7	58.8	57.6	130.3	37.0	4.5	93.5	35.7	5.2
LOS	E	D	E	E	F	D	A	F	D	A
Approach Delay		57.4		57.9		36.4			33.7	
Approach LOS		E		E		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 42.8	Intersection LOS: D
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	349	460	96	197	455	122	57	1003	184	147	1293	399
Future Volume (veh/h)	349	460	96	197	455	122	57	1003	184	147	1293	399
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	364	479	58	205	474	65	59	1045	119	153	1347	190
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	419	732	88	266	574	78	73	1242	526	180	1525	645
Arrive On Green	0.20	0.35	0.35	0.13	0.28	0.28	0.07	0.53	0.53	0.17	0.65	0.65
Sat Flow, veh/h	3188	3095	373	3188	3042	415	1594	3544	1502	1594	3544	1500
Grp Volume(v), veh/h	364	273	264	205	275	264	59	1045	119	153	1347	190
Grp Sat Flow(s),veh/h/ln	1594	1772	1696	1594	1772	1685	1594	1772	1502	1594	1772	1500
Q Serve(g_s), s	11.4	13.4	13.5	6.4	15.0	15.2	3.8	25.9	4.4	9.6	32.4	5.7
Cycle Q Clear(g_c), s	11.4	13.4	13.5	6.4	15.0	15.2	3.8	25.9	4.4	9.6	32.4	5.7
Prop In Lane	1.00		0.22	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	419	419	401	266	334	318	73	1242	526	180	1525	645
V/C Ratio(X)	0.87	0.65	0.66	0.77	0.82	0.83	0.81	0.84	0.23	0.85	0.88	0.29
Avail Cap(c_a), veh/h	475	419	401	518	411	391	77	1601	678	194	1868	790
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	29.8	29.8	44.3	35.5	35.5	47.7	22.1	17.0	42.1	16.2	11.5
Incr Delay (d2), s/veh	13.2	3.6	3.9	1.8	10.6	11.8	44.3	3.3	0.2	27.1	4.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	5.2	5.1	2.4	6.5	6.3	2.4	9.3	1.4	4.8	8.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	33.3	33.7	46.1	46.1	47.4	92.1	25.4	17.2	69.2	20.8	11.7
LnGrp LOS	D	C	C	D	D	D	F	C	B	E	C	B
Approach Vol, veh/h		901			744			1223			1690	
Approach Delay, s/veh		41.7			46.5			27.8			24.2	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	42.0	13.2	30.7	9.2	50.3	18.2	25.7
Change Period (Y+Rc), s	5.8	* 5.8	4.6	6.2	4.5	5.8	4.6	6.2
Max Green Setting (Gmax), s	12.6	* 47	16.8	22.6	5.0	54.5	15.4	24.0
Max Q Clear Time (g_c+I1), s	11.6	27.9	8.4	15.5	5.8	34.4	13.4	17.2
Green Ext Time (p_c), s	0.0	7.9	0.2	1.6	0.0	10.1	0.2	1.6

Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

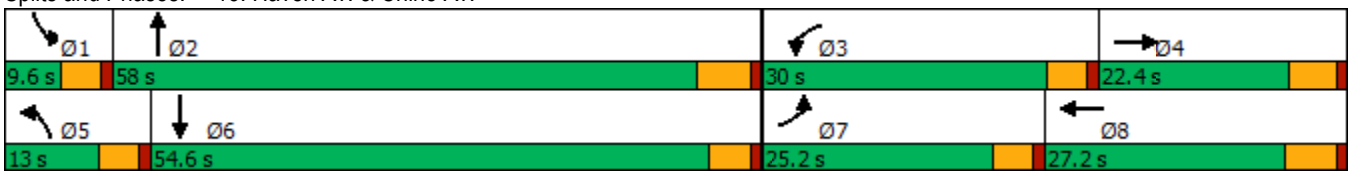
Notes

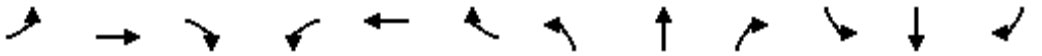
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	196	125	432	116	113	1067	1453	
Future Volume (vph)	196	125	432	116	113	1067	1453	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	25.2	22.4	30.0	27.2	13.0	58.0	54.6	9.6
Total Split (%)	21.0%	18.7%	25.0%	22.7%	10.8%	48.3%	45.5%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	18.4	17.0	25.4	23.6	8.4	61.8	49.9	
Actuated g/C Ratio	0.15	0.14	0.21	0.20	0.07	0.52	0.42	
v/c Ratio	0.85	0.96	1.26	0.35	1.08	0.79	1.17	
Control Delay	78.6	89.6	175.3	45.7	161.7	27.2	117.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	78.6	89.6	175.3	45.7	161.7	27.2	117.3	
LOS	E	F	F	D	F	C	F	
Approach Delay		84.7		147.9		37.7	117.3	
Approach LOS		F		F		D	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 89.7	Intersection LOS: F
Intersection Capacity Utilization 108.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	125	118	432	116	0	113	1067	261	0	1453	163
Future Volume (veh/h)	196	125	118	432	116	0	113	1067	261	0	1453	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	206	136	66	470	126	0	119	1123	143	0	1529	88
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	155	75	377	369	0	111	1614	205	1	1379	79
Arrive On Green	0.14	0.13	0.13	0.21	0.20	0.00	0.07	0.79	0.52	0.00	0.62	0.42
Sat Flow, veh/h	1594	1189	577	1781	1870	0	1594	3082	392	1781	3319	190
Grp Volume(v), veh/h	206	0	202	470	126	0	119	645	621	0	813	804
Grp Sat Flow(s),veh/h/ln	1594	0	1766	1781	1870	0	1594	1772	1701	1781	1772	1738
Q Serve(g_s), s	15.3	0.0	13.5	25.4	7.0	0.0	8.4	20.7	24.4	0.0	49.9	49.9
Cycle Q Clear(g_c), s	15.3	0.0	13.5	25.4	7.0	0.0	8.4	20.7	24.4	0.0	49.9	49.9
Prop In Lane	1.00		0.33	1.00		0.00	1.00		0.23	1.00		0.11
Lane Grp Cap(c), veh/h	230	0	230	377	369	0	111	928	891	1	736	722
V/C Ratio(X)	0.90	0.00	0.88	1.25	0.34	0.00	1.07	0.69	0.70	0.00	1.10	1.11
Avail Cap(c_a), veh/h	273	0	250	377	369	0	111	928	891	74	736	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.50	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	51.3	47.4	41.5	0.0	55.9	8.4	11.2	0.0	22.6	24.0
Incr Delay (d2), s/veh	24.3	0.0	26.6	131.9	0.5	0.0	104.7	2.3	2.4	0.0	65.6	69.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	7.6	24.7	3.2	0.0	6.5	4.9	6.2	0.0	29.5	30.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.8	0.0	78.0	179.3	42.0	0.0	160.5	10.6	13.6	0.0	88.2	93.3
LnGrp LOS	E	A	E	F	D	A	F	B	B	A	F	F
Approach Vol, veh/h		408			596			1385			1617	
Approach Delay, s/veh		76.4			150.3			24.9			90.8	
Approach LOS		E			F			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	68.7	30.0	21.4	13.0	55.7	21.9	29.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	52.2	25.4	* 17	8.4	* 50	20.6	21.4
Max Q Clear Time (g_c+I1), s	0.0	26.4	27.4	15.5	10.4	51.9	17.3	9.0
Green Ext Time (p_c), s	0.0	8.9	0.0	0.1	0.0	0.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	75.4
HCM 6th LOS	E

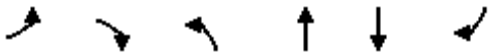
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	58	132	176	1328	1868
Future Volume (vph)	58	132	176	1328	1868
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	27.8	27.8	19.0	92.2	73.2
Total Split (%)	23.2%	23.2%	15.8%	76.8%	61.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.6	12.6	14.4	86.5	67.5
Actuated g/C Ratio	0.11	0.11	0.13	0.78	0.61
v/c Ratio	0.37	0.50	1.00	0.59	1.05
Control Delay	51.1	13.0	111.2	6.5	55.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	13.0	111.2	6.5	55.3
LOS	D	B	F	A	E
Approach Delay	24.6			18.8	55.3
Approach LOS	C			B	E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 38.5	Intersection LOS: D
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	132	176	1328	1868	59
Future Volume (veh/h)	58	132	176	1328	1868	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	67	84	205	1544	2172	69
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	146	138	213	2696	2134	67
Arrive On Green	0.09	0.09	0.13	0.80	0.62	0.62
Sat Flow, veh/h	1594	1502	1594	3455	3416	108
Grp Volume(v), veh/h	67	84	205	1544	1121	1121
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1683	1772	1752
Q Serve(g_s), s	4.3	5.8	13.8	18.2	67.4	67.4
Cycle Q Clear(g_c), s	4.3	5.8	13.8	18.2	67.4	67.4
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	146	138	213	2696	1107	1095
V/C Ratio(X)	0.46	0.61	0.96	0.57	1.01	1.02
Avail Cap(c_a), veh/h	325	306	213	2696	1107	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	47.1	46.5	4.0	20.2	20.2
Incr Delay (d2), s/veh	2.2	4.3	50.9	0.3	30.1	33.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.0	8.3	3.5	31.9	32.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.7	51.5	97.4	4.2	50.4	53.6
LnGrp LOS	D	D	F	A	F	F
Approach Vol, veh/h	151			1749	2241	
Approach Delay, s/veh	50.2			15.2	52.0	
Approach LOS	D			B	D	

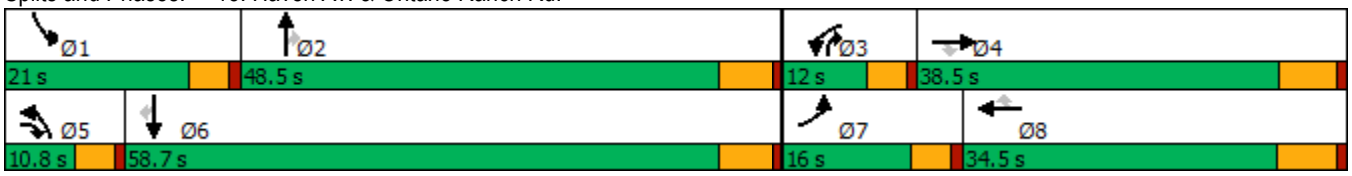
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		92.2		15.7	19.0	73.2
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	14.4	67.4
Max Q Clear Time (g_c+I1), s		20.2		7.8	15.8	69.4
Green Ext Time (p_c), s		17.3		0.3	0.0	0.0

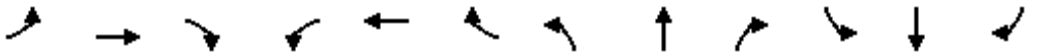
Intersection Summary		
HCM 6th Ctrl Delay		36.4
HCM 6th LOS		D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	490	1657	38	249	1299	651	19	368	77	765	602	295
Future Volume (vph)	490	1657	38	249	1299	651	19	368	77	765	602	295
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	9.6	9.6	34.5	34.5	9.6	47.8	9.6	9.6	45.8	45.8
Total Split (s)	16.0	38.5	10.8	12.0	34.5	34.5	10.8	48.5	12.0	21.0	58.7	58.7
Total Split (%)	13.3%	32.1%	9.0%	10.0%	28.8%	28.8%	9.0%	40.4%	10.0%	17.5%	48.9%	48.9%
Yellow Time (s)	3.6	5.2	3.6	3.6	5.5	5.5	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	4.6	6.5	6.5	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	11.5	32.7	44.6	7.5	28.3	28.3	5.6	19.1	32.5	16.6	32.2	32.2
Actuated g/C Ratio	0.12	0.34	0.46	0.08	0.29	0.29	0.06	0.20	0.33	0.17	0.33	0.33
v/c Ratio	1.39	0.99	0.05	1.16	0.67	0.97	0.22	0.57	0.14	1.51	0.55	0.45
Control Delay	225.2	52.9	0.1	150.5	33.6	44.9	53.6	37.7	1.9	268.9	28.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	225.2	52.9	0.1	150.5	33.6	44.9	53.6	37.7	1.9	268.9	28.6	5.8
LOS	F	D	A	F	C	D	D	D	A	F	C	A
Approach Delay		90.6			50.2			32.3			135.2	
Approach LOS		F			D			C			F	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 97.3		
Natural Cycle: 115		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 1.51		
Intersection Signal Delay: 84.2	Intersection LOS: F	
Intersection Capacity Utilization 95.0%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	1657	38	249	1299	651	19	368	77	765	602	295
Future Volume (veh/h)	490	1657	38	249	1299	651	19	368	77	765	602	295
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	521	1763	27	265	1382	188	20	391	32	814	640	165
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	397	1868	560	242	2181	462	35	546	353	571	1104	468
Arrive On Green	0.12	0.35	0.35	0.08	0.31	0.31	0.02	0.15	0.15	0.18	0.31	0.31
Sat Flow, veh/h	3188	5316	1502	3000	7088	1502	1594	3544	1502	3188	3544	1502
Grp Volume(v), veh/h	521	1763	27	265	1382	188	20	391	32	814	640	165
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1500	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	11.4	29.5	1.1	7.4	15.4	9.1	1.1	9.6	1.5	16.4	13.9	7.8
Cycle Q Clear(g_c), s	11.4	29.5	1.1	7.4	15.4	9.1	1.1	9.6	1.5	16.4	13.9	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	397	1868	560	242	2181	462	35	546	353	571	1104	468
V/C Ratio(X)	1.31	0.94	0.05	1.09	0.63	0.41	0.58	0.72	0.09	1.43	0.58	0.35
Avail Cap(c_a), veh/h	397	1874	562	242	2181	462	108	1652	821	571	2046	867
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	28.8	18.3	42.1	27.3	25.1	44.4	36.8	27.4	37.6	26.5	24.4
Incr Delay (d2), s/veh	158.1	10.4	0.0	85.1	0.6	0.6	5.5	1.8	0.1	202.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	13.0	0.3	5.4	5.9	3.0	0.5	4.1	0.5	22.0	5.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	198.2	39.3	18.4	127.2	27.9	25.7	49.9	38.6	27.5	239.6	27.0	24.9
LnGrp LOS	F	D	B	F	C	C	D	D	C	F	C	C
Approach Vol, veh/h		2311			1835			443			1619	
Approach Delay, s/veh		74.8			42.0			38.3			133.7	
Approach LOS		E			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	19.9	12.0	38.7	6.6	34.3	16.0	34.7
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	16.4	42.7	7.4	* 32	6.2	52.9	11.4	28.0
Max Q Clear Time (g_c+I1), s	18.4	11.6	9.4	31.5	3.1	15.9	13.4	17.4
Green Ext Time (p_c), s	0.0	2.5	0.0	0.7	0.0	5.0	0.0	6.4

Intersection Summary	
HCM 6th Ctrl Delay	77.9
HCM 6th LOS	E

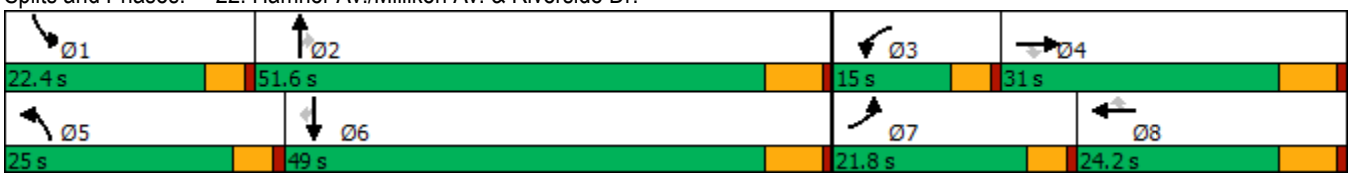
Notes

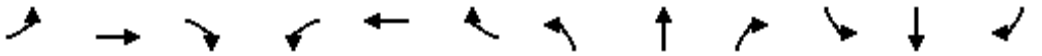
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	313	253	186	88	316	176	189	946	54	234	1236	466
Future Volume (vph)	313	253	186	88	316	176	189	946	54	234	1236	466
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	21.8	31.0	31.0	15.0	24.2	24.2	25.0	51.6	51.6	22.4	49.0	49.0
Total Split (%)	18.2%	25.8%	25.8%	12.5%	20.2%	20.2%	20.8%	43.0%	43.0%	18.7%	40.8%	40.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	14.8	23.5	23.5	9.3	18.1	18.1	11.3	42.5	42.5	12.9	44.1	44.1
Actuated g/C Ratio	0.13	0.21	0.21	0.08	0.16	0.16	0.10	0.39	0.39	0.12	0.40	0.40
v/c Ratio	0.77	0.71	0.42	0.69	1.15	0.46	0.61	0.73	0.09	0.66	0.92	0.60
Control Delay	59.5	52.3	8.4	76.6	142.3	10.5	56.1	33.3	0.3	55.9	43.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	52.3	8.4	76.6	142.3	10.5	56.1	33.3	0.3	55.9	43.5	9.2
LOS	E	D	A	E	F	B	E	C	A	E	D	A
Approach Delay		44.4			92.4			35.4			36.7	
Approach LOS		D			F			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 44.9	Intersection LOS: D
Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	313	253	186	88	316	176	189	946	54	234	1236	466
Future Volume (veh/h)	313	253	186	88	316	176	189	946	54	234	1236	466
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	329	266	155	93	333	147	199	996	52	246	1301	477
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	393	404	340	114	313	265	264	1384	586	311	1437	601
Arrive On Green	0.12	0.23	0.23	0.07	0.18	0.18	0.08	0.39	0.39	0.10	0.41	0.41
Sat Flow, veh/h	3188	1772	1490	1594	1772	1502	3188	3544	1500	3188	3544	1482
Grp Volume(v), veh/h	329	266	155	93	333	147	199	996	52	246	1301	477
Grp Sat Flow(s),veh/h/ln	1594	1772	1490	1594	1772	1502	1594	1772	1500	1594	1772	1482
Q Serve(g_s), s	10.3	13.9	9.1	5.9	18.0	9.1	6.2	24.3	2.2	7.7	35.2	28.8
Cycle Q Clear(g_c), s	10.3	13.9	9.1	5.9	18.0	9.1	6.2	24.3	2.2	7.7	35.2	28.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	393	404	340	114	313	265	264	1384	586	311	1437	601
V/C Ratio(X)	0.84	0.66	0.46	0.81	1.06	0.55	0.75	0.72	0.09	0.79	0.91	0.79
Avail Cap(c_a), veh/h	538	431	362	163	313	265	638	1578	668	556	1488	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	35.7	33.9	46.6	42.0	38.3	45.7	26.3	19.6	45.0	28.5	26.6
Incr Delay (d2), s/veh	6.2	3.4	1.0	12.7	69.0	2.5	1.6	1.4	0.1	1.7	8.1	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	6.0	3.2	2.6	13.4	3.4	2.4	9.6	0.7	3.0	15.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	39.1	34.9	59.3	111.0	40.8	47.4	27.7	19.7	46.7	36.6	33.4
LnGrp LOS	D	D	C	E	F	D	D	C	B	D	D	C
Approach Vol, veh/h		750			573			1247			2024	
Approach Delay, s/veh		43.0			84.6			30.5			37.1	
Approach LOS		D			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	46.0	11.9	29.5	13.0	47.5	17.2	24.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.8	45.4	10.4	24.8	20.4	42.8	17.2	18.0
Max Q Clear Time (g_c+I1), s	9.7	26.3	7.9	15.9	8.2	37.2	12.3	20.0
Green Ext Time (p_c), s	0.3	6.3	0.0	1.2	0.3	4.2	0.3	0.0

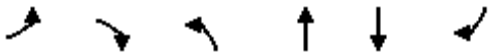
Intersection Summary	
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	109	129	1061	1327
Future Volume (vph)	109	129	1061	1327
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	23.0	97.0	97.0	97.0
Total Split (%)	19.2%	80.8%	80.8%	80.8%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	15.2		71.2	71.2
Actuated g/C Ratio	0.16		0.74	0.74
v/c Ratio	0.73		0.92dl	0.63
Control Delay	52.0		16.4	7.0
Queue Delay	0.0		0.0	0.0
Total Delay	52.0		16.4	7.0
LOS	D		B	A
Approach Delay	52.0		16.4	7.0
Approach LOS	D		B	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 97.5%	ICU Level of Service F
Analysis Period (min) 15	

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	109	86	129	1061	1327	164
Future Volume (veh/h)	109	86	129	1061	1327	164
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	95	142	1166	1458	180
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	137	109	178	1629	2442	298
Arrive On Green	0.15	0.15	0.77	0.77	0.77	0.77
Sat Flow, veh/h	939	743	172	2126	3281	390
Grp Volume(v), veh/h	216	0	417	891	806	832
Grp Sat Flow(s),veh/h/ln	1690	0	596	1702	1777	1800
Q Serve(g_s), s	12.8	0.0	42.8	26.4	20.0	20.6
Cycle Q Clear(g_c), s	12.8	0.0	63.4	26.4	20.0	20.6
Prop In Lane	0.56	0.44	0.34			0.22
Lane Grp Cap(c), veh/h	247	0	503	1304	1361	1379
V/C Ratio(X)	0.87	0.00	0.83	0.68	0.59	0.60
Avail Cap(c_a), veh/h	304	0	596	1533	1601	1622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	0.0	12.2	5.9	5.1	5.2
Incr Delay (d2), s/veh	20.2	0.0	8.2	1.0	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	5.3	5.8	4.4	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	63.1	0.0	20.5	6.9	5.6	5.7
LnGrp LOS	E	A	C	A	A	A
Approach Vol, veh/h	216			1308	1638	
Approach Delay, s/veh	63.1			11.2	5.6	
Approach LOS	E			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		83.2		19.5		83.2
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		92.5		18.5		92.5
Max Q Clear Time (g_c+I1), s		65.4		14.8		22.6
Green Ext Time (p_c), s		13.3		0.2		17.0

Intersection Summary		
HCM 6th Ctrl Delay		11.9
HCM 6th LOS		B

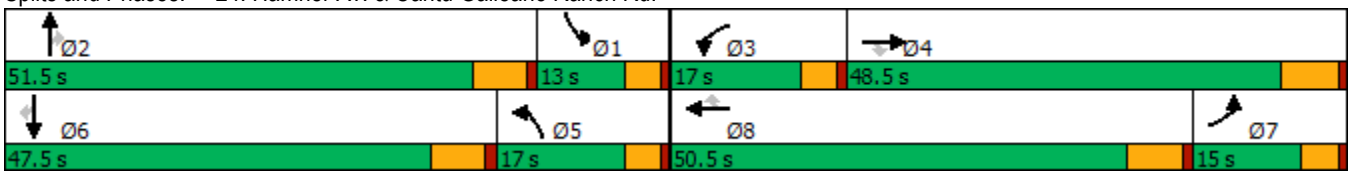
Notes

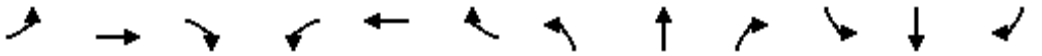
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	433	2047	451	517	1915	231	513	491	397	321	621	411
Future Volume (vph)	433	2047	451	517	1915	231	513	491	397	321	621	411
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	15.0	48.5	48.5	17.0	50.5	50.5	17.0	51.5	51.5	13.0	47.5	47.5
Total Split (%)	11.5%	37.3%	37.3%	13.1%	38.8%	38.8%	13.1%	39.6%	39.6%	10.0%	36.5%	36.5%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.1	42.2	42.2	12.5	41.6	41.6	13.1	22.6	22.6	10.9	20.5	20.5
Actuated g/C Ratio	0.12	0.38	0.38	0.11	0.38	0.38	0.12	0.20	0.20	0.10	0.19	0.19
v/c Ratio	1.07	0.75	0.65	1.35	0.71	0.33	1.27	0.45	0.80	0.95	0.47	0.50
Control Delay	112.4	32.5	21.8	210.6	31.4	5.8	180.7	38.7	29.0	88.7	40.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.4	32.5	21.8	210.6	31.4	5.8	180.7	38.7	29.0	88.7	40.5	11.2
LOS	F	C	C	F	C	A	F	D	C	F	D	B
Approach Delay		42.7			64.0			88.0			43.1	
Approach LOS		D			E			F			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 110.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 57.1	Intersection LOS: E
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	433	2047	451	517	1915	231	513	491	397	321	621	411
Future Volume (veh/h)	433	2047	451	517	1915	231	513	491	397	321	621	411
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	451	2132	262	539	1995	137	534	511	232	334	647	246
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	2873	609	438	2823	598	438	921	260	398	1144	485
Arrive On Green	0.11	0.38	0.38	0.12	0.38	0.38	0.12	0.16	0.16	0.11	0.15	0.15
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	451	2132	262	539	1995	137	534	511	232	334	647	246
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	11.2	24.8	7.6	12.4	22.8	5.9	12.4	8.4	10.5	9.3	8.1	7.2
Cycle Q Clear(g_c), s	11.2	24.8	7.6	12.4	22.8	5.9	12.4	8.4	10.5	9.3	8.1	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	2873	609	438	2823	598	438	921	260	398	1144	485
V/C Ratio(X)	1.14	0.74	0.43	1.23	0.71	0.23	1.22	0.55	0.89	0.84	0.57	0.51
Avail Cap(c_a), veh/h	395	3116	660	438	3264	692	438	2521	712	398	3064	1298
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	26.8	8.9	44.2	26.7	21.4	44.2	38.8	21.7	43.9	39.6	39.2
Incr Delay (d2), s/veh	90.3	0.9	0.5	122.3	0.6	0.2	117.7	0.5	10.2	13.9	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	10.1	3.9	12.6	9.2	2.0	12.3	3.7	4.3	4.6	3.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	135.2	27.7	9.3	166.5	27.3	21.6	161.9	39.3	31.9	57.8	40.0	40.0
LnGrp LOS	F	C	A	F	C	C	F	D	C	E	D	D
Approach Vol, veh/h		2845			2671			1277			1227	
Approach Delay, s/veh		43.0			55.1			89.2			44.9	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	22.7	17.0	45.2	17.0	21.6	17.7	44.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	6.5	* 6.5
Max Green Setting (Gmax), s	8.4	45.3	12.4	42.0	12.4	41.3	10.4	* 44
Max Q Clear Time (g_c+I1), s	11.3	12.5	14.4	26.8	14.4	10.1	13.2	24.8
Green Ext Time (p_c), s	0.0	4.1	0.0	12.0	0.0	5.3	0.0	13.2

Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

APPENDIX 7.1: HORIZON YEAR (2050) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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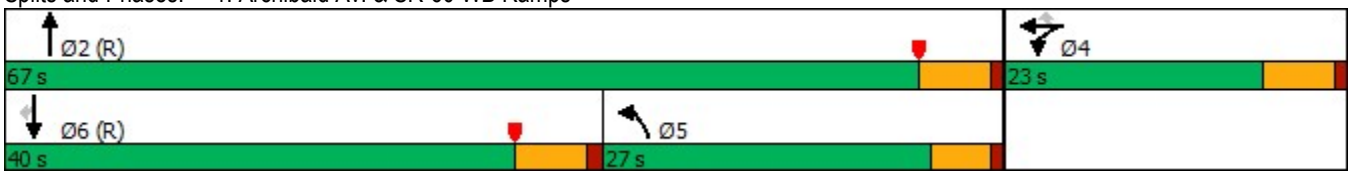
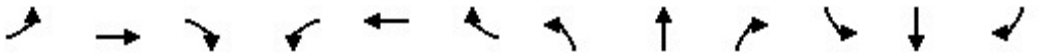
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	457	9	537	978	1339	562	194
Future Volume (vph)	457	9	537	978	1339	562	194
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	23.0	23.0	23.0	27.0	67.0	40.0	40.0
Total Split (%)	25.6%	25.6%	25.6%	30.0%	74.4%	44.4%	44.4%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	21.3	21.3	21.3	34.4	57.1	17.7	17.7
Actuated g/C Ratio	0.24	0.24	0.24	0.38	0.63	0.20	0.20
v/c Ratio	0.89	0.83	0.76	0.76	0.42	0.46	0.42
Control Delay	59.5	44.4	35.4	26.7	3.5	32.2	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	44.4	35.4	26.7	3.5	32.2	6.5
LOS	E	D	D	C	A	C	A
Approach Delay		46.7			13.3	25.6	
Approach LOS		D			B	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	457	9	537	978	1339	0	0	562	194
Future Volume (veh/h)	0	0	0	457	9	537	978	1339	0	0	562	194
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				637	0	338	998	1366	0	0	573	101
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				681	0	302	1610	3472	0	0	963	237
Arrive On Green				0.19	0.00	0.19	0.93	1.00	0.00	0.00	0.15	0.15
Sat Flow, veh/h				3563	0	1583	3456	5274	0	0	6696	1585
Grp Volume(v), veh/h				637	0	338	998	1366	0	0	573	101
Grp Sat Flow(s),veh/h/ln				1781	0	1583	1728	1702	0	0	1609	1585
Q Serve(g_s), s				15.9	0.0	17.2	4.2	0.0	0.0	0.0	7.5	5.2
Cycle Q Clear(g_c), s				15.9	0.0	17.2	4.2	0.0	0.0	0.0	7.5	5.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				681	0	302	1610	3472	0	0	963	237
V/C Ratio(X)				0.94	0.00	1.12	0.62	0.39	0.00	0.00	0.60	0.43
Avail Cap(c_a), veh/h				681	0	302	1610	3472	0	0	2445	602
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.64	0.64	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.9	0.0	36.4	1.8	0.0	0.0	0.0	35.7	34.8
Incr Delay (d2), s/veh				20.3	0.0	87.2	0.3	0.2	0.0	0.0	2.7	5.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.4	0.0	21.0	0.7	0.1	0.0	0.0	3.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				56.2	0.0	123.6	2.1	0.2	0.0	0.0	38.4	40.3
LnGrp LOS				E	A	F	A	A	A	A	D	D
Approach Vol, veh/h					975			2364			674	
Approach Delay, s/veh					79.5			1.0			38.7	
Approach LOS					E			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.0	23.0	47.7	19.3
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	61.2	17.2	22.0	* 34
Max Q Clear Time (g_c+I1), s	2.0	19.2	6.2	9.5
Green Ext Time (p_c), s	12.8	0.0	1.9	4.0

Intersection Summary	
HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Notes

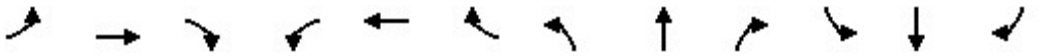
User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	433	5	560	1886	701	183	862
Future Volume (vph)	433	5	560	1886	701	183	862
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	34.0	34.0	34.0	44.0	44.0	12.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	48.9%	48.9%	13.3%	62.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	25.1	25.1	25.1	41.5	41.5	7.8	53.3
Actuated g/C Ratio	0.28	0.28	0.28	0.46	0.46	0.09	0.59
v/c Ratio	0.80	0.72	0.68	0.69	0.67	0.66	0.31
Control Delay	43.0	27.2	25.4	21.4	4.8	58.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	27.2	25.4	21.4	4.8	58.6	1.9
LOS	D	C	C	C	A	E	A
Approach Delay		32.1		16.9			11.8
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	433	5	560	0	0	0	0	1886	701	183	862	0
Future Volume (veh/h)	433	5	560	0	0	0	0	1886	701	183	862	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	589	0	261				0	2028	574	197	927	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	745	0	327				0	3481	839	265	3381	0
Arrive On Green	0.21	0.00	0.21				0.00	0.54	0.54	0.15	1.00	0.00
Sat Flow, veh/h	3563	0	1562				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	589	0	261				0	2028	574	197	927	0
Grp Sat Flow(s),veh/h/ln	1781	0	1562				0	1609	1551	1728	1702	0
Q Serve(g_s), s	14.1	0.0	14.3				0.0	19.0	24.3	4.9	0.0	0.0
Cycle Q Clear(g_c), s	14.1	0.0	14.3				0.0	19.0	24.3	4.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	745	0	327				0	3481	839	265	3381	0
V/C Ratio(X)	0.79	0.00	0.80				0.00	0.58	0.68	0.74	0.27	0.00
Avail Cap(c_a), veh/h	1116	0	489				0	3481	839	307	3381	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.75	0.75	0.00
Uniform Delay (d), s/veh	33.7	0.0	33.8				0.0	13.8	15.0	37.3	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.0	5.5				0.0	0.7	4.5	4.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	5.6				0.0	5.9	8.1	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	0.0	39.3				0.0	14.6	19.6	42.1	0.2	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		850						2602			1124	
Approach Delay, s/veh		37.1						15.7			7.5	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	10.9	54.5				65.4		24.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	8.0	38.2				50.2		28.2				
Max Q Clear Time (g_c+I1), s	6.9	26.3				2.0		16.3				
Green Ext Time (p_c), s	0.0	10.0				6.8		2.5				

Intersection Summary			
HCM 6th Ctrl Delay			17.6
HCM 6th LOS			B

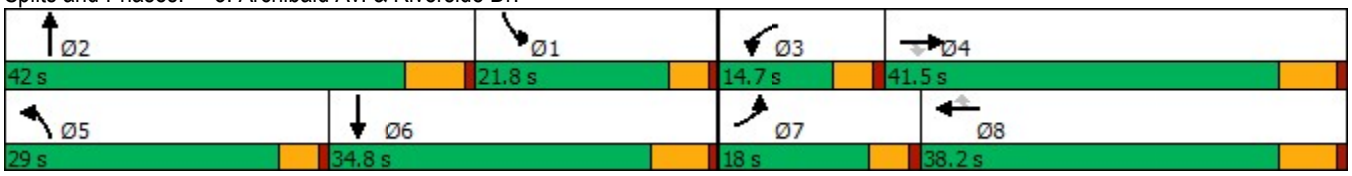
Notes

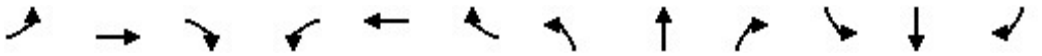
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	203	719	276	174	669	318	386	1739	265	744
Future Volume (vph)	203	719	276	174	669	318	386	1739	265	744
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	41.5	41.5	14.7	38.2	38.2	29.0	42.0	21.8	34.8
Total Split (%)	15.0%	34.6%	34.6%	12.3%	31.8%	31.8%	24.2%	35.0%	18.2%	29.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	32.6	32.6	10.1	29.3	29.3	24.4	35.8	17.2	28.6
Actuated g/C Ratio	0.11	0.28	0.28	0.09	0.25	0.25	0.21	0.30	0.15	0.24
v/c Ratio	1.17	0.81	0.47	1.33	0.83	0.55	1.22	1.38	1.19	0.85
Control Delay	166.4	46.9	7.0	232.3	51.4	8.5	164.9	207.9	164.9	48.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	166.4	46.9	7.0	232.3	51.4	8.5	164.9	207.9	164.9	48.1
LOS	F	D	A	F	D	A	F	F	F	D
Approach Delay		57.9			66.7			200.7		73.5
Approach LOS		E			E			F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.38	
Intersection Signal Delay: 119.0	Intersection LOS: F
Intersection Capacity Utilization 107.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	719	276	174	669	318	386	1739	190	265	744	211
Future Volume (veh/h)	203	719	276	174	669	318	386	1739	190	265	744	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	211	749	230	181	697	267	402	1811	195	276	775	180
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	908	399	136	814	356	329	1342	144	232	1001	230
Arrive On Green	0.11	0.27	0.27	0.09	0.24	0.24	0.21	0.30	0.30	0.15	0.26	0.26
Sat Flow, veh/h	1594	3367	1478	1594	3367	1474	1594	4428	474	1594	3918	901
Grp Volume(v), veh/h	211	749	230	181	697	267	402	1316	690	276	636	319
Grp Sat Flow(s),veh/h/ln	1594	1683	1478	1594	1683	1474	1594	1612	1678	1594	1612	1595
Q Serve(g_s), s	13.4	24.7	15.9	10.1	23.4	13.3	24.4	35.8	35.8	17.2	21.6	22.0
Cycle Q Clear(g_c), s	13.4	24.7	15.9	10.1	23.4	13.3	24.4	35.8	35.8	17.2	21.6	22.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.28	1.00		0.57
Lane Grp Cap(c), veh/h	181	908	399	136	814	356	329	977	508	232	824	408
V/C Ratio(X)	1.17	0.83	0.58	1.33	0.86	0.75	1.22	1.35	1.36	1.19	0.77	0.78
Avail Cap(c_a), veh/h	181	1006	441	136	912	399	329	977	508	232	824	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	40.5	37.3	54.0	42.8	18.6	46.9	41.2	41.2	50.5	40.8	40.9
Incr Delay (d2), s/veh	119.2	5.3	1.5	189.6	7.5	6.9	123.9	163.0	173.2	120.0	4.6	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	10.4	5.7	11.1	10.1	4.9	20.6	35.5	38.4	14.3	8.7	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	171.6	45.8	38.8	243.6	50.3	25.5	170.8	204.2	214.4	170.5	45.3	50.4
LnGrp LOS	F	D	D	F	D	C	F	F	F	F	D	D
Approach Vol, veh/h		1190			1145			2408			1231	
Approach Delay, s/veh		66.8			75.1			201.6			74.7	
Approach LOS		E			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	42.0	14.7	38.1	29.0	36.4	18.0	34.8
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.2	* 36	10.1	35.3	24.4	28.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	19.2	37.8	12.1	26.7	26.4	24.0	15.4	25.4
Green Ext Time (p_c), s	0.0	0.0	0.0	3.5	0.0	2.3	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	124.3
HCM 6th LOS	F

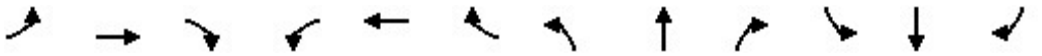
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	148	141	135	219	214	275	1775	85	840
Future Volume (vph)	148	141	135	219	214	275	1775	85	840
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	20.4	23.0	22.0	24.6	24.6	25.0	61.8	13.2	50.0
Total Split (%)	17.0%	19.2%	18.3%	20.5%	20.5%	20.8%	51.5%	11.0%	41.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.1	18.9	15.5	19.3	19.3	20.4	56.3	8.6	44.4
Actuated g/C Ratio	0.13	0.16	0.13	0.16	0.16	0.17	0.48	0.07	0.38
v/c Ratio	0.86	0.78	0.76	0.89	0.66	1.18	0.90	0.87	0.86
Control Delay	85.7	65.5	73.1	80.8	26.2	154.8	34.1	109.0	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	65.5	73.1	80.8	26.2	154.8	34.1	109.0	41.4
LOS	F	E	E	F	C	F	C	F	D
Approach Delay		74.4		58.4			49.3		46.9
Approach LOS		E		E			D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.7	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 52.0	Intersection LOS: D
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	141	47	135	219	214	275	1775	141	85	840	121
Future Volume (veh/h)	148	141	47	135	219	214	275	1775	141	85	840	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	174	166	47	159	258	158	324	2088	158	100	988	134
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	228	64	184	288	244	281	2339	176	118	1150	156
Arrive On Green	0.12	0.17	0.17	0.12	0.16	0.16	0.18	0.48	0.48	0.07	0.38	0.38
Sat Flow, veh/h	1594	1328	376	1594	1772	1502	1594	4878	366	1594	3046	413
Grp Volume(v), veh/h	174	0	213	159	258	158	324	1512	734	100	574	548
Grp Sat Flow(s),veh/h/ln	1594	0	1704	1594	1772	1502	1594	1772	1701	1594	1772	1687
Q Serve(g_s), s	12.4	0.0	13.7	11.3	16.5	9.3	20.4	44.8	45.8	7.2	34.6	34.6
Cycle Q Clear(g_c), s	12.4	0.0	13.7	11.3	16.5	9.3	20.4	44.8	45.8	7.2	34.6	34.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.22	1.00		0.24
Lane Grp Cap(c), veh/h	199	0	292	184	288	244	281	1699	815	118	669	637
V/C Ratio(X)	0.88	0.00	0.73	0.86	0.90	0.65	1.15	0.89	0.90	0.84	0.86	0.86
Avail Cap(c_a), veh/h	218	0	292	240	306	259	281	1751	840	118	695	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	0.0	45.4	50.3	47.5	30.2	47.7	27.3	27.6	52.9	33.2	33.2
Incr Delay (d2), s/veh	28.9	0.0	8.9	21.4	25.9	5.1	101.8	6.0	12.5	39.8	10.2	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	6.4	5.5	9.2	3.6	15.6	18.2	19.3	4.1	15.7	15.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.7	0.0	54.3	71.7	73.4	35.3	149.5	33.3	40.1	92.7	43.4	44.0
LnGrp LOS	E	A	D	E	E	D	F	C	D	F	D	D
Approach Vol, veh/h		387			575			2570			1222	
Approach Delay, s/veh		65.3			62.5			49.9			47.7	
Approach LOS		E			E			D			D	

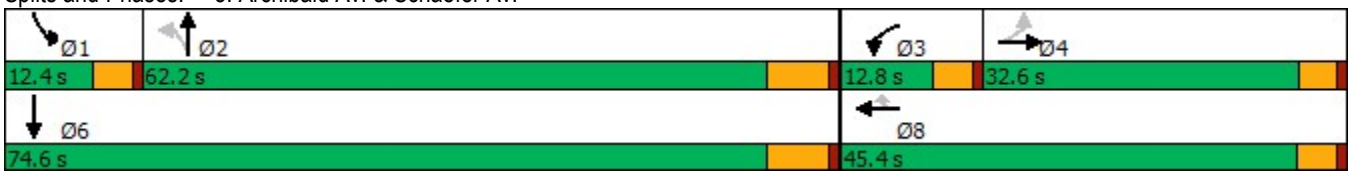
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	60.1	18.0	24.5	25.0	48.3	19.0	23.4
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	8.6	57.2	17.4	18.4	20.4	45.4	15.8	20.0
Max Q Clear Time (g_c+I1), s	9.2	47.8	13.3	15.7	22.4	36.6	14.4	18.5
Green Ext Time (p_c), s	0.0	7.7	0.1	0.3	0.0	4.2	0.1	0.3

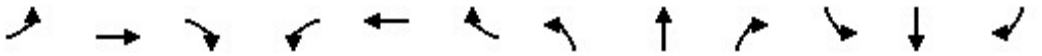
Intersection Summary	
HCM 6th Ctrl Delay	52.1
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	25	44	28	248	1836	82	1043
Future Volume (vph)	19	25	44	28	248	1836	82	1043
Turn Type	Perm	NA	Prot	NA	Perm	NA	Prot	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4				8			
Detector Phase	4	4	3	8	8	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	32.5	32.5	9.6	32.6	32.6	37.5	9.6	23.5
Total Split (s)	32.6	32.6	12.8	45.4	45.4	62.2	12.4	74.6
Total Split (%)	27.2%	27.2%	10.7%	37.8%	37.8%	51.8%	10.3%	62.2%
Yellow Time (s)	3.5	3.5	3.6	3.6	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.6	4.6	4.6	6.5	4.6	6.5
Lead/Lag	Lag	Lag	Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	10.7	10.7	7.0	17.7	17.7	55.1	7.9	67.6
Actuated g/C Ratio	0.11	0.11	0.07	0.18	0.18	0.57	0.08	0.70
v/c Ratio	0.17	0.15	0.46	0.10	0.80	0.81	0.76	0.54
Control Delay	44.4	43.0	58.5	32.2	36.7	20.8	81.5	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	43.0	58.5	32.2	36.7	20.8	81.5	9.0
LOS	D	D	E	C	D	C	F	A
Approach Delay		43.6		39.3		20.8		14.2
Approach LOS		D		D		C		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 77.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	25	0	44	28	248	0	1836	32	82	1043	21
Future Volume (veh/h)	19	25	0	44	28	248	0	1836	32	82	1043	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		1.00	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	23	30	0	52	33	295	0	2186	26	98	1242	25
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	291	0	64	443	357	72	2551	30	120	2156	43
Arrive On Green	0.16	0.16	0.00	0.04	0.25	0.25	0.00	0.52	0.52	0.08	0.64	0.64
Sat Flow, veh/h	895	1772	0	1594	1772	1426	391	4926	59	1594	3373	68
Grp Volume(v), veh/h	23	30	0	52	33	295	0	1430	782	98	620	647
Grp Sat Flow(s),veh/h/ln	895	1772	0	1594	1772	1426	391	1612	1760	1594	1683	1758
Q Serve(g_s), s	2.2	1.4	0.0	3.2	1.4	19.6	0.0	38.5	38.6	6.1	21.1	21.1
Cycle Q Clear(g_c), s	2.2	1.4	0.0	3.2	1.4	19.6	0.0	38.5	38.6	6.1	21.1	21.1
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.03	1.00		0.04
Lane Grp Cap(c), veh/h	219	291	0	64	443	357	72	1670	911	120	1076	1123
V/C Ratio(X)	0.11	0.10	0.00	0.81	0.07	0.83	0.00	0.86	0.86	0.82	0.58	0.58
Avail Cap(c_a), veh/h	323	497	0	130	721	580	87	1791	978	124	1143	1194
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	35.6	0.0	47.8	28.7	35.5	0.0	20.9	21.0	45.7	10.3	10.3
Incr Delay (d2), s/veh	0.2	0.2	0.0	8.9	0.1	5.2	0.0	4.1	7.3	30.1	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.6	0.0	1.4	0.6	7.0	0.0	13.1	15.1	3.3	6.1	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	35.8	0.0	56.7	28.8	40.7	0.0	25.1	28.3	75.8	11.0	11.0
LnGrp LOS	D	D	A	E	C	D	A	C	C	E	B	B
Approach Vol, veh/h		53			380			2212			1365	
Approach Delay, s/veh		35.9			41.9			26.2			15.6	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	12.1	58.4	8.6	21.1		70.6		29.7				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	7.8	55.7	8.2	* 28		68.1		40.8				
Max Q Clear Time (g_c+I1), s	8.1	40.6	5.2	4.2		23.1		21.6				
Green Ext Time (p_c), s	0.0	11.3	0.0	0.2		9.2		1.1				

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

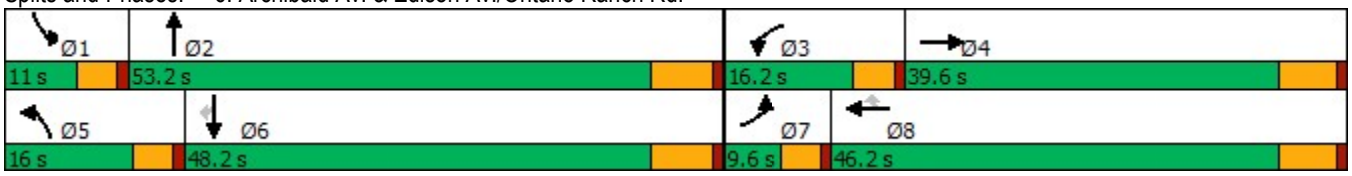
Notes

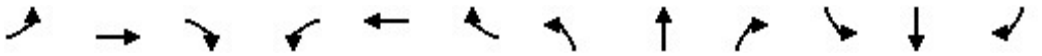
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	155	292	288	385	85	690	1637	270	27	943	101
Future Volume (vph)	43	155	292	288	385	85	690	1637	270	27	943	101
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	39.6		16.2	46.2	46.2	16.0	53.2		11.0	48.2	48.2
Total Split (%)	8.0%	33.0%		13.5%	38.5%	38.5%	13.3%	44.3%		9.2%	40.2%	40.2%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.1	23.0	106.5	11.8	32.1	32.1	11.6	48.1	106.5	5.9	37.9	37.9
Actuated g/C Ratio	0.05	0.22	1.00	0.11	0.30	0.30	0.11	0.45	1.00	0.06	0.36	0.36
v/c Ratio	0.33	0.22	0.21	0.96	0.80	0.17	4.41	1.13	0.20	0.34	0.83	0.17
Control Delay	60.1	34.6	0.3	89.8	47.4	0.9	1564.1	96.6	0.3	63.9	38.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	34.6	0.3	89.8	47.4	0.9	1564.1	96.6	0.3	63.9	38.8	0.6
LOS	E	C	A	F	D	A	F	F	A	E	D	A
Approach Delay		16.4			58.3			476.3			35.8	
Approach LOS		B			E			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.41	
Intersection Signal Delay: 270.1	Intersection LOS: F
Intersection Capacity Utilization 114.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	155	292	288	385	85	690	1637	270	27	943	101
Future Volume (veh/h)	43	155	292	288	385	85	690	1637	270	27	943	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	47	170	0	316	423	38	758	1799	0	30	1036	78
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	662		341	468	392	178	1620		45	1324	549
Arrive On Green	0.05	0.28	0.00	0.17	0.40	0.40	0.17	0.69	0.00	0.04	0.56	0.56
Sat Flow, veh/h	3000	3544	1502	3000	1772	1482	1594	3544	1502	1594	3544	1469
Grp Volume(v), veh/h	47	170	0	316	423	38	758	1799	0	30	1036	78
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1482	1594	1772	1502	1594	1772	1469
Q Serve(g_s), s	1.6	3.8	0.0	10.6	22.9	1.6	11.4	46.7	0.0	1.9	23.4	2.6
Cycle Q Clear(g_c), s	1.6	3.8	0.0	10.6	22.9	1.6	11.4	46.7	0.0	1.9	23.4	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	662		341	468	392	178	1620		45	1324	549
V/C Ratio(X)	0.43	0.26		0.93	0.90	0.10	4.26	1.11		0.67	0.78	0.14
Avail Cap(c_a), veh/h	147	1159		341	694	581	178	1620		100	1447	600
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	31.3	0.0	42.0	29.6	23.2	42.5	16.0	0.0	48.5	19.2	14.6
Incr Delay (d2), s/veh	1.0	0.2	0.0	30.3	11.1	0.1	1480.6	59.0	0.0	6.3	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.5	0.0	4.9	9.0	0.6	77.1	20.8	0.0	0.8	6.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.3	31.5	0.0	72.3	40.7	23.3	1523.1	75.1	0.0	54.8	21.8	14.7
LnGrp LOS	D	C		E	D	C	F	F		D	C	B
Approach Vol, veh/h		217	A		777			2557	A		1144	
Approach Delay, s/veh		35.1			52.7			504.3			22.2	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	53.2	16.2	25.3	16.0	44.7	8.3	33.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	6.4	46.7	11.6	33.4	11.4	41.7	5.0	40.0
Max Q Clear Time (g_c+I1), s	3.9	48.7	12.6	5.8	13.4	25.4	3.6	24.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	6.1	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	290.4
HCM 6th LOS	F

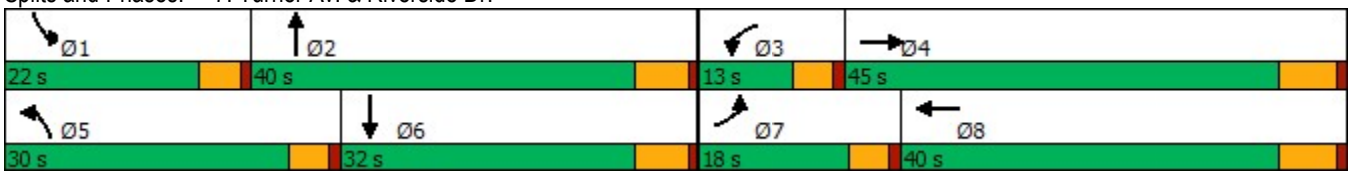
Notes

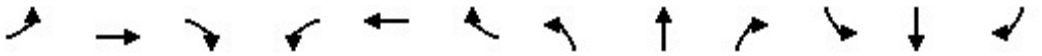
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	171	814	103	730	336	271	134	206
Future Volume (vph)	171	814	103	730	336	271	134	206
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	18.0	45.0	13.0	40.0	30.0	40.0	22.0	32.0
Total Split (%)	15.0%	37.5%	10.8%	33.3%	25.0%	33.3%	18.3%	26.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	13.4	38.9	8.4	33.9	25.5	28.0	15.0	17.6
Actuated g/C Ratio	0.12	0.35	0.08	0.30	0.23	0.25	0.13	0.16
v/c Ratio	1.14	1.10	1.09	1.12	1.18	0.75	0.80	0.73
Control Delay	152.1	94.1	158.7	105.3	144.4	32.2	74.2	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.1	94.1	158.7	105.3	144.4	32.2	74.2	38.2
LOS	F	F	F	F	F	C	E	D
Approach Delay		102.6		110.9		75.1		48.2
Approach LOS		F		F		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.6	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 90.6	Intersection LOS: F
Intersection Capacity Utilization 89.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	814	181	103	730	157	336	271	271	134	206	143
Future Volume (veh/h)	171	814	181	103	730	157	336	271	271	134	206	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.94	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	216	1030	115	130	924	104	425	343	178	170	261	92
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	1062	118	120	926	104	364	556	281	194	382	131
Arrive On Green	0.18	0.52	0.52	0.11	0.46	0.46	0.34	0.39	0.39	0.18	0.23	0.23
Sat Flow, veh/h	1594	3042	339	1594	3046	343	1594	2116	1069	1594	2445	838
Grp Volume(v), veh/h	216	570	575	130	511	517	425	271	250	170	177	176
Grp Sat Flow(s),veh/h/ln	1594	1683	1698	1594	1683	1705	1594	1683	1501	1594	1683	1600
Q Serve(g_s), s	13.4	36.4	36.5	8.4	33.7	33.7	25.4	14.3	14.9	11.5	10.7	11.2
Cycle Q Clear(g_c), s	13.4	36.4	36.5	8.4	33.7	33.7	25.4	14.3	14.9	11.5	10.7	11.2
Prop In Lane	1.00		0.20	1.00		0.20	1.00		0.71	1.00		0.52
Lane Grp Cap(c), veh/h	192	587	593	120	512	518	364	443	395	194	263	250
V/C Ratio(X)	1.12	0.97	0.97	1.08	1.00	1.00	1.17	0.61	0.63	0.88	0.67	0.70
Avail Cap(c_a), veh/h	192	587	593	120	512	518	364	518	462	249	397	377
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	25.9	25.9	49.3	30.2	30.2	36.5	29.1	29.3	44.6	40.0	40.2
Incr Delay (d2), s/veh	102.3	29.5	29.6	105.0	39.2	39.0	101.0	1.6	2.2	19.9	3.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	15.3	15.5	6.6	16.0	16.2	18.5	5.1	4.8	5.2	4.2	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	147.9	55.4	55.6	154.3	69.4	69.2	137.5	30.7	31.5	64.6	43.0	43.8
LnGrp LOS	F	E	E	F	E	E	F	C	C	E	D	D
Approach Vol, veh/h		1361			1158			946			523	
Approach Delay, s/veh		70.2			78.8			78.9			50.3	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	35.0	13.0	45.0	30.0	23.2	18.0	40.0
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	17.4	34.2	8.4	38.8	25.4	26.2	13.4	33.8
Max Q Clear Time (g_c+I1), s	13.5	16.9	10.4	38.5	27.4	13.2	15.4	35.7
Green Ext Time (p_c), s	0.1	2.7	0.0	0.2	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	72.1
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	100.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	170	181	117	61	285	160	157	493	52	94	230	109
Future Vol, veh/h	170	181	117	61	285	160	157	493	52	94	230	109
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	230	245	158	82	385	216	212	666	70	127	311	147
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

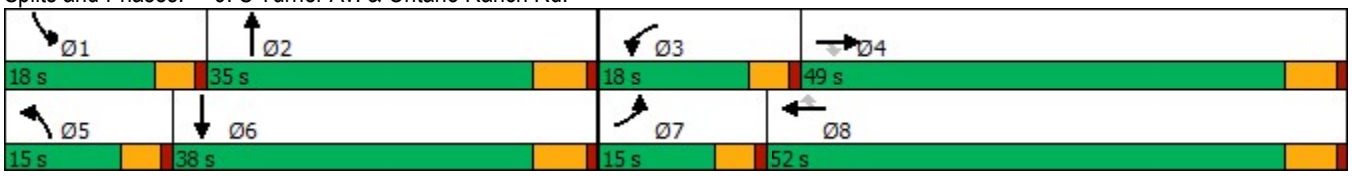
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	50.1	97.8	168.4	47.4
HCM LOS	F	F	F	E

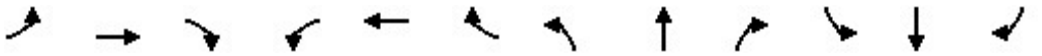
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	76%	0%	100%	34%	0%	100%	37%	0%	100%	41%
Vol Right, %	0%	0%	24%	0%	0%	66%	0%	0%	63%	0%	0%	59%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	157	329	216	170	121	177	61	190	255	94	153	186
LT Vol	157	0	0	170	0	0	61	0	0	94	0	0
Through Vol	0	329	164	0	121	60	0	190	95	0	153	77
RT Vol	0	0	52	0	0	117	0	0	160	0	0	109
Lane Flow Rate	212	444	292	230	163	240	82	257	345	127	207	251
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.754	1.519	0.987	0.842	0.575	0.816	0.298	0.894	1.159	0.467	0.734	0.861
Departure Headway (Hd)	12.964	12.464	12.295	13.405	12.905	12.444	13.313	12.813	12.374	13.38	12.88	12.469
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	280	298	298	271	282	292	272	285	296	271	282	294
Service Time	10.664	10.164	9.995	11.105	10.605	10.144	11.013	10.513	10.074	11.08	10.58	10.169
HCM Lane V/C Ratio	0.757	1.49	0.98	0.849	0.578	0.822	0.301	0.902	1.166	0.469	0.734	0.854
HCM Control Delay	46.7	280.8	86	60.2	31.7	53	21.6	67.3	138.8	27.3	44.3	60.1
HCM Lane LOS	E	F	F	F	D	F	C	F	F	D	E	F
HCM 95th-tile Q	5.6	25.3	10.2	6.9	3.3	6.7	1.2	8	14.5	2.3	5.3	7.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	150	1155	18	88	1334	55	46	157	210	77
Future Volume (vph)	150	1155	18	88	1334	55	46	157	210	77
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	15.0	49.0	49.0	18.0	52.0	52.0	15.0	35.0	18.0	38.0
Total Split (%)	12.5%	40.8%	40.8%	15.0%	43.3%	43.3%	12.5%	29.2%	15.0%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.4	46.7	46.7	10.0	46.3	46.3	7.5	18.2	13.4	26.2
Actuated g/C Ratio	0.10	0.43	0.43	0.09	0.42	0.42	0.07	0.17	0.12	0.24
v/c Ratio	0.99	0.85	0.03	0.60	0.99	0.08	0.42	0.73	1.07	0.51
Control Delay	118.7	36.0	0.1	64.1	52.9	0.8	60.2	54.9	128.6	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	118.7	36.0	0.1	64.1	52.9	0.8	60.2	54.9	128.6	29.9
LOS	F	D	A	E	D	A	E	D	F	C
Approach Delay		44.9			51.6			55.9		79.4
Approach LOS		D			D			E		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 52.7	Intersection LOS: D
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1155	18	88	1334	55	46	157	48	210	77	131
Future Volume (veh/h)	150	1155	18	88	1334	55	46	157	48	210	77	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	167	1283	16	98	1482	53	51	174	47	233	86	135
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	1641	732	124	1539	687	66	208	56	225	155	243
Arrive On Green	0.10	0.46	0.46	0.07	0.43	0.43	0.04	0.15	0.15	0.13	0.24	0.24
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1418	383	1781	656	1029
Grp Volume(v), veh/h	167	1283	16	98	1482	53	51	0	221	233	0	221
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1801	1781	0	1685
Q Serve(g_s), s	9.9	32.3	0.6	5.8	43.0	2.1	3.0	0.0	12.7	13.4	0.0	12.2
Cycle Q Clear(g_c), s	9.9	32.3	0.6	5.8	43.0	2.1	3.0	0.0	12.7	13.4	0.0	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		0.61
Lane Grp Cap(c), veh/h	175	1641	732	124	1539	687	66	0	264	225	0	398
V/C Ratio(X)	0.96	0.78	0.02	0.79	0.96	0.08	0.78	0.00	0.84	1.04	0.00	0.56
Avail Cap(c_a), veh/h	175	1641	732	225	1547	690	175	0	496	225	0	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.7	24.1	15.5	48.6	29.3	17.6	50.7	0.0	44.0	46.4	0.0	35.6
Incr Delay (d2), s/veh	55.0	2.5	0.0	4.3	14.9	0.0	7.2	0.0	6.9	69.8	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	12.7	0.2	2.6	19.6	0.7	1.4	0.0	5.9	10.1	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.6	26.6	15.5	52.9	44.2	17.7	57.9	0.0	50.9	116.2	0.0	36.9
LnGrp LOS	F	C	B	D	D	B	E	A	D	F	A	D
Approach Vol, veh/h		1466			1633			272			454	
Approach Delay, s/veh		35.1			43.9			52.2			77.6	
Approach LOS		D			D			D			E	

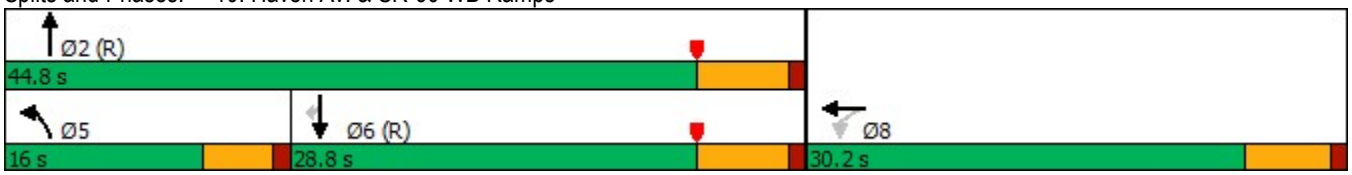
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	21.4	12.0	54.8	8.5	30.9	15.0	51.8
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.4	29.2	13.4	43.2	10.4	32.2	10.4	46.2
Max Q Clear Time (g_c+I1), s	15.4	14.7	7.8	34.3	5.0	14.2	11.9	45.0
Green Ext Time (p_c), s	0.0	0.9	0.0	5.2	0.0	1.1	0.0	0.9

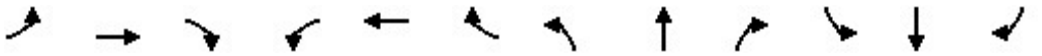
Intersection Summary	
HCM 6th Ctrl Delay	45.1
HCM 6th LOS	D

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	276	4	869	424	2166	1098	494
Future Volume (vph)	276	4	869	424	2166	1098	494
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	30.2	30.2		16.0	44.8	28.8	28.8
Total Split (%)	40.3%	40.3%		21.3%	59.7%	38.4%	38.4%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	24.4	24.4	75.0	11.0	38.6	22.6	22.6
Actuated g/C Ratio	0.33	0.33	1.00	0.15	0.51	0.30	0.30
v/c Ratio	1.01	1.01	0.57	0.88	0.86	0.75	0.62
Control Delay	69.4	70.2	1.5	39.4	16.3	27.2	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	70.2	1.5	39.4	16.3	27.2	5.9
LOS	E	E	A	D	B	C	A
Approach Delay		39.1			20.1	20.6	
Approach LOS		D			C	C	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 45 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 94.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	276	4	869	424	2166	0	0	1098	494
Future Volume (veh/h)	0	0	0	276	4	869	424	2166	0	0	1098	494
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				1107	0	0	442	2256	0	0	1144	447
Peak Hour Factor				0.25	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1159	0		507	2628	0	0	1539	471
Arrive On Green				0.33	0.00	0.00	0.29	1.00	0.00	0.00	0.30	0.30
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1563
Grp Volume(v), veh/h				1107	0	0	442	2256	0	0	1144	447
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1563
Q Serve(g_s), s				22.8	0.0	0.0	9.1	0.0	0.0	0.0	15.1	21.0
Cycle Q Clear(g_c), s				22.8	0.0	0.0	9.1	0.0	0.0	0.0	15.1	21.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1159	0		507	2628	0	0	1539	471
V/C Ratio(X)				0.96	0.00		0.87	0.86	0.00	0.00	0.74	0.95
Avail Cap(c_a), veh/h				1159	0		507	2628	0	0	1539	471
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.8	0.0	0.0	25.8	0.0	0.0	0.0	23.6	25.6
Incr Delay (d2), s/veh				16.8	0.0	0.0	1.6	0.4	0.0	0.0	3.3	30.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.1	0.0	0.0	3.0	0.1	0.0	0.0	5.9	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.5	0.0	0.0	27.5	0.4	0.0	0.0	26.9	56.1
LnGrp LOS				D	A		C	A	A	A	C	E
Approach Vol, veh/h					1107	A		2698			1591	
Approach Delay, s/veh					41.5			4.8			35.1	
Approach LOS					D			A			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.8			16.0	28.8		30.2				
Change Period (Y+Rc), s		6.2			5.0	6.2		5.8				
Max Green Setting (Gmax), s		38.6			11.0	22.6		24.4				
Max Q Clear Time (g_c+I1), s		2.0			11.1	23.0		24.8				
Green Ext Time (p_c), s		16.1			0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	21.3	
HCM 6th LOS	C	

Notes

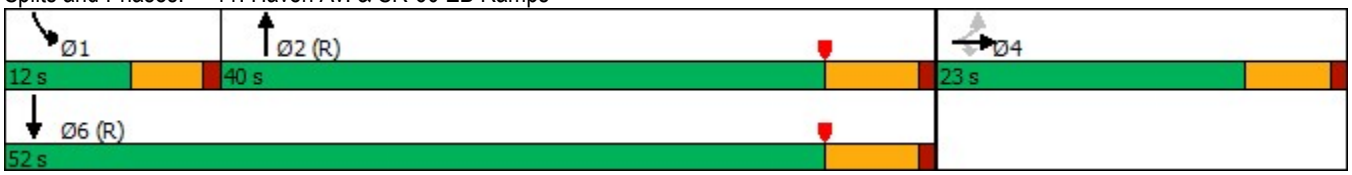
User approved volume balancing among the lanes for turning movement.

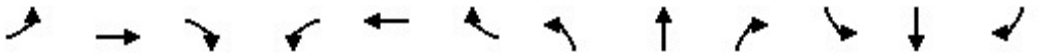
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	871	5	118	1792	393	965
Future Volume (vph)	871	5	118	1792	393	965
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	23.0	23.0	23.0	40.0	12.0	52.0
Total Split (%)	30.7%	30.7%	30.7%	53.3%	16.0%	69.3%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	17.2	17.2	17.2	33.8	7.0	45.8
Actuated g/C Ratio	0.23	0.23	0.23	0.45	0.09	0.61
v/c Ratio	1.19	1.20	0.27	1.04	1.29	0.33
Control Delay	138.0	142.6	7.3	50.2	169.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	138.0	142.6	7.3	50.2	169.5	7.0
LOS	F	F	A	D	F	A
Approach Delay		124.5		50.2		54.0
Approach LOS		F		D		D

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 48 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay: 67.4	Intersection LOS: E
Intersection Capacity Utilization 94.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	871	5	118	0	0	0	0	1792	446	393	965	0
Future Volume (veh/h)	871	5	118	0	0	0	0	1792	446	393	965	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	921	0	66				0	1886	237	414	1016	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	817	0	364				0	2069	258	323	3118	0
Arrive On Green	0.23	0.00	0.23				0.00	0.45	0.45	0.19	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4759	572	3456	5274	0
Grp Volume(v), veh/h	921	0	66				0	1394	729	414	1016	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1758	1728	1702	0
Q Serve(g_s), s	17.2	0.0	2.5				0.0	28.6	29.2	7.0	0.0	0.0
Cycle Q Clear(g_c), s	17.2	0.0	2.5				0.0	28.6	29.2	7.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	817	0	364				0	1534	792	323	3118	0
V/C Ratio(X)	1.13	0.00	0.18				0.00	0.91	0.92	1.28	0.33	0.00
Avail Cap(c_a), veh/h	817	0	364				0	1534	792	323	3118	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.44	0.44	0.00
Uniform Delay (d), s/veh	28.9	0.0	23.2				0.0	19.2	19.3	30.5	0.0	0.0
Incr Delay (d2), s/veh	72.7	0.0	0.2				0.0	9.5	17.6	137.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	0.0	0.9				0.0	11.3	13.7	8.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.6	0.0	23.5				0.0	28.6	36.9	168.4	0.1	0.0
LnGrp LOS	F	A	C				A	C	D	F	A	A
Approach Vol, veh/h		987						2123			1430	
Approach Delay, s/veh		96.3						31.5			48.8	
Approach LOS		F						C			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.0	40.0		23.0		52.0
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	7.0	33.8		17.2		45.8
Max Q Clear Time (g_c+I1), s	9.0	31.2		19.2		2.0
Green Ext Time (p_c), s	0.0	2.1		0.0		4.8

Intersection Summary	
HCM 6th Ctrl Delay	51.0
HCM 6th LOS	D

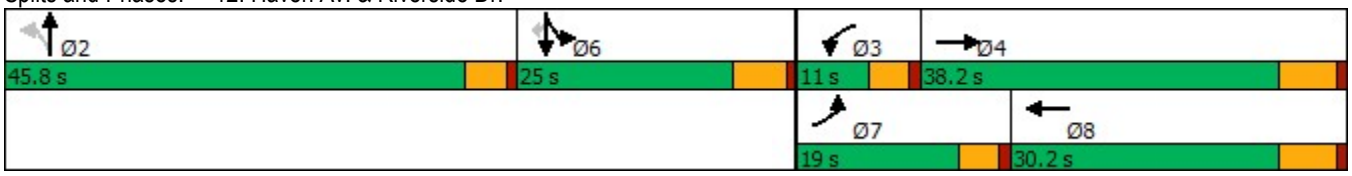
Notes

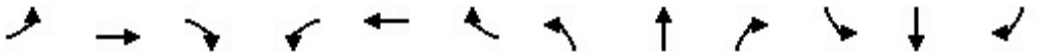
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	546	754	287	548	50	546	447	256	309
Future Volume (vph)	546	754	287	548	50	546	447	256	309
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	38.2	11.0	30.2	45.8	45.8	25.0	25.0	25.0
Total Split (%)	15.8%	31.8%	9.2%	25.2%	38.2%	38.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.4	32.0	6.4	24.0		41.1	19.2	19.2	19.2
Actuated g/C Ratio	0.12	0.27	0.05	0.20		0.34	0.16	0.16	0.16
v/c Ratio	3.07	1.88	3.63	1.42		7.50	1.88	0.96	0.65
Control Delay	966.0	431.9	1229.1	229.9		2949.1	440.5	95.8	11.4
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	966.0	431.9	1229.1	229.9		2949.1	440.5	95.8	11.4
LOS	F	F	F	F		F	F	F	B
Approach Delay		645.6		456.2		2949.1		222.3	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 7.50	
Intersection Signal Delay: 901.7	Intersection LOS: F
Intersection Capacity Utilization 156.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	546	754	65	287	548	431	50	546	186	447	256	309
Future Volume (veh/h)	546	754	65	287	548	431	50	546	186	447	256	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	581	802	66	305	583	423	53	581	181	476	272	153
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	427	35	85	364	264	38	413	129	255	284	235
Arrive On Green	0.12	0.27	0.27	0.05	0.20	0.20	0.34	0.34	0.34	0.16	0.16	0.16
Sat Flow, veh/h	1594	1603	132	1594	1822	1322	110	1206	376	1594	1772	1468
Grp Volume(v), veh/h	581	0	868	305	539	467	815	0	0	476	272	153
Grp Sat Flow(s),veh/h/ln	1594	0	1735	1594	1683	1460	1692	0	0	1594	1772	1468
Q Serve(g_s), s	14.4	0.0	32.0	6.4	24.0	24.0	41.1	0.0	0.0	19.2	18.3	11.7
Cycle Q Clear(g_c), s	14.4	0.0	32.0	6.4	24.0	24.0	41.1	0.0	0.0	19.2	18.3	11.7
Prop In Lane	1.00		0.08	1.00		0.91	0.07		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	191	0	463	85	337	292	580	0	0	255	284	235
V/C Ratio(X)	3.04	0.00	1.88	3.59	1.60	1.60	1.41	0.00	0.00	1.87	0.96	0.65
Avail Cap(c_a), veh/h	191	0	463	85	337	292	580	0	0	255	284	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	44.0	56.8	48.0	48.0	39.5	0.0	0.0	50.4	50.0	47.3
Incr Delay (d2), s/veh	930.8	0.0	402.5	1193.3	283.6	285.7	193.0	0.0	0.0	404.6	42.3	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	55.0	0.0	64.7	30.7	36.1	31.5	47.8	0.0	0.0	36.1	11.2	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	983.6	0.0	446.5	1250.1	331.6	333.7	232.4	0.0	0.0	455.0	92.4	53.5
LnGrp LOS	F	A	F	F	F	F	F	A	A	F	F	D
Approach Vol, veh/h		1449			1311			815			901	
Approach Delay, s/veh		661.9			546.1			232.4			277.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.8	11.0	38.2		25.0	19.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 41	6.4	32.0		19.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		43.1	8.4	34.0		21.2	16.4	26.0				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		472.4
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	32.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	265	195	169	677	425	187
Future Vol, veh/h	265	195	169	677	425	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	207	180	720	452	199

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1632	552	651	0	-	0
Stage 1	552	-	-	-	-	-
Stage 2	1080	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 111	533	935	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 90	533	935	-	-	-
Mov Cap-2 Maneuver	~ 214	-	-	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	326	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	131.2	2	0
HCM LOS	F		

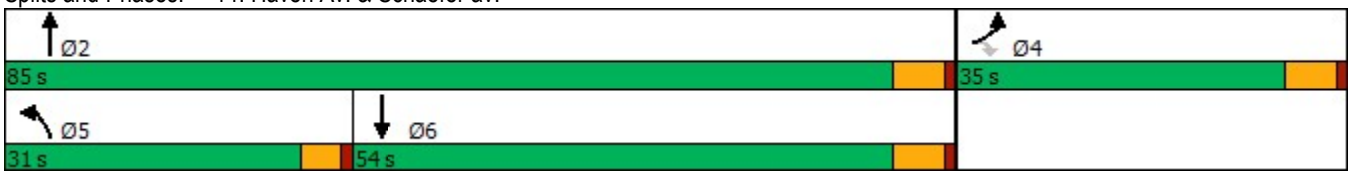
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	935	-	214	533	-	-
HCM Lane V/C Ratio	0.192	-	1.317	0.389	-	-
HCM Control Delay (s)	9.8	-	216	16	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0.7	-	15.4	1.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	89	120	132	852	280
Future Volume (vph)	89	120	132	852	280
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	35.0	35.0	31.0	85.0	54.0
Total Split (%)	29.2%	29.2%	25.8%	70.8%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.9	12.9	12.0	40.7	23.6
Actuated g/C Ratio	0.19	0.19	0.18	0.61	0.36
v/c Ratio	0.31	0.33	0.50	0.86	0.32
Control Delay	31.3	9.2	35.3	19.1	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	9.2	35.3	19.1	14.8
LOS	C	A	D	B	B
Approach Delay	18.6			21.3	14.8
Approach LOS	B			C	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 66.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	89	120	132	852	280	64
Future Volume (veh/h)	89	120	132	852	280	64
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	97	76	143	926	304	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	273	258	179	1087	1138	247
Arrive On Green	0.17	0.17	0.11	0.61	0.42	0.42
Sat Flow, veh/h	1594	1502	1594	1772	2827	594
Grp Volume(v), veh/h	97	76	143	926	185	186
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1683	1649
Q Serve(g_s), s	2.9	2.4	4.7	22.8	3.9	4.0
Cycle Q Clear(g_c), s	2.9	2.4	4.7	22.8	3.9	4.0
Prop In Lane	1.00	1.00	1.00			0.36
Lane Grp Cap(c), veh/h	273	258	179	1087	700	685
V/C Ratio(X)	0.35	0.30	0.80	0.85	0.26	0.27
Avail Cap(c_a), veh/h	863	813	780	2602	1504	1473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	19.5	23.3	8.4	10.3	10.4
Incr Delay (d2), s/veh	0.8	0.6	3.1	2.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.7	4.9	1.1	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.5	20.1	26.4	10.4	10.5	10.6
LnGrp LOS	C	C	C	B	B	B
Approach Vol, veh/h	173			1069	371	
Approach Delay, s/veh	20.3			12.6	10.6	
Approach LOS	C			B	B	

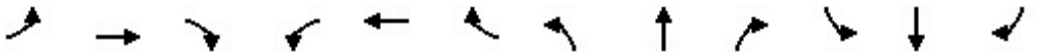
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.9		15.1	10.7	28.2
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		79.2		29.2	26.4	48.2
Max Q Clear Time (g_c+I1), s		24.8		4.9	6.7	6.0
Green Ext Time (p_c), s		8.3		0.5	0.2	2.1

Intersection Summary		
HCM 6th Ctrl Delay		12.9
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	238	1214	54	126	831	5	75	463	187	227	435	264
Future Volume (vph)	238	1214	54	126	831	5	75	463	187	227	435	264
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	15.0	38.0	38.0	11.5	34.5	34.5	11.7	48.5	48.5	22.0	58.8	58.8
Total Split (%)	12.5%	31.7%	31.7%	9.6%	28.8%	28.8%	9.8%	40.4%	40.4%	18.3%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.4	31.9	31.9	6.9	28.1	28.1	7.1	36.1	36.1	17.5	46.5	46.5
Actuated g/C Ratio	0.09	0.28	0.28	0.06	0.25	0.25	0.06	0.32	0.32	0.15	0.41	0.41
v/c Ratio	1.77	0.97	0.11	0.77	0.60	0.01	0.82	0.89	0.34	1.01	0.65	0.39
Control Delay	402.4	58.8	0.4	81.5	40.5	0.0	106.5	55.6	6.2	109.0	31.6	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	402.4	58.8	0.4	81.5	40.5	0.0	106.5	55.6	6.2	109.0	31.6	7.6
LOS	F	E	A	F	D	A	F	E	A	F	C	A
Approach Delay		111.0			45.7			48.1			43.7	
Approach LOS		F			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 113.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.77	
Intersection Signal Delay: 69.6	Intersection LOS: E
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	1214	54	126	831	5	75	463	187	227	435	264
Future Volume (veh/h)	238	1214	54	126	831	5	75	463	187	227	435	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	256	1305	47	135	894	-47	81	498	150	244	468	261
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	1360	422	178	1526	376	100	556	471	245	718	606
Arrive On Green	0.09	0.28	0.28	0.06	0.25	0.00	0.06	0.31	0.31	0.15	0.41	0.41
Sat Flow, veh/h	1594	4837	1500	2910	6095	1502	1594	1772	1500	1594	1772	1496
Grp Volume(v), veh/h	256	1305	47	135	894	-47	81	498	150	244	468	261
Grp Sat Flow(s),veh/h/ln	1594	1612	1500	1455	1524	1502	1594	1772	1500	1594	1772	1496
Q Serve(g_s), s	10.4	30.0	2.6	5.2	14.6	0.0	5.7	30.3	8.6	17.3	24.1	14.2
Cycle Q Clear(g_c), s	10.4	30.0	2.6	5.2	14.6	0.0	5.7	30.3	8.6	17.3	24.1	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	1360	422	178	1526	376	100	556	471	245	718	606
V/C Ratio(X)	1.75	0.96	0.11	0.76	0.59	-0.13	0.81	0.90	0.32	0.99	0.65	0.43
Avail Cap(c_a), veh/h	147	1360	422	178	1526	376	100	669	567	245	831	701
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	40.0	30.2	52.3	37.2	0.0	52.3	37.0	29.6	47.8	27.2	24.2
Incr Delay (d2), s/veh	362.5	16.4	0.5	15.7	1.7	0.0	35.7	13.1	0.4	55.9	1.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	13.3	1.0	2.2	5.3	0.0	3.2	14.5	3.0	10.4	9.9	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	413.8	56.4	30.7	68.0	38.9	0.0	88.0	50.1	30.0	103.7	28.7	24.7
LnGrp LOS	F	E	C	E	D	A	F	D	C	F	C	C
Approach Vol, veh/h		1608			982			729			973	
Approach Delay, s/veh		112.6			44.7			50.2			46.4	
Approach LOS		F			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	41.3	11.5	38.3	11.7	51.6	15.0	34.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.4	42.7	6.9	* 32	7.1	53.0	10.4	28.0
Max Q Clear Time (g_c+I1), s	19.3	32.3	7.2	32.0	7.7	26.1	12.4	16.6
Green Ext Time (p_c), s	0.0	2.5	0.0	0.0	0.0	3.7	0.0	4.1

Intersection Summary	
HCM 6th Ctrl Delay	71.5
HCM 6th LOS	E

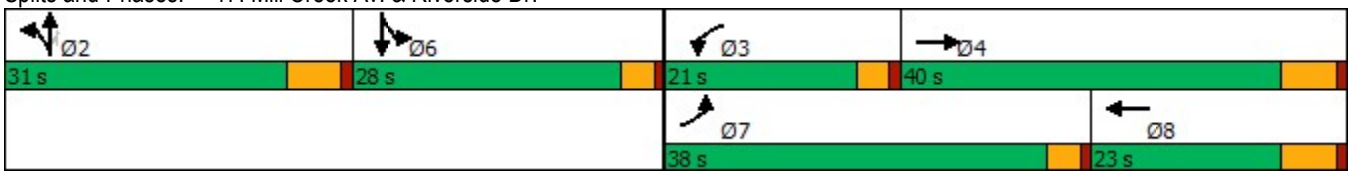
Notes

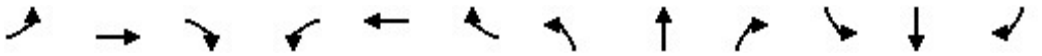
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	370	774	149	973	219	91	422	100	188
Future Volume (vph)	370	774	149	973	219	91	422	100	188
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	38.0	40.0	21.0	23.0	31.0	31.0	31.0	28.0	28.0
Total Split (%)	31.7%	33.3%	17.5%	19.2%	25.8%	25.8%	25.8%	23.3%	23.3%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	34.0	34.9	16.1	17.0	23.9	23.9	23.9	24.0	24.0
Actuated g/C Ratio	0.29	0.29	0.14	0.14	0.20	0.20	0.20	0.20	0.20
v/c Ratio	1.03	1.32	0.88	2.87	0.87	0.32	0.84	0.40	1.05
Control Delay	93.3	187.0	88.1	867.3	72.7	43.2	22.5	45.9	105.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.3	187.0	88.1	867.3	72.7	43.2	22.5	45.9	105.9
LOS	F	F	F	F	E	D	C	D	F
Approach Delay		161.9		772.9		40.1			90.1
Approach LOS		F		F		D			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.87	
Intersection Signal Delay: 332.6	Intersection LOS: F
Intersection Capacity Utilization 104.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	774	236	149	973	109	219	91	422	100	188	93
Future Volume (veh/h)	370	774	236	149	973	109	219	91	422	100	188	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	468	980	147	189	1232	87	277	115	488	127	238	67
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	857	129	212	452	32	335	373	314	316	256	72
Arrive On Green	0.28	0.29	0.29	0.13	0.14	0.14	0.21	0.21	0.21	0.20	0.20	0.20
Sat Flow, veh/h	1594	2931	439	1594	3184	224	1594	1772	1493	1594	1290	363
Grp Volume(v), veh/h	468	562	565	189	650	669	277	115	488	127	0	305
Grp Sat Flow(s),veh/h/ln	1594	1683	1687	1594	1683	1725	1594	1772	1493	1594	0	1653
Q Serve(g_s), s	34.0	35.0	35.0	14.0	17.0	17.0	19.9	6.6	25.2	8.3	0.0	21.7
Cycle Q Clear(g_c), s	34.0	35.0	35.0	14.0	17.0	17.0	19.9	6.6	25.2	8.3	0.0	21.7
Prop In Lane	1.00		0.26	1.00		0.13	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	452	492	494	212	239	245	335	373	314	316	0	328
V/C Ratio(X)	1.03	1.14	1.14	0.89	2.72	2.73	0.83	0.31	1.55	0.40	0.00	0.93
Avail Cap(c_a), veh/h	452	492	494	226	239	245	335	373	314	319	0	331
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.9	42.4	42.4	51.0	51.4	51.4	45.2	39.9	47.3	41.8	0.0	47.2
Incr Delay (d2), s/veh	51.5	86.0	86.4	29.8	786.8	790.6	15.5	0.5	264.3	0.8	0.0	31.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.1	25.5	25.6	7.1	59.1	60.8	9.1	2.8	32.0	3.4	0.0	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.4	128.4	128.8	80.8	838.2	842.0	60.7	40.4	311.6	42.6	0.0	78.7
LnGrp LOS	F	F	F	F	F	F	E	D	F	D	A	E
Approach Vol, veh/h		1595			1508			880			432	
Approach Delay, s/veh		118.6			745.0			197.2			68.1	
Approach LOS		F			F			F			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.0	20.0	41.0		27.8	38.0	23.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		25.2	17.0	34.0		24.0	34.0	17.0				
Max Q Clear Time (g_c+I1), s		27.2	16.0	37.0		23.7	36.0	19.0				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.1	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			343.3									
HCM 6th LOS			F									

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	23	81	1	26	0
Future Vol, veh/h	0	23	81	1	26	0
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	46	162	2	52	0
Number of Lanes	0	1	1	0	1	0

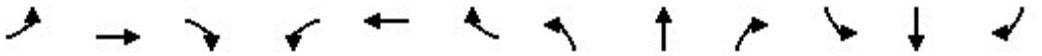
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7	8	7.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	100%
Vol Thru, %	99%	0%	0%
Vol Right, %	1%	100%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	82	23	26
LT Vol	0	0	26
Through Vol	81	0	0
RT Vol	1	23	0
Lane Flow Rate	164	46	52
Geometry Grp	1	1	1
Degree of Util (X)	0.184	0.049	0.063
Departure Headway (Hd)	4.047	3.806	4.339
Convergence, Y/N	Yes	Yes	Yes
Cap	886	947	821
Service Time	2.077	1.806	2.388
HCM Lane V/C Ratio	0.185	0.049	0.063
HCM Control Delay	8	7	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.2	0.2

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	677	464	1626	867	318
Future Volume (vph)	5	677	464	1626	867	318
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	22.5	22.5	11.2	22.5	22.5	22.5
Total Split (s)	36.0	36.0	26.0	54.0	28.0	28.0
Total Split (%)	40.0%	40.0%	28.9%	60.0%	31.1%	31.1%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	29.8	29.8	21.4	47.8	21.8	21.8
Actuated g/C Ratio	0.33	0.33	0.24	0.53	0.24	0.24
v/c Ratio	0.02	1.18	1.13	0.84	0.98	0.52
Control Delay	20.5	122.9	116.9	22.8	60.9	6.7
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	20.5	122.9	116.9	23.0	60.9	6.7
LOS	C	F	F	C	E	A
Approach Delay	121.2			43.8	46.4	
Approach LOS	F			D	D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 58.0	Intersection LOS: E
Intersection Capacity Utilization 106.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	7	5	677	464	1626	0	0	867	318
Future Volume (veh/h)	0	0	0	7	5	677	464	1626	0	0	867	318
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				7	5	354	473	1659	0	0	885	166
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				267	191	399	479	2215	0	0	993	421
Arrive On Green				0.25	0.25	0.25	0.27	0.59	0.00	0.00	0.27	0.27
Sat Flow, veh/h				1060	757	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				12	0	354	473	1659	0	0	885	166
Grp Sat Flow(s),veh/h/ln				1817	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				0.4	0.0	17.1	21.0	25.9	0.0	0.0	18.1	6.8
Cycle Q Clear(g_c), s				0.4	0.0	17.1	21.0	25.9	0.0	0.0	18.1	6.8
Prop In Lane				0.58		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				458	0	399	479	2215	0	0	993	421
V/C Ratio(X)				0.03	0.00	0.89	0.99	0.75	0.00	0.00	0.89	0.39
Avail Cap(c_a), veh/h				681	0	594	479	2247	0	0	1025	434
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.4	0.0	28.7	28.9	11.9	0.0	0.0	28.1	24.0
Incr Delay (d2), s/veh				0.0	0.0	10.7	37.6	1.4	0.0	0.0	9.8	0.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.2	0.0	7.1	13.0	8.2	0.0	0.0	8.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.4	0.0	39.3	66.5	13.3	0.0	0.0	37.9	24.6
LnGrp LOS				C	A	D	E	B	A	A	D	C
Approach Vol, veh/h					366			2132			1051	
Approach Delay, s/veh					38.8			25.1			35.8	
Approach LOS					D			C			D	

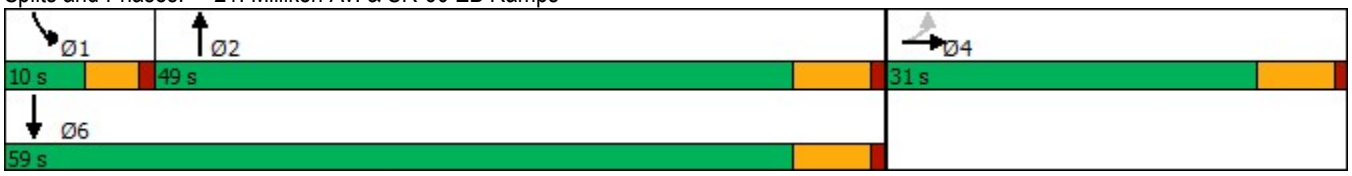
Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	53.3		26.0	27.3		26.3						
Change Period (Y+Rc), s	6.2		4.6	6.2		6.2						
Max Green Setting (Gmax), s	47.8		21.4	21.8		29.8						
Max Q Clear Time (g_c+I1), s	27.9		23.0	20.1		19.1						
Green Ext Time (p_c), s	11.6		0.0	1.0		0.9						

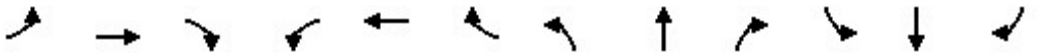
Intersection Summary		
HCM 6th Ctrl Delay		29.7
HCM 6th LOS		C

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	530	4	1613	103	738
Future Volume (vph)	530	4	1613	103	738
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	22.5	9.6	22.5
Total Split (s)	31.0	31.0	49.0	10.0	59.0
Total Split (%)	34.4%	34.4%	54.4%	11.1%	65.6%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	24.8	24.8	42.8	5.4	52.8
Actuated g/C Ratio	0.28	0.28	0.48	0.06	0.59
v/c Ratio	1.01	1.10	1.14	1.00	0.35
Control Delay	77.3	90.8	93.5	133.4	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	90.8	93.5	133.4	10.2
LOS	E	F	F	F	B
Approach Delay		85.0	93.5		25.3
Approach LOS		F	F		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 76.3	Intersection LOS: E
Intersection Capacity Utilization 106.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	4	567	0	0	0	0	1613	314	103	738	0
Future Volume (veh/h)	530	4	567	0	0	0	0	1613	314	103	738	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	422	178	293				0	1663	162	106	761	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	491	175	288				0	1598	154	107	2195	0
Arrive On Green	0.28	0.28	0.28				0.00	0.48	0.48	0.06	0.59	0.00
Sat Flow, veh/h	1781	636	1046				0	3360	323	1781	3741	0
Grp Volume(v), veh/h	422	0	471				0	916	909	106	761	0
Grp Sat Flow(s),veh/h/ln	1781	0	1682				0	1870	1812	1781	1870	0
Q Serve(g_s), s	20.2	0.0	24.8				0.0	42.8	42.8	5.4	9.5	0.0
Cycle Q Clear(g_c), s	20.2	0.0	24.8				0.0	42.8	42.8	5.4	9.5	0.0
Prop In Lane	1.00		0.62				0.00		0.18	1.00		0.00
Lane Grp Cap(c), veh/h	491	0	463				0	889	862	107	2195	0
V/C Ratio(X)	0.86	0.00	1.02				0.00	1.03	1.05	0.99	0.35	0.00
Avail Cap(c_a), veh/h	491	0	463				0	889	862	107	2195	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.9	0.0	32.6				0.0	23.6	23.6	42.3	9.7	0.0
Incr Delay (d2), s/veh	14.3	0.0	45.9				0.0	38.0	46.2	84.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	0.0	15.2				0.0	25.2	26.3	4.7	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.0	78.5				0.0	61.6	69.8	126.5	9.7	0.0
LnGrp LOS	D	A	F				A	F	F	F	A	A
Approach Vol, veh/h		893						1825			867	
Approach Delay, s/veh		62.8						65.7			24.0	
Approach LOS		E						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	49.0		31.0		59.0
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	5.4	42.8		24.8		52.8
Max Q Clear Time (g_c+I1), s	7.4	44.8		26.8		11.5
Green Ext Time (p_c), s	0.0	0.0		0.0		5.2

Intersection Summary		
HCM 6th Ctrl Delay		54.9
HCM 6th LOS		D

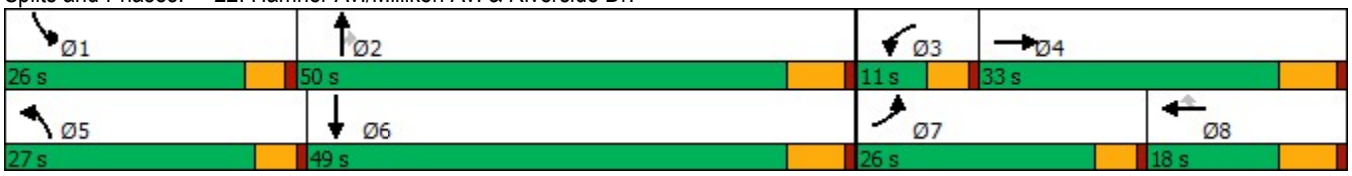
Notes

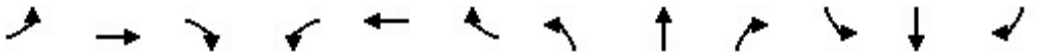
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	480	217	34	140	295	263	1226	70	296	706
Future Volume (vph)	480	217	34	140	295	263	1226	70	296	706
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	26.0	33.0	11.0	18.0	18.0	27.0	50.0	50.0	26.0	49.0
Total Split (%)	21.7%	27.5%	9.2%	15.0%	15.0%	22.5%	41.7%	41.7%	21.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	21.4	31.2	6.0	11.8	11.8	22.4	43.8	43.8	21.4	42.8
Actuated g/C Ratio	0.18	0.26	0.05	0.10	0.10	0.19	0.36	0.36	0.18	0.36
v/c Ratio	1.96	1.96	0.49	0.93	0.82	1.02	1.15	0.12	1.21	0.97
Control Delay	471.4	465.3	76.2	106.4	26.9	106.9	113.8	0.4	163.6	55.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	471.4	465.3	76.2	106.4	26.9	106.9	113.8	0.4	163.6	55.6
LOS	F	F	E	F	C	F	F	A	F	E
Approach Delay		467.5		54.2			107.6			80.4
Approach LOS		F		D			F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.96	
Intersection Signal Delay: 196.8	Intersection LOS: F
Intersection Capacity Utilization 128.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	217	619	34	140	295	263	1226	70	296	706	287
Future Volume (veh/h)	480	217	619	34	140	295	263	1226	70	296	706	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	552	249	658	39	161	305	302	1409	69	340	811	308
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	106	280	48	174	148	298	1229	548	284	851	323
Arrive On Green	0.18	0.25	0.25	0.03	0.10	0.10	0.19	0.37	0.37	0.18	0.36	0.36
Sat Flow, veh/h	1594	430	1137	1594	1772	1502	1594	3367	1502	1594	2387	905
Grp Volume(v), veh/h	552	0	907	39	161	305	302	1409	69	340	572	547
Grp Sat Flow(s),veh/h/ln	1594	0	1567	1594	1772	1502	1594	1683	1502	1594	1683	1609
Q Serve(g_s), s	21.4	0.0	29.6	2.9	10.8	11.8	22.4	43.8	3.7	21.4	39.7	39.8
Cycle Q Clear(g_c), s	21.4	0.0	29.6	2.9	10.8	11.8	22.4	43.8	3.7	21.4	39.7	39.8
Prop In Lane	1.00		0.73	1.00		1.00	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	284	0	386	48	174	148	298	1229	548	284	600	574
V/C Ratio(X)	1.94	0.00	2.35	0.81	0.92	2.07	1.02	1.15	0.13	1.20	0.95	0.95
Avail Cap(c_a), veh/h	284	0	386	85	174	148	298	1229	548	284	600	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	45.2	57.8	53.7	54.1	48.8	38.1	25.4	49.3	37.6	37.6
Incr Delay (d2), s/veh	436.6	0.0	615.1	11.1	46.7	502.1	56.1	75.9	0.1	117.4	25.3	26.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	42.6	0.0	76.9	1.3	6.9	24.9	13.2	29.8	1.3	17.4	19.5	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	485.9	0.0	660.3	68.9	100.4	556.2	104.9	114.0	25.5	166.7	62.9	64.1
LnGrp LOS	F	A	F	E	F	F	F	F	C	F	E	E
Approach Vol, veh/h		1459			505			1780			1459	
Approach Delay, s/veh		594.3			373.2			109.0			87.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	50.0	8.2	35.8	27.0	49.0	26.0	18.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	43.8	6.4	26.8	22.4	42.8	21.4	11.8
Max Q Clear Time (g_c+I1), s	23.4	45.8	4.9	31.6	24.4	41.8	23.4	13.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	264.7
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	17.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	110	57	3	1459	1463	19
Future Vol, veh/h	110	57	3	1459	1463	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	65	3	1658	1663	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2509	1674	1685	0	-	0
Stage 1	1674	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 27	117	377	-	-	-
Stage 1	166	-	-	-	-	-
Stage 2	387	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 24	117	377	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	149	-	-	-	-	-
Stage 2	387	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 327.3	0.7	0
HCM LOS	F		

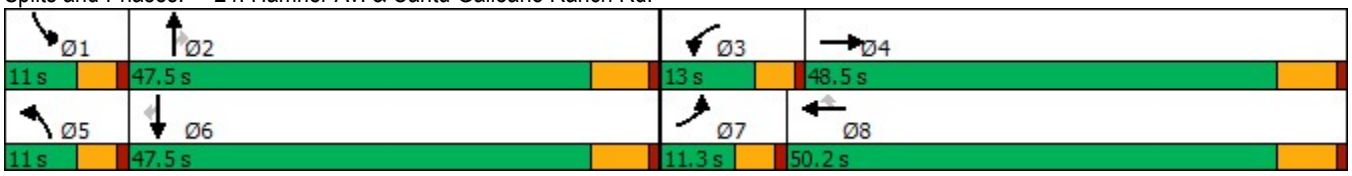
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	377	-	126	-	-
HCM Lane V/C Ratio	0.009	-	1.506	-	-
HCM Control Delay (s)	14.6	0.7	$ 327.3	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0	-	13.3	-	-

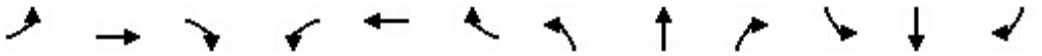
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	573	1208	269	1040	453	148	762	378	415	291	166
Future Volume (vph)	573	1208	269	1040	453	148	762	378	415	291	166
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.3	48.5	13.0	50.2	50.2	11.0	47.5	47.5	11.0	47.5	47.5
Total Split (%)	9.4%	40.4%	10.8%	41.8%	41.8%	9.2%	39.6%	39.6%	9.2%	39.6%	39.6%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	36.1	8.6	37.8	37.8	6.5	27.2	27.2	6.5	27.2	27.2
Actuated g/C Ratio	0.07	0.36	0.09	0.38	0.38	0.06	0.27	0.27	0.06	0.27	0.27
v/c Ratio	2.56	0.55	0.96	0.82	0.68	0.69	0.58	0.75	1.95	0.32	0.32
Control Delay	737.7	27.4	92.2	35.1	23.0	66.3	33.5	31.0	467.4	30.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	737.7	27.4	92.2	35.1	23.0	66.3	33.5	31.0	467.4	30.3	8.4
LOS	F	C	F	D	C	E	C	C	F	C	A
Approach Delay		256.0		40.7			36.5			234.1	
Approach LOS		F		D			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.56	
Intersection Signal Delay: 136.5	Intersection LOS: F
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	573	1208	0	269	1040	453	148	762	378	415	291	166
Future Volume (veh/h)	573	1208	0	269	1040	453	148	762	378	415	291	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	597	1258	-36	280	1083	344	154	794	238	432	303	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	2313	0	323	1345	600	223	1184	367	246	848	378
Arrive On Green	0.07	0.36	0.00	0.09	0.38	0.38	0.06	0.23	0.23	0.07	0.24	0.24
Sat Flow, veh/h	3456	6696	0	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	597	1222	0	280	1083	344	154	794	238	432	303	102
Grp Sat Flow(s),veh/h/ln	1728	1609	0	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.7	13.5	0.0	7.2	24.5	15.5	3.9	12.7	12.2	6.4	6.4	4.7
Cycle Q Clear(g_c), s	6.7	13.5	0.0	7.2	24.5	15.5	3.9	12.7	12.2	6.4	6.4	4.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	2313	0	323	1345	600	223	1184	367	246	848	378
V/C Ratio(X)	2.32	0.53	0.00	0.87	0.81	0.57	0.69	0.67	0.65	1.75	0.36	0.27
Avail Cap(c_a), veh/h	258	3010	0	323	1730	771	246	2349	729	246	1635	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	22.7	0.0	40.1	25.0	22.2	41.1	31.4	31.2	41.7	28.5	27.8
Incr Delay (d2), s/veh	603.9	0.2	0.0	20.3	2.2	0.9	5.4	0.7	1.9	355.4	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.3	4.6	0.0	3.7	9.4	5.2	1.7	4.9	4.4	14.7	2.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	645.4	22.9	0.0	60.4	27.2	23.0	46.5	32.0	33.1	397.1	28.7	28.2
LnGrp LOS	F	C	A	E	C	C	D	C	C	F	C	C
Approach Vol, veh/h		1819			1707			1186			837	
Approach Delay, s/veh		227.2			31.8			34.1			218.8	
Approach LOS		F			C			C			F	

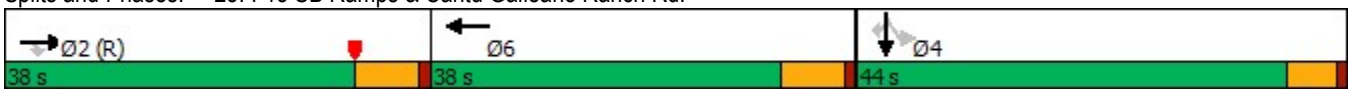
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	27.0	13.0	38.8	10.4	27.6	11.3	40.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	6.4	41.3	6.7	43.7
Max Q Clear Time (g_c+I1), s	8.4	14.7	9.2	15.5	5.9	8.4	8.7	26.5
Green Ext Time (p_c), s	0.0	6.1	0.0	8.5	0.0	2.1	0.0	7.5

Intersection Summary	
HCM 6th Ctrl Delay	124.6
HCM 6th LOS	F

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1348	178	684	360	313	0	1505
Future Volume (vph)	1348	178	684	360	313	0	1505
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	38.0	38.0	38.0		44.0	44.0	44.0
Total Split (%)	31.7%	31.7%	31.7%		36.7%	36.7%	36.7%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	Min		Min	Min	Min
Act Effct Green (s)	31.2	31.2	29.2	120.0	40.5	40.5	40.5
Actuated g/C Ratio	0.26	0.26	0.24	1.00	0.34	0.34	0.34
v/c Ratio	1.11	0.36	0.86	0.14	0.54	0.98	0.95
Control Delay	101.4	10.6	49.8	0.1	37.1	39.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.4	10.6	49.8	0.1	37.1	39.5	34.6
LOS	F	B	D	A	D	D	C
Approach Delay	90.9		32.7			37.0	
Approach LOS	F		C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 54.7	Intersection LOS: D
Intersection Capacity Utilization 91.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1348	178	0	684	360	0	0	0	313	0	1505
Future Volume (veh/h)	0	1348	178	0	684	360	0	0	0	313	0	1505
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1465	0	0	743	0				227	0	997
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2945		0	2049					571	0	1017
Arrive On Green	0.00	0.58	0.00	0.00	0.19	0.00				0.32	0.00	0.32
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1465	0	0	743	0				227	0	997
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	20.4	0.0	0.0	21.8	0.0				11.9	0.0	37.4
Cycle Q Clear(g_c), s	0.0	20.4	0.0	0.0	21.8	0.0				11.9	0.0	37.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2945		0	2049					571	0	1017
V/C Ratio(X)	0.00	0.50		0.00	0.36					0.40	0.00	0.98
Avail Cap(c_a), veh/h	0	2945		0	2049					571	0	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.36	0.00	0.00	0.81	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.1	0.0	0.0	29.4	0.0				31.7	0.0	40.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0				0.4	0.0	23.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.0	0.0	0.0	10.3	0.0				5.0	0.0	17.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.3	0.0	0.0	29.5	0.0				32.2	0.0	63.8
LnGrp LOS	A	B		A	C					C	A	E
Approach Vol, veh/h		1465	A		743	A					1224	
Approach Delay, s/veh		15.3			29.5						57.9	
Approach LOS		B			C						E	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	76.0	44.0	76.0
Change Period (Y+Rc), s	6.8	5.5	6.8
Max Green Setting (Gmax), s	31.2	38.5	31.2
Max Q Clear Time (g_c+I1), s	22.4	39.4	23.8
Green Ext Time (p_c), s	5.5	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Notes

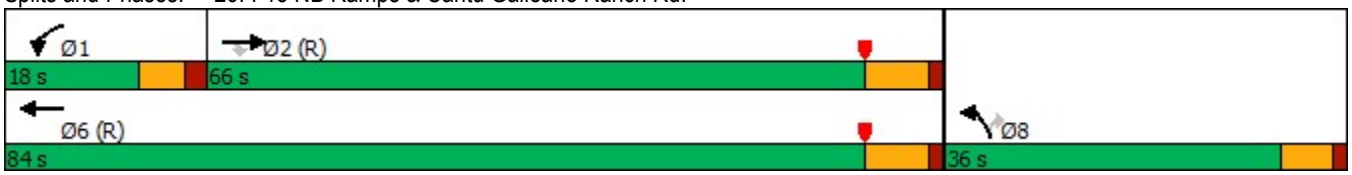
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	558	983	253	507	461	481
Future Volume (vph)	558	983	253	507	461	481
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.5	22.5	22.5	22.5
Total Split (s)	66.0	66.0	18.0	84.0	36.0	36.0
Total Split (%)	55.0%	55.0%	15.0%	70.0%	30.0%	30.0%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	60.4	60.4	12.5	78.9	27.8	27.8
Actuated g/C Ratio	0.50	0.50	0.10	0.66	0.23	0.23
v/c Ratio	0.24	0.90	0.77	0.16	0.86	0.56
Control Delay	22.5	32.5	67.7	8.3	52.8	7.9
Queue Delay	0.0	46.9	0.0	0.0	0.0	0.0
Total Delay	22.5	79.4	67.7	8.3	52.8	7.9
LOS	C	E	E	A	D	A
Approach Delay	58.8			28.1	38.6	
Approach LOS	E			C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 45.7	Intersection LOS: D
Intersection Capacity Utilization 79.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	558	983	253	507	461	481
Future Volume (veh/h)	558	983	253	507	461	481
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	607	535	275	551	535	269
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2790	866	330	3533	703	313
Arrive On Green	0.18	0.18	0.10	0.69	0.20	0.20
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	607	535	275	551	535	269
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	12.2	37.4	9.4	4.5	17.0	19.7
Cycle Q Clear(g_c), s	12.2	37.4	9.4	4.5	17.0	19.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2790	866	330	3533	703	313
V/C Ratio(X)	0.22	0.62	0.83	0.16	0.76	0.86
Avail Cap(c_a), veh/h	2790	866	346	3533	891	396
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.84	0.84	1.00	1.00
Uniform Delay (d), s/veh	27.3	37.6	53.3	6.4	45.5	46.6
Incr Delay (d2), s/veh	0.0	0.3	13.3	0.1	3.0	14.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	15.7	4.5	1.3	7.6	8.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.3	37.9	66.7	6.5	48.5	60.9
LnGrp LOS	C	D	E	A	D	E
Approach Vol, veh/h	1142			826	804	
Approach Delay, s/veh	32.3			26.5	52.6	
Approach LOS	C			C	D	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.4	72.9				90.3	29.7
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	12.0	58.7				76.7	30.0
Max Q Clear Time (g_c+I1), s	11.4	39.4				6.5	21.7
Green Ext Time (p_c), s	0.1	5.5				3.5	2.0

Intersection Summary			
HCM 6th Ctrl Delay		36.5	
HCM 6th LOS		D	

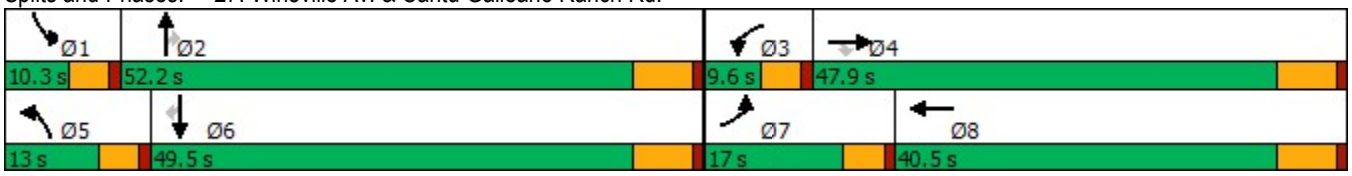
Notes

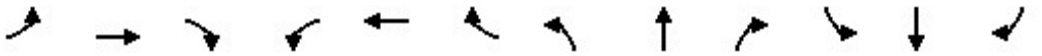
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	563	380	322	33	265	295	346	20	24	67	122
Future Volume (vph)	563	380	322	33	265	295	346	20	24	67	122
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	17.0	47.9	47.9	9.6	40.5	13.0	52.2	52.2	10.3	49.5	49.5
Total Split (%)	14.2%	39.9%	39.9%	8.0%	33.8%	10.8%	43.5%	43.5%	8.6%	41.3%	41.3%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.4	27.6	27.6	5.4	12.5	9.1	22.9	22.9	5.7	12.4	12.4
Actuated g/C Ratio	0.19	0.39	0.39	0.08	0.17	0.13	0.32	0.32	0.08	0.17	0.17
v/c Ratio	0.95	0.17	0.42	0.14	0.40	0.74	0.33	0.04	0.18	0.23	0.33
Control Delay	57.4	17.0	4.6	40.0	23.8	44.7	20.7	0.1	42.3	26.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	17.0	4.6	40.0	23.8	44.7	20.7	0.1	42.3	26.4	5.3
LOS	E	B	A	D	C	D	C	A	D	C	A
Approach Delay		31.8			25.3		30.8			16.1	
Approach LOS		C			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 71.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 54.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	563	380	322	33	265	65	295	346	20	24	67	122
Future Volume (veh/h)	563	380	322	33	265	65	295	346	20	24	67	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	612	413	240	36	288	51	321	376	12	26	73	106
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	730	1972	486	134	588	101	441	751	335	53	212	180
Arrive On Green	0.21	0.31	0.31	0.04	0.13	0.13	0.13	0.21	0.21	0.03	0.11	0.11
Sat Flow, veh/h	3456	6434	1585	3456	4388	751	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	612	413	240	36	221	118	321	376	12	26	73	106
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1735	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	9.1	2.6	6.6	0.5	3.2	3.4	4.8	5.0	0.3	0.8	1.9	3.4
Cycle Q Clear(g_c), s	9.1	2.6	6.6	0.5	3.2	3.4	4.8	5.0	0.3	0.8	1.9	3.4
Prop In Lane	1.00		1.00	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	730	1972	486	134	456	233	441	751	335	53	212	180
V/C Ratio(X)	0.84	0.21	0.49	0.27	0.48	0.51	0.73	0.50	0.04	0.49	0.34	0.59
Avail Cap(c_a), veh/h	798	4962	1223	322	2156	1099	541	3026	1350	189	1498	1270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	13.8	15.2	25.1	21.5	21.6	22.5	18.7	16.8	25.6	21.9	22.6
Incr Delay (d2), s/veh	6.7	0.1	0.8	0.4	0.8	1.7	2.7	0.5	0.0	2.5	1.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.7	1.9	0.2	1.1	1.2	1.8	1.8	0.1	0.3	0.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	13.8	16.0	25.5	22.3	23.3	25.2	19.2	16.9	28.2	22.9	25.6
LnGrp LOS	C	B	B	C	C	C	C	B	B	C	C	C
Approach Vol, veh/h		1265			375			709			205	
Approach Delay, s/veh		20.6			22.9			21.9			25.0	
Approach LOS		C			C			C			C	

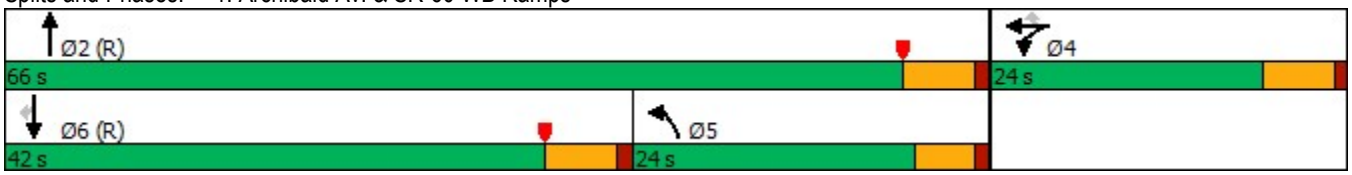
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	17.8	6.7	23.0	11.5	12.6	15.9	13.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	5.7	45.7	5.0	41.4	8.4	43.0	12.4	34.0
Max Q Clear Time (g_c+I1), s	2.8	7.0	2.5	8.6	6.8	5.4	11.1	5.4
Green Ext Time (p_c), s	0.0	2.4	0.0	3.3	0.1	0.7	0.2	1.8

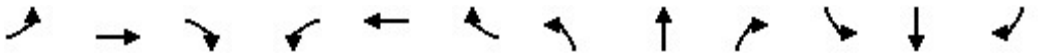
Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	495	1	213	651	715	1954	390
Future Volume (vph)	495	1	213	651	715	1954	390
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	24.0	24.0	24.0	24.0	66.0	42.0	42.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	17.2	17.2	17.2	18.7	61.2	37.4	37.4
Actuated g/C Ratio	0.19	0.19	0.19	0.21	0.68	0.42	0.42
v/c Ratio	0.83	0.84	0.44	0.93	0.21	0.75	0.49
Control Delay	58.0	58.5	8.1	50.3	0.4	24.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	58.5	8.1	50.3	0.4	24.8	8.4
LOS	E	E	A	D	A	C	A
Approach Delay		44.7			24.2	22.1	
Approach LOS		D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	495	1	213	651	715	0	0	1954	390
Future Volume (veh/h)	0	0	0	495	1	213	651	715	0	0	1954	390
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				539	0	73	664	730	0	0	1994	298
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				631	0	281	845	3544	0	0	2478	595
Arrive On Green				0.18	0.00	0.18	0.08	0.23	0.00	0.00	0.39	0.39
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1545
Grp Volume(v), veh/h				539	0	73	664	730	0	0	1994	298
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1545
Q Serve(g_s), s				13.2	0.0	3.6	17.0	10.4	0.0	0.0	24.9	13.2
Cycle Q Clear(g_c), s				13.2	0.0	3.6	17.0	10.4	0.0	0.0	24.9	13.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				631	0	281	845	3544	0	0	2478	595
V/C Ratio(X)				0.85	0.00	0.26	0.79	0.21	0.00	0.00	0.80	0.50
Avail Cap(c_a), veh/h				720	0	321	845	3544	0	0	2588	622
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.88	0.88	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.9	0.0	31.9	39.1	14.6	0.0	0.0	24.7	21.1
Incr Delay (d2), s/veh				8.9	0.0	0.5	4.0	0.1	0.0	0.0	2.9	3.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.2	0.0	3.4	8.2	4.0	0.0	0.0	9.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				44.8	0.0	32.4	43.1	14.7	0.0	0.0	27.6	24.1
LnGrp LOS				D	A	C	D	B	A	A	C	C
Approach Vol, veh/h					612			1394			2292	
Approach Delay, s/veh					43.3			28.2			27.1	
Approach LOS					D			C			C	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	68.3	21.7	27.8	40.5
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	18.2	19.0	* 36
Max Q Clear Time (g_c+I1), s	12.4	15.2	19.0	26.9
Green Ext Time (p_c), s	5.3	0.7	0.0	7.8

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

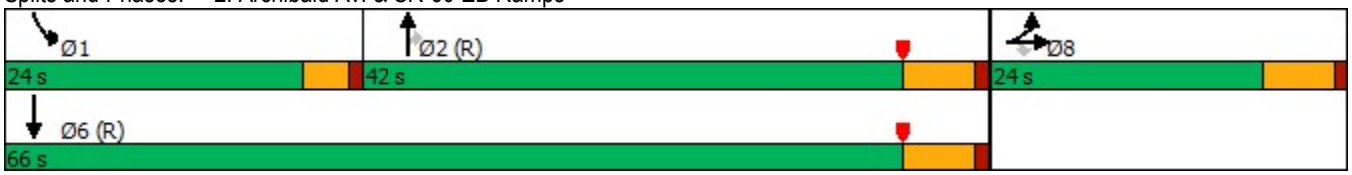
User approved volume balancing among the lanes for turning movement.

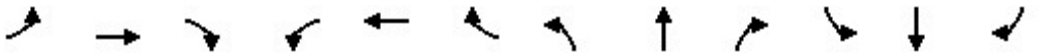
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	136	1	576	1232	668	662	1642
Future Volume (vph)	136	1	576	1232	668	662	1642
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	24.0	24.0	24.0	42.0	42.0	24.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	46.7%	46.7%	26.7%	73.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	17.9	17.9	17.9	37.0	37.0	19.5	60.5
Actuated g/C Ratio	0.20	0.20	0.20	0.41	0.41	0.22	0.67
v/c Ratio	0.37	0.94	0.81	0.47	0.71	0.90	0.49
Control Delay	34.7	69.6	43.8	20.3	9.7	56.5	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	69.6	43.8	20.3	9.7	56.5	2.0
LOS	C	E	D	C	A	E	A
Approach Delay		53.0		16.6			17.7
Approach LOS		D		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 22.4	Intersection LOS: C
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	1	576	0	0	0	0	1232	668	662	1642	0
Future Volume (veh/h)	136	1	576	0	0	0	0	1232	668	662	1642	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	92	0	397				0	1244	499	669	1659	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	274	0	487				0	2985	719	723	3664	0
Arrive On Green	0.15	0.00	0.15				0.00	0.46	0.46	0.42	1.00	0.00
Sat Flow, veh/h	1781	0	3170				0	6696	1550	3456	5274	0
Grp Volume(v), veh/h	92	0	397				0	1244	499	669	1659	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1609	1550	1728	1702	0
Q Serve(g_s), s	4.1	0.0	10.9				0.0	11.6	22.9	16.5	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	10.9				0.0	11.6	22.9	16.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	274	0	487				0	2985	719	723	3664	0
V/C Ratio(X)	0.34	0.00	0.82				0.00	0.42	0.69	0.93	0.45	0.00
Avail Cap(c_a), veh/h	360	0	641				0	2985	719	768	3664	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.57	0.57	0.00
Uniform Delay (d), s/veh	34.0	0.0	36.9				0.0	16.0	19.1	25.5	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	6.1				0.0	0.4	5.5	10.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	4.4				0.0	3.8	8.2	5.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	43.0				0.0	16.5	24.5	35.8	0.2	0.0
LnGrp LOS	C	A	D				A	B	C	D	A	A
Approach Vol, veh/h		489						1743			2328	
Approach Delay, s/veh		41.4						18.8			10.5	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	22.8	47.6				70.4		19.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	20.0	36.2				60.2		18.2				
Max Q Clear Time (g_c+I1), s	18.5	24.9				2.0		12.9				
Green Ext Time (p_c), s	0.3	7.0				17.0		0.9				

Intersection Summary			
HCM 6th Ctrl Delay			17.0
HCM 6th LOS			B

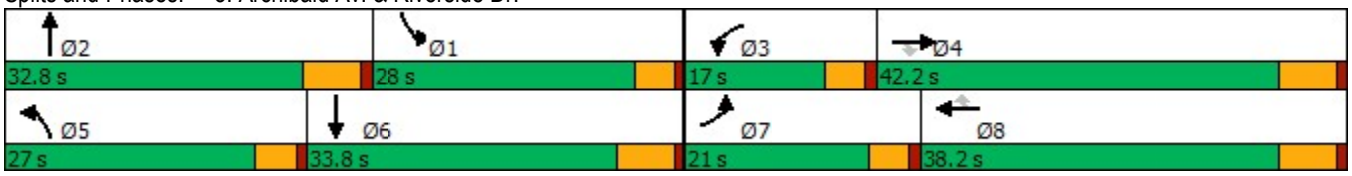
Notes

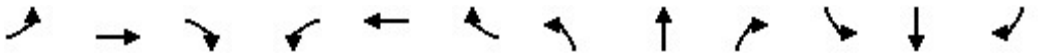
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	223	973	695	245	793	220	374	1180	353	1191
Future Volume (vph)	223	973	695	245	793	220	374	1180	353	1191
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	42.2	42.2	17.0	38.2	38.2	27.0	32.8	28.0	33.8
Total Split (%)	17.5%	35.2%	35.2%	14.2%	31.8%	31.8%	22.5%	27.3%	23.3%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.4	36.0	36.0	12.4	32.0	32.0	22.4	26.6	23.4	27.6
Actuated g/C Ratio	0.14	0.30	0.30	0.10	0.27	0.27	0.19	0.22	0.20	0.23
v/c Ratio	1.06	0.99	0.95	1.53	0.90	0.42	1.29	1.28	1.17	1.38
Control Delay	126.4	67.7	38.7	305.0	57.3	9.9	195.2	173.5	148.1	213.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.4	67.7	38.7	305.0	57.3	9.9	195.2	173.5	148.1	213.0
LOS	F	E	D	F	E	A	F	F	F	F
Approach Delay		64.0			97.3			178.2		200.7
Approach LOS		E			F			F		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.53	
Intersection Signal Delay: 137.0	Intersection LOS: F
Intersection Capacity Utilization 116.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	973	695	245	793	220	374	1180	156	353	1191	307
Future Volume (veh/h)	223	973	695	245	793	220	374	1180	156	353	1191	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	228	993	640	250	809	175	382	1204	152	360	1215	280
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	997	434	163	886	393	294	949	120	307	941	217
Arrive On Green	0.13	0.30	0.30	0.10	0.26	0.26	0.18	0.22	0.22	0.19	0.24	0.24
Sat Flow, veh/h	1594	3367	1468	1594	3367	1495	1594	4339	548	1594	3918	903
Grp Volume(v), veh/h	228	993	640	250	809	175	382	895	461	360	1000	495
Grp Sat Flow(s),veh/h/ln	1594	1683	1468	1594	1683	1495	1594	1612	1661	1594	1612	1596
Q Serve(g_s), s	16.4	35.8	36.0	12.4	28.3	7.1	22.4	26.6	26.6	23.4	29.2	29.2
Cycle Q Clear(g_c), s	16.4	35.8	36.0	12.4	28.3	7.1	22.4	26.6	26.6	23.4	29.2	29.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.57
Lane Grp Cap(c), veh/h	215	997	434	163	886	393	294	705	363	307	774	383
V/C Ratio(X)	1.06	1.00	1.47	1.54	0.91	0.44	1.30	1.27	1.27	1.17	1.29	1.29
Avail Cap(c_a), veh/h	215	997	434	163	886	393	294	705	363	307	774	383
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	42.7	42.8	54.6	43.5	13.5	49.6	47.5	47.5	49.1	46.2	46.2
Incr Delay (d2), s/veh	78.3	27.5	225.1	270.5	13.7	0.8	158.2	131.9	141.0	107.1	140.7	149.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	17.9	39.5	17.0	12.9	4.0	21.5	23.1	24.7	18.0	26.3	26.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	130.9	70.3	267.9	325.1	57.1	14.3	207.8	179.4	188.5	156.2	186.9	195.6
LnGrp LOS	F	E	F	F	E	B	F	F	F	F	F	F
Approach Vol, veh/h		1861			1234			1738			1855	
Approach Delay, s/veh		145.7			105.3			188.0			183.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.6	32.8	17.0	42.2	27.0	35.4	21.0	38.2
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.4	* 27	12.4	36.0	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	25.4	28.6	14.4	38.0	24.4	31.2	18.4	30.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	159.7
HCM 6th LOS	F

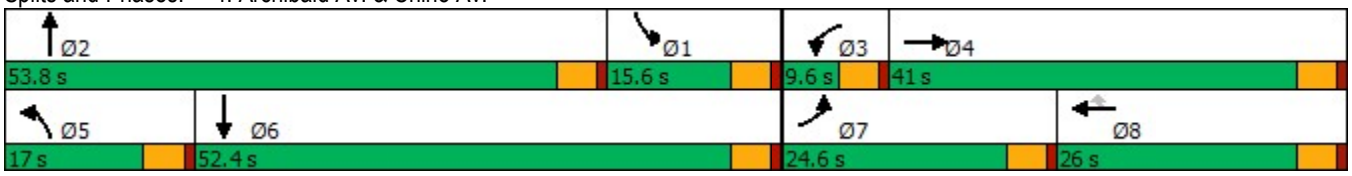
Notes

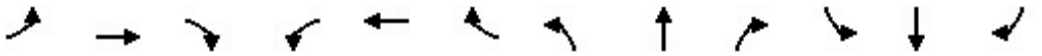
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	196	428	55	211	77	223	1411	93	1658
Future Volume (vph)	196	428	55	211	77	223	1411	93	1658
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	24.6	41.0	9.6	26.0	26.0	17.0	53.8	15.6	52.4
Total Split (%)	20.5%	34.2%	8.0%	21.7%	21.7%	14.2%	44.8%	13.0%	43.7%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	18.4	36.4	5.0	23.0	23.0	12.4	44.8	15.4	47.8
Actuated g/C Ratio	0.15	0.30	0.04	0.19	0.19	0.10	0.37	0.13	0.40
v/c Ratio	0.84	1.39	0.88	0.65	0.18	1.42	0.79	0.48	1.34
Control Delay	77.6	219.8	138.2	55.7	0.9	261.4	36.3	59.0	188.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.6	219.8	138.2	55.7	0.9	261.4	36.3	59.0	188.5
LOS	E	F	F	E	A	F	D	E	F
Approach Delay		188.5		56.6			65.6		182.1
Approach LOS		F		E			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay: 133.1	Intersection LOS: F
Intersection Capacity Utilization 127.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	428	266	55	211	77	223	1411	77	93	1658	134
Future Volume (veh/h)	196	428	266	55	211	77	223	1411	77	93	1658	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	204	446	142	57	220	44	232	1470	44	97	1727	72
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	389	124	66	359	304	165	1727	52	263	1346	56
Arrive On Green	0.21	0.46	0.46	0.06	0.30	0.30	0.16	0.50	0.50	0.25	0.60	0.60
Sat Flow, veh/h	1594	1283	408	1594	1772	1502	1594	5132	154	1594	3379	140
Grp Volume(v), veh/h	204	0	588	57	220	44	232	1015	499	97	901	898
Grp Sat Flow(s),veh/h/ln	1594	0	1691	1594	1772	1502	1594	1772	1741	1594	1772	1747
Q Serve(g_s), s	14.9	0.0	36.4	4.3	12.7	1.8	12.4	29.8	29.8	6.0	47.8	47.8
Cycle Q Clear(g_c), s	14.9	0.0	36.4	4.3	12.7	1.8	12.4	29.8	29.8	6.0	47.8	47.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.09	1.00		0.08
Lane Grp Cap(c), veh/h	227	0	513	66	359	304	165	1193	586	263	706	696
V/C Ratio(X)	0.90	0.00	1.15	0.86	0.61	0.14	1.41	0.85	0.85	0.37	1.28	1.29
Avail Cap(c_a), veh/h	266	0	513	66	359	304	165	1453	714	263	706	696
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	0.0	32.7	55.9	37.7	16.6	50.7	27.1	27.1	40.0	24.1	24.2
Incr Delay (d2), s/veh	27.8	0.0	86.7	63.8	3.1	0.2	216.0	4.3	8.2	0.9	135.5	141.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	24.7	2.8	5.3	0.9	14.3	10.1	10.5	2.3	40.1	40.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.2	0.0	119.4	119.7	40.8	16.8	266.7	31.4	35.3	40.8	159.6	165.4
LnGrp LOS	E	A	F	F	D	B	F	C	D	D	F	F
Approach Vol, veh/h		792			321			1746			1896	
Approach Delay, s/veh		107.7			51.5			63.8			156.3	
Approach LOS		F			D			E			F	

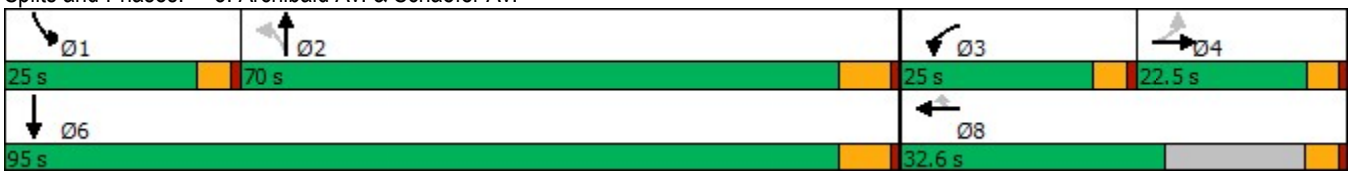
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	45.0	9.6	41.0	17.0	52.4	21.7	28.9
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	11.0	49.2	5.0	36.4	12.4	47.8	20.0	21.4
Max Q Clear Time (g_c+I1), s	8.0	31.8	6.3	38.4	14.4	49.8	16.9	14.7
Green Ext Time (p_c), s	0.0	8.5	0.0	0.0	0.0	0.0	0.2	0.7

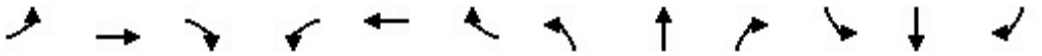
Intersection Summary	
HCM 6th Ctrl Delay	107.1
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	28	24	25	74	1478	242	1589
Future Volume (vph)	20	28	24	25	74	1478	242	1589
Turn Type	Perm	NA	Prot	NA	Perm	NA	Prot	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4				8			
Detector Phase	4	4	3	8	8	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	9.6	32.6	32.6	37.5	9.6	23.5
Total Split (s)	22.5	22.5	25.0	32.6	32.6	70.0	25.0	95.0
Total Split (%)	15.8%	15.8%	17.5%	22.9%	22.9%	49.1%	17.5%	66.7%
Yellow Time (s)	3.5	3.5	3.6	3.6	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.6	4.6	4.6	6.5	4.6	6.5
Lead/Lag	Lag	Lag	Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	8.2	8.2	6.6	14.3	14.3	41.5	21.8	70.2
Actuated g/C Ratio	0.09	0.09	0.07	0.16	0.16	0.45	0.24	0.77
v/c Ratio	0.19	0.19	0.23	0.10	0.27	0.74	0.68	0.66
Control Delay	50.0	48.2	53.2	36.1	11.1	23.6	48.2	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	48.2	53.2	36.1	11.1	23.6	48.2	9.8
LOS	D	D	D	D	B	C	D	A
Approach Delay		49.0		24.5		23.6		14.9
Approach LOS		D		C		C		B

Intersection Summary	
Cycle Length: 142.5	
Actuated Cycle Length: 91.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 19.4	Intersection LOS: B
Intersection Capacity Utilization 80.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	28	0	24	25	74	0	1478	34	242	1589	19
Future Volume (veh/h)	20	28	0	24	25	74	0	1478	34	242	1589	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	21	30	0	26	27	73	0	1572	34	257	1690	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	112	0	44	268	224	95	2229	48	294	2395	28
Arrive On Green	0.06	0.06	0.00	0.03	0.15	0.15	0.00	0.46	0.46	0.18	0.70	0.70
Sat Flow, veh/h	1130	1772	0	1594	1772	1484	256	4870	105	1594	3407	40
Grp Volume(v), veh/h	21	30	0	26	27	73	0	1041	565	257	834	876
Grp Sat Flow(s),veh/h/ln	1130	1772	0	1594	1772	1484	256	1612	1750	1594	1683	1764
Q Serve(g_s), s	1.4	1.2	0.0	1.2	1.0	3.3	0.0	19.7	19.7	11.9	22.2	22.3
Cycle Q Clear(g_c), s	1.4	1.2	0.0	1.2	1.0	3.3	0.0	19.7	19.7	11.9	22.2	22.3
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.06	1.00		0.02
Lane Grp Cap(c), veh/h	166	112	0	44	268	224	95	1476	801	294	1183	1240
V/C Ratio(X)	0.13	0.27	0.00	0.59	0.10	0.33	0.00	0.71	0.71	0.87	0.70	0.71
Avail Cap(c_a), veh/h	362	419	0	427	652	546	191	2691	1460	427	1957	2051
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	34.0	0.0	36.6	27.8	28.8	0.0	16.5	16.5	30.2	6.7	6.7
Incr Delay (d2), s/veh	0.3	1.3	0.0	4.5	0.2	0.8	0.0	0.6	1.2	9.6	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.5	0.0	0.5	0.4	1.2	0.0	5.9	6.5	4.8	4.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	35.3	0.0	41.1	28.0	29.7	0.0	17.1	17.7	39.8	7.4	7.4
LnGrp LOS	C	D	A	D	C	C	A	B	B	D	A	A
Approach Vol, veh/h		51			126			1606			1967	
Approach Delay, s/veh		34.9			31.7			17.3			11.7	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	18.7	41.3	6.7	9.4		60.0		16.1				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	20.4	63.5	20.4	* 18		88.5		28.0				
Max Q Clear Time (g_c+I1), s	13.9	21.7	3.2	3.4		24.3		5.3				
Green Ext Time (p_c), s	0.2	13.2	0.0	0.1		17.3		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

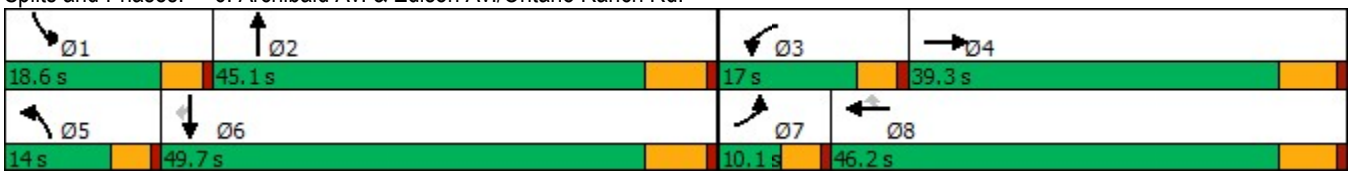
Notes

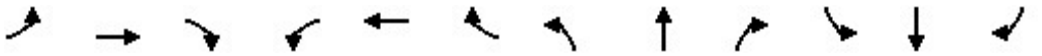
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	775	874	308	333	133	305	1220	387	185	1716	126
Future Volume (vph)	178	775	874	308	333	133	305	1220	387	185	1716	126
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.1	39.3		17.0	46.2	46.2	14.0	45.1		18.6	49.7	49.7
Total Split (%)	8.4%	32.8%		14.2%	38.5%	38.5%	11.7%	37.6%		15.5%	41.4%	41.4%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.5	31.0	118.0	12.4	38.0	38.0	9.4	38.6	118.0	14.0	43.2	43.2
Actuated g/C Ratio	0.05	0.26	1.00	0.11	0.32	0.32	0.08	0.33	1.00	0.12	0.37	0.37
v/c Ratio	1.36	0.88	0.61	1.04	0.62	0.25	2.55	1.11	0.27	1.04	1.40	0.21
Control Delay	240.5	53.5	1.9	112.3	39.3	5.7	741.9	100.4	0.4	128.1	215.0	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	240.5	53.5	1.9	112.3	39.3	5.7	741.9	100.4	0.4	128.1	215.0	3.4
LOS	F	D	A	F	D	A	F	F	A	F	F	A
Approach Delay		47.0			62.6			182.5			193.9	
Approach LOS		D			E			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.55	
Intersection Signal Delay: 134.0	Intersection LOS: F
Intersection Capacity Utilization 120.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	775	874	308	333	133	305	1220	387	185	1716	126
Future Volume (veh/h)	178	775	874	308	333	133	305	1220	387	185	1716	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	187	816	0	324	351	82	321	1284	0	195	1806	101
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	915		318	562	476	128	1168		190	1307	554
Arrive On Green	0.05	0.26	0.00	0.11	0.32	0.32	0.08	0.33	0.00	0.12	0.37	0.37
Sat Flow, veh/h	3000	3544	1502	3000	1772	1500	1594	3544	1502	1594	3544	1502
Grp Volume(v), veh/h	187	816	0	324	351	82	321	1284	0	195	1806	101
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	5.5	26.0	0.0	12.4	19.8	4.6	9.4	38.6	0.0	14.0	43.2	5.3
Cycle Q Clear(g_c), s	5.5	26.0	0.0	12.4	19.8	4.6	9.4	38.6	0.0	14.0	43.2	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	915		318	562	476	128	1168		190	1307	554
V/C Ratio(X)	1.33	0.89		1.02	0.62	0.17	2.51	1.10		1.02	1.38	0.18
Avail Cap(c_a), veh/h	141	1001		318	605	512	128	1168		190	1307	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	41.9	0.0	52.4	34.1	28.9	53.9	39.3	0.0	51.6	37.0	25.0
Incr Delay (d2), s/veh	188.0	9.6	0.0	55.8	1.8	0.2	702.1	58.0	0.0	71.5	176.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	12.0	0.0	7.0	8.3	1.6	28.5	24.9	0.0	9.1	49.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	243.8	51.5	0.0	108.1	35.9	29.1	756.0	97.2	0.0	123.1	213.7	25.2
LnGrp LOS	F	D		F	D	C	F	F		F	F	C
Approach Vol, veh/h		1003	A		757			1605	A		2102	
Approach Delay, s/veh		87.4			66.1			229.0			196.2	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.6	45.1	17.0	36.4	14.0	49.7	10.1	43.3
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	14.0	38.6	12.4	33.1	9.4	43.2	5.5	40.0
Max Q Clear Time (g_c+I1), s	16.0	40.6	14.4	28.0	11.4	45.2	7.5	21.8
Green Ext Time (p_c), s	0.0	0.0	0.0	2.2	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	167.8
HCM 6th LOS	F

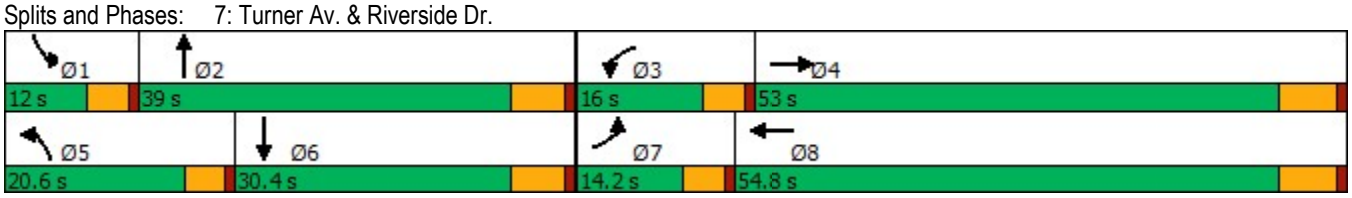
Notes

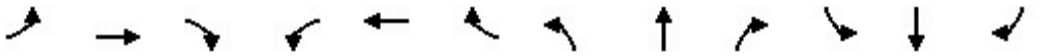
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	1070	140	1118	206	69	36	68
Future Volume (vph)	105	1070	140	1118	206	69	36	68
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	14.2	53.0	16.0	54.8	20.6	39.0	12.0	30.4
Total Split (%)	11.8%	44.2%	13.3%	45.7%	17.2%	32.5%	10.0%	25.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.4	46.9	11.4	48.9	16.0	26.0	6.5	12.4
Actuated g/C Ratio	0.09	0.43	0.11	0.45	0.15	0.24	0.06	0.11
v/c Ratio	0.78	0.97	0.86	0.80	0.90	0.29	0.39	0.33
Control Delay	84.8	48.6	89.7	30.8	85.0	12.4	62.1	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.8	48.6	89.7	30.8	85.0	12.4	62.1	25.0
LOS	F	D	F	C	F	B	E	C
Approach Delay		51.2		37.1		46.5		33.0
Approach LOS		D		D		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 44.2	Intersection LOS: D
Intersection Capacity Utilization 88.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1070	273	140	1118	49	206	69	163	36	68	64
Future Volume (veh/h)	105	1070	273	140	1118	49	206	69	163	36	68	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	108	1103	147	144	1153	30	212	71	86	37	70	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	1219	162	170	1453	38	238	390	344	52	254	118
Arrive On Green	0.12	0.61	0.61	0.16	0.65	0.65	0.22	0.35	0.35	0.05	0.17	0.17
Sat Flow, veh/h	1594	2978	396	1594	3351	87	1594	1683	1485	1594	2215	1027
Grp Volume(v), veh/h	108	623	627	144	579	604	212	71	86	37	52	53
Grp Sat Flow(s),veh/h/ln	1594	1683	1690	1594	1683	1755	1594	1683	1485	1594	1683	1559
Q Serve(g_s), s	6.4	30.9	31.1	8.5	23.9	24.0	12.4	2.8	4.0	2.2	2.6	2.9
Cycle Q Clear(g_c), s	6.4	30.9	31.1	8.5	23.9	24.0	12.4	2.8	4.0	2.2	2.6	2.9
Prop In Lane	1.00		0.23	1.00		0.05	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	131	689	692	170	730	761	238	390	344	52	193	178
V/C Ratio(X)	0.82	0.90	0.91	0.85	0.79	0.79	0.89	0.18	0.25	0.71	0.27	0.30
Avail Cap(c_a), veh/h	159	818	821	189	849	885	265	580	512	122	430	398
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	16.9	17.0	39.7	13.7	13.7	36.6	25.1	25.5	45.4	36.4	36.5
Incr Delay (d2), s/veh	21.0	12.0	12.3	24.7	4.5	4.4	25.4	0.2	0.4	6.5	0.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	8.8	8.9	4.1	6.1	6.3	5.9	1.1	1.3	0.9	1.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	28.9	29.3	64.4	18.2	18.1	61.9	25.3	25.8	51.9	37.1	37.4
LnGrp LOS	E	C	C	E	B	B	E	C	C	D	D	D
Approach Vol, veh/h		1358			1327			369			142	
Approach Delay, s/veh		31.8			23.2			46.5			41.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	28.1	14.9	45.6	19.0	16.8	12.5	48.0
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	7.4	33.2	11.4	46.8	16.0	24.6	9.6	48.6
Max Q Clear Time (g_c+I1), s	4.2	6.0	10.5	33.1	14.4	4.9	8.4	26.0
Green Ext Time (p_c), s	0.0	0.8	0.0	6.3	0.0	0.4	0.0	7.3

Intersection Summary	
HCM 6th Ctrl Delay	30.3
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	16.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	192	290	74	51	194	94	24	153	59	86	238	69
Future Vol, veh/h	192	290	74	51	194	94	24	153	59	86	238	69
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	209	315	80	55	211	102	26	166	64	93	259	75
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

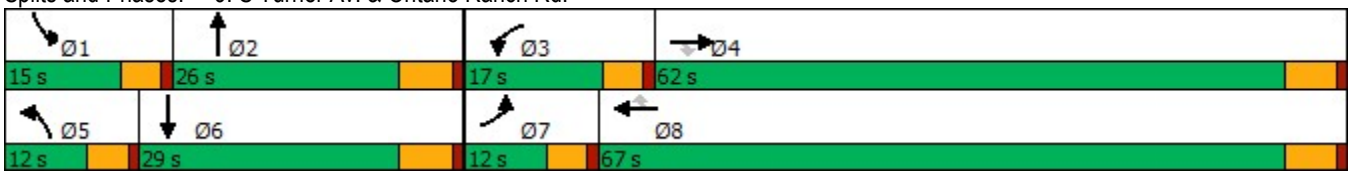
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	18.4	16	15.1	16.3
HCM LOS	C	C	C	C

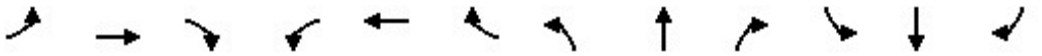
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	46%	0%	100%	57%	0%	100%	41%	0%	100%	53%
Vol Right, %	0%	0%	54%	0%	0%	43%	0%	0%	59%	0%	0%	47%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	102	110	192	193	171	51	129	159	86	159	148
LT Vol	24	0	0	192	0	0	51	0	0	86	0	0
Through Vol	0	102	51	0	193	97	0	129	65	0	159	79
RT Vol	0	0	59	0	0	74	0	0	94	0	0	69
Lane Flow Rate	26	111	120	209	210	186	55	141	172	93	172	161
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.07	0.282	0.291	0.508	0.482	0.41	0.143	0.343	0.401	0.239	0.417	0.375
Departure Headway (Hd)	9.642	9.142	8.766	8.764	8.264	7.961	9.295	8.795	8.38	9.196	8.696	8.37
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	372	394	410	413	437	454	386	409	429	392	416	432
Service Time	7.395	6.895	6.52	6.483	5.983	5.679	7.047	6.547	6.132	6.916	6.416	6.09
HCM Lane V/C Ratio	0.07	0.282	0.293	0.506	0.481	0.41	0.142	0.345	0.401	0.237	0.413	0.373
HCM Control Delay	13.1	15.5	15.1	20.2	18.5	16.1	13.6	16.1	16.7	14.8	17.5	16
HCM Lane LOS	B	C	C	C	C	C	B	C	C	B	C	C
HCM 95th-tile Q	0.2	1.1	1.2	2.8	2.6	2	0.5	1.5	1.9	0.9	2	1.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	158	2204	53	84	1907	163	19	19	179	38
Future Volume (vph)	158	2204	53	84	1907	163	19	19	179	38
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	12.0	62.0	62.0	17.0	67.0	67.0	12.0	26.0	15.0	29.0
Total Split (%)	10.0%	51.7%	51.7%	14.2%	55.8%	55.8%	10.0%	21.7%	12.5%	24.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	7.4	61.5	61.5	9.4	61.3	61.3	5.9	8.7	10.4	19.3
Actuated g/C Ratio	0.07	0.57	0.57	0.09	0.56	0.56	0.05	0.08	0.10	0.18
v/c Ratio	1.42	1.18	0.06	0.59	1.03	0.18	0.21	0.46	1.14	0.33
Control Delay	266.2	113.6	0.1	63.8	52.2	3.1	55.7	23.6	155.7	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	266.2	113.6	0.1	63.8	52.2	3.1	55.7	23.6	155.7	21.8
LOS	F	F	A	E	D	A	E	C	F	C
Approach Delay		121.1			48.9			29.4		105.3
Approach LOS		F			D			C		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay: 86.9	Intersection LOS: F
Intersection Capacity Utilization 95.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	2204	53	84	1907	163	19	19	66	179	38	70
Future Volume (veh/h)	158	2204	53	84	1907	163	19	19	66	179	38	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	170	2370	35	90	2051	89	20	20	39	192	41	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	2080	928	114	2059	919	37	31	61	175	111	116
Arrive On Green	0.07	0.59	0.59	0.06	0.58	0.58	0.02	0.06	0.06	0.10	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	567	1105	1781	836	877
Grp Volume(v), veh/h	170	2370	35	90	2051	89	20	0	59	192	0	84
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1671	1781	0	1713
Q Serve(g_s), s	7.4	61.8	1.0	5.3	60.6	2.6	1.2	0.0	3.7	10.4	0.0	4.7
Cycle Q Clear(g_c), s	7.4	61.8	1.0	5.3	60.6	2.6	1.2	0.0	3.7	10.4	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.66	1.00		0.51
Lane Grp Cap(c), veh/h	125	2080	928	114	2059	919	37	0	92	175	0	227
V/C Ratio(X)	1.36	1.14	0.04	0.79	1.00	0.10	0.53	0.00	0.64	1.09	0.00	0.37
Avail Cap(c_a), veh/h	125	2080	928	209	2059	919	125	0	320	175	0	376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.1	21.9	9.3	48.7	22.1	9.9	51.2	0.0	48.9	47.6	0.0	41.8
Incr Delay (d2), s/veh	205.9	69.1	0.0	4.5	18.8	0.0	4.3	0.0	7.2	95.5	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	41.5	0.3	2.4	26.7	0.8	0.6	0.0	1.7	9.1	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	255.0	91.0	9.3	53.2	40.9	9.9	55.5	0.0	56.1	143.1	0.0	42.8
LnGrp LOS	F	F	A	D	D	A	E	A	E	F	A	D
Approach Vol, veh/h		2575			2230			79			276	
Approach Delay, s/veh		100.7			40.2			56.0			112.6	
Approach LOS		F			D			E			F	

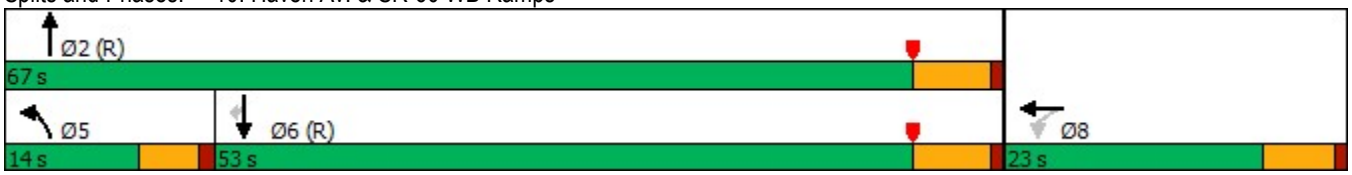
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	11.6	11.4	67.6	6.8	19.8	12.0	67.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	20.2	12.4	56.2	7.4	23.2	7.4	61.2
Max Q Clear Time (g_c+I1), s	12.4	5.7	7.3	63.8	3.2	6.7	9.4	62.6
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.0

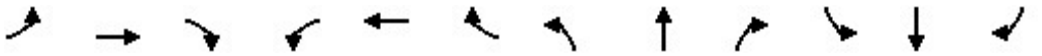
Intersection Summary	
HCM 6th Ctrl Delay	74.5
HCM 6th LOS	E

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	384	12	682	260	1214	2187	844
Future Volume (vph)	384	12	682	260	1214	2187	844
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	23.0	23.0		14.0	67.0	53.0	53.0
Total Split (%)	25.6%	25.6%		15.6%	74.4%	58.9%	58.9%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	14.9	14.9	90.0	9.3	63.1	48.7	48.7
Actuated g/C Ratio	0.17	0.17	1.00	0.10	0.70	0.54	0.54
v/c Ratio	0.75	0.73	0.45	0.76	0.36	0.83	0.76
Control Delay	52.2	51.0	0.9	39.1	8.6	21.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	51.0	0.9	39.1	8.6	21.0	9.0
LOS	D	D	A	D	A	C	A
Approach Delay		19.6			14.0	17.7	
Approach LOS		B			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	384	12	682	260	1214	0	0	2187	844
Future Volume (veh/h)	0	0	0	384	12	682	260	1214	0	0	2187	844
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				409	0	0	271	1265	0	0	2278	731
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				503	0		336	3704	0	0	2924	896
Arrive On Green				0.14	0.00	0.00	0.19	1.00	0.00	0.00	0.57	0.57
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1565
Grp Volume(v), veh/h				409	0	0	271	1265	0	0	2278	731
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1565
Q Serve(g_s), s				10.0	0.0	0.0	6.7	0.0	0.0	0.0	31.0	33.7
Cycle Q Clear(g_c), s				10.0	0.0	0.0	6.7	0.0	0.0	0.0	31.0	33.7
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				503	0		336	3704	0	0	2924	896
V/C Ratio(X)				0.81	0.00		0.81	0.34	0.00	0.00	0.78	0.82
Avail Cap(c_a), veh/h				681	0		346	3704	0	0	2924	896
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.30	0.30	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				37.5	0.0	0.0	35.4	0.0	0.0	0.0	14.8	15.4
Incr Delay (d2), s/veh				5.4	0.0	0.0	3.9	0.1	0.0	0.0	2.1	8.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	0.0	2.6	0.0	0.0	0.0	10.4	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.9	0.0	0.0	39.3	0.1	0.0	0.0	17.0	23.5
LnGrp LOS				D	A		D	A	A	A	B	C
Approach Vol, veh/h					409	A		1536			3009	
Approach Delay, s/veh					42.9			7.0			18.6	
Approach LOS					D			A			B	

Timer - Assigned Phs	2		5	6		8				
Phs Duration (G+Y+Rc), s	71.5		13.7	57.7		18.5				
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8				
Max Green Setting (Gmax), s	60.8		9.0	46.8		17.2				
Max Q Clear Time (g_c+I1), s	2.0		8.7	35.7		12.0				
Green Ext Time (p_c), s	6.5		0.0	8.7		0.7				

Intersection Summary		
HCM 6th Ctrl Delay	17.0	
HCM 6th LOS	B	

Notes

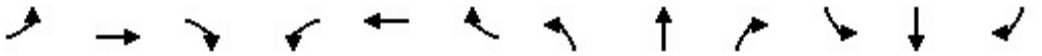
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	423	2	413	1236	739	1947
Future Volume (vph)	423	2	413	1236	739	1947
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	26.0	26.0	26.0	34.0	30.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	37.8%	33.3%	71.1%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	20.2	20.2	20.2	29.3	23.5	57.8
Actuated g/C Ratio	0.22	0.22	0.22	0.33	0.26	0.64
v/c Ratio	0.58	0.59	1.00	0.95	0.86	0.62
Control Delay	38.3	38.5	71.1	43.9	51.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	38.3	38.5	71.1	43.9	51.0	6.7
LOS	D	D	E	D	D	A
Approach Delay		54.5		43.9		18.9
Approach LOS		D		D		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 32.3	Intersection LOS: C
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	423	2	413	0	0	0	0	1236	267	739	1947	0
Future Volume (veh/h)	423	2	413	0	0	0	0	1236	267	739	1947	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	442	0	222				0	1288	143	770	2028	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	612	0	272				0	1846	205	841	3548	0
Arrive On Green	0.17	0.00	0.17				0.00	0.40	0.40	0.49	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4831	518	3456	5274	0
Grp Volume(v), veh/h	442	0	222				0	940	491	770	2028	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1777	1728	1702	0
Q Serve(g_s), s	10.6	0.0	12.1				0.0	20.7	20.7	18.6	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	12.1				0.0	20.7	20.7	18.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.29	1.00		0.00
Lane Grp Cap(c), veh/h	612	0	272				0	1348	704	841	3548	0
V/C Ratio(X)	0.72	0.00	0.81				0.00	0.70	0.70	0.92	0.57	0.00
Avail Cap(c_a), veh/h	800	0	356				0	1348	704	960	3548	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.46	0.46	0.00
Uniform Delay (d), s/veh	35.2	0.0	35.9				0.0	22.7	22.7	22.3	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	10.6				0.0	3.0	5.7	6.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	5.2				0.0	8.0	8.9	5.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	46.5				0.0	25.7	28.4	28.6	0.3	0.0
LnGrp LOS	D	A	D				A	C	C	C	A	A
Approach Vol, veh/h		664						1431			2798	
Approach Delay, s/veh		40.5						26.6			8.1	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.9	41.8		21.3		68.7
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	25.0	27.8		20.2		57.8
Max Q Clear Time (g_c+I1), s	20.6	22.7		14.1		2.0
Green Ext Time (p_c), s	1.3	2.8		1.3		14.7

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

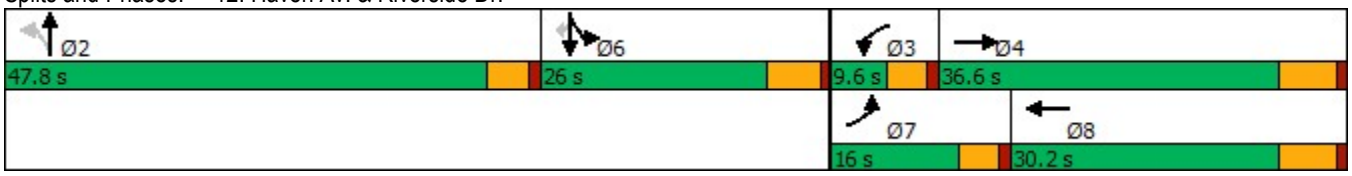
Notes

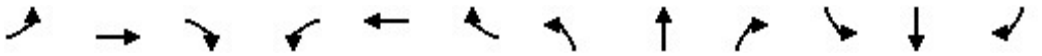
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	462	709	147	538	85	742	262	919	571
Future Volume (vph)	462	709	147	538	85	742	262	919	571
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	16.0	36.6	9.6	30.2	47.8	47.8	26.0	26.0	26.0
Total Split (%)	13.3%	30.5%	8.0%	25.2%	39.8%	39.8%	21.7%	21.7%	21.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.4	30.4	5.0	24.0		43.1	20.2	20.2	20.2
Actuated g/C Ratio	0.10	0.25	0.04	0.20		0.36	0.17	0.17	0.17
v/c Ratio	3.21	2.01	2.35	1.02		20.34	1.03	3.22	1.31
Control Delay	1028.3	489.0	679.1	86.8		8743.6	111.4	1026.4	180.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	1028.3	489.0	679.1	86.8		8743.6	111.4	1026.4	180.2
LOS	F	F	F	F		F	F	F	F
Approach Delay		679.2		195.6		8743.6		613.6	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 20.34	
Intersection Signal Delay: 2203.1	Intersection LOS: F
Intersection Capacity Utilization 181.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	462	709	138	147	538	115	85	742	149	262	919	571
Future Volume (veh/h)	462	709	138	147	538	115	85	742	149	262	919	571
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	481	739	143	153	560	100	89	773	149	273	957	369
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	363	70	66	569	101	54	472	91	268	298	252
Arrive On Green	0.09	0.25	0.25	0.04	0.20	0.20	0.36	0.36	0.36	0.17	0.17	0.17
Sat Flow, veh/h	1594	1434	277	1594	2844	506	151	1314	253	1594	1772	1496
Grp Volume(v), veh/h	481	0	882	153	331	329	1011	0	0	273	957	369
Grp Sat Flow(s),veh/h/ln	1594	0	1711	1594	1683	1667	1719	0	0	1594	1772	1496
Q Serve(g_s), s	11.4	0.0	30.4	5.0	23.5	23.6	43.1	0.0	0.0	20.2	20.2	20.2
Cycle Q Clear(g_c), s	11.4	0.0	30.4	5.0	23.5	23.6	43.1	0.0	0.0	20.2	20.2	20.2
Prop In Lane	1.00		0.16	1.00		0.30	0.09		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	151	0	433	66	337	333	617	0	0	268	298	252
V/C Ratio(X)	3.18	0.00	2.03	2.30	0.98	0.99	1.64	0.00	0.00	1.02	3.21	1.47
Avail Cap(c_a), veh/h	151	0	433	66	337	333	617	0	0	268	298	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	44.8	57.5	47.8	47.9	38.5	0.0	0.0	49.9	49.9	49.9
Incr Delay (d2), s/veh	996.6	0.0	473.6	631.3	44.0	45.9	294.3	0.0	0.0	59.5	1002.5	229.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	46.3	0.0	69.3	13.6	13.5	13.6	68.2	0.0	0.0	12.2	91.7	23.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1050.9	0.0	518.4	688.8	91.8	93.8	332.7	0.0	0.0	109.4	1052.4	279.7
LnGrp LOS	F	A	F	F	F	F	F	A	A	F	F	F
Approach Vol, veh/h		1363			813			1011			1599	
Approach Delay, s/veh		706.3			205.0			332.7			713.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		47.8	9.6	36.6		26.0	16.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 43	5.0	30.4		20.2	11.4	24.0				
Max Q Clear Time (g_c+I1), s		45.1	7.0	32.4		22.2	13.4	25.6				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		544.5
HCM 6th LOS		F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	37

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	192	87	187	799	889	385
Future Vol, veh/h	192	87	187	799	889	385
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	202	92	197	841	936	405

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2374	1139	1341	0	-	0
Stage 1	1139	-	-	-	-	-
Stage 2	1235	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 38	245	514	-	-	-
Stage 1	305	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 23	245	514	-	-	-
Mov Cap-2 Maneuver	~ 112	-	-	-	-	-
Stage 1	~ 188	-	-	-	-	-
Stage 2	274	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 325.9	3.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	514	-	112	245	-	-
HCM Lane V/C Ratio	0.383	-	1.805	0.374	-	-
HCM Control Delay (s)	16.3	-	$ 460.8	28.2	-	-
HCM Lane LOS	C	-	F	D	-	-
HCM 95th %tile Q(veh)	1.8	-	16	1.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	64	110	168	801	1120
Future Volume (vph)	64	110	168	801	1120
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	34.0	34.0	34.0	86.0	52.0
Total Split (%)	28.3%	28.3%	28.3%	71.7%	43.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.3	12.3	15.6	67.0	46.7
Actuated g/C Ratio	0.14	0.14	0.17	0.74	0.51
v/c Ratio	0.35	0.41	0.72	0.72	0.81
Control Delay	41.5	11.1	51.4	11.4	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	11.1	51.4	11.4	24.8
LOS	D	B	D	B	C
Approach Delay	22.2			18.3	24.8
Approach LOS	C			B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 91	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 67.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	110	168	801	1120	65
Future Volume (veh/h)	64	110	168	801	1120	65
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	74	59	195	931	1302	76
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	208	196	234	1252	1600	93
Arrive On Green	0.13	0.13	0.15	0.71	0.49	0.49
Sat Flow, veh/h	1594	1502	1594	1772	3322	188
Grp Volume(v), veh/h	74	59	195	931	677	701
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1683	1738
Q Serve(g_s), s	3.0	2.5	8.5	23.1	24.2	24.3
Cycle Q Clear(g_c), s	3.0	2.5	8.5	23.1	24.2	24.3
Prop In Lane	1.00	1.00	1.00			0.11
Lane Grp Cap(c), veh/h	208	196	234	1252	833	860
V/C Ratio(X)	0.36	0.30	0.83	0.74	0.81	0.82
Avail Cap(c_a), veh/h	632	595	659	1998	1093	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	28.0	29.5	6.5	15.2	15.2
Incr Delay (d2), s/veh	1.0	0.9	2.9	0.9	3.6	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	3.1	4.7	8.1	8.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.2	28.8	32.4	7.4	18.8	18.8
LnGrp LOS	C	C	C	A	B	B
Approach Vol, veh/h	133			1126	1378	
Approach Delay, s/veh	29.1			11.7	18.8	
Approach LOS	C			B	B	

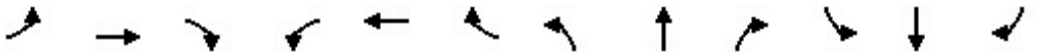
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		56.0		15.1	15.1	41.0
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		80.2		28.2	29.4	46.2
Max Q Clear Time (g_c+I1), s		25.1		5.0	10.5	26.3
Green Ext Time (p_c), s		8.4		0.3	0.2	8.9

Intersection Summary		
HCM 6th Ctrl Delay		16.3
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	602	1680	95	264	1705	228	93	486	115	170	568	264
Future Volume (vph)	602	1680	95	264	1705	228	93	486	115	170	568	264
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.4	39.0	39.0	6.2	32.5	32.5	9.9	41.4	41.4	10.4	42.0	42.0
Actuated g/C Ratio	0.10	0.33	0.33	0.05	0.27	0.27	0.08	0.35	0.35	0.09	0.36	0.36
v/c Ratio	3.86	1.12	0.18	1.86	1.09	0.41	0.75	0.84	0.19	1.30	0.97	0.42
Control Delay	1318.7	102.2	5.4	440.6	90.5	6.5	85.9	48.7	2.5	222.0	66.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1318.7	102.2	5.4	440.6	90.5	6.5	85.9	48.7	2.5	222.0	66.7	9.0
LOS	F	F	A	F	F	A	F	D	A	F	E	A
Approach Delay		406.3			123.9			46.1			77.9	
Approach LOS		F			F			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.86	
Intersection Signal Delay: 215.0	Intersection LOS: F
Intersection Capacity Utilization 118.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	602	1680	95	264	1705	228	93	486	115	170	568	264
Future Volume (veh/h)	602	1680	95	264	1705	228	93	486	115	170	568	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	640	1787	88	281	1814	198	99	517	72	181	604	248
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	1607	499	154	1703	419	120	609	516	141	632	536
Arrive On Green	0.11	0.33	0.33	0.05	0.28	0.28	0.08	0.34	0.34	0.09	0.36	0.36
Sat Flow, veh/h	1594	4837	1502	2910	6095	1502	1594	1772	1502	1594	1772	1502
Grp Volume(v), veh/h	640	1787	88	281	1814	198	99	517	72	181	604	248
Grp Sat Flow(s),veh/h/ln	1594	1612	1502	1455	1524	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	12.4	39.0	4.9	6.2	32.8	12.9	7.2	31.8	3.9	10.4	39.1	14.9
Cycle Q Clear(g_c), s	12.4	39.0	4.9	6.2	32.8	12.9	7.2	31.8	3.9	10.4	39.1	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	1607	499	154	1703	419	120	609	516	141	632	536
V/C Ratio(X)	3.80	1.11	0.18	1.83	1.07	0.47	0.82	0.85	0.14	1.28	0.96	0.46
Avail Cap(c_a), veh/h	168	1607	499	154	1703	419	147	652	552	141	646	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	39.2	27.8	55.6	42.3	35.1	53.5	35.7	26.6	53.5	36.9	29.1
Incr Delay (d2), s/veh	1275.7	59.9	0.8	397.3	41.6	3.8	22.2	9.9	0.1	170.3	24.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	64.4	23.3	1.8	10.7	16.4	4.9	3.5	14.7	1.3	10.7	20.3	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1328.2	99.1	28.6	452.9	84.0	38.9	75.7	45.6	26.7	223.8	61.5	29.7
LnGrp LOS	F	F	C	F	F	D	E	D	C	F	E	C
Approach Vol, veh/h		2515			2293			688			1033	
Approach Delay, s/veh		409.4			125.3			48.0			82.3	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	46.1	10.8	45.5	13.4	47.7	17.0	39.3
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	12.4	33.8	8.2	41.0	9.2	41.1	14.4	34.8
Green Ext Time (p_c), s	0.0	2.2	0.0	0.0	0.0	0.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	219.8
HCM 6th LOS	F

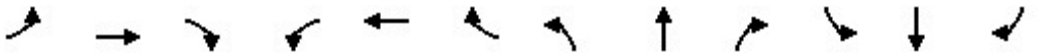
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	125	1343	515	1034	18	22	130	70	17
Future Volume (vph)	125	1343	515	1034	18	22	130	70	17
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	22.0	43.0	11.0	32.0	37.0	37.0	37.0	29.0	29.0
Total Split (%)	18.3%	35.8%	9.2%	26.7%	30.8%	30.8%	30.8%	24.2%	24.2%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.5	37.5	7.1	33.0	12.4	12.4	12.4	12.3	12.3
Actuated g/C Ratio	0.13	0.42	0.08	0.37	0.14	0.14	0.14	0.14	0.14
v/c Ratio	0.65	1.10	4.38	1.02	0.09	0.09	0.43	0.34	0.33
Control Delay	53.1	84.0	1547.6	60.2	34.9	34.9	10.7	39.8	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	84.0	1547.6	60.2	34.9	34.9	10.7	39.8	15.8
LOS	D	F	F	E	C	C	B	D	B
Approach Delay		81.5		514.5		16.3			26.6
Approach LOS		F		F		B			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 89.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.38	
Intersection Signal Delay: 280.1	Intersection LOS: F
Intersection Capacity Utilization 98.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1343	101	515	1034	137	18	22	130	70	17	68
Future Volume (veh/h)	125	1343	101	515	1034	137	18	22	130	70	17	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	133	1429	54	548	1100	98	19	23	125	74	18	45
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	1442	54	131	1303	116	191	212	179	205	56	141
Arrive On Green	0.10	0.44	0.44	0.08	0.42	0.42	0.12	0.12	0.12	0.13	0.13	0.13
Sat Flow, veh/h	1594	3308	125	1594	3127	278	1594	1772	1498	1594	439	1097
Grp Volume(v), veh/h	133	726	757	548	592	606	19	23	125	74	0	63
Grp Sat Flow(s),veh/h/ln	1594	1683	1749	1594	1683	1722	1594	1772	1498	1594	0	1536
Q Serve(g_s), s	6.9	36.3	36.5	7.0	26.8	26.9	0.9	1.0	6.8	3.6	0.0	3.2
Cycle Q Clear(g_c), s	6.9	36.3	36.5	7.0	26.8	26.9	0.9	1.0	6.8	3.6	0.0	3.2
Prop In Lane	1.00		0.07	1.00		0.16	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	162	734	762	131	701	717	191	212	179	205	0	197
V/C Ratio(X)	0.82	0.99	0.99	4.17	0.84	0.85	0.10	0.11	0.70	0.36	0.00	0.32
Avail Cap(c_a), veh/h	338	734	762	131	701	717	586	651	551	469	0	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	23.7	23.8	38.9	22.3	22.3	33.3	33.3	35.9	33.8	0.0	33.6
Incr Delay (d2), s/veh	3.9	30.4	30.7	1443.8	9.3	9.2	0.2	0.2	4.8	1.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	18.3	19.2	55.3	10.9	11.2	0.3	0.4	2.5	1.4	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	54.2	54.5	1482.7	31.5	31.5	33.5	33.5	40.7	34.9	0.0	34.5
LnGrp LOS	D	D	D	F	C	C	C	C	D	C	A	C
Approach Vol, veh/h		1616			1746			167			137	
Approach Delay, s/veh		53.3			487.0			38.9			34.7	
Approach LOS		D			F			D			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.0	11.0	43.0		14.9	12.6	41.4				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		31.2	7.0	37.0		25.0	18.0	26.0				
Max Q Clear Time (g_c+I1), s		8.8	9.0	38.5		5.6	8.9	28.9				
Green Ext Time (p_c), s		0.5	0.0	0.0		0.5	0.1	0.0				

Intersection Summary	
HCM 6th Ctrl Delay	258.5
HCM 6th LOS	F

Intersection	
Intersection Delay, s/veh	21.6
Intersection LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	17	0	0	80	96
Future Vol, veh/h	5	17	0	0	80	96
Peak Hour Factor	0.25	0.25	0.25	0.25	0.25	0.25
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	68	0	0	320	384
Number of Lanes	0	1	1	0	1	0

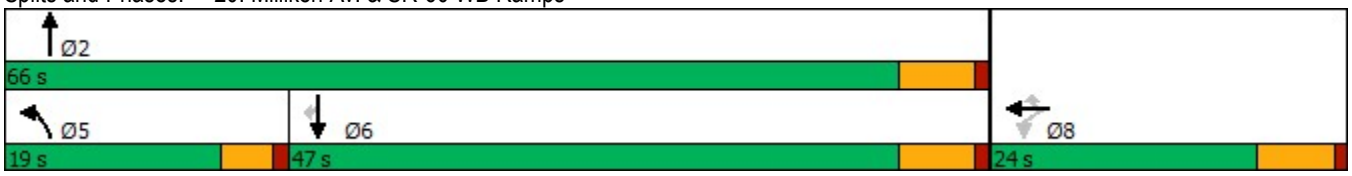
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.8	0	23.2
HCM LOS	A	-	C

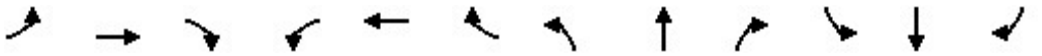
Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	23%	45%
Vol Thru, %	100%	0%	55%
Vol Right, %	0%	77%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	22	176
LT Vol	0	5	80
Through Vol	0	0	96
RT Vol	0	17	0
Lane Flow Rate	0	88	704
Geometry Grp	1	1	1
Degree of Util (X)	0	0.125	0.817
Departure Headway (Hd)	4.884	5.116	4.178
Convergence, Y/N	Yes	Yes	Yes
Cap	0	705	852
Service Time	2.904	3.116	2.271
HCM Lane V/C Ratio	0	0.125	0.826
HCM Control Delay	7.9	8.8	23.2
HCM Lane LOS	N	A	C
HCM 95th-tile Q	0	0.4	9.1

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	548	438	1413	1649	629
Future Volume (vph)	5	548	438	1413	1649	629
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	9.6	16.2	16.2	16.2
Total Split (s)	24.0	24.0	19.0	66.0	47.0	47.0
Total Split (%)	26.7%	26.7%	21.1%	73.3%	52.2%	52.2%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	17.8	17.8	14.4	59.8	40.8	40.8
Actuated g/C Ratio	0.20	0.20	0.16	0.66	0.45	0.45
v/c Ratio	0.78	1.47	1.61	0.59	1.02	0.63
Control Delay	51.3	249.9	319.6	9.6	52.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	249.9	319.6	9.6	52.2	5.4
LOS	D	F	F	A	D	A
Approach Delay	185.5			82.9	39.2	
Approach LOS	F			F	D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.61	
Intersection Signal Delay: 79.6	Intersection LOS: E
Intersection Capacity Utilization 111.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	258	5	548	438	1413	0	0	1649	629
Future Volume (veh/h)	0	0	0	258	5	548	438	1413	0	0	1649	629
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				269	5	290	456	1472	0	0	1718	328
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				346	6	313	285	2486	0	0	1696	719
Arrive On Green				0.30	0.30	0.30	0.24	1.00	0.00	0.00	0.68	0.68
Sat Flow, veh/h				1750	33	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				274	0	290	456	1472	0	0	1718	328
Grp Sat Flow(s),veh/h/ln				1783	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				12.6	0.0	16.0	14.4	0.3	0.0	0.0	40.8	8.6
Cycle Q Clear(g_c), s				12.6	0.0	16.0	14.4	0.3	0.0	0.0	40.8	8.6
Prop In Lane				0.98		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				353	0	313	285	2486	0	0	1696	719
V/C Ratio(X)				0.78	0.00	0.93	1.60	0.59	0.00	0.00	1.01	0.46
Avail Cap(c_a), veh/h				353	0	313	285	2486	0	0	1696	719
HCM Platoon Ratio				1.50	1.50	1.50	1.50	1.50	1.00	1.00	1.50	1.50
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				29.8	0.0	31.0	34.2	0.1	0.0	0.0	14.4	9.3
Incr Delay (d2), s/veh				10.5	0.0	32.1	285.9	0.4	0.0	0.0	25.1	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.6	0.0	7.8	27.8	0.2	0.0	0.0	12.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				40.3	0.0	63.1	320.1	0.4	0.0	0.0	39.5	9.7
LnGrp LOS				D	A	E	F	A	A	A	F	A
Approach Vol, veh/h					564			1928			2046	
Approach Delay, s/veh					52.0			76.0			34.8	
Approach LOS					D			E			C	

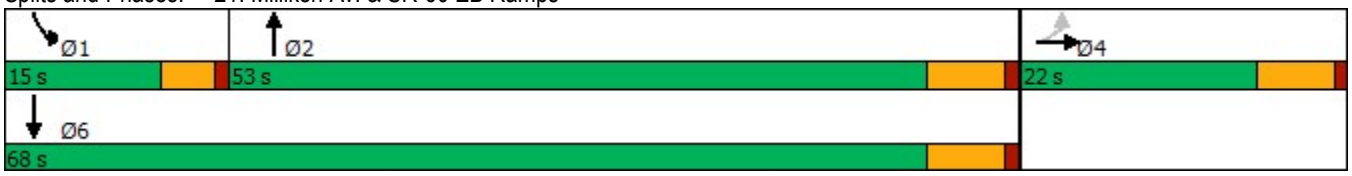
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		66.0			19.0	47.0		24.0				
Change Period (Y+Rc), s		6.2			4.6	6.2		6.2				
Max Green Setting (Gmax), s		59.8			14.4	40.8		17.8				
Max Q Clear Time (g_c+I1), s		2.3			16.4	42.8		18.0				
Green Ext Time (p_c), s		14.7			0.0	0.0		0.0				

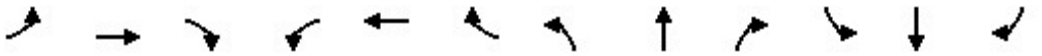
Intersection Summary												
HCM 6th Ctrl Delay			54.4									
HCM 6th LOS			D									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	319	5	1816	270	1779
Future Volume (vph)	319	5	1816	270	1779
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	16.2	16.2	23.2	9.6	16.2
Total Split (s)	22.0	22.0	53.0	15.0	68.0
Total Split (%)	24.4%	24.4%	58.9%	16.7%	75.6%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	15.8	15.8	46.8	10.4	61.8
Actuated g/C Ratio	0.18	0.18	0.52	0.12	0.69
v/c Ratio	0.96	1.49	1.17	1.38	0.72
Control Delay	81.9	267.2	106.9	230.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.5
Total Delay	81.9	267.2	106.9	230.9	11.4
LOS	F	F	F	F	B
Approach Delay		193.6	106.9		40.3
Approach LOS		F	F		D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.49	
Intersection Signal Delay: 91.9	Intersection LOS: F
Intersection Capacity Utilization 111.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	5	399	0	0	0	0	1816	336	270	1779	0
Future Volume (veh/h)	319	5	399	0	0	0	0	1816	336	270	1779	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	273	88	209				0	1892	175	281	1853	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	313	86	205				0	1757	160	206	2569	0
Arrive On Green	0.26	0.26	0.26				0.00	0.78	0.78	0.17	1.00	0.00
Sat Flow, veh/h	1781	492	1168				0	3378	307	1781	3741	0
Grp Volume(v), veh/h	273	0	297				0	1034	1034	281	1853	0
Grp Sat Flow(s),veh/h/ln	1781	0	1660				0	1870	1815	1781	1870	0
Q Serve(g_s), s	13.2	0.0	15.8				0.0	46.8	46.8	10.4	0.0	0.0
Cycle Q Clear(g_c), s	13.2	0.0	15.8				0.0	46.8	46.8	10.4	0.0	0.0
Prop In Lane	1.00		0.70				0.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h	313	0	291				0	973	944	206	2569	0
V/C Ratio(X)	0.87	0.00	1.02				0.00	1.06	1.10	1.37	0.72	0.00
Avail Cap(c_a), veh/h	313	0	291				0	973	944	206	2569	0
HCM Platoon Ratio	1.50	1.50	1.50				1.00	1.50	1.50	1.50	1.50	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.2	0.0	33.2				0.0	9.9	9.9	37.2	0.0	0.0
Incr Delay (d2), s/veh	22.7	0.0	57.7				0.0	47.0	58.8	192.3	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	9.9				0.0	17.5	20.1	14.9	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	0.0	90.8				0.0	56.9	68.7	229.5	1.0	0.0
LnGrp LOS	D	A	F				A	F	F	F	A	A
Approach Vol, veh/h		570						2067			2134	
Approach Delay, s/veh		73.6						62.8			31.1	
Approach LOS		E						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.0	53.0		22.0		68.0
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	10.4	46.8		15.8		61.8
Max Q Clear Time (g_c+I1), s	12.4	48.8		17.8		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		23.3

Intersection Summary		
HCM 6th Ctrl Delay		49.9
HCM 6th LOS		D

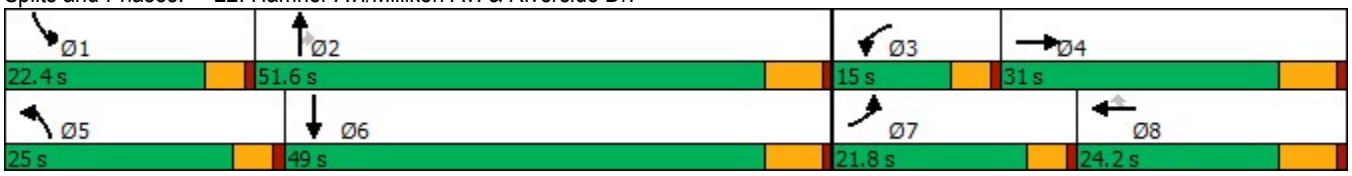
Notes

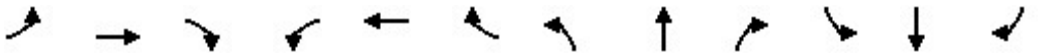
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	393	203	109	274	250	482	1456	59	257	1398
Future Volume (vph)	393	203	109	274	250	482	1456	59	257	1398
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	21.8	31.0	15.0	24.2	24.2	25.0	51.6	51.6	22.4	49.0
Total Split (%)	18.2%	25.8%	12.5%	20.2%	20.2%	20.8%	43.0%	43.0%	18.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	17.2	25.1	10.1	18.0	18.0	20.4	45.4	45.4	17.8	42.8
Actuated g/C Ratio	0.14	0.21	0.08	0.15	0.15	0.17	0.38	0.38	0.15	0.36
v/c Ratio	1.83	1.43	0.86	1.09	0.59	1.88	1.21	0.10	1.16	1.83
Control Delay	421.3	240.9	102.7	129.5	11.3	440.9	135.7	0.3	153.5	400.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	421.3	240.9	102.7	129.5	11.3	440.9	135.7	0.3	153.5	400.5
LOS	F	F	F	F	B	F	F	A	F	F
Approach Delay		319.8		78.2			205.3			372.9
Approach LOS		F		E			F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.88	
Intersection Signal Delay: 275.3	Intersection LOS: F
Intersection Capacity Utilization 150.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	203	303	109	274	250	482	1456	59	257	1398	646
Future Volume (veh/h)	393	203	303	109	274	250	482	1456	59	257	1398	646
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	414	214	278	115	288	225	507	1533	57	271	1472	666
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	144	187	137	266	225	271	1274	567	236	822	343
Arrive On Green	0.14	0.21	0.21	0.09	0.15	0.15	0.17	0.38	0.38	0.15	0.36	0.36
Sat Flow, veh/h	1594	693	901	1594	1772	1502	1594	3367	1500	1594	2305	962
Grp Volume(v), veh/h	414	0	492	115	288	225	507	1533	57	271	1042	1096
Grp Sat Flow(s),veh/h/ln	1594	0	1594	1594	1772	1502	1594	1683	1500	1594	1683	1583
Q Serve(g_s), s	17.2	0.0	24.9	8.5	18.0	18.0	20.4	45.4	2.9	17.8	42.8	42.8
Cycle Q Clear(g_c), s	17.2	0.0	24.9	8.5	18.0	18.0	20.4	45.4	2.9	17.8	42.8	42.8
Prop In Lane	1.00		0.57	1.00		1.00	1.00		1.00	1.00		0.61
Lane Grp Cap(c), veh/h	228	0	331	137	266	225	271	1274	567	236	600	565
V/C Ratio(X)	1.81	0.00	1.49	0.84	1.08	1.00	1.87	1.20	0.10	1.15	1.73	1.94
Avail Cap(c_a), veh/h	228	0	331	138	266	225	271	1274	567	236	600	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	0.0	47.6	54.0	51.0	51.0	49.8	37.3	24.1	51.1	38.6	38.6
Incr Delay (d2), s/veh	382.3	0.0	234.9	32.9	79.3	59.6	405.8	99.3	0.1	103.7	337.6	430.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.9	0.0	31.0	4.6	13.5	10.2	38.3	34.9	1.0	13.6	72.8	83.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	433.7	0.0	282.4	86.9	130.3	110.6	455.6	136.6	24.2	154.8	376.2	468.8
LnGrp LOS	F	A	F	F	F	F	F	F	C	F	F	F
Approach Vol, veh/h		906			628			2097			2409	
Approach Delay, s/veh		351.6			115.3			210.7			393.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	51.6	14.9	31.1	25.0	49.0	21.8	24.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.8	45.4	10.4	24.8	20.4	42.8	17.2	18.0
Max Q Clear Time (g_c+I1), s	19.8	47.4	10.5	26.9	22.4	44.8	19.2	20.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	294.8
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	36	76	1865	1724	121
Future Vol, veh/h	54	36	76	1865	1724	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	40	84	2049	1895	133

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3155	1962	2028	0	-	0
Stage 1	1962	-	-	-	-	-
Stage 2	1193	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 10	79	277	-	-	-
Stage 1	119	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 10	79	277	-	-	-
Mov Cap-2 Maneuver	100	-	-	-	-	-
Stage 1	119	-	-	-	-	-
Stage 2	251	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	209.6	0.9	0
HCM LOS	F		

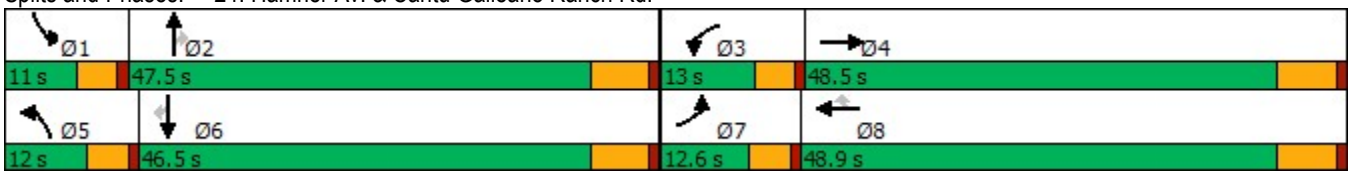
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	277	-	90	-	-
HCM Lane V/C Ratio	0.302	-	1.099	-	-
HCM Control Delay (s)	23.5	0	209.6	-	-
HCM Lane LOS	C	A	F	-	-
HCM 95th %tile Q(veh)	1.2	-	6.7	-	-

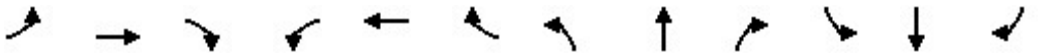
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	704	1527	475	1542	449	239	516	371	729	855	569
Future Volume (vph)	704	1527	475	1542	449	239	516	371	729	855	569
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	12.6	48.5	13.0	48.9	48.9	12.0	47.5	47.5	11.0	46.5	46.5
Total Split (%)	10.5%	40.4%	10.8%	40.8%	40.8%	10.0%	39.6%	39.6%	9.2%	38.8%	38.8%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.0	42.0	8.4	42.4	42.4	7.4	40.1	40.1	6.4	39.1	39.1
Actuated g/C Ratio	0.07	0.35	0.07	0.36	0.36	0.06	0.34	0.34	0.05	0.33	0.33
v/c Ratio	3.17	0.87	2.04	1.27	0.66	1.17	0.31	0.61	4.10	0.77	0.95
Control Delay	1010.1	40.0	510.5	162.0	20.8	162.4	29.7	23.3	1425.4	40.9	54.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1010.1	40.0	510.5	162.0	20.8	162.4	29.7	23.3	1425.4	40.9	54.4
LOS	F	D	F	F	C	F	C	C	F	D	D
Approach Delay		306.4		203.5			55.8			512.9	
Approach LOS		F		F			E			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.10	
Intersection Signal Delay: 295.4	Intersection LOS: F
Intersection Capacity Utilization 111.7%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	704	1527	331	475	1542	449	239	516	371	729	855	569
Future Volume (veh/h)	704	1527	331	475	1542	449	239	516	371	729	855	569
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	733	1591	220	495	1606	402	249	538	230	759	891	552
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	2015	279	242	1256	560	213	1757	546	184	1193	532
Arrive On Green	0.07	0.35	0.35	0.07	0.35	0.35	0.06	0.34	0.34	0.05	0.34	0.34
Sat Flow, veh/h	3456	5757	796	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	733	1334	477	495	1606	402	249	538	230	759	891	552
Grp Sat Flow(s),veh/h/ln	1728	1609	1727	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	8.0	29.8	29.8	8.4	42.4	26.4	7.4	9.3	13.4	6.4	26.7	40.3
Cycle Q Clear(g_c), s	8.0	29.8	29.8	8.4	42.4	26.4	7.4	9.3	13.4	6.4	26.7	40.3
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	1689	604	242	1256	560	213	1757	546	184	1193	532
V/C Ratio(X)	3.18	0.79	0.79	2.05	1.28	0.72	1.17	0.31	0.42	4.12	0.75	1.04
Avail Cap(c_a), veh/h	230	1689	604	242	1256	560	213	1757	546	184	1193	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	35.0	35.0	55.8	38.8	33.6	56.3	28.8	30.2	56.8	35.3	39.8
Incr Delay (d2), s/veh	993.0	2.6	7.0	485.0	131.8	4.4	114.6	0.1	0.5	1416.0	2.6	48.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	35.1	11.2	12.8	19.8	40.0	10.1	6.5	3.6	4.9	38.9	11.3	21.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1049.0	37.6	42.0	540.8	170.6	38.0	170.9	28.9	30.7	1472.8	37.9	88.8
LnGrp LOS	F	D	D	F	F	D	F	C	C	F	D	F
Approach Vol, veh/h		2544			2503			1017			2202	
Approach Delay, s/veh		329.9			222.5			64.1			545.2	
Approach LOS		F			F			E			F	

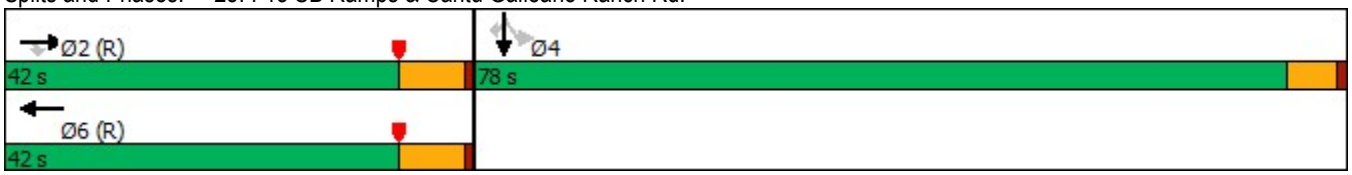
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	47.5	13.0	48.5	12.0	46.5	12.6	48.9
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	6.4	41.3	8.4	42.0	7.4	40.3	8.0	42.4
Max Q Clear Time (g_c+I1), s	8.4	15.4	10.4	31.8	9.4	42.3	10.0	44.4
Green Ext Time (p_c), s	0.0	4.1	0.0	7.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	322.0
HCM 6th LOS	F

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1969	398	1201	504	352	1	1632
Future Volume (vph)	1969	398	1201	504	352	1	1632
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0		78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%		65.0%	65.0%	65.0%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min		Min	Min	Min
Act Effct Green (s)	35.2	35.2	35.2	120.0	72.5	72.5	72.5
Actuated g/C Ratio	0.29	0.29	0.29	1.00	0.60	0.60	0.60
v/c Ratio	1.44	0.67	1.26	0.20	0.34	1.04	0.98
Control Delay	233.0	20.2	161.7	0.1	13.0	65.3	48.7
Queue Delay	0.0	0.0	0.0	0.0	0.2	24.9	0.0
Total Delay	233.0	20.2	161.7	0.1	13.2	90.2	48.7
LOS	F	C	F	A	B	F	D
Approach Delay	197.2		113.9			60.5	
Approach LOS	F		F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 113.2 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay: 129.0	Intersection LOS: F
Intersection Capacity Utilization 110.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1969	398	0	1201	504	0	0	0	352	1	1632
Future Volume (veh/h)	0	1969	398	0	1201	504	0	0	0	352	1	1632
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	2140	0	0	1305	0				256	0	1476
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	1976		0	1376					909	0	1618
Arrive On Green	0.00	0.39	0.00	0.00	0.77	0.00				0.51	0.00	0.51
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	2140	0	0	1305	0				256	0	1476
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	46.4	0.0	0.0	37.5	0.0				9.9	0.0	51.2
Cycle Q Clear(g_c), s	0.0	46.4	0.0	0.0	37.5	0.0				9.9	0.0	51.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1976		0	1376					909	0	1618
V/C Ratio(X)	0.00	1.08		0.00	0.95					0.28	0.00	0.91
Avail Cap(c_a), veh/h	0	1976		0	1376					1076	0	1915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.00	0.00	0.50	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	36.8	0.0	0.0	12.5	0.0				16.8	0.0	26.9
Incr Delay (d2), s/veh	0.0	38.3	0.0	0.0	8.8	0.0				0.2	0.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	24.7	0.0	0.0	6.2	0.0				3.9	0.0	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	75.1	0.0	0.0	21.3	0.0				17.0	0.0	33.3
LnGrp LOS	A	F		A	C					B	A	C
Approach Vol, veh/h		2140	A		1305	A					1732	
Approach Delay, s/veh		75.1			21.3						30.9	
Approach LOS		E			C						C	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	53.2	66.8	53.2
Change Period (Y+Rc), s	6.8	5.5	6.8
Max Green Setting (Gmax), s	35.2	72.5	35.2
Max Q Clear Time (g_c+I1), s	48.4	53.2	39.5
Green Ext Time (p_c), s	0.0	8.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

Notes

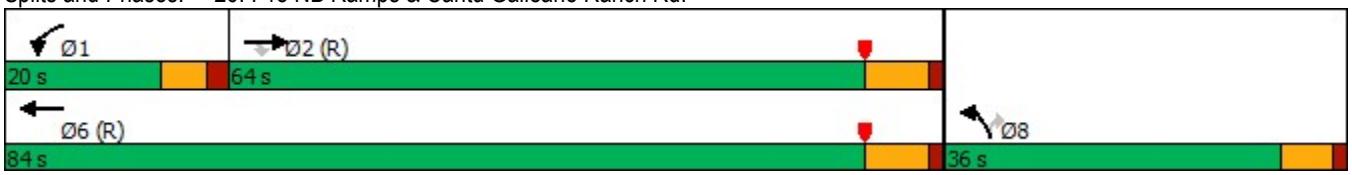
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	935	1477	265	712	944	186
Future Volume (vph)	935	1477	265	712	944	186
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.0	22.5	22.5	22.5
Total Split (s)	64.0	64.0	20.0	84.0	36.0	36.0
Total Split (%)	53.3%	53.3%	16.7%	70.0%	30.0%	30.0%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	57.3	57.3	13.4	76.7	30.0	30.0
Actuated g/C Ratio	0.48	0.48	0.11	0.64	0.25	0.25
v/c Ratio	0.42	1.40	0.75	0.24	1.22	0.38
Control Delay	12.1	207.5	64.6	9.4	147.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	207.5	64.6	9.4	147.1	11.1
LOS	B	F	E	A	F	B
Approach Delay	131.8			24.4	126.9	
Approach LOS	F			C	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.40	
Intersection Signal Delay: 107.3	Intersection LOS: F
Intersection Capacity Utilization 110.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	935	1477	265	712	944	186
Future Volume (veh/h)	935	1477	265	712	944	186
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1016	812	288	774	1026	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2497	775	346	3264	891	396
Arrive On Green	0.82	0.82	0.10	0.64	0.25	0.25
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	1016	812	288	774	1026	120
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	6.6	58.7	9.8	7.7	30.0	7.4
Cycle Q Clear(g_c), s	6.6	58.7	9.8	7.7	30.0	7.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2497	775	346	3264	891	396
V/C Ratio(X)	0.41	1.05	0.83	0.24	1.15	0.30
Avail Cap(c_a), veh/h	2497	775	403	3264	891	396
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.83	0.83	1.00	1.00
Uniform Delay (d), s/veh	6.2	11.0	53.0	9.2	45.0	36.5
Incr Delay (d2), s/veh	0.0	25.4	10.3	0.1	81.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	9.9	4.6	2.5	22.8	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.3	36.4	63.3	9.4	126.3	36.9
LnGrp LOS	A	F	E	A	F	D
Approach Vol, veh/h	1828			1062	1146	
Approach Delay, s/veh	19.6			24.0	116.9	
Approach LOS	B			C	F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	66.0				84.0	36.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	14.0	56.7				76.7	30.0
Max Q Clear Time (g_c+I1), s	11.8	60.7				9.7	32.0
Green Ext Time (p_c), s	0.2	0.0				5.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	48.4
HCM 6th LOS	D

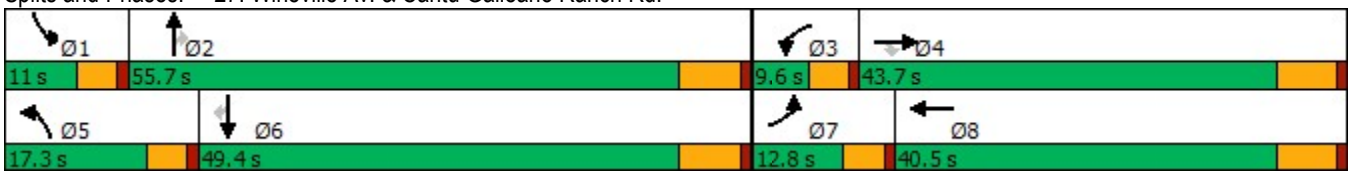
Notes

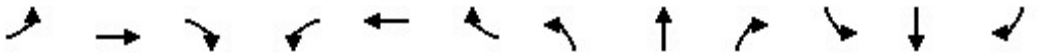
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	143	477	395	32	449	251	112	56	35	205	269
Future Volume (vph)	143	477	395	32	449	251	112	56	35	205	269
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	12.8	43.7	43.7	9.6	40.5	17.3	55.7	55.7	11.0	49.4	49.4
Total Split (%)	10.7%	36.4%	36.4%	8.0%	33.8%	14.4%	46.4%	46.4%	9.2%	41.2%	41.2%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.7	25.0	25.0	5.4	15.5	10.6	26.8	26.8	6.1	17.3	17.3
Actuated g/C Ratio	0.10	0.33	0.33	0.07	0.21	0.14	0.36	0.36	0.08	0.23	0.23
v/c Ratio	0.44	0.24	0.53	0.14	0.50	0.56	0.10	0.10	0.26	0.52	0.56
Control Delay	41.2	20.8	5.5	42.7	28.2	38.9	18.9	0.4	45.4	30.2	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	20.8	5.5	42.7	28.2	38.9	18.9	0.4	45.4	30.2	13.2
LOS	D	C	A	D	C	D	B	A	D	C	B
Approach Delay		17.7			29.1		28.4			22.3	
Approach LOS		B			C		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 75	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 54.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	477	395	32	449	35	251	112	56	35	205	269
Future Volume (veh/h)	143	477	395	32	449	35	251	112	56	35	205	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	518	291	35	488	28	273	122	35	38	223	227
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	1729	426	128	1123	64	392	978	436	70	376	319
Arrive On Green	0.08	0.27	0.27	0.04	0.23	0.23	0.11	0.28	0.28	0.04	0.20	0.20
Sat Flow, veh/h	3456	6434	1585	3456	4942	281	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	155	518	291	35	335	181	273	122	35	38	223	227
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1820	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	2.5	3.7	9.6	0.6	4.9	5.0	4.4	1.5	1.0	1.2	6.3	7.8
Cycle Q Clear(g_c), s	2.5	3.7	9.6	0.6	4.9	5.0	4.4	1.5	1.0	1.2	6.3	7.8
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	1729	426	128	773	413	392	978	436	70	376	319
V/C Ratio(X)	0.57	0.30	0.68	0.27	0.43	0.44	0.70	0.12	0.08	0.54	0.59	0.71
Avail Cap(c_a), veh/h	485	4093	1008	296	1979	1058	751	2990	1334	195	1372	1163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	17.0	19.1	27.4	19.4	19.4	24.9	15.9	15.7	27.6	21.2	21.8
Incr Delay (d2), s/veh	0.7	0.1	1.9	0.4	0.4	0.7	0.8	0.1	0.1	2.4	1.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.1	3.0	0.2	1.6	1.8	1.7	0.5	0.3	0.5	2.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	17.1	21.1	27.8	19.7	20.1	25.8	16.0	15.8	30.0	22.7	24.7
LnGrp LOS	C	B	C	C	B	C	C	B	B	C	C	C
Approach Vol, veh/h		964			551			430			488	
Approach Delay, s/veh		19.8			20.4			22.2			24.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.6	6.8	22.2	11.2	18.3	9.2	19.8
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	6.4	49.2	5.0	37.2	12.7	42.9	8.2	34.0
Max Q Clear Time (g_c+I1), s	3.2	3.5	2.6	11.6	6.4	9.8	4.5	7.0
Green Ext Time (p_c), s	0.0	0.8	0.0	4.1	0.3	1.9	0.1	2.8

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

APPENDIX 7.2: HORIZON YEAR (2050) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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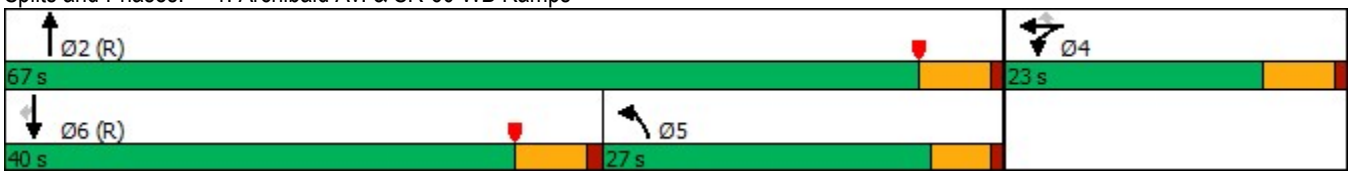
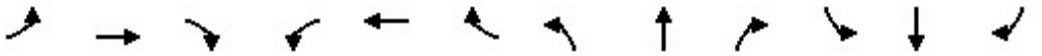
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	457	9	537	978	1306	564	194
Future Volume (vph)	457	9	537	978	1306	564	194
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	23.0	23.0	23.0	27.0	67.0	40.0	40.0
Total Split (%)	25.6%	25.6%	25.6%	30.0%	74.4%	44.4%	44.4%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	21.3	21.3	21.3	34.4	57.1	17.7	17.7
Actuated g/C Ratio	0.24	0.24	0.24	0.38	0.63	0.20	0.20
v/c Ratio	0.89	0.82	0.77	0.76	0.41	0.46	0.42
Control Delay	60.0	43.1	35.5	26.9	3.5	32.1	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	43.1	35.5	26.9	3.5	32.1	6.5
LOS	E	D	D	C	A	C	A
Approach Delay		46.5			13.5	25.6	
Approach LOS		D			B	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	457	9	537	978	1306	0	0	564	194
Future Volume (veh/h)	0	0	0	457	9	537	978	1306	0	0	564	194
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				637	0	338	998	1333	0	0	576	101
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				681	0	302	1608	3472	0	0	967	238
Arrive On Green				0.19	0.00	0.19	0.93	1.00	0.00	0.00	0.15	0.15
Sat Flow, veh/h				3563	0	1583	3456	5274	0	0	6696	1585
Grp Volume(v), veh/h				637	0	338	998	1333	0	0	576	101
Grp Sat Flow(s),veh/h/ln				1781	0	1583	1728	1702	0	0	1609	1585
Q Serve(g_s), s				15.9	0.0	17.2	4.3	0.0	0.0	0.0	7.5	5.2
Cycle Q Clear(g_c), s				15.9	0.0	17.2	4.3	0.0	0.0	0.0	7.5	5.2
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				681	0	302	1608	3472	0	0	967	238
V/C Ratio(X)				0.94	0.00	1.12	0.62	0.38	0.00	0.00	0.60	0.42
Avail Cap(c_a), veh/h				681	0	302	1608	3472	0	0	2445	602
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.66	0.66	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.9	0.0	36.4	1.8	0.0	0.0	0.0	35.7	34.7
Incr Delay (d2), s/veh				20.3	0.0	87.2	0.4	0.2	0.0	0.0	2.7	5.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.4	0.0	21.0	0.7	0.1	0.0	0.0	3.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				56.2	0.0	123.6	2.2	0.2	0.0	0.0	38.4	40.2
LnGrp LOS				E	A	F	A	A	A	A	D	D
Approach Vol, veh/h					975			2331			677	
Approach Delay, s/veh					79.5			1.1			38.7	
Approach LOS					E			A			D	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	67.0	23.0	47.7	19.3
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	61.2	17.2	22.0	* 34
Max Q Clear Time (g_c+I1), s	2.0	19.2	6.3	9.5
Green Ext Time (p_c), s	12.3	0.0	1.9	4.0

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

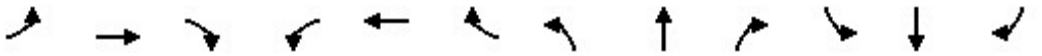
User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	433	5	560	1853	701	183	864
Future Volume (vph)	433	5	560	1853	701	183	864
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	34.0	34.0	34.0	44.0	44.0	12.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	48.9%	48.9%	13.3%	62.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	25.1	25.1	25.1	41.5	41.5	7.8	53.3
Actuated g/C Ratio	0.28	0.28	0.28	0.46	0.46	0.09	0.59
v/c Ratio	0.80	0.72	0.69	0.68	0.67	0.66	0.31
Control Delay	43.0	27.3	25.5	21.1	4.8	58.8	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	27.3	25.5	21.1	4.8	58.8	1.9
LOS	D	C	C	C	A	E	A
Approach Delay		32.2		16.6			11.9
Approach LOS		C		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	433	5	560	0	0	0	0	1853	701	183	864	0
Future Volume (veh/h)	433	5	560	0	0	0	0	1853	701	183	864	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	589	0	261				0	1992	574	197	929	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	745	0	327				0	3481	839	265	3381	0
Arrive On Green	0.21	0.00	0.21				0.00	0.54	0.54	0.15	1.00	0.00
Sat Flow, veh/h	3563	0	1562				0	6696	1551	3456	5274	0
Grp Volume(v), veh/h	589	0	261				0	1992	574	197	929	0
Grp Sat Flow(s),veh/h/ln	1781	0	1562				0	1609	1551	1728	1702	0
Q Serve(g_s), s	14.1	0.0	14.3				0.0	18.5	24.3	4.9	0.0	0.0
Cycle Q Clear(g_c), s	14.1	0.0	14.3				0.0	18.5	24.3	4.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	745	0	327				0	3481	839	265	3381	0
V/C Ratio(X)	0.79	0.00	0.80				0.00	0.57	0.68	0.74	0.27	0.00
Avail Cap(c_a), veh/h	1116	0	489				0	3481	839	307	3381	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.74	0.74	0.00
Uniform Delay (d), s/veh	33.7	0.0	33.8				0.0	13.7	15.0	37.3	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.0	5.5				0.0	0.7	4.5	4.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	5.6				0.0	5.7	8.1	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	0.0	39.3				0.0	14.4	19.6	42.1	0.1	0.0
LnGrp LOS	D	A	D				A	B	B	D	A	A
Approach Vol, veh/h		850						2566			1126	
Approach Delay, s/veh		37.1						15.6			7.5	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	10.9	54.5				65.4		24.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	8.0	38.2				50.2		28.2				
Max Q Clear Time (g_c+I1), s	6.9	26.3				2.0		16.3				
Green Ext Time (p_c), s	0.0	9.9				6.8		2.5				

Intersection Summary			
HCM 6th Ctrl Delay			17.6
HCM 6th LOS			B

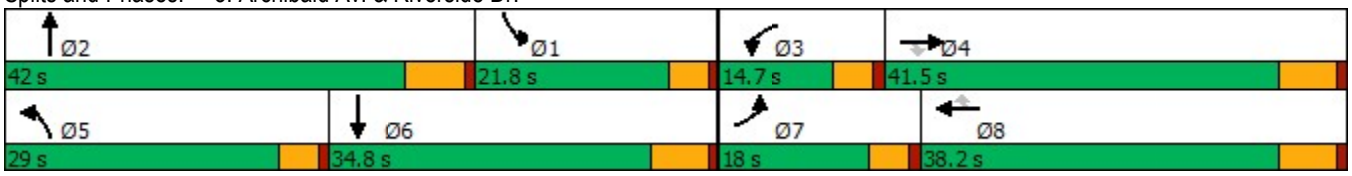
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	203	718	306	174	621	318	409	1706	267	744
Future Volume (vph)	203	718	306	174	621	318	409	1706	267	744
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	41.5	41.5	14.7	38.2	38.2	29.0	42.0	21.8	34.8
Total Split (%)	15.0%	34.6%	34.6%	12.3%	31.8%	31.8%	24.2%	35.0%	18.2%	29.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	31.5	31.5	10.1	28.2	28.2	24.4	35.9	17.2	28.6
Actuated g/C Ratio	0.12	0.27	0.27	0.09	0.24	0.24	0.21	0.31	0.15	0.25
v/c Ratio	1.16	0.82	0.51	1.32	0.80	0.56	1.28	1.34	1.19	0.84
Control Delay	162.1	48.3	7.2	226.7	49.4	8.7	186.9	192.2	163.0	47.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	162.1	48.3	7.2	226.7	49.4	8.7	186.9	192.2	163.0	47.2
LOS	F	D	A	F	D	A	F	F	F	D
Approach Delay		56.8			65.5			191.3		72.5
Approach LOS		E			E			F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.34	
Intersection Signal Delay: 114.5	Intersection LOS: F
Intersection Capacity Utilization 105.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	718	306	174	621	318	409	1706	190	267	744	211
Future Volume (veh/h)	203	718	306	174	621	318	409	1706	190	267	744	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	211	748	261	181	647	267	426	1777	195	278	775	180
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	876	385	138	781	342	333	1356	148	235	1014	233
Arrive On Green	0.11	0.26	0.26	0.09	0.23	0.23	0.21	0.31	0.31	0.15	0.26	0.26
Sat Flow, veh/h	1594	3367	1478	1594	3367	1473	1594	4418	482	1594	3918	901
Grp Volume(v), veh/h	211	748	261	181	647	267	426	1295	677	278	636	319
Grp Sat Flow(s),veh/h/ln	1594	1683	1478	1594	1683	1473	1594	1612	1676	1594	1612	1595
Q Serve(g_s), s	13.4	24.7	18.5	10.1	21.3	13.3	24.4	35.8	35.8	17.2	21.3	21.6
Cycle Q Clear(g_c), s	13.4	24.7	18.5	10.1	21.3	13.3	24.4	35.8	35.8	17.2	21.3	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		0.57
Lane Grp Cap(c), veh/h	183	876	385	138	781	342	333	990	514	235	835	413
V/C Ratio(X)	1.15	0.85	0.68	1.31	0.83	0.78	1.28	1.31	1.32	1.18	0.76	0.77
Avail Cap(c_a), veh/h	183	1019	447	138	923	404	333	990	514	235	835	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	41.0	38.8	53.3	42.6	18.8	46.1	40.4	40.4	49.7	39.9	40.0
Incr Delay (d2), s/veh	113.6	6.4	3.4	182.6	5.5	8.1	146.4	146.1	156.0	117.2	4.2	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	10.5	6.8	10.9	9.1	5.0	22.8	33.4	36.1	14.2	8.5	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	165.3	47.4	42.1	235.8	48.1	27.0	192.5	186.5	196.5	167.0	44.1	48.8
LnGrp LOS	F	D	D	F	D	C	F	F	F	F	D	D
Approach Vol, veh/h		1220			1095			2398			1233	
Approach Delay, s/veh		66.7			74.0			190.4			73.0	
Approach LOS		E			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.4	42.0	14.7	36.6	29.0	36.4	18.0	33.3
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.2	* 36	10.1	35.3	24.4	28.6	13.4	32.0
Max Q Clear Time (g_c+I1), s	19.2	37.8	12.1	26.7	26.4	23.6	15.4	23.3
Green Ext Time (p_c), s	0.0	0.0	0.0	3.6	0.0	2.4	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	119.2
HCM 6th LOS	F

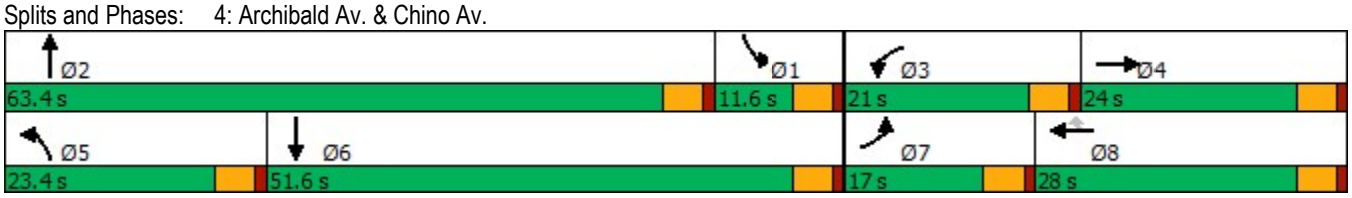
Notes

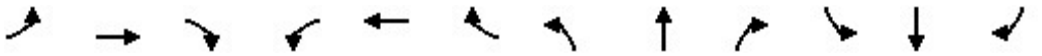
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	148	127	153	157	214	293	1765	85	870
Future Volume (vph)	148	127	153	157	214	293	1765	85	870
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	17.0	24.0	21.0	28.0	28.0	23.4	63.4	11.6	51.6
Total Split (%)	14.2%	20.0%	17.5%	23.3%	23.3%	19.5%	52.8%	9.7%	43.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.5	17.6	15.6	20.7	20.7	18.9	56.9	7.0	45.0
Actuated g/C Ratio	0.11	0.15	0.13	0.18	0.18	0.16	0.49	0.06	0.39
v/c Ratio	1.02	0.83	0.85	0.59	0.66	1.33	0.88	1.04	0.86
Control Delay	127.3	69.6	81.9	51.9	28.4	213.1	31.2	157.8	39.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.3	69.6	81.9	51.9	28.4	213.1	31.2	157.8	39.9
LOS	F	E	F	D	C	F	C	F	D
Approach Delay		94.8		51.1			55.3		49.2
Approach LOS		F		D			E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 115.6	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay: 56.4	Intersection LOS: E
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	127	64	153	157	214	293	1765	161	85	870	121
Future Volume (veh/h)	148	127	64	153	157	214	293	1765	161	85	870	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	174	149	67	180	185	158	345	2076	181	100	1024	134
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	170	76	206	293	248	267	2400	207	99	1203	157
Arrive On Green	0.11	0.15	0.15	0.13	0.17	0.17	0.17	0.50	0.50	0.06	0.39	0.39
Sat Flow, veh/h	1594	1158	521	1594	1772	1502	1594	4819	416	1594	3061	400
Grp Volume(v), veh/h	174	0	216	180	185	158	345	1521	736	100	592	566
Grp Sat Flow(s),veh/h/ln	1594	0	1678	1594	1772	1502	1594	1772	1691	1594	1772	1690
Q Serve(g_s), s	12.2	0.0	14.1	12.4	10.9	9.1	18.8	42.4	43.4	7.0	34.2	34.3
Cycle Q Clear(g_c), s	12.2	0.0	14.1	12.4	10.9	9.1	18.8	42.4	43.4	7.0	34.2	34.3
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.25	1.00		0.24
Lane Grp Cap(c), veh/h	176	0	246	206	293	248	267	1765	842	99	696	664
V/C Ratio(X)	0.99	0.00	0.88	0.88	0.63	0.64	1.29	0.86	0.87	1.01	0.85	0.85
Avail Cap(c_a), veh/h	176	0	290	233	369	313	267	1857	886	99	742	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	0.0	46.9	48.0	43.7	29.9	46.7	24.8	25.0	52.6	31.1	31.1
Incr Delay (d2), s/veh	64.1	0.0	22.3	26.8	2.3	2.8	156.5	4.3	9.3	91.9	8.9	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	7.3	6.4	4.9	3.4	18.6	16.6	17.4	5.2	15.2	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	114.0	0.0	69.2	74.8	45.9	32.7	203.2	29.1	34.4	144.5	40.0	40.5
LnGrp LOS	F	A	E	E	D	C	F	C	C	F	D	D
Approach Vol, veh/h		390			523			2602			1258	
Approach Delay, s/veh		89.2			51.9			53.7			48.5	
Approach LOS		F			D			D			D	

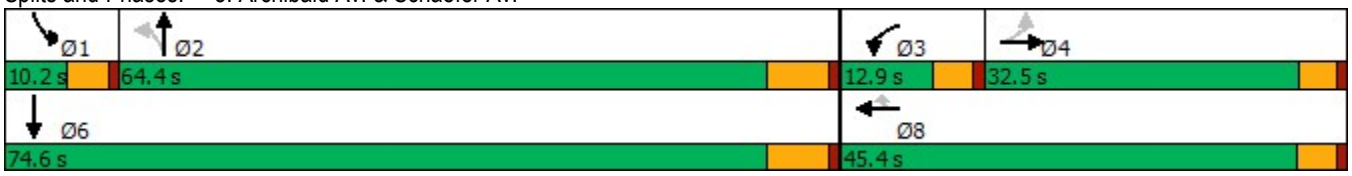
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	60.5	19.1	21.1	23.4	48.7	17.0	23.1
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	7.0	58.8	16.4	19.4	18.8	47.0	12.4	23.4
Max Q Clear Time (g_c+I1), s	9.0	45.4	14.4	16.1	20.8	36.3	14.2	12.9
Green Ext Time (p_c), s	0.0	10.5	0.1	0.3	0.0	5.0	0.0	1.1

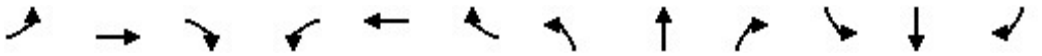
Intersection Summary	
HCM 6th Ctrl Delay	55.0
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	25	61	28	248	1862	82	1108
Future Volume (vph)	19	25	61	28	248	1862	82	1108
Turn Type	Perm	NA	Prot	NA	Perm	NA	Prot	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4				8			
Detector Phase	4	4	3	8	8	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	32.5	32.5	9.6	32.6	32.6	37.5	9.6	23.5
Total Split (s)	32.5	32.5	12.9	45.4	45.4	64.4	10.2	74.6
Total Split (%)	27.1%	27.1%	10.8%	37.8%	37.8%	53.7%	8.5%	62.2%
Yellow Time (s)	3.5	3.5	3.6	3.6	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.6	4.6	4.6	6.5	4.6	6.5
Lead/Lag	Lag	Lag	Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	10.8	10.8	9.3	20.0	20.0	56.3	5.7	66.6
Actuated g/C Ratio	0.11	0.11	0.10	0.20	0.20	0.58	0.06	0.68
v/c Ratio	0.17	0.15	0.49	0.09	0.81	0.83	1.08	0.59
Control Delay	44.1	42.8	57.5	31.3	42.0	21.3	163.8	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	42.8	57.5	31.3	42.0	21.3	163.8	10.7
LOS	D	D	E	C	D	C	F	B
Approach Delay		43.4		43.9		21.3		21.1
Approach LOS		D		D		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 97.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	25	0	61	28	248	0	1862	50	82	1108	21
Future Volume (veh/h)	19	25	0	61	28	248	0	1862	50	82	1108	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		1.00	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	23	30	0	73	33	295	0	2217	48	98	1319	25
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	262	0	90	444	357	72	2611	56	89	2156	41
Arrive On Green	0.15	0.15	0.00	0.06	0.25	0.25	0.00	0.54	0.54	0.06	0.64	0.64
Sat Flow, veh/h	890	1772	0	1594	1772	1426	364	4870	105	1594	3378	64
Grp Volume(v), veh/h	23	30	0	73	33	295	0	1466	799	98	657	687
Grp Sat Flow(s),veh/h/ln	890	1772	0	1594	1772	1426	364	1612	1750	1594	1683	1759
Q Serve(g_s), s	2.3	1.5	0.0	4.5	1.4	19.5	0.0	38.6	38.9	5.6	23.1	23.2
Cycle Q Clear(g_c), s	2.3	1.5	0.0	4.5	1.4	19.5	0.0	38.6	38.9	5.6	23.1	23.2
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.06	1.00		0.04
Lane Grp Cap(c), veh/h	204	262	0	90	444	357	72	1729	938	89	1074	1123
V/C Ratio(X)	0.11	0.11	0.00	0.81	0.07	0.83	0.00	0.85	0.85	1.10	0.61	0.61
Avail Cap(c_a), veh/h	322	497	0	132	724	582	88	1869	1014	89	1147	1199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	36.9	0.0	46.6	28.6	35.4	0.0	19.7	19.8	47.2	10.7	10.7
Incr Delay (d2), s/veh	0.2	0.2	0.0	12.7	0.1	5.1	0.0	3.7	6.7	124.0	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.6	0.0	2.0	0.6	6.9	0.0	12.8	14.8	5.2	6.8	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	37.1	0.0	59.3	28.7	40.4	0.0	23.4	26.4	171.1	11.6	11.6
LnGrp LOS	D	D	A	E	C	D	A	C	C	F	B	B
Approach Vol, veh/h		53			401			2265			1442	
Approach Delay, s/veh		37.3			42.9			24.4			22.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	10.2	60.1	10.3	19.4		70.3		29.6				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	5.6	57.9	8.3	* 28		68.1		40.8				
Max Q Clear Time (g_c+I1), s	7.6	40.9	6.5	4.3		25.2		21.5				
Green Ext Time (p_c), s	0.0	12.7	0.0	0.2		10.1		1.1				

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

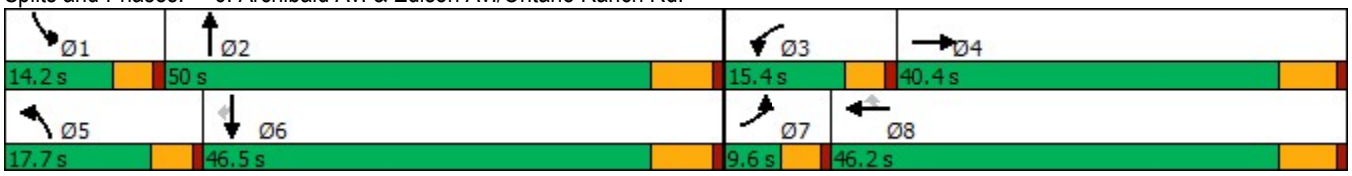
Notes

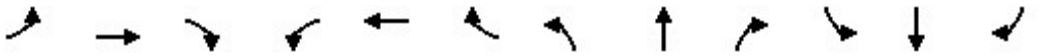
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	256	292	304	499	129	690	1637	339	109	943	101
Future Volume (vph)	43	256	292	304	499	129	690	1637	339	109	943	101
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	40.4		15.4	46.2	46.2	17.7	50.0		14.2	46.5	46.5
Total Split (%)	8.0%	33.7%		12.8%	38.5%	38.5%	14.8%	41.7%		11.8%	38.8%	38.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.0	30.0	116.2	10.9	38.0	38.0	13.2	43.7	116.2	9.6	40.2	40.2
Actuated g/C Ratio	0.04	0.26	1.00	0.09	0.33	0.33	0.11	0.38	1.00	0.08	0.35	0.35
v/c Ratio	0.36	0.31	0.21	1.20	0.95	0.25	4.23	1.36	0.25	0.92	0.85	0.18
Control Delay	64.2	35.1	0.3	165.2	65.9	7.5	1486.6	196.1	0.4	114.0	44.0	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	35.1	0.3	165.2	65.9	7.5	1486.6	196.1	0.4	114.0	44.0	2.1
LOS	E	D	A	F	E	A	F	F	A	F	D	A
Approach Delay		20.0			90.2			505.0			46.9	
Approach LOS		C			F			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.2	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.23	
Intersection Signal Delay: 280.2	Intersection LOS: F
Intersection Capacity Utilization 120.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	256	292	304	499	129	690	1637	339	109	943	101
Future Volume (veh/h)	43	256	292	304	499	129	690	1637	339	109	943	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	47	281	0	334	548	119	758	1799	0	120	1036	100
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	950		276	579	484	178	1315		131	1209	501
Arrive On Green	0.03	0.27	0.00	0.09	0.33	0.33	0.11	0.37	0.00	0.08	0.34	0.34
Sat Flow, veh/h	3000	3544	1502	3000	1772	1483	1594	3544	1502	1594	3544	1468
Grp Volume(v), veh/h	47	281	0	334	548	119	758	1799	0	120	1036	100
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1483	1594	1772	1502	1594	1772	1468
Q Serve(g_s), s	1.8	7.4	0.0	10.8	35.3	6.9	13.1	43.5	0.0	8.8	31.9	5.6
Cycle Q Clear(g_c), s	1.8	7.4	0.0	10.8	35.3	6.9	13.1	43.5	0.0	8.8	31.9	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	950		276	579	484	178	1315		131	1209	501
V/C Ratio(X)	0.47	0.30		1.21	0.95	0.25	4.26	1.37		0.92	0.86	0.20
Avail Cap(c_a), veh/h	128	1034		276	605	506	178	1315		131	1209	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.6	34.1	0.0	53.2	38.5	28.9	52.1	36.9	0.0	53.4	35.9	27.3
Incr Delay (d2), s/veh	1.3	0.2	0.0	122.6	23.7	0.3	1477.9	170.5	0.0	53.8	6.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.1	0.0	8.6	18.2	2.4	78.1	48.4	0.0	5.3	13.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	34.3	0.0	175.8	62.2	29.1	1530.0	207.3	0.0	107.3	42.2	27.5
LnGrp LOS	E	C		F	E	C	F	F		F	D	C
Approach Vol, veh/h		328	A		1001			2557	A		1256	
Approach Delay, s/veh		37.5			96.1			599.4			47.3	
Approach LOS		D			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	50.0	15.4	37.6	17.7	46.5	8.5	44.5
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	9.6	43.5	10.8	34.2	13.1	40.0	5.0	40.0
Max Q Clear Time (g_c+I1), s	10.8	45.5	12.8	9.4	15.1	33.9	3.8	37.3
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.0	3.3	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	330.7
HCM 6th LOS	F

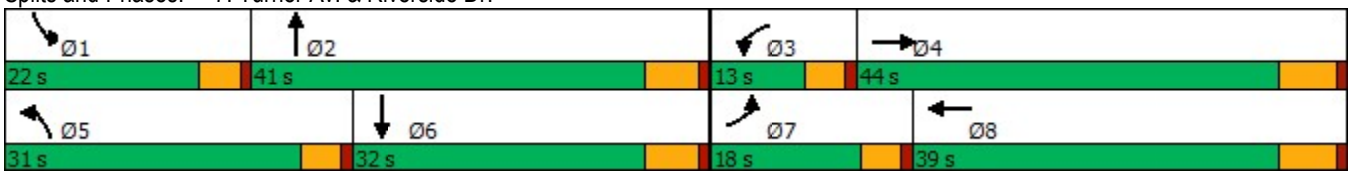
Notes

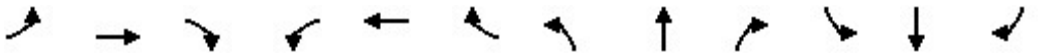
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	171	815	103	682	336	271	134	206
Future Volume (vph)	171	815	103	682	336	271	134	206
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	18.0	44.0	13.0	39.0	31.0	41.0	22.0	32.0
Total Split (%)	15.0%	36.7%	10.8%	32.5%	25.8%	34.2%	18.3%	26.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	13.4	37.9	8.4	32.9	26.5	28.7	15.0	17.2
Actuated g/C Ratio	0.12	0.34	0.08	0.30	0.24	0.26	0.13	0.15
v/c Ratio	1.13	1.13	1.08	1.09	1.13	0.74	0.80	0.74
Control Delay	150.7	104.3	156.8	94.1	126.6	31.1	73.4	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	150.7	104.3	156.8	94.1	126.6	31.1	73.4	38.9
LOS	F	F	F	F	F	C	E	D
Approach Delay		111.1		101.0		67.6		48.5
Approach LOS		F		F		E		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 88.6	Intersection LOS: F
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	815	181	103	682	157	336	271	271	134	206	143
Future Volume (veh/h)	171	815	181	103	682	157	336	271	271	134	206	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.94	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	216	1032	115	130	863	104	425	343	178	170	261	92
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	1032	115	120	889	107	378	577	291	196	387	133
Arrive On Green	0.12	0.34	0.34	0.08	0.29	0.29	0.24	0.27	0.27	0.12	0.16	0.16
Sat Flow, veh/h	1594	3043	339	1594	3020	364	1594	2116	1070	1594	2445	838
Grp Volume(v), veh/h	216	571	576	130	481	486	425	271	250	170	177	176
Grp Sat Flow(s),veh/h/ln	1594	1683	1698	1594	1683	1701	1594	1683	1503	1594	1683	1600
Q Serve(g_s), s	13.4	37.8	37.8	8.4	31.5	31.5	26.4	15.6	16.2	11.7	11.1	11.6
Cycle Q Clear(g_c), s	13.4	37.8	37.8	8.4	31.5	31.5	26.4	15.6	16.2	11.7	11.1	11.6
Prop In Lane	1.00		0.20	1.00		0.21	1.00		0.71	1.00		0.52
Lane Grp Cap(c), veh/h	192	571	576	120	496	501	378	459	409	196	266	253
V/C Ratio(X)	1.13	1.00	1.00	1.08	0.97	0.97	1.13	0.59	0.61	0.87	0.67	0.69
Avail Cap(c_a), veh/h	192	571	576	120	496	501	378	532	475	249	396	376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	36.8	36.8	51.5	38.8	38.8	42.5	35.2	35.4	48.0	44.1	44.3
Incr Delay (d2), s/veh	103.3	37.4	37.6	105.8	32.9	32.7	84.9	1.3	1.8	19.2	2.9	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	20.3	20.6	6.8	16.7	16.8	18.8	6.3	5.9	5.5	4.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	152.3	74.2	74.4	157.3	71.7	71.5	127.4	36.5	37.1	67.2	47.0	47.7
LnGrp LOS	F	E	F	F	E	E	F	D	D	E	D	D
Approach Vol, veh/h		1363			1097			946			523	
Approach Delay, s/veh		86.7			81.8			77.5			53.8	
Approach LOS		F			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.3	36.2	13.0	44.0	31.0	23.4	18.0	39.0
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	17.4	35.2	8.4	37.8	26.4	26.2	13.4	32.8
Max Q Clear Time (g_c+I1), s	13.7	18.2	10.4	39.8	28.4	13.6	15.4	33.5
Green Ext Time (p_c), s	0.1	2.7	0.0	0.0	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	78.7
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	89.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	170	169	117	49	224	148	157	493	51	92	230	109
Future Vol, veh/h	170	169	117	49	224	148	157	493	51	92	230	109
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	230	228	158	66	303	200	212	666	69	124	311	147
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

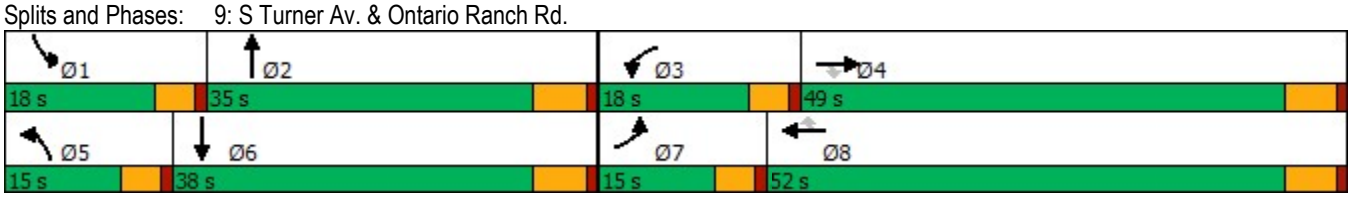
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	48.1	64	158	46.7
HCM LOS	E	F	F	E

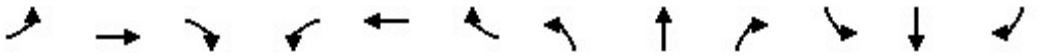
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	76%	0%	100%	32%	0%	100%	34%	0%	100%	41%
Vol Right, %	0%	0%	24%	0%	0%	68%	0%	0%	66%	0%	0%	59%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	157	329	215	170	113	173	49	149	223	92	153	186
LT Vol	157	0	0	170	0	0	49	0	0	92	0	0
Through Vol	0	329	164	0	113	56	0	149	75	0	153	77
RT Vol	0	0	51	0	0	117	0	0	148	0	0	109
Lane Flow Rate	212	444	291	230	152	234	66	202	301	124	207	251
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.738	1.484	0.959	0.838	0.535	0.794	0.237	0.696	1.001	0.455	0.731	0.857
Departure Headway (Hd)	12.641	12.141	11.975	13.284	12.784	12.311	13.278	12.778	12.312	13.301	12.801	12.297
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	289	302	306	273	283	295	272	285	298	272	284	294
Service Time	10.341	9.841	9.675	10.984	10.484	10.011	10.978	10.478	10.012	11.001	10.501	10.09
HCM Lane V/C Ratio	0.734	1.47	0.951	0.842	0.537	0.793	0.243	0.709	1.01	0.456	0.729	0.854
HCM Control Delay	44	265	77.9	59.1	29.3	49.6	20.1	40.2	89.7	26.6	43.7	59.2
HCM Lane LOS	E	F	F	F	D	E	C	E	F	D	E	F
HCM 95th-tile Q	5.4	24.6	9.7	6.9	2.9	6.3	0.9	4.8	10.5	2.2	5.2	7.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	150	1424	18	63	1526	48	46	157	220	77
Future Volume (vph)	150	1424	18	63	1526	48	46	157	220	77
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	15.0	49.0	49.0	18.0	52.0	52.0	15.0	35.0	18.0	38.0
Total Split (%)	12.5%	40.8%	40.8%	15.0%	43.3%	43.3%	12.5%	29.2%	15.0%	31.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.4	50.1	50.1	8.7	46.3	46.3	7.5	17.8	13.4	25.8
Actuated g/C Ratio	0.10	0.46	0.46	0.08	0.43	0.43	0.07	0.16	0.12	0.24
v/c Ratio	0.99	0.97	0.03	0.50	1.13	0.07	0.42	0.72	1.12	0.51
Control Delay	117.5	47.4	0.1	60.6	97.1	0.2	59.8	55.0	141.4	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.5	47.4	0.1	60.6	97.1	0.2	59.8	55.0	141.4	30.2
LOS	F	D	A	E	F	A	E	D	F	C
Approach Delay		53.5			92.9			55.9		87.2
Approach LOS		D			F			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 73.9	Intersection LOS: E
Intersection Capacity Utilization 90.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1424	18	63	1526	48	46	157	41	220	77	131
Future Volume (veh/h)	150	1424	18	63	1526	48	46	157	41	220	77	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	167	1582	16	70	1696	45	51	174	40	244	86	135
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	1720	767	90	1551	692	66	209	48	225	152	239
Arrive On Green	0.10	0.48	0.48	0.05	0.44	0.44	0.04	0.14	0.14	0.13	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1471	338	1781	656	1029
Grp Volume(v), veh/h	167	1582	16	70	1696	45	51	0	214	244	0	221
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1809	1781	0	1685
Q Serve(g_s), s	9.9	43.8	0.6	4.1	46.2	1.7	3.0	0.0	12.2	13.4	0.0	12.3
Cycle Q Clear(g_c), s	9.9	43.8	0.6	4.1	46.2	1.7	3.0	0.0	12.2	13.4	0.0	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.61
Lane Grp Cap(c), veh/h	175	1720	767	90	1551	692	66	0	257	225	0	391
V/C Ratio(X)	0.95	0.92	0.02	0.78	1.09	0.07	0.78	0.00	0.83	1.08	0.00	0.57
Avail Cap(c_a), veh/h	175	1720	767	225	1551	692	175	0	499	225	0	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.5	25.4	14.2	49.7	29.8	17.3	50.5	0.0	44.2	46.2	0.0	35.9
Incr Delay (d2), s/veh	54.1	8.5	0.0	5.3	52.9	0.0	7.2	0.0	6.8	83.5	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	18.3	0.2	1.9	29.0	0.6	1.4	0.0	5.7	10.9	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.6	33.9	14.2	54.9	82.7	17.3	57.7	0.0	51.0	129.7	0.0	37.2
LnGrp LOS	F	C	B	D	F	B	E	A	D	F	A	D
Approach Vol, veh/h		1765			1811			265			465	
Approach Delay, s/veh		40.1			80.0			52.3			85.8	
Approach LOS		D			F			D			F	

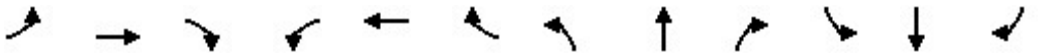
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	20.9	10.0	57.0	8.5	30.4	15.0	52.0
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	13.4	29.2	13.4	43.2	10.4	32.2	10.4	46.2
Max Q Clear Time (g_c+I1), s	15.4	14.2	6.1	45.8	5.0	14.3	11.9	48.2
Green Ext Time (p_c), s	0.0	0.9	0.0	0.0	0.0	1.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.6
HCM 6th LOS	E

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	276	4	869	368	2197	1184	494
Future Volume (vph)	276	4	869	368	2197	1184	494
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	30.2	30.2		16.0	44.8	28.8	28.8
Total Split (%)	40.3%	40.3%		21.3%	59.7%	38.4%	38.4%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	24.4	24.4	75.0	10.6	38.6	23.0	23.0
Actuated g/C Ratio	0.33	0.33	1.00	0.14	0.51	0.31	0.31
v/c Ratio	1.01	1.01	0.57	0.79	0.87	0.79	0.62
Control Delay	69.4	70.2	1.5	34.4	18.9	28.5	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	70.2	1.5	34.4	18.9	28.5	5.8
LOS	E	E	A	C	B	C	A
Approach Delay		39.1			21.1	21.8	
Approach LOS		D			C	C	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 45 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 26.9	Intersection LOS: C
Intersection Capacity Utilization 93.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	276	4	869	368	2197	0	0	1184	494
Future Volume (veh/h)	0	0	0	276	4	869	368	2197	0	0	1184	494
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				1107	0	0	383	2289	0	0	1233	447
Peak Hour Factor				0.25	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1159	0		459	2628	0	0	1610	493
Arrive On Green				0.33	0.00	0.00	0.27	1.00	0.00	0.00	0.32	0.32
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1563
Grp Volume(v), veh/h				1107	0	0	383	2289	0	0	1233	447
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1563
Q Serve(g_s), s				22.8	0.0	0.0	7.8	0.0	0.0	0.0	16.3	20.6
Cycle Q Clear(g_c), s				22.8	0.0	0.0	7.8	0.0	0.0	0.0	16.3	20.6
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1159	0		459	2628	0	0	1610	493
V/C Ratio(X)				0.96	0.00		0.84	0.87	0.00	0.00	0.77	0.91
Avail Cap(c_a), veh/h				1159	0		507	2628	0	0	1610	493
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.09	0.09	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.8	0.0	0.0	26.8	0.0	0.0	0.0	23.2	24.6
Incr Delay (d2), s/veh				16.8	0.0	0.0	1.0	0.4	0.0	0.0	3.5	23.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				11.1	0.0	0.0	2.7	0.1	0.0	0.0	6.3	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				41.5	0.0	0.0	27.7	0.4	0.0	0.0	26.7	47.6
LnGrp LOS				D	A		C	A	A	A	C	D
Approach Vol, veh/h					1107	A		2672			1680	
Approach Delay, s/veh					41.5			4.3			32.3	
Approach LOS					D			A			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.8			15.0	29.8		30.2				
Change Period (Y+Rc), s		6.2			5.0	6.2		5.8				
Max Green Setting (Gmax), s		38.6			11.0	22.6		24.4				
Max Q Clear Time (g_c+I1), s		2.0			9.8	22.6		24.8				
Green Ext Time (p_c), s		16.5			0.1	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	20.5	
HCM 6th LOS	C	

Notes

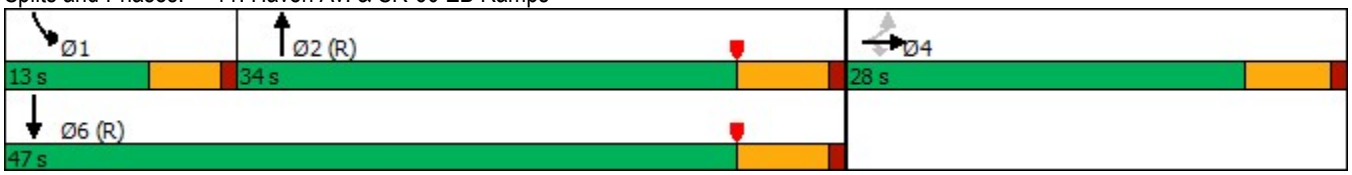
User approved volume balancing among the lanes for turning movement.

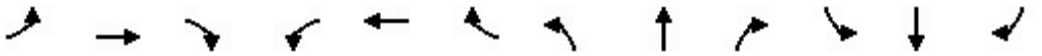
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	871	5	202	1767	393	1051
Future Volume (vph)	871	5	202	1767	393	1051
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	28.0	28.0	28.0	34.0	13.0	47.0
Total Split (%)	37.3%	37.3%	37.3%	45.3%	17.3%	62.7%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	22.1	22.1	22.1	27.8	8.1	40.9
Actuated g/C Ratio	0.29	0.29	0.29	0.37	0.11	0.55
v/c Ratio	0.93	0.94	0.39	1.24	1.12	0.40
Control Delay	53.9	55.4	12.0	135.9	99.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	55.4	12.0	135.9	99.5	10.2
LOS	D	E	B	F	F	B
Approach Delay		46.7		135.9		34.6
Approach LOS		D		F		C

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 48 (64%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 84.7	Intersection LOS: F
Intersection Capacity Utilization 93.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	871	5	202	0	0	0	0	1767	446	393	1051	0
Future Volume (veh/h)	871	5	202	0	0	0	0	1767	446	393	1051	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	921	0	108				0	1860	258	414	1106	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1017	0	452				0	1727	237	369	2832	0
Arrive On Green	0.29	0.00	0.29				0.00	0.38	0.38	0.21	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4698	622	3456	5274	0
Grp Volume(v), veh/h	921	0	108				0	1393	725	414	1106	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1748	1728	1702	0
Q Serve(g_s), s	18.7	0.0	3.9				0.0	28.6	28.6	8.0	0.0	0.0
Cycle Q Clear(g_c), s	18.7	0.0	3.9				0.0	28.6	28.6	8.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	1017	0	452				0	1298	667	369	2832	0
V/C Ratio(X)	0.91	0.00	0.24				0.00	1.07	1.09	1.12	0.39	0.00
Avail Cap(c_a), veh/h	1055	0	469				0	1298	667	369	2832	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.39	0.39	0.00
Uniform Delay (d), s/veh	25.8	0.0	20.6				0.0	23.2	23.2	29.5	0.0	0.0
Incr Delay (d2), s/veh	10.9	0.0	0.3				0.0	47.2	61.1	69.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.0	1.3				0.0	18.3	21.4	6.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	0.0	20.8				0.0	70.4	84.3	98.8	0.2	0.0
LnGrp LOS	D	A	C				A	F	F	F	A	A
Approach Vol, veh/h		1029						2118			1520	
Approach Delay, s/veh		35.0						75.1			27.0	
Approach LOS		D						E			C	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	13.0	34.8		27.2		47.8						
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2						
Max Green Setting (Gmax), s	8.0	27.8		22.2		40.8						
Max Q Clear Time (g_c+I1), s	10.0	30.6		20.7		2.0						
Green Ext Time (p_c), s	0.0	0.0		0.7		5.3						

Intersection Summary												
HCM 6th Ctrl Delay			50.6									
HCM 6th LOS			D									

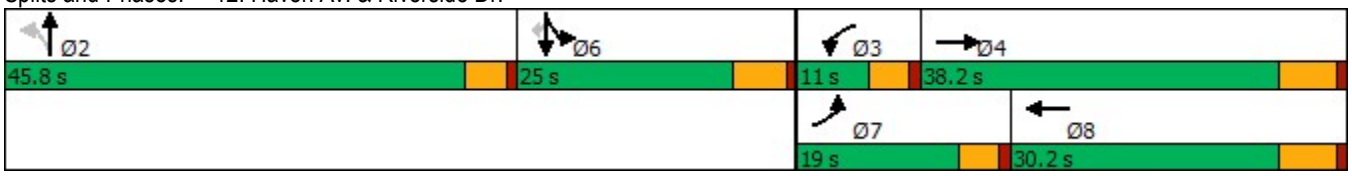
Notes

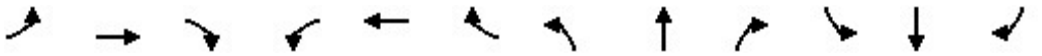
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	546	763	321	526	24	530	478	412	309
Future Volume (vph)	546	763	321	526	24	530	478	412	309
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	38.2	11.0	30.2	45.8	45.8	25.0	25.0	25.0
Total Split (%)	15.8%	31.8%	9.2%	25.2%	38.2%	38.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	14.4	32.0	6.4	24.0		41.1	19.2	19.2	19.2
Actuated g/C Ratio	0.12	0.27	0.05	0.20		0.34	0.16	0.16	0.16
v/c Ratio	3.07	1.88	4.06	1.40		3.99	2.01	1.55	0.69
Control Delay	966.0	432.1	1419.2	217.8		1370.7	496.5	300.4	15.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	966.0	432.1	1419.2	217.8		1370.7	496.5	300.4	15.9
LOS	F	F	F	F		F	F	F	B
Approach Delay		645.4		517.3		1370.7		305.3	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.06	
Intersection Signal Delay: 643.3	Intersection LOS: F
Intersection Capacity Utilization 158.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	546	763	57	321	526	439	24	530	222	478	412	309
Future Volume (veh/h)	546	763	57	321	526	439	24	530	222	478	412	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	581	812	58	341	560	431	26	564	219	509	438	153
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	433	31	85	354	273	18	401	156	255	284	235
Arrive On Green	0.12	0.27	0.27	0.05	0.20	0.20	0.34	0.34	0.34	0.16	0.16	0.16
Sat Flow, veh/h	1594	1623	116	1594	1771	1363	54	1171	455	1594	1772	1468
Grp Volume(v), veh/h	581	0	870	341	532	459	809	0	0	509	438	153
Grp Sat Flow(s),veh/h/ln	1594	0	1739	1594	1683	1450	1679	0	0	1594	1772	1468
Q Serve(g_s), s	14.4	0.0	32.0	6.4	24.0	24.0	41.1	0.0	0.0	19.2	19.2	11.7
Cycle Q Clear(g_c), s	14.4	0.0	32.0	6.4	24.0	24.0	41.1	0.0	0.0	19.2	19.2	11.7
Prop In Lane	1.00		0.07	1.00		0.94	0.03		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	191	0	464	85	337	290	575	0	0	255	284	235
V/C Ratio(X)	3.04	0.00	1.88	4.01	1.58	1.58	1.41	0.00	0.00	2.00	1.54	0.65
Avail Cap(c_a), veh/h	191	0	464	85	337	290	575	0	0	255	284	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	44.0	56.8	48.0	48.0	39.5	0.0	0.0	50.4	50.4	47.3
Incr Delay (d2), s/veh	930.8	0.0	402.3	1382.9	275.4	277.5	193.2	0.0	0.0	461.9	262.1	6.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	55.0	0.0	64.9	35.1	35.4	30.7	47.5	0.0	0.0	40.1	28.9	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	983.6	0.0	446.3	1439.7	323.4	325.5	232.6	0.0	0.0	512.3	312.5	53.5
LnGrp LOS	F	A	F	F	F	F	F	A	A	F	F	D
Approach Vol, veh/h		1451			1332			809			1100	
Approach Delay, s/veh		661.4			609.9			232.6			368.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		45.8	11.0	38.2		25.0	19.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 41	6.4	32.0		19.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		43.1	8.4	34.0		21.2	16.4	26.0				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		504.3
HCM 6th LOS		F

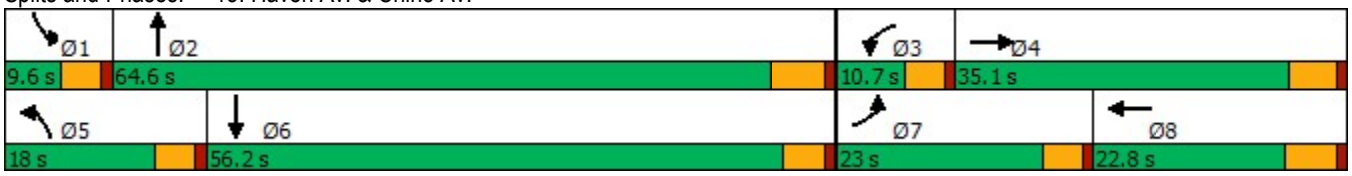
Notes

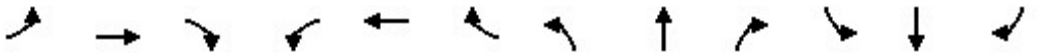
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	252	68	25	55	174	685	611	
Future Volume (vph)	252	68	25	55	174	685	611	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	23.0	35.1	10.7	22.8	18.0	64.6	56.2	9.6
Total Split (%)	19.2%	29.3%	8.9%	19.0%	15.0%	53.8%	46.8%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	18.5	25.1	5.7	11.4	13.5	68.7	51.8	
Actuated g/C Ratio	0.17	0.23	0.05	0.10	0.12	0.62	0.47	
v/c Ratio	1.02	0.63	0.30	0.32	0.97	0.70	1.01	
Control Delay	108.6	30.1	61.9	52.3	108.2	20.2	64.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	108.6	30.1	61.9	52.3	108.2	20.2	64.5	
LOS	F	C	E	D	F	C	E	
Approach Delay		67.4		55.3		37.5	64.5	
Approach LOS		E		E		D	E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 54.2	Intersection LOS: D
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	68	208	25	55	0	174	685	28	0	611	149
Future Volume (veh/h)	252	68	208	25	55	0	174	685	28	0	611	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	268	74	115	27	60	0	185	729	15	0	650	159
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	148	229	45	164	0	187	1054	22	2	621	152
Arrive On Green	0.16	0.22	0.22	0.03	0.09	0.00	0.12	0.61	0.61	0.00	0.45	0.45
Sat Flow, veh/h	1594	660	1026	1781	1870	0	1594	1730	36	1781	1375	336
Grp Volume(v), veh/h	268	0	189	27	60	0	185	0	744	0	0	809
Grp Sat Flow(s),veh/h/ln	1594	0	1686	1781	1870	0	1594	0	1766	1781	0	1711
Q Serve(g_s), s	18.4	0.0	11.2	1.7	3.5	0.0	13.2	0.0	32.5	0.0	0.0	51.5
Cycle Q Clear(g_c), s	18.4	0.0	11.2	1.7	3.5	0.0	13.2	0.0	32.5	0.0	0.0	51.5
Prop In Lane	1.00		0.61	1.00		0.00	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	257	0	377	45	164	0	187	0	1075	2	0	772
V/C Ratio(X)	1.04	0.00	0.50	0.60	0.37	0.00	0.99	0.00	0.69	0.00	0.00	1.05
Avail Cap(c_a), veh/h	257	0	439	95	279	0	187	0	1075	78	0	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	47.8	0.0	38.7	55.0	49.1	0.0	50.3	0.0	15.1	0.0	0.0	31.3
Incr Delay (d2), s/veh	67.7	0.0	1.0	4.7	1.4	0.0	62.1	0.0	1.9	0.0	0.0	45.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	0.0	4.6	0.8	1.6	0.0	8.3	0.0	11.9	0.0	0.0	30.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.6	0.0	39.8	59.8	50.4	0.0	112.4	0.0	17.0	0.0	0.0	76.8
LnGrp LOS	F	A	D	E	D	A	F	A	B	A	A	F
Approach Vol, veh/h		457			87			929			809	
Approach Delay, s/veh		84.2			53.3			36.0			76.8	
Approach LOS		F			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	75.3	7.5	31.3	18.0	57.3	23.0	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	58.8	6.1	* 30	13.4	* 52	18.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	34.5	3.7	13.2	15.2	53.5	20.4	5.5
Green Ext Time (p_c), s	0.0	5.0	0.0	0.9	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	60.8
HCM 6th LOS	E

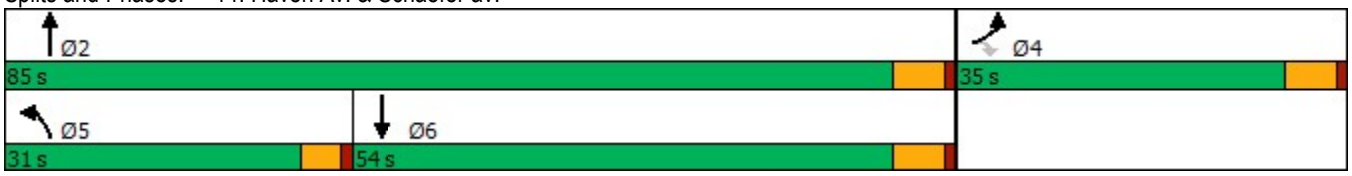
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	89	137	150	635	403
Future Volume (vph)	89	137	150	635	403
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	35.0	35.0	31.0	85.0	54.0
Total Split (%)	29.2%	29.2%	25.8%	70.8%	45.0%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.2	12.2	10.5	30.0	14.6
Actuated g/C Ratio	0.22	0.22	0.19	0.55	0.27
v/c Ratio	0.27	0.33	0.53	0.71	0.54
Control Delay	21.8	6.8	28.6	14.0	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	6.8	28.6	14.0	19.3
LOS	C	A	C	B	B
Approach Delay	12.7			16.8	19.3
Approach LOS	B			B	B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 54.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	89	137	150	635	403	64
Future Volume (veh/h)	89	137	150	635	403	64
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	97	95	163	690	438	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	348	328	205	877	757	115
Arrive On Green	0.22	0.22	0.13	0.50	0.25	0.25
Sat Flow, veh/h	1594	1502	1594	1772	2994	455
Grp Volume(v), veh/h	97	95	163	690	258	247
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1772	1676
Q Serve(g_s), s	2.1	2.1	4.0	13.0	5.2	5.2
Cycle Q Clear(g_c), s	2.1	2.1	4.0	13.0	5.2	5.2
Prop In Lane	1.00	1.00	1.00			0.27
Lane Grp Cap(c), veh/h	348	328	205	877	448	424
V/C Ratio(X)	0.28	0.29	0.79	0.79	0.58	0.58
Avail Cap(c_a), veh/h	1149	1083	1039	3465	2109	1995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	13.2	17.1	8.5	13.2	13.3
Incr Delay (d2), s/veh	0.4	0.5	2.6	1.6	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.3	2.8	1.6	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.6	13.7	19.8	10.1	14.4	14.5
LnGrp LOS	B	B	B	B	B	B
Approach Vol, veh/h	192			853	505	
Approach Delay, s/veh	13.6			11.9	14.5	
Approach LOS	B			B	B	

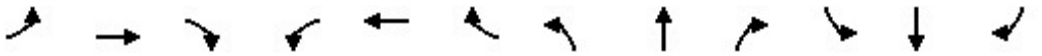
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		25.9		14.6	9.8	16.0
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		79.2		29.2	26.4	48.2
Max Q Clear Time (g_c+I1), s		15.0		4.1	6.0	7.2
Green Ext Time (p_c), s		5.0		0.5	0.2	2.9

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1503	54	127	1092	209	75	362	192	489	419	172
Future Volume (vph)	230	1503	54	127	1092	209	75	362	192	489	419	172
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	15.0	38.0	38.0	11.5	34.5	34.5	11.7	48.5	48.5	22.0	58.8	58.8
Total Split (%)	12.5%	31.7%	31.7%	9.6%	28.8%	28.8%	9.8%	40.4%	40.4%	18.3%	49.0%	49.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	10.5	32.0	32.0	6.9	28.2	28.2	7.1	29.0	29.0	17.5	39.3	39.3
Actuated g/C Ratio	0.10	0.30	0.30	0.06	0.26	0.26	0.07	0.27	0.27	0.16	0.37	0.37
v/c Ratio	1.60	1.02	0.11	0.71	0.63	0.40	0.76	0.81	0.40	2.03	0.69	0.28
Control Delay	331.1	65.2	0.4	71.1	37.4	7.1	92.7	50.0	10.2	502.9	34.4	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	331.1	65.2	0.4	71.1	37.4	7.1	92.7	50.0	10.2	502.9	34.4	4.1
LOS	F	E	A	E	D	A	F	D	B	F	C	A
Approach Delay		97.4			36.0			43.0			241.7	
Approach LOS		F			D			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.7	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.03	
Intersection Signal Delay: 104.3	Intersection LOS: F
Intersection Capacity Utilization 103.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1503	54	127	1092	209	75	362	192	489	419	172
Future Volume (veh/h)	230	1503	54	127	1092	209	75	362	192	489	419	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	247	1616	47	137	1174	173	81	389	155	526	451	162
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1613	455	188	1892	401	100	466	394	264	649	548
Arrive On Green	0.10	0.30	0.30	0.06	0.27	0.27	0.06	0.26	0.26	0.17	0.37	0.37
Sat Flow, veh/h	1594	5316	1500	3000	7088	1502	1594	1772	1500	1594	1772	1495
Grp Volume(v), veh/h	247	1616	47	137	1174	173	81	389	155	526	451	162
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1772	1500	1594	1772	1495
Q Serve(g_s), s	10.4	31.8	2.4	4.7	15.3	10.0	5.3	21.7	8.9	17.4	22.7	8.1
Cycle Q Clear(g_c), s	10.4	31.8	2.4	4.7	15.3	10.0	5.3	21.7	8.9	17.4	22.7	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	1613	455	188	1892	401	100	466	394	264	649	548
V/C Ratio(X)	1.56	1.00	0.10	0.73	0.62	0.43	0.81	0.83	0.39	1.99	0.70	0.30
Avail Cap(c_a), veh/h	158	1613	455	197	1892	401	108	721	611	264	895	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	36.5	26.3	48.3	33.8	31.8	48.5	36.5	31.8	43.7	28.3	23.6
Incr Delay (d2), s/veh	281.7	22.9	0.5	10.3	1.5	3.4	30.7	5.1	0.6	458.5	1.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.3	16.2	0.8	1.9	6.3	3.8	2.9	9.6	3.1	40.2	9.3	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	329.0	59.5	26.7	58.6	35.3	35.2	79.2	41.6	32.4	502.2	29.6	23.9
LnGrp LOS	F	F	C	E	D	D	E	D	C	F	C	C
Approach Vol, veh/h		1910			1484			625			1139	
Approach Delay, s/veh		93.5			37.4			44.2			247.1	
Approach LOS		F			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	33.4	11.2	38.3	11.2	44.2	15.0	34.5
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.4	42.7	6.9	* 32	7.1	53.0	10.4	28.0
Max Q Clear Time (g_c+I1), s	19.4	23.7	6.7	33.8	7.3	24.7	12.4	17.3
Green Ext Time (p_c), s	0.0	2.5	0.0	0.0	0.0	3.2	0.0	5.6

Intersection Summary	
HCM 6th Ctrl Delay	105.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	5.4
Intersection LOS	A

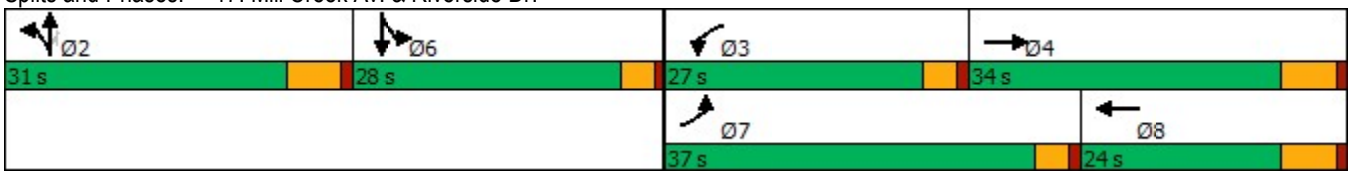
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	484	165	0	123
Demand Flow Rate, veh/h	493	168	0	125
Vehicles Circulating, veh/h	50	24	543	152
Vehicles Exiting, veh/h	227	519	0	40
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	3.7	0.0	4.0
Approach LOS	A	A	-	A

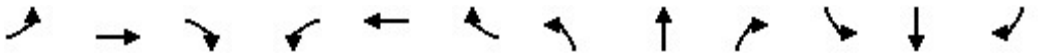
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	493	168	0	125
Cap Entry Lane, veh/h	1311	1346	793	1182
Entry HV Adj Factor	0.981	0.982	1.000	0.984
Flow Entry, veh/h	484	165	0	123
Cap Entry, veh/h	1287	1323	793	1163
V/C Ratio	0.376	0.125	0.000	0.106
Control Delay, s/veh	6.4	3.7	4.5	4.0
LOS	A	A	A	A
95th %tile Queue, veh	2	0	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	388	779	120	986	231	91	251	100	188
Future Volume (vph)	388	779	120	986	231	91	251	100	188
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	37.0	34.0	27.0	24.0	31.0	31.0	31.0	28.0	28.0
Total Split (%)	30.8%	28.3%	22.5%	20.0%	25.8%	25.8%	25.8%	23.3%	23.3%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	33.0	35.3	15.7	18.0	24.1	24.1	24.1	24.0	24.0
Actuated g/C Ratio	0.28	0.30	0.13	0.15	0.20	0.20	0.20	0.20	0.20
v/c Ratio	1.12	1.31	0.73	2.61	0.91	0.32	0.58	0.40	1.12
Control Delay	119.7	181.8	68.6	751.5	79.1	43.1	8.9	45.9	125.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.7	181.8	68.6	751.5	79.1	43.1	8.9	45.9	125.4
LOS	F	F	E	F	E	D	A	D	F
Approach Delay		165.2		684.0		42.6			105.4
Approach LOS		F		F		D			F

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 118.9			
Natural Cycle: 115			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 2.61			
Intersection Signal Delay: 312.6		Intersection LOS: F	
Intersection Capacity Utilization 106.7%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	388	779	285	120	986	109	231	91	251	100	188	110
Future Volume (veh/h)	388	779	285	120	986	109	231	91	251	100	188	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	491	986	209	152	1248	87	292	115	65	127	238	88
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	909	192	175	498	35	316	351	296	323	242	89
Arrive On Green	0.42	0.48	0.48	0.17	0.23	0.23	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	2831	599	1594	3269	227	1594	1772	1493	1594	1190	440
Grp Volume(v), veh/h	491	616	579	152	675	660	292	115	65	127	0	326
Grp Sat Flow(s),veh/h/ln	1594	1772	1657	1594	1772	1725	1594	1772	1493	1594	0	1630
Q Serve(g_s), s	33.0	38.0	38.0	11.0	18.0	18.0	21.0	6.0	3.9	7.4	0.0	23.5
Cycle Q Clear(g_c), s	33.0	38.0	38.0	11.0	18.0	18.0	21.0	6.0	3.9	7.4	0.0	23.5
Prop In Lane	1.00		0.36	1.00		0.13	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	445	569	532	175	270	263	316	351	296	323	0	331
V/C Ratio(X)	1.10	1.08	1.09	0.87	2.50	2.51	0.92	0.33	0.22	0.39	0.00	0.99
Avail Cap(c_a), veh/h	445	569	532	310	270	263	340	378	318	323	0	331
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	30.6	30.6	48.5	45.6	45.6	40.7	35.4	34.7	35.4	0.0	40.9
Incr Delay (d2), s/veh	73.9	62.2	64.6	4.9	687.5	692.0	29.2	0.5	0.4	0.8	0.0	45.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.4	22.3	21.2	4.2	58.4	57.1	9.7	2.5	1.4	2.8	0.0	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.3	92.8	95.2	53.4	733.1	737.6	69.8	35.9	35.0	36.1	0.0	86.3
LnGrp LOS	F	F	F	D	F	F	E	D	D	D	A	F
Approach Vol, veh/h		1686			1487			472			453	
Approach Delay, s/veh		98.1			665.6			56.8			72.3	
Approach LOS		F			F			E			E	

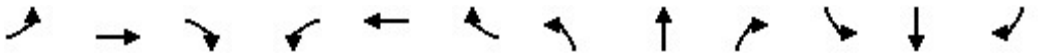
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.2	17.0	44.0		28.0	37.0	24.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		25.2	23.0	28.0		24.0	33.0	18.0				
Max Q Clear Time (g_c+I1), s		23.0	13.0	40.0		25.5	35.0	20.0				
Green Ext Time (p_c), s		0.4	0.1	0.0		0.0	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			296.4									
HCM 6th LOS			F									

Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	268	182	92	33	62	13	4
Future Volume (vph)	268	182	92	33	62	13	4
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		4	8		2		6
Permitted Phases	4			2		6	
Detector Phase	4	4	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	73.0	73.0	22.5	24.5	24.5	24.5	24.5
Total Split (%)	60.8%	60.8%	18.8%	20.4%	20.4%	20.4%	20.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	68.8	68.8	12.7	13.0	13.0	13.0	13.0
Actuated g/C Ratio	0.64	0.64	0.12	0.12	0.12	0.12	0.12
v/c Ratio	4.28	0.17	0.62	0.27	0.60	0.23	0.39
Control Delay	1515.6	9.6	54.3	49.2	56.0	48.7	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1515.6	9.6	54.3	49.2	56.0	48.7	14.5
LOS	F	A	D	D	E	D	B
Approach Delay		893.1	54.3		54.6		21.0
Approach LOS		F	D		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.28	
Intersection Signal Delay: 491.7	Intersection LOS: F
Intersection Capacity Utilization 37.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: Mill Creek Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	268	182	6	0	92	19	33	62	5	13	4	95
Future Volume (veh/h)	268	182	6	0	92	19	33	62	5	13	4	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	291	198	-2	0	100	32	36	124	6	26	8	70
Peak Hour Factor	0.92	0.92	0.92	0.50	0.92	0.50	0.92	0.50	0.50	0.50	0.50	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	479	503	0	199	151	48	407	296	14	373	28	242
Arrive On Green	0.27	0.27	0.00	0.00	0.11	0.11	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	1870	0	1781	1358	434	1321	1769	86	1260	165	1445
Grp Volume(v), veh/h	291	196	0	0	0	132	36	0	130	26	0	78
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1781	0	1792	1321	0	1855	1260	0	1610
Q Serve(g_s), s	4.3	2.6	0.0	0.0	0.0	2.1	0.7	0.0	1.9	0.6	0.0	1.3
Cycle Q Clear(g_c), s	4.3	2.6	0.0	0.0	0.0	2.1	2.0	0.0	1.9	2.4	0.0	1.3
Prop In Lane	1.00		0.00	1.00		0.24	1.00		0.05	1.00		0.90
Lane Grp Cap(c), veh/h	479	503	0	199	0	200	407	0	311	373	0	270
V/C Ratio(X)	0.61	0.39	0.00	0.00	0.00	0.66	0.09	0.00	0.42	0.07	0.00	0.29
Avail Cap(c_a), veh/h	4088	4293	0	1074	0	1081	1070	0	1243	1007	0	1079
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.5	8.9	0.0	0.0	0.0	12.7	11.7	0.0	11.1	12.2	0.0	10.9
Incr Delay (d2), s/veh	1.3	0.5	0.0	0.0	0.0	3.7	0.1	0.0	0.9	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.6	0.0	0.0	0.0	0.7	0.1	0.0	0.5	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	9.4	0.0	0.0	0.0	16.4	11.8	0.0	12.0	12.3	0.0	11.5
LnGrp LOS	B	A	A	A	A	B	B	A	B	B	A	B
Approach Vol, veh/h		487			132			166			104	
Approach Delay, s/veh		10.2			16.4			12.0			11.7	
Approach LOS		B			B			B			B	

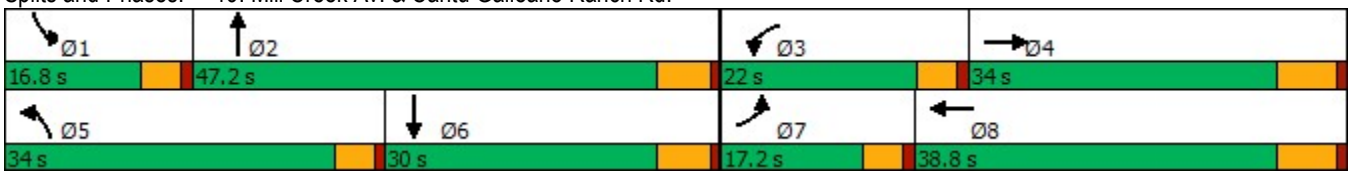
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.5		12.5		9.5		7.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.0		68.5		20.0		18.0				
Max Q Clear Time (g_c+I1), s		4.0		6.3		4.4		4.1				
Green Ext Time (p_c), s		0.6		1.9		0.3		0.5				

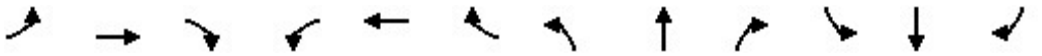
Intersection Summary												
HCM 6th Ctrl Delay			11.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	Ø1	Ø6
Lane Configurations								
Traffic Volume (vph)	24	1462	28	1273	47	19		
Future Volume (vph)	24	1462	28	1273	47	19		
Turn Type	Prot	NA	Prot	NA	Prot	NA		
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2		
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	23.5	9.6	23.5	9.6	27.8	9.6	27.8
Total Split (s)	17.2	34.0	22.0	38.8	34.0	47.2	16.8	30.0
Total Split (%)	14.3%	28.3%	18.3%	32.3%	28.3%	39.3%	14%	25%
Yellow Time (s)	3.6	5.5	3.6	5.5	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.6	6.5	4.6	6.5	4.6	5.8		
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	5.9	33.6	6.1	33.7	6.8	18.9		
Actuated g/C Ratio	0.09	0.49	0.09	0.49	0.10	0.27		
v/c Ratio	0.17	0.65	0.19	0.59	0.29	0.29		
Control Delay	38.1	18.5	38.1	17.1	38.1	6.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	38.1	18.5	38.1	17.1	38.1	6.6		
LOS	D	B	D	B	D	A		
Approach Delay		18.8		17.5		14.2		
Approach LOS		B		B		B		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 69.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 17.9	Intersection LOS: B
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 19: Mill Creek Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	1462	12	28	1273	57	47	19	128	0	0	0
Future Volume (veh/h)	24	1462	12	28	1273	57	47	19	128	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	1589	-150	30	1384	-101	51	21	9	0	0	-43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	2152	0	61	2171	0	91	251	108	4	0	320
Arrive On Green	0.03	0.42	0.00	0.03	0.43	0.00	0.05	0.20	0.20	0.00	0.00	0.00
Sat Flow, veh/h	1781	5274	0	1781	5274	0	1781	1242	532	1781	1870	0
Grp Volume(v), veh/h	26	1439	0	30	1283	0	51	0	30	0	-43	-43
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1702	0	1781	0	1775	1781	1870	1585
Q Serve(g_s), s	0.7	11.2	0.0	0.8	9.5	0.0	1.4	0.0	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	11.2	0.0	0.8	9.5	0.0	1.4	0.0	0.7	0.0	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	54	2152	0	61	2171	0	91	0	359	4	0	0
V/C Ratio(X)	0.48	0.67	0.00	0.49	0.59	0.00	0.56	0.00	0.08	0.00	0.00	0.00
Avail Cap(c_a), veh/h	454	2842	0	627	3338	0	1060	0	1487	440	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	23.6	11.5	0.0	23.4	10.9	0.0	22.9	0.0	16.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.4	0.4	0.0	2.3	0.3	0.0	2.0	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.7	0.0	0.3	2.3	0.0	0.5	0.0	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	11.9	0.0	25.7	11.2	0.0	24.9	0.0	16.1	0.0	0.0	0.0
LnGrp LOS	C	B	A	C	B	A	C	A	B	A	A	A
Approach Vol, veh/h		1465			1313			81			-86	
Approach Delay, s/veh		12.1			11.5			21.7			0.0	
Approach LOS		B			B			C			A	

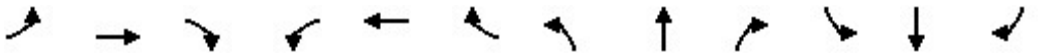
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	15.8	6.3	27.3	7.1	8.7	6.1	27.5
Change Period (Y+Rc), s	4.6	5.8	4.6	6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	12.2	41.4	17.4	27.5	29.4	24.2	12.6	32.3
Max Q Clear Time (g_c+I1), s	0.0	2.7	2.8	13.2	3.4	0.0	2.7	11.5
Green Ext Time (p_c), s	0.0	0.1	0.0	7.6	0.0	0.0	0.0	8.2

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	677	457	1588	915	318
Future Volume (vph)	5	677	457	1588	915	318
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	22.5	22.5	11.2	22.5	22.5	22.5
Total Split (s)	35.0	35.0	25.0	55.0	30.0	30.0
Total Split (%)	38.9%	38.9%	27.8%	61.1%	33.3%	33.3%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	28.8	28.8	20.4	48.8	23.8	23.8
Actuated g/C Ratio	0.32	0.32	0.23	0.54	0.26	0.26
v/c Ratio	0.28	1.21	1.16	0.80	0.95	0.49
Control Delay	24.5	136.6	130.8	20.6	52.2	6.1
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	24.5	136.6	130.8	20.8	52.2	6.1
LOS	C	F	F	C	D	A
Approach Delay	115.8			45.4	40.3	
Approach LOS	F			D	D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 58.1	Intersection LOS: E
Intersection Capacity Utilization 105.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	149	5	677	457	1588	0	0	915	318
Future Volume (veh/h)	0	0	0	149	5	677	457	1588	0	0	915	318
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				152	5	354	466	1620	0	0	934	166
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				443	15	407	449	2208	0	0	1054	446
Arrive On Green				0.26	0.26	0.26	0.25	0.59	0.00	0.00	0.28	0.28
Sat Flow, veh/h				1727	57	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				157	0	354	466	1620	0	0	934	166
Grp Sat Flow(s),veh/h/ln				1784	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				5.8	0.0	17.3	20.4	25.3	0.0	0.0	19.4	6.8
Cycle Q Clear(g_c), s				5.8	0.0	17.3	20.4	25.3	0.0	0.0	19.4	6.8
Prop In Lane				0.97		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				458	0	407	449	2208	0	0	1054	446
V/C Ratio(X)				0.34	0.00	0.87	1.04	0.73	0.00	0.00	0.89	0.37
Avail Cap(c_a), veh/h				634	0	564	449	2254	0	0	1099	466
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.5	0.0	28.8	30.3	12.0	0.0	0.0	27.9	23.3
Incr Delay (d2), s/veh				0.4	0.0	10.5	52.9	1.2	0.0	0.0	8.7	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.3	0.0	7.2	14.4	8.1	0.0	0.0	9.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.0	0.0	39.3	83.2	13.2	0.0	0.0	36.6	23.9
LnGrp LOS				C	A	D	F	B	A	A	D	C
Approach Vol, veh/h					511			2086			1100	
Approach Delay, s/veh					34.9			28.9			34.6	
Approach LOS					C			C			C	

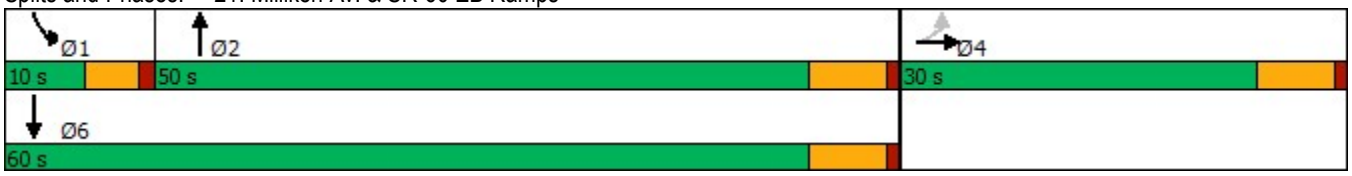
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		54.0			25.0	29.0		27.0				
Change Period (Y+Rc), s		6.2			4.6	6.2		6.2				
Max Green Setting (Gmax), s		48.8			20.4	23.8		28.8				
Max Q Clear Time (g_c+I1), s		27.3			22.4	21.4		19.3				
Green Ext Time (p_c), s		11.8			0.0	1.5		1.5				

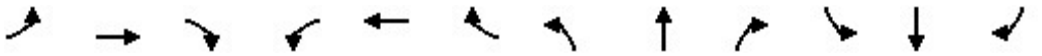
Intersection Summary												
HCM 6th Ctrl Delay			31.4									
HCM 6th LOS			C									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	530	4	1568	103	928
Future Volume (vph)	530	4	1568	103	928
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	22.5	9.6	22.5
Total Split (s)	30.0	30.0	50.0	10.0	60.0
Total Split (%)	33.3%	33.3%	55.6%	11.1%	66.7%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	23.8	23.8	43.8	5.4	53.8
Actuated g/C Ratio	0.26	0.26	0.49	0.06	0.60
v/c Ratio	1.05	1.07	1.13	1.00	0.43
Control Delay	89.4	85.1	90.6	133.4	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	89.4	85.1	90.6	133.4	10.5
LOS	F	F	F	F	B
Approach Delay		87.1	90.6		22.8
Approach LOS		F	F		C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 72.2	Intersection LOS: E
Intersection Capacity Utilization 105.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	530	4	482	0	0	0	0	1568	391	103	928	0
Future Volume (veh/h)	530	4	482	0	0	0	0	1568	391	103	928	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	400	209	250				0	1616	207	106	957	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	471	205	245				0	1585	200	107	2236	0
Arrive On Green	0.26	0.26	0.26				0.00	0.49	0.49	0.06	0.60	0.00
Sat Flow, veh/h	1781	776	928				0	3257	410	1781	3741	0
Grp Volume(v), veh/h	400	0	459				0	916	907	106	957	0
Grp Sat Flow(s),veh/h/ln	1781	0	1703				0	1870	1797	1781	1870	0
Q Serve(g_s), s	19.2	0.0	23.8				0.0	43.8	43.8	5.4	12.4	0.0
Cycle Q Clear(g_c), s	19.2	0.0	23.8				0.0	43.8	43.8	5.4	12.4	0.0
Prop In Lane	1.00		0.54				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	471	0	450				0	910	874	107	2236	0
V/C Ratio(X)	0.85	0.00	1.02				0.00	1.01	1.04	0.99	0.43	0.00
Avail Cap(c_a), veh/h	471	0	450				0	910	874	107	2236	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.4	0.0	33.1				0.0	23.1	23.1	42.3	9.8	0.0
Incr Delay (d2), s/veh	13.7	0.0	47.3				0.0	31.4	40.6	84.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	15.0				0.0	24.0	25.2	4.7	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	0.0	80.4				0.0	54.5	63.7	126.5	9.9	0.0
LnGrp LOS	D	A	F				A	F	F	F	A	A
Approach Vol, veh/h		859						1823			1063	
Approach Delay, s/veh		63.9						59.0			21.5	
Approach LOS		E						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	50.0		30.0		60.0
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	5.4	43.8		23.8		53.8
Max Q Clear Time (g_c+I1), s	7.4	45.8		25.8		14.4
Green Ext Time (p_c), s	0.0	0.0		0.0		7.1

Intersection Summary		
HCM 6th Ctrl Delay		49.5
HCM 6th LOS		D

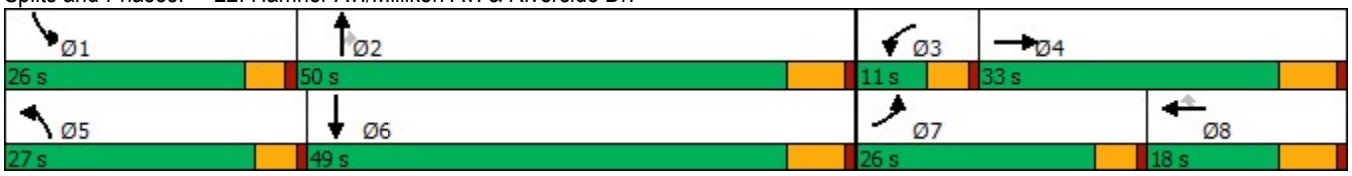
Notes

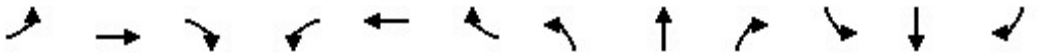
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	371	161	34	141	295	263	1368	70	296	828
Future Volume (vph)	371	161	34	141	295	263	1368	70	296	828
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	26.0	33.0	11.0	18.0	18.0	27.0	50.0	50.0	26.0	49.0
Total Split (%)	21.7%	27.5%	9.2%	15.0%	15.0%	22.5%	41.7%	41.7%	21.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	21.4	31.2	6.0	11.8	11.8	22.4	43.8	43.8	21.4	42.8
Actuated g/C Ratio	0.18	0.26	0.05	0.10	0.10	0.19	0.36	0.36	0.18	0.36
v/c Ratio	1.51	1.74	0.49	0.94	0.81	1.02	1.29	0.12	1.21	1.07
Control Delay	282.3	368.0	76.2	107.7	25.5	106.9	168.1	0.4	163.6	83.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	282.3	368.0	76.2	107.7	25.5	106.9	168.1	0.4	163.6	83.9
LOS	F	F	E	F	C	F	F	A	F	F
Approach Delay		340.4		53.8			151.8			100.8
Approach LOS		F		D			F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.74	
Intersection Signal Delay: 173.0	Intersection LOS: F
Intersection Capacity Utilization 129.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	371	161	619	34	141	295	263	1368	70	296	828	270
Future Volume (veh/h)	371	161	619	34	141	295	263	1368	70	296	828	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	426	185	658	39	162	305	302	1572	69	340	952	288
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	84	299	48	174	148	298	1229	548	284	909	274
Arrive On Green	0.18	0.25	0.25	0.03	0.10	0.10	0.19	0.37	0.37	0.18	0.36	0.36
Sat Flow, veh/h	1594	341	1213	1594	1772	1502	1594	3367	1502	1594	2549	768
Grp Volume(v), veh/h	426	0	843	39	162	305	302	1572	69	340	627	613
Grp Sat Flow(s),veh/h/ln	1594	0	1554	1594	1772	1502	1594	1683	1502	1594	1683	1634
Q Serve(g_s), s	21.4	0.0	29.6	2.9	10.9	11.8	22.4	43.8	3.7	21.4	42.8	42.8
Cycle Q Clear(g_c), s	21.4	0.0	29.6	2.9	10.9	11.8	22.4	43.8	3.7	21.4	42.8	42.8
Prop In Lane	1.00		0.78	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	284	0	383	48	174	148	298	1229	548	284	600	583
V/C Ratio(X)	1.50	0.00	2.20	0.81	0.93	2.07	1.02	1.28	0.13	1.20	1.05	1.05
Avail Cap(c_a), veh/h	284	0	383	85	174	148	298	1229	548	284	600	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	45.2	57.8	53.7	54.1	48.8	38.1	25.4	49.3	38.6	38.6
Incr Delay (d2), s/veh	242.1	0.0	549.6	11.1	48.2	502.1	56.1	132.1	0.1	117.4	49.0	51.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.3	0.0	69.3	1.3	7.0	24.9	13.2	39.3	1.3	17.4	24.6	24.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	291.4	0.0	594.8	68.9	101.9	556.2	104.9	170.2	25.5	166.7	87.6	90.1
LnGrp LOS	F	A	F	E	F	F	F	F	C	F	F	F
Approach Vol, veh/h		1269			506			1943			1580	
Approach Delay, s/veh		493.0			373.2			154.9			105.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	50.0	8.2	35.8	27.0	49.0	26.0	18.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	21.4	43.8	6.4	26.8	22.4	42.8	21.4	11.8
Max Q Clear Time (g_c+I1), s	23.4	45.8	4.9	31.6	24.4	44.8	23.4	13.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	242.0
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	10	0	1686	1600	3
Future Vol, veh/h	24	10	0	1686	1600	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	11	0	1916	1818	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2778	1820	1821	0	-	0
Stage 1	1820	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	~ 18	96	334	-	-	-
Stage 1	141	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 18	96	334	-	-	-
Mov Cap-2 Maneuver	122	-	-	-	-	-
Stage 1	141	-	-	-	-	-
Stage 2	334	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	52.6	0	0
HCM LOS	F		

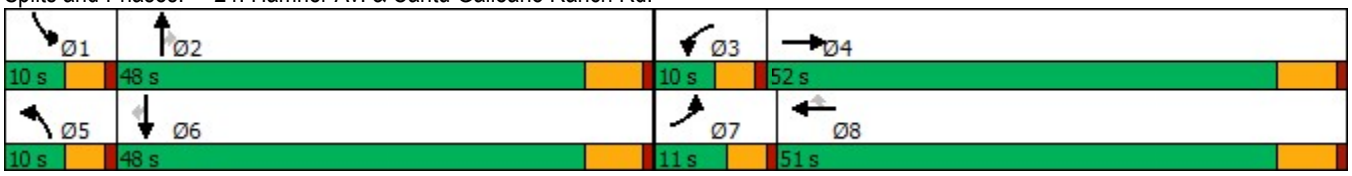
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	334	-	113	-	-
HCM Lane V/C Ratio	-	-	0.342	-	-
HCM Control Delay (s)	0	-	52.6	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

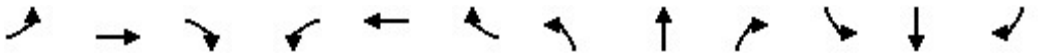
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	850	1509	291	1405	307	314	749	376	373	253	441
Future Volume (vph)	850	1509	291	1405	307	314	749	376	373	253	441
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.0	52.0	10.0	51.0	51.0	10.0	48.0	48.0	10.0	48.0	48.0
Total Split (%)	9.2%	43.3%	8.3%	42.5%	42.5%	8.3%	40.0%	40.0%	8.3%	40.0%	40.0%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	45.8	5.4	44.8	44.8	5.4	30.4	30.4	5.4	30.4	30.4
Actuated g/C Ratio	0.06	0.42	0.05	0.41	0.41	0.05	0.28	0.28	0.05	0.28	0.28
v/c Ratio	4.38	0.62	1.78	1.01	0.43	1.92	0.55	0.75	2.29	0.27	0.88
Control Delay	1544.3	27.1	404.0	59.2	14.7	463.5	34.4	33.8	620.1	30.5	45.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1544.3	27.1	404.0	59.2	14.7	463.5	34.4	33.8	620.1	30.5	45.9
LOS	F	C	F	E	B	F	C	C	F	C	D
Approach Delay		552.8		102.4			127.9			243.1	
Approach LOS		F		F			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.38	
Intersection Signal Delay: 287.9	Intersection LOS: F
Intersection Capacity Utilization 106.4%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	850	1509	93	291	1405	307	314	749	376	373	253	441
Future Volume (veh/h)	850	1509	93	291	1405	307	314	749	376	373	253	441
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	885	1572	-28	303	1464	185	327	780	184	389	264	251
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	2900	0	188	1566	698	188	1118	347	188	778	347
Arrive On Green	0.06	0.45	0.00	0.05	0.44	0.44	0.05	0.22	0.22	0.05	0.22	0.22
Sat Flow, veh/h	3456	6696	0	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	885	1544	0	303	1464	185	327	780	184	389	264	251
Grp Sat Flow(s),veh/h/ln	1728	1609	0	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.4	17.2	0.0	5.4	38.8	7.3	5.4	13.9	10.2	5.4	6.2	14.5
Cycle Q Clear(g_c), s	6.4	17.2	0.0	5.4	38.8	7.3	5.4	13.9	10.2	5.4	6.2	14.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	2900	0	188	1566	698	188	1118	347	188	778	347
V/C Ratio(X)	3.96	0.53	0.00	1.61	0.93	0.26	1.73	0.70	0.53	2.06	0.34	0.72
Avail Cap(c_a), veh/h	223	2957	0	188	1597	712	188	2156	669	188	1500	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	19.6	0.0	46.8	26.3	17.5	46.8	35.6	34.2	46.8	32.6	35.9
Incr Delay (d2), s/veh	1343.5	0.2	0.0	296.7	10.5	0.2	351.9	0.8	1.3	496.6	0.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	44.3	5.7	0.0	10.0	16.4	2.4	11.4	5.5	3.8	15.2	2.6	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1389.9	19.8	0.0	343.5	36.9	17.7	398.7	36.4	35.4	543.4	32.9	38.7
LnGrp LOS	F	B	A	F	D	B	F	D	D	F	C	D
Approach Vol, veh/h		2429			1952			1291			904	
Approach Delay, s/veh		519.0			82.7			128.1			254.2	
Approach LOS		F			F			F			F	

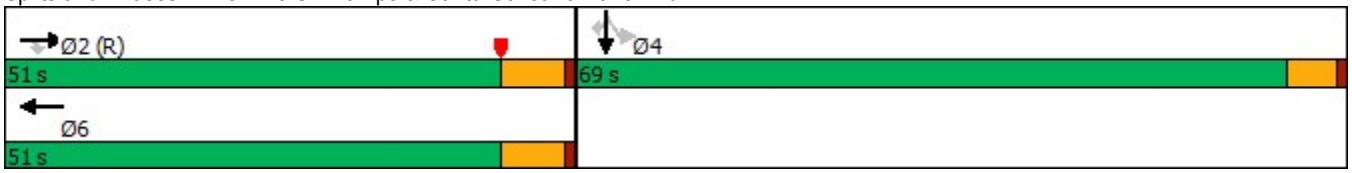
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	27.9	10.0	51.1	10.0	27.9	11.0	50.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	5.4	41.8	5.4	45.5	5.4	41.8	6.4	44.5
Max Q Clear Time (g_c+I1), s	7.4	15.9	7.4	19.2	7.4	16.5	8.4	40.8
Green Ext Time (p_c), s	0.0	5.7	0.0	11.5	0.0	2.3	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	276.3
HCM 6th LOS	F

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1409	373	876	360	313	0	1552
Future Volume (vph)	1409	373	876	360	313	0	1552
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	51.0	51.0	51.0		69.0	69.0	69.0
Total Split (%)	42.5%	42.5%	42.5%		57.5%	57.5%	57.5%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	Min		Min	Min	Min
Act Effct Green (s)	43.4	43.4	43.4	120.0	64.3	64.3	64.3
Actuated g/C Ratio	0.36	0.36	0.36	1.00	0.54	0.54	0.54
v/c Ratio	0.83	0.50	0.74	0.14	0.34	1.09	1.05
Control Delay	39.8	5.9	45.8	0.1	17.4	85.9	71.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	5.9	45.8	0.1	17.4	85.9	71.7
LOS	D	A	D	A	B	F	E
Approach Delay	32.7		32.5			69.5	
Approach LOS	C		C			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 46.7	Intersection LOS: D
Intersection Capacity Utilization 98.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱↱				↰	✣	↱
Traffic Volume (veh/h)	0	1409	373	0	876	360	0	0	0	313	0	1552
Future Volume (veh/h)	0	1409	373	0	876	360	0	0	0	313	0	1552
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	1532	0	0	952	0				227	0	939
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2857		0	1989					602	0	1071
Arrive On Green	0.00	0.56	0.00	0.00	1.00	0.00				0.34	0.00	0.34
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	1532	0	0	952	0				227	0	939
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	22.7	0.0	0.0	0.0	0.0				11.6	0.0	33.4
Cycle Q Clear(g_c), s	0.0	22.7	0.0	0.0	0.0	0.0				11.6	0.0	33.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2857		0	1989					602	0	1071
V/C Ratio(X)	0.00	0.54		0.00	0.48					0.38	0.00	0.88
Avail Cap(c_a), veh/h	0	2857		0	1989					943	0	1678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.30	0.00	0.00	0.73	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.6	0.0	0.0	0.0	0.0				30.1	0.0	37.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0				0.4	0.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.8	0.0	0.0	0.0	0.0				4.9	0.0	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.8	0.0	0.0	0.1	0.0				30.5	0.0	40.9
LnGrp LOS	A	B		A	A					C	A	D
Approach Vol, veh/h		1532	A		952	A					1166	
Approach Delay, s/veh		16.8			0.1						38.8	
Approach LOS		B			A						D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	74.0	46.0	74.0
Change Period (Y+Rc), s	6.8	5.5	6.8
Max Green Setting (Gmax), s	44.2	63.5	44.2
Max Q Clear Time (g_c+I1), s	24.7	35.4	2.0
Green Ext Time (p_c), s	9.8	5.1	6.8

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

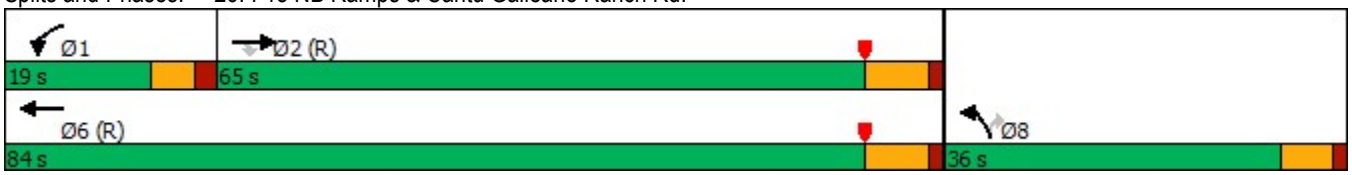
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	557	1057	253	538	622	481
Future Volume (vph)	557	1057	253	538	622	481
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.5	22.5	22.5	22.5
Total Split (s)	65.0	65.0	19.0	84.0	36.0	36.0
Total Split (%)	54.2%	54.2%	15.8%	70.0%	30.0%	30.0%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	58.1	58.1	12.6	76.7	30.0	30.0
Actuated g/C Ratio	0.48	0.48	0.10	0.64	0.25	0.25
v/c Ratio	0.25	0.99	0.76	0.18	0.95	0.59
Control Delay	11.8	47.0	66.8	9.0	64.9	8.1
Queue Delay	0.0	5.8	0.0	0.0	0.0	0.0
Total Delay	11.8	52.8	66.8	9.0	64.9	8.1
LOS	B	D	E	A	E	A
Approach Delay	38.6			27.5	47.1	
Approach LOS	D			C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 38.8	Intersection LOS: D
Intersection Capacity Utilization 83.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	557	1057	253	538	622	481
Future Volume (veh/h)	557	1057	253	538	622	481
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	605	524	275	585	676	306
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2673	830	332	3419	782	348
Arrive On Green	0.87	0.87	0.10	0.67	0.22	0.22
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	605	524	275	585	676	306
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	2.2	11.1	9.4	5.1	21.9	22.4
Cycle Q Clear(g_c), s	2.2	11.1	9.4	5.1	21.9	22.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2673	830	332	3419	782	348
V/C Ratio(X)	0.23	0.63	0.83	0.17	0.86	0.88
Avail Cap(c_a), veh/h	2673	830	374	3419	891	396
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.58	0.58	0.84	0.84	1.00	1.00
Uniform Delay (d), s/veh	3.7	4.3	53.3	7.4	45.1	45.3
Incr Delay (d2), s/veh	0.1	2.1	11.2	0.1	8.0	18.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.3	4.4	1.6	10.2	10.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.8	6.4	64.5	7.5	53.1	63.4
LnGrp LOS	A	A	E	A	D	E
Approach Vol, veh/h	1129			860	982	
Approach Delay, s/veh	5.0			25.7	56.3	
Approach LOS	A			C	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.5	70.1				87.6	32.4
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	13.0	57.7				76.7	30.0
Max Q Clear Time (g_c+I1), s	11.4	13.1				7.1	24.4
Green Ext Time (p_c), s	0.2	6.3				3.8	1.9

Intersection Summary		
HCM 6th Ctrl Delay		28.0
HCM 6th LOS		C

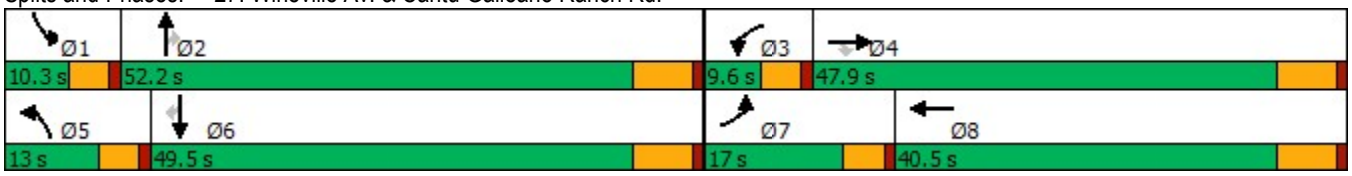
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	568	387	310	33	286	293	346	20	24	67	135
Future Volume (vph)	568	387	310	33	286	293	346	20	24	67	135
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	17.0	47.9	47.9	9.6	40.5	13.0	52.2	52.2	10.3	49.5	49.5
Total Split (%)	14.2%	39.9%	39.9%	8.0%	33.8%	10.8%	43.5%	43.5%	8.6%	41.3%	41.3%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.4	27.9	27.9	5.4	12.9	9.1	22.9	22.9	5.7	12.4	12.4
Actuated g/C Ratio	0.19	0.39	0.39	0.08	0.18	0.13	0.32	0.32	0.08	0.17	0.17
v/c Ratio	0.96	0.17	0.41	0.14	0.41	0.73	0.33	0.04	0.18	0.23	0.36
Control Delay	60.1	16.9	4.5	40.1	24.5	44.8	20.8	0.1	42.5	26.5	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	16.9	4.5	40.1	24.5	44.8	20.8	0.1	42.5	26.5	6.6
LOS	E	B	A	D	C	D	C	A	D	C	A
Approach Delay		33.3			25.9		30.8			16.3	
Approach LOS		C			C		C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 71.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 55.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	568	387	310	33	286	65	293	346	20	24	67	135
Future Volume (veh/h)	568	387	310	33	286	65	293	346	20	24	67	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	617	421	227	36	311	51	318	376	12	26	73	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	729	2001	493	133	615	98	435	774	345	53	227	193
Arrive On Green	0.21	0.31	0.31	0.04	0.14	0.14	0.13	0.22	0.22	0.03	0.12	0.12
Sat Flow, veh/h	3456	6434	1585	3456	4440	707	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	617	421	227	36	236	126	318	376	12	26	73	120
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1743	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	9.4	2.7	6.3	0.6	3.5	3.7	4.9	5.1	0.3	0.8	2.0	4.0
Cycle Q Clear(g_c), s	9.4	2.7	6.3	0.6	3.5	3.7	4.9	5.1	0.3	0.8	2.0	4.0
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	729	2001	493	133	471	241	435	774	345	53	227	193
V/C Ratio(X)	0.85	0.21	0.46	0.27	0.50	0.52	0.73	0.49	0.03	0.49	0.32	0.62
Avail Cap(c_a), veh/h	778	4837	1192	314	2102	1076	527	2949	1315	184	1460	1238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	14.0	15.3	25.7	22.0	22.0	23.2	18.8	17.0	26.3	22.1	23.0
Incr Delay (d2), s/veh	7.6	0.1	0.7	0.4	0.8	1.7	3.0	0.5	0.0	2.6	0.8	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.7	1.8	0.2	1.2	1.4	1.9	1.8	0.1	0.3	0.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	14.0	15.9	26.1	22.8	23.8	26.1	19.3	17.0	28.9	22.9	26.3
LnGrp LOS	C	B	B	C	C	C	C	B	B	C	C	C
Approach Vol, veh/h		1265			398			706			219	
Approach Delay, s/veh		21.4			23.4			22.4			25.5	
Approach LOS		C			C			C			C	

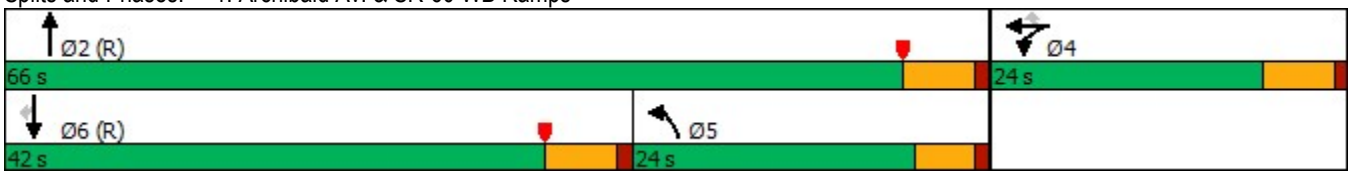
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	18.5	6.7	23.6	11.5	13.2	16.2	14.1
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	5.7	45.7	5.0	41.4	8.4	43.0	12.4	34.0
Max Q Clear Time (g_c+I1), s	2.8	7.1	2.6	8.3	6.9	6.0	11.4	5.7
Green Ext Time (p_c), s	0.0	2.4	0.0	3.3	0.1	0.7	0.2	1.9

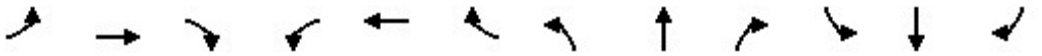
Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	495	1	213	651	685	1901	390
Future Volume (vph)	495	1	213	651	685	1901	390
Turn Type	Split	NA	Perm	Prot	NA	NA	Perm
Protected Phases	4	4		5	2	6	
Permitted Phases			4				6
Detector Phase	4	4	4	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	8.0	8.0	8.0
Minimum Split (s)	10.8	10.8	10.8	10.0	43.8	38.8	38.8
Total Split (s)	24.0	24.0	24.0	24.0	66.0	42.0	42.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	73.3%	46.7%	46.7%
Yellow Time (s)	4.8	4.8	4.8	4.0	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.0	5.8	5.8	5.8
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	17.2	17.2	17.2	18.7	61.2	37.4	37.4
Actuated g/C Ratio	0.19	0.19	0.19	0.21	0.68	0.42	0.42
v/c Ratio	0.83	0.84	0.44	0.93	0.20	0.73	0.49
Control Delay	58.0	58.5	8.1	50.2	0.4	24.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	58.5	8.1	50.2	0.4	24.3	8.1
LOS	E	E	A	D	A	C	A
Approach Delay		44.7			24.7	21.5	
Approach LOS		D			C	C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Archibald Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	495	1	213	651	685	0	0	1901	390
Future Volume (veh/h)	0	0	0	495	1	213	651	685	0	0	1901	390
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				539	0	73	664	699	0	0	1940	298
Peak Hour Factor				0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				631	0	281	858	3544	0	0	2453	589
Arrive On Green				0.18	0.00	0.18	0.08	0.23	0.00	0.00	0.38	0.38
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	6696	1545
Grp Volume(v), veh/h				539	0	73	664	699	0	0	1940	298
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1609	1545
Q Serve(g_s), s				13.2	0.0	3.6	17.0	9.9	0.0	0.0	24.0	13.3
Cycle Q Clear(g_c), s				13.2	0.0	3.6	17.0	9.9	0.0	0.0	24.0	13.3
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				631	0	281	858	3544	0	0	2453	589
V/C Ratio(X)				0.85	0.00	0.26	0.77	0.20	0.00	0.00	0.79	0.51
Avail Cap(c_a), veh/h				720	0	321	858	3544	0	0	2588	621
HCM Platoon Ratio				1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.89	0.89	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				35.9	0.0	31.9	38.8	14.5	0.0	0.0	24.7	21.3
Incr Delay (d2), s/veh				8.9	0.0	0.5	3.6	0.1	0.0	0.0	2.7	3.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.2	0.0	3.4	8.2	3.7	0.0	0.0	8.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				44.8	0.0	32.4	42.4	14.6	0.0	0.0	27.4	24.4
LnGrp LOS				D	A	C	D	B	A	A	C	C
Approach Vol, veh/h					612			1363			2238	
Approach Delay, s/veh					43.3			28.1			27.0	
Approach LOS					D			C			C	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	68.3	21.7	28.1	40.1
Change Period (Y+Rc), s	5.8	5.8	5.8	* 5.8
Max Green Setting (Gmax), s	60.2	18.2	19.0	* 36
Max Q Clear Time (g_c+I1), s	11.9	15.2	19.0	26.0
Green Ext Time (p_c), s	5.0	0.7	0.0	8.3

Intersection Summary	
HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C

Notes

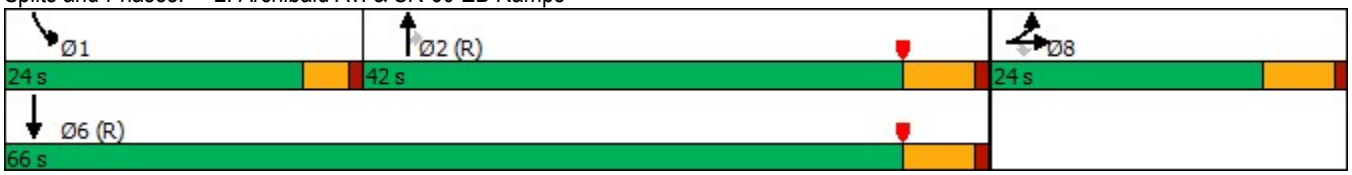
User approved volume balancing among the lanes for turning movement.

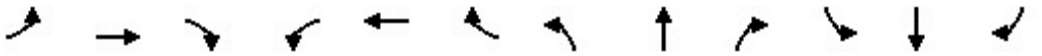
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	136	1	576	1202	668	662	1589
Future Volume (vph)	136	1	576	1202	668	662	1589
Turn Type	Split	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8	8		2		1	6
Permitted Phases			8		2		
Detector Phase	8	8	8	2	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	32.8	32.8	9.0	33.8
Total Split (s)	24.0	24.0	24.0	42.0	42.0	24.0	66.0
Total Split (%)	26.7%	26.7%	26.7%	46.7%	46.7%	26.7%	73.3%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	3.0	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	5.8	5.8	4.0	5.8
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	17.8	17.8	17.8	37.1	37.1	19.5	60.6
Actuated g/C Ratio	0.20	0.20	0.20	0.41	0.41	0.22	0.67
v/c Ratio	0.37	0.93	0.82	0.46	0.71	0.90	0.47
Control Delay	34.8	68.1	44.2	20.1	9.7	56.8	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	68.1	44.2	20.1	9.7	56.8	1.9
LOS	C	E	D	C	A	E	A
Approach Delay		52.6		16.4			18.0
Approach LOS		D		B			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow, Master Intersection	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 22.5	Intersection LOS: C
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Archibald Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	1	576	0	0	0	0	1202	668	662	1589	0
Future Volume (veh/h)	136	1	576	0	0	0	0	1202	668	662	1589	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	92	0	397				0	1214	499	669	1605	0
Peak Hour Factor	0.99	0.99	0.99				0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	274	0	487				0	2985	719	723	3664	0
Arrive On Green	0.15	0.00	0.15				0.00	0.46	0.46	0.42	1.00	0.00
Sat Flow, veh/h	1781	0	3170				0	6696	1550	3456	5274	0
Grp Volume(v), veh/h	92	0	397				0	1214	499	669	1605	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1609	1550	1728	1702	0
Q Serve(g_s), s	4.1	0.0	10.9				0.0	11.2	22.9	16.5	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	10.9				0.0	11.2	22.9	16.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	274	0	487				0	2985	719	723	3664	0
V/C Ratio(X)	0.34	0.00	0.82				0.00	0.41	0.69	0.93	0.44	0.00
Avail Cap(c_a), veh/h	360	0	641				0	2985	719	768	3664	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.59	0.59	0.00
Uniform Delay (d), s/veh	34.0	0.0	36.9				0.0	15.9	19.1	25.5	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	6.1				0.0	0.4	5.5	10.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	4.4				0.0	3.7	8.2	5.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	43.0				0.0	16.4	24.5	36.1	0.2	0.0
LnGrp LOS	C	A	D				A	B	C	D	A	A
Approach Vol, veh/h		489						1713			2274	
Approach Delay, s/veh		41.4						18.7			10.8	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	22.8	47.6				70.4		19.6				
Change Period (Y+Rc), s	4.0	5.8				5.8		5.8				
Max Green Setting (Gmax), s	20.0	36.2				60.2		18.2				
Max Q Clear Time (g_c+I1), s	18.5	24.9				2.0		12.9				
Green Ext Time (p_c), s	0.3	6.9				16.0		0.9				

Intersection Summary			
HCM 6th Ctrl Delay			17.2
HCM 6th LOS			B

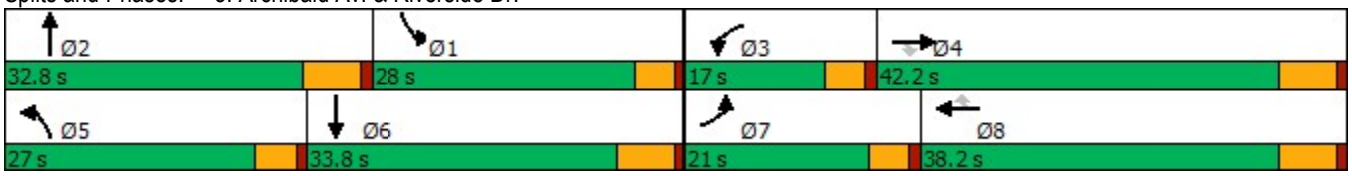
Notes

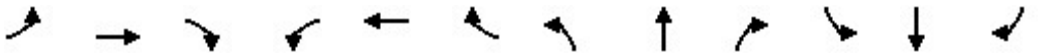
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	223	913	705	245	769	222	379	1148	354	1138
Future Volume (vph)	223	913	705	245	769	222	379	1148	354	1138
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	21.0	42.2	42.2	17.0	38.2	38.2	27.0	32.8	28.0	33.8
Total Split (%)	17.5%	35.2%	35.2%	14.2%	31.8%	31.8%	22.5%	27.3%	23.3%	28.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.4	36.0	36.0	12.4	32.0	32.0	22.4	26.6	23.4	27.6
Actuated g/C Ratio	0.14	0.30	0.30	0.10	0.27	0.27	0.19	0.22	0.20	0.23
v/c Ratio	1.06	0.93	0.96	1.53	0.88	0.42	1.31	1.25	1.17	1.33
Control Delay	126.4	56.6	41.6	305.0	54.5	9.3	201.7	160.8	149.2	191.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.4	56.6	41.6	305.0	54.5	9.3	201.7	160.8	149.2	191.5
LOS	F	E	D	F	D	A	F	F	F	F
Approach Delay		59.3			96.0			170.0		183.1
Approach LOS		E			F			F		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.53	
Intersection Signal Delay: 128.6	Intersection LOS: F
Intersection Capacity Utilization 113.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	913	705	245	769	222	379	1148	156	354	1138	307
Future Volume (veh/h)	223	913	705	245	769	222	379	1148	156	354	1138	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	228	932	650	250	785	178	387	1171	152	361	1161	280
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	997	434	163	886	393	294	946	123	307	931	225
Arrive On Green	0.13	0.30	0.30	0.10	0.26	0.26	0.18	0.22	0.22	0.19	0.24	0.24
Sat Flow, veh/h	1594	3367	1468	1594	3367	1495	1594	4323	561	1594	3879	935
Grp Volume(v), veh/h	228	932	650	250	785	178	387	873	450	361	965	476
Grp Sat Flow(s),veh/h/ln	1594	1683	1468	1594	1683	1495	1594	1612	1659	1594	1612	1590
Q Serve(g_s), s	16.4	32.8	36.0	12.4	27.2	7.3	22.4	26.6	26.6	23.4	29.2	29.2
Cycle Q Clear(g_c), s	16.4	32.8	36.0	12.4	27.2	7.3	22.4	26.6	26.6	23.4	29.2	29.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.59
Lane Grp Cap(c), veh/h	215	997	434	163	886	393	294	705	363	307	774	382
V/C Ratio(X)	1.06	0.94	1.50	1.54	0.89	0.45	1.32	1.24	1.24	1.18	1.25	1.25
Avail Cap(c_a), veh/h	215	997	434	163	886	393	294	705	363	307	774	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	41.7	42.8	54.6	43.0	13.5	49.6	47.5	47.5	49.1	46.2	46.2
Incr Delay (d2), s/veh	78.3	15.3	235.1	270.5	10.7	0.8	165.2	119.1	128.9	108.4	121.6	131.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	15.0	40.7	17.0	12.1	4.1	22.0	21.9	23.5	18.2	24.2	24.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	130.9	57.0	277.9	325.1	53.8	14.3	214.8	166.6	176.4	157.5	167.8	177.3
LnGrp LOS	F	E	F	F	D	B	F	F	F	F	F	F
Approach Vol, veh/h		1810			1213			1710			1802	
Approach Delay, s/veh		145.6			103.9			180.1			168.2	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.6	32.8	17.0	42.2	27.0	35.4	21.0	38.2
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	23.4	* 27	12.4	36.0	22.4	27.6	16.4	32.0
Max Q Clear Time (g_c+I1), s	25.4	28.6	14.4	38.0	24.4	31.2	18.4	29.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	153.1
HCM 6th LOS	F

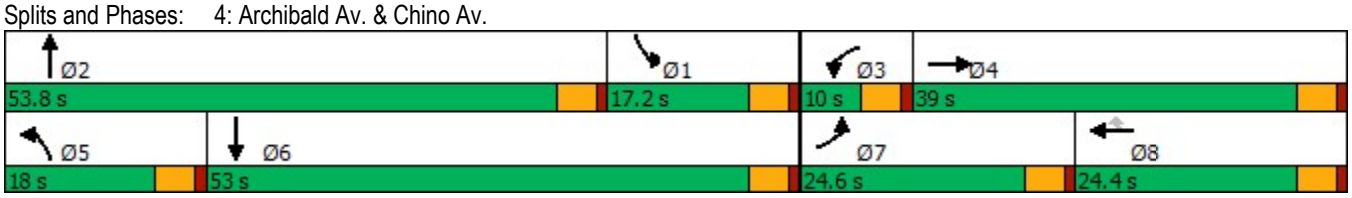
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	196	347	70	170	77	230	1384	93	1614
Future Volume (vph)	196	347	70	170	77	230	1384	93	1614
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases					8				
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	24.6	39.0	10.0	24.4	24.4	18.0	53.8	17.2	53.0
Total Split (%)	20.5%	32.5%	8.3%	20.3%	20.3%	15.0%	44.8%	14.3%	44.2%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	18.4	34.4	5.4	21.4	21.4	13.4	44.5	17.3	48.4
Actuated g/C Ratio	0.15	0.29	0.04	0.18	0.18	0.11	0.37	0.14	0.40
v/c Ratio	0.84	1.33	1.03	0.56	0.19	1.36	0.79	0.43	1.29
Control Delay	77.6	193.8	171.0	53.6	1.0	236.1	36.3	55.2	168.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.6	193.8	171.0	53.6	1.0	236.1	36.3	55.2	168.0
LOS	E	F	F	D	A	F	D	E	F
Approach Delay		166.1		66.8			63.4		162.3
Approach LOS		F		E			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 120.6	Intersection LOS: F
Intersection Capacity Utilization 122.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	347	279	70	170	77	230	1384	85	93	1614	134
Future Volume (veh/h)	196	347	279	70	170	77	230	1384	85	93	1614	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	204	361	156	73	177	44	240	1442	53	97	1681	72
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	335	145	72	333	283	178	1748	64	274	1361	58
Arrive On Green	0.14	0.29	0.29	0.05	0.19	0.19	0.11	0.34	0.34	0.17	0.40	0.40
Sat Flow, veh/h	1594	1168	505	1594	1772	1502	1594	5091	187	1594	3374	144
Grp Volume(v), veh/h	204	0	517	73	177	44	240	1004	491	97	879	874
Grp Sat Flow(s),veh/h/ln	1594	0	1672	1594	1772	1502	1594	1772	1735	1594	1772	1746
Q Serve(g_s), s	15.1	0.0	34.4	5.4	10.8	2.0	13.4	31.1	31.1	6.4	48.4	48.4
Cycle Q Clear(g_c), s	15.1	0.0	34.4	5.4	10.8	2.0	13.4	31.1	31.1	6.4	48.4	48.4
Prop In Lane	1.00		0.30	1.00		1.00	1.00		0.11	1.00		0.08
Lane Grp Cap(c), veh/h	229	0	479	72	333	283	178	1217	596	274	715	704
V/C Ratio(X)	0.89	0.00	1.08	1.02	0.53	0.16	1.35	0.82	0.82	0.35	1.23	1.24
Avail Cap(c_a), veh/h	266	0	479	72	333	283	178	1453	711	274	715	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	42.8	57.3	43.9	19.6	53.3	36.1	36.1	43.8	35.8	35.8
Incr Delay (d2), s/veh	26.7	0.0	63.9	111.3	1.6	0.3	189.3	3.4	6.8	0.8	115.4	120.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	22.2	4.4	4.8	1.1	14.5	13.1	13.4	2.5	42.2	42.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.2	0.0	106.7	168.6	45.5	19.9	242.6	39.5	42.8	44.6	151.2	156.3
LnGrp LOS	E	A	F	F	D	B	F	D	D	D	F	F
Approach Vol, veh/h		721			294			1735			1850	
Approach Delay, s/veh		98.3			72.3			68.6			148.0	
Approach LOS		F			E			E			F	

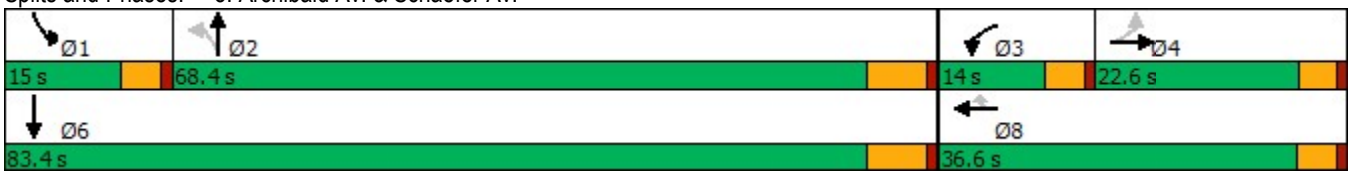
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.2	45.8	10.0	39.0	18.0	53.0	21.8	27.2
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	12.6	49.2	5.4	34.4	13.4	48.4	20.0	19.8
Max Q Clear Time (g_c+I1), s	8.4	33.1	7.4	36.4	15.4	50.4	17.1	12.8
Green Ext Time (p_c), s	0.1	8.1	0.0	0.0	0.0	0.0	0.2	0.5

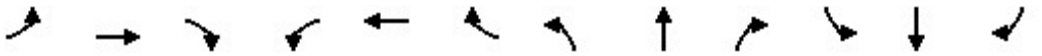
Intersection Summary	
HCM 6th Ctrl Delay	105.4
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	28	37	25	74	1465	242	1572
Future Volume (vph)	20	28	37	25	74	1465	242	1572
Turn Type	Perm	NA	Prot	NA	Perm	NA	Prot	NA
Protected Phases		4	3	8		2	1	6
Permitted Phases	4				8			
Detector Phase	4	4	3	8	8	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	22.5	22.5	9.6	32.6	32.6	37.5	9.6	23.5
Total Split (s)	22.6	22.6	14.0	36.6	36.6	68.4	15.0	83.4
Total Split (%)	18.8%	18.8%	11.7%	30.5%	30.5%	57.0%	12.5%	69.5%
Yellow Time (s)	3.5	3.5	3.6	3.6	3.6	5.5	3.6	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.6	4.6	4.6	6.5	4.6	6.5
Lead/Lag	Lag	Lag	Lead			Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	None
Act Effct Green (s)	8.3	8.3	7.2	14.4	14.4	37.2	11.8	56.7
Actuated g/C Ratio	0.11	0.11	0.09	0.19	0.19	0.48	0.15	0.73
v/c Ratio	0.16	0.16	0.27	0.08	0.23	0.70	1.07	0.69
Control Delay	43.9	42.2	46.9	30.4	9.7	18.1	117.2	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	42.2	46.9	30.4	9.7	18.1	117.2	11.3
LOS	D	D	D	C	A	B	F	B
Approach Delay		42.9		23.6		18.1		25.3
Approach LOS		D		C		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 77.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay: 22.3	Intersection LOS: C
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Archibald Av. & Schaefer Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	28	0	37	25	74	0	1465	41	242	1572	19
Future Volume (veh/h)	20	28	0	37	25	74	0	1465	41	242	1572	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	21	30	0	39	27	73	0	1559	42	257	1672	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	118	0	60	299	251	101	2254	61	232	2302	28
Arrive On Green	0.07	0.07	0.00	0.04	0.17	0.17	0.00	0.47	0.47	0.15	0.68	0.68
Sat Flow, veh/h	1131	1772	0	1594	1772	1486	260	4839	130	1594	3406	41
Grp Volume(v), veh/h	21	30	0	39	27	73	0	1039	562	257	825	867
Grp Sat Flow(s),veh/h/ln	1131	1772	0	1594	1772	1486	260	1612	1745	1594	1683	1764
Q Serve(g_s), s	1.3	1.1	0.0	1.7	0.9	3.1	0.0	18.1	18.1	10.4	22.3	22.4
Cycle Q Clear(g_c), s	1.3	1.1	0.0	1.7	0.9	3.1	0.0	18.1	18.1	10.4	22.3	22.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.07	1.00		0.02
Lane Grp Cap(c), veh/h	176	118	0	60	299	251	101	1502	813	232	1138	1192
V/C Ratio(X)	0.12	0.25	0.00	0.65	0.09	0.29	0.00	0.69	0.69	1.11	0.73	0.73
Avail Cap(c_a), veh/h	388	449	0	210	794	666	205	2796	1513	232	1813	1900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	31.6	0.0	33.9	25.0	25.9	0.0	15.0	15.0	30.5	7.4	7.4
Incr Delay (d2), s/veh	0.3	1.1	0.0	4.3	0.1	0.6	0.0	0.6	1.1	90.7	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.5	0.0	0.7	0.4	1.0	0.0	5.2	5.7	9.4	4.2	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	32.8	0.0	38.2	25.2	26.6	0.0	15.6	16.1	121.2	8.3	8.2
LnGrp LOS	C	C	A	D	C	C	A	B	B	F	A	A
Approach Vol, veh/h		51			139			1601			1949	
Approach Delay, s/veh		32.4			29.6			15.8			23.1	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	15.0	39.7	7.3	9.3		54.7		16.6				
Change Period (Y+Rc), s	4.6	6.5	4.6	* 4.6		6.5		4.6				
Max Green Setting (Gmax), s	10.4	61.9	9.4	* 18		76.9		32.0				
Max Q Clear Time (g_c+I1), s	12.4	20.1	3.7	3.3		24.4		5.1				
Green Ext Time (p_c), s	0.0	13.1	0.0	0.1		16.3		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

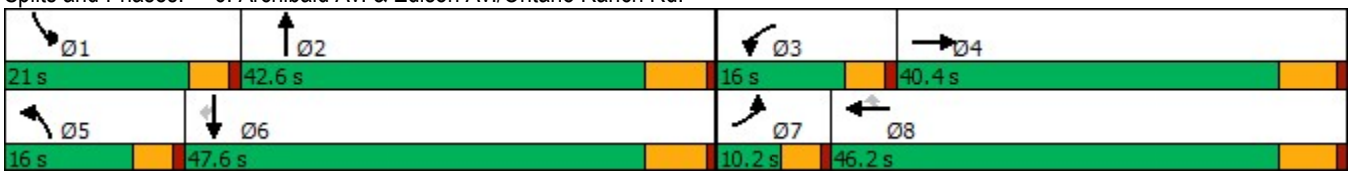
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	800	874	295	329	128	305	1220	356	181	1716	126
Future Volume (vph)	178	800	874	295	329	128	305	1220	356	181	1716	126
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	10.2	40.4		16.0	46.2	46.2	16.0	42.6		21.0	47.6	47.6
Total Split (%)	8.5%	33.7%		13.3%	38.5%	38.5%	13.3%	35.5%		17.5%	39.7%	39.7%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.6	32.0	117.8	11.4	37.8	37.8	11.4	36.8	117.8	15.8	41.1	41.1
Actuated g/C Ratio	0.05	0.27	1.00	0.10	0.32	0.32	0.10	0.31	1.00	0.13	0.35	0.35
v/c Ratio	1.33	0.88	0.61	1.08	0.61	0.23	2.10	1.17	0.25	0.91	1.47	0.21
Control Delay	229.2	52.7	1.9	125.8	39.1	3.9	543.9	122.2	0.4	92.2	245.4	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	229.2	52.7	1.9	125.8	39.1	3.9	543.9	122.2	0.4	92.2	245.4	3.6
LOS	F	D	A	F	D	A	F	F	A	F	F	A
Approach Delay		45.6			67.2			167.5			216.5	
Approach LOS		D			E			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.10	
Intersection Signal Delay: 136.5	Intersection LOS: F
Intersection Capacity Utilization 120.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	800	874	295	329	128	305	1220	356	181	1716	126
Future Volume (veh/h)	178	800	874	295	329	128	305	1220	356	181	1716	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	187	842	0	311	346	93	321	1284	0	191	1806	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	944		292	560	474	155	1113		215	1245	528
Arrive On Green	0.05	0.27	0.00	0.10	0.32	0.32	0.10	0.31	0.00	0.13	0.35	0.35
Sat Flow, veh/h	3000	3544	1502	3000	1772	1500	1594	3544	1502	1594	3544	1502
Grp Volume(v), veh/h	187	842	0	311	346	93	321	1284	0	191	1806	114
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	5.6	26.7	0.0	11.4	19.4	5.3	11.4	36.7	0.0	13.8	41.1	6.2
Cycle Q Clear(g_c), s	5.6	26.7	0.0	11.4	19.4	5.3	11.4	36.7	0.0	13.8	41.1	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	944		292	560	474	155	1113		215	1245	528
V/C Ratio(X)	1.30	0.89		1.06	0.62	0.20	2.07	1.15		0.89	1.45	0.22
Avail Cap(c_a), veh/h	144	1036		292	606	513	155	1113		223	1245	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	41.3	0.0	52.8	34.0	29.2	52.8	40.1	0.0	49.7	37.9	26.6
Incr Delay (d2), s/veh	177.3	9.3	0.0	70.4	1.7	0.2	501.4	79.6	0.0	30.6	207.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	12.3	0.0	7.0	8.2	1.9	26.0	27.1	0.0	7.0	52.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	232.9	50.6	0.0	123.2	35.7	29.4	554.2	119.8	0.0	80.3	245.1	26.8
LnGrp LOS	F	D		F	D	C	F	F		F	F	C
Approach Vol, veh/h		1029	A		750			1605	A		2111	
Approach Delay, s/veh		83.7			71.2			206.6			218.4	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	43.2	16.0	37.4	16.0	47.6	10.2	43.2
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	16.4	36.1	11.4	34.2	11.4	41.1	5.6	40.0
Max Q Clear Time (g_c+I1), s	15.8	38.7	13.4	28.7	13.4	43.1	7.6	21.4
Green Ext Time (p_c), s	0.0	0.0	0.0	2.4	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	169.7
HCM 6th LOS	F

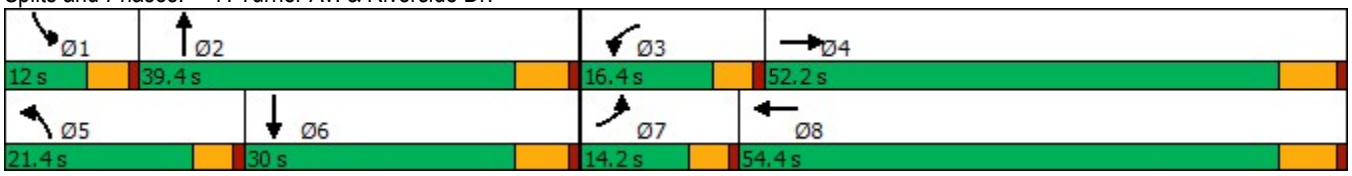
Notes

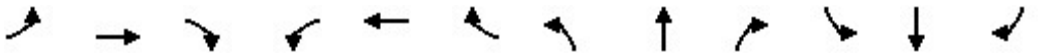
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	1011	140	1095	206	69	36	68
Future Volume (vph)	105	1011	140	1095	206	69	36	68
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.2	9.6	27.2	9.6	28.8	9.6	28.8
Total Split (s)	14.2	52.2	16.4	54.4	21.4	39.4	12.0	30.0
Total Split (%)	11.8%	43.5%	13.7%	45.3%	17.8%	32.8%	10.0%	25.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	9.4	46.1	11.8	48.5	16.8	26.8	6.5	12.4
Actuated g/C Ratio	0.09	0.43	0.11	0.45	0.16	0.25	0.06	0.11
v/c Ratio	0.79	0.95	0.84	0.79	0.87	0.28	0.39	0.33
Control Delay	85.7	45.2	85.2	31.0	77.2	12.2	62.4	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	45.2	85.2	31.0	77.2	12.2	62.4	25.2
LOS	F	D	F	C	E	B	E	C
Approach Delay		48.3		36.9		42.8		33.1
Approach LOS		D		D		D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 42.3	Intersection LOS: D
Intersection Capacity Utilization 86.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 7: Turner Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1011	273	140	1095	49	206	69	163	36	68	64
Future Volume (veh/h)	105	1011	273	140	1095	49	206	69	163	36	68	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	108	1042	178	144	1129	38	212	71	116	37	70	40
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	1182	201	171	1451	49	240	389	344	52	239	125
Arrive On Green	0.08	0.41	0.41	0.11	0.44	0.44	0.15	0.23	0.23	0.03	0.11	0.11
Sat Flow, veh/h	1594	2866	489	1594	3321	112	1594	1683	1485	1594	2115	1110
Grp Volume(v), veh/h	108	611	609	144	572	595	212	71	116	37	54	56
Grp Sat Flow(s),veh/h/ln	1594	1683	1671	1594	1683	1750	1594	1683	1485	1594	1683	1542
Q Serve(g_s), s	6.5	32.8	32.9	8.7	28.4	28.4	12.7	3.3	6.4	2.2	2.9	3.2
Cycle Q Clear(g_c), s	6.5	32.8	32.9	8.7	28.4	28.4	12.7	3.3	6.4	2.2	2.9	3.2
Prop In Lane	1.00		0.29	1.00		0.06	1.00		1.00	1.00		0.72
Lane Grp Cap(c), veh/h	132	694	689	171	735	764	240	389	344	52	190	174
V/C Ratio(X)	0.82	0.88	0.88	0.84	0.78	0.78	0.88	0.18	0.34	0.72	0.29	0.32
Avail Cap(c_a), veh/h	156	792	786	192	830	862	274	578	510	121	416	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	26.5	26.6	42.9	23.5	23.5	40.7	30.2	31.3	46.9	39.8	39.9
Incr Delay (d2), s/veh	21.3	10.3	10.7	23.0	4.2	4.1	22.8	0.2	0.6	6.7	0.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	13.7	13.7	4.3	10.8	11.2	6.3	1.3	2.2	1.0	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.4	36.8	37.2	65.9	27.7	27.6	63.5	30.4	31.9	53.6	40.6	41.0
LnGrp LOS	E	D	D	E	C	C	E	C	C	D	D	D
Approach Vol, veh/h		1328			1311			399			147	
Approach Delay, s/veh		39.3			31.8			48.4			44.0	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	28.4	15.1	46.5	19.4	16.8	12.7	48.9
Change Period (Y+Rc), s	4.6	5.8	4.6	6.2	4.6	5.8	4.6	6.2
Max Green Setting (Gmax), s	7.4	33.6	11.8	46.0	16.8	24.2	9.6	48.2
Max Q Clear Time (g_c+I1), s	4.2	8.4	10.7	34.9	14.7	5.2	8.5	30.4
Green Ext Time (p_c), s	0.0	1.0	0.0	5.4	0.1	0.4	0.0	6.6

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	192	210	74	45	155	86	24	153	44	70	238	69
Future Vol, veh/h	192	210	74	45	155	86	24	153	44	70	238	69
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	209	228	80	49	168	93	26	166	48	76	259	75
Number of Lanes	1	2	0	1	2	0	1	2	0	1	2	0

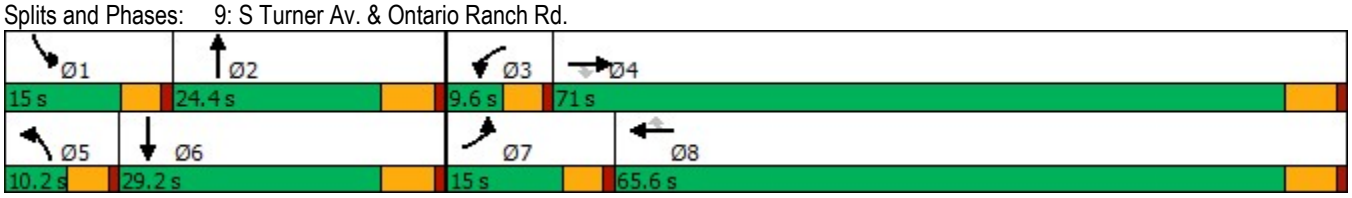
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	15.7	13.8	13.6	14.7
HCM LOS	C	B	B	B

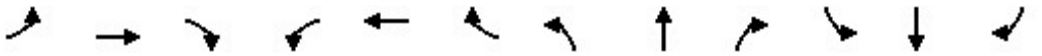
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	54%	0%	100%	49%	0%	100%	38%	0%	100%	53%
Vol Right, %	0%	0%	46%	0%	0%	51%	0%	0%	62%	0%	0%	47%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	102	95	192	140	144	45	103	138	70	159	148
LT Vol	24	0	0	192	0	0	45	0	0	70	0	0
Through Vol	0	102	51	0	140	70	0	103	52	0	159	79
RT Vol	0	0	44	0	0	74	0	0	86	0	0	69
Lane Flow Rate	26	111	103	209	152	157	49	112	150	76	172	161
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.065	0.259	0.232	0.476	0.326	0.32	0.118	0.256	0.322	0.179	0.382	0.343
Departure Headway (Hd)	8.903	8.403	8.078	8.215	7.715	7.355	8.691	8.191	7.754	8.482	7.982	7.656
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	401	426	443	438	466	488	411	437	462	422	450	469
Service Time	6.678	6.178	5.854	5.979	5.479	5.119	6.464	5.964	5.527	6.251	5.751	5.425
HCM Lane V/C Ratio	0.065	0.261	0.233	0.477	0.326	0.322	0.119	0.256	0.325	0.18	0.382	0.343
HCM Control Delay	12.3	14.1	13.3	18.3	14.2	13.6	12.6	13.8	14.2	13.1	15.6	14.4
HCM Lane LOS	B	B	B	C	B	B	B	B	B	B	C	B
HCM 95th-tile Q	0.2	1	0.9	2.5	1.4	1.4	0.4	1	1.4	0.6	1.8	1.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	158	2207	53	66	1892	153	19	19	160	38
Future Volume (vph)	158	2207	53	66	1892	153	19	19	160	38
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	23.8	23.8	9.6	23.8	23.8	9.6	23.8	9.6	23.8
Total Split (s)	15.0	71.0	71.0	9.6	65.6	65.6	10.2	24.4	15.0	29.2
Total Split (%)	12.5%	59.2%	59.2%	8.0%	54.7%	54.7%	8.5%	20.3%	12.5%	24.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	10.4	65.3	65.3	5.0	59.9	59.9	5.4	8.6	10.4	19.7
Actuated g/C Ratio	0.09	0.59	0.59	0.05	0.54	0.54	0.05	0.08	0.09	0.18
v/c Ratio	1.02	1.13	0.06	0.89	1.06	0.17	0.23	0.34	1.03	0.33
Control Delay	124.6	89.4	0.1	127.7	63.5	1.7	58.8	28.5	127.3	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	124.6	89.4	0.1	127.7	63.5	1.7	58.8	28.5	127.3	21.7
LOS	F	F	A	F	E	A	E	C	F	C
Approach Delay		89.7			61.0			36.6		84.8
Approach LOS		F			E			D		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 110.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 76.2	Intersection LOS: E
Intersection Capacity Utilization 94.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 9: S Turner Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	2207	53	66	1892	153	19	19	33	160	38	70
Future Volume (veh/h)	158	2207	53	66	1892	153	19	19	33	160	38	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	170	2373	35	71	2034	84	20	20	19	172	41	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	2178	971	84	1997	891	37	41	39	174	103	109
Arrive On Green	0.10	0.61	0.61	0.05	0.56	0.56	0.02	0.05	0.05	0.10	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	882	838	1781	836	877
Grp Volume(v), veh/h	170	2373	35	71	2034	84	20	0	39	172	0	84
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1720	1781	0	1713
Q Serve(g_s), s	10.1	65.2	0.9	4.2	59.8	2.6	1.2	0.0	2.4	10.3	0.0	4.8
Cycle Q Clear(g_c), s	10.1	65.2	0.9	4.2	59.8	2.6	1.2	0.0	2.4	10.3	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.49	1.00		0.51
Lane Grp Cap(c), veh/h	174	2178	971	84	1997	891	37	0	81	174	0	212
V/C Ratio(X)	0.98	1.09	0.04	0.85	1.02	0.09	0.54	0.00	0.48	0.99	0.00	0.40
Avail Cap(c_a), veh/h	174	2178	971	84	1997	891	94	0	301	174	0	377
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.9	20.6	8.2	50.3	23.3	10.8	51.6	0.0	49.4	47.9	0.0	43.0
Incr Delay (d2), s/veh	60.8	48.7	0.0	50.0	24.9	0.0	4.4	0.0	4.4	64.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	37.0	0.3	3.0	28.4	0.8	0.6	0.0	1.1	7.5	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.7	69.3	8.2	100.3	48.2	10.8	55.9	0.0	53.8	112.3	0.0	44.2
LnGrp LOS	F	F	A	F	F	B	E	A	D	F	A	D
Approach Vol, veh/h		2578			2189			59			256	
Approach Delay, s/veh		71.1			48.4			54.6			89.9	
Approach LOS		E			D			D			F	

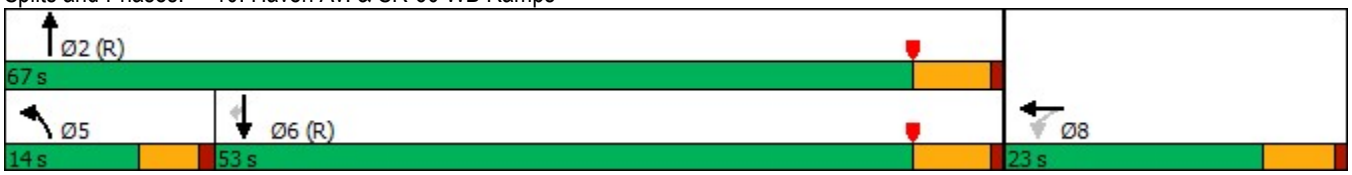
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	10.8	9.6	71.0	6.8	19.0	15.0	65.6
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8
Max Green Setting (Gmax), s	10.4	18.6	5.0	65.2	5.6	23.4	10.4	59.8
Max Q Clear Time (g_c+I1), s	12.3	4.4	6.2	67.2	3.2	6.8	12.1	61.8
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0

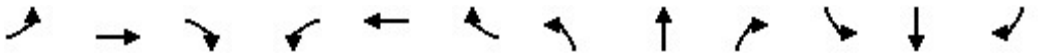
Intersection Summary	
HCM 6th Ctrl Delay	62.1
HCM 6th LOS	E

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	384	12	682	177	1224	2179	844
Future Volume (vph)	384	12	682	177	1224	2179	844
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0		5.0	8.0	8.0	8.0
Minimum Split (s)	15.8	15.8		10.0	35.2	28.2	28.2
Total Split (s)	23.0	23.0		14.0	67.0	53.0	53.0
Total Split (%)	25.6%	25.6%		15.6%	74.4%	58.9%	58.9%
Yellow Time (s)	4.8	4.8		4.0	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8		5.0	6.2	6.2	6.2
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	14.9	14.9	90.0	8.3	63.1	49.8	49.8
Actuated g/C Ratio	0.17	0.17	1.00	0.09	0.70	0.55	0.55
v/c Ratio	0.75	0.73	0.45	0.58	0.36	0.81	0.75
Control Delay	52.2	51.0	0.9	35.4	8.1	19.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	51.0	0.9	35.4	8.1	19.9	8.2
LOS	D	D	A	D	A	B	A
Approach Delay		19.6			11.6	16.6	
Approach LOS		B			B	B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 15.9	Intersection LOS: B
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 10: Haven Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	384	12	682	177	1224	0	0	2179	844
Future Volume (veh/h)	0	0	0	384	12	682	177	1224	0	0	2179	844
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				409	0	0	184	1275	0	0	2270	731
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				503	0		253	3704	0	0	3047	934
Arrive On Green				0.14	0.00	0.00	0.15	1.00	0.00	0.00	0.60	0.60
Sat Flow, veh/h				3563	0	1585	3456	5274	0	0	5274	1565
Grp Volume(v), veh/h				409	0	0	184	1275	0	0	2270	731
Grp Sat Flow(s),veh/h/ln				1781	0	1585	1728	1702	0	0	1702	1565
Q Serve(g_s), s				10.0	0.0	0.0	4.6	0.0	0.0	0.0	29.1	31.8
Cycle Q Clear(g_c), s				10.0	0.0	0.0	4.6	0.0	0.0	0.0	29.1	31.8
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				503	0		253	3704	0	0	3047	934
V/C Ratio(X)				0.81	0.00		0.73	0.34	0.00	0.00	0.75	0.78
Avail Cap(c_a), veh/h				681	0		346	3704	0	0	3047	934
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.49	0.49	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				37.5	0.0	0.0	37.6	0.0	0.0	0.0	13.2	13.7
Incr Delay (d2), s/veh				5.4	0.0	0.0	1.3	0.1	0.0	0.0	1.7	6.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	0.0	1.8	0.0	0.0	0.0	9.4	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.9	0.0	0.0	38.9	0.1	0.0	0.0	14.9	20.3
LnGrp LOS				D	A		D	A	A	A	B	C
Approach Vol, veh/h					409	A		1459			3001	
Approach Delay, s/veh					42.9			5.0			16.2	
Approach LOS					D			A			B	

Timer - Assigned Phs	2		5	6		8				
Phs Duration (G+Y+Rc), s	71.5		11.6	59.9		18.5				
Change Period (Y+Rc), s	6.2		5.0	6.2		5.8				
Max Green Setting (Gmax), s	60.8		9.0	46.8		17.2				
Max Q Clear Time (g_c+I1), s	2.0		6.6	33.8		12.0				
Green Ext Time (p_c), s	6.6		0.1	9.9		0.7				

Intersection Summary		
HCM 6th Ctrl Delay	15.1	
HCM 6th LOS	B	

Notes

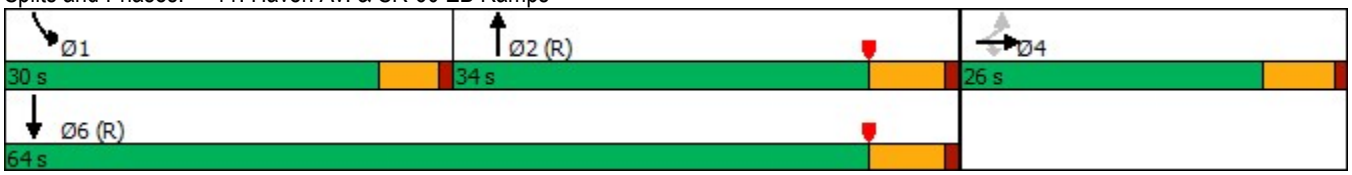
User approved volume balancing among the lanes for turning movement.

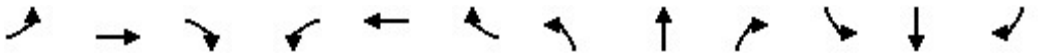
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	423	2	257	1164	739	1939
Future Volume (vph)	423	2	257	1164	739	1939
Turn Type	Perm	NA	Perm	NA	Prot	NA
Protected Phases		4		2	1	6
Permitted Phases	4		4			
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	8.0	5.0	8.0
Minimum Split (s)	10.8	10.8	10.8	28.2	10.0	31.2
Total Split (s)	26.0	26.0	26.0	34.0	30.0	64.0
Total Split (%)	28.9%	28.9%	28.9%	37.8%	33.3%	71.1%
Yellow Time (s)	4.8	4.8	4.8	5.2	4.0	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	6.2	5.0	6.2
Lead/Lag				Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	
Recall Mode	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	16.9	16.9	16.9	32.4	23.7	61.1
Actuated g/C Ratio	0.19	0.19	0.19	0.36	0.26	0.68
v/c Ratio	0.70	0.71	0.71	0.82	0.85	0.58
Control Delay	45.9	46.3	31.7	31.3	52.1	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	45.9	46.3	31.7	31.3	52.1	5.8
LOS	D	D	C	C	D	A
Approach Delay		40.7		31.3		18.6
Approach LOS		D		C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 11: Haven Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	423	2	257	0	0	0	0	1164	267	739	1939	0
Future Volume (veh/h)	423	2	257	0	0	0	0	1164	267	739	1939	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	442	0	138				0	1212	143	770	2020	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	556	0	248				0	1906	225	841	3628	0
Arrive On Green	0.16	0.00	0.16				0.00	0.41	0.41	0.49	1.00	0.00
Sat Flow, veh/h	3563	0	1585				0	4798	546	3456	5274	0
Grp Volume(v), veh/h	442	0	138				0	891	464	770	2020	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1772	1728	1702	0
Q Serve(g_s), s	10.8	0.0	7.2				0.0	18.8	18.8	18.6	0.0	0.0
Cycle Q Clear(g_c), s	10.8	0.0	7.2				0.0	18.8	18.8	18.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.31	1.00		0.00
Lane Grp Cap(c), veh/h	556	0	248				0	1401	729	841	3628	0
V/C Ratio(X)	0.79	0.00	0.56				0.00	0.64	0.64	0.92	0.56	0.00
Avail Cap(c_a), veh/h	800	0	356				0	1401	729	960	3628	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.50	0.50	0.00
Uniform Delay (d), s/veh	36.6	0.0	35.1				0.0	21.1	21.1	22.3	0.0	0.0
Incr Delay (d2), s/veh	3.6	0.0	2.0				0.0	2.2	4.2	6.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	2.8				0.0	7.2	7.9	5.5	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	37.1				0.0	23.3	25.3	29.1	0.3	0.0
LnGrp LOS	D	A	D				A	C	C	C	A	A
Approach Vol, veh/h		580						1355			2790	
Approach Delay, s/veh		39.4						24.0			8.3	
Approach LOS		D						C			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.9	43.3		19.9		70.1
Change Period (Y+Rc), s	5.0	6.2		5.8		6.2
Max Green Setting (Gmax), s	25.0	27.8		20.2		57.8
Max Q Clear Time (g_c+I1), s	20.6	20.8		12.8		2.0
Green Ext Time (p_c), s	1.3	3.3		1.3		14.5

Intersection Summary		
HCM 6th Ctrl Delay		16.6
HCM 6th LOS		B

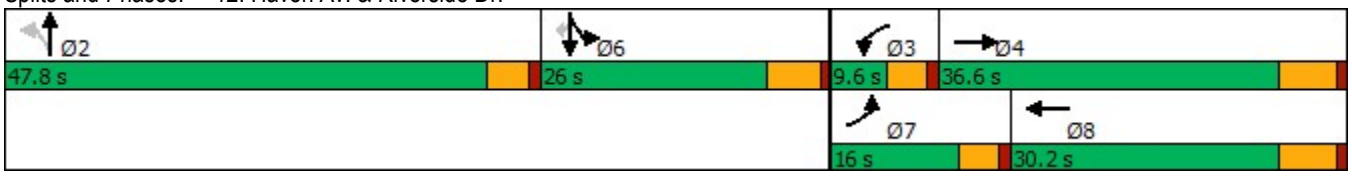
Notes

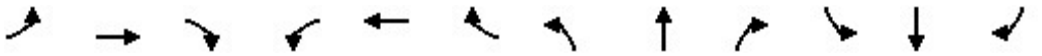
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	462	683	173	535	65	642	274	756	571
Future Volume (vph)	462	683	173	535	65	642	274	756	571
Turn Type	Prot	NA	Prot	NA	Perm	NA	Split	NA	Perm
Protected Phases	7	4	3	8		2	6	6	
Permitted Phases					2				6
Detector Phase	7	4	3	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	23.7	23.7	24.8	24.8	24.8
Total Split (s)	16.0	36.6	9.6	30.2	47.8	47.8	26.0	26.0	26.0
Total Split (%)	13.3%	30.5%	8.0%	25.2%	39.8%	39.8%	21.7%	21.7%	21.7%
Yellow Time (s)	3.6	5.2	3.6	5.2	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2		4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	11.4	30.4	5.0	24.0		43.1	20.2	20.2	20.2
Actuated g/C Ratio	0.10	0.25	0.04	0.20		0.36	0.17	0.17	0.17
v/c Ratio	3.21	1.86	2.77	1.07		10.56	1.07	2.65	1.20
Control Delay	1028.3	424.9	858.7	99.3		4329.6	122.9	774.7	129.1
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	1028.3	424.9	858.7	99.3		4329.6	122.9	774.7	129.1
LOS	F	F	F	F		F	F	F	F
Approach Delay		648.0		252.3		4329.6		433.0	
Approach LOS		F		F		F		F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 10.56	
Intersection Signal Delay: 1199.6	Intersection LOS: F
Intersection Capacity Utilization 165.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	462	683	105	173	535	150	65	642	164	274	756	571
Future Volume (veh/h)	462	683	105	173	535	150	65	642	164	274	756	571
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	481	711	108	180	557	136	68	669	165	285	788	369
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	379	58	66	534	130	46	455	112	268	298	252
Arrive On Green	0.09	0.25	0.25	0.04	0.20	0.20	0.36	0.36	0.36	0.17	0.17	0.17
Sat Flow, veh/h	1594	1495	227	1594	2671	650	129	1268	313	1594	1772	1496
Grp Volume(v), veh/h	481	0	819	180	350	343	902	0	0	285	788	369
Grp Sat Flow(s),veh/h/ln	1594	0	1722	1594	1683	1637	1709	0	0	1594	1772	1496
Q Serve(g_s), s	11.4	0.0	30.4	5.0	24.0	24.0	43.1	0.0	0.0	20.2	20.2	20.2
Cycle Q Clear(g_c), s	11.4	0.0	30.4	5.0	24.0	24.0	43.1	0.0	0.0	20.2	20.2	20.2
Prop In Lane	1.00		0.13	1.00		0.40	0.08		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	151	0	436	66	337	327	614	0	0	268	298	252
V/C Ratio(X)	3.18	0.00	1.88	2.71	1.04	1.05	1.47	0.00	0.00	1.06	2.64	1.47
Avail Cap(c_a), veh/h	151	0	436	66	337	327	614	0	0	268	298	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	44.8	57.5	48.0	48.0	38.5	0.0	0.0	49.9	49.9	49.9
Incr Delay (d2), s/veh	996.6	0.0	403.4	810.5	59.9	62.5	220.0	0.0	0.0	72.4	748.4	229.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	46.3	0.0	61.2	16.9	15.2	15.1	55.2	0.0	0.0	13.2	70.7	23.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1050.9	0.0	448.2	868.0	107.9	110.5	258.5	0.0	0.0	122.3	798.3	279.7
LnGrp LOS	F	A	F	F	F	F	F	A	A	F	F	F
Approach Vol, veh/h		1300			873			902			1442	
Approach Delay, s/veh		671.2			265.7			258.5			532.0	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		47.8	9.6	36.6		26.0	16.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 43	5.0	30.4		20.2	11.4	24.0				
Max Q Clear Time (g_c+I1), s		45.1	7.0	32.4		22.2	13.4	26.0				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				

Intersection Summary		
HCM 6th Ctrl Delay		466.0
HCM 6th LOS		F

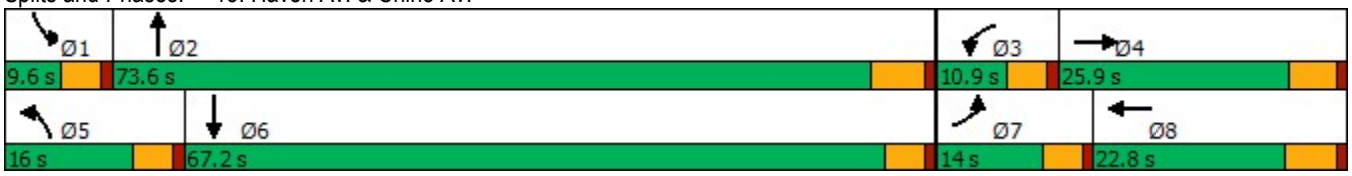
Notes

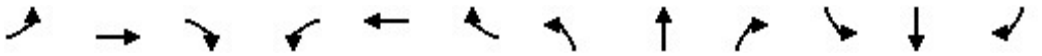
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	142	57	28	67	184	704	735	
Future Volume (vph)	142	57	28	67	184	704	735	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	14.0	25.9	10.9	22.8	16.0	73.6	67.2	9.6
Total Split (%)	11.7%	21.6%	9.1%	19.0%	13.3%	61.3%	56.0%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	9.8	16.5	5.8	11.6	11.5	77.7	62.8	
Actuated g/C Ratio	0.09	0.15	0.05	0.10	0.10	0.69	0.56	
v/c Ratio	1.08	0.51	0.33	0.38	1.20	0.63	1.20	
Control Delay	149.6	35.9	62.9	53.7	178.9	13.3	126.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	149.6	35.9	62.9	53.7	178.9	13.3	126.7	
LOS	F	D	E	D	F	B	F	
Approach Delay		92.6		56.4		46.7	126.7	
Approach LOS		F		E		D	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 89.1	Intersection LOS: F
Intersection Capacity Utilization 108.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	57	84	28	67	0	184	704	25	0	735	356
Future Volume (veh/h)	142	57	84	28	67	0	184	704	25	0	735	356
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	149	62	46	30	73	0	194	741	14	0	774	191
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	131	143	106	48	164	0	159	1193	23	2	752	186
Arrive On Green	0.08	0.14	0.14	0.03	0.09	0.00	0.10	0.69	0.69	0.00	0.55	0.55
Sat Flow, veh/h	1594	997	740	1781	1870	0	1594	1733	33	1781	1372	339
Grp Volume(v), veh/h	149	0	108	30	73	0	194	0	755	0	0	965
Grp Sat Flow(s),veh/h/ln	1594	0	1737	1781	1870	0	1594	0	1766	1781	0	1711
Q Serve(g_s), s	9.4	0.0	6.5	1.9	4.2	0.0	11.4	0.0	26.6	0.0	0.0	62.5
Cycle Q Clear(g_c), s	9.4	0.0	6.5	1.9	4.2	0.0	11.4	0.0	26.6	0.0	0.0	62.5
Prop In Lane	1.00		0.43	1.00		0.00	1.00		0.02	1.00		0.20
Lane Grp Cap(c), veh/h	131	0	248	48	164	0	159	0	1215	2	0	937
V/C Ratio(X)	1.13	0.00	0.43	0.63	0.45	0.00	1.22	0.00	0.62	0.00	0.00	1.03
Avail Cap(c_a), veh/h	131	0	312	98	279	0	159	0	1215	78	0	937
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	52.3	0.0	44.7	54.9	49.4	0.0	51.3	0.0	9.7	0.0	0.0	25.8
Incr Delay (d2), s/veh	119.3	0.0	1.2	4.9	1.9	0.0	141.8	0.0	1.0	0.0	0.0	37.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	2.8	0.9	2.0	0.0	10.7	0.0	8.7	0.0	0.0	33.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	171.6	0.0	45.9	59.9	51.3	0.0	193.2	0.0	10.7	0.0	0.0	63.0
LnGrp LOS	F	A	D	E	D	A	F	A	B	A	A	F
Approach Vol, veh/h		257			103			949			965	
Approach Delay, s/veh		118.8			53.8			48.0			63.0	
Approach LOS		F			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	84.3	7.7	22.1	16.0	68.3	14.0	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	67.8	6.3	* 21	11.4	* 63	9.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	28.6	3.9	8.5	13.4	64.5	11.4	6.2
Green Ext Time (p_c), s	0.0	5.6	0.0	0.3	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	62.6
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	64	123	175	527	663
Future Volume (vph)	64	123	175	527	663
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	4		5	2	6
Permitted Phases		4			
Detector Phase	4	4	5	2	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	27.8	9.6	15.8	29.8
Total Split (s)	34.0	34.0	34.0	86.0	52.0
Total Split (%)	28.3%	28.3%	28.3%	71.7%	43.3%
Yellow Time (s)	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	5.8	5.8
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	12.3	12.3	14.1	43.0	24.0
Actuated g/C Ratio	0.18	0.18	0.21	0.64	0.36
v/c Ratio	0.26	0.37	0.61	0.55	0.68
Control Delay	29.9	8.9	34.9	9.0	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	8.9	34.9	9.0	22.1
LOS	C	A	C	A	C
Approach Delay	16.1			15.4	22.1
Approach LOS	B			B	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 67.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 18.5	Intersection LOS: B
Intersection Capacity Utilization 54.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 14: Haven Av. & Schaefer av.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	123	175	527	663	65
Future Volume (veh/h)	64	123	175	527	663	65
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	74	74	203	613	771	76
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	274	258	251	1064	1120	110
Arrive On Green	0.17	0.17	0.16	0.60	0.35	0.35
Sat Flow, veh/h	1594	1502	1594	1772	3175	313
Grp Volume(v), veh/h	74	74	203	613	430	417
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	1772	1716
Q Serve(g_s), s	2.1	2.2	6.3	10.8	10.6	10.6
Cycle Q Clear(g_c), s	2.1	2.2	6.3	10.8	10.6	10.6
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	274	258	251	1064	625	605
V/C Ratio(X)	0.27	0.29	0.81	0.58	0.69	0.69
Avail Cap(c_a), veh/h	882	831	919	2787	1606	1555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	18.4	20.7	6.2	14.1	14.1
Incr Delay (d2), s/veh	0.5	0.6	2.4	0.5	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.0	2.1	2.1	3.4	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.8	19.0	23.1	6.7	15.5	15.5
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	148			816	847	
Approach Delay, s/veh	18.9			10.8	15.5	
Approach LOS	B			B	B	

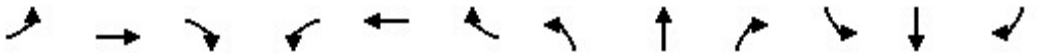
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		36.4		14.6	12.6	23.8
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		80.2		28.2	29.4	46.2
Max Q Clear Time (g_c+I1), s		12.8		4.2	8.3	12.6
Green Ext Time (p_c), s		4.2		0.4	0.2	5.4

Intersection Summary		
HCM 6th Ctrl Delay		13.7
HCM 6th LOS		B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	462	1778	95	270	1749	277	93	399	117	263	421	181
Future Volume (vph)	462	1778	95	270	1749	277	93	399	117	263	421	181
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	17.0	45.2	45.2	10.8	39.0	39.0	15.4	49.0	49.0	15.0	48.6	48.6
Total Split (%)	14.2%	37.7%	37.7%	9.0%	32.5%	32.5%	12.8%	40.8%	40.8%	12.5%	40.5%	40.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	12.5	39.2	39.2	6.2	32.7	32.7	9.7	32.2	32.2	10.5	33.0	33.0
Actuated g/C Ratio	0.11	0.36	0.36	0.06	0.30	0.30	0.09	0.29	0.29	0.10	0.30	0.30
v/c Ratio	2.73	1.00	0.17	1.70	0.88	0.45	0.71	0.82	0.22	1.85	0.84	0.33
Control Delay	813.4	56.2	5.3	369.8	43.5	6.2	77.2	48.9	2.8	439.1	50.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	813.4	56.2	5.3	369.8	43.5	6.2	77.2	48.9	2.8	439.1	50.8	5.4
LOS	F	E	A	F	D	A	E	D	A	F	D	A
Approach Delay		203.8			77.3			44.4			159.4	
Approach LOS		F			E			D			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.73	
Intersection Signal Delay: 134.1	Intersection LOS: F
Intersection Capacity Utilization 111.7%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	462	1778	95	270	1749	277	93	399	117	263	421	181
Future Volume (veh/h)	462	1778	95	270	1749	277	93	399	117	263	421	181
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	491	1891	88	287	1861	250	99	424	74	280	448	160
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1961	554	176	2199	466	121	480	406	157	519	440
Arrive On Green	0.12	0.37	0.37	0.06	0.31	0.31	0.08	0.27	0.27	0.10	0.29	0.29
Sat Flow, veh/h	1594	5316	1502	3000	7088	1502	1594	1772	1502	1594	1772	1502
Grp Volume(v), veh/h	491	1891	88	287	1861	250	99	424	74	280	448	160
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1500	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	12.4	36.8	4.2	6.2	26.0	14.6	6.5	24.3	4.0	10.4	25.3	8.9
Cycle Q Clear(g_c), s	12.4	36.8	4.2	6.2	26.0	14.6	6.5	24.3	4.0	10.4	25.3	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	1961	554	176	2199	466	121	480	406	157	519	440
V/C Ratio(X)	2.63	0.96	0.16	1.63	0.85	0.54	0.82	0.88	0.18	1.79	0.86	0.36
Avail Cap(c_a), veh/h	187	1961	554	176	2199	466	163	724	614	157	717	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	32.7	22.4	49.8	34.1	30.2	48.1	37.0	29.6	47.7	35.4	29.6
Incr Delay (d2), s/veh	747.0	13.5	0.6	308.3	4.2	4.4	15.7	8.6	0.2	377.9	7.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	43.5	16.9	1.5	9.7	10.9	5.4	3.0	11.1	1.4	20.4	11.4	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	793.7	46.1	23.0	358.1	38.3	34.5	63.8	45.6	29.8	425.6	43.3	30.1
LnGrp LOS	F	D	C	F	D	C	E	D	C	F	D	C
Approach Vol, veh/h		2470			2398			597			888	
Approach Delay, s/veh		193.9			76.2			46.6			161.5	
Approach LOS		F			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	34.4	10.8	45.5	12.6	36.8	17.0	39.3
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	6.2	* 39	10.8	42.8	12.4	32.5
Max Q Clear Time (g_c+I1), s	12.4	26.3	8.2	38.8	8.5	27.3	14.4	28.0
Green Ext Time (p_c), s	0.0	2.4	0.0	0.2	0.0	2.7	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	131.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

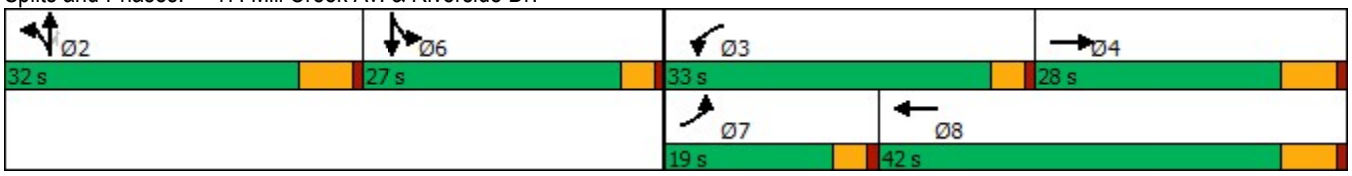
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	338	509	0	71
Demand Flow Rate, veh/h	344	519	0	73
Vehicles Circulating, veh/h	29	74	373	469
Vehicles Exiting, veh/h	513	299	0	124
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.0	6.8	0.0	5.2
Approach LOS	A	A	-	A

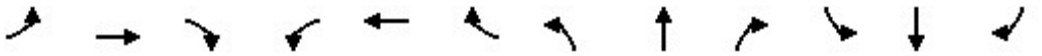
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	344	519	0	73
Cap Entry Lane, veh/h	1340	1280	943	855
Entry HV Adj Factor	0.982	0.980	1.000	0.973
Flow Entry, veh/h	338	509	0	71
Cap Entry, veh/h	1315	1254	943	832
V/C Ratio	0.257	0.406	0.000	0.085
Control Delay, s/veh	5.0	6.8	3.8	5.2
LOS	A	A	A	A
95th %tile Queue, veh	1	2	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	132	1340	294	1030	70	22	26	70	17
Future Volume (vph)	132	1340	294	1030	70	22	26	70	17
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA
Protected Phases	7	4	3	8	2	2		6	6
Permitted Phases							2		
Detector Phase	7	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0
Total Split (s)	19.0	28.0	33.0	42.0	32.0	32.0	32.0	27.0	27.0
Total Split (%)	15.8%	23.3%	27.5%	35.0%	26.7%	26.7%	26.7%	22.5%	22.5%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	12.2	26.7	22.0	36.6	12.6	12.6	12.6	12.4	12.4
Actuated g/C Ratio	0.13	0.28	0.23	0.39	0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.68	1.56	0.84	0.92	0.35	0.10	0.09	0.35	0.38
Control Delay	58.3	285.7	56.0	40.0	42.9	38.0	0.5	43.4	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	285.7	56.0	40.0	42.9	38.0	0.5	43.4	16.2
LOS	E	F	E	D	D	D	A	D	B
Approach Delay		266.9		43.2		32.5			27.5
Approach LOS		F		D		C			C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 93.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.56	
Intersection Signal Delay: 148.8	Intersection LOS: F
Intersection Capacity Utilization 85.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	1340	121	294	1030	137	70	22	26	70	17	81
Future Volume (veh/h)	132	1340	121	294	1030	137	70	22	26	70	17	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	140	1426	76	313	1096	98	74	23	-100	74	18	59
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	935	50	349	1259	112	198	221	187	212	47	155
Arrive On Green	0.11	0.28	0.28	0.22	0.39	0.39	0.12	0.12	0.00	0.13	0.13	0.13
Sat Flow, veh/h	1594	3334	177	1594	3206	286	1594	1772	1502	1590	356	1166
Grp Volume(v), veh/h	140	756	746	313	605	589	74	23	-100	74	0	77
Grp Sat Flow(s),veh/h/ln	1594	1772	1739	1594	1772	1720	1594	1772	1502	1590	0	1522
Q Serve(g_s), s	7.0	22.9	22.9	15.6	25.7	25.8	3.5	0.9	0.0	3.5	0.0	3.8
Cycle Q Clear(g_c), s	7.0	22.9	22.9	15.6	25.7	25.8	3.5	0.9	0.0	3.5	0.0	3.8
Prop In Lane	1.00		0.10	1.00		0.17	1.00		1.00	1.00		0.77
Lane Grp Cap(c), veh/h	170	497	487	349	696	676	198	221	187	212	0	203
V/C Ratio(X)	0.82	1.52	1.53	0.90	0.87	0.87	0.37	0.10	-0.53	0.35	0.00	0.38
Avail Cap(c_a), veh/h	293	497	487	566	782	759	512	569	482	448	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.7	29.4	29.4	30.9	22.8	22.9	32.8	31.7	0.0	32.1	0.0	32.3
Incr Delay (d2), s/veh	3.8	245.0	248.9	6.8	9.6	10.0	1.2	0.2	0.0	1.0	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	42.5	42.2	6.1	11.0	10.8	1.3	0.4	0.0	1.4	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	274.3	278.2	37.8	32.4	32.8	34.0	31.9	0.0	33.1	0.0	33.5
LnGrp LOS	D	F	F	D	C	C	C	C	A	C	A	C
Approach Vol, veh/h		1642			1507			-3			151	
Approach Delay, s/veh		256.1			33.7			0.0			33.3	
Approach LOS		F			C			A			C	

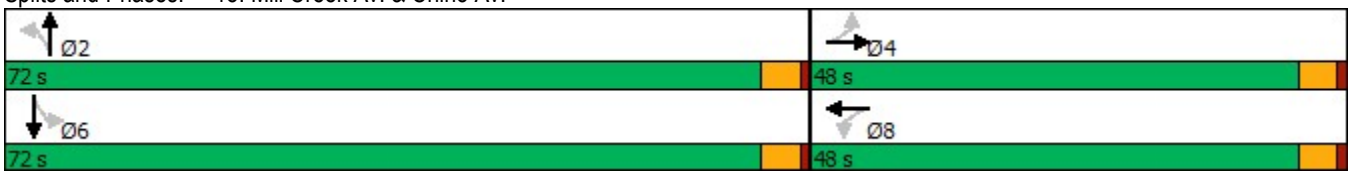
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.0	21.9	28.9		14.9	12.7	38.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		26.2	29.0	22.0		23.0	15.0	36.0				
Max Q Clear Time (g_c+I1), s		5.5	17.6	24.9		5.8	9.0	27.8				
Green Ext Time (p_c), s		0.2	0.3	0.0		0.5	0.1	4.3				

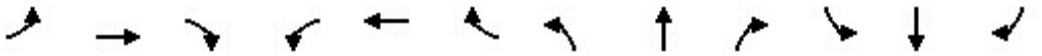
Intersection Summary												
HCM 6th Ctrl Delay			144.5									
HCM 6th LOS			F									

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	488	11	296	8	0	70	78
Future Volume (vph)	488	11	296	8	0	70	78
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4		8		2		6
Permitted Phases		8		2		6	
Detector Phase	4	8	8	2	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	48.0	48.0	48.0	72.0	72.0	72.0	72.0
Total Split (%)	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	30.1	30.1	30.1	31.3	31.3	31.3	31.3
Actuated g/C Ratio	0.42	0.42	0.42	0.44	0.44	0.44	0.44
v/c Ratio	0.77	0.26	0.41	0.04	0.01	0.45	0.72
Control Delay	26.3	20.6	17.4	14.1	0.0	17.8	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	20.6	17.4	14.1	0.0	17.8	21.3
LOS	C	C	B	B	A	B	C
Approach Delay	26.3		17.8		7.5		20.2
Approach LOS	C		B		A		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 71.1	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 21.6	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 18: Mill Creek Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	488	61	11	296	0	8	0	2	70	78	236
Future Volume (veh/h)	0	488	61	11	296	0	8	0	2	70	78	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	530	63	44	322	-40	9	0	-16	280	312	175
Peak Hour Factor	0.92	0.92	0.92	0.25	0.92	0.25	0.92	0.25	0.25	0.25	0.25	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	681	81	278	776	0	292	0	892	838	425	238
Arrive On Green	0.00	0.41	0.41	0.41	0.41	0.00	0.38	0.00	0.00	0.38	0.38	0.38
Sat Flow, veh/h	1097	1640	195	824	1870	0	909	1870	0	1781	1125	631
Grp Volume(v), veh/h	0	0	593	44	282	0	9	-16	-16	280	0	487
Grp Sat Flow(s),veh/h/ln	1097	0	1835	824	1870	0	909	1870	1585	1781	0	1757
Q Serve(g_s), s	0.0	0.0	12.1	2.1	4.5	0.0	0.4	0.0	0.0	5.0	0.0	10.4
Cycle Q Clear(g_c), s	0.0	0.0	12.1	14.2	4.5	0.0	10.7	0.0	0.0	5.0	0.0	10.4
Prop In Lane	1.00		0.11	1.00		0.00	1.00		0.00	1.00		0.36
Lane Grp Cap(c), veh/h	166	0	762	278	776	0	292	0	0	838	0	663
V/C Ratio(X)	0.00	0.00	0.78	0.16	0.36	0.00	0.03	0.00	0.00	0.33	0.00	0.73
Avail Cap(c_a), veh/h	812	0	1842	763	1877	0	1365	0	0	2941	0	2736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	11.0	17.1	8.7	0.0	16.2	0.0	0.0	10.0	0.0	11.6
Incr Delay (d2), s/veh	0.0	0.0	1.8	0.3	0.3	0.0	0.0	0.0	0.0	0.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.4	0.3	1.2	0.0	0.1	0.0	0.0	1.4	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	12.7	17.4	9.0	0.0	16.3	0.0	0.0	10.2	0.0	13.2
LnGrp LOS	A	A	B	B	A	A	B	A	A	B	A	B
Approach Vol, veh/h		593			326			-23			767	
Approach Delay, s/veh		12.7			10.1			0.0			12.1	
Approach LOS		B			B			A			B	

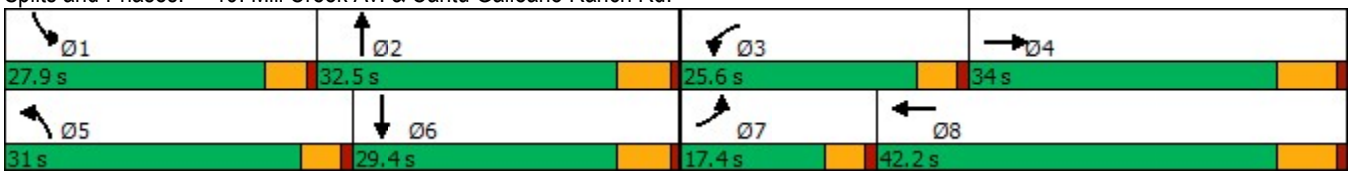
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.9		22.5		20.9		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		67.5		43.5		67.5		43.5				
Max Q Clear Time (g_c+I1), s		12.7		14.1		12.4		16.2				
Green Ext Time (p_c), s		0.0		3.8		4.0		1.8				

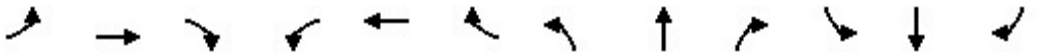
Intersection Summary												
HCM 6th Ctrl Delay			12.1									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	3	1785	59	1526	14	1	99	14
Future Volume (vph)	3	1785	59	1526	14	1	99	14
Turn Type	Prot	NA	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases								
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	23.5	9.6	23.5	9.6	27.8	9.6	27.8
Total Split (s)	17.4	34.0	25.6	42.2	31.0	32.5	27.9	29.4
Total Split (%)	14.5%	28.3%	21.3%	35.2%	25.8%	27.1%	23.3%	24.5%
Yellow Time (s)	3.6	5.5	3.6	5.5	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min
Act Effct Green (s)	5.2	30.8	7.4	38.9	5.6	12.1	9.3	21.6
Actuated g/C Ratio	0.07	0.40	0.10	0.51	0.07	0.16	0.12	0.28
v/c Ratio	0.03	0.96	0.37	0.64	0.12	0.14	0.50	0.11
Control Delay	40.3	39.9	42.2	18.0	40.6	12.0	42.8	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	39.9	42.2	18.0	40.6	12.0	42.8	10.6
LOS	D	D	D	B	D	B	D	B
Approach Delay		39.9		18.9		19.8		31.7
Approach LOS		D		B		B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 76.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 65.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 19: Mill Creek Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1785	27	59	1526	6	14	1	36	99	14	39
Future Volume (veh/h)	3	1785	27	59	1526	6	14	1	36	99	14	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1940	-188	64	1659	-91	15	1	-91	108	15	-12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	2135	0	96	2389	0	33	0	353	140	303	0
Arrive On Green	0.00	0.42	0.00	0.05	0.47	0.00	0.02	0.10	0.00	0.08	0.16	0.00
Sat Flow, veh/h	1781	5274	0	1781	5274	0	1781	1870	0	1781	1870	0
Grp Volume(v), veh/h	3	1752	0	64	1568	0	15	-90	-90	108	3	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1702	0	1781	1870	1585	1781	1870	0
Q Serve(g_s), s	0.1	18.8	0.0	2.2	14.6	0.0	0.5	0.0	0.0	3.7	0.1	0.0
Cycle Q Clear(g_c), s	0.1	18.8	0.0	2.2	14.6	0.0	0.5	0.0	0.0	3.7	0.1	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	7	2135	0	96	2389	0	33	0	0	140	303	0
V/C Ratio(X)	0.41	0.82	0.00	0.67	0.66	0.00	0.46	0.00	0.00	0.77	0.01	0.00
Avail Cap(c_a), veh/h	369	2272	0	605	2949	0	761	0	0	672	714	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.7	15.9	0.0	28.7	12.6	0.0	30.0	0.0	0.0	27.9	21.7	0.0
Incr Delay (d2), s/veh	13.5	2.4	0.0	2.9	0.4	0.0	3.7	0.0	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.8	0.0	0.9	3.9	0.0	0.2	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	18.3	0.0	31.6	13.0	0.0	33.7	0.0	0.0	31.2	21.8	0.0
LnGrp LOS	D	B	A	C	B	A	C	A	A	C	C	A
Approach Vol, veh/h		1755			1632			-165			111	
Approach Delay, s/veh		18.4			13.7			0.0			31.0	
Approach LOS		B			B			A			C	

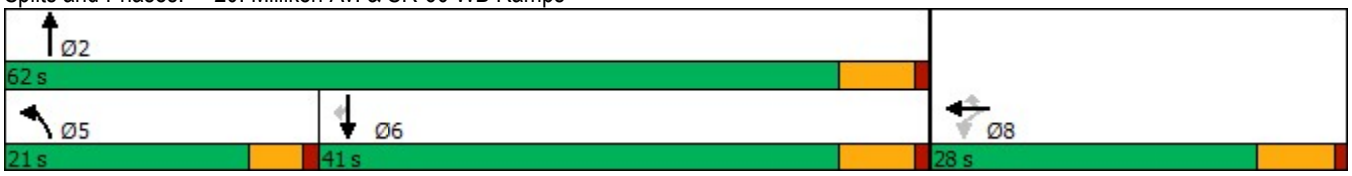
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	12.1	7.9	32.3	5.7	15.8	4.9	35.4
Change Period (Y+Rc), s	4.6	5.8	4.6	6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	23.3	26.7	21.0	27.5	26.4	23.6	12.8	35.7
Max Q Clear Time (g_c+I1), s	5.7	0.0	4.2	20.8	2.5	2.1	2.1	16.6
Green Ext Time (p_c), s	0.1	0.0	0.0	5.1	0.0	0.0	0.0	9.9

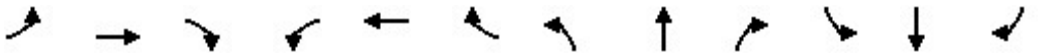
Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	548	383	1374	1559	629
Future Volume (vph)	5	548	383	1374	1559	629
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	8		5	2	6	
Permitted Phases		8				6
Detector Phase	8	8	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	16.2	16.2	9.6	16.2	16.2	16.2
Total Split (s)	28.0	28.0	21.0	62.0	41.0	41.0
Total Split (%)	31.1%	31.1%	23.3%	68.9%	45.6%	45.6%
Yellow Time (s)	5.2	5.2	3.6	5.2	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	4.6	6.2	6.2	6.2
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	21.8	21.8	16.4	55.8	34.8	34.8
Actuated g/C Ratio	0.24	0.24	0.18	0.62	0.39	0.39
v/c Ratio	0.66	1.25	1.24	0.62	1.13	0.68
Control Delay	39.2	158.9	165.2	12.0	95.0	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	158.9	165.2	12.0	95.0	7.3
LOS	D	F	F	B	F	A
Approach Delay	119.2			45.4	69.8	
Approach LOS	F			D	E	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 69.3	Intersection LOS: E
Intersection Capacity Utilization 107.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 20: Milliken Av. & SR-60 WB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	267	5	548	383	1374	0	0	1559	629
Future Volume (veh/h)	0	0	0	267	5	548	383	1374	0	0	1559	629
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				278	5	290	399	1431	0	0	1624	329
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				372	7	337	337	2411	0	0	1503	637
Arrive On Green				0.21	0.21	0.21	0.19	0.64	0.00	0.00	0.40	0.40
Sat Flow, veh/h				1751	31	1585	1781	3741	0	0	3741	1585
Grp Volume(v), veh/h				283	0	290	399	1431	0	0	1624	329
Grp Sat Flow(s),veh/h/ln				1783	0	1585	1781	1870	0	0	1870	1585
Q Serve(g_s), s				12.9	0.0	15.3	16.4	19.1	0.0	0.0	34.8	13.6
Cycle Q Clear(g_c), s				12.9	0.0	15.3	16.4	19.1	0.0	0.0	34.8	13.6
Prop In Lane				0.98		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				379	0	337	337	2411	0	0	1503	637
V/C Ratio(X)				0.75	0.00	0.86	1.18	0.59	0.00	0.00	1.08	0.52
Avail Cap(c_a), veh/h				449	0	399	337	2411	0	0	1503	637
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				31.9	0.0	32.9	35.1	8.9	0.0	0.0	25.9	19.5
Incr Delay (d2), s/veh				5.6	0.0	15.3	108.4	0.4	0.0	0.0	48.2	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.8	0.0	6.9	16.7	5.7	0.0	0.0	23.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				37.6	0.0	48.1	143.5	9.3	0.0	0.0	74.1	20.3
LnGrp LOS				D	A	D	F	A	A	A	F	C
Approach Vol, veh/h					573			1830			1953	
Approach Delay, s/veh					42.9			38.5			65.0	
Approach LOS					D			D			E	

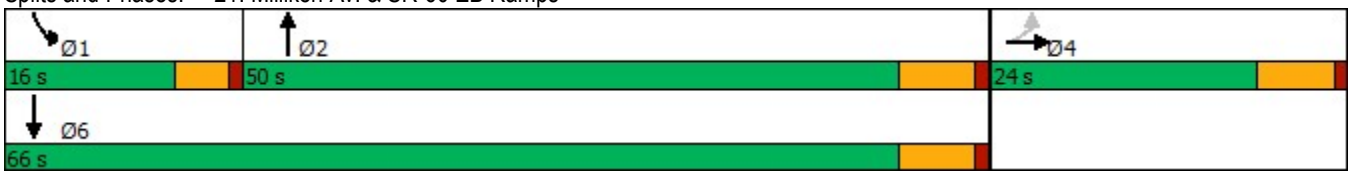
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		62.0			21.0	41.0		24.6				
Change Period (Y+Rc), s		6.2			4.6	6.2		6.2				
Max Green Setting (Gmax), s		55.8			16.4	34.8		21.8				
Max Q Clear Time (g_c+I1), s		21.1			18.4	36.8		17.3				
Green Ext Time (p_c), s		12.5			0.0	0.0		1.1				

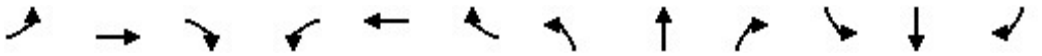
Intersection Summary												
HCM 6th Ctrl Delay			51.0									
HCM 6th LOS			D									

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	319	5	1722	270	1698
Future Volume (vph)	319	5	1722	270	1698
Turn Type	Perm	NA	NA	Prot	NA
Protected Phases		4	2	1	6
Permitted Phases	4				
Detector Phase	4	4	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	16.2	16.2	23.2	9.6	16.2
Total Split (s)	24.0	24.0	50.0	16.0	66.0
Total Split (%)	26.7%	26.7%	55.6%	17.8%	73.3%
Yellow Time (s)	5.2	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2	6.2	4.6	6.2
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	17.8	17.8	43.8	11.4	59.8
Actuated g/C Ratio	0.20	0.20	0.49	0.13	0.66
v/c Ratio	0.85	1.21	1.21	1.25	0.71
Control Delay	58.9	149.8	123.4	181.1	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.4
Total Delay	58.9	149.8	123.4	181.1	12.2
LOS	E	F	F	F	B
Approach Delay		111.6	123.4		35.3
Approach LOS		F	F		D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 85.0	Intersection LOS: F
Intersection Capacity Utilization 107.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 21: Milliken Av. & SR-60 EB Ramps





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	5	359	0	0	0	0	1722	352	270	1698	0
Future Volume (veh/h)	319	5	359	0	0	0	0	1722	352	270	1698	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	264	100	192				0	1794	185	281	1769	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	344	111	212				0	1636	166	227	2500	0
Arrive On Green	0.29	0.29	0.29				0.00	0.73	0.73	0.19	1.00	0.00
Sat Flow, veh/h	1781	573	1100				0	3342	338	1781	3741	0
Grp Volume(v), veh/h	264	0	292				0	990	990	281	1769	0
Grp Sat Flow(s),veh/h/ln	1781	0	1672				0	1870	1809	1781	1870	0
Q Serve(g_s), s	12.1	0.0	15.0				0.0	43.8	43.8	11.4	0.0	0.0
Cycle Q Clear(g_c), s	12.1	0.0	15.0				0.0	43.8	43.8	11.4	0.0	0.0
Prop In Lane	1.00		0.66				0.00		0.19	1.00		0.00
Lane Grp Cap(c), veh/h	344	0	323				0	916	886	227	2500	0
V/C Ratio(X)	0.77	0.00	0.90				0.00	1.08	1.12	1.24	0.71	0.00
Avail Cap(c_a), veh/h	354	0	333				0	916	886	227	2500	0
HCM Platoon Ratio	1.50	1.50	1.50				1.00	1.50	1.50	1.50	1.50	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.0	0.0	31.0				0.0	11.9	11.9	36.2	0.0	0.0
Incr Delay (d2), s/veh	9.5	0.0	26.5				0.0	54.0	67.7	138.9	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	7.4				0.0	19.4	22.2	13.0	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	0.0	57.5				0.0	65.8	79.6	175.1	0.9	0.0
LnGrp LOS	D	A	E				A	F	F	F	A	A
Approach Vol, veh/h		556						1979			2050	
Approach Delay, s/veh		48.9						72.7			24.8	
Approach LOS		D						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	50.0		23.5		66.0
Change Period (Y+Rc), s	4.6	6.2		6.2		6.2
Max Green Setting (Gmax), s	11.4	43.8		17.8		59.8
Max Q Clear Time (g_c+I1), s	13.4	45.8		17.0		2.0
Green Ext Time (p_c), s	0.0	0.0		0.2		21.0

Intersection Summary		
HCM 6th Ctrl Delay		48.4
HCM 6th LOS		D

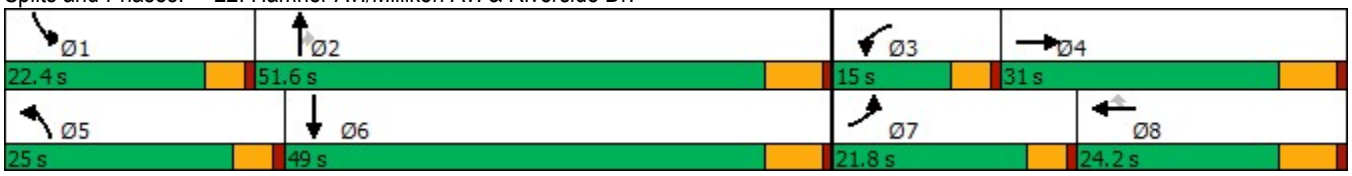
Notes

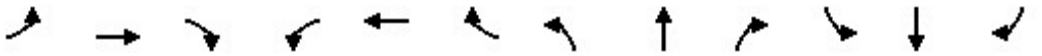
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	328	161	109	191	250	482	1443	59	257	1418
Future Volume (vph)	328	161	109	191	250	482	1443	59	257	1418
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2
Total Split (s)	21.8	31.0	15.0	24.2	24.2	25.0	51.6	51.6	22.4	49.0
Total Split (%)	18.2%	25.8%	12.5%	20.2%	20.2%	20.8%	43.0%	43.0%	18.7%	40.8%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	17.2	24.8	10.1	17.7	17.7	20.4	45.4	45.4	17.8	42.8
Actuated g/C Ratio	0.14	0.21	0.08	0.15	0.15	0.17	0.38	0.38	0.15	0.36
v/c Ratio	1.52	1.29	0.86	0.77	0.59	1.88	1.20	0.10	1.15	1.72
Control Delay	292.0	183.4	102.1	69.3	11.4	439.0	130.0	0.3	152.4	354.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	292.0	183.4	102.1	69.3	11.4	439.0	130.0	0.3	152.4	354.7
LOS	F	F	F	E	B	F	F	A	F	F
Approach Delay		228.4		49.5			201.1			330.8
Approach LOS		F		D			F			F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.7	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.88	
Intersection Signal Delay: 241.2	Intersection LOS: F
Intersection Capacity Utilization 142.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	161	303	109	191	250	482	1443	59	257	1418	504
Future Volume (veh/h)	328	161	303	109	191	250	482	1443	59	257	1418	504
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	345	169	278	115	201	225	507	1519	57	271	1493	517
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	124	204	137	266	225	271	1274	567	236	887	289
Arrive On Green	0.14	0.21	0.21	0.09	0.15	0.15	0.17	0.38	0.38	0.15	0.36	0.36
Sat Flow, veh/h	1594	597	982	1594	1772	1502	1594	3367	1500	1594	2487	809
Grp Volume(v), veh/h	345	0	447	115	201	225	507	1519	57	271	979	1031
Grp Sat Flow(s),veh/h/ln	1594	0	1578	1594	1772	1502	1594	1683	1500	1594	1683	1613
Q Serve(g_s), s	17.2	0.0	24.9	8.5	13.1	18.0	20.4	45.4	2.9	17.8	42.8	42.8
Cycle Q Clear(g_c), s	17.2	0.0	24.9	8.5	13.1	18.0	20.4	45.4	2.9	17.8	42.8	42.8
Prop In Lane	1.00		0.62	1.00		1.00	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	228	0	327	137	266	225	271	1274	567	236	600	575
V/C Ratio(X)	1.51	0.00	1.37	0.84	0.76	1.00	1.87	1.19	0.10	1.15	1.63	1.79
Avail Cap(c_a), veh/h	228	0	327	138	266	225	271	1274	567	236	600	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	0.0	47.6	54.0	48.9	51.0	49.8	37.3	24.1	51.1	38.6	38.6
Incr Delay (d2), s/veh	250.9	0.0	182.8	32.9	11.7	59.6	405.8	94.7	0.1	103.7	291.5	363.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.5	0.0	26.0	4.6	6.4	10.2	38.3	34.1	1.0	13.6	65.1	73.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	302.3	0.0	230.3	86.9	60.6	110.6	455.6	132.0	24.2	154.8	330.1	401.7
LnGrp LOS	F	A	F	F	E	F	F	F	C	F	F	F
Approach Vol, veh/h		792			541			2083			2281	
Approach Delay, s/veh		261.7			87.0			207.8			341.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	51.6	14.9	31.1	25.0	49.0	21.8	24.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	17.8	45.4	10.4	24.8	20.4	42.8	17.2	18.0
Max Q Clear Time (g_c+I1), s	19.8	47.4	10.5	26.9	22.4	44.8	19.2	20.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	257.4
HCM 6th LOS	F

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	1905	1855	10
Future Vol, veh/h	1	0	0	1905	1855	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	2093	2038	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3091	2044	2049	0	-	0
Stage 1	2044	-	-	-	-	-
Stage 2	1047	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	11	70	272	-	-	-
Stage 1	108	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	11	70	272	-	-	-
Mov Cap-2 Maneuver	95	-	-	-	-	-
Stage 1	108	-	-	-	-	-
Stage 2	300	-	-	-	-	-

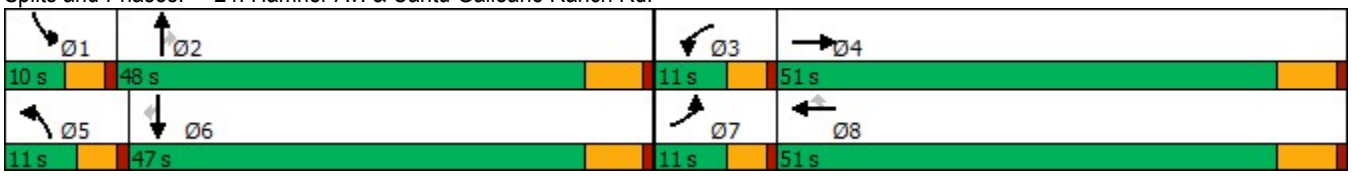
Approach	EB	NB	SB
HCM Control Delay, s	43.3	0	0
HCM LOS	E		

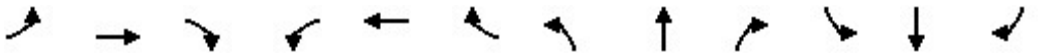
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	272	-	95	-	-
HCM Lane V/C Ratio	-	-	0.012	-	-
HCM Control Delay (s)	0	-	43.3	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	831	1593	451	1637	352	362	466	356	611	826	774
Future Volume (vph)	831	1593	451	1637	352	362	466	356	611	826	774
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	11.0	51.0	11.0	51.0	51.0	11.0	48.0	48.0	10.0	47.0	47.0
Total Split (%)	9.2%	42.5%	9.2%	42.5%	42.5%	9.2%	40.0%	40.0%	8.3%	39.2%	39.2%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	44.5	6.4	44.5	44.5	6.4	41.8	41.8	5.4	40.8	40.8
Actuated g/C Ratio	0.05	0.37	0.05	0.37	0.37	0.05	0.35	0.35	0.04	0.34	0.34
v/c Ratio	4.73	0.89	2.57	1.30	0.51	2.06	0.27	0.59	4.13	0.71	1.30
Control Delay	1704.4	40.3	744.4	173.5	14.2	523.8	28.7	24.9	1438.1	38.6	175.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1704.4	40.3	744.4	173.5	14.2	523.8	28.7	24.9	1438.1	38.6	175.9
LOS	F	D	F	F	B	F	C	C	F	D	F
Approach Delay		528.5		256.0			178.9			473.3	
Approach LOS		F		F			F			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 4.73	
Intersection Signal Delay: 390.0	Intersection LOS: F
Intersection Capacity Utilization 120.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	831	1593	410	451	1637	352	362	466	356	611	826	774
Future Volume (veh/h)	831	1593	410	451	1637	352	362	466	356	611	826	774
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	866	1659	219	470	1705	263	377	485	189	636	860	624
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	2148	284	184	1318	588	184	1779	552	156	1208	539
Arrive On Green	0.05	0.37	0.37	0.05	0.37	0.37	0.05	0.35	0.35	0.05	0.34	0.34
Sat Flow, veh/h	3456	5794	765	3456	3554	1585	3456	5106	1585	3456	3554	1585
Grp Volume(v), veh/h	866	1382	496	470	1705	263	377	485	189	636	860	624
Grp Sat Flow(s),veh/h/ln	1728	1609	1733	1728	1777	1585	1728	1702	1585	1728	1777	1585
Q Serve(g_s), s	6.4	30.3	30.3	6.4	44.5	15.0	6.4	8.2	10.6	5.4	25.3	40.8
Cycle Q Clear(g_c), s	6.4	30.3	30.3	6.4	44.5	15.0	6.4	8.2	10.6	5.4	25.3	40.8
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	1789	643	184	1318	588	184	1779	552	156	1208	539
V/C Ratio(X)	4.70	0.77	0.77	2.55	1.29	0.45	2.05	0.27	0.34	4.09	0.71	1.16
Avail Cap(c_a), veh/h	184	1789	643	184	1318	588	184	1779	552	156	1208	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	33.3	33.3	56.8	37.8	28.5	56.8	28.2	28.9	57.3	34.5	39.6
Incr Delay (d2), s/veh	1676.7	2.1	5.8	713.3	138.0	0.5	488.9	0.1	0.4	1405.6	2.0	90.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	45.6	11.3	12.8	20.9	43.0	5.4	15.2	3.2	3.9	32.6	10.7	28.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1733.5	35.4	39.1	770.1	175.7	29.0	545.7	28.2	29.3	1462.9	36.5	129.9
LnGrp LOS	F	D	D	F	F	C	F	C	C	F	D	F
Approach Vol, veh/h		2744			2438			1051			2120	
Approach Delay, s/veh		572.0			274.5			214.0			491.9	
Approach LOS		F			F			F			F	

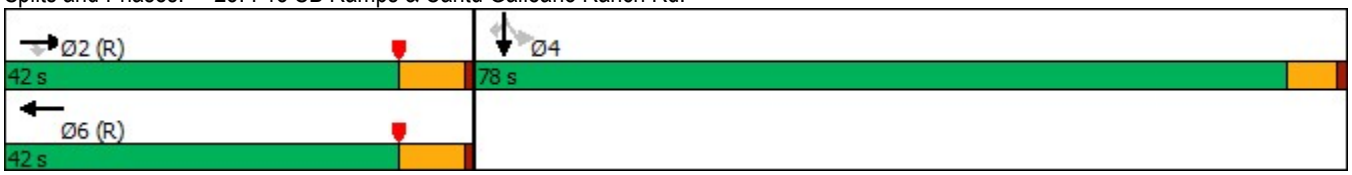
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	48.0	11.0	51.0	11.0	47.0	11.0	51.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	5.4	41.8	6.4	44.5	6.4	40.8	6.4	44.5
Max Q Clear Time (g_c+I1), s	7.4	12.6	8.4	32.3	8.4	42.8	8.4	46.5
Green Ext Time (p_c), s	0.0	3.7	0.0	8.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	419.8
HCM 6th LOS	F

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1901	400	1236	504	352	1	1572
Future Volume (vph)	1901	400	1236	504	352	1	1572
Turn Type	NA	Perm	NA	Free	Perm	NA	Perm
Protected Phases	2		6			4	
Permitted Phases		2		Free	4		4
Detector Phase	2	2	6		4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5		22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0		78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%		65.0%	65.0%	65.0%
Yellow Time (s)	5.8	5.8	5.8		4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8	6.8		5.5	5.5	5.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Min	C-Min	C-Min		Min	Min	Min
Act Effct Green (s)	35.2	35.2	35.2	120.0	72.5	72.5	72.5
Actuated g/C Ratio	0.29	0.29	0.29	1.00	0.60	0.60	0.60
v/c Ratio	1.39	0.67	1.29	0.20	0.34	1.00	0.95
Control Delay	211.9	19.3	176.5	0.1	13.0	55.0	41.3
Queue Delay	0.0	0.0	0.0	0.0	0.2	35.5	0.0
Total Delay	211.9	19.3	176.5	0.1	13.2	90.4	41.3
LOS	F	B	F	A	B	F	D
Approach Delay	178.4		125.4			57.2	
Approach LOS	F		F			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 113.2 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.39	
Intersection Signal Delay: 123.8	Intersection LOS: F
Intersection Capacity Utilization 109.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 25: I-15 SB Ramps & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1901	400	0	1236	504	0	0	0	352	1	1572
Future Volume (veh/h)	0	1901	400	0	1236	504	0	0	0	352	1	1572
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870				1870	1870	1870
Adj Flow Rate, veh/h	0	2066	0	0	1343	0				256	0	1194
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2				2	2	2
Cap, veh/h	0	2421		0	1685					754	0	1342
Arrive On Green	0.00	0.47	0.00	0.00	0.95	0.00				0.42	0.00	0.42
Sat Flow, veh/h	0	5274	1585	0	3647	2790				1781	0	3170
Grp Volume(v), veh/h	0	2066	0	0	1343	0				256	0	1194
Grp Sat Flow(s),veh/h/ln	0	1702	1585	0	1777	1395				1781	0	1585
Q Serve(g_s), s	0.0	42.9	0.0	0.0	9.6	0.0				11.6	0.0	41.8
Cycle Q Clear(g_c), s	0.0	42.9	0.0	0.0	9.6	0.0				11.6	0.0	41.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2421		0	1685					754	0	1342
V/C Ratio(X)	0.00	0.85		0.00	0.80					0.34	0.00	0.89
Avail Cap(c_a), veh/h	0	2421		0	1685					1076	0	1915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.00	0.00	0.39	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.9	0.0	0.0	1.9	0.0				23.3	0.0	32.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	1.6	0.0				0.3	0.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.7	0.0	0.0	1.3	0.0				4.7	0.0	15.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.3	0.0	0.0	3.5	0.0				23.6	0.0	36.1
LnGrp LOS	A	C		A	A					C	A	D
Approach Vol, veh/h		2066	A		1343	A					1450	
Approach Delay, s/veh		28.3			3.5						33.9	
Approach LOS		C			A						C	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	63.7	56.3	63.7
Change Period (Y+Rc), s	6.8	5.5	6.8
Max Green Setting (Gmax), s	35.2	72.5	35.2
Max Q Clear Time (g_c+I1), s	44.9	43.8	11.6
Green Ext Time (p_c), s	0.0	7.0	9.5

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

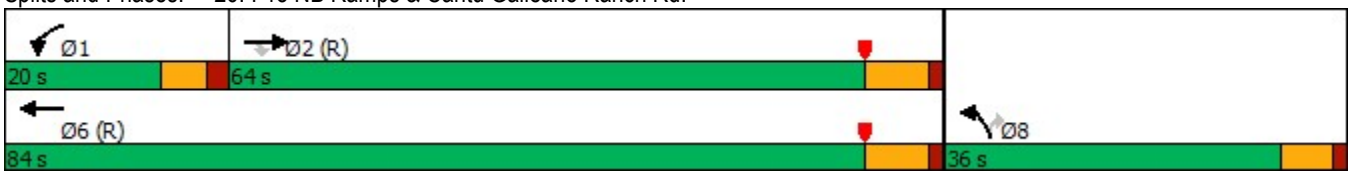
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	929	1424	265	692	998	186
Future Volume (vph)	929	1424	265	692	998	186
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	61.3	61.3	11.0	22.5	22.5	22.5
Total Split (s)	64.0	64.0	20.0	84.0	36.0	36.0
Total Split (%)	53.3%	53.3%	16.7%	70.0%	30.0%	30.0%
Yellow Time (s)	5.8	5.8	4.0	5.8	4.5	4.5
All-Red Time (s)	1.5	1.5	2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	7.3	6.0	7.3	6.0	6.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min
Act Effct Green (s)	57.3	57.3	13.4	76.7	30.0	30.0
Actuated g/C Ratio	0.48	0.48	0.11	0.64	0.25	0.25
v/c Ratio	0.42	1.35	0.75	0.23	1.29	0.39
Control Delay	12.2	185.5	64.6	9.4	175.2	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	185.6	64.6	9.4	175.2	12.1
LOS	B	F	E	A	F	B
Approach Delay	117.1			24.7	152.1	
Approach LOS	F			C	F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 106.7	Intersection LOS: F
Intersection Capacity Utilization 106.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 26: I-15 NB Ramps & Cantu Galleano Ranch Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	929	1424	265	692	998	186
Future Volume (veh/h)	929	1424	265	692	998	186
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1010	733	288	752	1085	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2497	775	346	3264	891	396
Arrive On Green	0.82	0.82	0.10	0.64	0.25	0.25
Sat Flow, veh/h	5274	1585	3456	5274	3563	1585
Grp Volume(v), veh/h	1010	733	288	752	1085	120
Grp Sat Flow(s),veh/h/ln	1702	1585	1728	1702	1781	1585
Q Serve(g_s), s	6.5	44.7	9.8	7.5	30.0	7.4
Cycle Q Clear(g_c), s	6.5	44.7	9.8	7.5	30.0	7.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2497	775	346	3264	891	396
V/C Ratio(X)	0.40	0.95	0.83	0.23	1.22	0.30
Avail Cap(c_a), veh/h	2497	775	403	3264	891	396
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.84	0.84	1.00	1.00
Uniform Delay (d), s/veh	6.2	9.7	53.0	9.2	45.0	36.5
Incr Delay (d2), s/veh	0.0	3.2	10.5	0.1	108.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.8	4.6	2.4	26.1	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.3	13.0	63.4	9.3	153.4	36.9
LnGrp LOS	A	B	E	A	F	D
Approach Vol, veh/h	1743			1040	1205	
Approach Delay, s/veh	9.1			24.3	141.8	
Approach LOS	A			C	F	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	66.0				84.0	36.0
Change Period (Y+Rc), s	6.0	7.3				7.3	6.0
Max Green Setting (Gmax), s	14.0	56.7				76.7	30.0
Max Q Clear Time (g_c+I1), s	11.8	46.7				9.5	32.0
Green Ext Time (p_c), s	0.2	6.1				5.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.2
HCM 6th LOS	D

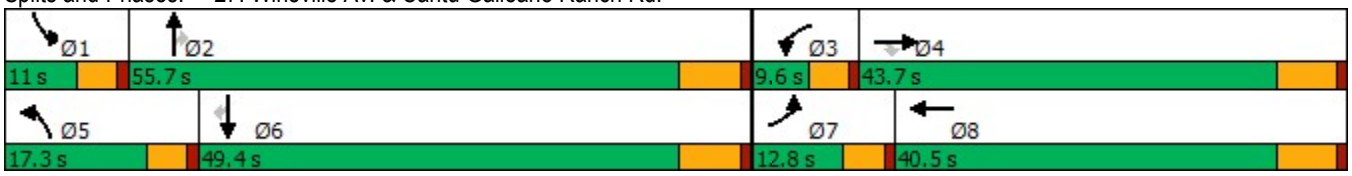
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	140	482	387	32	449	235	112	56	35	205	266
Future Volume (vph)	140	482	387	32	449	235	112	56	35	205	266
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			6
Detector Phase	7	4	4	3	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	40.5	40.5	9.6	40.5	9.6	48.5	48.5	9.6	48.5	48.5
Total Split (s)	12.8	43.7	43.7	9.6	40.5	17.3	55.7	55.7	11.0	49.4	49.4
Total Split (%)	10.7%	36.4%	36.4%	8.0%	33.8%	14.4%	46.4%	46.4%	9.2%	41.2%	41.2%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.7	25.0	25.0	5.4	15.5	10.1	26.3	26.3	6.1	17.2	17.2
Actuated g/C Ratio	0.10	0.34	0.34	0.07	0.21	0.14	0.35	0.35	0.08	0.23	0.23
v/c Ratio	0.43	0.24	0.52	0.14	0.50	0.55	0.10	0.10	0.26	0.52	0.55
Control Delay	40.8	20.6	5.5	42.5	27.9	38.9	19.0	0.4	45.0	29.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	20.6	5.5	42.5	27.9	38.9	19.0	0.4	45.0	29.9	12.7
LOS	D	C	A	D	C	D	B	A	D	C	B
Approach Delay		17.6			28.8		28.0			21.9	
Approach LOS		B			C		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 74.4	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 27: Wineville Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	482	387	32	449	35	235	112	56	35	205	266
Future Volume (veh/h)	140	482	387	32	449	35	235	112	56	35	205	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	524	283	35	488	28	255	122	35	38	223	224
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	1714	422	129	1108	63	375	957	427	71	375	318
Arrive On Green	0.08	0.27	0.27	0.04	0.22	0.22	0.11	0.27	0.27	0.04	0.20	0.20
Sat Flow, veh/h	3456	6434	1585	3456	4942	281	3456	3554	1585	1781	1870	1585
Grp Volume(v), veh/h	152	524	283	35	335	181	255	122	35	38	223	224
Grp Sat Flow(s),veh/h/ln	1728	1609	1585	1728	1702	1820	1728	1777	1585	1781	1870	1585
Q Serve(g_s), s	2.4	3.7	9.1	0.6	4.8	4.9	4.1	1.5	0.9	1.2	6.2	7.5
Cycle Q Clear(g_c), s	2.4	3.7	9.1	0.6	4.8	4.9	4.1	1.5	0.9	1.2	6.2	7.5
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	1714	422	129	763	408	375	957	427	71	375	318
V/C Ratio(X)	0.55	0.31	0.67	0.27	0.44	0.44	0.68	0.13	0.08	0.54	0.60	0.71
Avail Cap(c_a), veh/h	495	4179	1029	302	2021	1080	766	3053	1362	199	1401	1187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	16.8	18.8	26.8	19.1	19.1	24.6	15.8	15.6	27.0	20.8	21.3
Incr Delay (d2), s/veh	0.6	0.1	1.9	0.4	0.4	0.8	0.8	0.1	0.1	2.4	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.1	2.8	0.2	1.6	1.8	1.5	0.5	0.3	0.5	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	16.9	20.6	27.2	19.5	19.9	25.4	15.9	15.7	29.4	22.3	24.2
LnGrp LOS	C	B	C	C	B	B	C	B	B	C	C	C
Approach Vol, veh/h		959			551			412			485	
Approach Delay, s/veh		19.4			20.1			21.8			23.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	21.9	6.7	21.8	10.8	18.0	9.2	19.3
Change Period (Y+Rc), s	4.6	6.5	4.6	6.5	4.6	6.5	4.6	6.5
Max Green Setting (Gmax), s	6.4	49.2	5.0	37.2	12.7	42.9	8.2	34.0
Max Q Clear Time (g_c+I1), s	3.2	3.5	2.6	11.1	6.1	9.5	4.4	6.9
Green Ext Time (p_c), s	0.0	0.8	0.0	4.1	0.3	1.9	0.1	2.8

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

APPENDIX 7.3: HORIZON YEAR (2050) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	354	340	329	998	1366	573	198
v/c Ratio	0.89	0.83	0.76	0.76	0.42	0.46	0.42
Control Delay	59.5	44.4	35.4	26.7	3.5	32.2	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	44.4	35.4	26.7	3.5	32.2	6.5
Queue Length 50th (ft)	194	151	120	291	36	87	0
Queue Length 95th (ft)	#421	#363	#302	#475	32	86	43
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	398	410	431	1311	3457	2435	724
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.83	0.76	0.76	0.40	0.24	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	373	357	343	2028	754	197	927
v/c Ratio	0.80	0.72	0.68	0.69	0.67	0.66	0.31
Control Delay	43.0	27.2	25.4	21.4	4.8	58.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	27.2	25.4	21.4	4.8	58.6	1.9
Queue Length 50th (ft)	196	126	111	274	0	48	24
Queue Length 95th (ft)	305	235	210	320	67	m71	m16
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	526	545	548	2951	1125	309	3011
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.66	0.63	0.69	0.67	0.64	0.31

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	552	556	905	442	2256	1144	515
v/c Ratio	1.01	1.01	0.57	0.88	0.86	0.75	0.62
Control Delay	69.4	70.2	1.5	36.9	18.7	27.2	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	70.2	1.5	36.9	18.7	27.2	5.9
Queue Length 50th (ft)	~271	~275	0	118	269	174	0
Queue Length 95th (ft)	75	#487	0	m103	m239	222	67
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	546	548	1583	503	2617	1533	830
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	1.01	0.57	0.88	0.86	0.75	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	458	464	124	2355	414	1016
v/c Ratio	0.93	0.94	0.23	1.25	1.12	0.37
Control Delay	53.9	55.4	5.9	142.2	100.2	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	55.4	5.9	142.2	100.2	9.7
Queue Length 50th (ft)	215	218	2	~505	~124	100
Queue Length 95th (ft)	#397	#403	37	#602	m#161	m129
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	497	499	552	1880	371	2774
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.93	0.22	1.25	1.12	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	12	691	473	1659	885	324
v/c Ratio	0.02	1.14	1.03	0.90	1.20	0.55
Control Delay	19.8	109.5	84.2	28.0	135.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	109.5	84.2	28.0	135.2	7.7
Queue Length 50th (ft)	4	~428	~290	424	~324	0
Queue Length 95th (ft)	16	#645	#477	#564	#444	68
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	619	604	460	1840	739	586
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	1.14	1.03	0.90	1.20	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	491	644	1987	106	761
v/c Ratio	0.98	1.10	1.32	0.75	0.38
Control Delay	68.6	91.6	171.9	73.0	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	91.6	171.9	73.0	11.6
Queue Length 50th (ft)	290	~358	~776	60	117
Queue Length 95th (ft)	#503	#581	#917	#143	156
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	501	585	1511	145	2002
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	1.10	1.32	0.73	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1465	193	743	391	306	836	834
v/c Ratio	1.11	0.36	0.86	0.14	0.54	0.98	0.95
Control Delay	101.4	10.6	49.8	0.1	37.1	39.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.4	10.6	49.8	0.1	37.1	39.5	34.6
Queue Length 50th (ft)	~474	19	208	0	205	319	287
Queue Length 95th (ft)	#571	80	317	m0	307	#659	#612
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1322	529	920	2787	567	857	876
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.36	0.81	0.14	0.54	0.98	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	607	1068	275	551	700	324
v/c Ratio	0.24	0.90	0.77	0.16	0.86	0.56
Control Delay	22.5	32.5	67.7	8.3	52.8	7.9
Queue Delay	0.0	46.9	0.0	0.0	0.0	0.0
Total Delay	22.5	79.4	67.7	8.3	52.8	7.9
Queue Length 50th (ft)	68	455	107	58	247	0
Queue Length 95th (ft)	m57	m411	#174	75	319	82
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2569	1189	360	3343	871	603
Starvation Cap Reductn	0	256	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	1.14	0.76	0.16	0.80	0.54

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	268	260	195	664	730	1994	398
v/c Ratio	0.83	0.84	0.44	0.93	0.21	0.75	0.49
Control Delay	58.0	58.5	8.1	50.3	0.4	24.8	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	58.5	8.1	50.3	0.4	24.8	8.4
Queue Length 50th (ft)	153	152	0	206	2	279	44
Queue Length 95th (ft)	#282	#290	57	#301	2	326	120
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	339	327	459	724	3456	2665	810
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.80	0.42	0.92	0.21	0.75	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	123	300	297	1244	675	669	1659
v/c Ratio	0.37	0.94	0.81	0.47	0.71	0.90	0.49
Control Delay	34.7	69.6	43.8	20.3	9.7	56.5	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	69.6	43.8	20.3	9.7	56.5	2.0
Queue Length 50th (ft)	64	162	124	149	55	181	21
Queue Length 95th (ft)	117	#336	#264	181	189	m#286	33
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	339	324	369	2634	951	762	3416
Starvation Cap Reductn	0	0	0	0	0	0	253
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.93	0.80	0.47	0.71	0.88	0.52

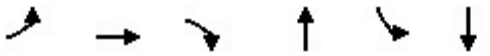
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	208	205	710	271	1265	2278	879
v/c Ratio	0.75	0.73	0.45	0.76	0.36	0.83	0.76
Control Delay	52.2	51.0	0.9	39.1	8.6	21.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	51.0	0.9	39.1	8.6	21.0	9.0
Queue Length 50th (ft)	117	115	0	85	142	390	63
Queue Length 95th (ft)	#195	191	0	m97	m155	465	241
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	321	322	1583	360	3563	2752	1151
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.64	0.45	0.75	0.36	0.83	0.76

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	220	223	430	1566	770	2028
v/c Ratio	0.58	0.59	1.00	0.95	0.86	0.62
Control Delay	38.3	38.5	71.1	43.9	51.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	38.3	38.5	71.1	43.9	51.0	6.7
Queue Length 50th (ft)	117	120	196	~317	221	112
Queue Length 95th (ft)	196	198	#392	#431	m274	163
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	377	378	432	1640	953	3265
Starvation Cap Reductn	0	0	0	0	0	220
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.59	1.00	0.95	0.81	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	274	571	456	1472	1718	655
v/c Ratio	0.78	1.47	1.04	0.63	1.33	0.73
Control Delay	51.3	249.9	87.8	10.2	182.5	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	249.9	87.8	10.2	182.5	11.3
Queue Length 50th (ft)	149	~407	~282	223	~675	60
Queue Length 95th (ft)	#269	#611	#466	284	#811	200
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	351	389	440	2351	1289	895
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.47	1.04	0.63	1.33	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	299	454	2242	281	1853
v/c Ratio	0.68	1.11	1.81	0.83	0.88
Control Delay	39.2	110.8	391.8	54.7	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.6
Total Delay	39.2	110.8	391.8	54.7	21.4
Queue Length 50th (ft)	163	~313	~1035	151	415
Queue Length 95th (ft)	#263	#512	#1183	#262	533
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	437	408	1237	391	2213
Starvation Cap Reductn	0	0	0	0	104
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	1.11	1.81	0.72	0.88

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	2140	433	1305	548	345	908	905
v/c Ratio	1.44	0.67	1.26	0.20	0.34	1.04	0.98
Control Delay	233.0	20.2	161.7	0.1	13.0	65.3	48.7
Queue Delay	0.0	0.0	0.0	0.0	0.2	24.9	0.0
Total Delay	233.0	20.2	161.7	0.1	13.2	90.2	48.7
Queue Length 50th (ft)	~823	117	~681	0	131	~832	660
Queue Length 95th (ft)	#918	237	m#633	m0	192	#1108	#1004
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1491	646	1038	2787	1015	875	922
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	11	0	0	0	216	185	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.45	0.67	1.26	0.20	0.43	1.32	0.98

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1016	1605	288	774	1046	182
v/c Ratio	0.42	1.40	0.75	0.24	1.22	0.38
Control Delay	12.1	207.5	64.6	9.4	147.1	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	207.5	64.6	9.4	147.1	11.1
Queue Length 50th (ft)	76	~685	112	86	~513	18
Queue Length 95th (ft)	m59	m#707	160	107	#646	86
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2428	1150	400	3250	860	475
Starvation Cap Reductn	0	6	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.40	0.72	0.24	1.22	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX 7.4: HORIZON YEAR (2050) WITH PROJECT CONDITIONS

OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	354	340	329	998	1333	576	198
v/c Ratio	0.89	0.82	0.77	0.76	0.41	0.46	0.42
Control Delay	60.0	43.1	35.5	26.9	3.5	32.1	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	43.1	35.5	26.9	3.5	32.1	6.5
Queue Length 50th (ft)	194	148	120	291	36	87	0
Queue Length 95th (ft)	#421	#358	#302	#474	32	86	43
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	397	414	430	1311	3457	2435	724
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.82	0.77	0.76	0.39	0.24	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	373	357	343	1992	754	197	929
v/c Ratio	0.80	0.72	0.69	0.68	0.67	0.66	0.31
Control Delay	43.0	27.3	25.5	21.1	4.8	58.8	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	27.3	25.5	21.1	4.8	58.8	1.9
Queue Length 50th (ft)	196	126	112	267	0	49	23
Queue Length 95th (ft)	305	235	210	312	67	m71	m17
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	526	544	547	2951	1125	309	3011
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.66	0.63	0.68	0.67	0.64	0.31

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

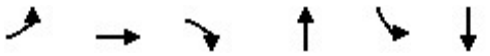
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	552	556	905	383	2289	1233	515
v/c Ratio	1.01	1.01	0.57	0.79	0.87	0.79	0.62
Control Delay	69.4	70.2	1.5	34.4	18.9	28.5	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.4	70.2	1.5	34.4	18.9	28.5	5.8
Queue Length 50th (ft)	~271	~275	0	102	274	192	0
Queue Length 95th (ft)	75	#487	0	m88	m246	244	67
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	546	548	1583	503	2617	1556	835
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	1.01	0.57	0.76	0.87	0.79	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	458	464	213	2329	414	1106
v/c Ratio	0.93	0.94	0.39	1.24	1.12	0.40
Control Delay	53.9	55.4	12.0	135.9	99.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	55.4	12.0	135.9	99.5	10.2
Queue Length 50th (ft)	215	218	32	~495	~124	109
Queue Length 95th (ft)	#397	#403	86	#592	m#154	m142
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	497	499	552	1881	371	2774
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.93	0.39	1.24	1.12	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	157	691	466	1620	934	324
v/c Ratio	0.26	1.14	1.01	0.88	1.26	0.55
Control Delay	22.8	109.5	80.4	26.3	161.8	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	109.5	80.4	26.3	161.8	7.7
Queue Length 50th (ft)	64	~428	~271	406	~355	0
Queue Length 95th (ft)	112	#645	#468	518	#476	68
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	608	604	460	1840	739	586
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	1.14	1.01	0.88	1.26	0.55

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	491	556	2019	106	957
v/c Ratio	0.98	1.04	1.34	0.75	0.48
Control Delay	68.6	75.4	182.2	73.0	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	75.4	182.2	73.0	12.7
Queue Length 50th (ft)	290	~309	~796	60	159
Queue Length 95th (ft)	#503	#522	#936	#143	207
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	501	536	1508	145	2002
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	1.04	1.34	0.73	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	1532	405	952	391	306	861	860
v/c Ratio	0.83	0.50	0.74	0.14	0.34	1.09	1.05
Control Delay	39.8	5.9	45.8	0.1	17.4	85.9	71.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	5.9	45.8	0.1	17.4	85.9	71.7
Queue Length 50th (ft)	389	14	380	0	137	~818	~756
Queue Length 95th (ft)	452	85	m427	m0	205	#1093	#1018
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1872	821	1303	2787	900	792	822
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.49	0.73	0.14	0.34	1.09	1.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	605	1149	275	585	822	377
v/c Ratio	0.25	0.99	0.76	0.18	0.95	0.59
Control Delay	11.8	47.0	66.8	9.0	64.9	8.1
Queue Delay	0.0	5.8	0.0	0.0	0.0	0.0
Total Delay	11.8	52.8	66.8	9.0	64.9	8.1
Queue Length 50th (ft)	41	538	108	62	317	3
Queue Length 95th (ft)	m76	m#775	#162	79	#444	96
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2460	1164	371	3250	861	639
Starvation Cap Reductn	0	28	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	1.01	0.74	0.18	0.95	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	268	260	195	664	699	1940	398
v/c Ratio	0.83	0.84	0.44	0.93	0.20	0.73	0.49
Control Delay	58.0	58.5	8.1	50.2	0.4	24.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	58.5	8.1	50.2	0.4	24.3	8.1
Queue Length 50th (ft)	153	152	0	205	2	268	41
Queue Length 95th (ft)	#282	#290	57	m#299	m2	314	116
Internal Link Dist (ft)		1312			387	822	
Turn Bay Length (ft)	360		360				125
Base Capacity (vph)	339	327	459	724	3456	2665	814
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.80	0.42	0.92	0.20	0.73	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	123	300	297	1214	675	669	1605
v/c Ratio	0.37	0.93	0.82	0.46	0.71	0.90	0.47
Control Delay	34.8	68.1	44.2	20.1	9.7	56.8	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	68.1	44.2	20.1	9.7	56.8	1.9
Queue Length 50th (ft)	64	160	124	144	55	180	20
Queue Length 95th (ft)	117	#331	#264	175	189	m#286	24
Internal Link Dist (ft)		1366		1177			387
Turn Bay Length (ft)	325		325		250		
Base Capacity (vph)	339	327	369	2641	952	762	3421
Starvation Cap Reductn	0	0	0	0	0	0	268
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.92	0.80	0.46	0.71	0.88	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	208	205	710	184	1275	2270	879
v/c Ratio	0.75	0.73	0.45	0.58	0.36	0.81	0.75
Control Delay	52.2	51.0	0.9	35.4	8.1	19.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	51.0	0.9	35.4	8.1	19.9	8.2
Queue Length 50th (ft)	117	115	0	58	128	380	55
Queue Length 95th (ft)	#195	191	0	m73	172	461	219
Internal Link Dist (ft)		1155			514	1331	
Turn Bay Length (ft)	240			150			
Base Capacity (vph)	321	322	1583	344	3563	2811	1172
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.64	0.45	0.53	0.36	0.81	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	220	223	268	1491	770	2020
v/c Ratio	0.70	0.71	0.71	0.82	0.85	0.58
Control Delay	45.9	46.3	31.7	31.3	52.1	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	45.9	46.3	31.7	31.3	52.1	5.8
Queue Length 50th (ft)	122	124	88	284	224	111
Queue Length 95th (ft)	196	198	169	#395	279	163
Internal Link Dist (ft)		944		581		514
Turn Bay Length (ft)	620		285		125	
Base Capacity (vph)	377	378	432	1813	960	3453
Starvation Cap Reductn	0	0	0	0	0	243
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.59	0.62	0.82	0.80	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	283	571	399	1431	1624	655
v/c Ratio	0.80	1.46	0.93	0.61	1.25	0.71
Control Delay	52.7	245.6	64.3	10.0	146.0	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	245.6	64.3	10.0	146.0	9.9
Queue Length 50th (ft)	155	~407	220	213	~615	48
Queue Length 95th (ft)	#283	#611	#389	271	#751	177
Internal Link Dist (ft)	1742			616	1566	
Turn Bay Length (ft)			75			
Base Capacity (vph)	354	392	444	2373	1301	917
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	1.46	0.90	0.60	1.25	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	299	412	2161	281	1769
v/c Ratio	0.68	1.00	1.75	0.83	0.84
Control Delay	39.0	77.7	365.1	54.6	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.3
Total Delay	39.0	77.7	365.1	54.6	19.0
Queue Length 50th (ft)	161	~243	~980	150	377
Queue Length 95th (ft)	#263	#447	#1131	#262	483
Internal Link Dist (ft)		1522	1450		616
Turn Bay Length (ft)				95	
Base Capacity (vph)	438	412	1234	392	2218
Starvation Cap Reductn	0	0	0	0	103
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.68	1.00	1.75	0.72	0.84

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	EBR	WBT	WBR	SBL	SBT	SBR
Lane Group Flow (vph)	2066	435	1343	548	345	876	872
v/c Ratio	1.39	0.67	1.29	0.20	0.34	1.00	0.95
Control Delay	211.9	19.3	176.5	0.1	13.0	55.0	41.3
Queue Delay	0.0	0.0	0.0	0.0	0.2	35.5	0.0
Total Delay	211.9	19.3	176.5	0.1	13.2	90.4	41.3
Queue Length 50th (ft)	~779	111	~714	0	131	700	601
Queue Length 95th (ft)	#875	231	m#625	m0	192	#1049	#945
Internal Link Dist (ft)	1972		847			2051	
Turn Bay Length (ft)				180			
Base Capacity (vph)	1491	653	1038	2787	1015	876	922
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	6	0	0	0	179	154	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.39	0.67	1.29	0.20	0.41	1.21	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1010	1548	288	752	1105	182
v/c Ratio	0.42	1.35	0.75	0.23	1.29	0.39
Control Delay	12.2	185.5	64.6	9.4	175.2	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	185.6	64.6	9.4	175.2	12.1
Queue Length 50th (ft)	78	~617	112	83	~564	24
Queue Length 95th (ft)	m62	m#694	160	103	#699	93
Internal Link Dist (ft)	847			2104	1664	
Turn Bay Length (ft)			255			
Base Capacity (vph)	2428	1150	400	3250	859	469
Starvation Cap Reductn	0	6	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.35	0.72	0.23	1.29	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

APPENDIX 7.5: HORIZON YEAR (2050) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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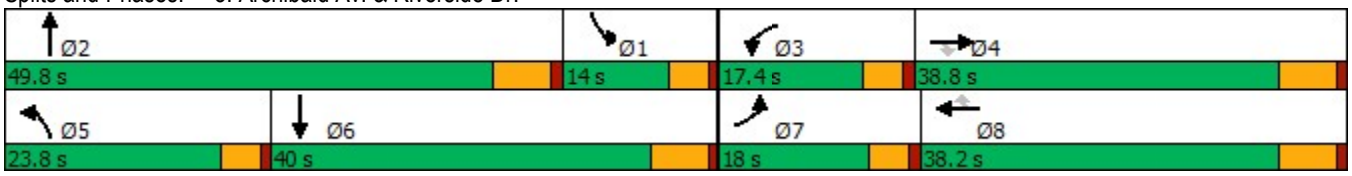
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	203	719	276	174	669	318	386	1739	265	744
Future Volume (vph)	203	719	276	174	669	318	386	1739	265	744
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	38.8	38.8	17.4	38.2	38.2	23.8	49.8	14.0	40.0
Total Split (%)	15.0%	32.3%	32.3%	14.5%	31.8%	31.8%	19.8%	41.5%	11.7%	33.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	30.5	30.5	12.8	29.9	29.9	17.9	43.6	9.4	35.1
Actuated g/C Ratio	0.11	0.26	0.26	0.11	0.25	0.25	0.15	0.37	0.08	0.30
v/c Ratio	1.18	0.86	0.49	1.06	0.82	0.66	0.86	1.14	1.13	0.70
Control Delay	168.4	53.2	8.3	135.6	50.5	25.7	67.8	105.0	145.8	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.4	53.2	8.3	135.6	50.5	25.7	67.8	105.0	145.8	38.2
LOS	F	D	A	F	D	C	E	F	F	D
Approach Delay		62.3			56.4			98.8		61.5
Approach LOS		E			E			F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 75.3	Intersection LOS: E
Intersection Capacity Utilization 99.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	719	276	174	669	318	386	1739	190	265	744	211
Future Volume (veh/h)	203	719	276	174	669	318	386	1739	190	265	744	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	211	749	132	181	697	170	402	1811	104	276	775	111
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	838	368	172	821	360	448	1720	99	245	1348	192
Arrive On Green	0.17	0.37	0.37	0.16	0.37	0.37	0.22	0.55	0.55	0.12	0.47	0.47
Sat Flow, veh/h	1594	3367	1477	1594	3367	1474	3092	4676	268	3092	4271	607
Grp Volume(v), veh/h	211	749	132	181	697	170	402	1248	667	276	584	302
Grp Sat Flow(s),veh/h/ln	1594	1683	1477	1594	1683	1474	1546	1612	1719	1546	1612	1653
Q Serve(g_s), s	13.4	24.8	7.7	12.8	22.6	7.9	15.0	43.6	43.6	9.4	15.5	15.7
Cycle Q Clear(g_c), s	13.4	24.8	7.7	12.8	22.6	7.9	15.0	43.6	43.6	9.4	15.5	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.37
Lane Grp Cap(c), veh/h	180	838	368	172	821	360	448	1186	632	245	1018	522
V/C Ratio(X)	1.17	0.89	0.36	1.05	0.85	0.47	0.90	1.05	1.05	1.13	0.57	0.58
Avail Cap(c_a), veh/h	180	926	406	172	909	398	501	1186	632	245	1018	522
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	35.6	30.3	49.7	35.6	18.2	45.5	26.6	26.6	52.2	25.4	25.5
Incr Delay (d2), s/veh	120.6	10.4	0.6	82.9	7.1	1.0	16.4	40.9	51.1	95.4	0.8	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	9.6	2.5	8.6	8.5	3.3	6.1	18.8	21.8	6.6	5.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	169.8	46.0	30.9	132.5	42.6	19.1	61.9	67.5	77.7	147.6	26.2	27.1
LnGrp LOS	F	D	C	F	D	B	E	F	F	F	C	C
Approach Vol, veh/h		1092			1048			2317			1162	
Approach Delay, s/veh		68.1			54.3			69.4			55.3	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	49.8	17.4	35.7	21.8	43.6	18.0	35.1
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	9.4	* 44	12.8	32.6	19.2	33.8	13.4	32.0
Max Q Clear Time (g_c+I1), s	11.4	45.6	14.8	26.8	17.0	17.7	15.4	24.6
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.2	4.7	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	63.4
HCM 6th LOS	E

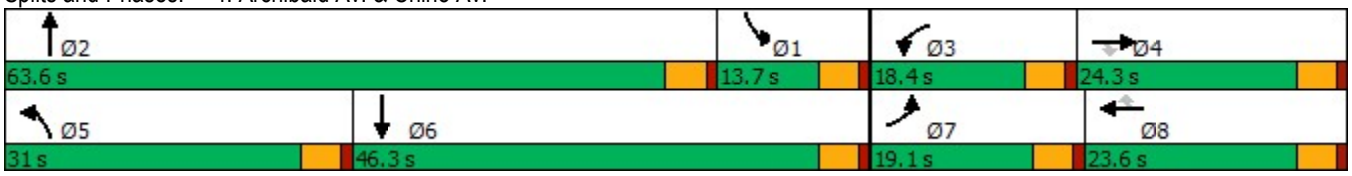
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	148	141	47	135	219	214	275	1775	85	840
Future Volume (vph)	148	141	47	135	219	214	275	1775	85	840
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	19.1	24.3	24.3	18.4	23.6	23.6	31.0	63.6	13.7	46.3
Total Split (%)	15.9%	20.3%	20.3%	15.3%	19.7%	19.7%	25.8%	53.0%	11.4%	38.6%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.4	19.7	19.7	13.5	18.8	18.8	25.8	57.9	9.1	41.2
Actuated g/C Ratio	0.12	0.17	0.17	0.11	0.16	0.16	0.22	0.49	0.08	0.35
v/c Ratio	0.91	0.57	0.15	0.88	0.92	0.68	0.94	0.88	0.83	0.93
Control Delay	96.3	54.5	0.9	94.4	87.9	27.8	82.5	32.1	99.6	51.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.3	54.5	0.9	94.4	87.9	27.8	82.5	32.1	99.6	51.7
LOS	F	D	A	F	F	C	F	C	F	D
Approach Delay		65.4			66.8			38.4		55.5
Approach LOS		E			E			D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.6	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 48.8	Intersection LOS: D
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	141	47	135	219	214	275	1775	141	85	840	121
Future Volume (veh/h)	148	141	47	135	219	214	275	1775	141	85	840	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	174	166	31	159	258	134	324	2088	84	100	988	71
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	302	256	183	286	242	348	2430	97	121	1098	79
Arrive On Green	0.12	0.17	0.17	0.11	0.16	0.16	0.22	0.48	0.48	0.08	0.34	0.34
Sat Flow, veh/h	1594	1772	1502	1594	1772	1502	1594	5073	203	1594	3261	234
Grp Volume(v), veh/h	174	166	31	159	258	134	324	1456	716	100	537	522
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1594	1772	1502	1594	1772	1732	1594	1772	1724
Q Serve(g_s), s	12.4	9.9	2.0	11.3	16.5	7.7	23.0	41.9	42.3	7.1	33.2	33.2
Cycle Q Clear(g_c), s	12.4	9.9	2.0	11.3	16.5	7.7	23.0	41.9	42.3	7.1	33.2	33.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.14
Lane Grp Cap(c), veh/h	198	302	256	183	286	242	348	1697	830	121	597	581
V/C Ratio(X)	0.88	0.55	0.12	0.87	0.90	0.55	0.93	0.86	0.86	0.83	0.90	0.90
Avail Cap(c_a), veh/h	200	303	257	191	292	247	365	1813	886	126	641	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	43.8	40.5	50.2	47.5	29.5	44.2	26.6	26.7	52.5	36.4	36.4
Incr Delay (d2), s/veh	32.7	2.1	0.2	31.3	28.9	2.6	29.7	4.2	8.4	33.5	15.1	15.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	4.4	0.7	6.0	9.4	2.9	11.4	16.7	17.4	3.9	15.9	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.3	45.9	40.7	81.5	76.4	32.1	73.9	30.7	35.0	86.0	51.4	51.8
LnGrp LOS	F	D	D	F	E	C	E	C	D	F	D	D
Approach Vol, veh/h		371			551			2496			1159	
Approach Delay, s/veh		62.5			67.1			37.6			54.6	
Approach LOS		E			E			D			D	

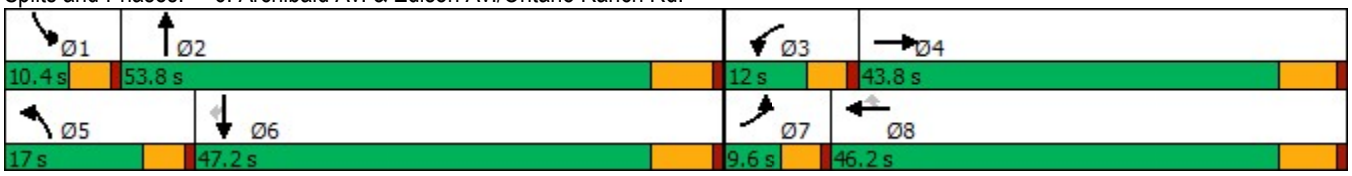
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	59.8	17.8	24.3	29.7	43.4	18.9	23.2
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	9.1	59.0	13.8	19.7	26.4	41.7	14.5	19.0
Max Q Clear Time (g_c+I1), s	9.1	44.3	13.3	11.9	25.0	35.2	14.4	18.5
Green Ext Time (p_c), s	0.0	10.9	0.0	0.5	0.1	3.2	0.0	0.1

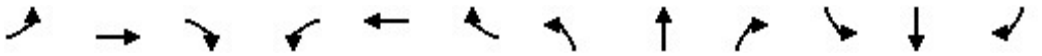
Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	155	292	288	385	85	690	1637	270	27	943	101
Future Volume (vph)	43	155	292	288	385	85	690	1637	270	27	943	101
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	43.8		12.0	46.2	46.2	17.0	53.8		10.4	47.2	47.2
Total Split (%)	8.0%	36.5%		10.0%	38.5%	38.5%	14.2%	44.8%		8.7%	39.3%	39.3%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.2	16.7	90.4	7.7	24.1	24.1	12.9	42.5	90.4	5.6	30.2	30.2
Actuated g/C Ratio	0.06	0.18	1.00	0.09	0.27	0.27	0.14	0.47	1.00	0.06	0.33	0.33
v/c Ratio	0.27	0.17	0.21	1.24	0.45	0.18	1.68	0.72	0.20	0.16	0.59	0.19
Control Delay	52.0	31.8	0.3	176.6	31.5	1.0	341.3	23.3	0.3	49.7	26.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	31.8	0.3	176.6	31.5	1.0	341.3	23.3	0.3	49.7	26.5	2.2
LOS	D	C	A	F	C	A	F	C	A	D	C	A
Approach Delay		14.8			83.2			105.4			24.8	
Approach LOS		B			F			F			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 90.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.68	
Intersection Signal Delay: 75.4	Intersection LOS: E
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	155	292	288	385	85	690	1637	270	27	943	101
Future Volume (veh/h)	43	155	292	288	385	85	690	1637	270	27	943	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	47	170	0	316	423	27	758	1799	0	30	1036	56
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	707		295	673	281	526	2372		96	1660	463
Arrive On Green	0.06	0.20	0.00	0.15	0.28	0.28	0.25	0.67	0.00	0.05	0.47	0.47
Sat Flow, veh/h	3000	5316	1502	3000	3544	1482	3188	5316	1502	3092	5316	1481
Grp Volume(v), veh/h	47	170	0	316	423	27	758	1799	0	30	1036	56
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1482	1594	1772	1502	1546	1772	1481
Q Serve(g_s), s	1.1	2.0	0.0	7.4	7.8	1.0	12.4	17.1	0.0	0.7	11.0	1.6
Cycle Q Clear(g_c), s	1.1	2.0	0.0	7.4	7.8	1.0	12.4	17.1	0.0	0.7	11.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	125	707		295	673	281	526	2372		96	1660	463
V/C Ratio(X)	0.38	0.24		1.07	0.63	0.10	1.44	0.76		0.31	0.62	0.12
Avail Cap(c_a), veh/h	200	2659		295	1886	789	526	3345		239	2878	802
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	26.9	0.0	32.0	24.6	22.1	28.3	9.7	0.0	35.1	16.7	14.2
Incr Delay (d2), s/veh	0.7	0.2	0.0	72.2	1.0	0.1	209.3	0.7	0.0	0.7	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.8	0.0	5.3	2.8	0.3	19.0	3.5	0.0	0.3	3.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	27.1	0.0	104.2	25.5	22.3	237.6	10.4	0.0	35.8	17.1	14.3
LnGrp LOS	D	C		F	C	C	F	B		D	B	B
Approach Vol, veh/h		217	A		766			2557	A		1122	
Approach Delay, s/veh		28.8			57.9			77.7			17.4	
Approach LOS		C			E			E			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	40.0	12.0	16.2	17.0	30.0	7.7	20.5
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.8	47.3	7.4	37.6	12.4	40.7	5.0	40.0
Max Q Clear Time (g_c+I1), s	2.7	19.1	9.4	4.0	14.4	13.0	3.1	9.8
Green Ext Time (p_c), s	0.0	14.5	0.0	1.0	0.0	7.2	0.0	2.6

Intersection Summary	
HCM 6th Ctrl Delay	57.7
HCM 6th LOS	E

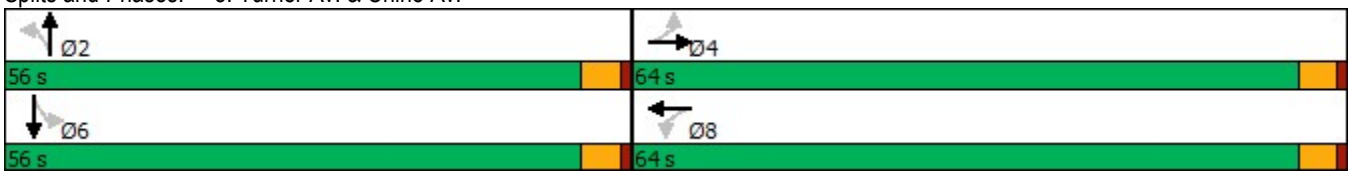
Notes

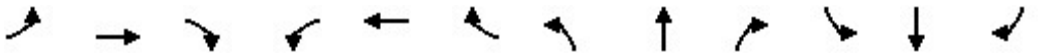
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	170	181	61	285	157	493	94	230
Future Volume (vph)	170	181	61	285	157	493	94	230
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	64.0	64.0	64.0	64.0	56.0	56.0	56.0	56.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	39.4	39.4	39.4	39.4	33.2	33.2	33.2	33.2
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.40	0.40	0.40	0.40
v/c Ratio	0.78	0.26	0.21	0.39	0.72	0.56	0.70	0.35
Control Delay	41.0	8.9	16.6	12.3	39.9	22.0	47.8	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	8.9	16.6	12.3	39.9	22.0	47.8	16.2
LOS	D	A	B	B	D	C	D	B
Approach Delay		20.6		12.8		26.0		23.0
Approach LOS		C		B		C		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 83.4	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 61.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Turner Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	181	117	61	285	160	157	493	52	94	230	109
Future Volume (veh/h)	170	181	117	61	285	160	157	493	52	94	230	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	230	245	90	82	385	148	212	666	43	127	311	79
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	380	1119	400	477	1094	415	397	1312	85	272	1089	272
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	779	2430	869	935	2377	901	889	3206	207	662	2660	664
Grp Volume(v), veh/h	230	168	167	82	271	262	212	349	360	127	195	195
Grp Sat Flow(s),veh/h/ln	779	1683	1615	935	1683	1594	889	1683	1730	662	1683	1641
Q Serve(g_s), s	18.7	4.1	4.3	4.0	7.1	7.3	14.5	10.7	10.7	12.2	5.3	5.5
Cycle Q Clear(g_c), s	26.0	4.1	4.3	8.3	7.1	7.3	20.0	10.7	10.7	22.9	5.3	5.5
Prop In Lane	1.00		0.54	1.00		0.56	1.00		0.12	1.00		0.40
Lane Grp Cap(c), veh/h	380	775	744	477	775	734	397	689	708	272	689	672
V/C Ratio(X)	0.60	0.22	0.22	0.17	0.35	0.36	0.53	0.51	0.51	0.47	0.28	0.29
Avail Cap(c_a), veh/h	693	1451	1392	852	1451	1374	696	1256	1290	495	1256	1224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	11.2	11.2	13.7	12.0	12.0	20.4	15.2	15.2	23.8	13.6	13.7
Incr Delay (d2), s/veh	1.6	0.1	0.2	0.2	0.3	0.3	1.1	0.6	0.6	1.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.3	1.3	0.8	2.3	2.3	2.7	3.5	3.6	1.8	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	11.3	11.4	13.9	12.2	12.3	21.5	15.8	15.8	25.0	13.8	13.9
LnGrp LOS	C	B	B	B	B	B	C	B	B	C	B	B
Approach Vol, veh/h		565			615			921			517	
Approach Delay, s/veh		15.7			12.5			17.1			16.6	
Approach LOS		B			B			B			B	

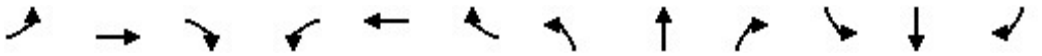
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.7		36.3		32.7		36.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		51.5		59.5		51.5		59.5				
Max Q Clear Time (g_c+I1), s		22.0		28.0		24.9		10.3				
Green Ext Time (p_c), s		5.7		3.8		3.3		3.9				

Intersection Summary												
HCM 6th Ctrl Delay			15.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	546	754	287	548	431	50	546	186	447	256	309
Future Volume (vph)	546	754	287	548	431	50	546	186	447	256	309
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8			2		6	6	
Permitted Phases					8	2		2			6
Detector Phase	7	4	3	8	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	30.2	23.7	23.7	23.7	24.8	24.8	24.8
Total Split (s)	25.0	36.4	18.8	30.2	30.2	24.8	24.8	24.8	40.0	40.0	40.0
Total Split (%)	20.8%	30.3%	15.7%	25.2%	25.2%	20.7%	20.7%	20.7%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.7	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.7	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	20.4	30.2	13.7	23.5	23.5	20.1	20.1	20.1	34.2	34.2	34.2
Actuated g/C Ratio	0.17	0.25	0.11	0.20	0.20	0.17	0.17	0.17	0.29	0.29	0.29
v/c Ratio	1.08	0.99	0.84	0.84	0.71	0.96	0.98	0.48	1.05	0.27	0.51
Control Delay	107.4	71.8	72.9	58.4	10.4	161.9	81.9	10.3	98.0	34.0	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.4	71.8	72.9	58.4	10.4	161.9	81.9	10.3	98.0	34.0	6.5
LOS	F	E	E	E	B	F	F	B	F	C	A
Approach Delay		86.0		45.3			69.9			53.9	
Approach LOS		F		D			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 64.2	Intersection LOS: E
Intersection Capacity Utilization 96.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	546	754	65	287	548	431	50	546	186	447	256	309
Future Volume (veh/h)	546	754	65	287	548	431	50	546	186	447	256	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	581	802	42	305	583	236	53	581	81	476	272	153
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	546	848	44	353	688	278	269	598	249	458	1017	426
Arrive On Green	0.26	0.38	0.38	0.17	0.29	0.29	0.25	0.25	0.25	0.43	0.43	0.43
Sat Flow, veh/h	3188	3328	174	3188	3544	1432	1594	3544	1475	1594	3544	1483
Grp Volume(v), veh/h	581	427	417	305	583	236	53	581	81	476	272	153
Grp Sat Flow(s),veh/h/ln	1594	1772	1730	1594	1772	1432	1594	1772	1475	1594	1772	1483
Q Serve(g_s), s	20.4	27.8	27.8	11.1	18.4	18.5	3.1	19.3	5.3	34.2	5.9	8.3
Cycle Q Clear(g_c), s	20.4	27.8	27.8	11.1	18.4	18.5	3.1	19.3	5.3	34.2	5.9	8.3
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	546	451	441	353	688	278	269	598	249	458	1017	426
V/C Ratio(X)	1.06	0.95	0.95	0.87	0.85	0.85	0.20	0.97	0.33	1.04	0.27	0.36
Avail Cap(c_a), veh/h	546	451	441	380	714	289	269	598	249	458	1017	426
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	36.0	36.0	48.8	40.6	40.6	38.1	44.2	39.0	33.9	25.8	26.5
Incr Delay (d2), s/veh	56.8	29.1	29.6	16.4	9.1	20.1	0.4	29.6	0.8	52.9	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	13.5	13.3	4.8	7.7	7.1	1.2	10.3	1.9	17.6	2.3	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	101.0	65.1	65.6	65.2	49.7	60.7	38.5	73.8	39.7	86.8	26.0	27.0
LnGrp LOS	F	E	E	E	D	E	D	E	D	F	C	C
Approach Vol, veh/h		1425			1124			715			901	
Approach Delay, s/veh		79.9			56.2			67.4			58.3	
Approach LOS		E			E			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.8	17.8	36.5		40.0	25.0	29.3				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 20	14.2	30.2		34.2	20.4	24.0				
Max Q Clear Time (g_c+I1), s		21.3	13.1	29.8		36.2	22.4	20.5				
Green Ext Time (p_c), s		0.0	0.1	0.2		0.0	0.0	1.5				

Intersection Summary		
HCM 6th Ctrl Delay		66.7
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	265	195	169	677	425
Future Volume (vph)	265	195	169	677	425
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	7		5	2	6
Permitted Phases		7			
Detector Phase	7	7	5	2	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	9.6	9.6	22.8	21.7
Total Split (s)	34.0	34.0	24.0	86.0	62.0
Total Split (%)	28.3%	28.3%	20.0%	71.7%	51.7%
Yellow Time (s)	3.6	3.6	3.6	4.8	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	5.8	4.7
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	21.4	21.4	15.0	60.2	41.4
Actuated g/C Ratio	0.23	0.23	0.16	0.65	0.45
v/c Ratio	0.77	0.41	0.70	0.63	0.85
Control Delay	51.9	7.8	57.2	12.9	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	7.8	57.2	12.9	34.8
LOS	D	A	E	B	C
Approach Delay	33.2			21.8	34.8
Approach LOS	C			C	C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 92.9	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 28.7	Intersection LOS: C
Intersection Capacity Utilization 74.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	265	195	169	677	425	187
Future Volume (veh/h)	265	195	169	677	425	187
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	282	207	180	720	452	199
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	331	311	217	1149	524	231
Arrive On Green	0.21	0.21	0.14	0.65	0.45	0.45
Sat Flow, veh/h	1594	1502	1594	1772	1166	513
Grp Volume(v), veh/h	282	207	180	720	0	651
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	0	1680
Q Serve(g_s), s	12.3	9.2	7.9	17.4	0.0	25.2
Cycle Q Clear(g_c), s	12.3	9.2	7.9	17.4	0.0	25.2
Prop In Lane	1.00	1.00	1.00			0.31
Lane Grp Cap(c), veh/h	331	311	217	1149	0	754
V/C Ratio(X)	0.85	0.66	0.83	0.63	0.00	0.86
Avail Cap(c_a), veh/h	648	611	428	1967	0	1332
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.6	26.3	30.4	7.5	0.0	17.9
Incr Delay (d2), s/veh	2.4	0.9	3.1	0.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	7.5	3.0	4.4	0.0	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.0	27.2	33.5	8.1	0.0	21.0
LnGrp LOS	C	C	C	A	A	C
Approach Vol, veh/h	489			900	651	
Approach Delay, s/veh	28.8			13.2	21.0	
Approach LOS	C			B	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		52.7		19.6	14.4	38.2
Change Period (Y+Rc), s		5.8		4.6	4.6	* 5.8
Max Green Setting (Gmax), s		80.2		29.4	19.4	* 57
Max Q Clear Time (g_c+I1), s		19.4		14.3	9.9	27.2
Green Ext Time (p_c), s		5.3		0.7	0.2	5.2

Intersection Summary		
HCM 6th Ctrl Delay		19.4
HCM 6th LOS		B

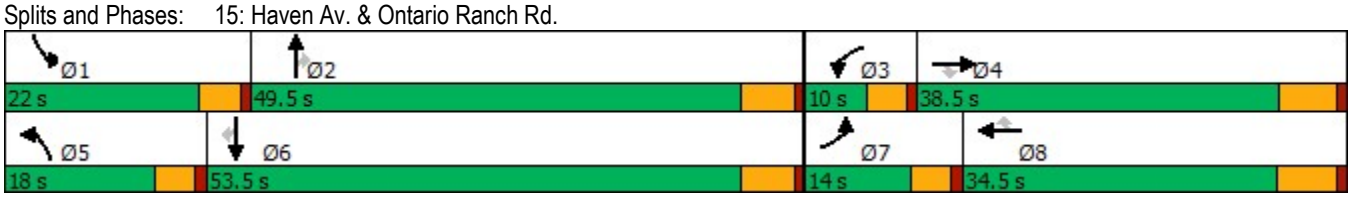
Notes

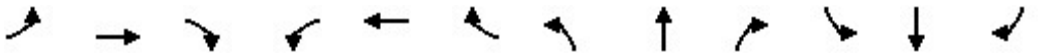
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	238	1214	54	126	831	5	75	463	187	227	435	264
Future Volume (vph)	238	1214	54	126	831	5	75	463	187	227	435	264
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	38.5	38.5	10.0	34.5	34.5	18.0	49.5	49.5	22.0	53.5	53.5
Total Split (%)	11.7%	32.1%	32.1%	8.3%	28.8%	28.8%	15.0%	41.3%	41.3%	18.3%	44.6%	44.6%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	9.5	32.6	32.6	5.4	28.2	28.2	9.2	23.0	23.0	17.5	33.5	33.5
Actuated g/C Ratio	0.10	0.33	0.33	0.05	0.28	0.28	0.09	0.23	0.23	0.18	0.34	0.34
v/c Ratio	0.88	0.76	0.10	0.83	0.45	0.01	0.56	0.65	0.43	0.88	0.42	0.43
Control Delay	76.1	34.7	0.7	86.6	31.4	0.0	59.9	38.2	10.9	73.1	27.6	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.1	34.7	0.7	86.6	31.4	0.0	59.9	38.2	10.9	73.1	27.6	7.0
LOS	E	C	A	F	C	A	E	D	B	E	C	A
Approach Delay		40.1			38.5			33.4			32.9	
Approach LOS		D			D			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 99.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 36.9	Intersection LOS: D
Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	1214	54	126	831	5	75	463	187	227	435	264
Future Volume (veh/h)	238	1214	54	126	831	5	75	463	187	227	435	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	256	1305	31	135	894	-103	81	498	99	244	468	193
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	1805	510	170	2109	447	100	700	312	270	1059	470
Arrive On Green	0.15	0.51	0.51	0.09	0.45	0.00	0.09	0.31	0.31	0.25	0.47	0.47
Sat Flow, veh/h	3092	5316	1500	3000	7088	1502	1594	3367	1499	1594	3367	1494
Grp Volume(v), veh/h	256	1305	31	135	894	-103	81	498	99	244	468	193
Grp Sat Flow(s),veh/h/ln	1546	1772	1500	1500	1772	1502	1594	1683	1499	1594	1683	1494
Q Serve(g_s), s	7.7	18.1	1.0	4.2	8.2	0.0	4.7	12.4	4.8	14.1	8.8	8.0
Cycle Q Clear(g_c), s	7.7	18.1	1.0	4.2	8.2	0.0	4.7	12.4	4.8	14.1	8.8	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	306	1805	510	170	2109	447	100	700	312	270	1059	470
V/C Ratio(X)	0.84	0.72	0.06	0.79	0.42	-0.23	0.81	0.71	0.32	0.90	0.44	0.41
Avail Cap(c_a), veh/h	306	1805	510	170	2109	447	225	1547	689	292	1688	750
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	19.9	15.7	43.0	20.8	0.0	42.5	30.2	27.6	34.7	19.5	19.3
Incr Delay (d2), s/veh	17.3	2.5	0.2	20.5	0.6	0.0	5.7	1.4	0.6	26.9	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	5.8	0.3	1.9	2.9	0.0	1.9	4.4	1.6	6.7	3.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	22.4	15.9	63.4	21.4	0.0	48.2	31.5	28.1	61.6	19.8	19.9
LnGrp LOS	E	C	B	E	C	A	D	C	C	E	B	B
Approach Vol, veh/h		1592			926			678			905	
Approach Delay, s/veh		27.8			29.9			33.0			31.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.7	25.6	10.0	38.8	10.6	35.7	14.0	34.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.4	43.7	5.4	* 32	13.4	47.7	9.4	28.0
Max Q Clear Time (g_c+I1), s	16.1	14.4	6.2	20.1	6.7	10.8	9.7	10.2
Green Ext Time (p_c), s	0.1	3.5	0.0	6.4	0.0	3.7	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

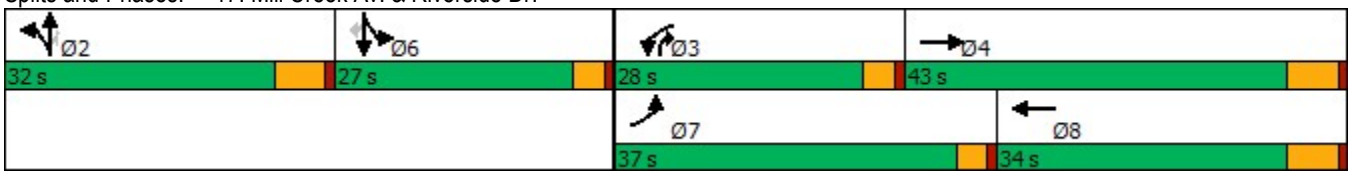
Notes

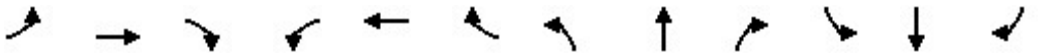
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	370	774	149	973	219	91	422	100	188	93
Future Volume (vph)	370	774	149	973	219	91	422	100	188	93
Turn Type	Prot	NA	Prot	NA	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	7	4	3	8	2	2	3	6	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	2	2	3	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	9.0	27.0	27.0	27.0
Total Split (s)	37.0	43.0	28.0	34.0	32.0	32.0	28.0	27.0	27.0	27.0
Total Split (%)	28.5%	33.1%	21.5%	26.2%	24.6%	24.6%	21.5%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			
Recall Mode	None	None	None	None	Min	Min	None	Min	Min	Min
Act Effct Green (s)	33.1	42.4	18.7	28.1	24.5	24.5	45.0	20.5	20.5	20.5
Actuated g/C Ratio	0.26	0.34	0.15	0.22	0.19	0.19	0.36	0.16	0.16	0.16
v/c Ratio	1.13	0.73	0.80	1.17	0.90	0.34	0.83	0.49	0.83	0.36
Control Delay	126.9	39.6	76.9	130.3	81.2	47.2	24.4	55.4	75.1	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.9	39.6	76.9	130.3	81.2	47.2	24.4	55.4	75.1	7.5
LOS	F	D	E	F	F	D	C	E	E	A
Approach Delay		63.0		123.8		44.2			53.4	
Approach LOS		E		F		D			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 126	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 78.4	Intersection LOS: E
Intersection Capacity Utilization 93.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	370	774	236	149	973	109	219	91	422	100	188	93
Future Volume (veh/h)	370	774	236	149	973	109	219	91	422	100	188	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	468	980	122	189	1232	75	277	115	281	127	238	48
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	1617	201	211	1095	67	303	337	482	275	305	226
Arrive On Green	0.39	0.52	0.52	0.20	0.33	0.33	0.29	0.29	0.29	0.26	0.26	0.26
Sat Flow, veh/h	1594	4631	575	1594	4954	302	1594	1772	1492	1594	1772	1311
Grp Volume(v), veh/h	468	749	353	189	881	426	277	115	281	127	238	48
Grp Sat Flow(s),veh/h/ln	1594	1772	1663	1594	1772	1712	1594	1772	1492	1594	1772	1311
Q Serve(g_s), s	33.0	18.7	18.8	14.7	28.0	28.0	21.3	6.5	19.9	8.5	15.8	3.6
Cycle Q Clear(g_c), s	33.0	18.7	18.8	14.7	28.0	28.0	21.3	6.5	19.9	8.5	15.8	3.6
Prop In Lane	1.00		0.35	1.00		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	415	1237	580	211	783	378	303	337	482	275	305	226
V/C Ratio(X)	1.13	0.61	0.61	0.90	1.13	1.13	0.91	0.34	0.58	0.46	0.78	0.21
Avail Cap(c_a), veh/h	415	1237	580	302	783	378	329	366	507	289	322	238
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	24.1	24.1	49.9	42.4	42.4	44.3	39.0	31.6	42.0	44.7	40.2
Incr Delay (d2), s/veh	83.7	0.8	1.8	16.9	72.5	85.0	27.7	0.6	1.6	1.2	11.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	6.3	6.1	6.2	18.3	19.0	9.7	2.7	6.2	3.3	7.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	122.4	25.0	26.0	66.9	114.9	127.4	72.0	39.6	33.2	43.2	55.8	40.7
LnGrp LOS	F	C	C	E	F	F	E	D	C	D	E	D
Approach Vol, veh/h		1570			1496			673			413	
Approach Delay, s/veh		54.2			112.4			50.3			50.2	
Approach LOS		D			F			D			D	

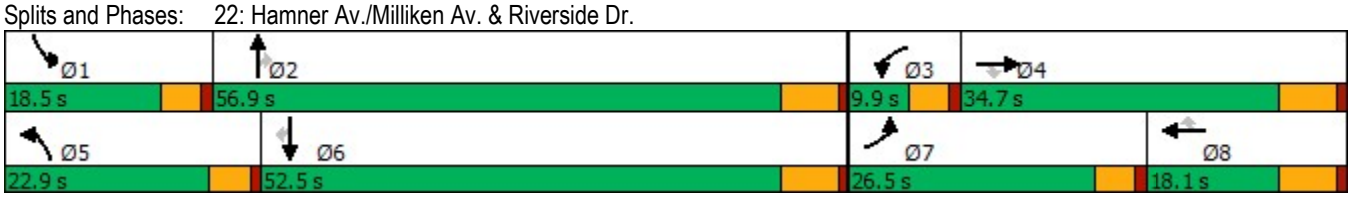
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.9	20.8	50.2		25.8	37.0	34.0				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		26.2	24.0	37.0		23.0	33.0	28.0				
Max Q Clear Time (g_c+I1), s		23.3	16.7	20.8		17.8	35.0	30.0				
Green Ext Time (p_c), s		0.8	0.1	6.0		0.9	0.0	0.0				

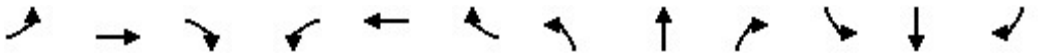
Intersection Summary												
HCM 6th Ctrl Delay			74.1									
HCM 6th LOS			E									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	480	217	619	34	140	295	263	1226	70	296	706	287
Future Volume (vph)	480	217	619	34	140	295	263	1226	70	296	706	287
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	26.5	34.7	34.7	9.9	18.1	18.1	22.9	56.9	56.9	18.5	52.5	52.5
Total Split (%)	22.1%	28.9%	28.9%	8.3%	15.1%	15.1%	19.1%	47.4%	47.4%	15.4%	43.8%	43.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	21.8	30.4	30.4	5.2	11.9	11.9	15.3	50.0	50.0	13.9	48.6	48.6
Actuated g/C Ratio	0.18	0.26	0.26	0.04	0.10	0.10	0.13	0.42	0.42	0.12	0.41	0.41
v/c Ratio	0.96	0.55	0.58	0.57	0.91	0.56	0.75	0.95	0.11	0.92	0.38	0.41
Control Delay	76.4	45.1	8.4	86.6	102.4	9.2	61.8	48.2	0.3	83.5	25.7	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.4	45.1	8.4	86.6	102.4	9.2	61.8	48.2	0.3	83.5	25.7	4.2
LOS	E	D	A	F	F	A	E	D	A	F	C	A
Approach Delay		39.3			42.6			48.4			34.2	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.2	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 41.3	Intersection LOS: D
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	217	619	34	140	295	263	1226	70	296	706	287
Future Volume (veh/h)	480	217	619	34	140	295	263	1226	70	296	706	287
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	552	249	366	39	161	172	302	1409	40	340	811	175
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	588	451	764	49	178	301	354	1474	624	373	2242	633
Arrive On Green	0.28	0.38	0.38	0.05	0.15	0.15	0.17	0.62	0.62	0.18	0.63	0.63
Sat Flow, veh/h	3188	1772	3003	1594	1772	3003	3188	3544	1502	3188	5316	1502
Grp Volume(v), veh/h	552	249	366	39	161	172	302	1409	40	340	811	175
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1594	1772	1502	1594	1772	1502	1594	1772	1502
Q Serve(g_s), s	20.1	13.1	10.9	2.9	10.6	6.3	10.9	44.0	1.2	12.4	8.6	6.2
Cycle Q Clear(g_c), s	20.1	13.1	10.9	2.9	10.6	6.3	10.9	44.0	1.2	12.4	8.6	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	588	451	764	49	178	301	354	1474	624	373	2242	633
V/C Ratio(X)	0.94	0.55	0.48	0.80	0.91	0.57	0.85	0.96	0.06	0.91	0.36	0.28
Avail Cap(c_a), veh/h	588	451	764	71	178	301	492	1515	642	373	2242	633
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	31.4	30.7	56.3	49.8	48.0	48.5	21.3	13.3	48.3	14.2	13.7
Incr Delay (d2), s/veh	22.7	1.5	0.5	20.6	41.8	2.6	7.6	13.9	0.0	25.2	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	5.0	3.6	1.4	6.4	2.3	4.3	14.6	0.4	5.8	2.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	32.8	31.2	76.8	91.6	50.6	56.1	35.2	13.3	73.5	14.3	14.0
LnGrp LOS	E	C	C	E	F	D	E	D	B	E	B	B
Approach Vol, veh/h		1167			372			1751			1326	
Approach Delay, s/veh		47.5			71.1			38.3			29.4	
Approach LOS		D			E			D			C	

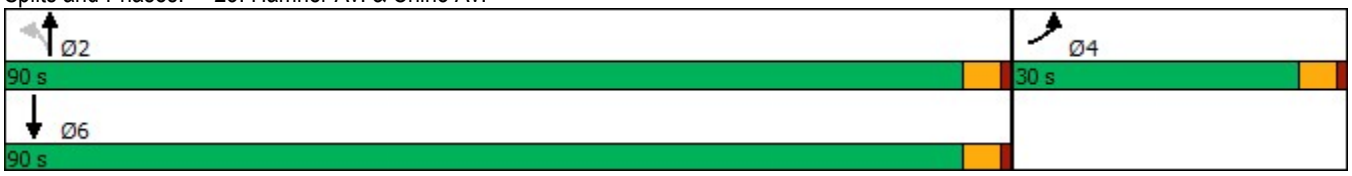
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	55.5	8.2	36.4	17.8	56.2	26.5	18.1
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	13.9	50.7	5.3	28.5	18.3	46.3	21.9	11.9
Max Q Clear Time (g_c+I1), s	14.4	46.0	4.9	15.1	12.9	10.6	22.1	12.6
Green Ext Time (p_c), s	0.0	3.4	0.0	2.3	0.3	6.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	110	3	1459	1463
Future Volume (vph)	110	3	1459	1463
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	30.0	90.0	90.0	90.0
Total Split (%)	25.0%	75.0%	75.0%	75.0%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	13.0		47.8	47.8
Actuated g/C Ratio	0.19		0.68	0.68
v/c Ratio	0.57		0.69	0.70
Control Delay	31.7		8.8	9.0
Queue Delay	0.0		0.0	0.0
Total Delay	31.7		8.8	9.0
LOS	C		A	A
Approach Delay	31.7		8.8	9.0
Approach LOS	C		A	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 70.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 59.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	57	3	1459	1463	19
Future Volume (veh/h)	110	57	3	1459	1463	19
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	65	3	1658	1662	22
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	163	85	73	2407	2424	32
Arrive On Green	0.15	0.15	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1119	582	1	3566	3685	47
Grp Volume(v), veh/h	191	0	869	792	821	863
Grp Sat Flow(s),veh/h/ln	1710	0	1865	1702	1777	1862
Q Serve(g_s), s	5.4	0.0	0.0	14.2	14.0	14.1
Cycle Q Clear(g_c), s	5.4	0.0	14.2	14.2	14.0	14.1
Prop In Lane	0.65	0.34	0.00			0.03
Lane Grp Cap(c), veh/h	249	0	1331	1149	1199	1257
V/C Ratio(X)	0.77	0.00	0.65	0.69	0.68	0.69
Avail Cap(c_a), veh/h	869	0	3221	2900	3028	3173
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	5.0	5.0	4.9	4.9
Incr Delay (d2), s/veh	4.9	0.0	0.5	0.7	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.4	1.4	1.4	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.5	0.0	5.5	5.7	5.6	5.6
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	191			1661	1684	
Approach Delay, s/veh	25.5			5.6	5.6	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		38.4		11.8		38.4
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		85.5		25.5		85.5
Max Q Clear Time (g_c+I1), s		16.2		7.4		16.1
Green Ext Time (p_c), s		17.4		0.5		17.8

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

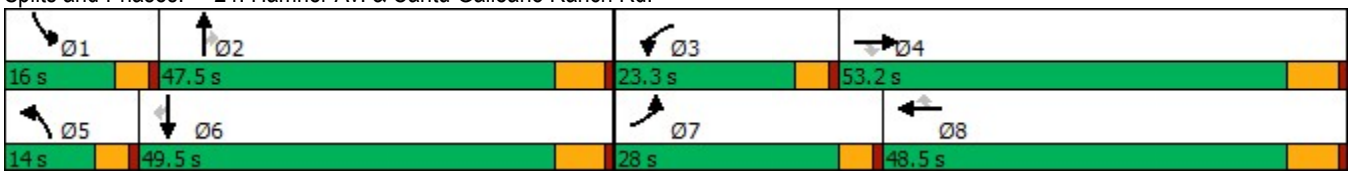
Notes

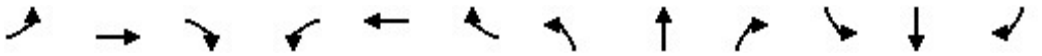
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	573	1208	269	1040	453	148	762	378	415	291	166
Future Volume (vph)	573	1208	269	1040	453	148	762	378	415	291	166
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	48.5	48.5	9.6	46.2	46.2	9.6	46.2	46.2
Total Split (s)	28.0	53.2	23.3	48.5	48.5	14.0	47.5	47.5	16.0	49.5	49.5
Total Split (%)	20.0%	38.0%	16.6%	34.6%	34.6%	10.0%	33.9%	33.9%	11.4%	35.4%	35.4%
Yellow Time (s)	3.6	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	23.8	43.8	13.7	33.6	33.6	8.6	26.5	26.5	11.6	29.5	29.5
Actuated g/C Ratio	0.20	0.37	0.12	0.29	0.29	0.07	0.22	0.22	0.10	0.25	0.25
v/c Ratio	0.83	0.45	0.68	0.51	0.83	0.60	0.63	0.68	1.24	0.16	0.19
Control Delay	58.3	29.5	60.5	36.1	38.6	66.1	43.9	17.5	174.5	35.4	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	29.5	60.5	36.1	38.6	66.1	43.9	17.5	174.5	35.4	5.6
LOS	E	C	E	D	D	E	D	B	F	D	A
Approach Delay		38.7		40.5			38.7			95.9	
Approach LOS		D		D			D			F	

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 117.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 48.0	Intersection LOS: D
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	573	1208	0	269	1040	453	148	762	378	415	291	166
Future Volume (veh/h)	573	1208	0	269	1040	453	148	762	378	415	291	166
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	597	1258	-125	280	1083	337	154	794	186	432	303	-35
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	670	2814	596	353	2149	455	219	1156	326	389	1898	804
Arrive On Green	0.19	0.38	0.00	0.10	0.29	0.29	0.06	0.21	0.21	0.11	0.25	0.00
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	597	1258	-125	280	1083	337	154	794	186	432	303	-35
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	17.1	13.2	0.0	8.0	12.6	20.1	4.4	13.7	11.0	11.4	3.3	0.0
Cycle Q Clear(g_c), s	17.1	13.2	0.0	8.0	12.6	20.1	4.4	13.7	11.0	11.4	3.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	670	2814	596	353	2149	455	219	1156	326	389	1898	804
V/C Ratio(X)	0.89	0.45	-0.21	0.79	0.50	0.74	0.70	0.69	0.57	1.11	0.16	-0.04
Avail Cap(c_a), veh/h	798	3345	709	638	3009	637	321	2219	627	389	3102	1314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.4	24.4	0.0	46.0	31.0	33.7	48.1	38.4	37.3	46.5	30.3	0.0
Incr Delay (d2), s/veh	9.8	0.1	0.0	1.5	0.2	2.9	1.5	0.7	1.6	79.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	5.3	0.0	3.4	5.3	7.5	1.9	6.0	4.2	9.1	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	24.5	0.0	47.5	31.2	36.6	49.6	39.1	38.9	125.7	30.4	0.0
LnGrp LOS	D	C	A	D	C	D	D	D	D	F	C	A
Approach Vol, veh/h		1730			1700			1134			700	
Approach Delay, s/veh		35.5			35.0			40.5			90.7	
Approach LOS		D			C			D			F	

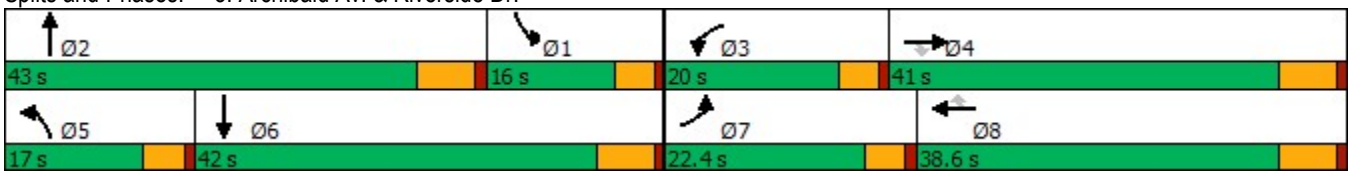
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	27.7	14.9	45.8	11.0	32.7	24.2	36.5
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	11.4	41.3	18.7	46.7	9.4	43.3	23.4	42.0
Max Q Clear Time (g_c+I1), s	13.4	15.7	10.0	15.2	6.4	5.3	19.1	22.1
Green Ext Time (p_c), s	0.0	5.8	0.3	9.3	0.1	1.9	0.6	7.9

Intersection Summary	
HCM 6th Ctrl Delay	43.7
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	223	973	695	245	793	220	374	1180	353	1191
Future Volume (vph)	223	973	695	245	793	220	374	1180	353	1191
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	22.4	41.0	41.0	20.0	38.6	38.6	17.0	43.0	16.0	42.0
Total Split (%)	18.7%	34.2%	34.2%	16.7%	32.2%	32.2%	14.2%	35.8%	13.3%	35.0%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.8	34.8	34.8	15.4	32.4	32.4	12.4	36.8	11.4	35.8
Actuated g/C Ratio	0.15	0.29	0.29	0.13	0.27	0.27	0.10	0.31	0.10	0.30
v/c Ratio	0.97	1.02	1.17	1.23	0.89	0.42	1.21	0.93	1.24	1.07
Control Delay	104.0	76.7	117.1	183.2	55.7	9.7	163.8	52.1	177.4	85.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.0	76.7	117.1	183.2	55.7	9.7	163.8	52.1	177.4	85.4
LOS	F	E	F	F	E	A	F	D	F	F
Approach Delay		94.8			72.5			76.6		102.9
Approach LOS		F			E			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 88.2	Intersection LOS: F
Intersection Capacity Utilization 107.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	973	695	245	793	220	374	1180	156	353	1191	307
Future Volume (veh/h)	223	973	695	245	793	220	374	1180	156	353	1191	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	228	993	352	250	809	111	382	1204	82	360	1215	160
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	979	427	205	912	405	321	1333	91	302	1279	168
Arrive On Green	0.22	0.44	0.44	0.19	0.41	0.41	0.16	0.43	0.43	0.15	0.44	0.44
Sat Flow, veh/h	1594	3367	1467	1594	3367	1495	3092	4619	315	3092	4319	569
Grp Volume(v), veh/h	228	993	352	250	809	111	382	840	446	360	907	468
Grp Sat Flow(s),veh/h/ln	1594	1683	1467	1594	1683	1495	1546	1612	1709	1546	1612	1663
Q Serve(g_s), s	16.9	34.8	25.3	15.4	26.7	4.3	12.4	29.0	29.0	11.7	32.4	32.4
Cycle Q Clear(g_c), s	16.9	34.8	25.3	15.4	26.7	4.3	12.4	29.0	29.0	11.7	32.4	32.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.34
Lane Grp Cap(c), veh/h	237	979	427	205	912	405	321	931	493	302	955	492
V/C Ratio(X)	0.96	1.01	0.82	1.22	0.89	0.27	1.19	0.90	0.90	1.19	0.95	0.95
Avail Cap(c_a), veh/h	237	979	427	205	912	405	321	992	526	302	965	498
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	33.7	31.0	48.3	33.8	14.5	50.5	32.4	32.4	51.0	32.4	32.4
Incr Delay (d2), s/veh	47.2	32.2	12.4	134.1	10.6	0.4	113.0	10.9	18.3	114.0	18.0	28.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	15.7	8.7	13.1	10.2	2.0	9.4	10.5	12.1	8.9	12.4	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	93.3	66.0	43.4	182.4	44.4	14.8	163.5	43.3	50.6	165.0	50.4	60.5
LnGrp LOS	F	F	D	F	D	B	F	D	D	F	D	E
Approach Vol, veh/h		1573			1170			1668			1735	
Approach Delay, s/veh		64.9			71.1			72.8			76.9	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	40.7	20.0	41.0	17.0	41.6	22.4	38.6
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	11.4	* 37	15.4	34.8	12.4	35.8	17.8	32.4
Max Q Clear Time (g_c+I1), s	13.7	31.0	17.4	36.8	14.4	34.4	18.9	28.7
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	1.1	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	71.6
HCM 6th LOS	E

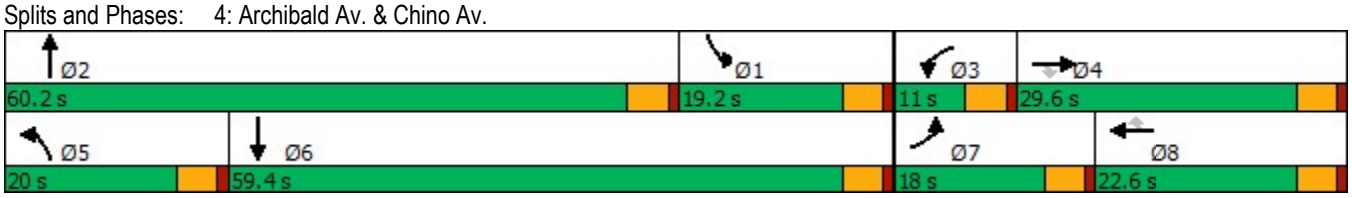
Notes

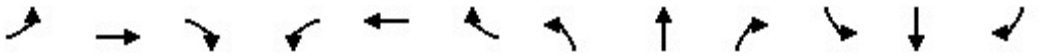
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	196	428	266	55	211	77	223	1411	93	1658
Future Volume (vph)	196	428	266	55	211	77	223	1411	93	1658
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	18.0	29.6	29.6	11.0	22.6	22.6	20.0	60.2	19.2	59.4
Total Split (%)	15.0%	24.7%	24.7%	9.2%	18.8%	18.8%	16.7%	50.2%	16.0%	49.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	26.5	26.5	6.4	17.2	17.2	15.4	53.7	18.8	54.8
Actuated g/C Ratio	0.11	0.22	0.22	0.05	0.14	0.14	0.13	0.45	0.16	0.46
v/c Ratio	1.15	1.14	0.52	0.68	0.87	0.22	1.14	0.65	0.39	1.16
Control Delay	161.2	131.9	10.2	92.5	80.7	1.3	151.3	28.5	49.7	110.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	161.2	131.9	10.2	92.5	80.7	1.3	151.3	28.5	49.7	110.3
LOS	F	F	B	F	F	A	F	C	D	F
Approach Delay		102.0			64.8			44.5		107.3
Approach LOS		F			E			D		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.2	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 81.1	Intersection LOS: F
Intersection Capacity Utilization 110.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	428	266	55	211	77	223	1411	77	93	1658	134
Future Volume (veh/h)	196	428	266	55	211	77	223	1411	77	93	1658	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	204	446	136	57	220	44	232	1470	38	97	1727	72
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	373	311	70	251	213	207	1772	46	394	1558	65
Arrive On Green	0.17	0.32	0.32	0.07	0.21	0.21	0.19	0.52	0.52	0.37	0.69	0.69
Sat Flow, veh/h	1594	1772	1478	1594	1772	1502	1594	5156	133	1594	3379	140
Grp Volume(v), veh/h	204	446	136	57	220	44	232	1010	498	97	901	898
Grp Sat Flow(s),veh/h/ln	1594	1772	1478	1594	1772	1502	1594	1772	1745	1594	1772	1747
Q Serve(g_s), s	13.4	25.0	8.7	4.2	14.3	1.8	15.4	28.7	28.7	5.0	54.8	54.8
Cycle Q Clear(g_c), s	13.4	25.0	8.7	4.2	14.3	1.8	15.4	28.7	28.7	5.0	54.8	54.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.08
Lane Grp Cap(c), veh/h	180	373	311	70	251	213	207	1218	600	394	817	805
V/C Ratio(X)	1.14	1.20	0.44	0.81	0.88	0.21	1.12	0.83	0.83	0.25	1.10	1.11
Avail Cap(c_a), veh/h	180	373	311	86	268	227	207	1658	816	394	817	805
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	40.7	35.1	55.0	45.8	16.0	47.9	25.9	25.9	29.7	18.3	18.3
Incr Delay (d2), s/veh	108.2	111.7	1.0	36.1	25.0	0.5	99.7	2.7	5.3	0.3	63.6	68.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	21.1	3.0	2.3	7.4	1.1	11.1	9.3	9.6	1.8	26.4	27.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	157.6	152.4	36.1	91.1	70.8	16.4	147.6	28.6	31.2	30.1	82.0	86.4
LnGrp LOS	F	F	D	F	E	B	F	C	C	C	F	F
Approach Vol, veh/h		786			321			1740			1896	
Approach Delay, s/veh		133.6			67.0			45.2			81.4	
Approach LOS		F			E			D			F	

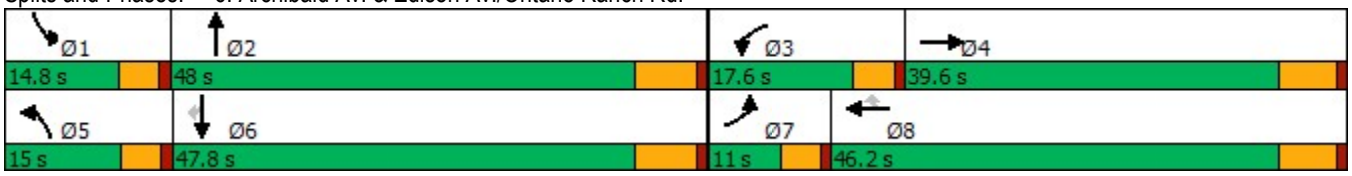
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	45.4	9.9	29.6	20.0	59.4	18.0	21.5
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	14.6	55.6	6.4	25.0	15.4	54.8	13.4	18.0
Max Q Clear Time (g_c+I1), s	7.0	30.7	6.2	27.0	17.4	56.8	15.4	16.3
Green Ext Time (p_c), s	0.1	10.1	0.0	0.0	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	75.8
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	775	874	308	333	133	305	1220	387	185	1716	126
Future Volume (vph)	178	775	874	308	333	133	305	1220	387	185	1716	126
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	11.0	39.6		17.6	46.2	46.2	15.0	48.0		14.8	47.8	47.8
Total Split (%)	9.2%	33.0%		14.7%	38.5%	38.5%	12.5%	40.0%		12.3%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.4	24.2	111.0	13.0	30.8	30.8	10.4	42.1	111.0	9.7	41.4	41.4
Actuated g/C Ratio	0.06	0.22	1.00	0.12	0.28	0.28	0.09	0.38	1.00	0.09	0.37	0.37
v/c Ratio	1.09	0.71	0.61	0.93	0.36	0.27	1.08	0.64	0.27	0.72	0.91	0.20
Control Delay	144.6	43.6	1.9	82.6	32.9	6.2	123.3	30.7	0.4	66.1	42.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	144.6	43.6	1.9	82.6	32.9	6.2	123.3	30.7	0.4	66.1	42.0	3.5
LOS	F	D	A	F	C	A	F	C	A	E	D	A
Approach Delay		33.4			48.1			39.4			41.8	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 39.5	Intersection LOS: D
Intersection Capacity Utilization 89.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	775	874	308	333	133	305	1220	387	185	1716	126
Future Volume (veh/h)	178	775	874	308	333	133	305	1220	387	185	1716	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	187	816	0	324	351	98	321	1284	0	195	1806	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	1094		361	946	400	307	2075		249	1992	563
Arrive On Green	0.06	0.21	0.00	0.12	0.27	0.27	0.10	0.39	0.00	0.08	0.37	0.37
Sat Flow, veh/h	3000	5316	1502	3000	3544	1500	3188	5316	1502	3092	5316	1502
Grp Volume(v), veh/h	187	816	0	324	351	98	321	1284	0	195	1806	114
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1546	1772	1502
Q Serve(g_s), s	6.4	15.6	0.0	11.5	8.7	5.5	10.4	21.0	0.0	6.7	34.7	5.5
Cycle Q Clear(g_c), s	6.4	15.6	0.0	11.5	8.7	5.5	10.4	21.0	0.0	6.7	34.7	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	1094		361	946	400	307	2075		249	1992	563
V/C Ratio(X)	1.05	0.75		0.90	0.37	0.24	1.05	0.62		0.78	0.91	0.20
Avail Cap(c_a), veh/h	178	1644		361	1313	556	307	2075		292	2033	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	40.2	0.0	46.8	32.2	31.0	48.8	26.5	0.0	48.7	32.0	22.8
Incr Delay (d2), s/veh	81.8	1.0	0.0	23.4	0.2	0.3	63.8	0.6	0.0	9.2	6.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	6.5	0.0	5.3	3.6	1.9	6.6	8.2	0.0	2.8	14.6	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	132.6	41.3	0.0	70.2	32.4	31.4	112.6	27.0	0.0	57.9	38.3	23.0
LnGrp LOS	F	D		E	C	C	F	C		E	D	C
Approach Vol, veh/h		1003	A		773			1605	A		2115	
Approach Delay, s/veh		58.3			48.1			44.1			39.3	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	48.7	17.6	28.4	15.0	47.0	11.0	35.0
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	10.2	41.5	13.0	33.4	10.4	41.3	6.4	40.0
Max Q Clear Time (g_c+I1), s	8.7	23.0	13.5	17.6	12.4	36.7	8.4	10.7
Green Ext Time (p_c), s	0.1	7.8	0.0	4.5	0.0	3.7	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	45.4
HCM 6th LOS	D

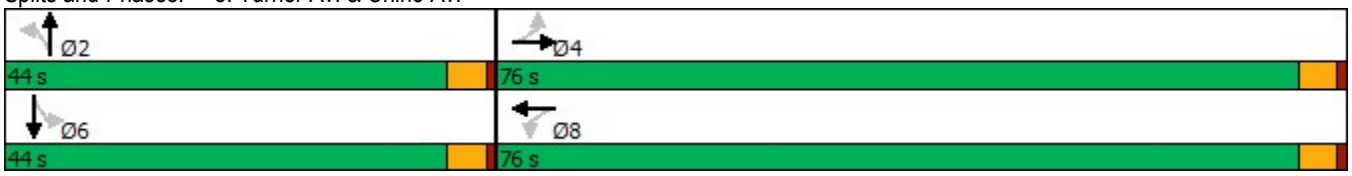
Notes

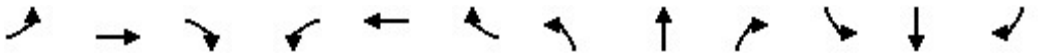
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	192	290	51	194	24	153	86	238
Future Volume (vph)	192	290	51	194	24	153	86	238
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	76.0	76.0	76.0	76.0	44.0	44.0	44.0	44.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	14.5	14.5	14.5	14.5	10.2	10.2	10.2	10.2
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.30	0.30	0.30	0.30
v/c Ratio	0.53	0.28	0.15	0.22	0.10	0.24	0.31	0.34
Control Delay	13.4	6.4	7.7	4.8	11.4	8.6	13.9	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	6.4	7.7	4.8	11.4	8.6	13.9	10.3
LOS	B	A	A	A	B	A	B	B
Approach Delay		8.8		5.2		8.9		11.1
Approach LOS		A		A		A		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 34.3	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 8.6	Intersection LOS: A
Intersection Capacity Utilization 51.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Turner Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	290	74	51	194	94	24	153	59	86	238	69
Future Volume (veh/h)	192	290	74	51	194	94	24	153	59	86	238	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	209	315	47	55	211	59	26	166	42	93	259	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	598	1198	177	553	1064	290	453	757	186	491	827	132
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	993	2942	435	912	2614	713	965	2662	653	1039	2906	465
Grp Volume(v), veh/h	209	179	183	55	134	136	26	103	105	93	149	152
Grp Sat Flow(s),veh/h/ln	993	1683	1694	912	1683	1644	965	1683	1632	1039	1683	1688
Q Serve(g_s), s	5.0	2.1	2.1	1.2	1.5	1.6	0.6	1.4	1.4	2.2	2.0	2.1
Cycle Q Clear(g_c), s	6.6	2.1	2.1	3.3	1.5	1.6	2.7	1.4	1.4	3.6	2.0	2.1
Prop In Lane	1.00		0.26	1.00		0.43	1.00		0.40	1.00		0.28
Lane Grp Cap(c), veh/h	598	685	690	553	685	669	453	479	464	491	479	480
V/C Ratio(X)	0.35	0.26	0.27	0.10	0.20	0.20	0.06	0.22	0.23	0.19	0.31	0.32
Avail Cap(c_a), veh/h	2626	4125	4150	2417	4125	4027	1484	2279	2209	1602	2279	2285
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	5.7	5.7	6.9	5.6	5.6	9.3	8.0	8.0	9.4	8.2	8.2
Incr Delay (d2), s/veh	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.3	0.3	0.1	0.2	0.2	0.1	0.3	0.3	0.3	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.1	5.9	6.0	6.9	5.7	5.7	9.3	8.2	8.2	9.6	8.6	8.6
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		571			325			234			394	
Approach Delay, s/veh		6.7			5.9			8.3			8.8	
Approach LOS		A			A			A			A	

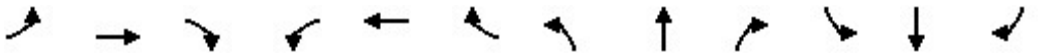
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.8		16.4		12.8		16.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		39.5		71.5		39.5		71.5				
Max Q Clear Time (g_c+I1), s		4.7		8.6		5.6		5.3				
Green Ext Time (p_c), s		1.2		3.3		2.0		1.9				

Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	462	709	147	538	115	85	742	149	262	919	571
Future Volume (vph)	462	709	147	538	115	85	742	149	262	919	571
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8			2		6	6	
Permitted Phases					8	2		2			6
Detector Phase	7	4	3	8	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	30.2	23.7	23.7	23.7	24.8	24.8	24.8
Total Split (s)	21.0	34.8	16.4	30.2	30.2	28.0	28.0	28.0	40.8	40.8	40.8
Total Split (%)	17.5%	29.0%	13.7%	25.2%	25.2%	23.3%	23.3%	23.3%	34.0%	34.0%	34.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.7	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.7	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	16.4	29.3	9.8	22.7	22.7	23.3	23.3	23.3	35.0	35.0	35.0
Actuated g/C Ratio	0.14	0.25	0.08	0.19	0.19	0.20	0.20	0.20	0.29	0.29	0.29
v/c Ratio	1.10	1.03	0.59	0.83	0.32	1.59	1.12	0.37	0.59	0.92	0.78
Control Delay	120.8	80.7	61.9	57.8	9.5	369.8	114.7	9.1	42.0	55.3	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	120.8	80.7	61.9	57.8	9.5	369.8	114.7	9.1	42.0	55.3	16.8
LOS	F	F	E	E	A	F	F	A	D	E	B
Approach Delay		94.8		51.6			120.9			40.8	
Approach LOS		F		D			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 118.7	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 73.4	Intersection LOS: E
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	462	709	138	147	538	115	85	742	149	262	919	571
Future Volume (veh/h)	462	709	138	147	538	115	85	742	149	262	919	571
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	481	739	76	153	560	63	89	773	82	273	957	298
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	449	822	84	205	651	269	319	710	301	465	1035	438
Arrive On Green	0.21	0.39	0.39	0.10	0.28	0.28	0.30	0.30	0.30	0.44	0.44	0.44
Sat Flow, veh/h	3188	3154	324	3188	3544	1466	1594	3544	1502	1594	3544	1499
Grp Volume(v), veh/h	481	415	400	153	560	63	89	773	82	273	957	298
Grp Sat Flow(s),veh/h/ln	1594	1772	1706	1594	1772	1466	1594	1772	1502	1594	1772	1499
Q Serve(g_s), s	16.4	25.6	25.6	5.4	17.5	3.9	5.0	23.3	4.8	15.1	29.7	18.5
Cycle Q Clear(g_c), s	16.4	25.6	25.6	5.4	17.5	3.9	5.0	23.3	4.8	15.1	29.7	18.5
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	462	444	205	651	269	319	710	301	465	1035	438
V/C Ratio(X)	1.07	0.90	0.90	0.75	0.86	0.23	0.28	1.09	0.27	0.59	0.92	0.68
Avail Cap(c_a), veh/h	449	462	444	323	731	302	319	710	301	479	1066	451
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	34.0	34.0	51.7	40.7	35.8	34.3	40.7	34.2	27.4	31.5	28.4
Incr Delay (d2), s/veh	62.6	20.2	21.0	2.0	9.4	0.4	0.5	60.7	0.5	1.8	13.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	11.6	11.2	2.1	7.4	1.3	1.9	15.2	1.7	5.1	12.2	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.5	54.3	55.0	53.7	50.1	36.2	34.8	101.4	34.7	29.2	44.5	32.4
LnGrp LOS	F	D	D	D	D	D	C	F	C	C	D	C
Approach Vol, veh/h		1296			776			944			1528	
Approach Delay, s/veh		74.6			49.7			89.3			39.4	
Approach LOS		E			D			F			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.0	12.1	36.5		39.8	21.0	27.6				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 23	11.8	28.6		35.0	16.4	24.0				
Max Q Clear Time (g_c+I1), s		25.3	7.4	27.6		31.7	18.4	19.5				
Green Ext Time (p_c), s		0.0	0.1	0.5		2.3	0.0	1.5				

Intersection Summary		
HCM 6th Ctrl Delay		61.6
HCM 6th LOS		E

Notes

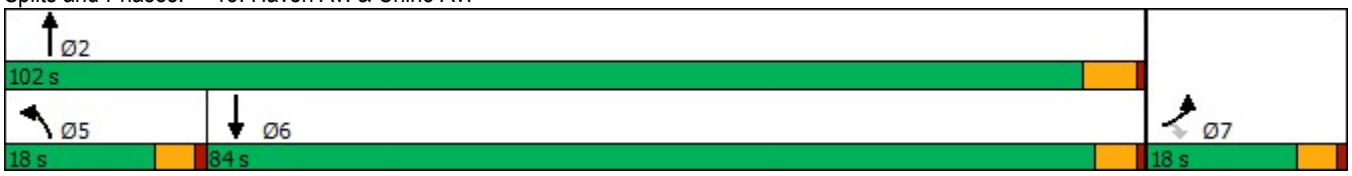
User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Volume (vph)	192	87	187	799	889
Future Volume (vph)	192	87	187	799	889
Turn Type	Prot	Perm	Prot	NA	NA
Protected Phases	7		5	2	6
Permitted Phases		7			
Detector Phase	7	7	5	2	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	9.6	9.6	22.8	21.7
Total Split (s)	18.0	18.0	18.0	102.0	84.0
Total Split (%)	15.0%	15.0%	15.0%	85.0%	70.0%
Yellow Time (s)	3.6	3.6	3.6	4.8	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	5.8	4.7
Lead/Lag			Lead		Lag
Lead-Lag Optimize?			Yes		Yes
Recall Mode	None	None	None	Min	Min
Act Effct Green (s)	13.4	13.4	13.4	96.2	79.3
Actuated g/C Ratio	0.11	0.11	0.11	0.80	0.66
v/c Ratio	1.15	0.37	1.12	0.59	1.19
Control Delay	160.5	14.4	151.9	6.6	114.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	160.5	14.4	151.9	6.6	114.6
LOS	F	B	F	A	F
Approach Delay	114.8			34.2	114.6
Approach LOS	F			C	F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 83.4	Intersection LOS: F
Intersection Capacity Utilization 109.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	192	87	187	799	889	385
Future Volume (veh/h)	192	87	187	799	889	385
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1673	1772	1673	1772	1772	1772
Adj Flow Rate, veh/h	202	50	197	841	936	205
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	176	166	176	1424	922	202
Arrive On Green	0.11	0.11	0.11	0.80	0.65	0.65
Sat Flow, veh/h	1594	1502	1594	1772	1408	308
Grp Volume(v), veh/h	202	50	197	841	0	1141
Grp Sat Flow(s),veh/h/ln	1594	1502	1594	1772	0	1716
Q Serve(g_s), s	13.4	3.7	13.4	21.5	0.0	79.3
Cycle Q Clear(g_c), s	13.4	3.7	13.4	21.5	0.0	79.3
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	176	166	176	1424	0	1124
V/C Ratio(X)	1.15	0.30	1.12	0.59	0.00	1.02
Avail Cap(c_a), veh/h	176	166	176	1424	0	1124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.9	49.5	53.9	4.5	0.0	20.9
Incr Delay (d2), s/veh	112.3	0.4	102.7	0.7	0.0	30.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	0.0	10.3	5.2	0.0	38.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	166.1	49.9	156.5	5.1	0.0	51.6
LnGrp LOS	F	D	F	A	A	F
Approach Vol, veh/h	252			1038	1141	
Approach Delay, s/veh	143.1			33.8	51.6	
Approach LOS	F			C	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		103.1		18.0	18.0	85.1
Change Period (Y+Rc), s		5.8		4.6	4.6	* 5.8
Max Green Setting (Gmax), s		96.2		13.4	13.4	* 79
Max Q Clear Time (g_c+I1), s		23.5		15.4	15.4	81.3
Green Ext Time (p_c), s		6.9		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.5
HCM 6th LOS	D

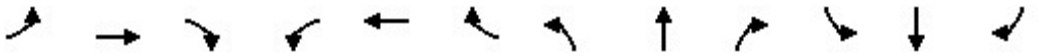
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	602	1680	95	264	1705	228	93	486	115	170	568	264
Future Volume (vph)	602	1680	95	264	1705	228	93	486	115	170	568	264
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	21.0	43.0	43.0	13.0	35.0	35.0	15.5	49.0	49.0	15.0	48.5	48.5
Total Split (%)	17.5%	35.8%	35.8%	10.8%	29.2%	29.2%	12.9%	40.8%	40.8%	12.5%	40.4%	40.4%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	16.5	37.1	37.1	8.5	28.7	28.7	9.6	26.0	26.0	10.5	26.8	26.8
Actuated g/C Ratio	0.16	0.36	0.36	0.08	0.28	0.28	0.09	0.25	0.25	0.10	0.26	0.26
v/c Ratio	1.30	0.94	0.17	1.16	0.93	0.41	0.67	0.61	0.25	1.13	0.70	0.47
Control Delay	187.4	44.2	5.4	149.4	46.4	6.7	69.7	36.9	3.0	155.4	38.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	187.4	44.2	5.4	149.4	46.4	6.7	69.7	36.9	3.0	155.4	38.8	6.1
LOS	F	D	A	F	D	A	E	D	A	F	D	A
Approach Delay		78.9			54.6			35.7			50.0	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 103.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 61.0	Intersection LOS: E
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	602	1680	95	264	1705	228	93	486	115	170	568	264
Future Volume (veh/h)	602	1680	95	264	1705	228	93	486	115	170	568	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	640	1787	52	281	1814	123	99	517	63	181	604	141
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	528	2036	575	262	2125	450	121	664	296	173	773	345
Arrive On Green	0.26	0.57	0.57	0.13	0.45	0.45	0.11	0.30	0.30	0.16	0.34	0.34
Sat Flow, veh/h	3092	5316	1502	3000	7088	1502	1594	3367	1502	1594	3367	1502
Grp Volume(v), veh/h	640	1787	52	281	1814	123	99	517	63	181	604	141
Grp Sat Flow(s),veh/h/ln	1546	1772	1502	1500	1772	1502	1594	1683	1502	1594	1683	1502
Q Serve(g_s), s	16.4	27.7	1.5	8.4	22.0	4.9	5.8	13.5	3.0	10.4	15.5	6.9
Cycle Q Clear(g_c), s	16.4	27.7	1.5	8.4	22.0	4.9	5.8	13.5	3.0	10.4	15.5	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	528	2036	575	262	2125	450	121	664	296	173	773	345
V/C Ratio(X)	1.21	0.88	0.09	1.07	0.85	0.27	0.82	0.78	0.21	1.05	0.78	0.41
Avail Cap(c_a), veh/h	528	2036	575	262	2125	450	181	1514	675	173	1497	668
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	18.5	12.9	41.7	24.5	19.9	41.9	31.9	28.2	40.2	29.3	26.5
Incr Delay (d2), s/veh	112.2	5.7	0.3	75.7	4.6	1.5	10.0	2.0	0.4	82.0	1.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	7.9	0.5	5.5	7.2	1.7	2.5	4.9	1.0	7.6	5.3	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	147.9	24.2	13.2	117.4	29.2	21.4	51.9	33.9	28.6	122.3	31.1	27.3
LnGrp LOS	F	C	B	F	C	C	D	C	C	F	C	C
Approach Vol, veh/h		2479			2218			679			926	
Approach Delay, s/veh		55.9			39.9			36.0			48.3	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	24.8	13.0	43.3	11.9	27.9	21.0	35.3
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	10.4	43.2	8.4	* 37	10.9	42.7	16.4	28.5
Max Q Clear Time (g_c+I1), s	12.4	15.5	10.4	29.7	7.8	17.5	18.4	24.0
Green Ext Time (p_c), s	0.0	3.5	0.0	5.5	0.0	4.3	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

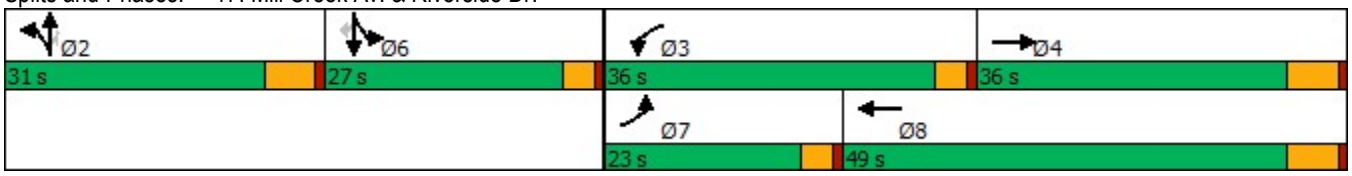
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

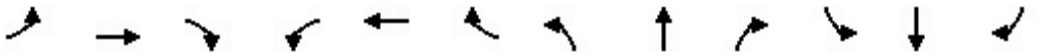
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	125	1343	515	1034	18	22	130	70	17	68
Future Volume (vph)	125	1343	515	1034	18	22	130	70	17	68
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8	2	2		6	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0	27.0
Total Split (s)	23.0	36.0	36.0	49.0	31.0	31.0	31.0	27.0	27.0	27.0
Total Split (%)	17.7%	27.7%	27.7%	37.7%	23.8%	23.8%	23.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	12.9	30.3	32.3	49.7	12.4	12.4	12.4	12.6	12.6	12.6
Actuated g/C Ratio	0.12	0.28	0.30	0.46	0.12	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.70	1.04	1.15	0.52	0.10	0.11	0.47	0.40	0.09	0.24
Control Delay	66.3	72.3	126.7	23.1	44.4	44.4	13.0	51.1	43.8	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.3	72.3	126.7	23.1	44.4	44.4	13.0	51.1	43.8	1.9
LOS	E	E	F	C	D	D	B	D	D	A
Approach Delay		71.8		54.7		20.3			28.7	
Approach LOS		E		D		C			C	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 107.6
Natural Cycle: 115
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 59.5 — Intersection LOS: E
Intersection Capacity Utilization 85.8% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1343	101	515	1034	137	18	22	130	70	17	68
Future Volume (veh/h)	125	1343	101	515	1034	137	18	22	130	70	17	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	133	1429	54	548	1100	98	19	23	74	74	18	45
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1481	56	495	2412	215	158	175	148	171	191	156
Arrive On Green	0.10	0.29	0.29	0.31	0.50	0.50	0.10	0.10	0.10	0.11	0.11	0.11
Sat Flow, veh/h	1594	5088	192	1594	4811	428	1594	1772	1497	1594	1772	1453
Grp Volume(v), veh/h	133	995	488	548	810	388	19	23	74	74	18	45
Grp Sat Flow(s),veh/h/ln	1594	1772	1736	1594	1772	1695	1594	1772	1497	1594	1772	1453
Q Serve(g_s), s	8.4	28.5	28.5	32.0	15.2	15.3	1.1	1.2	4.8	4.5	0.9	2.9
Cycle Q Clear(g_c), s	8.4	28.5	28.5	32.0	15.2	15.3	1.1	1.2	4.8	4.5	0.9	2.9
Prop In Lane	1.00		0.11	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	1031	505	495	1777	850	158	175	148	171	191	156
V/C Ratio(X)	0.83	0.97	0.97	1.11	0.46	0.46	0.12	0.13	0.50	0.43	0.09	0.29
Avail Cap(c_a), veh/h	294	1031	505	495	1777	850	390	433	366	356	395	324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	36.0	36.0	35.5	16.6	16.6	42.4	42.4	44.0	43.1	41.5	42.4
Incr Delay (d2), s/veh	4.3	20.1	31.2	73.2	0.2	0.4	0.3	0.3	2.6	1.7	0.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	14.3	15.6	21.5	5.6	5.4	0.4	0.5	1.8	1.8	0.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	56.1	67.2	108.8	16.8	17.0	42.7	42.7	46.6	44.8	41.7	43.4
LnGrp LOS	D	E	E	F	B	B	D	D	D	D	D	D
Approach Vol, veh/h		1616			1746			116			137	
Approach Delay, s/veh		59.0			45.7			45.2			43.9	
Approach LOS		E			D			D			D	

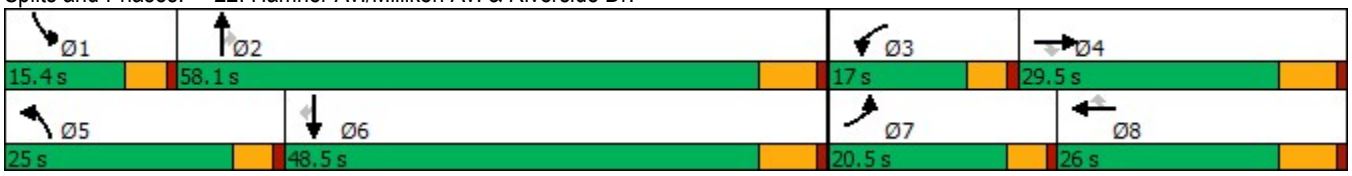
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.0	36.0	36.0		15.1	14.3	57.7				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		25.2	32.0	30.0		23.0	19.0	43.0				
Max Q Clear Time (g_c+I1), s		6.8	34.0	30.5		6.5	10.4	17.3				
Green Ext Time (p_c), s		0.3	0.0	0.0		0.3	0.1	7.9				

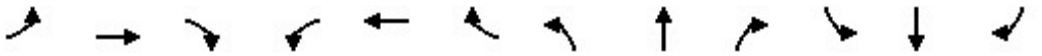
Intersection Summary												
HCM 6th Ctrl Delay			51.5									
HCM 6th LOS			D									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	393	203	303	109	274	250	482	1456	59	257	1398	646
Future Volume (vph)	393	203	303	109	274	250	482	1456	59	257	1398	646
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	20.5	29.5	29.5	17.0	26.0	26.0	25.0	58.1	58.1	15.4	48.5	48.5
Total Split (%)	17.1%	24.6%	24.6%	14.2%	21.7%	21.7%	20.8%	48.4%	48.4%	12.8%	40.4%	40.4%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	15.9	24.4	24.4	11.3	19.8	19.8	20.3	51.9	51.9	10.8	42.4	42.4
Actuated g/C Ratio	0.13	0.20	0.20	0.09	0.16	0.16	0.17	0.43	0.43	0.09	0.35	0.35
v/c Ratio	0.99	0.60	0.38	0.78	0.99	0.37	0.95	1.00	0.09	0.95	0.79	0.92
Control Delay	93.3	51.7	5.8	85.4	100.6	6.8	77.3	58.4	0.5	96.7	38.5	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.3	51.7	5.8	85.4	100.6	6.8	77.3	58.4	0.5	96.7	38.5	38.2
LOS	F	D	A	F	F	A	E	E	A	F	D	D
Approach Delay		54.4			60.9			61.3			44.9	
Approach LOS		D			E			E			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 53.7	Intersection LOS: D
Intersection Capacity Utilization 96.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	203	303	109	274	250	482	1456	59	257	1398	646
Future Volume (veh/h)	393	203	303	109	274	250	482	1456	59	257	1398	646
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	414	214	161	115	288	131	507	1533	33	271	1472	343
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	376	628	136	292	496	542	1533	649	287	1874	522
Arrive On Green	0.20	0.32	0.32	0.13	0.25	0.25	0.25	0.65	0.65	0.13	0.53	0.53
Sat Flow, veh/h	3188	1772	2961	1594	1772	3003	3188	3544	1501	3188	5316	1481
Grp Volume(v), veh/h	414	214	161	115	288	131	507	1533	33	271	1472	343
Grp Sat Flow(s),veh/h/ln	1594	1772	1480	1594	1772	1502	1594	1772	1501	1594	1772	1481
Q Serve(g_s), s	15.5	12.1	4.8	8.5	19.4	4.2	18.7	51.9	1.0	10.1	26.8	20.1
Cycle Q Clear(g_c), s	15.5	12.1	4.8	8.5	19.4	4.2	18.7	51.9	1.0	10.1	26.8	20.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	422	376	628	136	292	496	542	1533	649	287	1874	522
V/C Ratio(X)	0.98	0.57	0.26	0.84	0.99	0.26	0.94	1.00	0.05	0.94	0.79	0.66
Avail Cap(c_a), veh/h	422	376	628	165	292	496	542	1533	649	287	1874	522
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	36.4	33.9	51.5	45.0	39.3	44.1	21.1	12.1	51.6	24.6	23.0
Incr Delay (d2), s/veh	38.3	2.0	0.2	23.8	48.4	0.3	23.5	23.0	0.0	38.0	2.3	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	4.9	1.7	4.0	11.3	1.5	8.1	18.1	0.3	5.2	8.8	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.3	38.4	34.1	75.3	93.4	39.6	67.6	44.1	12.2	89.7	26.9	26.0
LnGrp LOS	F	D	C	E	F	D	E	F	B	F	C	C
Approach Vol, veh/h		789			534			2073			2086	
Approach Delay, s/veh		62.6			76.3			49.3			34.9	
Approach LOS		E			E			D			C	

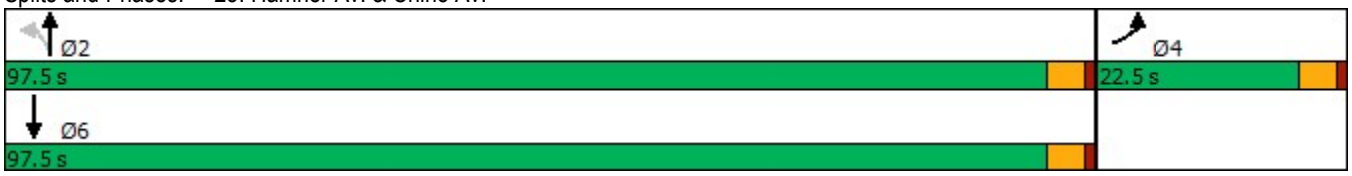
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	58.1	14.9	31.6	25.0	48.5	20.5	26.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	10.8	51.9	12.4	23.3	20.4	42.3	15.9	19.8
Max Q Clear Time (g_c+I1), s	12.1	53.9	10.5	14.1	20.7	28.8	17.5	21.4
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.0	8.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	48.4
HCM 6th LOS	D

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	54	76	1865	1724
Future Volume (vph)	54	76	1865	1724
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	22.5	97.5	97.5	97.5
Total Split (%)	18.8%	81.3%	81.3%	81.3%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	11.2		99.8	99.8
Actuated g/C Ratio	0.09		0.83	0.83
v/c Ratio	0.55		1.09	0.70
Control Delay	49.4		63.5	6.1
Queue Delay	0.0		0.0	0.0
Total Delay	49.4		63.5	6.1
LOS	D		E	A
Approach Delay	49.4		63.5	6.1
Approach LOS	D		E	A

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 35.9	Intersection LOS: D
Intersection Capacity Utilization 119.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	36	76	1865	1724	121
Future Volume (veh/h)	54	36	76	1865	1724	121
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	24	84	2049	1895	67
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	75	31	98	2459	2994	105
Arrive On Green	0.06	0.06	0.86	0.86	0.86	0.86
Sat Flow, veh/h	1209	492	73	2876	3595	123
Grp Volume(v), veh/h	84	0	1093	1040	956	1006
Grp Sat Flow(s),veh/h/ln	1721	0	1247	1702	1777	1848
Q Serve(g_s), s	5.2	0.0	74.2	24.8	18.4	18.8
Cycle Q Clear(g_c), s	5.2	0.0	93.0	24.8	18.4	18.8
Prop In Lane	0.70	0.29	0.08			0.07
Lane Grp Cap(c), veh/h	107	0	1102	1455	1519	1580
V/C Ratio(X)	0.78	0.00	0.99	0.71	0.63	0.64
Avail Cap(c_a), veh/h	285	0	1102	1455	1519	1580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	0.0	7.0	2.9	2.5	2.5
Incr Delay (d2), s/veh	11.8	0.0	25.1	1.7	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	9.2	2.3	1.6	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	62.1	0.0	32.1	4.6	3.3	3.4
LnGrp LOS	E	A	C	A	A	A
Approach Vol, veh/h	84			2133	1962	
Approach Delay, s/veh	62.1			18.7	3.3	
Approach LOS	E			B	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		97.5		11.3		97.5
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		93.0		18.0		93.0
Max Q Clear Time (g_c+I1), s		95.0		7.2		20.8
Green Ext Time (p_c), s		0.0		0.1		26.3

Intersection Summary		
HCM 6th Ctrl Delay		12.4
HCM 6th LOS		B

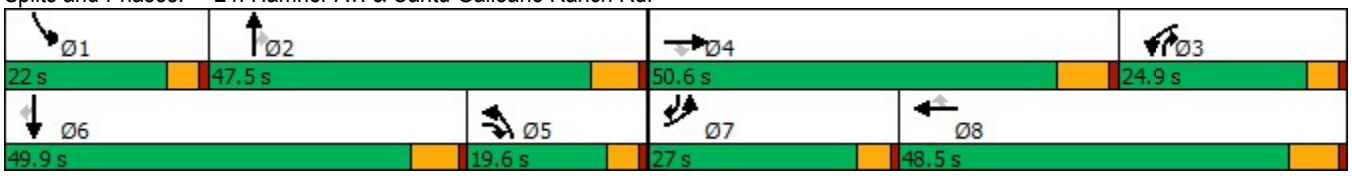
Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	704	1527	331	475	1542	449	239	516	371	729	855	569
Future Volume (vph)	704	1527	331	475	1542	449	239	516	371	729	855	569
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	48.5	9.6	9.6	48.5	48.5	9.6	46.2	9.6	9.6	46.2	9.6
Total Split (s)	27.0	50.6	19.6	24.9	48.5	48.5	19.6	47.5	24.9	22.0	49.9	27.0
Total Split (%)	18.6%	34.9%	13.5%	17.2%	33.4%	33.4%	13.5%	32.8%	17.2%	15.2%	34.4%	18.6%
Yellow Time (s)	3.6	5.5	3.6	3.6	5.5	5.5	3.6	5.2	3.6	3.6	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	4.6	6.5	6.5	4.6	6.2	4.6	4.6	6.2	4.6
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	22.6	35.7	57.3	25.8	38.9	38.9	15.0	21.3	48.7	17.6	23.9	48.1
Actuated g/C Ratio	0.18	0.29	0.47	0.21	0.32	0.32	0.12	0.17	0.40	0.14	0.20	0.39
v/c Ratio	1.12	0.73	0.43	0.67	0.68	0.67	0.58	0.55	0.56	1.50	0.61	0.45
Control Delay	119.4	41.7	16.7	51.1	38.7	18.5	58.3	48.1	15.2	269.9	46.9	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.4	41.7	16.7	51.1	38.7	18.5	58.3	48.1	15.2	269.9	46.9	13.2
LOS	F	D	B	D	D	B	E	D	B	F	D	B
Approach Delay		59.8			37.4			39.4			113.4	
Approach LOS		E			D			D			F	

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 122.5	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay: 64.3	Intersection LOS: E
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	704	1527	331	475	1542	449	239	516	371	729	855	569
Future Volume (veh/h)	704	1527	331	475	1542	449	239	516	371	729	855	569
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	733	1591	131	495	1606	285	249	538	202	759	891	202
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	722	2220	628	668	2235	474	353	803	524	561	1398	1235
Arrive On Green	0.30	0.45	0.45	0.28	0.45	0.45	0.15	0.21	0.21	0.24	0.28	0.28
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	733	1591	131	495	1606	285	249	538	202	759	891	202
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	22.4	19.2	0.0	13.9	19.3	15.0	7.3	9.7	3.2	17.4	11.5	2.5
Cycle Q Clear(g_c), s	22.4	19.2	0.0	13.9	19.3	15.0	7.3	9.7	3.2	17.4	11.5	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	722	2220	628	668	2235	474	353	803	524	561	1398	1235
V/C Ratio(X)	1.02	0.72	0.21	0.74	0.72	0.60	0.70	0.67	0.39	1.35	0.64	0.16
Avail Cap(c_a), veh/h	722	2984	790	668	2842	602	483	2096	889	561	2957	1895
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	26.9	17.0	37.3	26.7	25.5	45.5	41.0	9.5	42.2	36.5	7.9
Incr Delay (d2), s/veh	37.4	0.5	0.2	3.9	0.7	1.2	1.3	1.0	0.5	170.6	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	6.7	1.6	5.6	6.8	4.7	3.1	4.1	1.5	19.8	4.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.9	27.4	17.2	41.2	27.4	26.8	46.8	42.0	10.0	212.8	37.0	8.0
LnGrp LOS	F	C	B	D	C	C	D	D	B	F	D	A
Approach Vol, veh/h		2455			2386			989			1852	
Approach Delay, s/veh		41.3			30.2			36.7			105.9	
Approach LOS		D			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	22.0	27.2	39.3	17.2	26.9	27.0	39.5
Change Period (Y+Rc), s	4.6	6.2	6.5	* 6.5	6.2	* 6.2	4.6	6.5
Max Green Setting (Gmax), s	17.4	41.3	20.3	* 44	15.0	* 44	22.4	42.0
Max Q Clear Time (g_c+I1), s	19.4	11.7	15.9	21.2	9.3	13.5	24.4	21.3
Green Ext Time (p_c), s	0.0	4.1	0.4	11.7	0.2	7.1	0.0	11.7

Intersection Summary	
HCM 6th Ctrl Delay	52.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

APPENDIX 7.6: HORIZON YEAR (2050) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS

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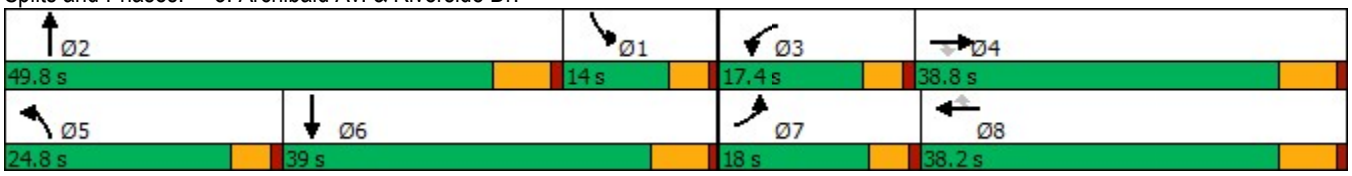
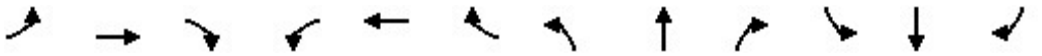
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	203	718	306	174	621	318	409	1706	267	744
Future Volume (vph)	203	718	306	174	621	318	409	1706	267	744
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	18.0	38.8	38.8	17.4	38.2	38.2	24.8	49.8	14.0	39.0
Total Split (%)	15.0%	32.3%	32.3%	14.5%	31.8%	31.8%	20.7%	41.5%	11.7%	32.5%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	30.5	30.5	12.8	29.9	29.9	18.8	43.6	9.4	34.2
Actuated g/C Ratio	0.11	0.26	0.26	0.11	0.25	0.25	0.16	0.37	0.08	0.29
v/c Ratio	1.18	0.86	0.53	1.06	0.76	0.66	0.87	1.12	1.14	0.72
Control Delay	168.4	53.1	8.5	135.6	47.3	25.7	67.1	97.3	148.3	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	168.4	53.1	8.5	135.6	47.3	25.7	67.1	97.3	148.3	39.3
LOS	F	D	A	F	D	C	E	F	F	D
Approach Delay		61.0			55.0			92.0		63.1
Approach LOS		E			D			F		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 117.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 72.5	Intersection LOS: E
Intersection Capacity Utilization 97.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	718	306	174	621	318	409	1706	190	267	744	211
Future Volume (veh/h)	203	718	306	174	621	318	409	1706	190	267	744	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	211	748	163	181	647	170	426	1777	104	278	775	111
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	848	372	172	831	364	476	1712	100	244	1303	185
Arrive On Green	0.11	0.25	0.25	0.11	0.25	0.25	0.15	0.37	0.37	0.08	0.31	0.31
Sat Flow, veh/h	1594	3367	1477	1594	3367	1474	3092	4670	273	3092	4271	607
Grp Volume(v), veh/h	211	748	163	181	647	170	426	1226	655	278	584	302
Grp Sat Flow(s),veh/h/ln	1594	1683	1477	1594	1683	1474	1546	1612	1718	1546	1612	1653
Q Serve(g_s), s	13.4	25.4	11.0	12.8	21.3	8.8	16.1	43.6	43.6	9.4	18.3	18.5
Cycle Q Clear(g_c), s	13.4	25.4	11.0	12.8	21.3	8.8	16.1	43.6	43.6	9.4	18.3	18.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		0.37
Lane Grp Cap(c), veh/h	180	848	372	172	831	364	476	1182	630	244	984	504
V/C Ratio(X)	1.18	0.88	0.44	1.06	0.78	0.47	0.90	1.04	1.04	1.14	0.59	0.60
Avail Cap(c_a), veh/h	180	923	405	172	906	396	525	1182	630	244	984	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	42.8	37.4	53.1	41.8	21.8	49.4	37.7	37.7	54.8	35.1	35.1
Incr Delay (d2), s/veh	122.2	9.5	0.8	84.1	4.1	0.9	15.9	36.3	46.6	99.8	1.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	11.2	3.9	8.9	8.9	3.0	7.0	22.0	25.2	6.9	7.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	175.0	52.3	38.2	137.2	45.8	22.8	65.2	74.0	84.3	154.5	36.0	37.1
LnGrp LOS	F	D	D	F	D	C	E	F	F	F	D	D
Approach Vol, veh/h		1122			998			2307			1164	
Approach Delay, s/veh		73.3			58.5			75.3			64.6	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	49.8	17.4	36.1	22.9	42.5	18.0	35.5
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	9.4	* 44	12.8	32.6	20.2	32.8	13.4	32.0
Max Q Clear Time (g_c+I1), s	11.4	45.6	14.8	27.4	18.1	20.5	15.4	23.3
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.2	4.1	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	69.7
HCM 6th LOS	E

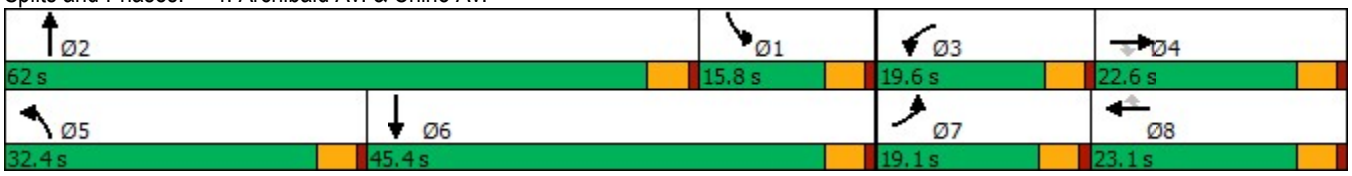
Notes

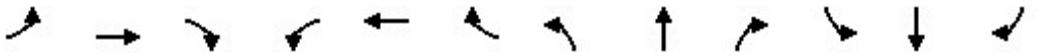
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	148	127	64	153	157	214	293	1765	85	870
Future Volume (vph)	148	127	64	153	157	214	293	1765	85	870
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	19.1	22.6	22.6	19.6	23.1	23.1	32.4	62.0	15.8	45.4
Total Split (%)	15.9%	18.8%	18.8%	16.3%	19.3%	19.3%	27.0%	51.7%	13.2%	37.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	14.4	15.6	15.6	14.9	16.1	16.1	27.1	56.2	11.8	40.9
Actuated g/C Ratio	0.12	0.13	0.13	0.13	0.14	0.14	0.23	0.48	0.10	0.35
v/c Ratio	0.89	0.63	0.23	0.90	0.76	0.68	0.94	0.90	0.63	0.96
Control Delay	93.2	60.8	1.7	92.6	69.2	23.9	79.5	33.7	70.0	54.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.2	60.8	1.7	92.6	69.2	23.9	79.5	33.7	70.0	54.9
LOS	F	E	A	F	E	C	E	C	E	D
Approach Delay		63.8			57.5			39.8		56.1
Approach LOS		E			E			D		E

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 116.9	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 48.2	Intersection LOS: D
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	127	64	153	157	214	293	1765	161	85	870	121
Future Volume (veh/h)	148	127	64	153	157	214	293	1765	161	85	870	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	174	149	67	180	185	158	345	2076	181	100	1024	134
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	216	183	205	222	188	369	2361	204	154	1086	142
Arrive On Green	0.12	0.12	0.12	0.13	0.13	0.13	0.23	0.49	0.49	0.10	0.35	0.35
Sat Flow, veh/h	1594	1772	1502	1594	1772	1502	1594	4819	416	1594	3061	400
Grp Volume(v), veh/h	174	149	67	180	185	158	345	1521	736	100	592	566
Grp Sat Flow(s),veh/h/ln	1594	1772	1502	1594	1772	1502	1594	1772	1691	1594	1772	1690
Q Serve(g_s), s	12.1	9.1	4.6	12.5	11.5	9.2	23.9	43.2	44.3	6.8	36.5	36.6
Cycle Q Clear(g_c), s	12.1	9.1	4.6	12.5	11.5	9.2	23.9	43.2	44.3	6.8	36.5	36.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.24
Lane Grp Cap(c), veh/h	199	216	183	205	222	188	369	1737	829	154	629	599
V/C Ratio(X)	0.88	0.69	0.37	0.88	0.83	0.84	0.93	0.88	0.89	0.65	0.94	0.94
Avail Cap(c_a), veh/h	205	283	240	212	291	246	393	1804	861	158	641	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	47.5	45.5	48.3	48.1	30.5	42.5	25.7	26.0	49.1	35.2	35.3
Incr Delay (d2), s/veh	31.3	4.7	1.2	31.1	14.4	17.5	28.4	5.1	10.9	8.7	22.2	23.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	4.2	1.8	6.6	5.9	4.2	11.7	17.2	18.1	3.0	18.5	17.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.8	52.1	46.7	79.3	62.6	48.0	70.9	30.7	36.9	57.8	57.4	58.5
LnGrp LOS	E	D	D	E	E	D	E	C	D	E	E	E
Approach Vol, veh/h		390			523			2602			1258	
Approach Delay, s/veh		63.5			63.9			37.8			57.9	
Approach LOS		E			E			D			E	

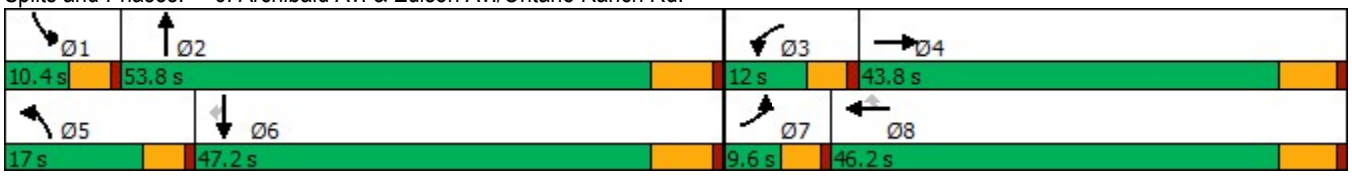
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	59.8	19.1	18.3	30.7	44.6	18.7	18.8
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	11.2	57.4	15.0	18.0	27.8	40.8	14.5	18.5
Max Q Clear Time (g_c+I1), s	8.8	46.3	14.5	11.1	25.9	38.6	14.1	13.5
Green Ext Time (p_c), s	0.0	8.9	0.0	0.5	0.2	1.4	0.0	0.7

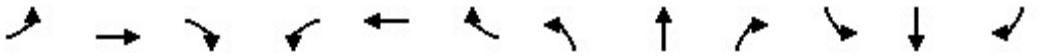
Intersection Summary	
HCM 6th Ctrl Delay	48.1
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	256	292	304	499	129	690	1637	339	109	943	101
Future Volume (vph)	43	256	292	304	499	129	690	1637	339	109	943	101
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	9.6	43.8		12.0	46.2	46.2	17.0	53.8		10.4	47.2	47.2
Total Split (%)	8.0%	36.5%		10.0%	38.5%	38.5%	14.2%	44.8%		8.7%	39.3%	39.3%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	5.1	20.4	98.1	7.6	25.4	25.4	12.7	41.7	98.1	5.9	35.0	35.0
Actuated g/C Ratio	0.05	0.21	1.00	0.08	0.26	0.26	0.13	0.43	1.00	0.06	0.36	0.36
v/c Ratio	0.30	0.25	0.21	1.45	0.60	0.28	1.85	0.80	0.25	0.65	0.55	0.18
Control Delay	55.5	32.8	0.3	261.5	35.9	5.2	419.1	28.6	0.4	65.8	27.1	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	32.8	0.3	261.5	35.9	5.2	419.1	28.6	0.4	65.8	27.1	2.1
LOS	E	C	A	F	D	A	F	C	A	E	C	A
Approach Delay		18.4			105.2			126.0			28.6	
Approach LOS		B			F			F			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.85	
Intersection Signal Delay: 89.5	Intersection LOS: F
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	256	292	304	499	129	690	1637	339	109	943	101
Future Volume (veh/h)	43	256	292	304	499	129	690	1637	339	109	943	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	47	281	0	334	548	76	758	1799	0	120	1036	56
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	834		268	732	306	477	2292		179	1805	503
Arrive On Green	0.06	0.24	0.00	0.13	0.31	0.31	0.22	0.65	0.00	0.09	0.51	0.51
Sat Flow, veh/h	3000	5316	1502	3000	3544	1482	3188	5316	1502	3092	5316	1482
Grp Volume(v), veh/h	47	281	0	334	548	76	758	1799	0	120	1036	56
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1482	1594	1772	1502	1546	1772	1482
Q Serve(g_s), s	1.2	3.6	0.0	7.4	11.5	3.2	12.4	20.1	0.0	3.1	11.2	1.6
Cycle Q Clear(g_c), s	1.2	3.6	0.0	7.4	11.5	3.2	12.4	20.1	0.0	3.1	11.2	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	834		268	732	306	477	2292		179	1805	503
V/C Ratio(X)	0.39	0.34		1.25	0.75	0.25	1.59	0.78		0.67	0.57	0.11
Avail Cap(c_a), veh/h	181	2414		268	1712	716	477	3036		217	2613	728
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	28.1	0.0	35.9	26.7	23.8	32.1	11.9	0.0	37.0	16.2	13.8
Incr Delay (d2), s/veh	0.8	0.2	0.0	137.9	1.6	0.4	274.4	1.0	0.0	3.6	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.4	0.0	7.5	4.1	1.0	22.1	4.5	0.0	1.2	3.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	28.3	0.0	173.8	28.2	24.2	306.6	12.9	0.0	40.6	16.5	13.9
LnGrp LOS	D	C		F	C	C	F	B		D	B	B
Approach Vol, veh/h		328	A		958			2557	A		1212	
Approach Delay, s/veh		29.8			78.6			99.9			18.7	
Approach LOS		C			E			F			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	42.2	12.0	19.2	17.0	34.6	7.9	23.3
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	5.8	47.3	7.4	37.6	12.4	40.7	5.0	40.0
Max Q Clear Time (g_c+I1), s	5.1	22.1	9.4	5.6	14.4	13.2	3.2	13.5
Green Ext Time (p_c), s	0.0	13.6	0.0	1.7	0.0	7.2	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	71.9
HCM 6th LOS	E

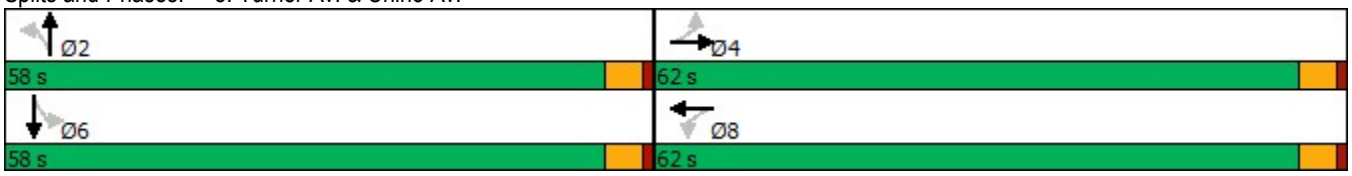
Notes

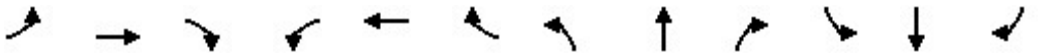
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	170	169	49	224	157	493	92	230
Future Volume (vph)	170	169	49	224	157	493	92	230
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	62.0	62.0	62.0	62.0	58.0	58.0	58.0	58.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%	48.3%	48.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	32.0	32.0	32.0	32.0	30.7	30.7	30.7	30.7
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.42	0.42	0.42	0.42
v/c Ratio	0.73	0.27	0.18	0.35	0.67	0.53	0.61	0.33
Control Delay	35.2	8.8	16.3	10.8	32.2	18.5	35.8	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	8.8	16.3	10.8	32.2	18.5	35.8	13.5
LOS	D	A	B	B	C	B	D	B
Approach Delay		18.7		11.5		21.6		18.3
Approach LOS		B		B		C		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 73.7	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Turner Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	169	117	49	224	148	157	493	51	92	230	109
Future Volume (veh/h)	170	169	117	49	224	148	157	493	51	92	230	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	230	228	158	66	303	200	212	666	69	124	311	147
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	870	578	429	878	563	376	1318	136	272	956	441
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	801	1937	1287	892	1954	1254	835	3068	317	646	2226	1027
Grp Volume(v), veh/h	230	197	189	66	260	243	212	365	370	124	233	225
Grp Sat Flow(s),veh/h/ln	801	1683	1540	892	1683	1525	835	1683	1702	646	1683	1570
Q Serve(g_s), s	19.6	5.4	5.7	3.7	7.5	7.8	16.9	11.7	11.8	12.9	6.8	7.1
Cycle Q Clear(g_c), s	27.4	5.4	5.7	9.5	7.5	7.8	23.9	11.7	11.8	24.7	6.8	7.1
Prop In Lane	1.00		0.84	1.00		0.82	1.00		0.19	1.00		0.65
Lane Grp Cap(c), veh/h	373	757	692	429	757	685	376	723	731	272	723	674
V/C Ratio(X)	0.62	0.26	0.27	0.15	0.34	0.35	0.56	0.50	0.51	0.46	0.32	0.33
Avail Cap(c_a), veh/h	632	1301	1191	718	1301	1179	618	1211	1224	459	1211	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	12.8	12.9	15.8	13.3	13.4	22.1	15.5	15.5	24.5	14.0	14.1
Incr Delay (d2), s/veh	1.7	0.2	0.2	0.2	0.3	0.3	1.3	0.5	0.5	1.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	1.8	1.8	0.7	2.5	2.4	3.0	4.0	4.0	1.9	2.3	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	12.9	13.1	16.0	13.6	13.7	23.4	16.0	16.0	25.6	14.3	14.4
LnGrp LOS	C	B	B	B	B	B	C	B	B	C	B	B
Approach Vol, veh/h		616			569			947			582	
Approach Delay, s/veh		17.1			13.9			17.7			16.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.5		37.9		36.5		37.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		53.5		57.5		53.5		57.5				
Max Q Clear Time (g_c+I1), s		25.9		29.4		26.7		11.5				
Green Ext Time (p_c), s		6.0		4.0		3.8		3.6				

Intersection Summary												
HCM 6th Ctrl Delay			16.6									
HCM 6th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	546	763	321	526	439	24	530	222	478	412	309
Future Volume (vph)	546	763	321	526	439	24	530	222	478	412	309
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8			2		6	6	
Permitted Phases					8	2		2			6
Detector Phase	7	4	3	8	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	30.2	23.7	23.7	23.7	24.8	24.8	24.8
Total Split (s)	25.0	36.4	18.8	30.2	30.2	24.8	24.8	24.8	40.0	40.0	40.0
Total Split (%)	20.8%	30.3%	15.7%	25.2%	25.2%	20.7%	20.7%	20.7%	33.3%	33.3%	33.3%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.7	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.7	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	20.4	30.2	14.1	23.9	23.9	20.1	20.1	20.1	34.2	34.2	34.2
Actuated g/C Ratio	0.17	0.25	0.12	0.20	0.20	0.17	0.17	0.17	0.29	0.29	0.29
v/c Ratio	1.08	0.99	0.91	0.80	0.71	0.47	0.95	0.54	1.13	0.44	0.51
Control Delay	108.9	73.0	82.0	55.1	10.4	74.6	77.0	10.4	122.1	36.6	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.9	73.0	82.0	55.1	10.4	74.6	77.0	10.4	122.1	36.6	6.5
LOS	F	E	F	E	B	E	E	B	F	D	A
Approach Delay		87.3		46.6			57.9			63.0	
Approach LOS		F		D			E			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.9	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 64.8	Intersection LOS: E
Intersection Capacity Utilization 98.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	546	763	57	321	526	439	24	530	222	478	412	309
Future Volume (veh/h)	546	763	57	321	526	439	24	530	222	478	412	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	581	812	34	341	560	244	26	564	119	509	438	153
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	542	848	35	377	709	287	267	594	247	454	1010	423
Arrive On Green	0.25	0.38	0.38	0.18	0.30	0.30	0.25	0.25	0.25	0.43	0.43	0.43
Sat Flow, veh/h	3188	3369	141	3188	3544	1433	1594	3544	1475	1594	3544	1483
Grp Volume(v), veh/h	581	427	419	341	560	244	26	564	119	509	438	153
Grp Sat Flow(s),veh/h/ln	1594	1772	1738	1594	1772	1433	1594	1772	1475	1594	1772	1483
Q Serve(g_s), s	20.4	28.2	28.2	12.6	17.4	19.2	1.5	18.8	8.2	34.2	10.4	8.4
Cycle Q Clear(g_c), s	20.4	28.2	28.2	12.6	17.4	19.2	1.5	18.8	8.2	34.2	10.4	8.4
Prop In Lane	1.00		0.08	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	542	446	437	377	709	287	267	594	247	454	1010	423
V/C Ratio(X)	1.07	0.96	0.96	0.90	0.79	0.85	0.10	0.95	0.48	1.12	0.43	0.36
Avail Cap(c_a), veh/h	542	446	437	377	709	287	267	594	247	454	1010	423
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	36.7	36.7	48.7	39.7	40.3	38.0	44.4	40.5	34.4	27.5	27.0
Incr Delay (d2), s/veh	59.4	31.9	32.3	23.8	6.0	21.0	0.2	25.1	1.5	79.4	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	14.0	13.8	5.8	7.1	7.4	0.6	9.7	2.9	20.9	4.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.1	68.6	69.1	72.5	45.7	61.3	38.1	69.6	41.9	113.8	27.8	27.5
LnGrp LOS	F	E	E	E	D	E	D	E	D	F	C	C
Approach Vol, veh/h		1427			1145			709			1100	
Approach Delay, s/veh		83.2			57.0			63.8			67.6	
Approach LOS		F			E			E			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.8	18.8	36.4		40.0	25.0	30.2				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 20	14.2	30.2		34.2	20.4	24.0				
Max Q Clear Time (g_c+I1), s		20.8	14.6	30.2		36.2	22.4	21.2				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	1.2				

Intersection Summary		
HCM 6th Ctrl Delay		69.3
HCM 6th LOS		E

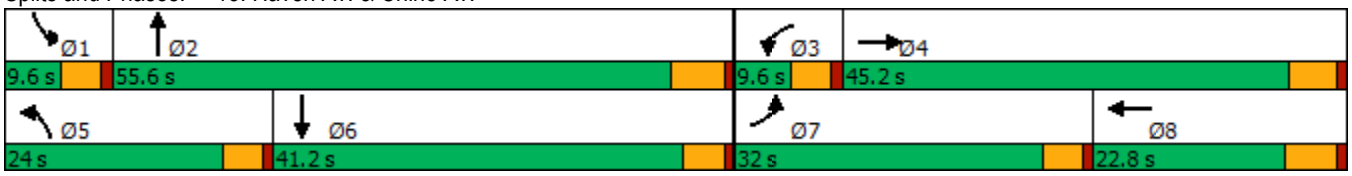
Notes

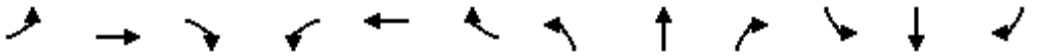
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	252	68	25	55	174	685	611	
Future Volume (vph)	252	68	25	55	174	685	611	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	32.0	45.2	9.6	22.8	24.0	55.6	41.2	9.6
Total Split (%)	26.7%	37.7%	8.0%	19.0%	20.0%	46.3%	34.3%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	21.0	27.8	5.5	12.2	15.6	49.1	29.6	
Actuated g/C Ratio	0.22	0.30	0.06	0.13	0.17	0.52	0.31	
v/c Ratio	0.76	0.51	0.13	0.25	0.71	0.41	0.78	
Control Delay	53.1	19.6	53.4	47.7	58.0	16.1	36.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.1	19.6	53.4	47.7	58.0	16.1	36.5	
LOS	D	B	D	D	E	B	D	
Approach Delay		35.5		49.5		24.3	36.5	
Approach LOS		D		D		C	D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 94.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 32.0	Intersection LOS: C
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	68	208	25	55	0	174	685	28	0	611	149
Future Volume (veh/h)	252	68	208	25	55	0	174	685	28	0	611	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	268	74	221	27	60	0	185	729	30	0	650	159
Peak Hour Factor	0.94	0.92	0.94	0.92	0.92	0.92	0.94	0.94	0.92	0.92	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	117	349	96	224	0	218	1676	69	2	815	199
Arrive On Green	0.19	0.28	0.28	0.03	0.12	0.00	0.14	0.50	0.50	0.00	0.30	0.30
Sat Flow, veh/h	1594	413	1235	3456	1870	0	1594	3380	139	1781	2682	655
Grp Volume(v), veh/h	268	0	295	27	60	0	185	382	377	0	408	401
Grp Sat Flow(s),veh/h/ln	1594	0	1648	1728	1870	0	1594	1772	1747	1781	1683	1654
Q Serve(g_s), s	13.7	0.0	13.1	0.6	2.4	0.0	9.5	11.6	11.6	0.0	18.6	18.6
Cycle Q Clear(g_c), s	13.7	0.0	13.1	0.6	2.4	0.0	9.5	11.6	11.6	0.0	18.6	18.6
Prop In Lane	1.00		0.75	1.00		0.00	1.00		0.08	1.00		0.40
Lane Grp Cap(c), veh/h	304	0	465	96	224	0	218	879	866	2	511	503
V/C Ratio(X)	0.88	0.00	0.63	0.28	0.27	0.00	0.85	0.43	0.44	0.00	0.80	0.80
Avail Cap(c_a), veh/h	522	0	785	207	380	0	370	1056	1041	107	735	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	0.0	26.2	39.8	33.5	0.0	35.2	13.5	13.5	0.0	26.7	26.7
Incr Delay (d2), s/veh	4.3	0.0	1.4	0.6	0.6	0.0	3.5	0.3	0.3	0.0	4.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	5.0	0.3	1.1	0.0	3.7	4.1	4.0	0.0	7.7	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	0.0	27.6	40.4	34.1	0.0	38.7	13.9	13.9	0.0	30.7	30.9
LnGrp LOS	D	A	C	D	C	A	D	B	B	A	C	C
Approach Vol, veh/h		563			87			944			809	
Approach Delay, s/veh		32.2			36.1			18.7			30.8	
Approach LOS		C			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	47.3	6.9	29.4	16.1	31.2	20.5	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	49.8	5.0	* 40	19.4	* 37	27.4	17.0
Max Q Clear Time (g_c+I1), s	0.0	13.6	2.6	15.1	11.5	20.6	15.7	4.4
Green Ext Time (p_c), s	0.0	4.7	0.0	1.8	0.1	4.8	0.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

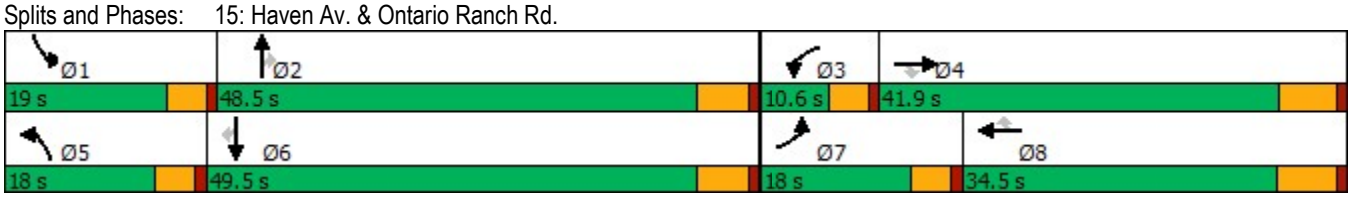
Notes

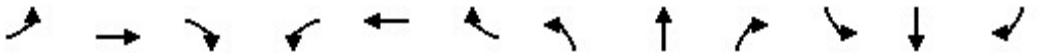
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1503	54	127	1092	209	75	362	192	489	419	172
Future Volume (vph)	230	1503	54	127	1092	209	75	362	192	489	419	172
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	18.0	41.9	41.9	10.6	34.5	34.5	18.0	48.5	48.5	19.0	49.5	49.5
Total Split (%)	15.0%	34.9%	34.9%	8.8%	28.8%	28.8%	15.0%	40.4%	40.4%	15.8%	41.3%	41.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	13.5	36.1	36.1	6.1	28.3	28.3	9.1	19.9	19.9	14.6	27.6	27.6
Actuated g/C Ratio	0.14	0.37	0.37	0.06	0.29	0.29	0.09	0.20	0.20	0.15	0.28	0.28
v/c Ratio	1.13	0.83	0.09	0.74	0.58	0.38	0.55	0.57	0.48	2.24	0.48	0.34
Control Delay	141.9	34.0	0.6	71.6	32.3	6.6	58.9	37.7	12.9	595.5	31.7	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	141.9	34.0	0.6	71.6	32.3	6.6	58.9	37.7	12.9	595.5	31.7	5.9
LOS	F	C	A	E	C	A	E	D	B	F	C	A
Approach Delay		46.9			32.0			32.7			282.8	
Approach LOS		D			C			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 98	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.24	
Intersection Signal Delay: 92.5	Intersection LOS: F
Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1503	54	127	1092	209	75	362	192	489	419	172
Future Volume (veh/h)	230	1503	54	127	1092	209	75	362	192	489	419	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	247	1616	47	137	1174	173	81	389	155	526	451	162
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	2003	565	190	2117	449	101	609	271	242	908	403
Arrive On Green	0.14	0.38	0.38	0.06	0.30	0.30	0.06	0.18	0.18	0.15	0.27	0.27
Sat Flow, veh/h	1594	5316	1500	3000	7088	1502	1594	3367	1499	1594	3367	1493
Grp Volume(v), veh/h	247	1616	47	137	1174	173	81	389	155	526	451	162
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1683	1499	1594	1683	1493
Q Serve(g_s), s	13.4	25.8	1.9	4.2	13.2	8.7	4.8	10.1	8.9	14.4	10.7	8.4
Cycle Q Clear(g_c), s	13.4	25.8	1.9	4.2	13.2	8.7	4.8	10.1	8.9	14.4	10.7	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	2003	565	190	2117	449	101	609	271	242	908	403
V/C Ratio(X)	1.10	0.81	0.08	0.72	0.55	0.39	0.80	0.64	0.57	2.17	0.50	0.40
Avail Cap(c_a), veh/h	225	2003	565	190	2117	449	225	1517	676	242	1553	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	26.4	19.0	43.5	27.9	26.3	43.8	35.9	35.4	40.2	29.2	28.3
Incr Delay (d2), s/veh	87.9	3.6	0.3	11.0	1.1	2.5	5.6	1.1	1.9	540.5	0.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	10.4	0.6	1.8	5.2	3.1	2.0	4.0	0.1	41.7	4.1	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.5	30.0	19.3	54.5	29.0	28.8	49.4	37.1	37.3	580.7	29.6	29.0
LnGrp LOS	F	C	B	D	C	C	D	D	D	F	C	C
Approach Vol, veh/h		1910			1484			625			1139	
Approach Delay, s/veh		42.5			31.3			38.7			284.0	
Approach LOS		D			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	22.9	10.6	42.2	10.6	31.4	18.0	34.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	14.4	42.7	6.0	* 36	13.4	43.7	13.4	28.0
Max Q Clear Time (g_c+I1), s	16.4	12.1	6.2	27.8	6.8	12.7	15.4	15.2
Green Ext Time (p_c), s	0.0	2.9	0.0	5.6	0.0	3.4	0.0	6.2

Intersection Summary	
HCM 6th Ctrl Delay	92.2
HCM 6th LOS	F

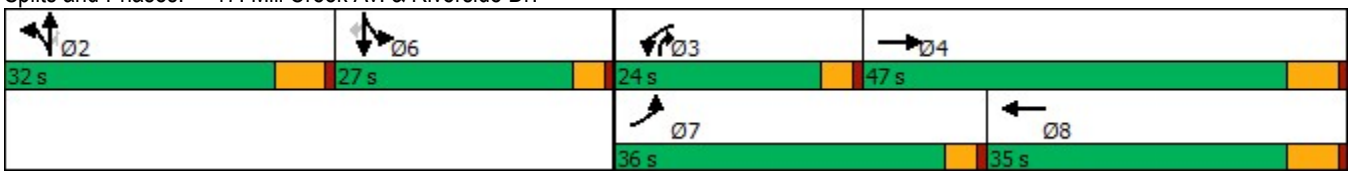
Notes

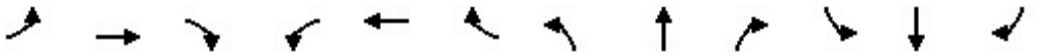
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	388	779	120	986	231	91	251	100	188	110
Future Volume (vph)	388	779	120	986	231	91	251	100	188	110
Turn Type	Prot	NA	Prot	NA	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	7	4	3	8	2	2	3	6	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	2	2	3	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	9.0	27.0	27.0	27.0
Total Split (s)	36.0	47.0	24.0	35.0	32.0	32.0	24.0	27.0	27.0	27.0
Total Split (%)	27.7%	36.2%	18.5%	26.9%	24.6%	24.6%	18.5%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag			Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes			
Recall Mode	None	None	None	None	Min	Min	None	Min	Min	Min
Act Effct Green (s)	32.1	45.3	15.8	29.1	25.3	25.3	42.9	20.6	20.6	20.6
Actuated g/C Ratio	0.25	0.36	0.12	0.23	0.20	0.20	0.34	0.16	0.16	0.16
v/c Ratio	1.23	0.73	0.77	1.16	0.93	0.33	0.52	0.49	0.83	0.42
Control Delay	163.7	37.4	78.9	122.5	85.6	47.0	10.6	55.5	75.5	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	163.7	37.4	78.9	122.5	85.6	47.0	10.6	55.5	75.5	11.3
LOS	F	D	E	F	F	D	B	E	E	B
Approach Delay		71.2		118.2		46.6			52.8	
Approach LOS		E		F		D			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 126.8	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 81.0	Intersection LOS: F
Intersection Capacity Utilization 96.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	388	779	285	120	986	109	231	91	251	100	188	110
Future Volume (veh/h)	388	779	285	120	986	109	231	91	251	100	188	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	491	986	184	152	1248	75	292	115	65	127	238	69
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	399	1604	298	174	1125	68	313	348	456	273	304	225
Arrive On Green	0.38	0.55	0.55	0.16	0.34	0.34	0.29	0.29	0.29	0.26	0.26	0.26
Sat Flow, veh/h	1594	4352	810	1594	4959	298	1594	1772	1492	1594	1772	1310
Grp Volume(v), veh/h	491	802	368	152	892	431	292	115	65	127	238	69
Grp Sat Flow(s),veh/h/ln	1594	1772	1618	1594	1772	1713	1594	1772	1492	1594	1772	1310
Q Serve(g_s), s	32.0	19.6	19.7	11.9	29.0	29.0	22.8	6.5	3.6	8.6	16.0	5.4
Cycle Q Clear(g_c), s	32.0	19.6	19.7	11.9	29.0	29.0	22.8	6.5	3.6	8.6	16.0	5.4
Prop In Lane	1.00		0.50	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	1306	596	174	804	389	313	348	456	273	304	225
V/C Ratio(X)	1.23	0.61	0.62	0.88	1.11	1.11	0.93	0.33	0.14	0.46	0.78	0.31
Avail Cap(c_a), veh/h	399	1306	596	249	804	389	327	363	470	287	319	236
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	22.4	22.4	52.6	42.1	42.1	44.3	38.5	28.2	42.5	45.2	41.3
Incr Delay (d2), s/veh	123.7	0.9	1.9	15.9	65.9	78.5	32.4	0.6	0.1	1.2	11.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.3	6.5	6.1	5.1	18.2	18.9	10.8	2.7	1.3	3.3	7.5	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	163.6	23.3	24.4	68.5	108.0	120.6	76.7	39.1	28.3	43.7	56.8	42.1
LnGrp LOS	F	C	C	E	F	F	E	D	C	D	E	D
Approach Vol, veh/h		1661			1475			472			434	
Approach Delay, s/veh		65.0			107.6			60.9			50.6	
Approach LOS		E			F			E			D	

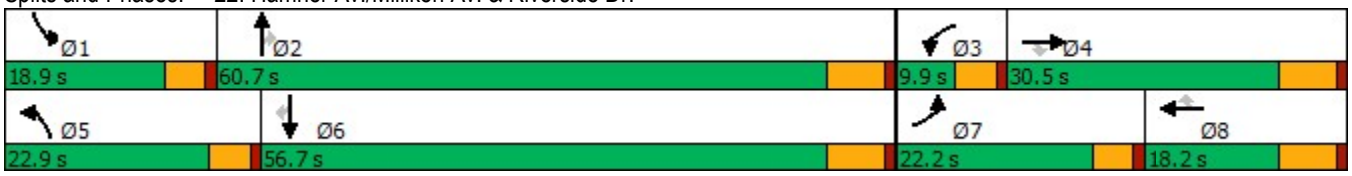
Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	30.9	17.9	53.1	25.9	36.0	35.0
Change Period (Y+Rc), s	5.8	4.0	6.0	4.0	4.0	6.0
Max Green Setting (Gmax), s	26.2	20.0	41.0	23.0	32.0	29.0
Max Q Clear Time (g_c+I1), s	24.8	13.9	21.7	18.0	34.0	31.0
Green Ext Time (p_c), s	0.3	0.1	7.0	0.9	0.0	0.0

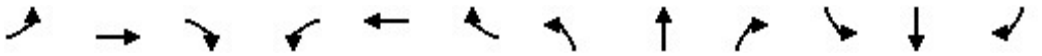
Intersection Summary	
HCM 6th Ctrl Delay	78.5
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	371	161	619	34	141	295	263	1368	70	296	828	270
Future Volume (vph)	371	161	619	34	141	295	263	1368	70	296	828	270
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	22.2	30.5	30.5	9.9	18.2	18.2	22.9	60.7	60.7	18.9	56.7	56.7
Total Split (%)	18.5%	25.4%	25.4%	8.3%	15.2%	15.2%	19.1%	50.6%	50.6%	15.8%	47.3%	47.3%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	17.6	26.3	26.3	5.2	12.0	12.0	15.3	54.5	54.5	14.3	53.5	53.5
Actuated g/C Ratio	0.15	0.22	0.22	0.04	0.10	0.10	0.13	0.45	0.45	0.12	0.45	0.45
v/c Ratio	0.95	0.48	0.73	0.57	0.92	0.60	0.75	0.98	0.10	0.93	0.61	0.37
Control Delay	82.0	46.8	17.7	87.4	103.6	10.0	62.1	51.1	0.3	84.7	27.7	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.0	46.8	17.7	87.4	103.6	10.0	62.1	51.1	0.3	84.7	27.7	3.7
LOS	F	D	B	F	F	B	E	D	A	F	C	A
Approach Delay		42.5			43.7			50.7			35.2	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 43.4	Intersection LOS: D
Intersection Capacity Utilization 87.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	371	161	619	34	141	295	263	1368	70	296	828	270
Future Volume (veh/h)	371	161	619	34	141	295	263	1368	70	296	828	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	426	185	366	39	162	172	302	1572	40	340	952	155
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	455	384	573	48	178	265	354	1605	680	369	1635	693
Arrive On Green	0.22	0.33	0.33	0.05	0.15	0.15	0.17	0.68	0.68	0.18	0.69	0.69
Sat Flow, veh/h	3092	1772	2643	1594	1772	2643	3188	3544	1502	3092	3544	1502
Grp Volume(v), veh/h	426	185	366	39	162	172	302	1572	40	340	952	155
Grp Sat Flow(s),veh/h/ln	1546	1772	1321	1594	1772	1321	1594	1772	1502	1546	1772	1502
Q Serve(g_s), s	16.2	10.0	14.1	2.9	10.8	7.3	11.0	50.9	1.1	12.9	16.6	4.5
Cycle Q Clear(g_c), s	16.2	10.0	14.1	2.9	10.8	7.3	11.0	50.9	1.1	12.9	16.6	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	455	384	573	48	178	265	354	1605	680	369	1635	693
V/C Ratio(X)	0.94	0.48	0.64	0.81	0.91	0.65	0.85	0.98	0.06	0.92	0.58	0.22
Avail Cap(c_a), veh/h	455	384	573	71	178	265	487	1613	684	369	1635	693
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	35.0	36.4	56.8	50.3	48.9	48.9	18.7	10.7	48.6	12.5	10.6
Incr Delay (d2), s/veh	26.8	0.9	2.4	21.9	43.3	5.5	8.0	17.7	0.0	27.3	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	4.0	4.2	1.4	6.5	2.5	4.4	15.6	0.3	5.9	4.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.9	35.9	38.8	78.7	93.6	54.3	56.9	36.3	10.7	75.9	13.0	10.8
LnGrp LOS	E	D	D	E	F	D	E	D	B	E	B	B
Approach Vol, veh/h		977			373			1914			1447	
Approach Delay, s/veh		53.1			74.0			39.0			27.6	
Approach LOS		D			E			D			C	

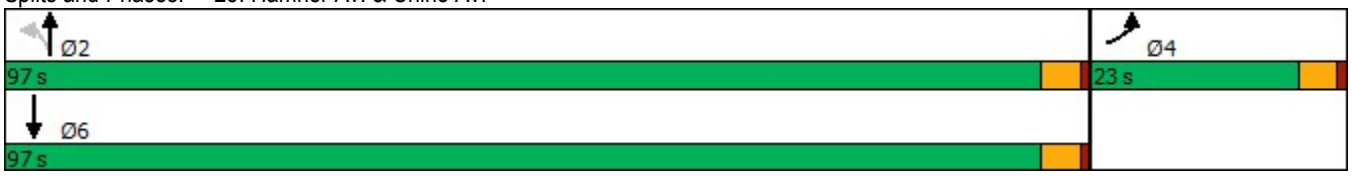
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	60.4	8.2	32.2	17.9	61.4	22.2	18.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	14.3	54.5	5.3	24.3	18.3	50.5	17.6	12.0
Max Q Clear Time (g_c+I1), s	14.9	52.9	4.9	16.1	13.0	18.6	18.2	12.8
Green Ext Time (p_c), s	0.0	1.3	0.0	1.5	0.3	7.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Lane Group	EBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	24	1686	1600
Future Volume (vph)	24	1686	1600
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5
Total Split (s)	23.0	97.0	97.0
Total Split (%)	19.2%	80.8%	80.8%
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Min	Min
Act Effct Green (s)	8.6	59.2	59.2
Actuated g/C Ratio	0.13	0.86	0.86
v/c Ratio	0.17	0.60	0.60
Control Delay	29.6	4.4	4.5
Queue Delay	0.0	0.0	0.0
Total Delay	29.6	4.4	4.5
LOS	C	A	A
Approach Delay	29.6	4.4	4.5
Approach LOS	C	A	A

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 68.5		
Natural Cycle: 60		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.60		
Intersection Signal Delay: 4.7	Intersection LOS: A	
Intersection Capacity Utilization 58.3%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	10	0	1686	1600	3
Future Volume (veh/h)	24	10	0	1686	1600	3
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	11	0	1916	1818	3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	49	20	0	2936	2857	5
Arrive On Green	0.04	0.04	0.00	0.78	0.78	0.78
Sat Flow, veh/h	1193	486	0	3741	3734	6
Grp Volume(v), veh/h	39	0	0	1916	887	934
Grp Sat Flow(s),veh/h/ln	1723	0	0	1870	1777	1869
Q Serve(g_s), s	1.1	0.0	0.0	11.7	11.1	11.1
Cycle Q Clear(g_c), s	1.1	0.0	0.0	11.7	11.1	11.1
Prop In Lane	0.69	0.28	0.00			0.00
Lane Grp Cap(c), veh/h	71	0	0	2936	1394	1467
V/C Ratio(X)	0.55	0.00	0.00	0.65	0.64	0.64
Avail Cap(c_a), veh/h	616	0	0	6681	3173	3338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	0.0	0.0	2.5	2.4	2.4
Incr Delay (d2), s/veh	6.3	0.0	0.0	0.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.1	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.7	0.0	0.0	2.7	2.9	2.9
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	39			1916	1821	
Approach Delay, s/veh	30.7			2.7	2.9	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		45.1		6.6		45.1
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		92.5		18.5		92.5
Max Q Clear Time (g_c+I1), s		13.7		3.1		13.1
Green Ext Time (p_c), s		26.9		0.0		21.9

Intersection Summary	
HCM 6th Ctrl Delay	3.1
HCM 6th LOS	A

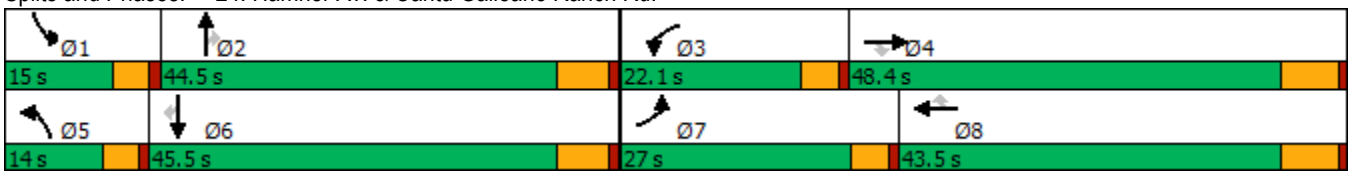
Notes

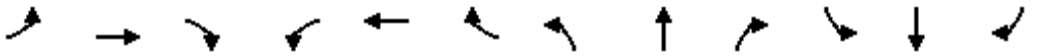
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	850	1509	93	291	1405	307	314	749	376	373	253	441
Future Volume (vph)	850	1509	93	291	1405	307	314	749	376	373	253	441
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	43.5	43.5	9.6	43.5	43.5	9.6	43.2	43.2	9.6	43.2	43.2
Total Split (s)	27.0	48.4	48.4	22.1	43.5	43.5	14.0	44.5	44.5	15.0	45.5	45.5
Total Split (%)	20.8%	37.2%	37.2%	17.0%	33.5%	33.5%	10.8%	34.2%	34.2%	11.5%	35.0%	35.0%
Yellow Time (s)	3.6	5.5	5.5	3.6	5.5	5.5	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	6.5	4.6	6.5	6.5	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	22.6	42.0	42.0	13.8	33.2	33.2	9.5	25.4	25.4	10.5	26.4	26.4
Actuated g/C Ratio	0.20	0.37	0.37	0.12	0.29	0.29	0.08	0.22	0.22	0.09	0.23	0.23
v/c Ratio	1.26	0.57	0.15	0.71	0.67	0.55	1.11	0.63	0.67	1.19	0.15	0.42
Control Delay	167.3	30.6	5.4	58.6	37.6	19.1	134.0	42.2	16.3	158.5	34.9	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.3	30.6	5.4	58.6	37.6	19.1	134.0	42.2	16.3	158.5	34.9	4.3
LOS	F	C	A	E	D	B	F	D	B	F	C	A
Approach Delay		77.0			37.8			55.5			65.5	
Approach LOS		E			D			E			E	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 113.8	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 59.5	Intersection LOS: E
Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	850	1509	93	291	1405	307	314	749	376	373	253	441
Future Volume (veh/h)	850	1509	93	291	1405	307	314	749	376	373	253	441
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	885	1572	71	303	1464	143	327	780	137	389	264	412
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	760	2900	614	375	2089	443	319	1119	316	353	1563	662
Arrive On Green	0.21	0.39	0.39	0.11	0.28	0.28	0.09	0.20	0.20	0.10	0.21	0.21
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	885	1572	71	303	1464	143	327	780	137	389	264	412
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	22.4	17.1	3.0	8.7	18.4	7.5	9.4	13.6	7.9	10.4	3.0	12.4
Cycle Q Clear(g_c), s	22.4	17.1	3.0	8.7	18.4	7.5	9.4	13.6	7.9	10.4	3.0	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	760	2900	614	375	2089	443	319	1119	316	353	1563	662
V/C Ratio(X)	1.16	0.54	0.12	0.81	0.70	0.32	1.02	0.70	0.43	1.10	0.17	0.62
Avail Cap(c_a), veh/h	760	2987	633	594	2638	559	319	2048	579	353	2802	1187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	24.9	20.6	45.9	33.9	30.0	47.8	39.1	36.8	47.3	34.0	37.7
Incr Delay (d2), s/veh	87.8	0.2	0.1	2.0	0.6	0.4	56.8	0.8	0.9	78.1	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.4	6.9	1.0	3.8	7.8	2.7	6.5	6.0	3.0	8.2	1.3	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	129.1	25.1	20.7	47.9	34.5	30.4	104.6	39.9	37.7	125.4	34.1	38.7
LnGrp LOS	F	C	C	D	C	C	F	D	D	F	C	D
Approach Vol, veh/h		2528			1910			1244			1065	
Approach Delay, s/veh		61.4			36.3			56.6			69.2	
Approach LOS		E			D			E			E	

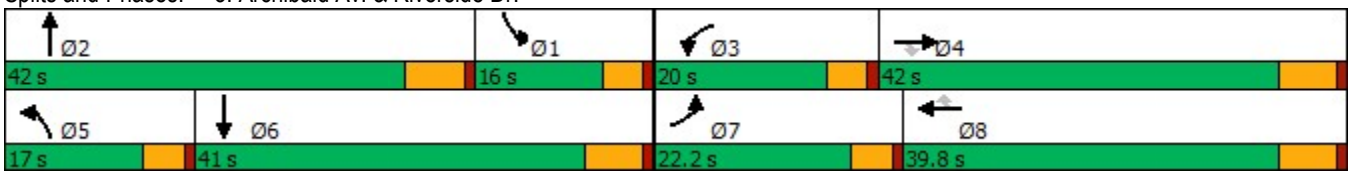
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	27.1	15.6	47.2	14.0	28.1	27.0	35.8
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	10.4	38.3	17.5	41.9	9.4	39.3	22.4	37.0
Max Q Clear Time (g_c+I1), s	12.4	15.6	10.7	19.1	11.4	14.4	24.4	20.4
Green Ext Time (p_c), s	0.0	5.4	0.3	11.2	0.0	3.2	0.0	8.9

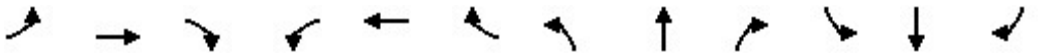
Intersection Summary	
HCM 6th Ctrl Delay	54.6
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	223	913	705	245	769	222	379	1148	354	1138
Future Volume (vph)	223	913	705	245	769	222	379	1148	354	1138
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	38.2	38.2	9.6	38.2	38.2	9.6	32.2	9.6	33.2
Total Split (s)	22.2	42.0	42.0	20.0	39.8	39.8	17.0	42.0	16.0	41.0
Total Split (%)	18.5%	35.0%	35.0%	16.7%	33.2%	33.2%	14.2%	35.0%	13.3%	34.2%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	3.6	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	4.6	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	17.6	35.8	35.8	15.4	33.6	33.6	12.4	35.7	11.5	34.8
Actuated g/C Ratio	0.15	0.30	0.30	0.13	0.28	0.28	0.10	0.30	0.10	0.29
v/c Ratio	0.98	0.93	1.16	1.23	0.84	0.40	1.22	0.94	1.23	1.06
Control Delay	106.4	57.5	112.7	183.2	49.9	8.5	169.4	53.5	176.1	82.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.4	57.5	112.7	183.2	49.9	8.5	169.4	53.5	176.1	82.8
LOS	F	E	F	F	D	A	F	D	F	F
Approach Delay		84.5			68.8			79.6		101.2
Approach LOS		F			E			E		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 84.9	Intersection LOS: F
Intersection Capacity Utilization 107.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Archibald Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	913	705	245	769	222	379	1148	156	354	1138	307
Future Volume (veh/h)	223	913	705	245	769	222	379	1148	156	354	1138	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	228	932	362	250	785	114	387	1171	82	361	1161	160
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	996	434	206	933	415	322	1313	92	296	1244	171
Arrive On Green	0.15	0.30	0.30	0.13	0.28	0.28	0.10	0.28	0.28	0.10	0.29	0.29
Sat Flow, veh/h	1594	3367	1468	1594	3367	1495	3092	4610	323	3092	4292	591
Grp Volume(v), veh/h	228	932	362	250	785	114	387	819	434	361	872	449
Grp Sat Flow(s),veh/h/ln	1594	1683	1468	1594	1683	1495	1546	1612	1707	1546	1612	1658
Q Serve(g_s), s	17.0	32.1	27.5	15.4	26.2	5.1	12.4	29.0	29.1	11.4	31.4	31.4
Cycle Q Clear(g_c), s	17.0	32.1	27.5	15.4	26.2	5.1	12.4	29.0	29.1	11.4	31.4	31.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.36
Lane Grp Cap(c), veh/h	235	996	434	206	933	415	322	919	486	296	935	481
V/C Ratio(X)	0.97	0.94	0.83	1.21	0.84	0.27	1.20	0.89	0.89	1.22	0.93	0.93
Avail Cap(c_a), veh/h	235	1011	441	206	949	421	322	968	513	296	941	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	40.9	39.2	51.9	40.6	17.7	53.4	40.9	40.9	53.9	41.2	41.2
Incr Delay (d2), s/veh	49.6	15.2	12.8	132.5	6.8	0.4	117.4	10.1	17.2	126.0	15.6	25.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	14.7	10.9	13.5	11.2	2.5	9.9	12.2	13.9	9.4	13.8	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.1	56.1	52.1	184.4	47.4	18.0	170.8	51.0	58.0	179.9	56.8	66.5
LnGrp LOS	F	E	D	F	D	B	F	D	E	F	E	E
Approach Vol, veh/h		1522			1149			1640			1682	
Approach Delay, s/veh		61.7			74.3			81.1			85.8	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	40.2	20.0	41.5	17.0	40.8	22.2	39.3
Change Period (Y+Rc), s	6.2	* 6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	11.4	* 36	15.4	35.8	12.4	34.8	17.6	33.6
Max Q Clear Time (g_c+I1), s	13.4	31.1	17.4	34.1	14.4	33.4	19.0	28.2
Green Ext Time (p_c), s	0.0	2.9	0.0	1.1	0.0	1.0	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	76.2
HCM 6th LOS	E

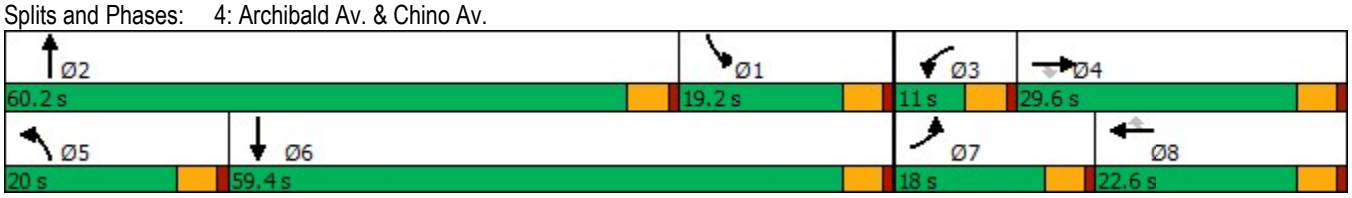
Notes

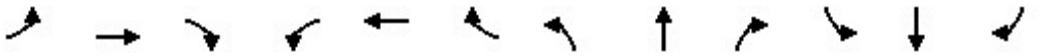
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	196	347	279	70	170	77	230	1384	93	1614
Future Volume (vph)	196	347	279	70	170	77	230	1384	93	1614
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases			4			8				
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	22.6	22.6	9.6	22.6	22.6	9.6	22.6	9.6	22.6
Total Split (s)	18.0	29.6	29.6	11.0	22.6	22.6	20.0	60.2	19.2	59.4
Total Split (%)	15.0%	24.7%	24.7%	9.2%	18.8%	18.8%	16.7%	50.2%	16.0%	49.5%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	25.0	25.0	6.4	18.0	18.0	15.4	53.3	19.2	54.8
Actuated g/C Ratio	0.11	0.21	0.21	0.05	0.15	0.15	0.13	0.44	0.16	0.46
v/c Ratio	1.16	0.98	0.57	0.87	0.67	0.21	1.18	0.66	0.38	1.14
Control Delay	164.1	90.8	12.7	123.7	61.7	1.3	166.4	28.9	49.3	102.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	164.1	90.8	12.7	123.7	61.7	1.3	166.4	28.9	49.3	102.6
LOS	F	F	B	F	E	A	F	C	D	F
Approach Delay		81.7			60.8			47.5		99.9
Approach LOS		F			E			D		F

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 75.0	Intersection LOS: E
Intersection Capacity Utilization 104.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: Archibald Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	347	279	70	170	77	230	1384	85	93	1614	134
Future Volume (veh/h)	196	347	279	70	170	77	230	1384	85	93	1614	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	204	361	150	73	177	44	240	1442	47	97	1681	72
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	369	308	85	266	225	205	1737	57	391	1541	66
Arrive On Green	0.17	0.31	0.31	0.08	0.22	0.22	0.19	0.51	0.51	0.37	0.68	0.68
Sat Flow, veh/h	1594	1772	1478	1594	1772	1502	1594	5116	167	1594	3374	144
Grp Volume(v), veh/h	204	361	150	73	177	44	240	999	490	97	879	874
Grp Sat Flow(s),veh/h/ln	1594	1772	1478	1594	1772	1502	1594	1772	1739	1594	1772	1746
Q Serve(g_s), s	13.4	24.2	9.9	5.4	10.9	1.8	15.4	28.8	28.8	5.1	54.8	54.8
Cycle Q Clear(g_c), s	13.4	24.2	9.9	5.4	10.9	1.8	15.4	28.8	28.8	5.1	54.8	54.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.08
Lane Grp Cap(c), veh/h	178	369	308	85	266	225	205	1203	590	391	809	797
V/C Ratio(X)	1.15	0.98	0.49	0.86	0.67	0.20	1.17	0.83	0.83	0.25	1.09	1.10
Avail Cap(c_a), veh/h	178	369	308	85	266	225	205	1642	806	391	809	797
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	41.0	36.1	54.8	43.8	15.7	48.4	26.5	26.5	30.2	18.9	18.9
Incr Delay (d2), s/veh	112.3	40.8	1.2	54.1	6.2	0.4	117.6	2.7	5.4	0.3	57.6	61.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	13.5	3.4	3.4	4.9	1.0	12.1	9.4	9.7	1.9	25.3	25.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	162.2	81.8	37.2	108.9	49.9	16.1	166.0	29.2	31.9	30.5	76.5	80.4
LnGrp LOS	F	F	D	F	D	B	F	C	C	C	F	F
Approach Vol, veh/h		715			294			1729			1850	
Approach Delay, s/veh		95.4			59.5			49.0			75.9	
Approach LOS		F			E			D			E	

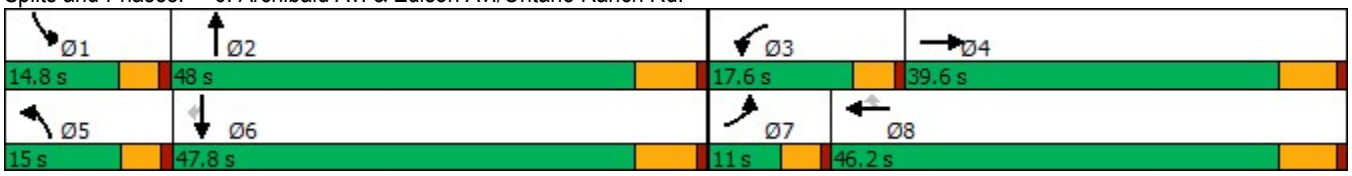
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.1	45.3	11.0	29.6	20.0	59.4	18.0	22.6
Change Period (Y+Rc), s	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Max Green Setting (Gmax), s	14.6	55.6	6.4	25.0	15.4	54.8	13.4	18.0
Max Q Clear Time (g_c+I1), s	7.1	30.8	7.4	26.2	17.4	56.8	15.4	12.9
Green Ext Time (p_c), s	0.1	10.0	0.0	0.0	0.0	0.0	0.0	0.4

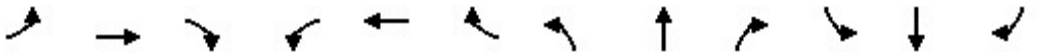
Intersection Summary	
HCM 6th Ctrl Delay	67.7
HCM 6th LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	800	874	295	329	128	305	1220	356	181	1716	126
Future Volume (vph)	178	800	874	295	329	128	305	1220	356	181	1716	126
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			6
Detector Phase	7	4		3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	9.6	39.2		9.6	46.2	46.2	9.6	39.5		9.6	46.5	46.5
Total Split (s)	11.0	39.6		17.6	46.2	46.2	15.0	48.0		14.8	47.8	47.8
Total Split (%)	9.2%	33.0%		14.7%	38.5%	38.5%	12.5%	40.0%		12.3%	39.8%	39.8%
Yellow Time (s)	3.6	5.2		3.6	5.2	5.2	3.6	5.5		3.6	5.5	5.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2		4.6	6.2	6.2	4.6	6.5		4.6	6.5	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.4	24.6	111.4	13.0	31.3	31.3	10.4	42.1	111.4	9.7	41.4	41.4
Actuated g/C Ratio	0.06	0.22	1.00	0.12	0.28	0.28	0.09	0.38	1.00	0.09	0.37	0.37
v/c Ratio	1.09	0.72	0.61	0.89	0.35	0.26	1.09	0.64	0.25	0.72	0.92	0.20
Control Delay	145.9	43.8	1.9	77.3	32.7	6.2	125.3	31.0	0.4	66.0	42.6	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	145.9	43.8	1.9	77.3	32.7	6.2	125.3	31.0	0.4	66.0	42.6	3.5
LOS	F	D	A	E	C	A	F	C	A	E	D	A
Approach Delay		33.8			45.7			40.5			42.3	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 111.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 39.7	Intersection LOS: D
Intersection Capacity Utilization 89.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Archibald Av. & Edison Av./Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	800	874	295	329	128	305	1220	356	181	1716	126
Future Volume (veh/h)	178	800	874	295	329	128	305	1220	356	181	1716	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1575	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	187	842	0	311	346	93	321	1284	0	191	1806	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	1119		359	961	407	305	2069		245	1982	560
Arrive On Green	0.06	0.21	0.00	0.12	0.27	0.27	0.10	0.39	0.00	0.08	0.37	0.37
Sat Flow, veh/h	3000	5316	1502	3000	3544	1500	3188	5316	1502	3092	5316	1502
Grp Volume(v), veh/h	187	842	0	311	346	93	321	1284	0	191	1806	114
Grp Sat Flow(s),veh/h/ln	1500	1772	1502	1500	1772	1500	1594	1772	1502	1546	1772	1502
Q Serve(g_s), s	6.4	16.2	0.0	11.1	8.6	5.2	10.4	21.1	0.0	6.6	35.1	5.6
Cycle Q Clear(g_c), s	6.4	16.2	0.0	11.1	8.6	5.2	10.4	21.1	0.0	6.6	35.1	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	1119		359	961	407	305	2069		245	1982	560
V/C Ratio(X)	1.06	0.75		0.87	0.36	0.23	1.05	0.62		0.78	0.91	0.20
Avail Cap(c_a), veh/h	177	1633		359	1304	552	305	2069		290	2019	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	40.3	0.0	47.0	32.0	30.8	49.2	26.7	0.0	49.1	32.4	23.1
Incr Delay (d2), s/veh	84.2	1.2	0.0	18.8	0.2	0.3	66.1	0.6	0.0	8.9	6.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	6.8	0.0	4.9	3.5	1.8	6.7	8.3	0.0	2.7	14.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	135.4	41.4	0.0	65.8	32.2	31.1	115.3	27.3	0.0	58.0	39.0	23.3
LnGrp LOS	F	D		E	C	C	F	C		E	D	C
Approach Vol, veh/h		1029	A		750			1605	A		2111	
Approach Delay, s/veh		58.5			46.0			44.9			39.9	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	48.8	17.6	29.1	15.0	47.0	11.0	35.7
Change Period (Y+Rc), s	4.6	6.5	4.6	6.2	4.6	6.5	4.6	6.2
Max Green Setting (Gmax), s	10.2	41.5	13.0	33.4	10.4	41.3	6.4	40.0
Max Q Clear Time (g_c+I1), s	8.6	23.1	13.1	18.2	12.4	37.1	8.4	10.6
Green Ext Time (p_c), s	0.1	7.7	0.0	4.6	0.0	3.5	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D

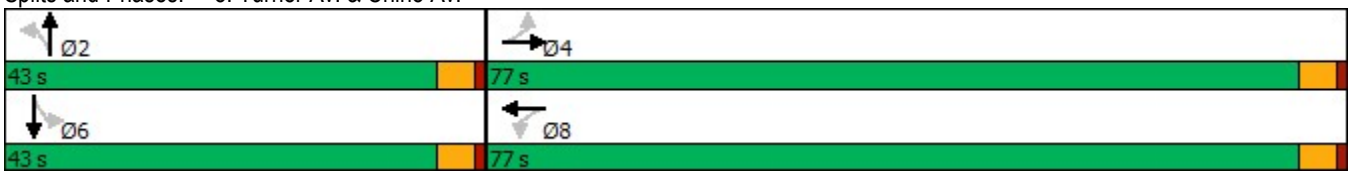
Notes

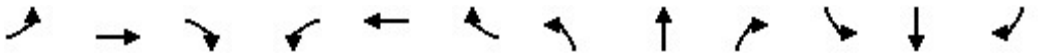
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	192	210	45	155	24	153	70	238
Future Volume (vph)	192	210	45	155	24	153	70	238
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	77.0	77.0	77.0	77.0	43.0	43.0	43.0	43.0
Total Split (%)	64.2%	64.2%	64.2%	64.2%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	13.4	13.4	13.4	13.4	9.9	9.9	9.9	9.9
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.30	0.30	0.30	0.30
v/c Ratio	0.52	0.23	0.13	0.19	0.09	0.22	0.25	0.33
Control Delay	13.3	5.5	7.6	4.7	10.5	8.5	12.0	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	5.5	7.6	4.7	10.5	8.5	12.0	9.6
LOS	B	A	A	A	B	A	B	A
Approach Delay		8.6		5.2		8.7		10.0
Approach LOS		A		A		A		B

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 32.9	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 48.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Turner Av. & Chino Av.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	210	74	45	155	86	24	153	44	70	238	69
Future Volume (veh/h)	192	210	74	45	155	86	24	153	44	70	238	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	209	228	80	49	168	93	26	166	48	76	259	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	600	987	337	577	853	450	442	726	202	490	732	207
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1001	2463	841	959	2131	1123	936	2570	715	1026	2589	734
Grp Volume(v), veh/h	209	154	154	49	131	130	26	106	108	76	166	168
Grp Sat Flow(s),veh/h/ln	1001	1683	1621	959	1683	1570	936	1683	1601	1026	1683	1640
Q Serve(g_s), s	4.9	1.7	1.8	1.0	1.4	1.5	0.6	1.4	1.5	1.7	2.2	2.3
Cycle Q Clear(g_c), s	6.4	1.7	1.8	2.8	1.4	1.5	3.0	1.4	1.5	3.2	2.2	2.3
Prop In Lane	1.00		0.52	1.00		0.72	1.00		0.45	1.00		0.45
Lane Grp Cap(c), veh/h	600	674	649	577	674	629	442	476	453	490	476	463
V/C Ratio(X)	0.35	0.23	0.24	0.08	0.19	0.21	0.06	0.22	0.24	0.15	0.35	0.36
Avail Cap(c_a), veh/h	2754	4297	4137	2640	4297	4007	1446	2282	2171	1591	2282	2223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.7	5.6	5.6	6.6	5.5	5.6	9.3	7.8	7.8	9.1	8.1	8.1
Incr Delay (d2), s/veh	0.3	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.3	0.1	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	0.3	0.1	0.2	0.2	0.1	0.3	0.3	0.2	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	5.8	5.8	6.6	5.7	5.7	9.4	8.0	8.1	9.2	8.5	8.6
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		517			310			240			410	
Approach Delay, s/veh		6.7			5.8			8.2			8.7	
Approach LOS		A			A			A			A	

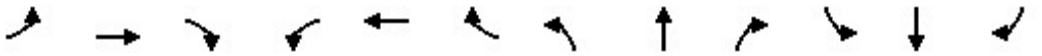
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.5		15.9		12.5		15.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		38.5		72.5		38.5		72.5				
Max Q Clear Time (g_c+I1), s		5.0		8.4		5.2		4.8				
Green Ext Time (p_c), s		1.3		3.0		2.2		1.8				

Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	462	683	173	535	150	65	642	164	274	756	571
Future Volume (vph)	462	683	173	535	150	65	642	164	274	756	571
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8			2		6	6	
Permitted Phases					8	2		2			6
Detector Phase	7	4	3	8	8	2	2	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	25.2	9.6	30.2	30.2	23.7	23.7	23.7	24.8	24.8	24.8
Total Split (s)	19.0	36.3	12.9	30.2	30.2	40.8	40.8	40.8	30.0	30.0	30.0
Total Split (%)	15.8%	30.3%	10.8%	25.2%	25.2%	34.0%	34.0%	34.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.6	5.2	3.6	5.2	5.2	3.7	3.7	3.7	4.8	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	4.6	6.2	6.2	4.7	4.7	4.7	5.8	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	14.4	29.8	8.3	23.7	23.7	36.1	36.1	36.1	24.2	24.2	24.2
Actuated g/C Ratio	0.12	0.25	0.07	0.20	0.20	0.30	0.30	0.30	0.20	0.20	0.20
v/c Ratio	1.26	0.94	0.82	0.80	0.38	1.24	0.63	0.30	0.89	1.11	0.78
Control Delay	180.8	63.1	83.3	55.3	9.1	234.9	39.2	6.1	76.2	110.7	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	180.8	63.1	83.3	55.3	9.1	234.9	39.2	6.1	76.2	110.7	12.1
LOS	F	E	F	E	A	F	D	A	E	F	B
Approach Delay		106.6		52.9			47.6			69.7	
Approach LOS		F		D			D			E	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 119.7	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 72.4	Intersection LOS: E
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Haven Av. & Riverside Dr.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	462	683	105	173	535	150	65	642	164	274	756	571
Future Volume (veh/h)	462	683	105	173	535	150	65	642	164	274	756	571
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	481	711	57	180	557	83	68	669	98	285	788	369
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	435	824	66	236	683	283	382	849	360	366	813	344
Arrive On Green	0.14	0.26	0.26	0.07	0.19	0.19	0.24	0.24	0.24	0.23	0.23	0.23
Sat Flow, veh/h	3188	3232	259	3188	3544	1466	1594	3544	1502	1594	3544	1498
Grp Volume(v), veh/h	481	390	378	180	557	83	68	669	98	285	788	369
Grp Sat Flow(s),veh/h/ln	1594	1772	1719	1594	1772	1466	1594	1772	1502	1594	1772	1498
Q Serve(g_s), s	14.4	22.1	22.2	5.8	15.9	5.1	3.6	18.7	5.6	17.7	23.2	24.2
Cycle Q Clear(g_c), s	14.4	22.1	22.2	5.8	15.9	5.1	3.6	18.7	5.6	17.7	23.2	24.2
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	452	438	236	683	283	382	849	360	366	813	344
V/C Ratio(X)	1.11	0.86	0.86	0.76	0.82	0.29	0.18	0.79	0.27	0.78	0.97	1.07
Avail Cap(c_a), veh/h	435	506	491	251	806	334	545	1213	514	366	813	344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	37.5	37.5	47.9	40.8	36.4	31.9	37.6	32.6	38.1	40.3	40.6
Incr Delay (d2), s/veh	74.9	13.1	13.6	10.7	5.6	0.6	0.2	2.3	0.4	10.3	24.2	69.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	10.7	10.4	2.6	7.1	1.8	1.4	8.3	2.0	7.7	12.4	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	120.5	50.7	51.1	58.6	46.4	37.0	32.1	39.9	33.0	48.5	64.5	110.3
LnGrp LOS	F	D	D	E	D	D	C	D	C	D	E	F
Approach Vol, veh/h		1249			820			835			1442	
Approach Delay, s/veh		77.7			48.1			38.5			73.0	
Approach LOS		E			D			D			E	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	12.4	33.1		30.0	19.0	26.5				
Change Period (Y+Rc), s		* 4.7	4.6	6.2		5.8	4.6	6.2				
Max Green Setting (Gmax), s		* 36	8.3	30.1		24.2	14.4	24.0				
Max Q Clear Time (g_c+I1), s		20.7	7.8	24.2		26.2	16.4	17.9				
Green Ext Time (p_c), s		4.6	0.0	2.1		0.0	0.0	1.9				

Intersection Summary		
HCM 6th Ctrl Delay		63.0
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	Ø1
Lane Configurations								
Traffic Volume (vph)	142	57	28	67	184	704	735	
Future Volume (vph)	142	57	28	67	184	704	735	
Turn Type	Prot	NA	Prot	NA	Prot	NA	NA	
Protected Phases	7	4	3	8	5	2	6	1
Permitted Phases								
Detector Phase	7	4	3	8	5	2	6	
Switch Phase								
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0
Minimum Split (s)	9.6	22.4	9.6	22.8	9.6	22.8	21.7	9.6
Total Split (s)	20.2	33.4	9.6	22.8	24.0	67.4	53.0	9.6
Total Split (%)	16.8%	27.8%	8.0%	19.0%	20.0%	56.2%	44.2%	8%
Yellow Time (s)	3.6	4.4	3.6	4.8	3.6	4.8	3.7	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.4	4.6	5.8	4.6	5.8	4.7	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None
Act Effct Green (s)	14.4	21.4	5.4	12.1	16.3	61.6	41.6	
Actuated g/C Ratio	0.14	0.21	0.05	0.12	0.16	0.62	0.42	
v/c Ratio	0.66	0.37	0.16	0.32	0.75	0.35	0.84	
Control Delay	60.8	27.1	55.2	50.8	62.9	10.7	32.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	60.8	27.1	55.2	50.8	62.9	10.7	32.2	
LOS	E	C	E	D	E	B	C	
Approach Delay		43.9		52.1		21.2	32.2	
Approach LOS		D		D		C	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.1	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.2	Intersection LOS: C
Intersection Capacity Utilization 72.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: Haven Av. & Chino Av.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	57	84	28	67	0	184	704	25	0	735	356
Future Volume (veh/h)	142	57	84	28	67	0	184	704	25	0	735	356
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1870	1772	1870	1870	1870	1673	1772	1870	1870	1772	1772
Adj Flow Rate, veh/h	149	62	88	30	73	0	194	741	27	0	774	375
Peak Hour Factor	0.95	0.92	0.95	0.92	0.92	0.92	0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	132	188	100	200	0	225	2067	75	2	920	445
Arrive On Green	0.11	0.19	0.19	0.03	0.11	0.00	0.14	0.61	0.61	0.00	0.42	0.42
Sat Flow, veh/h	1594	699	992	3456	1870	0	1594	3398	124	1781	2201	1063
Grp Volume(v), veh/h	149	0	150	30	73	0	194	386	382	0	592	557
Grp Sat Flow(s),veh/h/ln	1594	0	1692	1728	1870	0	1594	1772	1750	1781	1683	1581
Q Serve(g_s), s	8.6	0.0	7.4	0.8	3.4	0.0	11.1	10.2	10.2	0.0	29.5	29.6
Cycle Q Clear(g_c), s	8.6	0.0	7.4	0.8	3.4	0.0	11.1	10.2	10.2	0.0	29.5	29.6
Prop In Lane	1.00		0.59	1.00		0.00	1.00		0.07	1.00		0.67
Lane Grp Cap(c), veh/h	178	0	320	100	200	0	225	1078	1064	2	704	661
V/C Ratio(X)	0.84	0.00	0.47	0.30	0.37	0.00	0.86	0.36	0.36	0.00	0.84	0.84
Avail Cap(c_a), veh/h	266	0	507	185	340	0	331	1168	1153	95	870	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	0.0	33.7	44.5	38.8	0.0	39.3	9.2	9.2	0.0	24.4	24.4
Incr Delay (d2), s/veh	8.9	0.0	1.1	0.6	1.1	0.0	10.4	0.2	0.2	0.0	6.2	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	3.0	0.3	1.6	0.0	4.8	3.3	3.3	0.0	12.3	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	0.0	34.8	45.1	39.9	0.0	49.7	9.4	9.4	0.0	30.6	31.2
LnGrp LOS	D	A	C	D	D	A	D	A	A	A	C	C
Approach Vol, veh/h		299			103			962			1149	
Approach Delay, s/veh		42.2			41.4			17.5			30.9	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	62.7	7.3	23.5	17.8	44.9	15.0	15.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 5.8	4.6	* 5.8	4.6	5.8
Max Green Setting (Gmax), s	5.0	61.6	5.0	* 28	19.4	* 48	15.6	17.0
Max Q Clear Time (g_c+I1), s	0.0	12.2	2.8	9.4	13.1	31.6	10.6	5.4
Green Ext Time (p_c), s	0.0	4.8	0.0	0.7	0.1	7.5	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	27.5
HCM 6th LOS	C

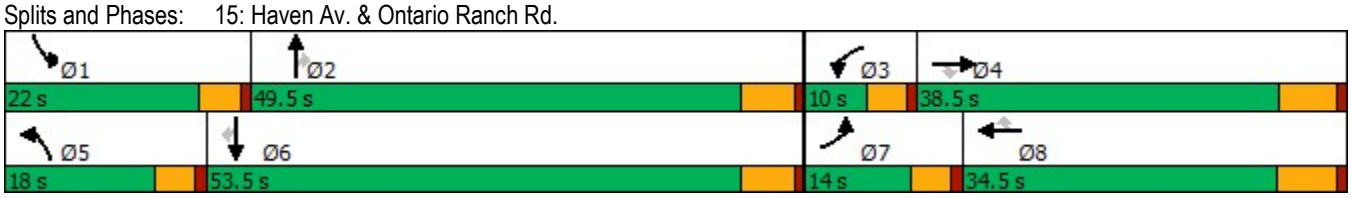
Notes

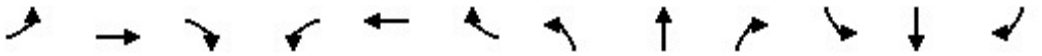
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1503	54	127	1092	209	75	362	192	489	419	172
Future Volume (vph)	230	1503	54	127	1092	209	75	362	192	489	419	172
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	29.2	29.2	9.6	34.5	34.5	9.6	47.8	47.8	9.6	45.8	45.8
Total Split (s)	14.0	38.5	38.5	10.0	34.5	34.5	18.0	49.5	49.5	22.0	53.5	53.5
Total Split (%)	11.7%	32.1%	32.1%	8.3%	28.8%	28.8%	15.0%	41.3%	41.3%	18.3%	44.6%	44.6%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.5	5.5	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.5	6.5	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	9.5	32.6	32.6	5.5	28.3	28.3	9.1	19.8	19.8	17.6	30.5	30.5
Actuated g/C Ratio	0.10	0.34	0.34	0.06	0.29	0.29	0.09	0.20	0.20	0.18	0.31	0.31
v/c Ratio	1.60	0.91	0.10	0.82	0.57	0.38	0.55	0.57	0.51	1.83	0.43	0.31
Control Delay	329.3	40.3	0.7	82.2	31.7	6.5	57.9	37.2	17.3	415.7	28.3	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	329.3	40.3	0.7	82.2	31.7	6.5	57.9	37.2	17.3	415.7	28.3	5.2
LOS	F	D	A	F	C	A	E	D	B	F	C	A
Approach Delay		76.2			32.5			33.6			200.0	
Approach LOS		E			C			C			F	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.83	
Intersection Signal Delay: 85.2	Intersection LOS: F
Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 15: Haven Av. & Ontario Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1503	54	127	1092	209	75	362	192	489	419	172
Future Volume (veh/h)	230	1503	54	127	1092	209	75	362	192	489	419	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1575	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	247	1616	31	137	1174	117	81	389	104	526	451	94
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1846	521	174	2156	457	100	594	265	298	1012	449
Arrive On Green	0.15	0.52	0.52	0.09	0.46	0.46	0.09	0.26	0.26	0.28	0.45	0.45
Sat Flow, veh/h	1594	5316	1500	3000	7088	1502	1594	3367	1499	1594	3367	1494
Grp Volume(v), veh/h	247	1616	31	137	1174	117	81	389	104	526	451	94
Grp Sat Flow(s),veh/h/ln	1594	1772	1500	1500	1772	1502	1594	1683	1499	1594	1683	1494
Q Serve(g_s), s	9.4	24.9	1.0	4.2	11.1	4.5	4.6	9.6	5.3	17.4	8.6	3.5
Cycle Q Clear(g_c), s	9.4	24.9	1.0	4.2	11.1	4.5	4.6	9.6	5.3	17.4	8.6	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	1846	521	174	2156	457	100	594	265	298	1012	449
V/C Ratio(X)	1.53	0.88	0.06	0.79	0.54	0.26	0.81	0.65	0.39	1.76	0.45	0.21
Avail Cap(c_a), veh/h	161	1846	521	174	2156	457	230	1582	704	298	1726	766
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	20.5	14.8	41.9	20.6	18.8	41.6	31.7	30.1	33.5	20.2	18.8
Incr Delay (d2), s/veh	268.8	6.2	0.2	19.3	1.0	1.4	5.7	1.2	0.9	357.3	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.3	7.7	0.3	1.9	3.8	1.5	1.9	3.5	1.8	35.1	2.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	308.3	26.7	15.0	61.2	21.6	20.2	47.3	32.9	31.1	390.8	20.5	19.1
LnGrp LOS	F	C	B	E	C	C	D	C	C	F	C	B
Approach Vol, veh/h		1894			1428			574			1071	
Approach Delay, s/veh		63.2			25.3			34.6			202.2	
Approach LOS		E			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	22.2	10.0	38.8	10.4	33.8	14.0	34.8
Change Period (Y+Rc), s	4.6	5.8	4.6	* 6.5	4.6	5.8	4.6	6.5
Max Green Setting (Gmax), s	17.4	43.7	5.4	* 32	13.4	47.7	9.4	28.0
Max Q Clear Time (g_c+I1), s	19.4	11.6	6.2	26.9	6.6	10.6	11.4	13.1
Green Ext Time (p_c), s	0.0	2.8	0.0	4.0	0.0	3.2	0.0	6.6

Intersection Summary	
HCM 6th Ctrl Delay	79.0
HCM 6th LOS	E

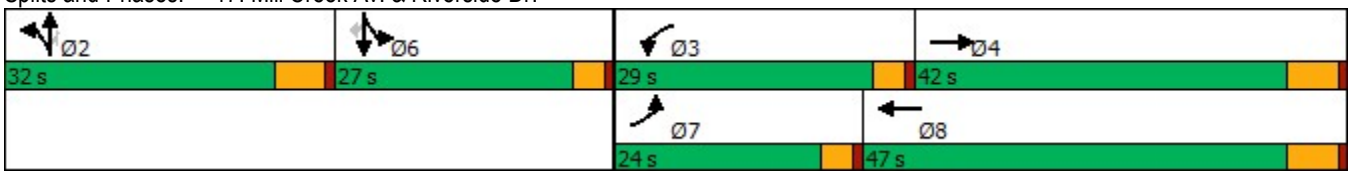
Notes

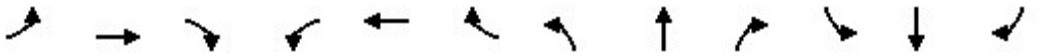
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	132	1340	294	1030	70	22	26	70	17	81
Future Volume (vph)	132	1340	294	1030	70	22	26	70	17	81
Turn Type	Prot	NA	Prot	NA	Split	NA	Perm	Split	NA	Perm
Protected Phases	7	4	3	8	2	2		6	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.0	26.0	9.0	23.0	29.8	29.8	29.8	27.0	27.0	27.0
Total Split (s)	24.0	42.0	29.0	47.0	32.0	32.0	32.0	27.0	27.0	27.0
Total Split (%)	18.5%	32.3%	22.3%	36.2%	24.6%	24.6%	24.6%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	5.0	3.0	5.0	4.8	4.8	4.8	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	5.8	5.8	5.8	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	13.4	36.3	25.2	48.2	12.8	12.8	12.8	12.7	12.7	12.7
Actuated g/C Ratio	0.13	0.34	0.24	0.45	0.12	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.71	0.87	0.84	0.53	0.39	0.11	0.10	0.40	0.09	0.29
Control Delay	65.2	40.3	60.8	24.0	50.1	43.5	0.7	50.7	43.6	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.2	40.3	60.8	24.0	50.1	43.5	0.7	50.7	43.6	3.3
LOS	E	D	E	C	D	D	A	D	D	A
Approach Delay		42.3		31.4		37.8			27.1	
Approach LOS		D		C		D			C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 107	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 17: Mill Creek Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	1340	121	294	1030	137	70	22	26	70	17	81
Future Volume (veh/h)	132	1340	121	294	1030	137	70	22	26	70	17	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	140	1426	76	313	1096	98	74	23	-100	74	18	59
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	1729	92	343	2190	196	174	193	164	187	209	171
Arrive On Green	0.11	0.35	0.35	0.22	0.46	0.46	0.11	0.11	0.00	0.12	0.12	0.12
Sat Flow, veh/h	1594	5000	266	1594	4809	430	1594	1772	1502	1590	1772	1456
Grp Volume(v), veh/h	140	1011	491	313	807	387	74	23	-100	74	18	59
Grp Sat Flow(s),veh/h/ln	1594	1772	1723	1594	1772	1695	1594	1772	1502	1590	1772	1456
Q Serve(g_s), s	8.0	24.4	24.4	17.9	15.0	15.0	4.1	1.1	0.0	4.0	0.8	3.5
Cycle Q Clear(g_c), s	8.0	24.4	24.4	17.9	15.0	15.0	4.1	1.1	0.0	4.0	0.8	3.5
Prop In Lane	1.00		0.15	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	1225	596	343	1614	772	174	193	164	187	209	171
V/C Ratio(X)	0.83	0.82	0.82	0.91	0.50	0.50	0.43	0.12	-0.61	0.40	0.09	0.34
Avail Cap(c_a), veh/h	341	1366	664	427	1614	772	447	497	421	392	436	359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	28.0	28.0	35.8	17.9	17.9	38.9	37.5	0.0	38.1	36.7	37.9
Incr Delay (d2), s/veh	4.0	3.9	7.7	18.7	0.2	0.5	1.6	0.3	0.0	1.4	0.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	10.0	10.3	8.2	5.5	5.3	1.6	0.5	0.0	1.6	0.4	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	31.9	35.6	54.5	18.2	18.5	40.5	37.8	0.0	39.5	36.9	39.1
LnGrp LOS	D	C	D	D	B	B	D	D	A	D	D	D
Approach Vol, veh/h		1642			1507			-3			151	
Approach Delay, s/veh		34.1			25.8			0.0			39.0	
Approach LOS		C			C			A			D	

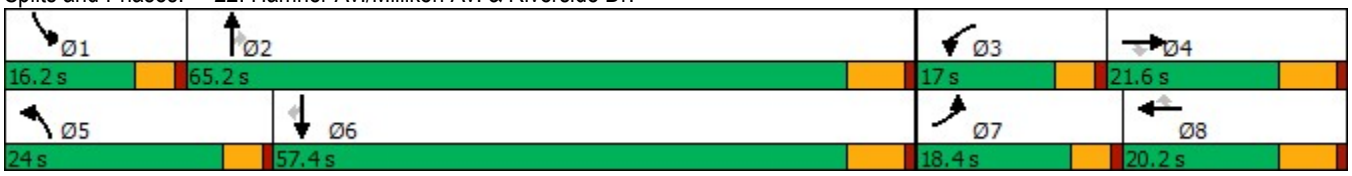
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.0	24.1	38.3		15.0	13.9	48.5				
Change Period (Y+Rc), s		5.8	4.0	6.0		4.0	4.0	6.0				
Max Green Setting (Gmax), s		26.2	25.0	36.0		23.0	20.0	41.0				
Max Q Clear Time (g_c+I1), s		6.1	19.9	26.4		6.0	10.0	17.0				
Green Ext Time (p_c), s		0.2	0.2	5.9		0.4	0.1	7.7				

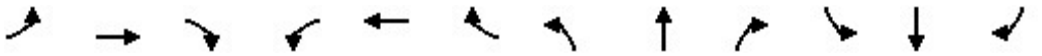
Intersection Summary	
HCM 6th Ctrl Delay	30.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	328	161	303	109	191	250	482	1443	59	257	1418	504
Future Volume (vph)	328	161	303	109	191	250	482	1443	59	257	1418	504
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	16.2	16.2	9.6	16.2	16.2	9.6	35.2	35.2	9.6	16.2	16.2
Total Split (s)	18.4	21.6	21.6	17.0	20.2	20.2	24.0	65.2	65.2	16.2	57.4	57.4
Total Split (%)	15.3%	18.0%	18.0%	14.2%	16.8%	16.8%	20.0%	54.3%	54.3%	13.5%	47.8%	47.8%
Yellow Time (s)	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2	3.6	5.2	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2	4.6	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.8	16.5	16.5	11.3	14.0	14.0	19.4	59.0	59.0	11.6	51.2	51.2
Actuated g/C Ratio	0.12	0.14	0.14	0.09	0.12	0.12	0.16	0.49	0.49	0.10	0.43	0.43
v/c Ratio	0.98	0.70	0.51	0.78	0.98	0.49	0.99	0.88	0.08	0.92	0.99	0.63
Control Delay	95.7	65.9	8.3	85.4	111.3	9.1	88.4	34.3	0.4	88.6	55.9	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.7	65.9	8.3	85.4	111.3	9.1	88.4	34.3	0.4	88.6	55.9	11.2
LOS	F	E	A	F	F	A	F	C	A	F	E	B
Approach Delay		56.2			59.7			46.4			49.4	
Approach LOS		E			E			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 50.3	Intersection LOS: D
Intersection Capacity Utilization 95.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 22: Hamner Av./Milliken Av. & Riverside Dr.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	161	303	109	191	250	482	1443	59	257	1418	504
Future Volume (veh/h)	328	161	303	109	191	250	482	1443	59	257	1418	504
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1673	1772	1772	1673	1772	1772	1673	1772	1772
Adj Flow Rate, veh/h	345	169	161	115	201	131	507	1519	36	271	1493	268
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	259	378	136	207	308	515	1742	738	299	1512	632
Arrive On Green	0.17	0.22	0.22	0.13	0.18	0.18	0.24	0.74	0.74	0.15	0.64	0.64
Sat Flow, veh/h	3092	1772	2589	1594	1772	2643	3188	3544	1501	3092	3544	1482
Grp Volume(v), veh/h	345	169	161	115	201	131	507	1519	36	271	1493	268
Grp Sat Flow(s),veh/h/ln	1546	1772	1294	1594	1772	1321	1594	1772	1501	1546	1772	1482
Q Serve(g_s), s	13.3	10.4	6.4	8.5	13.5	5.3	19.0	37.8	0.8	10.4	49.4	10.7
Cycle Q Clear(g_c), s	13.3	10.4	6.4	8.5	13.5	5.3	19.0	37.8	0.8	10.4	49.4	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	259	378	136	207	308	515	1742	738	299	1512	632
V/C Ratio(X)	0.97	0.65	0.43	0.84	0.97	0.42	0.98	0.87	0.05	0.91	0.99	0.42
Avail Cap(c_a), veh/h	356	259	378	165	207	308	515	1742	738	299	1512	632
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	44.1	42.5	51.5	49.3	45.9	45.3	13.0	8.1	50.8	21.3	14.3
Incr Delay (d2), s/veh	39.5	5.7	0.8	23.8	54.5	0.9	35.3	5.2	0.0	28.8	20.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	4.6	2.0	4.0	8.5	1.7	9.0	7.9	0.3	4.9	17.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.0	49.8	43.3	75.3	103.8	46.8	80.6	18.1	8.1	79.5	41.4	14.8
LnGrp LOS	F	D	D	E	F	D	F	B	A	E	D	B
Approach Vol, veh/h		675			447			2062			2032	
Approach Delay, s/veh		68.3			79.8			33.3			43.0	
Approach LOS		E			E			C			D	

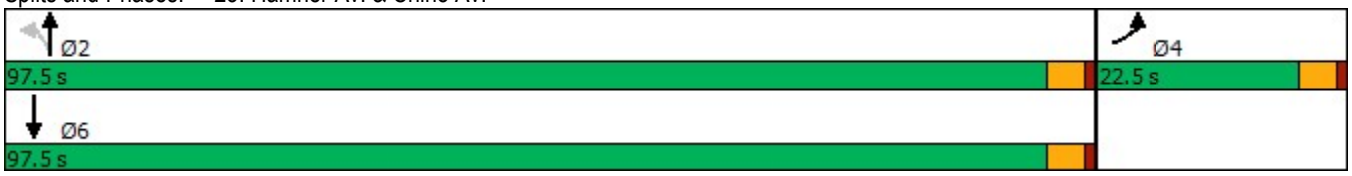
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	65.2	14.9	23.7	24.0	57.4	18.4	20.2
Change Period (Y+Rc), s	4.6	6.2	4.6	6.2	4.6	6.2	4.6	6.2
Max Green Setting (Gmax), s	11.6	59.0	12.4	15.4	19.4	51.2	13.8	14.0
Max Q Clear Time (g_c+I1), s	12.4	39.8	10.5	12.4	21.0	51.4	15.3	15.5
Green Ext Time (p_c), s	0.0	10.4	0.0	0.4	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

Lane Group	EBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	1	1905	1855
Future Volume (vph)	1	1905	1855
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5
Total Split (s)	22.5	97.5	97.5
Total Split (%)	18.8%	81.3%	81.3%
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	Min	Min
Act Effct Green (s)	7.6	61.4	61.4
Actuated g/C Ratio	0.12	0.95	0.95
v/c Ratio	0.00	0.59	0.61
Control Delay	35.0	2.8	3.0
Queue Delay	0.0	0.0	0.0
Total Delay	35.0	2.8	3.0
LOS	C	A	A
Approach Delay	35.0	2.8	3.0
Approach LOS	C	A	A

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 64.3		
Natural Cycle: 75		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.61		
Intersection Signal Delay: 2.9	Intersection LOS: A	
Intersection Capacity Utilization 64.3%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 23: Hamner Av. & Chino Av.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	0	0	1905	1855	10
Future Volume (veh/h)	1	0	0	1905	1855	10
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2093	1	0	2093	2038	11
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	9999	9999	0	2791	2704	15
Arrive On Green	0.14	0.14	0.00	0.75	0.75	0.75
Sat Flow, veh/h	1897708650496	0437248	0	3741	3718	20
Grp Volume(v), veh/h	2093	1	0	2093	998	1051
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1870	1777	1867
Q Serve(g_s), s	0.0	0.0	0.0	25.1	25.3	25.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	25.1	25.3	25.4
Prop In Lane	1.00	1.00	0.00			0.01
Lane Grp Cap(c), veh/h	26228437	80152	4562688	0	2791	1326	1393
V/C Ratio(X)	0.00	0.00	0.00	0.75	0.75	0.75
Avail Cap(c_a), veh/h	4389517	6682	5474688	0	4470	2123	2231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	5.7	5.7	5.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	4.2	4.2	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	0.0	0.0	6.1	6.6	6.6
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	2094			2093	2049	
Approach Delay, s/veh	0.0			6.1	6.6	
Approach LOS	A			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		62.6		15.3		62.6
Change Period (Y+Rc), s		4.5		4.5		4.5
Max Green Setting (Gmax), s		93.0		18.0		93.0
Max Q Clear Time (g_c+I1), s		27.1		2.0		27.4
Green Ext Time (p_c), s		31.0		8.8		28.4

Intersection Summary	
HCM 6th Ctrl Delay	4.2
HCM 6th LOS	A

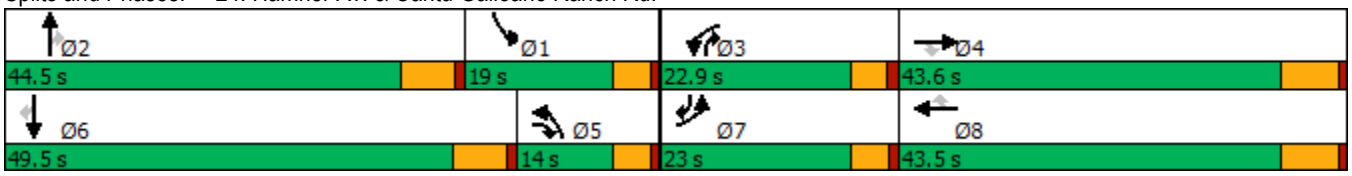
Notes

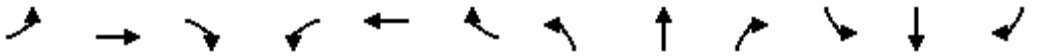
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	831	1593	410	451	1637	352	362	466	356	611	826	774
Future Volume (vph)	831	1593	410	451	1637	352	362	466	356	611	826	774
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.6	43.5	9.6	9.6	43.5	43.5	9.6	43.2	9.6	9.6	43.2	9.6
Total Split (s)	23.0	43.6	14.0	22.9	43.5	43.5	14.0	44.5	22.9	19.0	49.5	23.0
Total Split (%)	17.7%	33.5%	10.8%	17.6%	33.5%	33.5%	10.8%	34.2%	17.6%	14.6%	38.1%	17.7%
Yellow Time (s)	3.6	5.5	3.6	3.6	5.5	5.5	3.6	5.2	3.6	3.6	5.2	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	6.5	4.6	4.6	6.5	6.5	4.6	6.2	4.6	4.6	6.2	4.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	None
Act Effct Green (s)	18.6	36.3	49.0	17.9	35.6	35.6	10.8	17.7	37.2	14.5	21.4	41.6
Actuated g/C Ratio	0.17	0.33	0.45	0.16	0.33	0.33	0.10	0.16	0.34	0.13	0.20	0.38
v/c Ratio	1.43	0.67	0.57	0.81	0.70	0.55	1.07	0.53	0.63	1.34	0.58	0.64
Control Delay	237.7	33.4	15.2	56.5	34.3	15.2	116.4	43.3	18.4	205.6	40.9	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	237.7	33.4	15.2	56.5	34.3	15.2	116.4	43.3	18.4	205.6	40.9	17.0
LOS	F	C	B	E	C	B	F	D	B	F	D	B
Approach Delay		90.7			35.7			58.2			78.1	
Approach LOS		F			D			E			E	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 108.5	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay: 67.5	Intersection LOS: E
Intersection Capacity Utilization 92.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 24: Hamner Av. & Cantu Galleano Ranch Rd.





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	831	1593	410	451	1637	352	362	466	356	611	826	774
Future Volume (veh/h)	831	1593	410	451	1637	352	362	466	356	611	826	774
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	866	1659	401	470	1705	341	377	485	187	636	860	415
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	2561	690	536	2327	493	331	757	453	555	1479	1203
Arrive On Green	0.27	0.51	0.51	0.23	0.47	0.47	0.14	0.20	0.20	0.23	0.30	0.30
Sat Flow, veh/h	3563	7481	1585	3563	7481	1585	3563	5611	1585	3563	7481	3170
Grp Volume(v), veh/h	866	1659	401	470	1705	341	377	485	187	636	860	415
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	18.4	16.4	6.0	12.9	18.7	10.5	9.4	8.0	5.4	15.8	9.9	5.4
Cycle Q Clear(g_c), s	18.4	16.4	6.0	12.9	18.7	10.5	9.4	8.0	5.4	15.8	9.9	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	648	2561	690	536	2327	493	331	757	453	555	1479	1203
V/C Ratio(X)	1.34	0.65	0.58	0.88	0.73	0.69	1.14	0.64	0.41	1.15	0.58	0.34
Avail Cap(c_a), veh/h	648	2744	729	644	2736	580	331	2124	839	555	3202	1933
HCM Platoon Ratio	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	20.2	5.0	38.2	23.6	8.8	43.5	38.1	10.8	38.8	32.0	8.1
Incr Delay (d2), s/veh	161.8	0.5	1.1	10.1	0.9	2.8	92.6	0.9	0.6	85.5	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.1	5.4	1.7	5.6	6.3	4.8	8.0	3.4	2.0	12.4	4.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	198.6	20.7	6.0	48.3	24.4	11.6	136.1	39.0	11.4	124.3	32.4	8.3
LnGrp LOS	F	C	A	D	C	B	F	D	B	F	C	A
Approach Vol, veh/h		2926			2516			1049			1911	
Approach Delay, s/veh		71.3			27.2			69.0			57.7	
Approach LOS		E			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	19.9	19.8	41.1	14.0	26.2	23.0	38.0
Change Period (Y+Rc), s	4.6	6.2	4.6	6.5	4.6	6.2	4.6	6.5
Max Green Setting (Gmax), s	14.4	38.3	18.3	37.1	9.4	43.3	18.4	37.0
Max Q Clear Time (g_c+I1), s	17.8	10.0	14.9	18.4	11.4	11.9	20.4	20.7
Green Ext Time (p_c), s	0.0	3.6	0.4	11.8	0.0	8.1	0.0	10.8

Intersection Summary	
HCM 6th Ctrl Delay	54.7
HCM 6th LOS	D

October 3, 2022

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RICH HAVEN SPECIFIC PLAN AMENDMENT VEHICLE MILES TRAVELED (VMT) ANALYSIS

Mr. Craig Cristina and Mr. Dave Bartlett,

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Analysis for the Rich Haven Specific Plan Amendment (**2022 Specific Plan Amendment/Project**), which is located north of Ontario Ranch Road, south of Riverside Drive, east of Haven Avenue, and on either side of Mill Creek Avenue in the City of Ontario.

PROJECT OVERVIEW

The Rich-Haven Specific Plan (RHSP) was approved by the City of Ontario in 2015, with subsequent Specific Plan Amendments approved in 2016, 2018, and 2021. The current (2021) Rich-Haven Specific Plan (**2021 Specific Plan**) comprises approximately 584 acres located west of Interstate 15 (I-15), and south of State Route 60 (SR-60). The 2021 Specific Plan Area lies within the 8,200-acre Ontario Ranch area, in the southeast portion of The Ontario Plan (TOP). The 2021 Specific Plan Area is bounded generally by Riverside Drive to the north, "Old" East Edison Avenue [alignment] to the south, Mill Creek Avenue and Hamner Avenue to the east, and Haven Avenue to the west. The location and boundaries of the 2022 RHSP Specific Plan Amendment evaluated in this analysis coincide with the location and boundaries in the 2021 Specific Plan as presented on Exhibit 1.

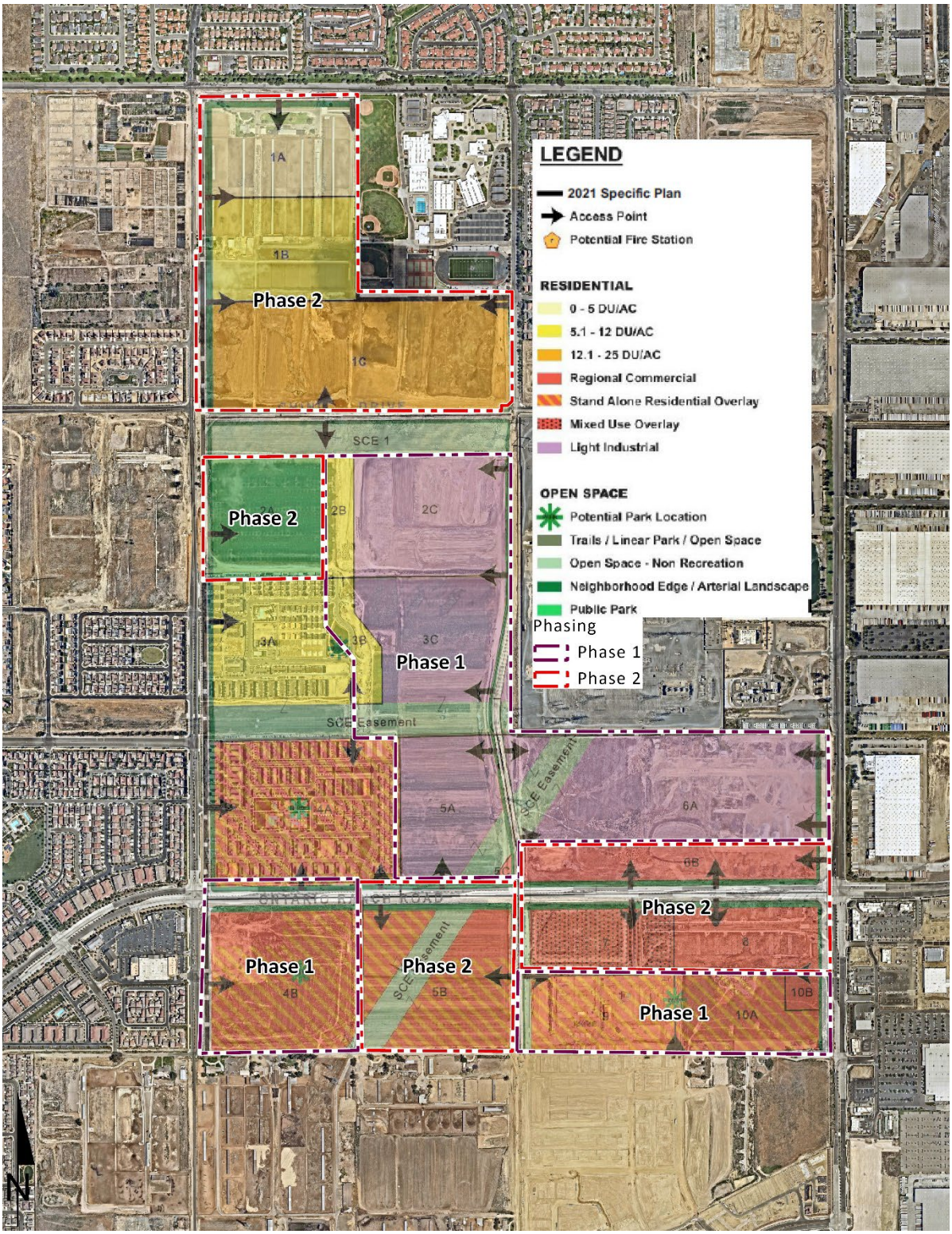
The 2021 Specific Plan entitlements allow for development of up to 7,194 dwelling units (all residential types), up to 990,902 square feet of commercial/office space, up to 1,183,525 square feet of light industrial uses, approximately 27 acres of public parkland, and approximately 20 acres of Southern California Edison (SCE) Parcel open space and SCE Easements.

Under the proposed 2022 Specific Plan Amendment, the Specific Plan Area would be developed with up to 7,194 dwelling units, up to 925,002 square feet of commercial space, and up to 2,767,148 square feet of light industrial uses. Other existing land uses, e.g., public parkland, Southern California Edison (SCE) Parcel open space and SCE Easements would not be substantively affected under the 2022 Specific Plan Amendment.

In summary, the proposed 2022 Specific Plan Amendment would result in the following primary revisions to the 2021 Specific Plan:

1. Total residential development within the Specific Plan would be maintained at 7,194 dwelling units. Residential units and densities would however be reassigned within the Specific Plan.
2. Total commercial development would be reduced by 65,900 square feet (approximately 7 percent reduction from the 2021 Specific Plan commercial entitlements).
3. Total light industrial development would be increased by 1,583,623 square feet (approximately 134 percent increase from the 2021 Specific Plan light industrial entitlements).

EXHIBIT 1: 2022 SPECIFIC PLAN AMENDMENT LAND USE PLAN



BACKGROUND

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which require all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) (**Technical Advisory**) (1). Based on the Technical Advisory, the City of Ontario has developed and adopted their own VMT methodologies and thresholds (Resolution No. 2020-071), which were adopted by City Council in June 2020 (**City Guidelines**) (2). This VMT analysis has been prepared based on the adopted City Guidelines.

PROJECT LEVEL SCREENING

City's Guidelines describe that a project may be determined to have a less than significant impact and may be screened out of requiring a project level VMT analysis if it meets at least one of the City's VMT screening criteria. The City's adopted VMT screening criteria are described in Table 2 along with a determination of each screening criteria's applicability to the Project.

TABLE 2: SCREENING FOR LAND USE POJECTS EXEMPT FROM VMT CALCULATIONS

Screening	Screening Criteria	Project Evaluation	Result
Transit Priority Area	Projects located within a Transit Priority Area (TPA) (i.e., within ½ mile of an existing "major transit stop"[1] or an existing stop along a "high-quality transit corridor"[2]) may be presumed to have a less than significant impact absent substantial evidence to the contrary	Specific Plan Site is not located within ½ mile of an existing major transit stop or along a high-quality transit corridor.	Does Not Meet Criteria
Low Area VMT	Projects may be presumed to have a less than significant VMT impact if located in an already low VMT generating traffic analysis zones (TAZs) that generates a VMT per service population that does not exceed the Citywide average under General Plan Buildout condition VMT per service population.	The Specific Plan is not located within a low VMT generating area.	Does Not Meet Criteria

[1] Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").
[2] Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

TABLE 2 CONT.: SCREENING FOR LAND USE POJECTS EXEMPT FROM VMT CALCULATIONS

Screening	Screening Criteria	Project Evaluation	Result
Project Type Screening by Land Use Type	Projects that meet the criteria describe below can be screened from further VMT review during the CEQA process and are presumed to have less than significant impact upon transportation (determination to be made by City staff). 1. Local serving retail: a. Not greater than 50,000 sq. ft. in size b. Projects with a Neighborhood Commercial TOP Land Use designation since this designation is intended to be local serving (Neighborhood Commercial is defined as "Local serving retail, personal service, office, and dining uses, typically located within a predominantly residential neighborhood"). 2. Local Serving K – 12 Public Schools (not magnet or charter schools); 3. Local/Neighborhood Parks; 4. Daycare / Childcare/Pre-Kindergarten; 5. Affordable or Supportive Housing; 6. Student Housing on or adjacent to college campuses; 7. Community Institutions (e.g. Public Library, Fire Station, local government facilities); 8. Senior Housing (as defined by HUD) or Assisted Living facilities; HUD defines Senior Housing as projects that are: a. Provided under any state or federal program that the Secretary of HUD has determined to be specifically designed and operated to assist elderly persons (as defined in the state or federal program); b. Intended for, and solely occupied by persons 62 years of age or older; or c. Intended and operated for occupancy by persons 55 years of age or older. (most commonly used)	The Specific Plan does not contain any of the available land use types that would qualify for this screening.	Does not Meet Criteria

The 2022 Specific Plan Amendment was not found to meet any of the City's adopted VMT screening criteria for land use projects. City Guidelines require a project level VMT analysis to be performed.

VMT ANALYSIS

VMT MODELING

The City Guidelines identifies the San Bernardino Traffic Analysis Model (**SBTAM**) as the appropriate tool for conducting VMT analysis for land use projects in the City of Ontario, as it considers interaction between different land uses based on socio-economic data, such as population, households, and employment. The City of Ontario has recently adopted an updated version of SBTAM also referred to as The Ontario Plan (**TOP**) model, which contains updated roadway network and socio-economic data within the City of Ontario consistent with the City's recently adopted TOP and includes a base year of 2019 and a General Plan Buildout of 2050. Outside of the City of Ontario, the model assumes datasets consistent with the 2016 Southern

California Association of Governments (SCAG) Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS). Urban Crossroads has obtained the newly adopted TOP model from the City of Ontario.

VMT METRIC AND SIGNIFICANCE THRESHOLD

City Guidelines identifies the efficiency based metric VMT per Service Population (**SP**) (i.e., population and employees) is to be used to conduct project level VMT analyses for land use projects in the City of Ontario. City Guidelines also identifies the following impact threshold for project level VMT analyses:

- A significant impact would occur if the project VMT per SP exceeds the Citywide average VMT per SP under General Plan Buildout Conditions.

The City of Ontario's average VMT per SP under General Plan Buildout conditions has been calculated using TOP General Plan Buildout (2050) model. Table 3 provides the City of Ontario's Citywide average VMT per SP for General Plan Buildout (2050) conditions.

TABLE 3: CITYWIDE VMT PER SERVICE POPULATION

Ontario	TOP 2050
Service Population	706,494
VMT	21,689,573
VMT per SP	30.70

As shown in Table 3, the City of Ontario's VMT per SP for General Plan Buildout (2050) conditions has been calculated as **30.70 VMT per SP**.

PROJECT LAND USE CONVERSION

In order to estimate project generated VMT, standard land use information such as dwelling units and building square footage must first be converted into a SBTAM compatible dataset. The SBTAM model utilizes socio-economic data (**SED**) (e.g., population, households and employment) instead of land use information for the purposes of vehicle trip estimation. Land use information for the Project has been converted to SED and input into a separate traffic analysis zone (**TAZ**) to isolate the Project's VMT. Table 4 summarizes the SED inputs used to reflect the Project.

TABLE 4: POPULATION & EMPLOYMENT ESTIMATES

	2022 Specific Plan Amendment
Households	7,194
Population	25,179
Employment	5,005

VMT CALCULATION

Origin/Destination VMT Method

The Origin/Destination (**OD**) method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in the study area (i.e., TAZ or group of TAZ's). The OD method

accounts for all trips (i.e., both passenger car and truck) and trip purposes (i.e., total VMT) and therefore provides a more complete estimate of VMT. Total VMT is then divided by the Project's SP to derive the efficiency based metric VMT per SP.

Table 5 presents Project generated total OD VMT and the resulting total OD VMT per SP for both Baseline (2022) and General Plan Buildout (2050) conditions. As shown in Table 5, the Project would generate total OD VMT per SP below the City's adopted impact threshold for both Baseline (2022) and General Plan Buildout Year (2050) conditions.

TABLE 5: PROJECT TOTAL OD VMT

	Baseline (2022)	General Plan Buildout Year (2050)
Population	25,179	25,179
Employment	5,005	5,005
Service Population	30,184	30,184
Total OD VMT	679,212	777,191
Total VMT Trucks	33,586	33,586
OD VMT per SP	22.50	25.75
City Threshold	30.70	30.70
Percent Below Threshold	-26.71%	-16.12%
Potentially Significant?	No	No

Boundary VMT Method

City Guidelines also acknowledge that a VMT analysis should also contain an evaluation of a project's effect on VMT, which can be performed using the boundary method of calculating VMT. The boundary method is the sum of all weekday VMT on the roadway network within a designated boundary (i.e., City boundary or other designated geographic area). The boundary method estimates VMT by multiplying vehicle trips on each roadway segment within the boundary by that segment's length. This approach consists of all trips, including those trips that do not begin or end in the designated boundary. Consistent with City Guidelines, the City of Ontario was used as the boundary for this assessment. In addition, as the Project is located near the southeastern edge of the City of Ontario, an additional assessment of a ten-mile boundary area surrounding the Project site has also been conducted to ensure trips associated with the Project are not omitted.

Table 6 presents total VMT calculated using the boundary method for No Project (i.e., 2021 Specific Plan) and With Project (i.e., 2022 Specific Plan Amendment) General Plan Buildout (2050) conditions. Boundary VMT is higher under the 2022 Specific Plan Amendment scenario for both the City of Ontario boundary and 10-mile boundary of the Project, but similarly to the OD VMT per SP results, the Boundary VMT per SP is lower under the proposed Project.

TABLE 6: GENERAL PLAN BUILDOUT (2050) BOUNDARY VMT RESULTS

	City Boundary		10-Mile Boundary	
Scenario	No Project	With Project	No Project	With Project
Service Population	719,661	721,445	2,276,901	2,278,685
Boundary VMT	9,670,427	9,687,140	35,863,716	35,892,228
VMT per SP	13.44	13.43	15.75	15.75
Change in VMT	-0.01		0.00	
Potentially Significant?	No		No	

SUMMARY

Based on the results of this analysis the following findings are made:

- The 2022 Specific Plan Amendment was evaluated against screening criteria as outlined in the City Guidelines. The 2022 Specific Plan Amendment was not found to meet any available screening criteria, and a VMT analysis was performed.
- The 2022 Specific Plan Amendment's VMT analysis found the 2022 Specific Plan Amendment to be below the City's VMT per service population threshold by 26.71% for baseline (2022) conditions and 16.12% for buildout (2050) conditions.
- In addition, the 2022 Specific Plan Amendment cumulative effect on VMT was also found to reduce the City's VMT per SP with the inclusion of the 2022 Specific Plan Amendment, which indicates that the 2022 Specific Plan Amendment is a more efficient land use plan.
- The 2022 Specific Plan Amendment is found to have a less than significant impact.

If you have any questions, please contact me directly at aso@urbanxroads.com.

Respectfully submitted,

URBAN CROSSROADS, INC.

Alexander So
Senior Associate

REFERENCES

1. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA.* State of California : s.n., December 2018.
2. **City of Ontario.** *SB 743 VMT Thresholds.* City of Ontario : s.n., June 2020.