FINAL ENVIRONMENTAL IMPACT REPORT

Volume II

SCH #2004071095

West Haven Specific Plan

(PSP03-006)

APPENDIX I

Draft Final Report Traffic Analysis for the West Haven Specific Plan

URS Corporation

DRAFT FINAL REPORT

TRAFFIC ANALYSIS FOR THE WEST HAVEN SPECIFIC PLAN PROJECT

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1.0 INTRODUCTION

This Traffic Report summarizes the results of a traffic impact analysis conducted for the West Haven Specific Plan project. This package contains the relevant tables and assumptions that will be included in the EIR documentation. The following analysis scenarios were conducted for the proposed project.

- Existing Conditions
- Horizon Year 2015 Baseline Conditions
- Horizon Year 2015 Baseline Plus Project Conditions

2.0 TRAFFIC ANALYSIS METHODOLOGY

The traffic analyses prepared for this study were performed in accordance with City of Ontario requirements, the California Environmental Quality Act (CEQA) project review process, and the San Bernardino County Congestion Management Program (CMP) requirements. Detailed information on roadway segment and intersection analysis methodologies, standards, and thresholds are discussed in the following sections.

2.1 THRESHOLD OF SIGNIFICANCE

The City of Ontario strives to maintain LOS D (with V/C < 1.00) or better operating conditions for study intersections. The study roadways were evaluated using the 2003 SANBAG CMP Generalized Peak Hour/Peak Direction Level of Service Standards.

2.2 ROADWAY SEGMENTS

Segment Level of Service (LOS) standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. The CMP roadway capacity standards were based on the San Bernardino County Congestion Management Program (CMP) and adopted for use in the West Haven Specific Planning Area. The capacities shown in **Table 2.1** reflect the generalized peak hour/peak direction level of service maximum volumes that can be reasonably carried on the roadway under prevailing traffic conditions.

Table 2.1 Generalized Peak Hourly/Direction Capacity

Roadway Sections		Level of Service Thresholds				
Lanes	Cross-section	A	B	C	D	E
2	Undivided	490	740	790	830	870
4	Divided	1080	1610	1680	1760	1850
6	Divided	1680	2450	2530	2650	2770
2	Divided + (LeftTurn)	515	777	830	872	914
2	Divided (NoLeft)	417	629	672	706	740

4	Undivided + (Left)	1026	1530	1596	1672	1758
6	Undivided + (Left)	1596	2328	2404	2518	2632

Source: San Bernardino County CMP, 2003 Update.

2.3 SIGNALIZED INTERSECTIONS

Signalized intersection analysis follows the procedures outlined in the *2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209*. This method defines Level of Service in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time. This technique uses 1,900 vehicles per hour per lane (vphpl) as the maximum saturation volume of an intersection. This saturation volume is adjusted to account for lane width, on-street parking, pedestrians, traffic composition (i.e., percentage trucks), and shared lane movements (i.e., through and right-turn movements originating from the same lane). The computerized intersection analysis was performed with the *Traffix 7.6* software package (Dowling Associates, 2003).

2.4 UNSIGNALIZED INTERSECTIONS

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the 2000 Highway Capacity Manual (Section 10) unsignalized intersection analysis methodology. The *Traffix 7.6* software also supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement.

Table 2.2 presents the range of Volume-to-Capacity (V/C) ratios and corresponding LOS standards utilized to analyze the signalized and unsignalized study intersections.

Table 2.2 Level Of Service Descriptions

Description of Operation	Signalized Intersection Delay (seconds per vehicle)	Stop-Controlled Intersection Delay (seconds per vehicle)
LOS A describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	<10.0	<10.0
LOS B describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	10.1 – 20.0	10.1 – 15.0
LOS C describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.1 – 35.0	15.1 – 25.0

LOS D describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.	35.1 – 55.0	25.1 – 35.0
LOS E is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.	55.1 – 80.0	35.1- 50.0
LOS F describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.	>80.0	>50.0

3.0 EXISTING CONDITIONS

The tables in this section summarize the result of the existing conditions analysis conducted for the study roadway segments and intersections.

3.1 ROADWAY SEGMENT ANALYSIS

The study roadway segments were evaluated using CMP Peak Hour/Peak Direction traffic analysis procedure using existing traffic counts conducted in September 2004.

Table 3.1 Roadway Segment Level Of Service Results
Existing Conditions

Roadway	Segment	Cross-Section (Lanage)	AM Peak Hour Volume	PM Peak Hour Volume	LOS Threshold (LOS E)	AM Peak Hour (LOS)	PM Peak Hour (LOS)
Archibald Avenue	Riverside Drive to SR 60	6 DIV	1,361	1,167	2,770	A	A
Haven Avenue	SR 60 to Creekside Drive	4 DIV	1,502	1,640	1,850	B	C
	Creekside Drive to Riverside Drive	4 DIV	1,003	931	1,850	A	A
	Riverside Drive to Chino Avenue (Future)	2 UNDIV	146	251	870	A	A
	Chino Avenue (Future) to Edison Avenue	2 UNDIV	126	179	870	A	A
Turner Avenue	Schaefer to Riverside	4 DIV	555	256	1,850	A	A
Riverside Drive	Ontario Avenue to Archibald Avenue	4 DIV	522	798	1,850	A	A
	Archibald Avenue to Turner Avenue	4 DIV	814	965	1,850	A	A

	Turner Avenue to Haven Avenue	2/1	1,146	751	1,850	B	A
	Haven Avenue to Mill Creek	2/1	526	593	1,850	A	A

As shown in Table 3.1, the result of existing peak hour/peak direction roadway segment analysis indicate that all study roadway segments are operating at acceptable LOS C or better.

3.2 INTERSECTION ANALYSIS

Table 3.2 summarizes the results of existing conditions peak hour intersection analysis. All intersections are signalized unless otherwise noted.

Table 3.2 Peak Hour Intersection Level Of Service Results
Existing Conditions

Study Intersections		AM Peak Hour			PM Peak Hour		
		LOS	Avg. Delay	V/C	LOS	Avg. Delay	V/C
1	Archibald Avenue/SR-60 WB Ramps	C	25.7	0.788	C	25.1	0.733
2	Archibald Avenue/SR-60 EB Ramps	B	19.4	0.441	C	26.1	0.588
3	Archibald Avenue/Riverside Drive	C	31.3	0.473	C	33.1	0.578
4	Archibald Avenue/Chino Avenue	C	23.6	0.311	B	20.0	0.311
5	Archibald Avenue/Schaefer Avenue [1]	C	15.2	0.000	C	16.1	0.000
6	Archibald Avenue/Edison Avenue	C	22.4	0.278	C	25.5	0.373
7	Turner Avenue/Riverside Drive	C	30.0	0.777	C	20.6	0.335
8	Turner Avenue/Chino Avenue [2]	A	8.9	0.234	A	8.2	0.146
11	Haven Avenue/SR-60 WB Ramps	B	14.5	0.414	A	8.5	0.576
12	Haven Avenue/SR-60 EB Ramps	C	27.4	0.759	C	23.7	0.622
13	Haven Avenue/Creekside Drive	C	27.1	0.399	C	25.1	0.561
14	Haven Avenue/Riverside Drive	C	23.7	0.276	C	23.2	0.497
17	Haven Avenue/Old Edison Avenue [1]	B	12.9	0.000	B	12.0	0.000
18	Millcreek/Riverside Drive	C	23.6	0.329	B	17.1	0.368
19	Milliken Avenue/Riverside Drive	C	24.0	0.527	C	26.5	0.612

[1] – Unsignalized 2-way Stop Control
[2] – Unsignalized 4-way Stop Control

As shown in Table 3.2, the result of the existing conditions analysis, indicate that all study intersections are forecast to operate at LOS C or better.

3.3 HORIZON YEAR 2015 BASELINE CONDITIONS

The Horizon Year 2015 without project roadway network builds upon the existing roadway network and incorporates applicable improvements that were either approved or funded and constructed by Year 2015.

Figure 3-1 shows the Year 2015 Baseline intersection geometric assumptions consistent with the prescribed roadway configurations outlined in the New Model Colony Master Plan. **Figures 3-2** and **3-3** summarize the projected AM and PM intersection turning movement volume under Year 2015 Baseline conditions.

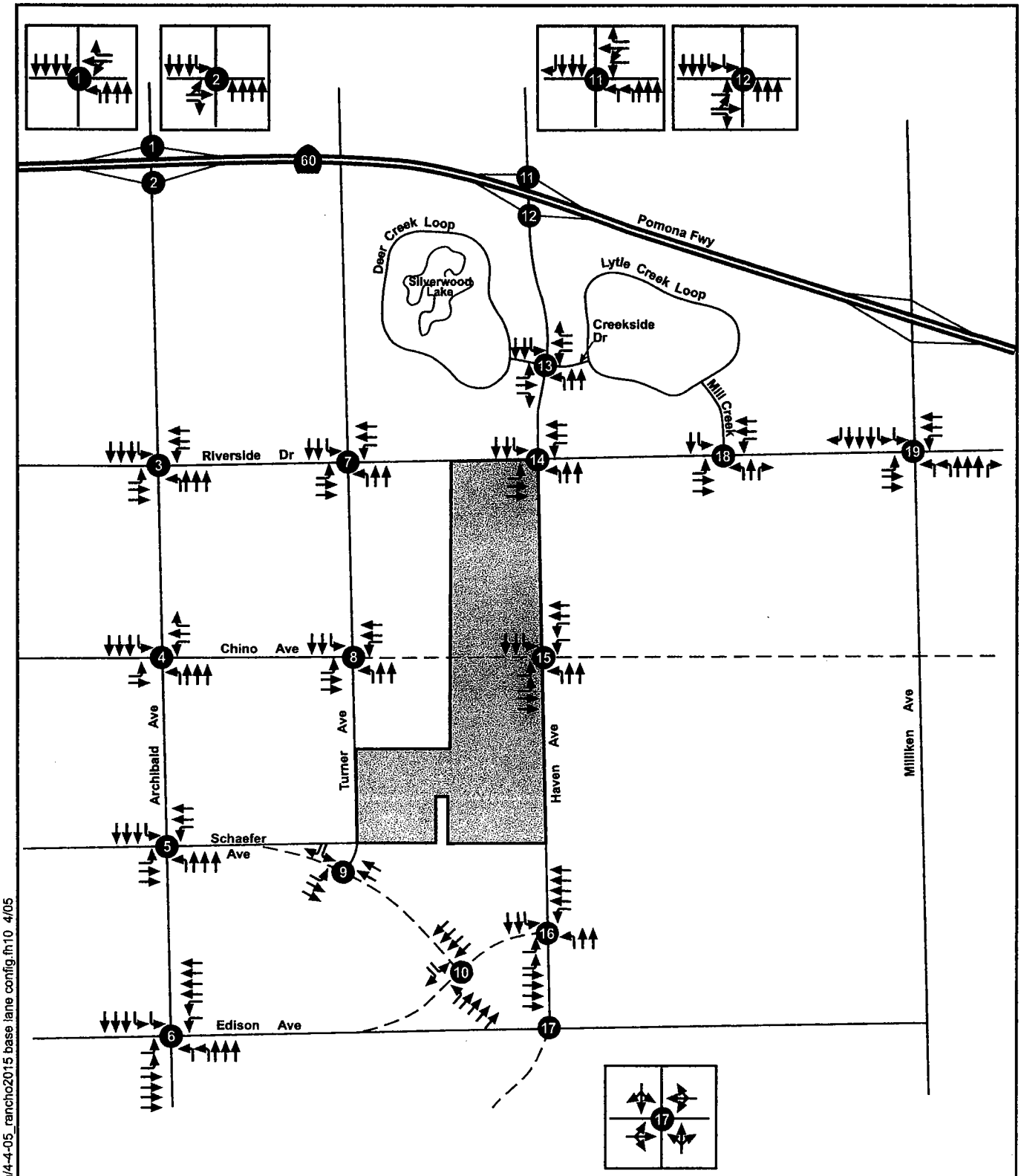
3.4 ROADWAY SEGMENT ANALYSIS

Table 3.1 presents the results of the roadway segment analysis conducted for the study area roadway segments under Year 2015 Baseline conditions.

Table 3.1 Roadway Segment Level Of Service Results
Year 2015 Baseline Conditions

Roadway	Segment	Cross-Section (Lanage)	AM Peak Hour Volume	PM Peak Hour Volume	LOS Threshold (LOS E)	AM Peak Hour (LOS)	PM Peak Hour (LOS)
Archibald Avenue	Riverside Drive to SR 60	6 DIV	1,645	2,545	2,770	A	D
Haven Avenue	SR 60 to Creekside Drive	4 DIV	1,566	1,414	1,850	B	B
	Creekside Drive to Riverside Drive	4 DIV	1,120	1,045	1,850	B	A
	Riverside Drive to Chino Avenue (Future)	4 DIV	737	1,483	1,850	A	B
	Chino Avenue (Future) to Edison Avenue	4 DIV	941	1,338	1,850	A	B
Turner Avenue	Schaefer to Riverside	4 UNDIV	38	48	1,758	A	A
Riverside Drive	Ontario Avenue to Archibald Avenue	6 UNDIV	1,215	1,825	2,632	A	B
	Archibald Avenue to Turner Avenue	6 UNDIV	1,174	1,881	2,632	A	B
	Turner Avenue to Haven Avenue	6 UNDIV	1,242	1,821	2,632	A	B
	Haven Avenue to Mill Creek	6 UNDIV	1,049	2,872	2,632	A	F
	Mill Creek to Milliken Avenue	6 UNDIV	1,719	3,007	2,632	B	F
Schaefer Avenue	Archibald Avenue to Turner Avenue	6 UNDIV	68	104	2,362	A	A

As shown in Table 3.1 the majority of the roadway segments are forecast to have sufficient roadway capacities during Year 2015 Baseline conditions with the exception of the roadway segments along Riverside Drive between Haven Avenue and Mill Creek; and between Mill Creek and Milliken Avenue. This over capacity conditions indicate that there is a need to provide more capacity to east-west trending roadways. This could be potentially accomplished by building new roadways, improving roadways to their general plan standards, roadway links extensions and gap closure of discontinuous roadways.



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2015 BASE LANE CONFIGURATIONS

Project No.: 38000774	Date: JANUARY 2005	Project: WEST HAVEN SPECIFIC PLAN EIR	Figure 3-1

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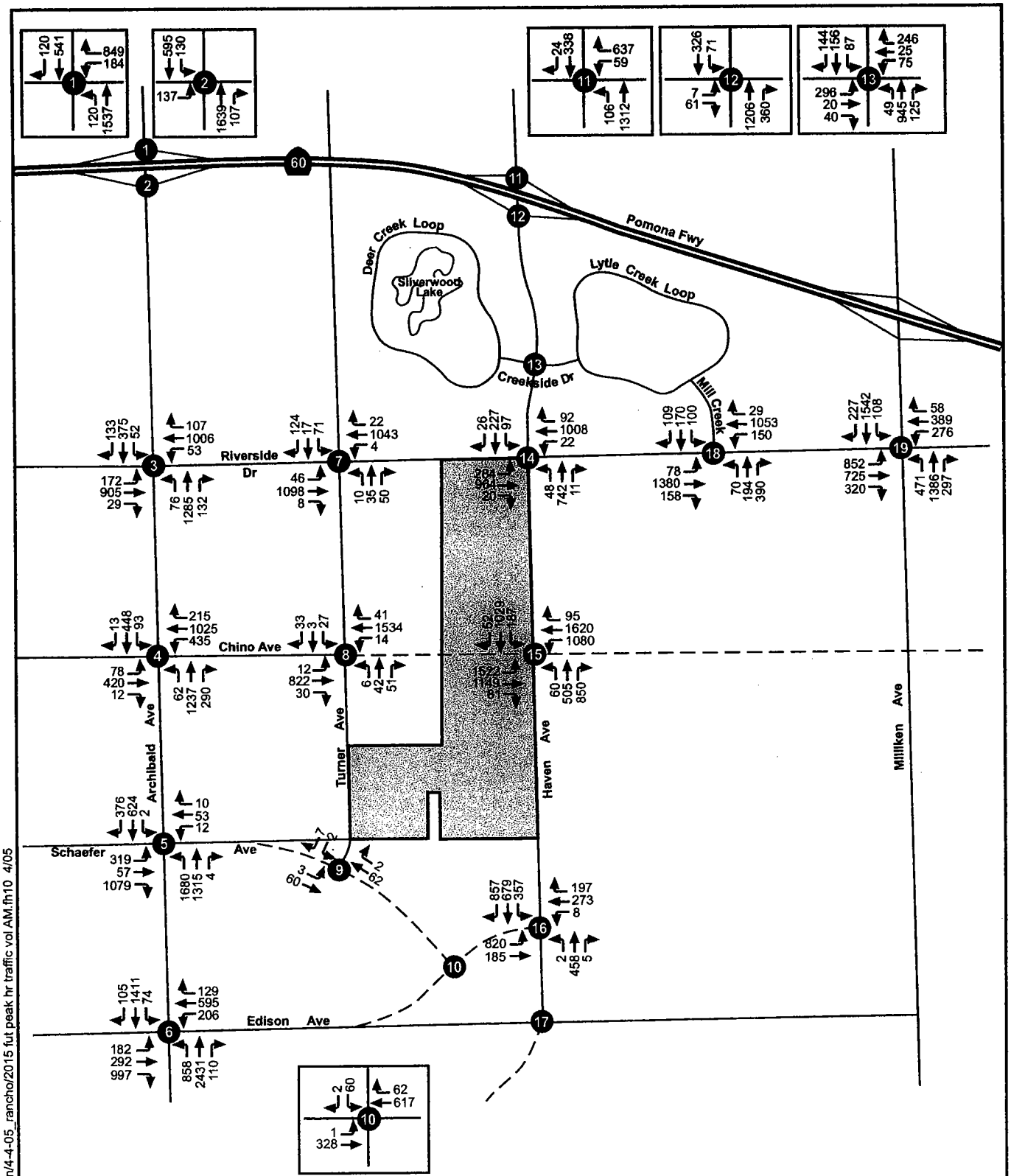

2015 FUTURE BASE PEAK HOUR TRAFFIC VOLUMES - AM

Project No.: 38000774	Date: JANUARY 2005	Project: WEST HAVEN SPECIFIC PLAN EIR	Figure 3-2

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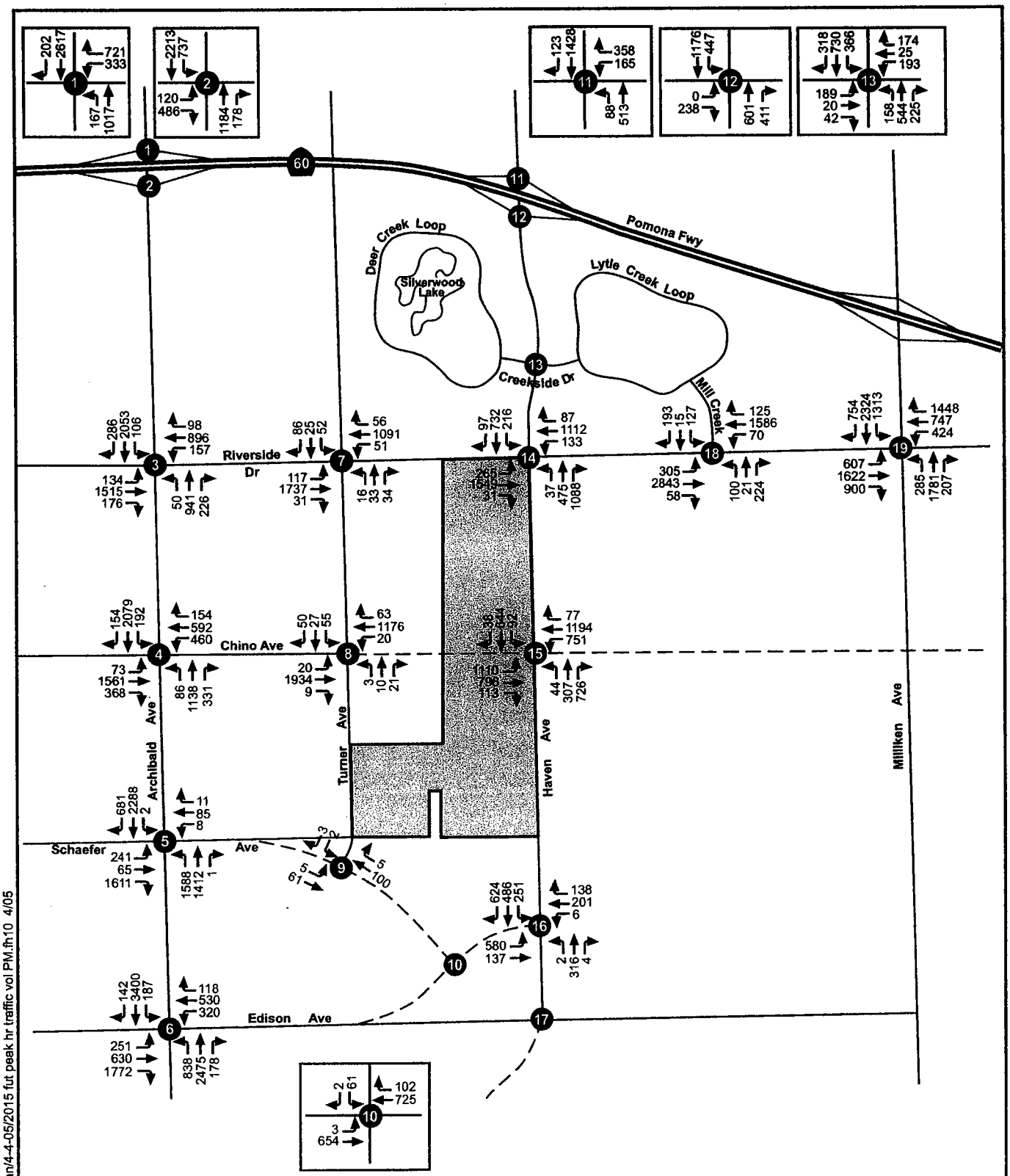

2015 FUTURE BASE PEAK HOUR TRAFFIC VOLUMES - PM

Project No.: 38000774	Date: JANUARY 2005	Project: WEST HAVEN SPECIFIC PLAN EIR	Figure 3-3

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3.5 INTERSECTION ANALYSIS

Table 3.2 presents the LOS analysis results for the study area intersection under Year 2015 Baseline conditions.

Table 3.2 Intersection Level Of Service Results
Year 2015 Baseline Conditions

Study Intersections		AM Peak Hour			PM Peak Hour		
		LOS	Avg. Delay	V/C	LOS	Avg. Delay	V/C
1	Archibald Avenue/SR-60 WB Ramps	D	43.4	0.892	D	51.4	1.039
2	Archibald Avenue/SR-60 EB Ramps	B	13.0	0.437	D	39.1	0.988
3	Archibald Avenue/Riverside Drive	C	30.3	0.792	F	84.4	1.165
4	Archibald Avenue/Chino Avenue	D	49.2	1.050	F	498.3	2.660
5	Archibald Avenue/Schaefer Avenue	F	376.1	2.226	F	719.1	2.966
6	Archibald Avenue/Edison Avenue	F	175.1	1.388	F	491.5	2.466
7	Turner Avenue/Riverside Drive	B	10.3	0.437	B	10.3	0.625
8	Turner Avenue/Chino Avenue	A	5.1	0.508	A	5.4	0.625
9	Turner Avenue/Schaefer Avenue [1]	A	8.6	-	A	8.9	-
10	Schaefer Avenue/Edison Avenue [1]	C	16.9	-	C	22.7	-
11	Haven Avenue/SR-60 WB Ramps	A	9.4	0.292	A	8.0	0.376
12	Haven Avenue/SR-60 EB Ramps	A	5.8	0.402	B	17.6	0.602
13	Haven Avenue/Creekside Drive	C	29.5	0.585	C	30.6	0.603
14	Haven Avenue/Riverside Drive	C	31.2	0.808	F	197.4	1.488
15	Haven Avenue/Chino Avenue	F	247.7	1.743	F	124.2	1.327
16	Haven Avenue/New Edison Avenue	D	48.0	1.029	C	28.2	0.740
18	Millcreek/Riverside Drive	C	24.3	0.734	C	31.6	0.967
19	Milliken Avenue/Riverside Drive	E	76.6	1.142	F	319.2	1.876

[1] – Unsignalized 2-way Stop Control

As shown in Table 3.2, the following intersections are forecast at either LOS E/F or LOS D (with V/C > 1.00) while the remainder of the intersections are forecast at LOS D (with V/C 1.00) or better.

- Archibald Avenue / SR-60 WB Ramps ((LOS D PM, V/C > 1.00)
- Archibald Avenue / Riverside Drive (LOS F PM)
- Archibald Avenue / Chino Avenue (LOS D AM, V/C > 1.00, LOS F PM)
- Archibald Avenue / Schaefer Avenue (LOS F AM, PM)
- Archibald Avenue / Edison Avenue (LOS F AM, PM)
- Haven Avenue / Riverside Drive (LOS F PM)
- Haven Avenue / Chino Avenue (LOS F AM, PM)
- Haven Avenue / New Edison Avenue (LOS D AM, V/C > 1.00)
- Milliken Avenue / Riverside Drive (LOS E AM, LOS F PM)

4.0 HORIZON YEAR 2015 BASELINE PLUS PROJECT CONDITIONS

Similar to Year 2015 Baseline conditions, the Horizon Year 2015 with project roadway network builds upon the existing roadway network and incorporates applicable improvements that were either approved or funded and constructed by 2015.

4.1 PROJECT TRIP GENERATION

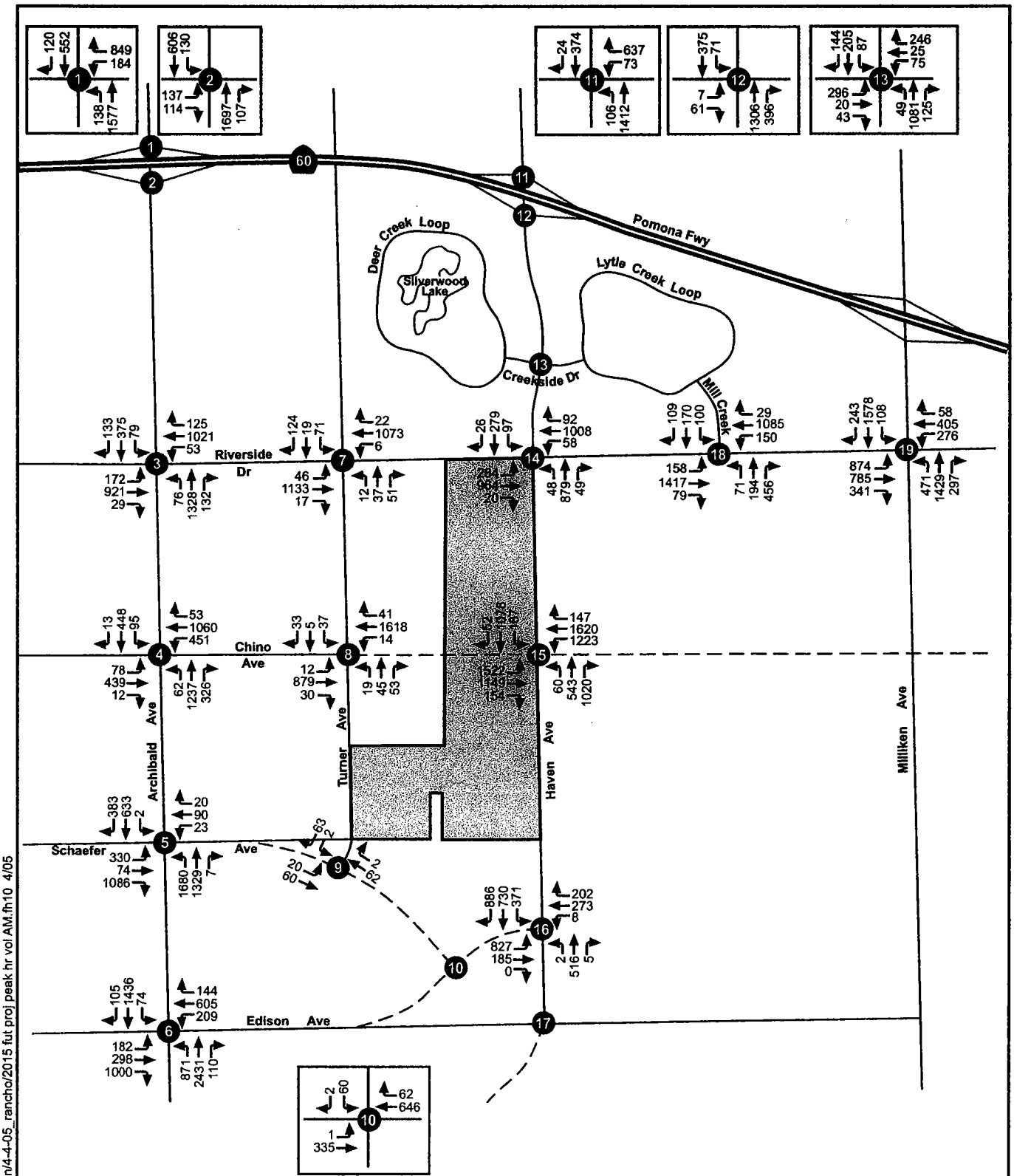
The project trip generation data shown in **Table 4.1** was derived from the *Updated Year 2015 Ontario NMC Traffic Model (October 2004)*. Traffic Analysis Zones (TAZ's) 759, 770 and 781 were assigned to represent the West Haven Specific Planning Area. The estimation of project trip generation for the West Haven Specific Planning Area was based on City approved "Year 2015 Land Use Data" and standard trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 5th Edition.

Table 4.1 West Haven Specific Planning Area
Trip Generation

TAZ #	AM TRIPS			PM TRIPS		
	Inbound	Outbound	TOTAL	Inbound	Outbound	TOTAL
759	228	162	390	260	303	563
770	140	277	417	299	211	510
781	61	195	256	206	111	317
TOTAL	429	634	1063	765	625	1390

Source: *Updated Year 2015 Ontario NMC Traffic Model (October 2004).*

Figures 4-1 and 4-2, show the AM and PM Peak Hour Year 2015 with Project traffic volume, within the project study area.



2015 FUTURE WITH PROJECT PEAK HOUR TRAFFIC VOLUMES - AM

Project No.: 38000774	Date: JANUARY 2005	Project: WEST HAVEN SPECIFIC PLAN EIR	Figure 4-1

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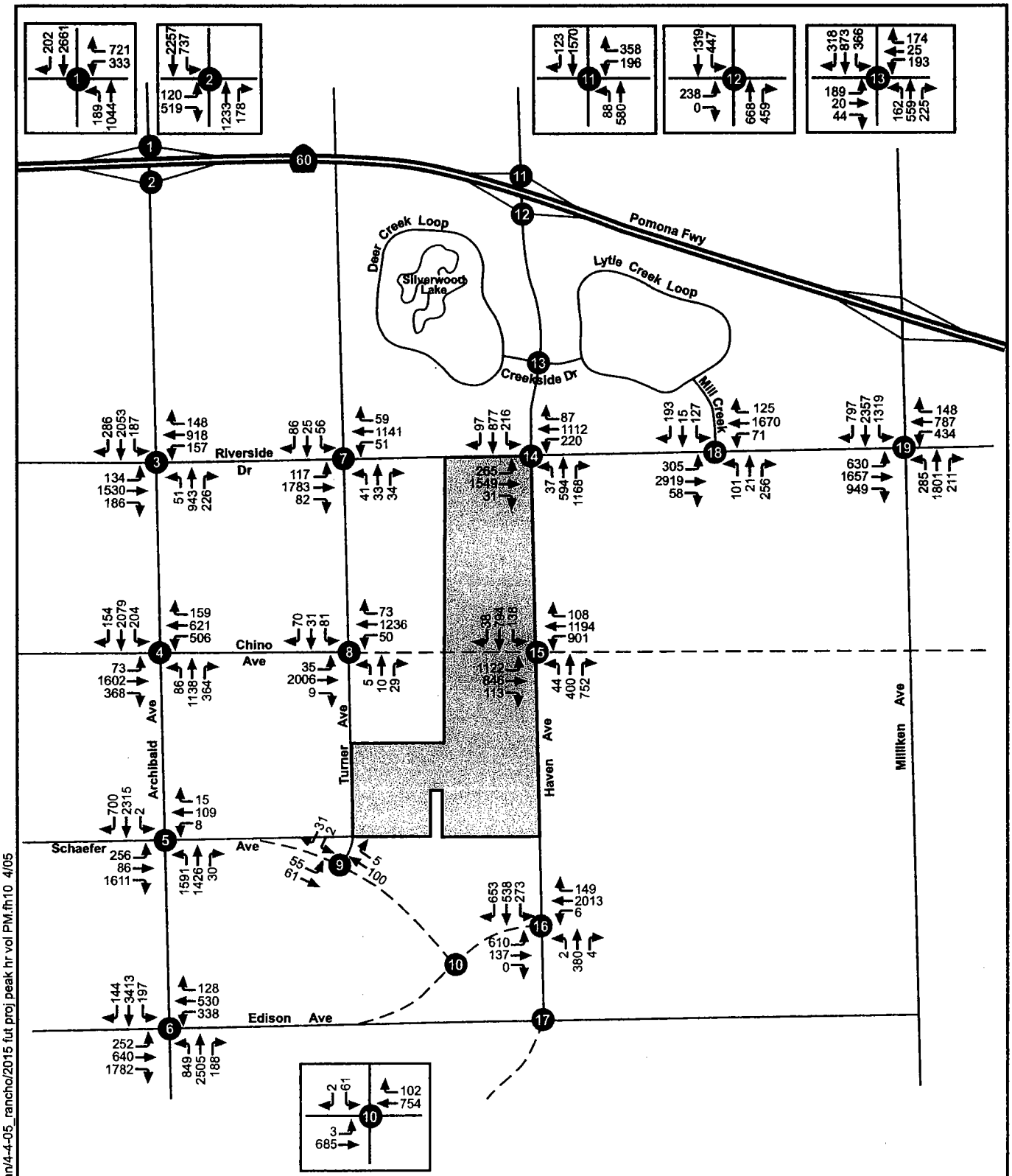

2015 FUTURE WITH PROJECT PEAK HOUR TRAFFIC VOLUMES - PM

Project No.: 38000774	Date: JANUARY 2005	Project: WEST HAVEN SPECIFIC PLAN EIR	Figure 4-2

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4.2 ROADWAY SEGMENT ANALYSIS

Table 4.2 presents the LOS analysis results for the study area roadway segments under Horizon Year 2015 Baseline plus Project (or Build) conditions.

Table 4.2 Roadway Segment Level Of Service Results
Year 2015 Baseline Plus Project Conditions

Roadway	Segment	Cross-Section (Lanage)	AM Peak Hour Volume	PM Peak Hour Volume	LOS Threshold (LOS E)	AM Peak Hour (LOS)	PM Peak Hour (LOS)
Archibald Avenue	Riverside Drive to SR 60	6 DIV	1,706	2,626	2,770	B	D
Haven Avenue	SR 60 to Creekside Drive	4 DIV	1,702	1,557	1,850	D	B
	Creekside Drive to Riverside Drive	4 DIV	1,256	1,190	1,850	B	B
	Riverside Drive to Chino Avenue (Future)	4 DIV	919	1,715	1,850	A	D
	Chino Avenue (Future) to Edison Avenue	4 DIV	1,149	1,638	1,850	B	C
Turner Avenue	Schaefer to Riverside	4 UNDIV	55	99	1,758	A	A
Riverside Drive	Ontario Avenue to Archibald Avenue	6 UNDIV	1,230	1,850	2,632	A	B
	Archibald Avenue to Turner Avenue	6 UNDIV	1,207	1,978	2,632	A	B
	Turner Avenue to Haven Avenue	6 UNDIV	1,277	1,871	2,632	A	B
	Haven Avenue to Mill Creek	6 UNDIV	1,152	2,952	2,632	A	F
	Mill Creek to Milliken Avenue	6 UNDIV	1,822	3,115	2,632	B	F
Schaefer Avenue	Archibald Avenue to Turner Avenue	6 UNDIV	124	132	2,362	A	A

Similar to Year 2015 Baseline conditions, the majority of the roadway segments shown in Table 4.2 under Year 2105 Baseline Plus Project conditions are forecast to have sufficient roadway capacities during Year 2015 Baseline conditions with the exception of the roadway segments along Riverside Drive between Haven Avenue and Mill Creek; and between Mill Creek and Milliken Avenue where the projected demands exceed LOS E peak directional capacities during the PM peak hour.

The over capacity conditions again indicate that there is a need to provide more capacity to east-west trending roadways. This could be potentially accomplished by building new roadways, improving roadways to their general plan standards, roadway links extensions and gap closure of discontinuous roadways.

4.3 INTERSECTION ANALYSIS

Table 4.3 presents the LOS analysis results for the study area intersection in 2015 with Project (or Build) conditions.

Table 4.3 Intersection Level Of Service Results
Year 2015 Baseline Plus Project Conditions

Study Intersections		AM Peak Hour			PM Peak Hour		
		LOS	Avg. Delay	V/C	LOS	Avg. Delay	V/C
1	Archibald Avenue/SR-60 WB Ramps	D	44.4	0.901	D	54.9	1.053
2	Archibald Avenue/SR-60 EB Ramps	B	12.9	0.446	D	43.9	1.018
3	Archibald Avenue/Riverside Drive	C	32.1	0.828	F	87.3	1.173
4	Archibald Avenue/Chino Avenue	D	53.5	1.050	F	580.9	2.953
5	Archibald Avenue/Schaefer Avenue	F	376.8	2.244	F	716.0	2.979
6	Archibald Avenue/Edison Avenue	F	185.9	1.430	F	499.6	2.486
7	Turner Avenue/Riverside Drive	B	10.3	0.446	B	10.6	0.656
8	Turner Avenue/Chino Avenue	A	5.5	0.535	A	8.1	0.684
9	Turner Avenue/Schaefer Avenue [1]	A	8.7	-	A	8.8	-
10	Schaefer Avenue/Edison Avenue [1]	C	17.6	-	C	24.0	-
11	Haven Avenue/SR-60 WB Ramps	A	9.8	0.317	A	8.3	0.415
12	Haven Avenue/SR-60 EB Ramps	A	5.5	0.432	B	17.0	0.638
13	Haven Avenue/Creekside Drive	C	29.7	0.626	C	30.8	0.611
14	Haven Avenue/Riverside Drive	D	35.4	0.864	F	214.8	1.599
15	Haven Avenue/Chino Avenue	F	304.5	1.884	F	144.2	1.389
16	Haven Avenue/New Edison Avenue	D	51.8	1.056	C	29.1	0.779
18	Millcreek/Riverside Drive	C	29.3	0.850	E	60.9	1.123
19	Milliken Avenue/Riverside Drive	F	82.5	1.169	F	336.6	1.917

As shown in Table 4.3, the following intersections are forecast at either LOS E/F or LOS D (with V/C > 1.00) while the remainder of the intersections are forecast at LOS D (with V/C 1.00) or better.

- Archibald Avenue / SR-60 WB Ramps ((LOS D PM, V/C > 1.00)
- Archibald Avenue / SR-60 EB Ramps ((LOS D PM, V/C > 1.00)
- Archibald Avenue / Riverside Drive (LOS F PM)
- Archibald Avenue / Chino Avenue (LOS D AM, V/C > 1.00, LOS F PM)
- Archibald Avenue / Schaefer Avenue (LOS F AM, PM)
- Archibald Avenue / Edison Avenue (LOS F AM, PM)
- Haven Avenue / Riverside Drive (LOS F PM)
- Haven Avenue / Chino Avenue (LOS F AM, PM)
- Haven Avenue / New Edison Avenue (LOS D AM, V/C > 1.00)
- Milliken Avenue / Riverside Drive (LOS F AM, LOS F PM)

5.0 YEAR 2015 BASELINE PLUS PROJECT CONDITIONS WITH MITIGATIONS

The mitigated Year 2015 Baseline with project conditions builds upon the Year 2015 Baseline roadway network and incorporates applicable improvements to bring projected deficient intersections to acceptable levels of service. The proposed mitigations collectively addresses traffic impacts associated with the proposed West Haven Specific Plan as well the other specific planning areas within the New Model Colony.

5.1 PROPOSED MITIGATION MEASURES

The mitigated Year 2015 Baseline with Project conditions builds upon the Year 2015 Baseline roadway network and incorporates applicable improvements to bring projected deficient intersections to acceptable

LOS. The proposed mitigations collectively addresses traffic impacts associated with the proposed Project, as well the other areas within the NMC.

The following describes the proposed mitigation measures that were developed in consultation with City staff and consultants conducting concurrent traffic studies in the study area. The list includes only the proposed mitigation measures that are relevant and applicable for the operationally deficient traffic study intersections identified in this Project Traffic Analysis. In Project meetings, the City has been made aware, and has discussed that some of these intersections will still sustain deficiencies even after mitigation measures are applied. Regardless, improvement costs associated with these mitigation measures shall be determined using a fair-share cost sharing method acceptable to the City and other concerned parties.

5.2 ON-SITE PROJECT MITIGATION

In coordination with City staff, the Project proponent will be responsible for the completion of onsite improvements fronting the Project site. The following proposed onsite improvements and approval conditions addresses basic roadway and circulation needs to facilitate vehicular ingress and egress to and from the Project site.

The Project proponent will provide adequate right-of-way and easements on the west side from centerline of Haven Avenue to its ultimate General Plan standard width.

The Project proponent will be responsible for the parkway, curbs and gutter on the western half of Haven Avenue fronting the Project site and half of the cost of median improvements along Haven Avenue fronting the Project site.

5.3 OFF-SITE PROJECT MITIGATION

The project traffic analysis had identified impacted study intersections and the following mitigations measures were developed:

T-1 Archibald Avenue/SR-60 WB Ramps (Proposed by others and in the Project Traffic Analysis)

- Provide exclusive westbound left turn lane
- Restripe shared westbound left/thru lane to a shared left/thru/right turn lane.

The above improvements will bring p.m. LOS D and 1.053 V/C to LOS C and 0.845 V/C.

T-2 Archibald Avenue/SR-60 EB Ramps (Proposed by others and in the Project Traffic Analysis)

- Provide exclusive eastbound left turn lane
- Restripe shared eastbound left/thru lane to a shared left/thru/right turn lane.

The above improvements will bring p.m. LOS D and 1.018 V/C to LOS C and 0.860 V/C

T-3 Archibald Avenue/Riverside Drive (Proposed by others and in the Project Traffic Analysis)

- Provide a fourth southbound thru lane
- Provide an exclusive eastbound right turn lane

The above improvements will bring p.m. LOS F and 1.173 V/C to LOS D and 0.980 V/C.

T-4 Archibald Avenue/Chino Avenue (Proposed by others and in the Project Traffic Analysis)

- Provide an exclusive northbound right turn lane
- Provide a fourth southbound thru lane
- Provide a second and third eastbound thru lane
- Provide an exclusive eastbound right turn lane
- Provide a second westbound left turn lane
- Provide a second westbound thru lane

The above improvements will bring p.m. LOS F and 2.953 V/C to LOS C and 0.923 V/C.

T-5 Archibald Avenue/Schaefer Avenue (Proposed in the Project Traffic Analysis)

- Provide northbound second left turn lane
- Provide fourth northbound thru lane
- Provide fourth southbound thru lane
- Provide southbound exclusive free right turn lane
- Provide eastbound exclusive free right turn lane

The above improvements will bring p.m. LOS F and 2.979 V/C to LOS E and 1.134 V/C. This mitigation measures does not bring improvement to LOS D; and represents a significant impact.

T-6 Archibald Avenue/Edison Avenue (Proposed by others and in the Project Traffic Analysis)

- Provide fourth northbound thru lane
- Provide northbound exclusive right turn lane
- Provide fourth southbound thru lane
- Provide southbound exclusive right turn lane
- Provide eastbound exclusive free right turn lane
- Provide westbound exclusive right turn lane

The above improvements will bring p.m. LOS F and 2.486 V/C to LOS D and 1.026 V/C.

T-7 Turner Avenue/Chino Avenue (Proposed by others and in the Project Traffic Analysis)

- Signalize intersection

T-8 Haven Avenue/Riverside Drive (Proposed by others and in the Project Traffic Analysis)

- Provide an exclusive northbound free right turn lane

The above improvements to T-7 and T-8 will bring p.m. LOS F and 1.599 V/C to LOS D and 0.949 V/C.

T-9 Haven Avenue/Chino Avenue (Proposed in the Project Traffic Analysis)

- Provide northbound exclusive free right turn lane
- Provide eastbound third left turn lanes
- Provide westbound third left turn lanes

The above improvements will lower a.m. LOS F and 1.884 V/C to LOS F and 1.257 V/C. This mitigation measures does not bring improvement to LOS D; and represents a significant impact.

T-10 Millcreek/Riverside Drive (Proposed in the Project Traffic Analysis)

- Provide eastbound third thru lane

The above improvements will bring p.m. LOS E and 1.123 V/C to LOS C and 0.905 V/C.

T-11 Milliken Avenue/Riverside Drive (Proposed by others and in the Project Traffic Analysis)

- Provide eastbound second left turn lane
- Provide eastbound exclusive free right turn lane
- Provide westbound second left turn lane

The above improvements will bring p.m. LOS F and 1.917 V/C to LOS F and 1.449 V/C. This mitigation measures does not bring improvement to LOS D; and represents a significant impact.

6.0 FAIR SHARE CONTRIBUTION OF MITIGATION COST

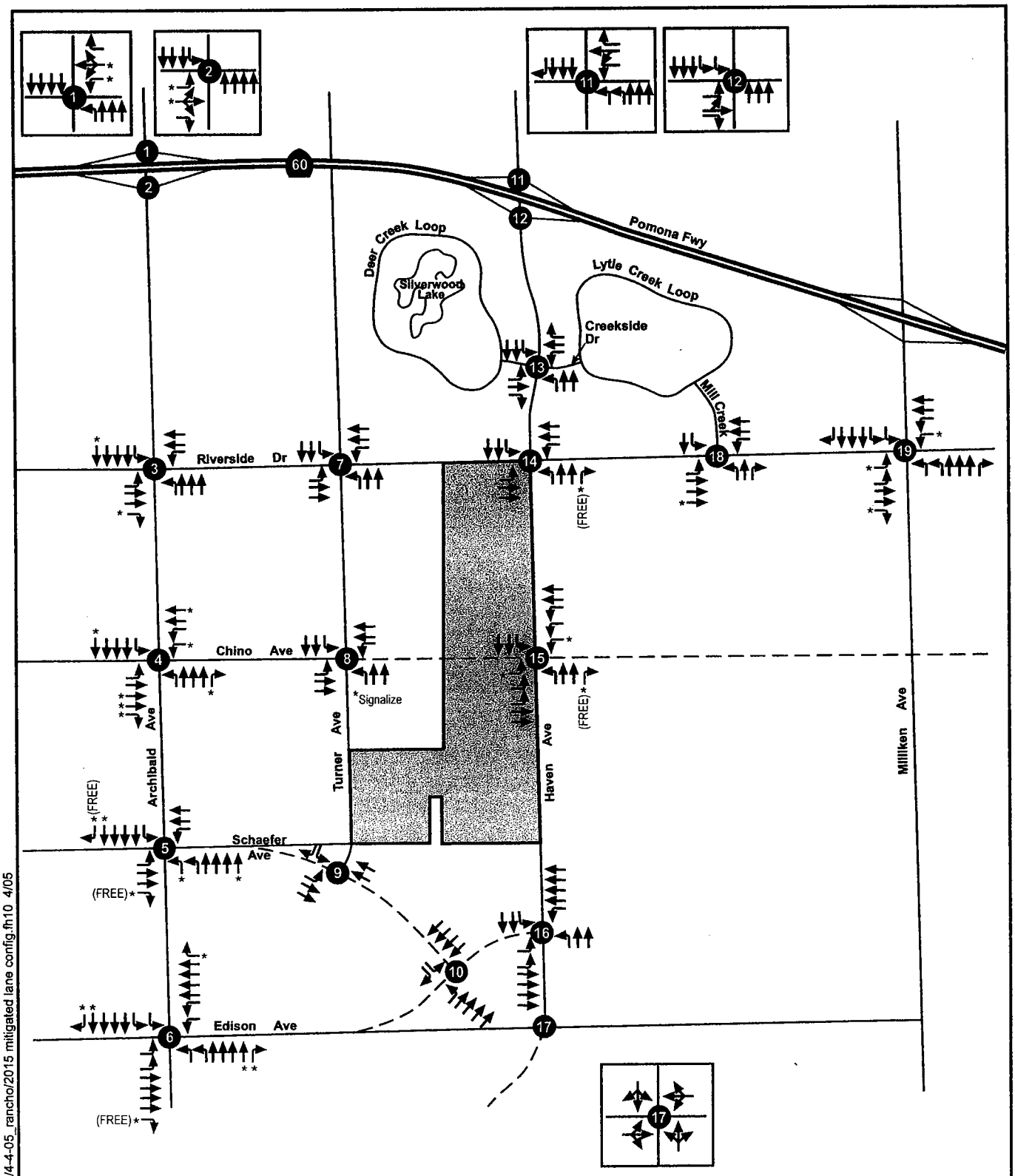
The City of Ontario is the responsible agency tasked with the exaction of fees to fund the construction and implementation of the proposed mitigation measures. The fair share mechanism is based on the on ratio of the individual project's contribution to future project added traffic. This mechanism ensures that the burden of the roadway and intersection mitigation costs, are distributed fairly to responsible projects.

A fair share cost analysis was conducted for the eleven study intersection that were identified to be deficient at project buildout of the West Haven Specific Plan project. The construction cost schedule shows that approximately $2.4M is needed to improve these facilities to acceptable operating conditions. Based on the fair share cost distribution, the project's proportionate share is approximately $90,000 or about 4 percent of the total costs.

6.1 POST MITIGATION CONDITIONS

With the implementation of onsite mitigation measures and offsite mitigation measures, T-1 through T-11, it is anticipated that the majority of the study intersections and roadways segments would experience improved operating conditions and acceptable levels of service. Although some intersection and roadways would still continue to carry a significant amount of traffic volume due in part by deficiencies of the roadway circulation system which include missing roadway links and interchange access to the regional freeway system. However, it is anticipated that upon completion of planned freeway interchanges and gap closures of discontinuous roadways, traffic volume would be evenly distributed to the roadway circulation system resulting in improved operating conditions of the overloaded intersection and roadway segments.

To accommodate the projected traffic demand, some proposed traffic improvements (i.e., triple left turn lanes or roadway widening beyond General Plan standards) were evaluated for analysis purposes only and may require additional right-of-way and accommodation beyond the prescribed roadway width of the NMC roadway standards. It is anticipated that future improvements and added roadway links from the surrounding roadway circulation system would result in a more even distribution of roadway traffic and potentially improve the operating conditions of the identified deficient intersections. Figure 3.11-6, *2015 Mitigated Lane Configurations,* features the mitigation measures proposed by others and in this Project's EIR Traffic Analysis.



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2015 MITIGATED LANE CONFIGURATIONS

Project No.: 38000774	Date: JANUARY 2005	Project: WEST HAVEN SPECIFIC PLAN EIR	Figure 5-1

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6.2 MITIGATED INTERSECTION ANALYSIS

Table 6.1 presents the LOS analysis results for the study area intersection in 2015 with Project (or Build) conditions with proposed mitigations.

Table 6.1 Intersection Level Of Service Results
Mitigated - Year 2015 Baseline Plus Project Conditions

Study Intersections		AM Peak Hour			PM Peak Hour		
		LOS	Avg. Delay	V/C	LOS	Avg. Delay	V/C
1	Archibald Avenue/SR-60 WB Ramps	C	24.7	0.641	C	24.4	0.845
2	Archibald Avenue/SR-60 EB Ramps	B	11.6	0.420	C	24.8	0.860
3	Archibald Avenue/Riverside Drive	C	32.0	0.828	D	44.6	0.980
4	Archibald Avenue/Chino Avenue	C	27.6	0.849	C	31.6	0.923
5	Archibald Avenue/Schaefer Avenue	C	32.0	0.922	E	78.5	1.134
6	Archibald Avenue/Edison Avenue	C	24.6	0.661	D	44.7	1.026
7	Turner Avenue/Riverside Drive	B	10.3	0.446	B	10.6	0.656
8	Turner Avenue/Chino Avenue	A	5.5	0.535	A	8.1	0.684
9	Turner Avenue/Schaefer Avenue	A	8.7	0.000	A	8.8	0.000
10	Schaefer Avenue/Edison Avenue	C	17.6	0.000	C	24.0	0.000
11	Haven Avenue/SR-60 WB Ramps	A	9.8	0.317	A	8.3	0.415
12	Haven Avenue/SR-60 EB Ramps	A	5.5	0.432	B	17.0	0.638
13	Haven Avenue/Creekside Drive	C	29.7	0.626	C	30.8	0.611
14	Haven Avenue/Riverside Drive	C	34.2	0.847	D	46.4	0.949
15	Haven Avenue/Chino Avenue	F	114.6	1.257	D	41.9	0.926
16	Haven Avenue/New Edison Avenue	D	51.8	1.056	C	29.1	0.779
17	Haven Avenue/Old Edison Avenue	-	-	-	-	-	-
18	Millcreek/Riverside Drive	C	27.3	0.738	C	25.6	0.905
19	Milliken Avenue/Riverside Drive	D	38.1	0.908	F	166.8	1.449

As shown in Table 6.1 the following five study intersections are forecast at at either LOS E/F or LOS D (with V/C > 1.00) while the remainder of the intersections are forecast at LOS D (with V/C 1.00) or better.

- Archibald Avenue/Schaefer Avenue (LOS E PM)
- Archibald Avenue/Edison Avenue (LOS D PM, V/C > 1.00)
- Haven Avenue/Chino Avenue (LOS F AM)
- Haven Avenue/New Edison Avenue (LOS D AM, V/C > 1.00)
- Milliken Avenue/Riverside Drive (LOS F PM)

6.3 PROJECT ADDED TRIPS COMPARED TO FUTURE TRAFFIC VOLUME

Tables 7.2 and 7.3 shows the Year 2015 AM and PM peak hour project contribution as compared to the change of projected Year 2015 and existing traffic.

Table 7.2 Year 2015 Percent Project Trip Contribution
AM Peak Hour

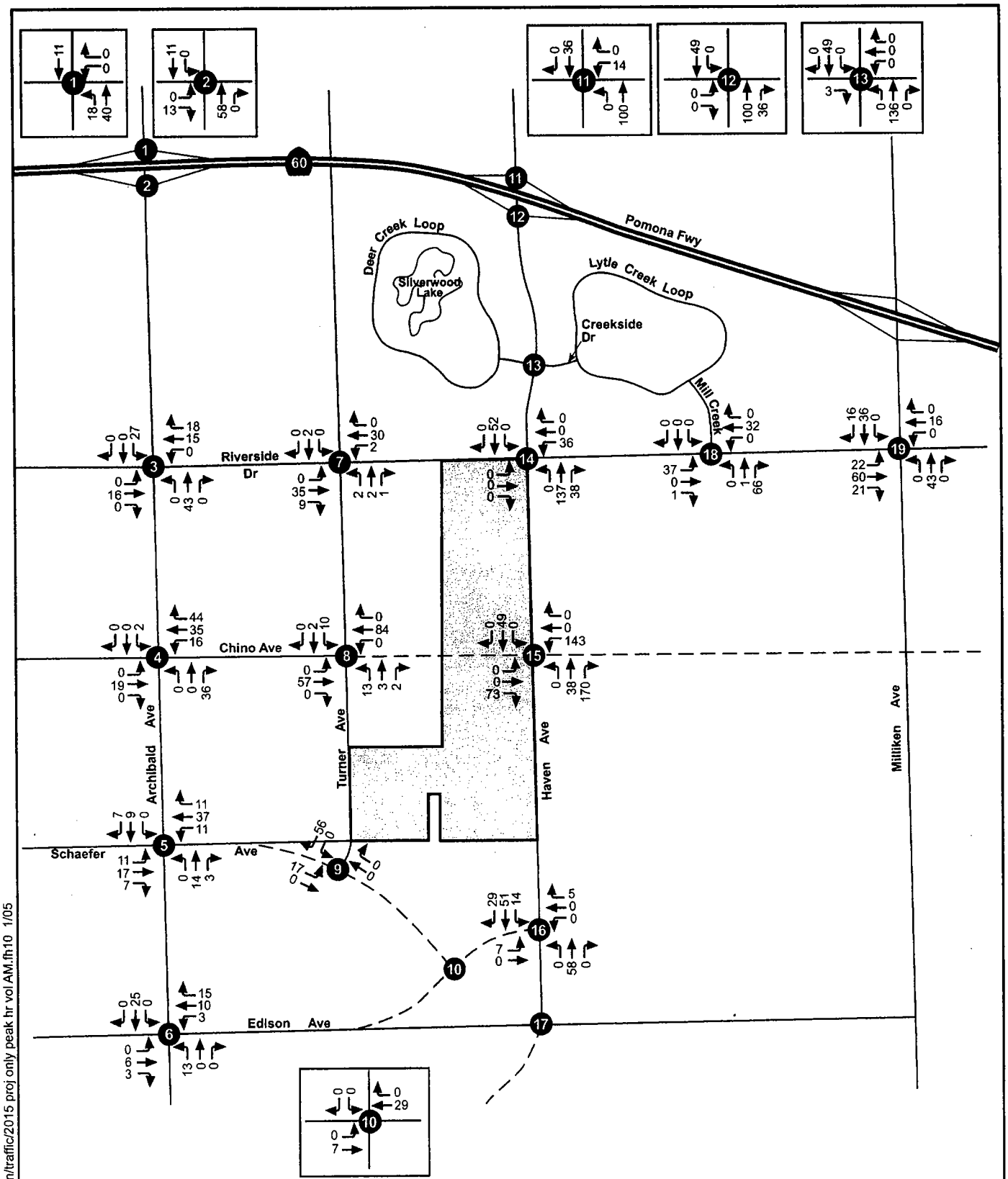
Intersection		Project Trips	2015 Total Volume	2004 Existing Volume	Change 2015-2004	Percent Project Trips
1	Archibald Avenue/SR-60 WB Ramps	69	3419	2469	950	7.26%
2	Archibald Avenue/SR-60 EB Ramps	82	2791	2281	510	16.07%
3	Archibald Avenue/Riverside Drive	119	4445	2338	2107	5.65%
4	Archibald Avenue/Chino Avenue	152	4479	1473	3006	5.06%
5	Archibald Avenue/Schaefer Avenue	127	5645	998	4647	2.73%
6	Archibald Avenue/Edison Avenue	75	7464	1475	5989	1.25%
7	Turner Avenue/Riverside Drive	83	2602	3100	[1]	3.19
8	Turner Avenue/Chino Avenue	171	2714	476	2238	7.64%
9	Turner Avenue/Schaefer Avenue	73	209	0	209	34.93%
10	Schaefer Avenue/Edison Avenue	36	1106	0	1106	3.25%
11	Haven Avenue/SR-60 WB Ramps	150	2625	3976	[1]	5.71%
12	Haven Avenue/SR-60 EB Ramps	185	2216	3517	[1]	8.35%
13	Haven Avenue/Creekside Drive	188	2396	1861	535	35.14%
14	Haven Avenue/Riverside Drive	263	3804	806	2998	8.77%
15	Haven Avenue/Chino Avenue	525	8754	0	8754	6.00%
16	Haven Avenue/New Edison Avenue	164	4004	0	4004	4.10%
17	Haven Avenue/Old Edison Avenue	-	-	458	-458	0.00%
18	Millcreek/Riverside Drive	137	4018	1126	2892	4.74%
19	Milliken Avenue/Riverside Drive	214	6865	1893	4972	4.30%

[1] – Model data show lowered Year 2015 volume, percent project trips calculated based on Year 2015 volume.

Table 7.3 Year 2015 Percent Project Trip Contribution
PM Peak Hour

Intersection		Project Trips	2015 Total Volume	2004 Existing Volume	Change 2015-2004	Percent Project Trips
1	Archibald Avenue/SR-60 WB Ramps	93	5150	2187	2963	3.14%
2	Archibald Avenue/SR-60 EB Ramps	126	5044	2352	2692	4.68%
3	Archibald Avenue/Riverside Drive	183	6820	2821	3999	4.58%
4	Archibald Avenue/Chino Avenue	166	7353	1588	5765	2.88%
5	Archibald Avenue/Schaefer Avenue	156	8146	1178	6968	2.24%
6	Archibald Avenue/Edison Avenue	125	10965	1823	9142	1.37%
7	Turner Avenue/Riverside Drive	179	3507	1588	1919	9.33%
8	Turner Avenue/Chino Avenue	247	3585	361	3224	7.66%
9	Turner Avenue/Schaefer Avenue	78	254	0	254	30.71%
10	Schaefer Avenue/Edison Avenue	60	1607	0	1607	3.73%
11	Haven Avenue/SR-60 WB Ramps	240	2915	4242	[1]	8.23%
12	Haven Avenue/SR-60 EB Ramps	258	3131	3885	[1]	8.24%
13	Haven Avenue/Creekside Drive	164	3148	2711	437	37.53%
14	Haven Avenue/Riverside Drive	431	6252	1770	4482	9.62%
15	Haven Avenue/Chino Avenue	558	6450	0	6450	8.65%
16	Haven Avenue/New Edison Avenue	208	2951	0	2951	7.05%
18	Millcreek/Riverside Drive	194	5861	1253	4608	4.21%
19	Milliken Avenue/Riverside Drive	267	11375	2066	9309	2.87%

[1] – Model data show lowered Year 2015 volume, percent project trips calculated based on Year 2015 volume.



2015 PROJECT ONLY PEAK HOUR TRAFFIC VOLUMES - AM

Project No.: 38000774	Date: JANUARY 2005	Project: WEST HAVEN SPECIFIC PLAN EIR	Figure 6-2

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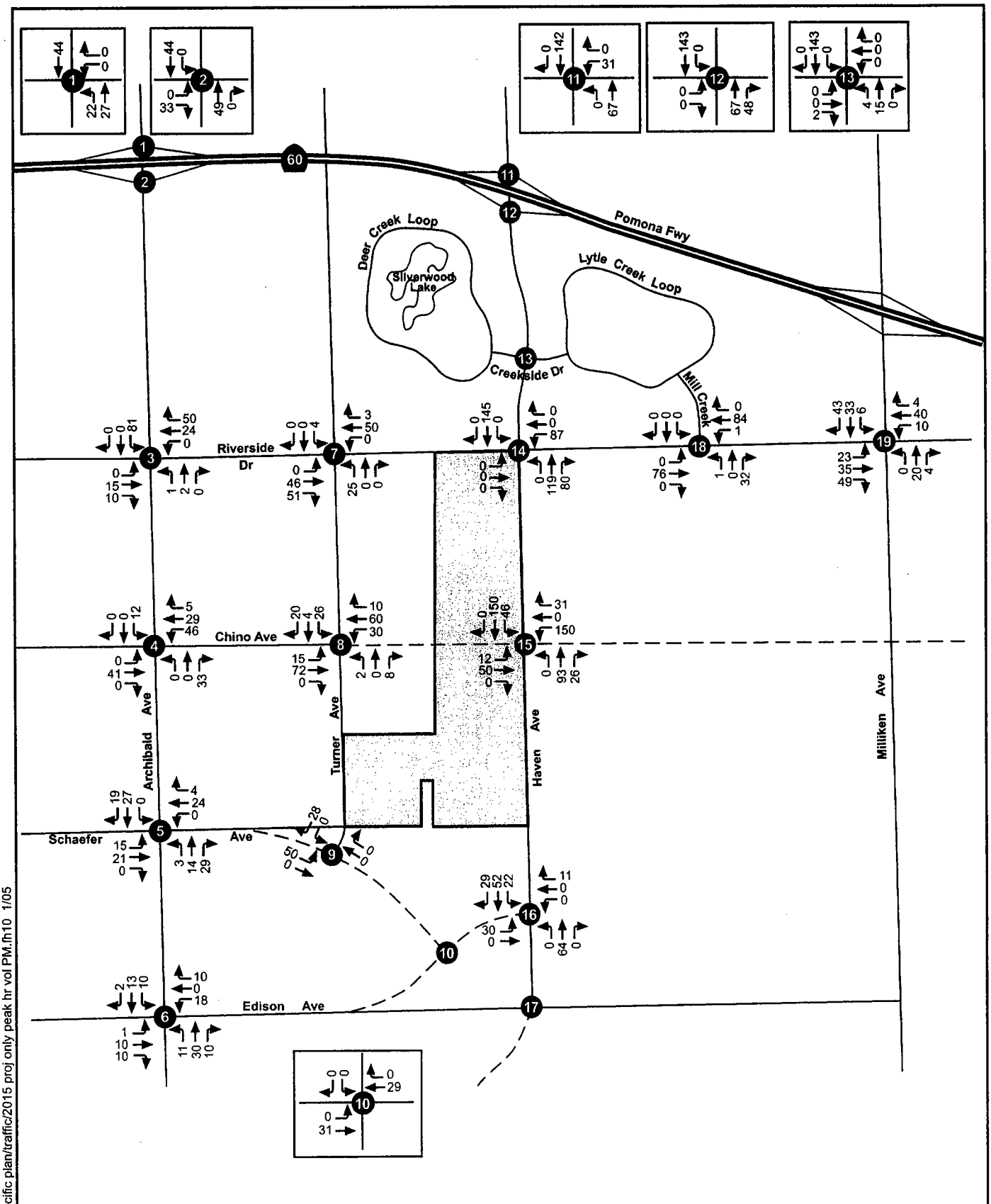

2015 PROJECT ONLY PEAK HOUR TRAFFIC VOLUMES - PM

Project No.: 38000774	Date: JANUARY 2005	Project: WEST HAVEN SPECIFIC PLAN EIR	Figure 6-3

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6.4 FAIR SHARE COST ANALYSIS

Table 7.4 presents a preliminary order of magnitude cost estimate to implement the proposed mitigation measures presented in Section 7.1. The cost presented in the table were based construction costs only for funding and programming purposes only and does not include the costs for right-of-way acquisition and other related mitigation implementation expenses. As shown in Table 7.4, each of the mitigated study intersections has total mitigation cost column that sums up the applicable proposed improvements. The percent project share as presented in Section 7.3 was then used in the calculation of the project's fair and equitable share in the proposed mitigation costs.

Based on the above methodology, the preliminary order of magnitude estimate for the 11 deficient study intersections is approximately $2.5 million as compared with the projects fair share amount of $90,000 or about four percent share to the proposed mitigation costs.

Table 6.4
Intersection lane Needs and Mitigation Costs

		Additional Lane Needs												LUMP	LEFT	THRU	RIGHT		PROJECT	PROJECT
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	SUM	LANE	LANE	LANE	TOTAL	PERCENT	SHARE
1	ARCHIBALD AVE/SR-60 WB RAMPS										1			$500	$53,400	$0	$0	$53,900	3.14%	$1,692
2	ARCHIBALD AVE/SR-60 EB RAMPS							1						$500	$53,400	$0	$0	$53,900	4.68%	$2,523
3	ARCHIBALD AVE/RIVERSIDE DR					1				1					$0	$106,800	$53,400	$160,200	4.58%	$7,332
4	ARCHIBALD AVE/CHINO AVE			1		1			2	1	1	1			$53,400	$427,200	$106,800	$587,400	2.88%	$16,914
5	ARCHIBALD AVE/SCHAEFER AVE	1	1			1	1			1					$53,400	$213,600	$106,800	$373,800	2.24%	$8,369
6	ARCHIBALD AVE/EDISON AVE		1	1		1	1			1			1		$0	$213,600	$213,600	$427,200	1.37%	$5,841
7	TURNER AVE/RIVERSDIE DR														$0	$0	$0	$0	9.33%	$0
8	TURNER AVE/CHINO AVE													$250,000	$0	$0	$0	$250,000	7.66%	$19,154
9	TURNER AVE/SCHAEFER AVE														$0	$0	$0	$0	30.71%	$0
10	SCHAEFER AVE/EDISON AVE														$0	$0	$0	$0	3.73%	$0
11	HAVEN AVE/SR-60 WB RAMPS														$0	$0	$0	$0	8.23%	$0
12	HAVEN AVE/SR-60 EB RAMPS														$0	$0	$0	$0	8.24%	$0
13	HAVEN AVE/CREEKSIDE DR														$0	$0	$0	$0	0.00%	$0
14	HAVEN AVE/RIVERSIDE DR			1											$0	$0	$53,400	$53,400	9.62%	$5,135
15	HAVEN AVE/CHINO AVE			1				1			1				$106,800	$0	$53,400	$160,200	8.65%	$13,859
16	HAVEN AVE/NEW EDISON AVE														$0	$0	$0	$0	7.05%	$0
17	HAVEN AVE/OLD EDISON AVE														$0	$0	$0	$0	0.00%	$0
18	MILL CREEK/RIVERSIDE DR								1						$0	$106,800	$0	$106,800	4.21%	$4,496
19	MILLIKEN AVE/RIVERSIDE DR							1		1	1				$106,800	$0	$53,400	$160,200	2.87%	$4,595
	TOTAL													$251,000	$427,200	$1,068,000	$640,800	$2,387,000	3.77%	$89,909

IMPROVEMENTS	UNIT COST
LEFT TURN LANE	$53,400
THRU LANE	$106,800
RIGHT TURN LANE	$53,400
SIGNAL TIMING ADJUSTMENT	$5,000
SIGNAL PHASING ADJUSTMENT	$25,000
NEW INTERSECTION SIGNAL	$250,000
LANE RESTRIPING	$500
ROADWAY IMPROVEMENTS/MILE	$1,000,000

7.0 CONCLUSIONS AND RECOMMENDATION

Collectively, the proposed West Haven Specific Planning Area project, in conjunction with other concurrent specific planning area projects, will have a profound contribution in the future tripmaking within the New Model Colony in particular and the City of Ontario and surrounding communities in general. The future land use decisions and proposals, associated with these projects will generate trips that need to be accommodated within the current circulation system as well as the future baseline circulation and traffic infrastructure by Year 2015.

During Year 2015 Project Buildout conditions, circulation and traffic improvements are necessary to maintain acceptable roadway and intersection levels of service within the New Model Colony. The mitigations proposed in this study will help alleviate future traffic deficiencies associated with the various development projects, however "spot mitigations" cannot solve the underlying deficiencies alone.

It is recommended that as projects developments are completed, continuous traffic monitoring need to be implemented to respond to dynamic changes of the circulation and traffic patterns in the area.

It is also recommended that opportunities for right of way preservation need to be included during the early phases of project development and negotiations to ensure that development traffic demands are met both in the short and long term conditions.

It is also recommended that projected east-west roadway deficiencies will need to be addressed in terms improving parallel arterials, connecting missing links through gap closures and improving access to the regional freeway system via new interchanges or interchange upgrades.