5.6 - TRANSPORTATION AND CIRCULATION

5.6.1 - Introduction

Information in this section is based upon the following documents:

- NMC Final EIR, City of Ontario, October 1997. This document is incorporated by reference.
- NMC Transportation Implementation Plan, City of Ontario, February 2001. This document is incorporated by reference.
- Initial Study/Mitigated Negative Declaration, NMC Transportation Implementation Plan, City of Ontario, August 2002. This document is incorporated by reference.
- Six Specific Plan Traffic Impact Analysis, Meyer, Mohaddes Associates, February 2005. This document is contained in Appendix E of the Technical Appendices.

The NMC Final EIR evaluated potential impacts to traffic that would result from build-out of the NMC, which included evaluations of the roadway infrastructure and levels of service within and in the vicinity of the NMC. The NMC Final EIR identified policies that would ultimately reduce potential traffic-related impacts below the level of significance. The NMC Final EIR based its analysis on Year 2015 General Plan land use interim build-out and regional Year 2015 development levels consistent with San Bernardino County's regional Comprehensive Transportation Plan (CTP). The CTP included a total of six Traffic Analysis Zones for the NMC.

Subsequent to the preparation of the NMC Final EIR, the City prepared a Transportation Implementation Plan (TIP) for the NMC in order to identify the transportation infrastructure needed for build-out of the NMC over an approximately 30-year period. The purpose of the TIP is to:

- Develop an Implementation Plan for the Transportation Element of the General Plan;
- To refine roadway construction phasing, developer responsible components and costs, funding mechanisms, and maintenance issues;
- To specify comprehensive strategies and requirements to guide the preparation of subarea specific plans;
- To identify interim facilities and improvements as developments occur;
- To create a secondary roadway plan, called a Transitional Roadway Plan, that identifies existing roads to be maintained for agricultural product transport or farm equipment routes, determines roadway specifications and markings that identify the roads as being used for agricultural vehicles, establishes criteria to determine when the road should transition from being predominately used for agricultural purposes to being used for urban purposes; and

- To create a Transportation Mobility Plan to improve the movement of pedestrians, bicycles, public transit, truck and automobile, freight and rail, within the NMC.

The Transitional Roadway Plan (TRP) contained in the TIP stated that the transition from the existing rural roadways to urban arterials will require several steps. Many of the roadway improvements will be implemented as frontage improvements, constructed in conjunction with proposed development projects. Other situations will require a roadway to be widened to provide additional travel lanes, but where no development is scheduled for the fronting properties, the City may need to actively pursue the widening through acquisition of right-of-way. A determination will have to be made on a case-by-case basis as to whether the right-of-way can or should be acquired on one or both sides of the existing roadway.

The TRP further stated that it is difficult to develop a detailed phasing plan for the roadways because of uncertainties in the pace and location of developments. The TRP evaluated the Year 2015 as an interim horizon year.

The City prepared an Initial Study/Mitigated Negative Declaration in order to determine the level of environmental review necessary for implementation of the TIP (TIP IS/MND). The TIP IS/MND stated that with the recommended mitigation measures, all TIP project-related impacts could be reduced below the level of significance and that no new environmental impacts were identified beyond those identified in the NMC Final EIR. The TIP IS/MND further stated that site-specific analyses would occur as individual NMC subareas are developed.

This section of the DEIR evaluates the potentially significant impacts to traffic that would result from implementation of the proposed project.

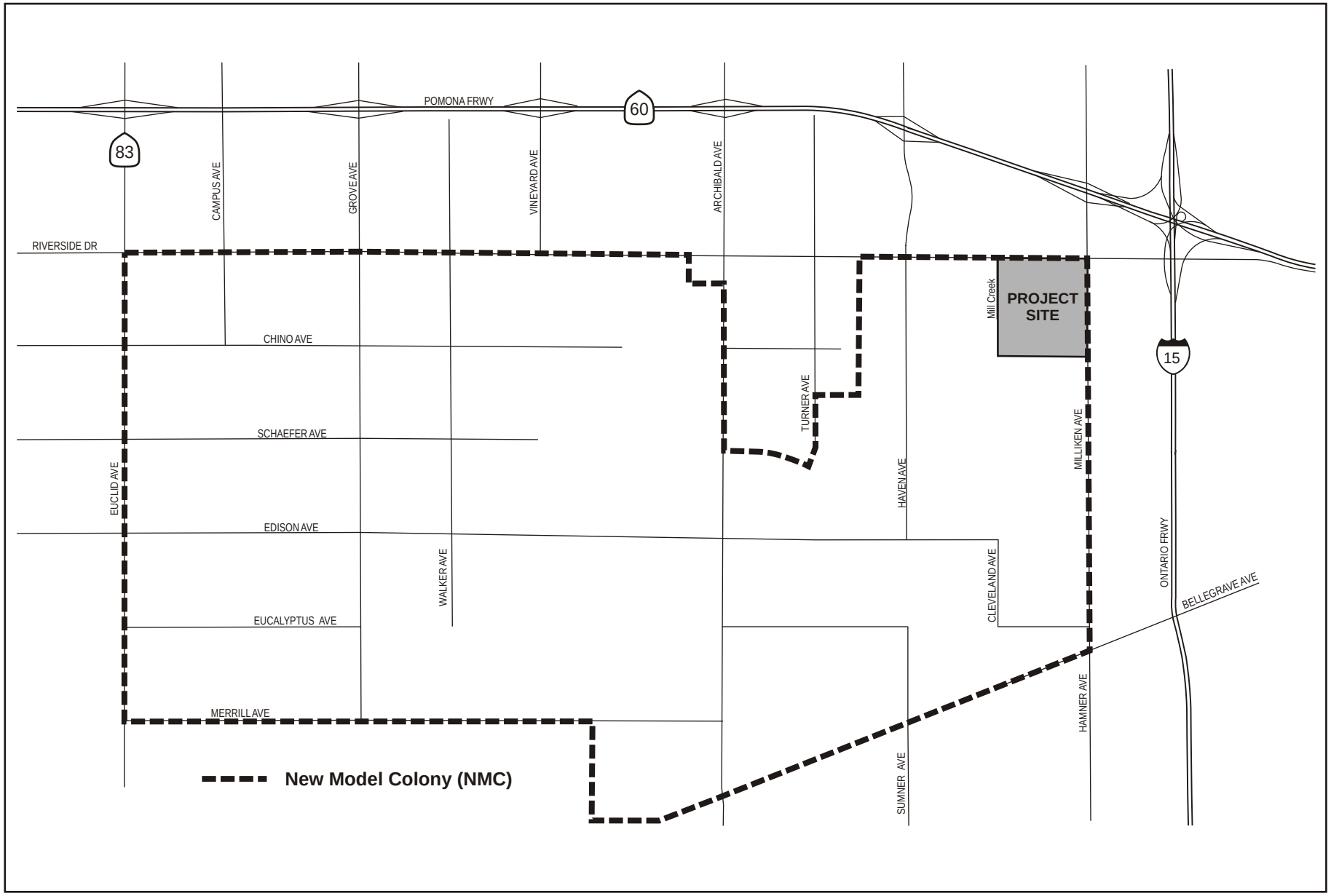
5.6.2 - Existing Conditions

This section includes a description of transportation facilities in the vicinity of the project site that would be affected by the proposed project, which include road networks, intersections, traffic volumes, transit service, airport operations, and project site access.

Road Network

The following describes existing conditions of the major roadways within the vicinity of the project site (see Exhibit 5.6-1).

Riverside Drive. This roadway is an east-west arterial located north of the project site. It has varying curb-to-curb widths throughout the study area and a posted speed limit of 50



Source: Meyer, Mohaddes Associates, November 2004.

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Exhibit 5.6-1
Project Vicinity

Michael Brandman Associates

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miles per hour. Riverside Drive has two through lanes in the westbound direction and one through lane in the eastbound direction through the NMC. Riverside Drive carries approximately 12,000 vehicles per day.

Creekside Drive. This roadway is an east-west collector located north of the project site. It has a curb-to-curb width of approximately 65 feet and a posted speed limit of 35 miles per hour. Creekside Drive has two travel lanes and carries approximately 7,000 vehicles per day.

Mill Creek Avenue. This roadway is a north-south arterial located west of the project site. It has varying curb-to-curb widths of approximately 40 feet north of Riverside Drive and 65 feet south Riverside Drive and a posted speed limit of 35 miles per hour. Mill Creek Avenue has two travel lanes and carries approximately 1,500 vehicles per day.

Milliken Avenue. This roadway is a north-south arterial located east of the project site. It has varying curb-to-curb widths of approximately 90 feet north of Riverside Drive and 55 feet south Riverside Drive and a posted speed limit of 40 miles per hour. Milliken Avenue has four travel lanes north of Riverside Drive and two travel lanes south of Riverside Drive and carries approximately 12,700 vehicles per day.

Archibald Avenue. This roadway is a north-south arterial located west of the project site. It has a curb-to-curb width of approximately 100 feet and a posted speed limit of 45 miles per hour. Archibald Avenue has four travel lanes in the northbound direction and three travel lanes in the southbound direction between SR-60 and Riverside Drive. It has four lanes of travel between Riverside Drive and Chino Avenue. The segment between Chino Avenue and the southern boundary of the project site has two travel lanes in the northbound direction and one travel lane in the southbound direction. Archibald Avenue has two travel lanes from the southern boundary of the project site to the San Bernardino-Riverside County Line. It carries an average of 15,000 vehicles per day through the NMC.

Turner Avenue. This roadway is a north-south arterial located west of the project site. It has a curb-to-curb width of approximately 60 feet and a posted speed limit of 45 miles per hour. Turner Avenue has four travel lanes between SR-60 to south of Chino Avenue. Turner Avenue carries approximately 3,200 vehicles per day.

Haven Avenue. This roadway is a north-south arterial located west of the project site. It has varying curb-to-curb widths of approximately 132, 78, and 65 feet between SR-60 and Creek Side, Creek Side and Riverside Drive, and Riverside Drive and Chino Avenue, respectively. Haven Avenue has three travel lanes in the northbound direction and two lanes in the southbound direction between SR-60 and Creek Side. It has two travel lanes in the northbound direction and one travel lane in the southbound direction between Creek Side and Riverside Drive with one travel lane in each direction south of Riverside Drive through the study area. Haven Avenue has a posted speed limit of 40 miles per hour north of Creek Side and 50 miles per hour south of Creek Side to Chino Avenue. It carries approximately 11,000

vehicles per day north of Riverside Drive and 3,000 vehicles per day south of Riverside Drive.

Intersections

A total of ten intersections were selected in consultation with the City for the level of service (LOS) analysis. The ten intersections were selected because they represent the locations that may potentially be impacted by traffic due to the proposed project. Each intersection is depicted on Exhibit 5.6-2 and separately described below. Intersections designated by the San Bernardino Congestion Management Program are identified by CMP following the intersection name.

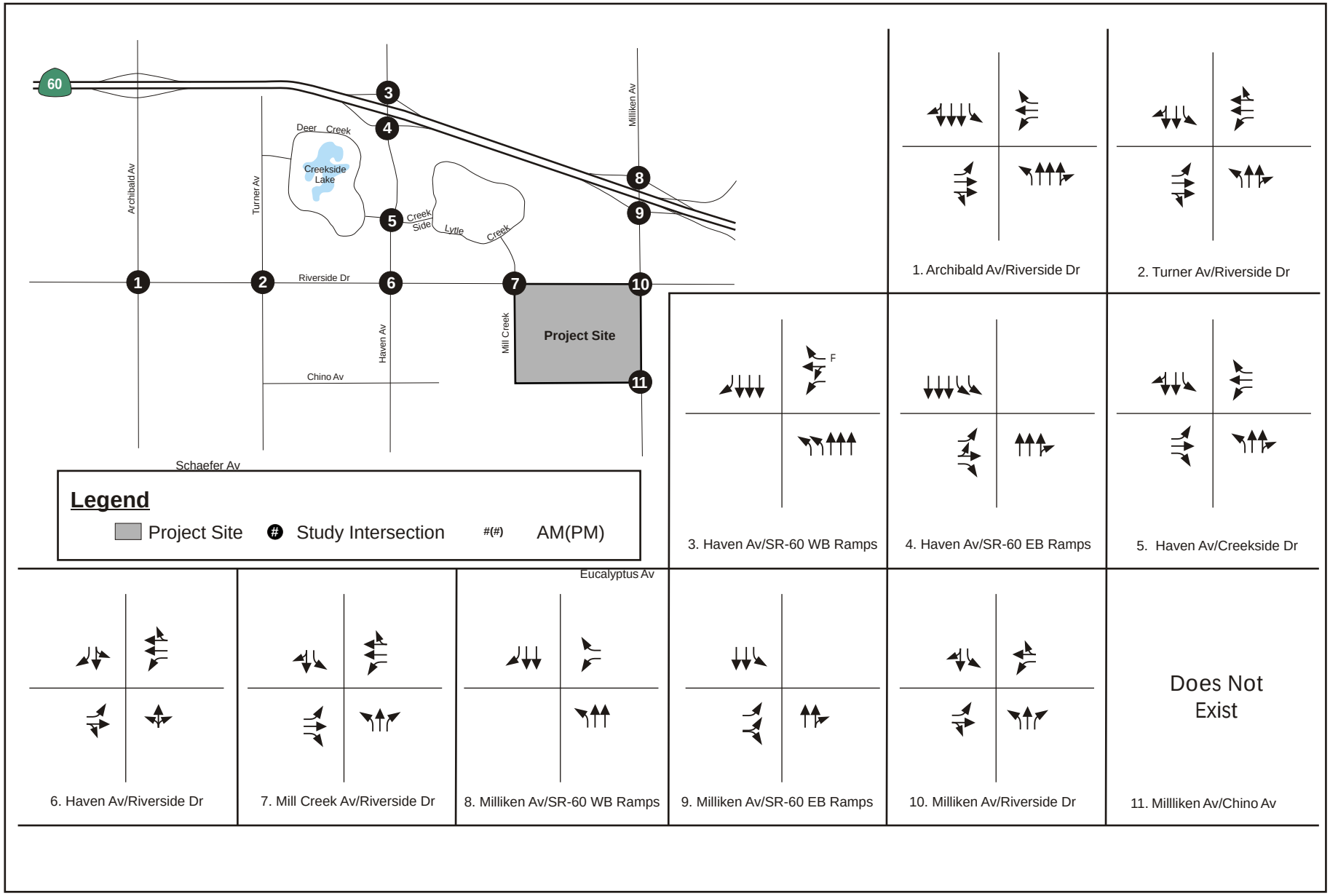
1. **Archibald Avenue and Riverside Drive (CMP).** This intersection is controlled by a four-phase traffic signal with protected left-turn phasing in all directions. The northbound and southbound approaches are striped as a left-turn-only lane, two through-only lanes, and a shared through/right-turn lane. The eastbound approach is striped as a left-turn-only lane, a through-only lane, and a shared through/right-turn lane. The westbound approach is striped as a left-turn-only lane, a through only lane, and a right-turn-only lane.

2. **Turner Avenue and Riverside Drive**. This intersection is a controlled by a three-phase traffic signal with protected left-turn phasing for Riverside Avenue. The northbound and southbound approaches are striped as a left-turn-only lane, a through-only lane, and a shared through/right-turn lane. The eastbound approach is striped as a left-turn-only lane, a through-only lane, and a shared through/right-turn lane. The westbound approach is striped as a left-turn-only lane, a through-only lane, and a right turn-only lane.

3. **Haven Avenue and SR-60 Westbound Ramps (CMP).** This intersection is controlled by a three-phase traffic signal with protected left-turn phasing for Haven Avenue (northbound). The northbound approach is striped as dual left-turn-only lanes and three through-only lanes. The southbound approach is striped as three through-only lanes and a right-turn-only lane. The westbound approach (off-ramp) is striped as a left-turn-only lane, a shared left-turn/through lane, and a free right-turn-only lane.

4. **Haven Avenue and SR-60 Eastbound Ramps (CMP).** This intersection is controlled by a three-phase traffic signal with protected left-turn phasing for Haven Avenue (southbound). The northbound approach is striped as two through-only lanes and a shared through/right-turn lane. The southbound approach is striped as dual left-turn-only lanes and three through-only lanes. The eastbound approach (off-ramp) is striped as a left-turn-only lane, a shared left-turn/through lane, and a right-turn-only lane.

5. **Haven Avenue and Creekside Avenue**. This intersection is controlled by a four-phase traffic signal with protected left-turn phasing for Haven Avenue and protected-permissive left-turn phasing for Creekside Avenue. The northbound and southbound approaches are striped as a left-turn-only lane, a through-only lane, and a shared through/right-turn only lane.



Source: Meyer, Mohaddes Associates.

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Michael Brandman Associates

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Exhibit 5.6-2
Existing Lane Configuration

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The eastbound and westbound approaches are striped as a left-turn-only lane, a through-only lane, and a right-turn-only lane.

6. **Haven Avenue and Riverside Drive**. This intersection is controlled by a three-phase traffic signal with protected left-turn phasing for Riverside Avenue. The northbound approach is striped as a shared left-turn/through/right-turn lane. The southbound approach is striped as a shared left-turn/through lane and a right-turn-only lane. The eastbound approach is striped as a left-turn-only lane and a shared through/right-turn lane. The westbound approach is striped as a left-turn-only lane, a through-only lane, and a shared through/right-turn lane.

7. **Mill Creek Avenue and Riverside Drive**. This intersection is controlled by a three-phase traffic signal with protected left-turn phasing for Riverside Avenue. The northbound approach is striped as a left-turn-only lane, a through-only lane, and a right-turn-only lane. The southbound approach is striped as a left-turn-only lane and a shared through/right-turn lane. The eastbound approach is striped as a left-turn-only lane, a through-only lane, and a right-turn-only lane. The westbound approach is striped as a left-turn-only lane, a through-only lane, and a shared through/right-turn lane.

8. **Milliken Avenue and SR-60 Westbound Ramps (CMP).** This intersection is controlled by a three-phase traffic signal with protected left-turn phasing for Milliken Avenue (northbound). The northbound approach is striped as a left-turn-only lane and two through-only lanes. The southbound approach is striped as two through-only lanes and a right-turn-only lane. The westbound approach (off-ramp) is striped as a left-turn-only lane and a right-turn-only lane.

9. **Milliken Avenue and SR-60 Eastbound Ramps (CMP).** This intersection is controlled by a three-phase traffic signal with protected left-turn phasing for Milliken Avenue (southbound). The northbound approach is striped as a through-only lane and a shared through/right-turn lane. The southbound approach is striped as a left-turn-only lane and two through-only lanes. The eastbound approach (off-ramp) is striped as a left-turn-only lane and a shared left-turn/right-turn lane.

10. **Milliken Avenue and Riverside Drive**. This intersection is a controlled by a three-phase traffic signal with protected left-turn phasing for Milliken Avenue. The northbound approach is striped as a left-turn-only lane, a through-only lane, and a right-turn-only lane. The southbound approach is striped as a left-turn-only lane and a shared through/right-turn lane. The eastbound and westbound approaches are striped as a left-turn-only lane and a shared through/right-turn lane.

Traffic Volumes

Morning and evening peak period turning movement traffic counts for the ten study intersections were collected on September 16, 2004, specifically for this traffic analysis. The traffic impact

analysis is based on the highest single hour of traffic during each time period at each location. Exhibit 5.6-3 illustrates the existing AM and PM peak hour turning movement volumes at the existing study intersections.

The morning and evening peak hour level of service analyses were conducted at the ten existing study intersections based on the existing traffic volume counts and the methodologies described previously. Table 5.6-1 summarizes the level of service calculations for the study intersections under existing conditions during the AM and PM peak hours. An examination of the data indicates that all ten intersections are currently operating acceptably in the AM peak hour. Seven intersections are operating as LOS C and three intersections are operating at LOS B. In the PM peak hour, all ten intersections are operating acceptably. The intersection of Haven Avenue and SR-60 Westbound Ramps is operating at LOS A with only 8 seconds of delay. Three intersections are operating at LOS B and six are operating at LOS C.

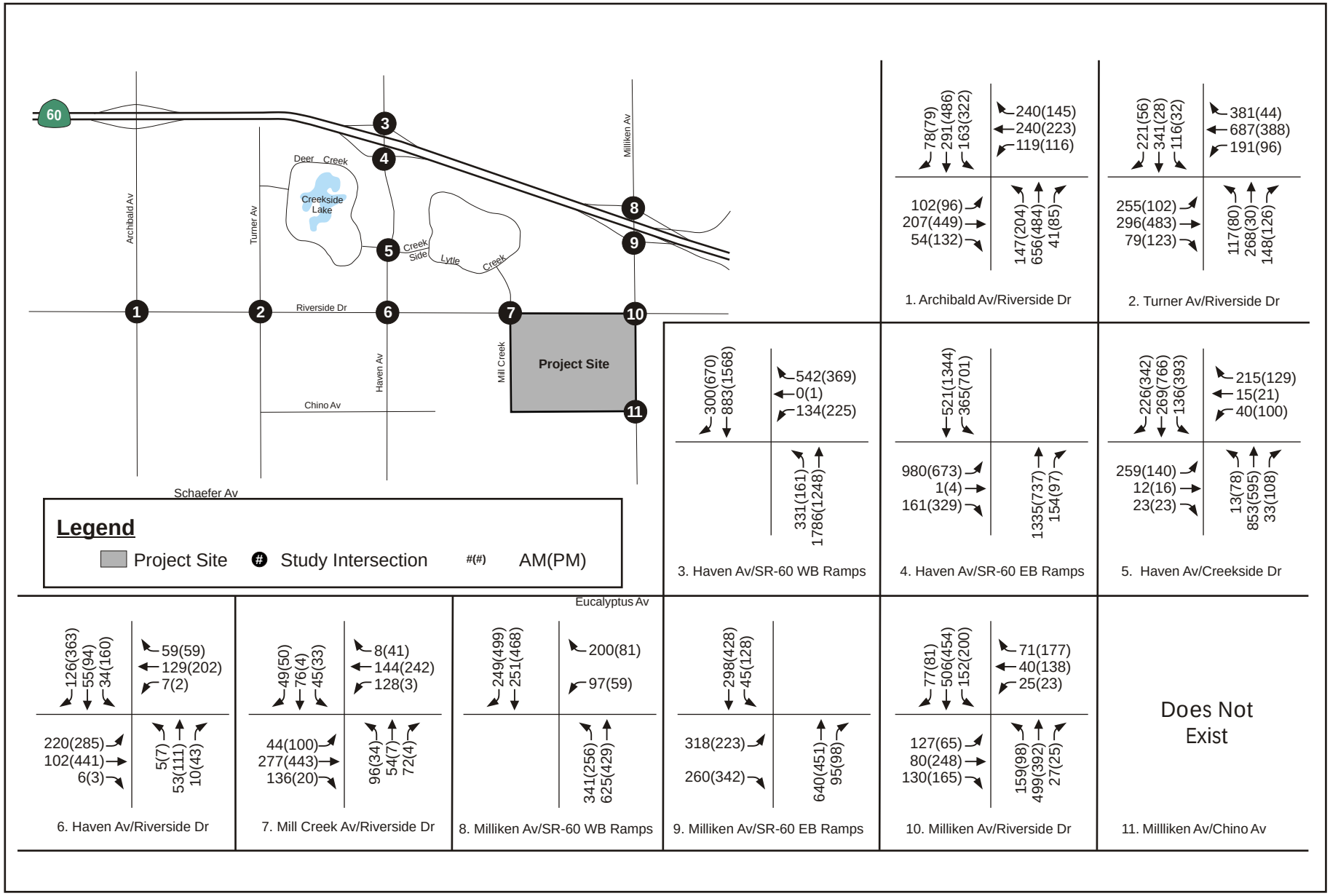
Table 5.6-1: Study Intersections Existing Conditions

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C
Archibald Avenue and Riverside Drive	C	30.1	0.489	C	32.1	0.595
Turner Avenue and Riverside Drive	C	29.4	0.792	B	19.4	0.343
Haven Avenue and SR-60 WB Ramps	B	13.8	0.426	A	7.6	0.599
Haven Avenue and SR-60 EB Ramps	C	27.9	0.807	C	23.0	0.671
Haven Avenue and Creekside Drive	C	25.9	0.680	C	23.7	0.658
Haven Avenue and Riverside Drive	C	22.6	0.291	C	22.0	0.519
Mill Creek and Riverside Drive	C	22.5	0.354	B	12.3	0.299
Milliken Avenue and SR-60 WB Ramps	B	18.9	0.531	B	14.1	0.566
Milliken Avenue and SR-60 EB Ramps	B	18.9	0.536	C	22.1	0.559
Milliken Avenue and Riverside Drive	C	23.4	0.599	C	26.2	0.641

LOS = level of Service
V/C = volume-to-capacity ratio
Source: Six Specific Plan Traffic Impact Analysis, Meyer, Mohaddes Associates, February 2005.

Performance Criteria

A level of service category is the generally accepted measure used to describe the quality of operation of roadways and intersections. There are six Levels of Service (LOS) categories - LOS A through LOS F - where LOS A represents free-flowing traffic conditions and LOS F represents constricted or bumper-to-bumper traffic conditions.



Source: Meyer, Mohaddes Associates.

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Exhibit 5.6-3
Existing Peak Hour Traffic Volumes

Michael Brandman Associates

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The City has established LOS D as the acceptable level of service. This is more stringent that the San Bernardino Congestion Management Program, which allows intersections to operate at LOS E.

Traffic service levels are also described in terms of an Intersection Capacity Utilization (ICU). The ICU methodology expresses intersection performance in terms of the degree of capacity utilization for critical lane groups of an intersection. Capacity utilization is expressed as a volume-to-capacity (V/C) ratio for each lane group, expressed in a decimal percent. The ICU of an intersection is based on the following variables: the number of vehicles using all legs of the intersection; the manner in which the vehicles use the intersection (left-turns, right-turns, etc.); and the capacity of each lane of the intersection. The sum of V/C ratios for the critical lane groups constitutes the ICU value for the intersection.

Table 5.6-2 describes the conditions associated with each LOS category, ICU value, and expected delays.

Table 5.6-2: LOS Interpretation

LOS Category	ICU Range	Description	Signalized Intersection Delay (seconds per vehicle)	Stop-Controlled Intersection Delay (seconds per vehicle)
LOS A	< 0.60	**Excellent operation.** All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10	≤ 10
LOS B	0.61 to 0.70	**Very good operation.** Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	> 10 and ≤ 20	> 10 and ≤ 15
LOS C	0.71 to 0.80	**Good operation.** Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	> 20 and ≤ 35	> 15 and ≤ 25
LOS D	0.81 to 0.90	**Fair operation.** Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues.	> 35 and ≤ 55	>25 and ≤ 35
LOS E	0.91 to 1.00	**Poor operation.** Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	> 55 and ≤ 80	> 35 and ≤ 50
LOS F	> 1.01	**Forced flow.** Represents jammed conditions. Backups form locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	> 80	> 50

Source: Six Specific Plan Traffic Impact Analysis, Meyer, Mohaddes Associates, February 2005.
< = less than
≤ = less than or equal to
> = greater than

Transit Service

Omnitrans, the public agency serving San Bernardino Valley, operates one line through the study area as illustrated in Exhibit 5.6-4. Route 70 - Ontario-Creekside-Ontario Mills. Route 70 travels mainly along Campus Avenue, Walnut Avenue, Riverside Drive, and Milliken Avenue. This route provides service between Montclair, Ontario and Rancho Cucamonga. Popular destinations along this route include the Ontario Civic Center and the Ontario Mills Mall. Transfers to other Omnitrans routes and public transit can be made at the Ontario Civic Center and Ontario Mills Mall (Routes 60, 61, 71, 75, and 90). This route operates seven days a week. On weekday, it operates with 60-minute headways from 7 AM to 9 PM. On Saturdays and Sundays, it operates every 60 minutes from 7:30 AM to 6:30 PM.

Airport Operations

The Ontario International Airport (OIA) is approximately 2.5 miles north of the project site, and therefore is not contained within the area of influence as defined under the State CEQA Guidelines, defined as being within two miles of an airport. The 1992 General Plan discusses current and future operations at OIA. According to the 1992 General Plan, the project site does not directly lie within the flight path of OIA. Aircraft from OIA fly over the general project area in a southeasterly direction away from the Airport.

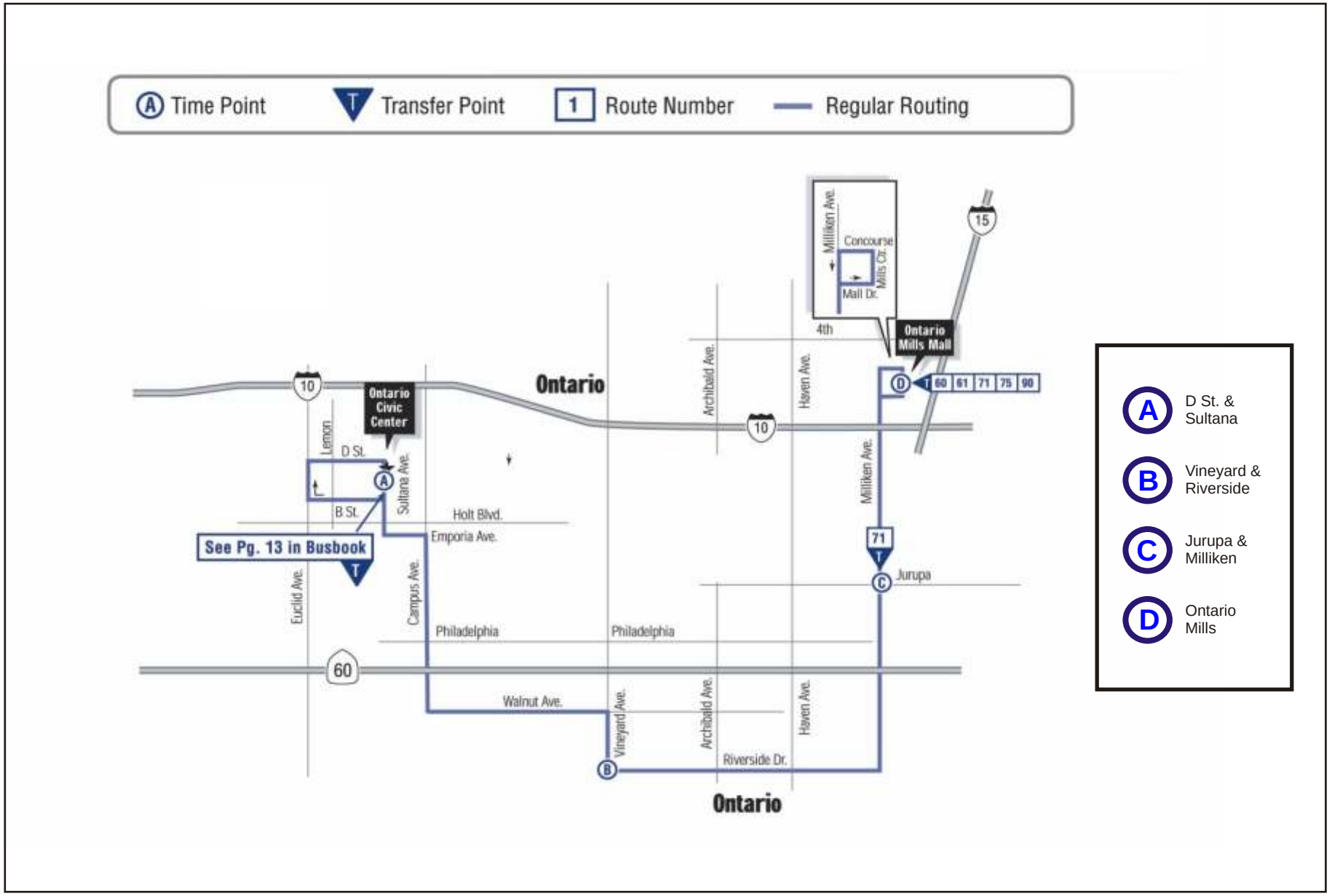
Project Site Access

Vehicular access to the residential component would be from three access intersections: one primary and two secondary. The primary access intersection would be from Riverside Drive on the north. The two secondary access intersections would be from Mill Creek Avenue on the west and Chino Avenue, when extended, on the south. These access intersections are shown on Exhibit 3-10, in Section 3 of this document, as R-1 through R-3.

Vehicular access to the commercial and business park/light industrial component would be from three access intersections located off Riverside Drive on the north, Milliken Avenue on the east, and Chino Avenue, when extended, on the south. These access intersections are shown on Exhibit 3-10, in Section 3 of this document, as C-1 through C-3. In addition, these access points would provide emergency vehicular access to the project site.

5.6.3 - Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project will normally have a significant



Source: Meyer, Mohaddes Associates

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Michael Brandman Associates

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Exhibit 5.6-4
Study Area Transit Routes

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impact on transportation and traffic if it results in any of the following:

- Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- Exceed, either individually or cumulatively, a level of service (LOS) standard established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

As previously stated, the San Bernardino Congestion Management Program established LOS E and the minimum LOS standard and the City established LOS D as the minimum standard for intersection performance. For purposes of this evaluation, the City's threshold of LOS D is used.

5.6.4 - Project Impacts

The proposed project would develop the project site with residential and commercial and business park/light industrial uses that would generate traffic beyond the existing conditions. The Edenglen Project would develop 584 residential dwelling units in single-family detached and single-family attached homes. In addition to the proposed residential component, the Edenglen Project includes approximately 56.9 acres designated for development of Community Commercial retail uses and Business Park/Light Industrial Uses. Of this total, 20 acres are proposed for Community Commercial uses and 26.9 acres are proposed for Business Park/Light Industrial uses, and 10 acres are identified as a Commercial Business Park Flex Zone (Flex Zone). The Flex Zone is intended to augment the area proposed for the Community Commercial in the event a large-scale or discount retail type use is proposed. If this type of retail use is not proposed, the 10 acres reserved for the Flex Zone would be allocated to the area proposed for Business Park/Light Industrial uses.

Following is a discussion of the project impacts that correspond to the thresholds of significance previously identified in Section 5.6.3. This section also provides a description of the methodology used to evaluate potential impacts.

Traffic Study Methodology

In this traffic analysis, minimum acceptable intersection operating conditions will follow City guidelines for all intersections. The City determined that the horizon year for this analysis would be Year 2015 consistent with the NMC Final EIR and the Transportation Implementation Plan.

Traffic operations in the vicinity of the project site were analyzed, as directed by the City, using the Highway Capacity Manual (HCM) methodology, as described in the Highway Capacity Manual, HCM 2000 (Transportation Research Board, Washington, D.C., 2000).

The following project scenarios were analyzed in this study:

- Existing Conditions (2004) - This scenario analyzed current operating conditions on the 10 study intersections using existing traffic counts.
- Horizon Year Without the Project (2015) - This scenario analyzed the future operating conditions of the study area intersections at the horizon year "without" the proposed project using forecast traffic volumes.
- Horizon Year With the Project (2015) - Analyzes the future operating conditions of the study area intersections at the horizon year "with" the proposed project using forecast traffic volumes.

Traffic Forecast Model Development

Traffic forecasts for this traffic impact analysis were prepared in consultation and coordination with the City. The City developed an updated version of the existing General Plan Circulation Element traffic model specifically for the proposed Edenglen Project and for the other subareas proposed for development within the NMC. This was because the NMC was originally represented by a total of six Southern California Association of Governments (SCAG) Traffic Analysis Zones (TAZ), which were too large for the proposed NMC subareas to provide meaningful analysis. City staff then created 53 TAZs among the 30 planning subareas within the NMC. Other developments outside the NMC were also incorporated into the updated model. This updated model is referred to in the Six Specific Plan Traffic Impact Analysis and this section as the Updated Year 2015 Ontario NMC Traffic Model (October 2004).

Other developments outside the NMC were also incorporated into the updated model.

Land Use Assumptions

The land use data documented in the NMC General Plan was reviewed and found to be the same as the land use data in the original traffic model. City staff developed Year 2015 Land Use Data for the

NMC, based on the project description for each of the NMC subareas currently proposed for development.

The City's traffic model has been customized to provide updated land use Year 2015 Forecasts for the NMC, TAZ structure, and highway network, to reflect all planned and programmed development in the eastern portion of the NMC.

Traffic Assignment

The Year 2015 Land Use Data along with a customized TAZ structure and updated highway network that reflects all planned and programmed development in the NMC were used to generate a Year 2015 traffic assignment. The Year 2015 traffic assignment is representative of a region with significant planned residential and commercial development.

The Year 2015 turning movement traffic volumes are obtained directly from the updated traffic model. Typically a post-processing of the model generated traffic volumes based on existing traffic trends would be performed. However, due to the magnitude of the planned developments in the area, the existing traffic circulation is expected to change dramatically, and therefore the current traffic movement patterns cannot be used as the basis for future traffic volume adjustments. Therefore, the Year 2015 turning movement volumes are used for level of service analysis for future conditions.

Future Base Project Conditions

The Year 2015 Future Base Without Project Conditions for each respective intersection turning movement traffic volume is calculated by subtracting the Project-Only Trip Distribution from the Year 2015 With Project Conditions. This serves as the basis for estimating impacts of the proposed project on background conditions for Year 2015.

Future Base Lane Assumptions. The Year 2015 future base circulation system in the NMC was developed by MMA in consultation with City of Ontario staff. The roadway segments expected to be in place by Year 2015, the number of lanes carrying through traffic and the corresponding intersection lane configurations were determined from various sources.

Roadway segments expected to be in place by Year 2015 were identified by the City based on planned and programmed developments in the NMC. The subareas proposed for development in the eastern portion of the NMC provide information for particular roadway segments bordering each respective project site. The Edenglen Project identifies street improvements adjacent to the proposed project site. Riverside Drive (eastbound), Chino Avenue (eastbound and westbound), Milliken Avenue (northbound and southbound), and Mill Creek Avenue (northbound and southbound) are

expected to be in place by Year 2015. Exhibit 5.6-5 identifies NMC-programmed streets including signal modifications/installations, bridge modification/installations, and roadway arterial improvements (one additional lane, two additional lanes and/or fully improved arterials).

In addition to the improvements illustrated in Exhibit 5.6-5, the City identified other proposed roadway segments which are considered essential circulation system components for the NMC for Year 2015 (see Exhibit 5.6-6). These proposed roadway segments are as follows:

- Vineyard Avenue between Riverside Drive and Schaeffer Avenue;
- Hellman Avenue between Riverside Drive and Schaeffer Avenue;
- Haven Avenue between Edison Avenue and Merrill Avenue; and
- Chino Avenue between Haven Avenue and Mill Creek Avenue.

Therefore, the roadway improvements identified in the NMC for the Year 2015 as well as the improvements outlined above are assumed to be in place and part of the Year 2015 base condition.

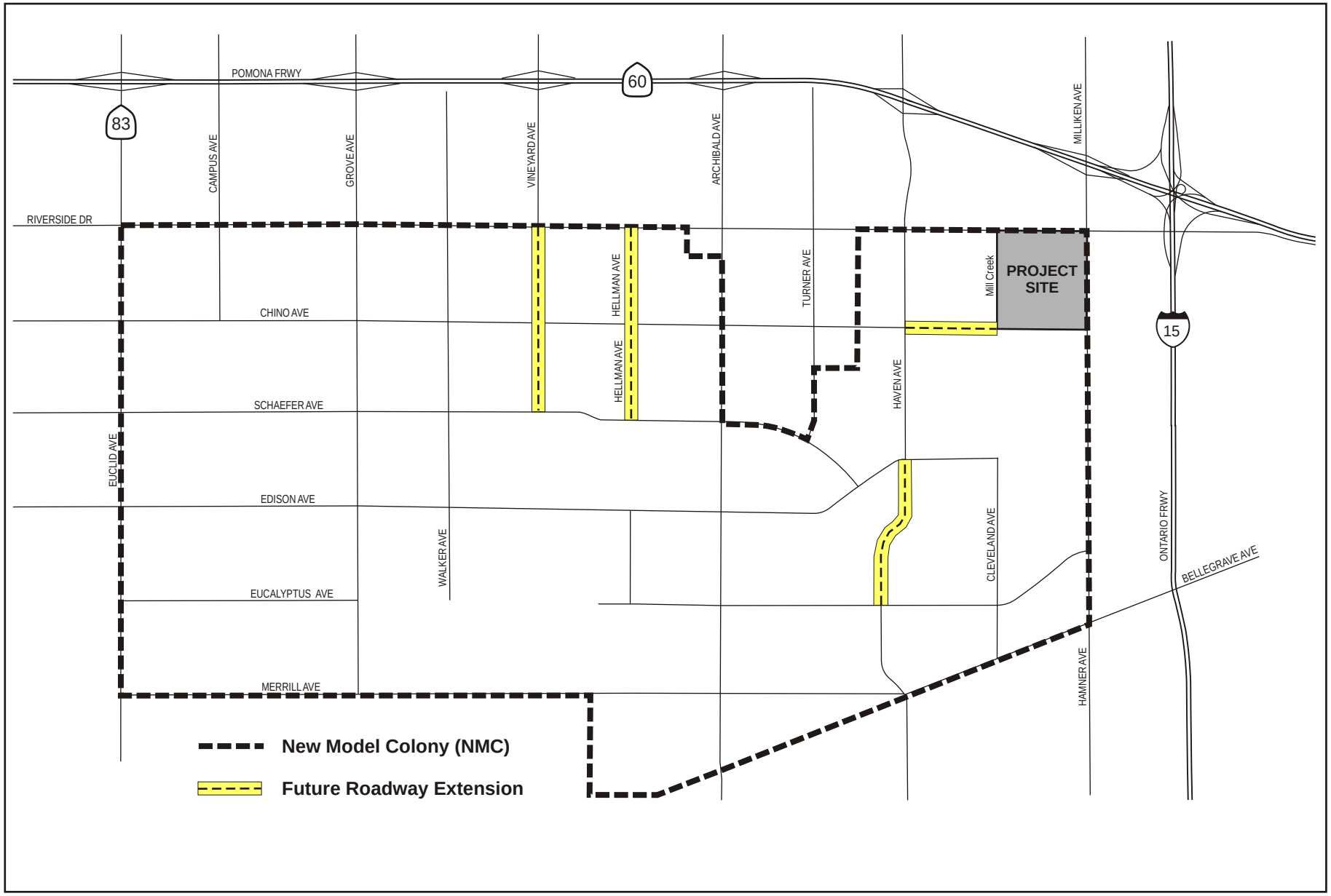
Intersection lane designation assumptions in the NMC are based on the information provided in the TIP. Information in this report includes conceptual roadway alignments, width of public right-of-way, the number and width of lanes, parkway and median widths, location of bikeways and conceptual tree planning scheme.

Source: Meyer, Mohaddes Associates

NORTH

Michael Brandman Associates

Exhibit 5.6-5
New Model Colony Street Improvements



Source: Meyer, Mohaddes Associates

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Exhibit 5.6-6
Future Base with Proposed Roadway Improvements

Michael Brandman Associates

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Future Base Traffic Operations Analysis. Exhibit 5.6-7 illustrates the AM and PM peak hour traffic volumes for Year 2015 Future Base Without Project Conditions at the study intersections. Based on the peak hour volumes shown on this exhibit, LOS analysis was performed for both AM and PM peak hours as summarized in Table 5.6-3.

Table 5.6-3: Year 2015 Future without Project Conditions

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C
Archibald Avenue and Riverside Drive	C	28.7	0.787	E	68.8	1.111
Turner Avenue and Riverside Drive	B	15.9	0.714	A	9.5	0.627
Haven Avenue and SR-60 WB Ramps	B	14.0	0.442	A	7.4	0.614
Haven Avenue and SR-60 EB Ramps	C	27.0	0.798	C	22.9	0.675
Haven Avenue and Creekside Drive	C	27.0	0.751	C	28.4	0.693
Haven Avenue and Riverside Drive	C	27.0	0.799	F	308.9	2.250
Mill Creek and Riverside Drive	C	26.5	0.814	E	56.3	1.121
Milliken Avenue and SR-60 WB Ramps	C	22.5	0.640	C	25.2	0.743
Milliken Avenue and SR-60 EB Ramps	C	24.7	0.840	F	121.2	1.286
Milliken Avenue and Riverside Drive	F	155.8	1.555	F	OVR	5.134

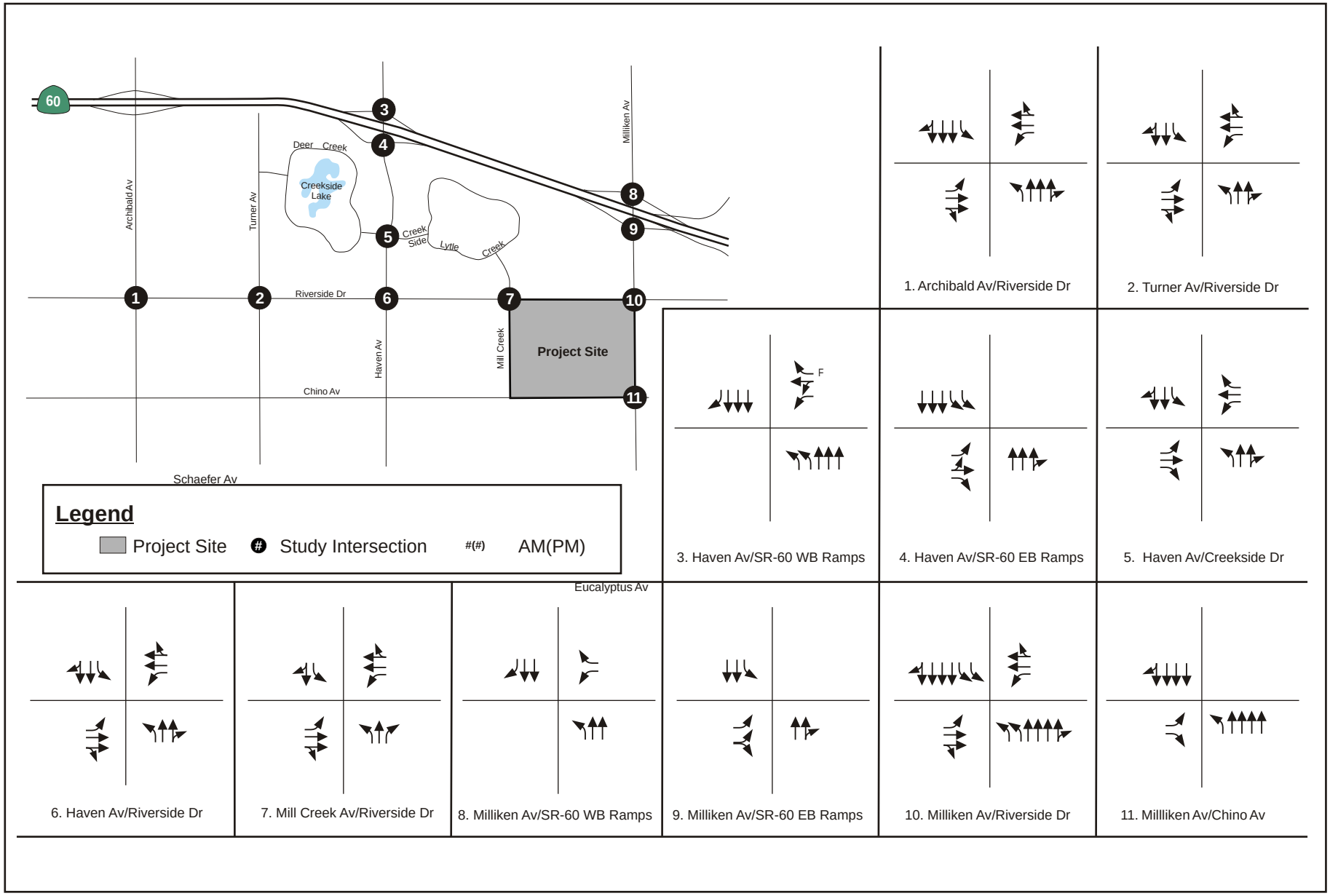
LOS = level of Service
V/C = volume-to-capacity ratio
OVR = overflow
Source: Six Specific Plan Traffic Impact Analysis, Meyer, Mohaddes Associates, February 2005.

In the AM peak hour, Table 5.6-3 shows that the intersection of Milliken Avenue and Riverside Drive is expected to operate at LOS F with approximately 156 seconds of delay and a volume to capacity ratio of 1.555. The remaining nine intersections are expected to operate acceptably.

In the PM peak hour, Table 5.6-3 shows that three intersections are expected to operate at LOS F and two would be at LOS E. A total of five out of ten study intersections are projected to operate unacceptably. The remaining five intersections are expected to operate acceptably.

Project Traffic

Trip Generation. The trip generation component of the Updated Year 2015 Ontario NMC Traffic Model was used to generate the project-specific trips for the Edenglen Project. The City traffic model uses the Institute of Transportation Engineers (ITE) Trip Generation Manual, 5th Edition, rates during the assignment process to calculate project trips. The "Year 2015 Land Use Data" includes specific land use data for City TAZ 761 (planning subarea 7), representing the Edenglen Project site. Table 5.6-4 summarizes Daily, AM and PM peak hour trip generation for all project components.



Source: Meyer, Mohaddes Associates.

NORTH

NOT TO SCALE

Michael Brandman Associates

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Exhibit 5.6-7
2015 Base Lane Configuration

EDENGLEN

Table 5.6-4: Project Trip Generation

Movement	AM Peak Hour	PM Peak Hour	Daily
In	598	646	9,099
Out	471	770	9,131
Total	1,069	1,416	18,230
Source: Six Specific Plan Traffic Impact Analysis, Meyer, Mohaddes Associates, February 2005.			

Trip Distribution. Trip distribution assumptions were derived from the results of the Updated Year 2015 Ontario NMC Traffic Model using "select zone" model runs for the proposed project (TAZ 761). Select zone model runs (AM and PM) report the specific trip distribution for a designated traffic analysis zone.

Impacts Related to Increased Traffic and LOS Standards

With the addition of the project traffic volumes and future Year 2015 traffic volumes to the future roadway network, the LOS at existing intersections will change.

The resulting Year *2015 Future With Project* AM and PM peak hour intersection turning volumes are shown on Table 5.6-5.

Table 5.6-5: Year 2015 Future with Project Conditions

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C
Archibald Avenue and Riverside Drive	C	28.9	0.794	E	71.0	1.120
Turner Avenue and Riverside Drive	B	15.8	0.721	A	9.5	0.638
Haven Avenue and SR-60 WB Ramps	B	14.0	0.444	A	7.4	0.614
Haven Avenue and SR-60 EB Ramps	C	27.1	0.800	C	22.9	0.677
Haven Avenue and Creekside Drive	C	27.0	0.753	C	28.5	0.694
Haven Avenue and Riverside Drive	C	27.5	0.821	F	340.7	2.352
Mill Creek and Riverside Drive	C	26.8	0.829	E	59.0	1.131
Milliken Avenue and SR-60 WB Ramps	C	29.0	0.926	C	28.7	0.845
Milliken Avenue and SR-60 EB Ramps	C	20.6	0.967	F	158.4	1.410
Milliken Avenue and Riverside Drive	F	176.2	1.595	F	OVR	6.381
Milliken Avenue and Chino Avenue	F	300.3	2.040	F	317.9	1.952

LOS = level of Service
V/C = volume-to-capacity ratio
OVR = overflow
Source: Six Specific Plan Traffic Impact Analysis, Meyer, Mohaddes Associates, February 2005.

The results of the Year 2015 with project analysis for the AM peak hour indicate that two intersections are expected to operate at an unacceptable condition (LOS F). The intersection of Milliken Avenue and Riverside Drive operates unacceptably with a delay of 176 seconds and a volume to capacity ratio of 1.595, and the future intersection of Milliken Avenue and Chino Avenue operates unacceptable with a delay of 300.3 seconds and volume to capacity ratio of 2.040. Therefore, the project would result in a significant impact on these two intersections. The remaining nine intersections are expected to operate acceptably.

Similarly the results of the Year 2015 "with project" analysis for the PM peak hour indicate that six intersections are expected to operate unacceptably; four intersections are expected to operate at LOS F and two would operate at LOS E. A total of six out of eleven study intersections are projected to be out of compliance with CMP guidelines and City LOS standards (LOS D or better with V/C<1.0) and would require improvement measures. Therefore, the project would result in a significant impact on these six intersections. The remaining five intersections are expected to operate acceptably with a maximum delay of 29 seconds and a volume to capacity ratio of 0.694.

Intersections R1, R2 and R3 (refer to Exhibit 3-10 of this document) represent the primary access intersections that service traffic volumes entering and exiting the project site for the residential component of the project. Similarly, intersections C1, C2, and C3 represent the primary access intersections that service traffic volumes entering and exiting the project site for the commercial and business park /light industrial component of the project. Site specific project trip generation and distribution analyses were performed based on the most current land use designations for the planned specific neighborhoods and areas of the Edenglen Project. LOS analysis and traffic signal warrants analyses were performed at each primary access intersection. Each intersection was analyzed as a stop-controlled intersection at the minor street approach only. A signal warrants analysis identified the need for traffic signalization at only the Primary Access Intersection C2.

Impacts Related to Changes in Air Traffic Patterns

The project site is located approximately 2.5 miles from the OIA. Based on this distance, the project would not affect operations of the OIA. The height of the proposed project would not penetrate any of the imaginary surfaces as defined in FAR Part 77.13, and the project site is located outside the 60 dB CNEL contour line. Therefore, implementation of the proposed project would not result in any impacts to air traffic patterns.

Impacts Related to Hazards Due to a Design Feature

There are no design features associated with the Edenglen Project that would result in design hazard. All roadway improvements would be constructed in accordance with City guidelines. Therefore, no significant impacts related to a transportation design hazard would occur.

Impacts Related to Inadequate Emergency Access

As with all new development within the NMC, the project will introduce a new on-site population that would be subject to emergency evacuation or response in the event of a major disaster. However, the proposed project will not result in the impairment or interference with the implementation of the City's emergency evacuation and support services procedures in the event of a natural disaster or other emergency. Both the residential component and commercial component provide adequate emergency vehicular access to and through the project site as depicted on Exhibit 3-11. Project impacts regarding an adopted emergency response plan or emergency evacuation plan are considered less than significant.

Impacts Related to Inadequate Parking Capacity

The Edenglen Project proposes parking in full conformance with City regulations. No significant parking impact would occur.

Impacts Related to Alternative Transportation

The Edenglen Specific Plan provides sidewalks in the residential component that are separated from roadways by landscaped parkways, which promote pedestrian activity. The Edenglen Specific Plan also includes a pedestrian and bicycle path (SCE Corridor Trail) that would include a link to the City Master Plan of Trails (see Exhibits 3-8 and 3-10). In addition, pedestrian and bicycle access between the residential and commercial components across the SCE Corridor is provided that would promote alternatives to the use of private automobiles. Therefore, with the inclusion of a pedestrian and bicycle path as part of the proposed project and connectivity between the residential and commercial components, no conflict with adopted policies, plans or programs supporting alternative forms of transportation would result from project implementation.

5.6.5 - Cumulative Impacts

The Year 2015 analysis provided in Section 5.6.4 provides a cumulative traffic analysis. This horizon year was chosen in order to be consistent with the Year 2015 Ontario NMC Traffic Model, the NMC Final EIR, and the Transportation Implementation Plan. Due to the magnitude of the ultimate development of the NMC, uncertainty regarding the pace and location of future NMC development, and the change in traffic patterns that would result from the traffic improvements in place prior to Year 2015, traffic circulation at Year 2015 and beyond is expected to change dramatically. Therefore, current traffic movement patterns cannot be used as the basis for future traffic adjustments beyond the horizon year. Improvements expected to be in place by Year 2015 are those associated with the proposed project (refer to Section 3.3.4 of this document for a complete description), which include improvements to Riverside Drive (eastbound), Chino Avenue (eastbound and westbound, Milliken Avenue (northbound and southbound), and Mill Creek Avenue (northbound and southbound). In addition to the improvements included with the proposed project, NMC-

programmed roadway improvements expected to be in place by Year 2015 include improvements to various arterials in the eastern half of the NMC with the exception of Edison Avenue (see Exhibit 5.6-5). These improvements include the following: signal installations/modifications; bridge installations/modifications; and roadway improvements, which would include additional lanes or fully improved roadways. Apart from NMC-programmed roadway improvements, City staff has identified additional roadways that are considered essential circulation system improvements that would be in place by Year 2015 (see Exhibit 5.6-6). In addition, this cumulative Year 2015 scenario includes traffic volumes associated with development in the project vicinity such as Eastvale, in Riverside County. Therefore, the analysis provided in Section 5.6.4 is considered a project-level and cumulative traffic analysis. As discussed in Section 5.6.4, significant traffic impacts would occur in the Year 2015 with the development of the proposed project and development anticipated for the Year 2015.

5.6.6 - Mitigation Measures

The Transportation/Circulation Section of the NMC Final EIR identified traffic and circulation mitigation measures that were related to the following: infrastructure improvements; transportation system management improvements; and preparation of a traffic impact analysis. The following mitigation measures are identified in the project-level traffic impact analysis.

T-1 The applicant shall pay their proportionate share (prior to building permit issuance) for or install (prior to occupancy of any structure) the following transportation improvements needed to serve the project. The determination of whether the payment of proportionate share or installation of the improvements is required shall be made by the City Engineer at the time of Tentative Tract Map approval. The method for determining proportionate share is identified in Tables 10 and 13 of the Six Specific Plan Traffic Impact Analysis.

- Mill Creek and Riverside Drive intersection - Provide an eastbound through only lane.
- Milliken Avenue and Riverside Drive intersection - Provide eastbound and westbound left-turn protected phasing, eastbound right-turn only lane with overlap phasing, eastbound left-turn only lane, and westbound left-turn only lane.
- Archibald Avenue and Riverside Drive intersection - Provide a southbound through only lane and an eastbound right-turn only lane.
- Haven Avenue and Riverside Drive intersection - Provide northbound and southbound left-turn protected phasing and provide northbound free-flowing right-turn only lane.
- Milliken Avenue and SR-60 eastbound ramps - Restripe eastbound shared left-turn/right-turn lane as a free-flowing right-turn only lane.
- Vineyard Avenue between Riverside Drive and Schaeffer Avenue - Add roadway segment.

- Hellman Avenue between Riverside Drive and Schaeffer Avenue - Add roadway segment.
- Haven Avenue between Edison Avenue and Merrill Avenue - Add roadway segment.
- Chino Avenue between Haven Avenue and Mill Creek Avenue - Add roadway segment.

T-2 Prior to the issuance of a building permit for the commercial component, the project applicant shall pay the proportionate share for the following transportation improvement in conformance with the City of Ontario's Traffic Impact Fee Program. The method for determining the proportionate share is identified in Tables 10 and 13 of the Six Specific Plan Traffic Impact Analysis.

- Primary access intersection C-2 (on Milliken Avenue between Chino Avenue and Riverside Drive) - provide signal.

5.6.7 - Level of Significance After Mitigation

Mitigation Measure T-1 would require implementation prior to permit issuance and occupancy of this site. This eliminates the potential for construction-related activities to commence without the benefit of the recommended mitigation measure. This mitigation measure would reduce the project related traffic impacts by requiring payment to the City's Traffic Impact Fee Program, which would result in improvements to existing roadways and installation of additional traffic-related improvements in phase with development of the project site.

With the implementation of the Mitigation Measure T-1, all but two (see Table 5.6-6) of the study intersections would operate in conformance with CMP and City standards. The intersection of Milliken Avenue and Riverside Drive and the future intersection of Milliken and Chino Avenue would continue to operate below the City standards. Based on discussion with City staff and an analysis of the traffic forecasts from the Year 2015 Ontario NMC Traffic Model, additional mitigation measures are not recommended at this time. This is because the traffic model for build-out of the NMC included these two intersections will operate at acceptable levels of service due to the future redistribution of traffic expected beyond Year 2015 as a result of the improvements anticipated to be in place prior to Year 2015. Therefore, with the implementation of the recommended mitigation measures, short-term significant and unavoidable impacts related to traffic would result from project and cumulative traffic in the Year 2015. Mitigation of these short-term traffic impacts is infeasible as a result of right-of-way constraints and the physical capacity of the existing roadway system. All other transportation and circulation impacts would be less than significant.

Table 5.6-6: Year 2015 Future Project Conditions With Mitigation

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C
Archibald Avenue and Riverside Drive	C	28.9	0.794	D	37.2	0.937
Turner Avenue and Riverside Drive	B	15.8	0.721	A	9.2	0.638
Haven Avenue and SR-60 WB Ramps	B	14.0	0.444	A	7.2	0.407
Haven Avenue and SR-60 EB Ramps	C	27.1	0.800	B	15.7	0.598
Haven Avenue and Creekside Drive	C	27.0	0.753	C	28.5	0.694
Haven Avenue and Riverside Drive	C	30.8	0.816	D	39.8	0.909
Mill Creek and Riverside Drive	C	25.3	0.721	C	22.1	0.882
Milliken Avenue and SR-60 WB Ramps	C	23.7	0.698	C	29.2	0.898
Milliken Avenue and SR-60 EB Ramps	B	13.4	0.716	A	2.3	0.817
Milliken Avenue and Riverside Drive	C	33.2	0.859	F	155.1	1.408
Milliken Avenue and Chino Avenue	F	300.3	2.040	F	317.9	1.952

LOS = level of Service
V/C = volume-to-capacity ratio
OVR = overflow
Source: Six Specific Plan Traffic Impact Analysis, Meyer, Mohaddes Associates, February 2005.

With the implementation of the traffic improvements recommended above, the levels of service at various intersections will be improved. Table 5.6-6 shows the levels of service with the implementation of the above mitigation measures.