5.14 TRANSPORTATION

This section of the draft environmental impact report (DEIR) evaluates the potential for implementation of the Ontario Ranch Business Park Specific Plan project (proposed project) to result in transportation and traffic impacts in the City of Ontario. The analysis in this section is based in part on the following technical report(s):

- *Ontario Ranch Business Park Traffic Impact Analysis*, Urban Crossroads, December 5, 2019 ("TIA") (Appendix L1)
- *Ontario Ranch Business Park Vehicle Miles Travelled (VMT) Assessment*, Urban Crossroads, November 26, 2019 ("VMT Memo") (Appendix L2)

Complete copies of these studies are contained in the technical appendices to this Draft EIR (located in Appendices L1 and L2, respectively)

5.14.1 Environmental Setting

5.14.1.1 REGULATORY BACKGROUND

State

Assembly Bill 1358, Complete Streets Act

The California Complete Streets Act of 2008, Assembly Bill 1358 (AB 1358), was signed into law on September 30, 2008. Beginning January 1, 2011, Assembly Bill 1358 required circulation elements to address the transportation system from a multimodal perspective. The bill states that streets, roads, and highways must "meet the needs of all users…in a manner suitable to the rural, suburban, or urban context of the general plan." Essentially, this bill requires a circulation element to plan for all modes of transportation where appropriate—including walking, biking, car travel, and transit.

The Complete Streets Act also requires general plan circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled. For further clarity, AB 1358 tasked the Governor's Office of Planning and Research to release guidelines for compliance with this legislation by January 1, 2014.

Sustainable Communities and Climate Protection Act

The Sustainable Communities and Climate Protection Act of 2008 or Senate Bill (SB) 375 was signed into law on September 30, 2008. The SB 375 regulation provides incentives for cities and developers to bring housing and jobs closer together and to improve public transit. The goal behind SB 375 is to reduce automobile commuting trips and length of automobile trips, thus helping to meet the statewide targets for reducing greenhouse gas emissions set by AB 32. SB 375 requires each metropolitan planning organization to add a broader vision for growth, called a "Sustainable Communities Strategy" (SCS), to its transportation plan. The SCS must lay out a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to lower greenhouse gas emissions. The SCS should integrate transportation, land-use, and housing policies to plan for achievement of the emissions target for their region.

Senate Bill 743

On September 27, 2013, SB 743 was signed into law. The Legislature found that with adoption of the Sustainable Communities and Climate Protection Act of 2008 (SB 375), the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and thereby contribute to the reduction of greenhouse gas emissions (GHG), as required by the California Global Warming Solutions Act of 2006 (AB 32). Additionally, AB 1358, described above, requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users.

SB 743 started a process that could fundamentally change transportation impact analysis as part of CEQA compliance. These changes will include the elimination of auto delay, level of service (LOS), and similar measures of vehicular capacity or traffic congestion as the basis for determining significant impacts under CEQA. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." OPR developed alternative metrics and thresholds based on VMT. The guidelines were certified by the Secretary of the Natural Resources Agency in December 2018, and automobile delay, as described solely by level of service of similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment. There is an opt-in period until July 1, 2020, for agencies to adopt new VMT-based criteria. As such, automobile delay is still considered a significant impact, and the City will continue to use the established LOS criteria for determining significant impacts.

Regional

SCAG's 2016 RTP/SCS

Every four years, the Southern California Association of Governments (SCAG) updates the Regional Transportation Plan (RTP) for the six-county region that includes Los Angeles, San Bernardino, Riverside, Orange, Ventura, and Imperial counties. On April 7, 2016, the SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan / Sustainable Communities Strategy (2016 RTP/SCS). The SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce greenhouse gas emissions from transportation (excluding goods movement). Current and recent transportation plan goals generally focus on balanced transportation and land use planning that:

- Maximize mobility and accessibility for all people and goods in the region.
- Ensure travel safety and reliability for all people and goods in the region.
- Preserve and ensure a sustainable regional transportation system.
- Maximize the productivity of our transportation system.

- Protect the environment and health of residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).
- Encourage land use and growth patterns that facilitate transit and active transportation.

Through implementation of the strategies in the RTP/SCS, SCAG anticipates lowering greenhouse gas emissions below 2005 levels by 8 percent by 2020, 18 percent by 2035, and 22 percent by 2040. Land use strategies to achieve the region's targets include planning for new growth around high quality transit areas and "livable corridors," and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016)

Caltrans

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway System (SHS) 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. 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 for freeway ramps, freeway segments, and freeway merge/diverge ramp junctions.

Local

City of Ontario

The Mobility Element of the Ontario Plan (TOP) establishes a guideline that is intended to provide a balanced transportation/circulation system that will support the anticipated growth in local and regional land uses. The Mobility Element is based on the following principles:

- Access to convenient local and regional mobility options is essential to the City's growth and prosperity.
- A comprehensive multi-modal mobility system is vital to achieving access to jobs, schools, shopping, services, parks and other key destination points.
- Transportation systems should reflect the context and desired character of the surrounding land uses.
- Well designed and maintained roadways are essential for the safe and efficient movement of goods and people.
- Transportation routes and their rights-of-way should be planned and preserved based upon projected travel demands.

The Mobility Element stipulates that roadways within the City comply with federal, state and local design and safety standards. Furthermore, the Mobility Element requires City roads maintain a peak hour Level of Service (LOS) E or better at all intersections.

The Mobility Element further provides goals and policies for bicycle, pedestrian, and public transit facilities. The following goals and policies would apply to the proposed project:

Bicycle and Pedestrian:

- **Goal M2: A** system of trails and corridors that facilitate and encourage bicycling and walking.
- **Policy M2-1:** Bikeway Plan. We maintain our Multipurpose Trails & Bikeway Corridor Plan to create a comprehensive system of on- and off-street bikeways that connect residential areas, businesses, schools, parks, and other key destination points.
- **Policy M2-2:** Bicycle System. We provide off-street multipurpose trails and Class II bikeways as our primary paths of travel and use the Class III for connectivity in constrained circumstances.
- **Policy M2-3:** Pedestrian Walkways. We require walkways that promote safe and convenient travel between residential areas, businesses, schools, parks, recreation areas, and other key destination points.
- **Policy M2-4:** Network Opportunities. We explore opportunities to expand the pedestrian and bicycle networks. This includes consideration of utility easements, levees, drainage corridors, road rights-of-way, medians and other potential options.

Public Transit:

- **Goal M3:** A public transit system that is a viable alternative to automobile travel and meets basic transportation needs of the transit dependent.
- **Policy M3-2:** Transit Facilities at New Development. We require new development to provide transit facilities, such as bus shelters, transit bays and turnouts, as necessary.
- **Policy M3-3:** Transit-Oriented Development. We may provide additional development-related incentives to those inherent in the Land Use Plan for projects that promote transit use.

5.14.1.2 EXISTING ROADWAY NETWORK

The study area consists of major roadways within the cities of Ontario, Chino, Chino Hills, Eastvale, Jurupa Valley and Caltrans facilities. The project site is located east of Euclid Avenue, north of Merrill Avenue, west of the unimproved right-of-way of Sultana Avenue, and south of Eucalyptus Avenue. Regional access to and from the proposed project is provided by SR-71 approximately 3 miles to the southwest, I-15 approximately 5.5 miles to the east, and SR-60 approximately 3 miles to the north. A detailed description of the existing roadway network and conditions is provided in Section 3 of the TIA (see Appendix L1).

Study Area

The TIA identifies a total of 52 existing and future intersections for analysis based on consultation with City of Ontario staff and through the application of the "50 peak hour trip" criterion. Table 5.14-1, *Intersection Analysis Locations*, lists the study intersections and the jurisdictions that have oversight on each intersection.

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Figure 5.14-1, *Location Map*, below shows the locations of each of the 52 study intersections. In addition to the study intersections, the study area also includes 16 freeway segments adjacent to the point of entry to the State Highway System ("SHS"). These freeway segments are included in Table 5.14-2 below.

Table 5.14-1 Intersection Analysis Locations

No.	Intersection	Jurisdiction
1	Euclid Av. (SR-83) & SR-60 WB Ramps	Ontario, Caltrans
2	Euclid Av. (SR-83) & SR-60 EB Ramps	Ontario, Caltrans
3	Euclid Av. (SR-83) & Walnut Av.	Chino, Ontario, Caltrans
4	Euclid Av. (SR-83) & Riverside Dr.	Chino, Ontario, Caltrans
5	Euclid Av. (SR-83) & Chino Av.	Chino, Ontario, Caltrans
6	Euclid Av. (SR-83) & Schaefer Av.	Chino, Ontario, Caltrans
7	Euclid Av. (SR-83) & Edison Av.	Chino, Ontario, Caltrans
8	Euclid Av. (SR-83) & Eucalyptus Av.	Chino, Ontario, Caltrans
9	Euclid Av. (SR-83) & Driveway 1 – Future Intersection	Chino, Ontario, Caltrans
10	Euclid Av. (SR-83) & Driveway 2 – Future Intersection	Chino, Ontario, Caltrans
11	Euclid Av. (SR-83) & Merrill Av.	Chino, Ontario, Caltrans
12	Euclid Av. (SR-83) & Kimball Av.	Chino, Caltrans
13	Euclid Av. (SR-83) & Bickmore Av.	Chino, Caltrans
14	Euclid Av. (SR-83) & Pine Av.	Chino, Caltrans
15	SR-71 NB Ramps & Euclid Av. (SR-83)	Chino, Caltrans
16	SR-71 SB Ramps & Butterfield Ranch Rd.	Chino Hills, Caltrans
17	Driveway 3 & Eucalyptus Av. – Future Intersection	Ontario
18	Driveway 4 & Merrill Av. – Future Intersection	Chino, Ontario
19	Driveway 5 & Eucalyptus Av. – Future Intersection	Ontario
20	Sultana Av. & Eucalyptus Av. – Future Intersection	Ontario
21	Sultana Av. & Driveway 6 – Future Intersection	Ontario
22	Sultana Av. & Driveway 7 – Future Intersection	Ontario
23	Sultana Av. & Driveway 8 – Future Intersection	Ontario
24	Sultana Av. & Driveway 9 – Future Intersection	Ontario
25	Sultana Av. & Driveway 10 – Future Intersection	Ontario
26	Sultana Av. & Driveway 11 – Future Intersection	Ontario
27	Sultana Av. & Merrill Av. – Future Intersection	Chino, Ontario
28	Bon View Av. & Eucalyptus Av.	Ontario
29	Bon View Av. & Merrill Av.	Chino, Ontario
30	Grove Av. & Edison Av.	Ontario
31	Grove Av. & Eucalyptus Av.	Ontario
32	Grove Av. & Merrill Av.	Chino, Ontario
33	Walker Av. & Edison Av.	Ontario
34	Walker Av./Flight Av. & Merrill Av.	Chino, Ontario
35	Baker Av./Van Vliet Av. & Merrill Av.	Chino, Ontario
36	Vineyard Av. & Edison Av. – 2040 Analysis Location Only	Ontario
37	Vineyard Av./Hellman Av. & Merrill Av.	Chino, Ontario
38	Carpenter Av. & Merrill Av.	Chino, Ontario
39	Hellman Av. & Edison Av. – 2040 Analysis Location Only	Ontario

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Table 5.14-1 Intersection Analysis Locations

No.	Intersection	Jurisdiction
40	Archibald Av. & Ontario Ranch Rd.	Ontario
41	Archibald Av. & Eucalyptus Av.	Ontario
42	Archibald Av. & Merrill Av.	Ontario
43	Archibald Av. & Limonite Av.	Eastvale
44	Turner Av. & Ontario Ranch Rd.	Ontario
45	Harrison Av. & Limonite Av.	Eastvale
46	Haven Av. & Ontario Ranch Rd.	Ontario
47	Sumner Av. & Limonite Av.	Eastvale
48	Scholar Wy. & Limonite Av.	Eastvale
49	Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.	Eastvale, Ontario
50	Hamner Av. & Limonite Av.	Eastvale
51	I-15 SB Ramps & Cantu Galleano Ranch Rd.	Eastvale, Caltrans
52	I-15 NB Ramps & Cantu Galleano Ranch Rd.	Jurupa Valley, Caltrans

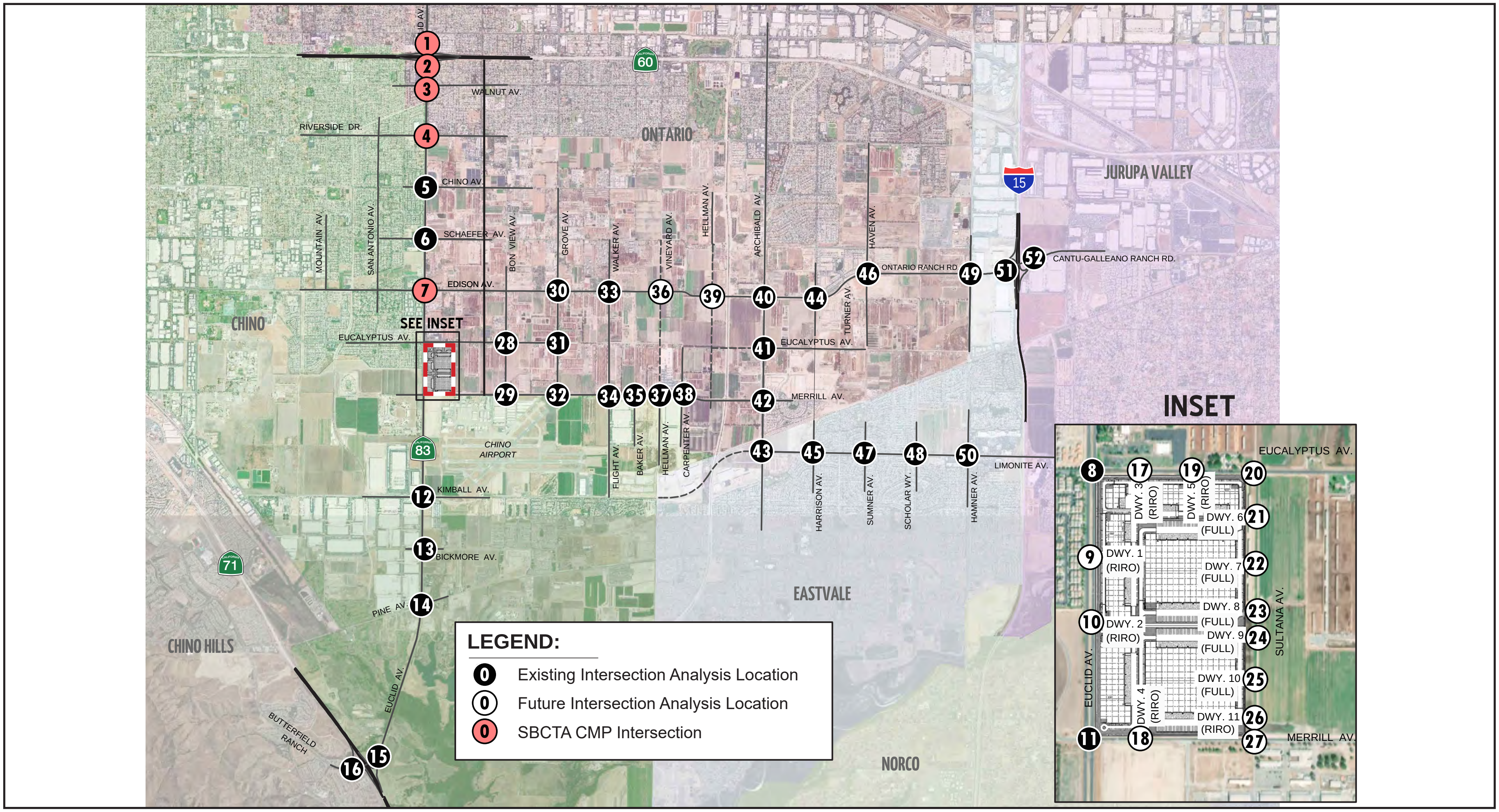
Source: Urban Crossroads, 2019.
Notes: WB: westbound; EB: eastbound; SR-83: State Route 83; SR-60: State Route 60;

Table 5.14-2 Freeway Facility Analysis Locations

No.	Intersection
1	SR-71 Freeway, Southbound – Southbound Loop On-Ramp at Euclid Avenue (SR-83)
2	SR-71 Freeway, Southbound – South of Euclid Avenue (SR-83)
3	SR-71 Freeway, Northbound – Northbound Off-Ramp at Euclid Avenue (SR-83)
4	SR-71 Freeway, Northbound – South of Euclid Avenue (SR-83)
5	SR-60 Freeway, Westbound – West of Euclid Avenue (SR-83)
6	SR-60 Freeway, Westbound – Westbound On-Ramp at Euclid Avenue (SR-83)
7	SR-60 Freeway, Westbound – Westbound Off-Ramp at Euclid Avenue (SR-83)
8	SR-60 Freeway, Westbound – East of Euclid Avenue (SR-83)
9	SR-60 Freeway, Eastbound – West of Euclid Avenue (SR-83)
10	SR-60 Freeway, Eastbound – Eastbound Off-Ramp at Euclid Avenue (SR-83)
11	SR-60 Freeway, Eastbound – Eastbound On-Ramp at Euclid Avenue (SR-83)
12	SR-60 Freeway, Eastbound – East of Euclid Avenue (SR-83)
13	I-15 Freeway, Southbound – North of Cantu Galleano Ranch Road
14	I-15 Freeway, Southbound – Southbound Off-Ramp at Cantu Galleano Ranch Road
15	I-15 Freeway, Northbound – North of Cantu Galleano Ranch Road
16	I-15 Freeway, Northbound – Northbound On-Ramp at Cantu Galleano Ranch Road

Source: Urban Crossroads, 2019.

Figure 5.14-1 - Location Map



Specific Plan Boundary

0 1.5
Scale (Miles)

Source: Urban Crossroads, 2019

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The City of Ontario General Plan Circulation Element provides roadway classifications for roadways in the study area. The following roadways are classified as 8-lane principal arterials (with four lanes in each direction); 6-lane principal arterials (with three lanes in each direction and a 14-foot curbed or painted median); and 4-lane principal arterials (with two lanes in each direction):8-Lane Principal Arterials

- Euclid Avenue (SR-83) from the SR-60 Freeway to Merrill Avenue
- Edison Avenue/Ontario Ranch Road from Euclid Avenue (SR-83) to Hamner Avenue; and
- Hamner Avenue from the SR-60 Freeway to Bellegrave Avenue

6-Lane Principal Arterials

- Vineyard Avenue from the SR-60 Freeway to Merrill Avenue
- Archibald Avenue north of Bellegrave Avenue

4-Lane Principal Arterials

- Grove Avenue north of Merrill Avenue
- Haven Avenue from Riverside Drive to Bellegrave Avenue

Riverside Drive is identified as minor arterial street with six lanes (three in either direction). In addition, the Walnut Street, Chino Avenue, Schaefer Avenue, Eucalyptus Avenue, Merrill Avenue, Bon View Avenue, Walker Avenue, and Hellman Avenue are identified as collector streets.

In addition, Euclid Avenue (SR-83), Edison Avenue/Ontario Ranch Road, Merrill Avenue, Archibald Avenue, and Hamner Avenue/Milliken Avenue are designated as Truck Routes in the City of Ontario. Riverside Drive, Edison Avenue, Merrill Avenue, Kimball Avenue, Pine Avenue, Flight Avenue, and Hellman Avenue are some of the designated City of Chino truck routes within the study area while Euclid Avenue (SR- 83) is designated as a State Truck Route. Exhibit 3-12 and Exhibit 3-13 in the TIA (Appendix L1) show the City of Ontario and City of Chino's designated truck route maps, respectively.

5.14.1.3 EXISTING TRAFFIC CONDITIONS

Key Concepts

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.

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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. The HCM uses different procedures depending on the type of intersection control.

Intersection Level of Service

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in January 2019. Table 5.14-3, *Intersection Level of Service Criteria,* provides a description of the level of service (LOS) associated with the delay in seconds per vehicle (sec/veh).

Table 5.14-3 Intersection Level of Service Criteria

Description	Average Control Delay (Seconds), V/C ≤ 1.0		Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
	Signalized Intersections	Unsignalized Intersections		
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	0 to 10.00	A	F
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	10.01 to 15.00	B	F
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	15.01 to 25.00	C	F
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	25.01 to 35.00	D	F
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	35.01 to 50.00	E	F
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	> 50.00	F	F

Source: HCM (6th Edition)

Signalized Intersections

The City of Ontario, City of Chino, City of Chino Hills, City of Eastvale, and City of Jurupa Valley require signalized intersection operations analysis based on the methodology described in the HCM. The TIA further uses flow rates, measured as vehicle per hour green per lane, for signalized intersections consistent with San Bernardino County CMP (contained in Appendix B of the TIA; Appendix L1 of this DEIR). The TIA uses Synchro software package (Version 10) for traffic modeling and signal timing. The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. 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. Synchro software was also used for intersections in Caltrans' jurisdiction. Signal timing for the freeway arterial-to-ramp intersections have been obtained from Caltrans District 8 and were utilized for the purposes of this analysis.

Unsignalized Intersections

The City of Ontario, City of Chino, City of Chino Hills, City of Eastvale, and City of Jurupa Valley require the operations of unsignalized intersections be evaluated using the methodology described in the HCM. 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. For all-way stop controlled intersections, LOS is computed for the intersection as a whole.

Traffic Signal Warrant Criteria

Caltrans establishes a list of criteria to determine the potential need for the installation of a traffic signal at an unsignalized intersection. The latest signal warrant criteria are presented in Caltrans' *California Manual on Uniform Traffic Control Devices* (CA MUTCD). The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. The TIA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions.

The 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.

Freeway Off-Ramp Queuing

The study area for this TIA includes the following freeway-to-arterial interchanges:

- SR-71 Freeway & Euclid Avenue (SR-83)
- Euclid Avenue (SR-83) & SR-60 Freeway
- I-15 Freeway & Cantu Galleano Ranch Road

Consistent with Caltrans requirements, the TIA uses the 95th percentile queuing of vehicles at the off-ramps to determine potential queuing deficiencies at the freeway ramp intersections at the interchanges. Specifically, the queuing analysis is utilized to identify any potential queuing and "spill back" onto the SR-71, SR-60, or I-15 Freeway mainline from the offramps.

Freeway Mainline Level of Service

Freeway segments are defined by the freeway-to-arterial interchange locations resulting in two existing on and off ramp locations. The freeway segments have been evaluated based upon peak hour directional volumes. The freeway segment analysis is based on the methodology described in the HCM and performed using HCS7

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(Highway Capacity Software, HCM 6th Edition). Table 5.14-4 provides descriptions for level of service for each density range.

Table 5.14-4 Description of Freeway Mainline Level of Service

Level of Service	Description	Density Range (pc/mi/ln)
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0.0 – 11.0
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	11.1 – 18.0
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	18.1 – 26.0
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	26.1 – 35.0
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	35.1 – 45.0
F	Breakdown in vehicle flow.	>45.0

Notes: pc/mi/ln = passenger cars per mile per lane
Source: HCM (6th Edition)

Freeway Merge/Diverge Ramp Level of Service

The measure of effectiveness (reported in passenger car/mile/lane) for merge/diverge ramps are calculated based on the existing number of travel lanes, number of lanes at the on and off ramps both at the analysis junction and at upstream and downstream locations (if applicable) and acceleration/deceleration lengths at each merge/diverge point. Table 5.14-5 presents the merge/diverge area level of service descriptions.

Table 5.14-5 Description of Freeway Mainline Level of Service

Level of Service	Density Range (pc/mi/ln)
A	≤10.0
B	10.0 – 20.0
C	20.0 – 28.0
D	28.0 – 35.0
E	>35.0
F	Demand Exceeds Capacity

Notes: pc/mi/ln = passenger cars per mile per lane
Source: HCM (6th Edition)

Existing Conditions

The following peak hours were selected for analysis:

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

The 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. The traffic counts collected in January 2019 include the following vehicle classifications: Passenger Cars, 2-Axle Trucks, 2-Axle Trucks, and 4 or More Axle Trucks. To represent the effect that large trucks, buses and recreational vehicles have on traffic flow; all trucks were converted into passenger car equivalent (PCE). Existing weekday average daily trip (ADT) volumes are shown in Exhibit 3-19 in the TIA (contained in Appendix L1). Existing weekday AM and weekday PM peak hour intersection traffic volumes (in PCE) are shown in Exhibit 3-20 in the TIA (contained in Appendix L1).

The existing study area intersections are currently operating at acceptable LOS during the peak hours with exception to the following:

- Euclid Avenue (SR-83) & Riverside Drive (#4) – LOS E PM peak hour only
- Grove Avenue & Edison Avenue (#30) – LOS F AM and PM peak hours
- Grove Avenue & Eucalyptus Avenue (#31) – LOS F PM peak hour only
- Grove Avenue & Merrill Avenue (#32) – LOS E PM peak hour only
- Walker Avenue & Edison Avenue (#33) – LOS F PM peak hour only
- Carpenter Avenue & Merrill Avenue (#38) – LOS F AM and PM peak hours
- Hamner Avenue & Ontario Ranch Road (#49) – LOS F PM peak hour only

The morning and evening peak hour LOS for existing traffic conditions are shown in Table 5.14-6 Existing Intersection Delay and Level of Service. Figure 5.14-2 below shows the existing level of service at each of the study intersections.

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Table 5.14-6 Existing Intersection Delay and Level of Service

ID	Study Intersection	Jurisdiction	Traffic Control	AM Peak Hour Delay[1]	AM Peak Hour LOS[5]	PM Peak Hour Delay[1]	PM Peak Hour LOS[5]
1	Euclid Av. (SR-83) & SR-60 WB Ramps	Chino, Ontario, Caltrans	TS	22.3	C	18.6	B
2	Euclid Av. (SR-83) & SR-60 EB Ramps	Chino, Ontario, Caltrans	TS	25.9	C	22.3	C
3	Euclid Av. (SR-83) & Walnut Av.	Chino, Ontario, Caltrans	TS	30.1	C	32.5	C
4	Euclid Av. (SR-83) & Riverside Dr.	Chino, Ontario, Caltrans	TS	47.0	D	55.5	E
5	Euclid Av. (SR-83) & Chino Av.	Chino, Ontario, Caltrans	TS	21.5	C	23.2	C
6	Euclid Av. (SR-83) & Schaefer Av.	Chino, Ontario, Caltrans	TS	23.6	C	26.2	C
7	Euclid Av. (SR-83) & Edison Av.	Chino, Ontario, Caltrans	TS	38.1	D	39.7	D
8	Euclid Av. (SR-83) & Eucalyptus Av.	Chino, Ontario, Caltrans	TS	13.8	B	13.2	B
9	Euclid Av. (SR-83) & Driveway 1 – Future Intersection	Chino, Ontario, Caltrans	Intersection Does Not Exist				
10	Euclid Av. (SR-83) & Driveway 2 – Future Intersection	Chino, Caltrans	Intersection Does Not Exist				
11	Euclid Av. (SR-83) & Merrill Av.	Chino, Caltrans	TS	26.4	C	29.9	C
12	Euclid Av. (SR-83) & Kimball Av.	Chino, Caltrans	TS	32.4	C	38.3	D
13	Euclid Av. (SR-83) & Bickmore Av.	Chino, Caltrans	TS	16.3	B	14.0	B
14	Euclid Av. (SR-83) & Pine Av.	Chino Hills, Caltrans	TS	31.9	C	39.5	D
15	SR-71 NB Ramps & Euclid Av. (SR-83)	Ontario	TS	27.2	C	43.1	D
16	SR-71 SB Ramps & Butterfield Ranch Rd.	Chino, Ontario	TS	40.0	D	39.8	D
17	Driveway 3 & Eucalyptus Av. – Future Intersection	Ontario	Intersection Does Not Exist				
18	Driveway 4 & Merrill Av. – Future Intersection	Ontario	Intersection Does Not Exist				
19	Driveway 5 & Eucalyptus Av. – Future Intersection	Ontario	Intersection Does Not Exist				
20	Sultana Av. & Eucalyptus Av. – Future Intersection	Ontario	Intersection Does Not Exist				
21	Sultana Av. & Driveway 6 – Future Intersection	Ontario	Intersection Does Not Exist				
22	Sultana Av. & Driveway 7 – Future Intersection	Ontario	Intersection Does Not Exist				
23	Sultana Av. & Driveway 8 – Future Intersection	Ontario	Intersection Does Not Exist				
24	Sultana Av. & Driveway 9 – Future Intersection	Ontario	Intersection Does Not Exist				
25	Sultana Av. & Driveway 10 – Future Intersection	Chino, Ontario	Intersection Does Not Exist				
26	Sultana Av. & Driveway 11 – Future Intersection	Ontario	Intersection Does Not Exist				
27	Sultana Av. & Merrill Av. – Future Intersection	Chino, Ontario	Intersection Does Not Exist				
28	Bon View Av. & Eucalyptus Av.	Ontario	AWS	8.6	A	9.1	A
29	Bon View Av. & Merrill Av.	Ontario	CSS	13.2	B	16.4	C
30	Grove Av. & Edison Av.	Chino, Ontario	AWS	71.9	F	>100.0	F
31	Grove Av. & Eucalyptus Av.	Ontario	CSS	20.0	C	>100.0	F

Table 5.14-6 Existing Intersection Delay and Level of Service

ID	Study Intersection	Jurisdiction	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay[1]	LOS[5]	Delay[1]	LOS[5]
32	Grove Av. & Merrill Av.	Chino, Ontario	AWS	34.6	D	43.7	E
33	Walker Av. & Edison Av.	Chino, Ontario	CSS	25.2	D	60.1	F
34	Walker Av./Flight Av. & Merrill Av.	Ontario	CSS	27.2	D	25.0	D
35	Baker Av./Van Vliet Av. & Merrill Av.	Chino, Ontario	CSS	11.3	B	13.6	B
36	Vineyard Av. & Edison Av. – 2040 Analysis Location Only	Chino, Ontario	Intersection Does Not Exist				
37	Vineyard Av./Hellman Av. & Merrill Av.	Ontario, Caltrans	CSS	9.4	A	10.9	B
38	Carpenter Av. & Merrill Av.	Ontario, Caltrans	AWS	86.2	F	89.5	F
39	Hellman Av. & Edison Av. – 2040 Analysis Location Only	Ontario	Intersection Does Not Exist				
40	Archibald Av. & Ontario Ranch Rd.	Ontario	TS	31.4	C	27.0	C
41	Archibald Av. & Eucalyptus Av.	Ontario	TS	5.8	A	3.2	A
42	Archibald Av. & Merrill Av.	Ontario	TS	33.6	C	29.2	C
43	Archibald Av. & Limonite Av.	Eastvale	TS	48.0	D	29.6	C
44	Turner Av. & Ontario Ranch Rd.	Ontario	TS	16.5	B	14.5	B
45	Harrison Av. & Limonite Av.	Eastvale	TS	19.1	B	17.1	B
46	Haven Av. & Ontario Ranch Rd.	Ontario	TS	25.0	C	22.8	C
47	Sumner Av. & Limonite Av.	Eastvale	TS	18.4	B	18.4	B
48	Scholar Wy. & Limonite Av.	Eastvale	TS	16.2	B	14.8	B
49	Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.	Eastvale, Ontario	TS	42.7	D	109.0	F
50	Hamner Av. & Limonite Av.	Eastvale	TS	24.2	C	27.1	C
51	I-15 SB Ramps & Cantu Galleano Ranch Rd.	Eastvale, Caltrans	TS	14.7	B	13.1	B
52	I-15 NB Ramps & Cantu Galleano Ranch Rd.	Jurupa Valley, Caltrans	TS	18.9	B	12.5	B

Source: Urban Crossroads, 2019.
Notes: SR-60: State Route 60; I-10: Interstate 10; TS: Traffic Signal; CSS: Cross Street Stop; AWS: All Way Stop; LOS: level of service
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.

Additionally, the TIA determined that the following intersections may warrant a traffic signal under existing conditions:

- Grove Avenue & Edison Avenue (#30)
- Grove Avenue & Eucalyptus Avenue (#31)
- Grove Avenue & Merrill Avenue (#32)
- Walker Avenue & Edison Avenue (#33)
- Walker Avenue/Flight Avenue & Merrill Avenue (#34)
- Carpenter Avenue & Merrill Avenue (#38)

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Freeway Facility Analysis

The TIA performed an off-ramp queuing analysis and a freeway facility analysis to capture existing conditions at these locations. With regards of off-ramp queuing, the TIA found that are no movements that currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Table 3-2 in the TIA summaries the peak hour freeway off-ramp queuing for existing conditions.

Table 5.14-7, *Existing Daily Roadway Capacity Analysis*, depicts the study area freeway segments and merge/diverge ramp junctions analyzed for this study are currently operating at an acceptable LOS (i.e., LOS D or better) during the peak hours for Existing (2019) traffic conditions, with exception of the following:

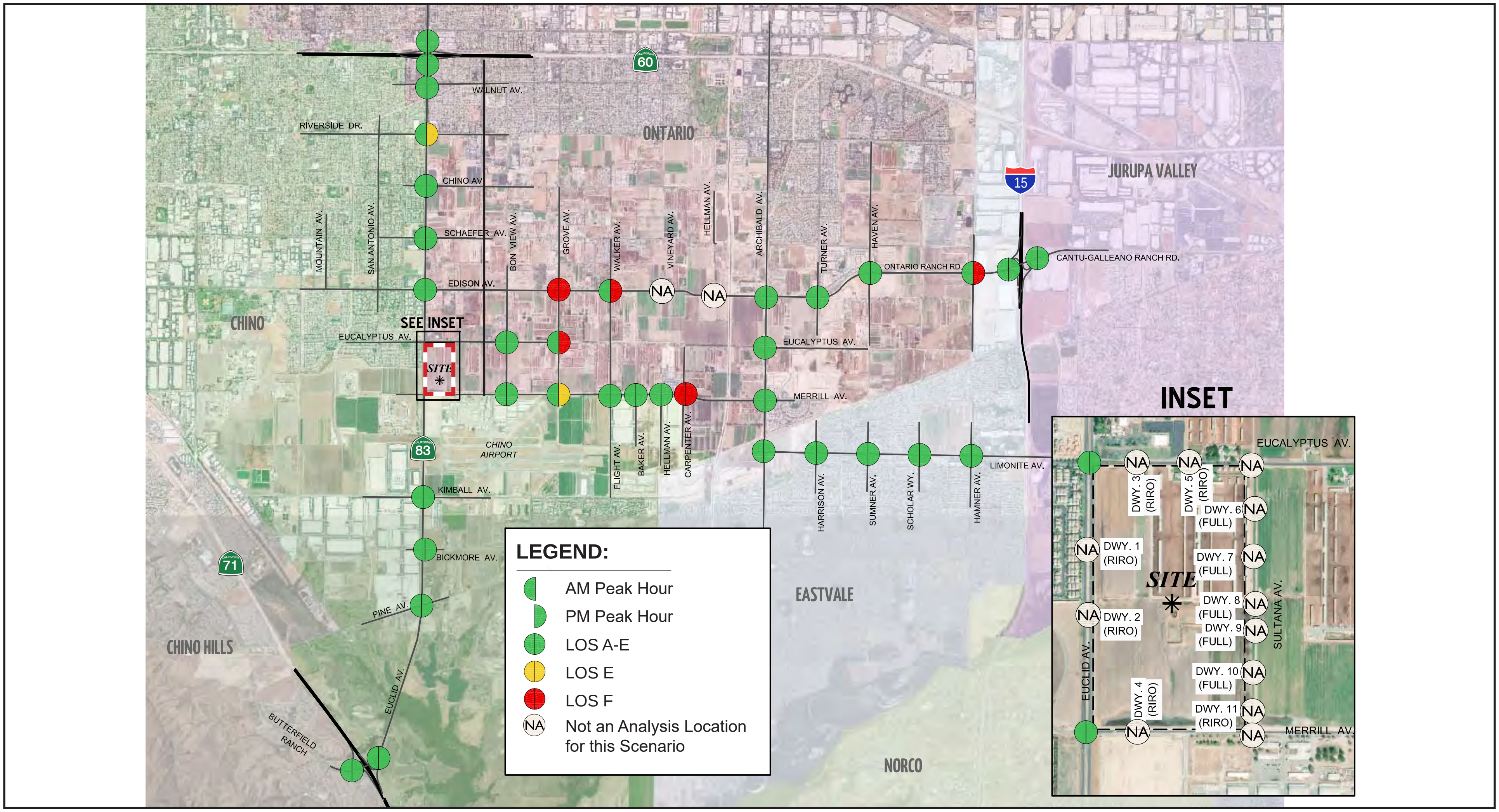
- SR-60 Freeway Westbound, Westbound Off-Ramp at Euclid Avenue (SR-83) (#7) – LOS E AM and PM peak hours.

Table 5.14-7 Existing Daily Roadway Capacity Analysis

Direction[4]	Ramp or Segment	Lanes on Freeway[1]	AM Peak Hour		PM Peak Hour	
			Density[2]	LOS[3]	Density[2]	LOS[3]
SB	Southbound Loop On-Ramp at Euclid Avenue (SR-83)	2	9.7	A	10.4	B
	South of Euclid Avenue (SR-83)	2	12.2	B	12.9	B
NB	Northbound Off-Ramp at Euclid Avenue (SR-83)	3	13.7	B	21.1	C
	South of Euclid Avenue (SR-83)	3	8.9	A	15.6	B
Westbound	West of Euclid Avenue (SR-83)	4	33.9	D	31.5	D
	Westbound On-Ramp at Euclid Avenue (SR-83)	4	28.5	D	27.2	C
	Westbound Off-Ramp at Euclid Avenue (SR-83)	4	32.0	E	35.8	E
	East of Euclid Avenue (SR-83)	4	34.6	D	33.3	D
Eastbound	West of Euclid Avenue (SR-83)	4	31.2	D	25.7	C
	Eastbound Off-Ramp at Euclid Avenue (SR-83)	4	32.3	D	28.6	D
	Eastbound On-Ramp at Euclid Avenue (SR-83)	4	28.1	D	24.0	C
	East of Euclid Avenue (SR-83)	4	32.9	D	26.4	D
SB	North of Cantu Galleano Ranch Road	4	18.5	C	14.8	B
	Southbound Off-Ramp at Cantu Galleano Ranch Road	4	27.2	C	22.8	C
NB	North of Cantu Galleano Ranch Road	5	16.2	B	14.1	B
	Northbound On-Ramp at Cantu Galleano Ranch Road	3	34.5	D	30.8	D

Source: Urban Crossroads, 2019.
* BOLD = Unacceptable Level of Service
1 Number of lanes are in the specified direction and is based on existing conditions.
2 Density is measured by passenger cars per mile per lane (pc/mi/ln).
3 LOS = Level of Service
4 SB = Southbound; NB = Northbound

Figure 5.14-2 - Existing (2019) Summary of LOS



Specific Plan Boundary

0 1.5
Scale (Miles)

Source: Urban Crossroads, 2019

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Alternative Modes of Transportation

Bicycle, Equestrian and Pedestrian Facilities

Field observations conducted in March 2019 indicate nominal pedestrian and bicycle activity within the study area. The City of Ontario General Plan Trails and Bikeways Systems is shown on Exhibit 3-14 in the TIA (see Appendix L1); it proposes Class II and Multipurpose Trails along Merrill Avenue, Campus Avenue, and Euclid Avenue adjacent to the project site. Pedestrian facilities currently exist directly adjacent to the site at the intersections of Euclid Avenue and Eucalyptus Avenue, and Euclid Avenue and Merrill Avenue. Exhibit 3-15 in the TIA (see Appendix L1) illustrates City of Chino future bicycle facilities, which proposes Class I bicycle facilities along Hellman Avenue and Kimball Avenue near the vicinity of the site. Exhibit 3-16 in the TIA (see Appendix L1) illustrates the City of Eastvale trails and bikeway systems. Existing pedestrian facilities within the study area are shown on Exhibit 3-17 in the TIA (see Appendix L1).

Existing Transit Service

The study area within the City of Chino is currently served by Omnitrans, a public transit agency serving various jurisdictions within San Bernardino County. Based on a review of the existing transit routes within the vicinity of the proposed project, Omnitrans Route 83 operates on Euclid Avenue (SR-83) north of the site. Route 83 could potentially serve the project. The Riverside Transit Authority (RTA) serves the City of Eastvale. Existing transit routes in the vicinity of the study area are illustrated on Exhibit 3-18 in the TIA (see Appendix L1).

5.14.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

T-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

T-2 Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b).

T-3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

T-4 Result in inadequate emergency access.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following threshold would be less than significant:

- Threshold T-4

This impact will not be addressed in the following analysis.

Jurisdictions' Minimum Acceptable Levels of Service

As discussed above, the study area for the proposed project spans multiple jurisdictions. The following is a summary of the minimum acceptable levels of service and associated definitions of intersection deficiencies for each applicable city.

City of Ontario

The City of Ontario utilizes a minimum acceptable LOS of LOS E, where feasible.

City of Chino Hills

The "Traffic Impact Study Guidelines for Development Projects in the City of Chino Hills," dated October 15, 2001, indicates LOS D shall be the minimum acceptable LOS to be used for all City of Chino Hills roadways and intersections. Therefore, any intersection operating at LOS E or LOS F will be considered deficient.

City of Chino

According to the City of Chino, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, where feasible.

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. Based on this criterion, where feasible, LOS D is the minimum acceptable LOS at each of the study intersections within the City of Eastvale.

City of Jurupa Valley

The City of Jurupa Valley utilizes a minimum acceptable LOS of LOS D, where feasible.

CMP

The CMP definition of deficiency is based on maintaining a level of service standard of LOS E or better, where feasible, except where an existing LOS F condition is identified in the CMP document. However, in an effort to overstate as opposed to understate potential deficiencies, LOS D has been utilized for the CMP intersections for the purposes of this analysis, unless the intersection is located in the City of Ontario (which uses LOS E).

Caltrans

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on SHS 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. If an existing SHS 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 for freeway ramps, freeway segments, and freeway merge/diverge ramp junctions.

VMT Thresholds

Background

The OPR's 2018 Technical Advisory has the following recommended numeric thresholds for residential, office and retail projects:

- For residential projects, a proposed project exceeding a level of 15% below existing VMT/capita may indicate a significant transportation impact. Existing VMT/capita may be measured as regional VMT per capita or as City VMT per capita.
- For office projects, a proposed project exceeding a level of 15% below existing regional VMT/employee may indicate a significant transportation impact.
- For retail projects, a net increase in total VMT may indicate a significant transportation impact. Numerical thresholds are not provided for other project types such as industrial uses.

WRCOG identifies the following criteria for lead agencies to consider:

- Below City-wide average VMT
- Below WRCOG regional average VMT

The San Bernardino Countywide Plan Draft Program Environmental Report (June 2019, "2019 CWP PEIR") identifies the following VMT thresholds for land use development in the unincorporated San Bernardino County:

- A residential VMT exceeding a level of 4 percent below existing VMT per capita would indicate a significant transportation impact.
- An employment VMT exceeding a level of 4 percent below existing VMT per employee would indicate a significant transportation impact.

Proposed Project VMT Threshold

The City of Ontario has not yet formally adopted VMT thresholds of significance for purposes of determining transportation impacts under CEQA. Notwithstanding, in order to address the provisions of SB 743, the transportation analysis herein uses a threshold of 15 percent below baseline average VMT/Service Population (SP)[1] for the City consistent with OPR's Technical Advisory recommendation.

CEQA Guidelines Section 15064.3, subdivision (a) states "For the purposes of this section 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." OPR's 2018 Technical

[1] Service population = residents + employees.

Advisory notes that here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Nevertheless, it is also recognized that the project would generate Heavy Duty Truck (HDT) traffic and has been considered in this VMT assessment. For consistency with other CEQA technical studies, HDT VMT identified in this analysis will be reflected in other applicable technical studies (e.g. Air Quality Impact Analysis, Greenhouse Gas Analysis, etc.).

As previously stated, based on OPR's 2018 Technical Advisory recommendation, project VMT/SP that is not reduced to a level 15 percent below the Baseline (2019) average daily VMT/SP for the City of Ontario is considered a significant transportation impact.

5.14.3 Plans, Programs, and Policies

PPP TR-1 The proposed project would be required to comply with the City of Ontario's Development Impact Fee (DIF) program, which helps fund transportation improvements. The City's DIF includes regional improvements to comply with Measure I. If roadway improvements are not included in the DIF program, the proposed project would be required to provide funding on a fair share basis where appropriate, as determined by the City. These fees shall be collected by the City of Ontario, 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. Chapter 8 of the TIA (contained in Appendix L1) provides more information on the DIF program, fair share contributions, and the proposed project's expected contributions.

PPP TR-2 The proposed project would be required to comply with Municipal Code Section 7-3.07, which requires that prior to any activity that would encroach into a right-of-way, the area be safeguarded through the installation of safety devices that would be specified by the City's Engineering Department during the construction permitting process to ensure that construction activities would not increase hazards.

5.14.4 Project Design Features

Roadway and Intersection Improvements

The proposed circulation plan for the proposed project would facilitate site access and movement of vehicles, pedestrians, and cyclists within the Specific Plan area. All road surface, sidewalk, and trail improvements within the Specific Plan area must be approved by the City's Engineering Department. Exhibit 1-4 in the TIA (contained in Appendix L1 to this DEIR) depicts the improvements described below. Implementation of the Specific Plan would result in the following roadway improvements:

- **Euclid Avenue (SR-83).** Euclid Avenue (SR-83) is a north-south oriented roadway located along the project's western boundary. Construct Euclid Avenue (SR-83) from Eucalyptus Avenue to Merrill Avenue at its ultimate half-section width as an 8-lane other principal arterial (200-foot ultimate right-of-way) in compliance with the circulation recommendations found in City of Ontario General Plan. Improvements include curb and gutter, a 15-foot parkway including sidewalk, and a 33-foot half-width raised median. This raised median will prohibit left turns into and out of Driveways 1 and 2 on Euclid Avenue (SR-83).

- **Eucalyptus Avenue.** Eucalyptus Avenue is an east-west oriented roadway located along the project's northern boundary. Construct Eucalyptus Avenue from Euclid Avenue (SR-83) to Sultana Avenue at its ultimate half-section width as a 4-lane collector (108-foot ultimate right-of-way) in compliance with the circulation recommendations found in City of Ontario General Plan. Improvements include curb and gutter and a 12-foot parkway including sidewalk.
- **Merrill Avenue.** Merrill Avenue is an east-west oriented roadway located along the project's southern boundary. Construct Merrill Avenue from Euclid Avenue (SR-83) to Sultana Avenue at its ultimate half-section width as a 4-lane collector (108-foot ultimate right-of-way) in compliance with the circulation recommendations found in City of Ontario General Plan. Improvements include curb and gutter and a 12-foot parkway including sidewalk.
- **Sultana Avenue.** Sultana Avenue is a north-south oriented roadway located along the project's eastern boundary. Construct Sultana Avenue from Eucalyptus Avenue to Merrill Avenue at its ultimate half-section width as a 2-lane local street (66-foot ultimate right-of-way) in compliance with the circulation recommendations found in City of Ontario General Plan. Improvements would include curb and gutter and a 9-foot parkway including sidewalk.

In addition, the proposed project includes improvements to the following project site access driveways and one existing intersection. These intersection improvements include:

- Euclid Avenue (SR-83) & Driveway 1 (#9):
  - Install a stop control on the westbound approach and a westbound right turn lane.
  - Add a northbound right turn lane with a minimum of 100-feet of storage.
- Euclid Avenue (SR-83) & Driveway 2 (#10):
  - Install a stop control on the westbound approach and a westbound right turn lane.
  - Add a northbound right turn lane with a minimum of 100-feet of storage.
- Euclid Avenue (SR-83) & Merrill Avenue (#11):
  - Add a westbound left turn lane with a minimum of 250-feet of storage.
  - Add a westbound right turn lane.
  - Modify the traffic signal to implement overlap phasing on the westbound right turn lane.
- Driveway 3 & Eucalyptus Avenue (#17):
  - Install a stop control on the northbound approach and a northbound right turn lane. The intersection should be constructed to prohibit left turns in and out of this driveway.
  - Add an eastbound right turn lane with a minimum of 100-feet of storage.

- Driveway 4 & Merrill Avenue (#18):
  - Install a stop control on the southbound approach and a northbound right turn lane. The intersection should be constructed to prohibit left turns in and out of this driveway.
  - Add a westbound right turn lane with a minimum of 100-feet of storage.
- Driveway 5 & Eucalyptus Avenue (#19):
  - Install a stop control on the northbound approach and a northbound right turn lane. The intersection should be constructed to prohibit left turns in and out of this driveway.
  - Add an eastbound right turn lane with a minimum of 100-feet of storage.
- Sultana Avenue & Eucalyptus Avenue (#20):
  - Install a stop control on the northbound approach and a northbound shared left-right turn lane.
  - Add an eastbound right turn lane with a minimum of 100-feet of storage.
  - Add a westbound left turn lane with a minimum of 150-feet of storage.
- Sultana Avenue & Driveway 6 (#21):
  - Install a stop control on the eastbound approach and an eastbound shared left-right turn lane.
  - Add a northbound left turn lane with a minimum of 100-feet of storage in the two-way-left-turn lane and a northbound through lane.
  - Add a southbound shared through-right turn lane.
- Sultana Avenue & Driveway 7 (#22):
  - Install a stop control on the eastbound approach and an eastbound shared left-right turn lane.
  - Add a northbound left turn lane with a minimum of 100-feet of storage in the two-way-left-turn lane and a northbound through lane.
  - Add a southbound shared through-right turn lane.
- Sultana Avenue & Driveway 8 (#23):
  - Install a stop control on the eastbound approach and an eastbound shared left-right turn lane.
  - Add a northbound left turn lane with a minimum of 100-feet of storage in the two-way-left-turn lane and a northbound through lane.
  - Add a southbound shared through-right turn lane.
- Sultana Avenue & Driveway 9 (#24):
  - Install a stop control on the eastbound approach and an eastbound shared left-right turn lane.

  - Add a northbound left turn lane with a minimum of 100-feet of storage in the two-way-left-turn lane and a northbound through lane.
  - Add a southbound shared through-right turn lane.
- Sultana Avenue & Driveway 10 (#25):
  - Install a stop control on the eastbound approach and an eastbound shared left-right turn lane.
  - Add a northbound left turn lane with a minimum of 100-feet of storage in the two-way-left-turn lane and a northbound through lane.
  - Add a southbound shared through-right turn lane.
- Sultana Avenue & Driveway 11 (#26):
  - Install a stop control on the eastbound approach and an eastbound right turn lane. The intersection should be constructed to prohibit left turns in and out of this driveway.
  - Add a northbound through lane.
  - Add a southbound shared through-right turn lane.

Truck Access and Circulation

In order to accommodate heavy truck access to the project site, the following improvements to curb radii and driveways would be made:

- Driveway 4 on Merrill Avenue would be modified to provide a 50-foot curb radius on the northwest and northeast corners to accommodate WB-67 trucks.
- The intersection of Sultana Avenue and Eucalyptus Avenue would be modified to provide a 50-foot curb radius on the southwest corner of the intersection to accommodate WB-67 trucks.
- Driveway 6 on Sultana Avenue would be modified to provide a 35-foot curb radius on the northwest corner and a 40-foot curb radius on the southwest corner. In addition, modify the landscaped median 30-feet to the west in order to allow for WB-67 trucks to maneuver on site at Driveway 6.
- Driveway 8 on Sultana Avenue would be modified to provide a 40-foot curb radius on the northwest corner and a 45-foot radius on the southwest corner. In addition, modify the landscaped median on the southwest corner by 10-feet to accommodate WB-67 trucks.
- Driveway 9 on Sultana Avenue would be modified to provide a 40-foot curb radius on the northwest corner. In addition, modify the landscaped median to the northwest corner by 10-feet to accommodate WB-67 trucks.

Exhibit 5 in the TIA (contained in Appendix L1) illustrates the turning radii of heavy trucks accessing the project site.

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5.14.5 Environmental Impacts

5.14.5.1 METHODOLOGY

This section summarizes the methodologies used to perform the traffic analyses and VMT analyses. The traffic analyses methodologies are consistent with the City of Ontario's Traffic Study Guidelines. The potential traffic impacts resulting from the proposed project are addressed below. As part of the TIA (Appendix L1) to determine the potential deficiencies to traffic and circulation, the following scenarios were analyzed in addition to existing conditions:

- Existing + Project
- Opening Year Cumulative (2022) Without Project
- Opening Year Cumulative (2022) With Project
- Horizon Year (2040) Without Project
- Horizon Year (2040) With Project

Project Trip Generation

Trips generated by the project's proposed land uses were estimated based on trip generation rates collected by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, 2017 and the Transportation Uniform Mitigation Fee (TUMF) High-Cube Warehouse Trip Generation Study (WSP, January 29, 2019). The trip generation summary illustrating daily, and peak hour trip generation estimates for the proposed project in actual vehicles and PCE are shown on Table 5.14-8 and Table 5.14-9, respectively.

Table 5.14-8 Project Trip Generation Summary (Actual)

Land Use	Quantity	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
High-Cube Fulfillment Warehouse	1,019.317 TSF							
Passenger Cars:		81	24	105	41	106	147	1,784
Truck Trips:								
2-4 axle:		6	2	8	3	8	11	166
5+-axle:		9	3	12	3	7	10	222
− Net Truck Trips		15	5	20	6	15	21	388
FULFILLMENT TOTAL NET TRIPS (Actual Vehicles)		96	29	125	47	121	168	2,172
High-Cube Cold Storage Warehouse	200.000 TSF							
Passenger Cars:		12	4	16	5	14	19	288
Truck Trips:								
2-axle:		2	1	3	0	1	1	48
3-axle:		1	0	1	0	0	0	16
4+-axle:		3	1	4	1	2	3	74
− Net Truck Trips		6	2	8	1	3	4	138

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Table 5.14-8 Project Trip Generation Summary (Actual)

Land Use	Quantity	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
COLD STORAGE TOTAL NET TRIPS (Actual Vehicles)		18	6	24	6	17	23	426
Warehousing	357.836 TSF							
Passenger Cars:		37	11	48	15	40	55	498
Truck Trips:								
2-axle:		2	0	2	1	2	3	22
3-axle:		2	1	3	1	2	3	26
4+-axle:		6	2	8	2	6	8	78
− Net Truck Trips		10	3	13	4	10	14	126
WAREHOUSING TOTAL NET TRIPS (Actual Vehicles)		47	14	61	19	50	69	624
Business Park	327.874 TSF							
Passenger Cars:		92	22	114	24	90	114	962
Truck Trips:								
2-axle:		2	1	3	1	2	3	24
3-axle:		3	1	4	1	3	4	30
4+-axle:		9	2	11	2	9	11	90
− Net Truck Trips		14	4	18	4	14	18	144
BUSINESS PARK TOTAL NET TRIPS (Actual Vehicles)		106	26	132	28	104	132	1,106
Total Proposed Project (Actual Vehicles)		267	75	342	100	292	392	4,328

Source: Urban Crossroads, 2019.
TSF = thousand square feet;
TOTAL NET TRIPS = Passenger cars + net truck trips

Table 5.14-9 Project Trip Generation Summary (PCE)

Land Use	Quantity	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
High-Cube Fulfillment Warehouse	1,019.317 TSF							
Passenger Cars:		81	24	105	41	106	147	1,784
Truck Trips:								
2-4 axle:		13	4	17	6	16	22	330
5+-axle:		26	8	34	9	22	31	664
− Net Truck Trips		39	12	51	15	38	53	994
FULFILLMENT TOTAL NET TRIPS (Actual Vehicles)		120	36	156	56	144	200	2,778
High-Cube Cold Storage Warehouse	200.000 TSF							
Passenger Cars:		12	4	16	5	14	19	288
Truck Trips:								
2-axle:		3	1	4	1	2	3	72
3-axle:		1	0	1	0	1	1	30
4+-axle:		9	3	12	2	6	8	224
− Net Truck Trips		13	4	17	3	9	12	326

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Table 5.14-9 Project Trip Generation Summary (PCE)

Land Use	Quantity	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
COLD STORAGE TOTAL NET TRIPS (Actual Vehicles)		25	8	33	8	23	31	614
Warehousing	357.836 TSF							
Passenger Cars:		37	11	48	15	40	55	498
Truck Trips:								
2-axle:		2	1	3	1	2	3	32
3-axle:		4	1	5	2	4	6	52
4+-axle:		18	5	23	7	19	26	234
− Net Truck Trips		24	7	31	10	25	35	318
WAREHOUSING TOTAL NET TRIPS (Actual Vehicles)		61	18	79	25	65	90	816
Business Park	327.874 TSF							
Passenger Cars:		92	22	114	24	90	114	962
Truck Trips:								
2-axle:		3	1	4	1	3	4	36
3-axle:		6	1	7	1	6	7	60
4+-axle:		26	6	32	7	26	33	270
− Net Truck Trips		35	8	43	9	35	44	366
BUSINESS PARK TOTAL NET TRIPS (Actual Vehicles)		127	30	157	33	125	158	1,328
Total Proposed Project (Actual Vehicles)		333	92	425	122	357	479	5,536

Source: Urban Crossroads, 2019.
TSF = thousand square feet;
TOTAL NET TRIPS = Passenger cars + net truck trips

Project Traffic Distribution and Assignment

Separate trip distributions were generated for both passenger cars and truck trips. Directional truck trip distribution patterns for Opening Year Cumulative and Horizon Year conditions are shown in Exhibit 4-1 of the TIA. Exhibit 4-2 and Exhibit 4-3 of the TIA illustrates the Opening Year Cumulative and Horizon Year passenger car trip distribution patterns. Truck trip distribution is based on designated truck haul routes. Passenger car trip distribution is based on San Bernardino Transportation Analysis Model (SBTAM) select zone run.

Traffic assignments for the project area to the adjoining 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. Exhibits 4-4 through 4-7 of the TIA show the proposed project's Opening Year Cumulative and Horizon Year project ADT and peak hour intersection turning movement volumes.

Future Traffic Conditions

Future traffic conditions are determined based on the project's anticipated traffic, an ambient growth factor, and known projects currently under development or proposed for development. These projects are known as "cumulative projects." The TIA identified a total of 71 cumulative projects within the jurisdictions of Ontario, Chino, Eastvale, Chino Hills, and Jurupa Valley. These cumulative projects were identified in consultation with the cities of Ontario, Chino, Eastvale, and Jurupa Valley. The cumulative project list is provided in Chapter 4 of this Draft EIR.

Opening Year Cumulative Conditions

To calculate future traffic conditions, the TIA utilized an ambient growth factor of two percent per year for 2022 traffic conditions. Ambient growth was added to daily and peak hour traffic volumes on surrounding roadways, in addition to 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. Project traffic for the Opening year scenario was then added to the base volumes to determine the Opening Year Cumulative "With Project" forecasts.

Horizon Year (2040) Volume Development

Traffic projections for Horizon Year (2040) without project conditions were derived from the SBTAM. The TIA uses the SBTAM and Riverside Transportation Analysis Model (RivTAM) along with a spreadsheet program consistent with National Cooperative Highway Research Program (NCHRP Report 255) to determine future traffic projections.

In an effort to conduct a conservative analysis, reductions to traffic forecasts from either Existing or Opening Year Cumulative traffic conditions were not assumed as part of this analysis. As such, in conjunction with the addition of cumulative projects that are not consistent with the General Plan, additional growth has also been applied on a movement-by-movement basis, where applicable, to estimate reasonable Horizon Year (2040) forecasts. Horizon Year (2040) turning volumes were compared to Opening Year Cumulative (2022) volumes in order to ensure a minimum growth as a part of the refinement process. The minimum growth includes any additional growth between Opening Year Cumulative (2022) and Horizon Year (2040) traffic conditions that is not accounted for by the traffic generated by cumulative development projects and ambient growth rates assumed between Existing (2019) and Opening Year Cumulative (2022) conditions. Adjustments were not made to study area intersections that may be affected by new future roadway connections (such as the extension of Pine Avenue or the extension of Kimball Avenue/Limonite Avenue), where travel patterns would likely get affected and forecasts may potentially decrease from the Opening Year Cumulative conditions. Future estimated peak hour traffic data was used for new intersections and intersections with an anticipated change in travel patterns to further refine the Horizon Year (2040) peak hour forecasts.

The future Horizon Year (2040) Without Project peak hour turning movements were then reviewed by Urban Crossroads, Inc. for reasonableness, and in some cases, were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes. The result of this traffic forecasting procedure is a series of traffic volumes which are suitable for traffic operations analysis.

The SBTAM and RivTAM do not include a truck component or have data that is unusually low. As such, in an effort to conduct a conservative analysis, the presence of trucks has been accounted for based on the manual volume adjustments made to demonstrate growth above Opening Year Cumulative (2022) traffic forecasts and are presented and evaluated in PCE. The Horizon Year (2040) forecasts are also assumed to be in PCE. Postprocessing worksheets for Horizon Year (2040) without Project traffic conditions are provided in Appendix 4.1 of the TIA contained in Appendix L1.

Deficiency Criteria

Based on the Cities' minimum level of service, this section outlines the methodology used to identify circulation system deficiencies.

Intersections

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, as measured by 50 or more peak hour trips, 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 proposed project will be responsible for improving its deficiency to acceptable levels of service. Table 2-6 in the TIA outlines the deficiency criteria for intersections. The proposed 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.

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.

Freeway

To determine whether the addition of project traffic to the SHS freeway segments would result in a deficiency, the following will be utilized:

- The traffic study finds that the LOS of a segment will degrade from D or better to E or F.

- The traffic study finds that the project will exacerbate an already deficient condition by contributing 50 or more one-way peak hour trips. A segment that is operating at or near capacity is deemed to be deficient.

To determine whether the addition of project traffic to the freeway off-ramps would result in a deficiency, the following will be utilized:

- The traffic study finds that the off-ramp will degrade from acceptable 95th percentile queues to unacceptable 95th percentile queues.
- The traffic study finds that the project will exacerbate an already deficient condition by contributing 50 or more peak hour trips to the off-ramp. An off-ramp that has 95th percentile queues that exceed the available storage is deemed to be deficient.

VMT Analysis

The Citywide Average VMT was calculated based on select-zone model runs for all the TAZs within the City of Ontario using 2012 and 2040 SBTAM. The SBTAM is a sub-regional model that was developed based on the Southern California Association of Governments (SCAG) Regional Planning model. The SBTAM is functionally similar to the SCAG model with a focused approach to San Bernardino County. The use of a travel demand model is supported by substantial evidence since the information contained in the model is specific to the region and for the land use type being proposed. As stated, a significant VMT impact would occur if the project cannot achieve a VMT/SP of 15 percent below baseline average VMT/SP for the City.

5.14.5.2 IMPACT ANALYSIS

The following impact analysis addresses one threshold of significance for which the Initial Study disclosed as a potentially significant impact. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.14-1: The project could potentially conflict with a program, plan ordinance or policy addressing the circulation system, including roadway facilities. [Threshold T-1]

Existing Plus Project

This scenario includes Existing traffic volumes plus Project traffic. The lane configurations and traffic controls assumed to be in place for Existing + Project conditions are consistent with those shown on Exhibit 3-1, Existing Number of Through Lanes and Intersection Controls, in the TIA (contained in Appendix L1) 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 Existing + Project conditions only (e.g., intersection and roadway improvements at the project's frontage and driveways).

Intersection Analysis

The ADT and weekday AM and PM peak hour intersection turning movement volumes which can be expected for Existing + Project traffic conditions are shown on Exhibit 5-1 and Exhibit 5-2 of the TIA, respectively. Table 5.14-10 below summarizes the intersection analysis results for Existing + Project conditions, which indicate that there are no additional study area intersections anticipated to operate at an unacceptable LOS, in

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addition to those previously identified for Existing traffic conditions. Figure 5.14-3 shows the location of each of the intersections and their AM and PM level of service.

Table 5.14-10 Existing Intersection Delay and Level of Service

ID	Study Intersection	Traffic Control	Existing (2019)				Existing + Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	Euclid Av. (SR-83) & SR-60 WB Ramps	TS	22.3	C	18.6	B	23.4	C	20.3	C
2	Euclid Av. (SR-83) & SR-60 EB Ramps	TS	25.9	C	22.3	C	27.0	C	22.5	C
3	Euclid Av. (SR-83) & Walnut Av.	TS	30.1	C	32.5	C	30.3	C	32.8	C
4	Euclid Av. (SR-83) & Riverside Dr.	TS	47.0	D	55.5	E	48.7	D	65.0	E
5	Euclid Av. (SR-83) & Chino Av.	TS	21.5	C	23.2	C	21.8	C	23.9	C
6	Euclid Av. (SR-83) & Schaefer Av.	TS	23.6	C	26.2	C	25.4	C	27.9	C
7	Euclid Av. (SR-83) & Edison Av.	TS	38.1	D	39.7	D	41.9	D	44.3	D
8	Euclid Av. (SR-83) & Eucalyptus Av.	TS	13.8	B	13.2	B	17.7	B	15.4	B
9	Euclid Av. (SR-83) & Driveway 1 – Future Intersection	CSS	Future Intersection				14.4	B	15.4	C
10	Euclid Av. (SR-83) & Driveway 2 – Future Intersection	CSS	Future Intersection				14.5	B	15.2	C
11	Euclid Av. (SR-83) & Merrill Av.	TS	26.4	C	29.9	C	309	C	46.1	D
12	Euclid Av. (SR-83) & Kimball Av.	TS	32.4	C	38.3	D	33.8	C	39.0	D
13	Euclid Av. (SR-83) & Bickmore Av.	TS	16.3	B	14.0	B	16.4	B	14.1	B
14	Euclid Av. (SR-83) & Pine Av.	TS	31.9	C	39.5	D	33.0	C	41.1	D
15	SR-71 NB Ramps & Euclid Av. (SR-83)	TS	27.2	C	43.1	D	27.1	C	42.7	D
16	SR-71 SB Ramps & Butterfield Ranch Rd.	TS	40.0	D	39.8	D	40.0	D	39.8	D
17	Driveway 3 & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				9.2	A	10.0	B
18	Driveway 4 & Merrill Av. – Future Intersection	CSS	Future Intersection				11.9	B	10.9	B
19	Driveway 5 & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				9.1	A	10.1	B
20	Sultana Av. & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				10.4	B	11.0	B
21	Sultana Av. & Driveway 6 – Future Intersection	CSS	Future Intersection				9.3	A	9.3	A
22	Sultana Av. & Driveway 7 – Future Intersection	CSS	Future Intersection				9.2	A	9.2	A
23	Sultana Av. & Driveway 8 – Future Intersection	CSS	Future Intersection				8.9	A	9.0	A
24	Sultana Av. & Driveway 9 – Future Intersection	CSS	Future Intersection				8.8	A	8.9	A
25	Sultana Av. & Driveway 10 – Future Intersection	CSS	Future Intersection				8.8	A	9.1	A
26	Sultana Av. & Driveway 11 – Future Intersection	CSS	Future Intersection				8.5	A	9.0	A
27	Sultana Av. & Merrill Av. – Future Intersection	CSS	Future Intersection				13.0	B	13.8	B
28	Bon View Av. & Eucalyptus Av.	AWS	8.6	A	9.1	A	9.2	A	10.1	A
29	Bon View Av. & Merrill Av.	CSS	13.2	B	16.4	C	14.2	B	18.0	C
30	Grove Av. & Edison Av.	AWS	71.9	F	>100.0	F	>100.0	F	>100.0	F
31	Grove Av. & Eucalyptus Av.	CSS	20.0	C	>100.0	F	23.1	C	>100.0	F
32	Grove Av. & Merrill Av.	AWS	34.6	D	43.7	E	57.2	F	70.5	F
33	Walker Av. & Edison Av.	CSS	25.2	D	60.1	F	27.6	D	77.3	F
34	Walker Av./Flight Av. & Merrill Av.	CSS	27.2	D	25.0	D	32.0	D	30.3	D
35	Baker Av./Van Vliet Av. & Merrill Av.	CSS	11.3	B	13.6	B	11.7	B	14.5	B

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Table 5.14-10 Existing Intersection Delay and Level of Service

ID	Study Intersection	Traffic Control	Existing (2019)				Existing + Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
36	Vineyard Av. & Edison Av. – 2040 Analysis Location Only	--	2040 Analysis Location				2040 Analysis Location			
37	Vineyard Av./Hellman Av. & Merrill Av.	CSS	9.4	A	10.9	B	9.5	A	11.4	B
38	Carpenter Av. & Merrill Av.	AWS	86.2	F	89.5	F	>100.0	F	>100.0	F
39	Hellman Av. & Edison Av. – 2040 Analysis Location Only	--	2040 Analysis Location				2040 Analysis Location			
40	Archibald Av. & Ontario Ranch Rd.	TS	31.4	C	27.0	C	34.6	C	27.9	C
41	Archibald Av. & Eucalyptus Av.	TS	5.8	A	3.2	A	5.8	A	3.3	A
42	Archibald Av. & Merrill Av.	TS	33.6	C	29.2	C	38.0	D	32.3	C
43	Archibald Av. & Limonite Av.	TS	48.0	D	29.6	C	54.9	D	33.7	C
44	Turner Av. & Ontario Ranch Rd.	TS	16.5	B	14.5	B	16.7	B	14.9	B
45	Harrison Av. & Limonite Av.	TS	19.1	B	17.1	B	19.2	B	17.1	B
46	Haven Av. & Ontario Ranch Rd.	TS	25.0	C	22.8	C	25.2	C	22.9	C
47	Sumner Av. & Limonite Av.	TS	18.4	B	18.4	B	18.6	B	18.4	B
48	Scholar Wy. & Limonite Av.	TS	16.2	B	14.8	B	16.2	B	14.8	B
49	Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.	TS	42.7	D	109.0	F	45.0	D	111.5	F
50	Hamner Av. & Limonite Av.	TS	24.2	C	27.1	C	24.3	C	27.1	C
51	I-15 SB Ramps & Cantu Galleano Ranch Rd.	TS	14.7	B	13.1	B	15.1	B	13.2	B
52	I-15 NB Ramps & Cantu Galleano Ranch Rd.	TS	18.9	B	12.5	B	18.8	B	12.5	B

Source: Urban Crossroads, 2019.
Notes: SR-60: State Route 60; I-10: Interstate 10; TS: Traffic Signal; CSS: Cross Street Stop; AWS: All Way Stop; LOS: level of service
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.

Seven intersections were found to operate at an unacceptable LOS (LOS E or worse) during the peak hours under Existing traffic conditions and are anticipated to continue to operate at an unacceptable LOS during the one or more peak hours with the addition of project traffic. These seven intersections are:

- Euclid Avenue (SR-83) & Riverside Drive (#4)
- Grove Avenue & Edison Avenue (#30)
- Grove Avenue & Eucalyptus Avenue (#31)
- Grove Avenue & Merrill Avenue (#32)
- Walker Avenue & Edison Avenue (#33)
- Carpenter Avenue & Merrill Avenue (#38)
- Hamner Avenue & Ontario Ranch Road (#49)

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Freeway Analysis

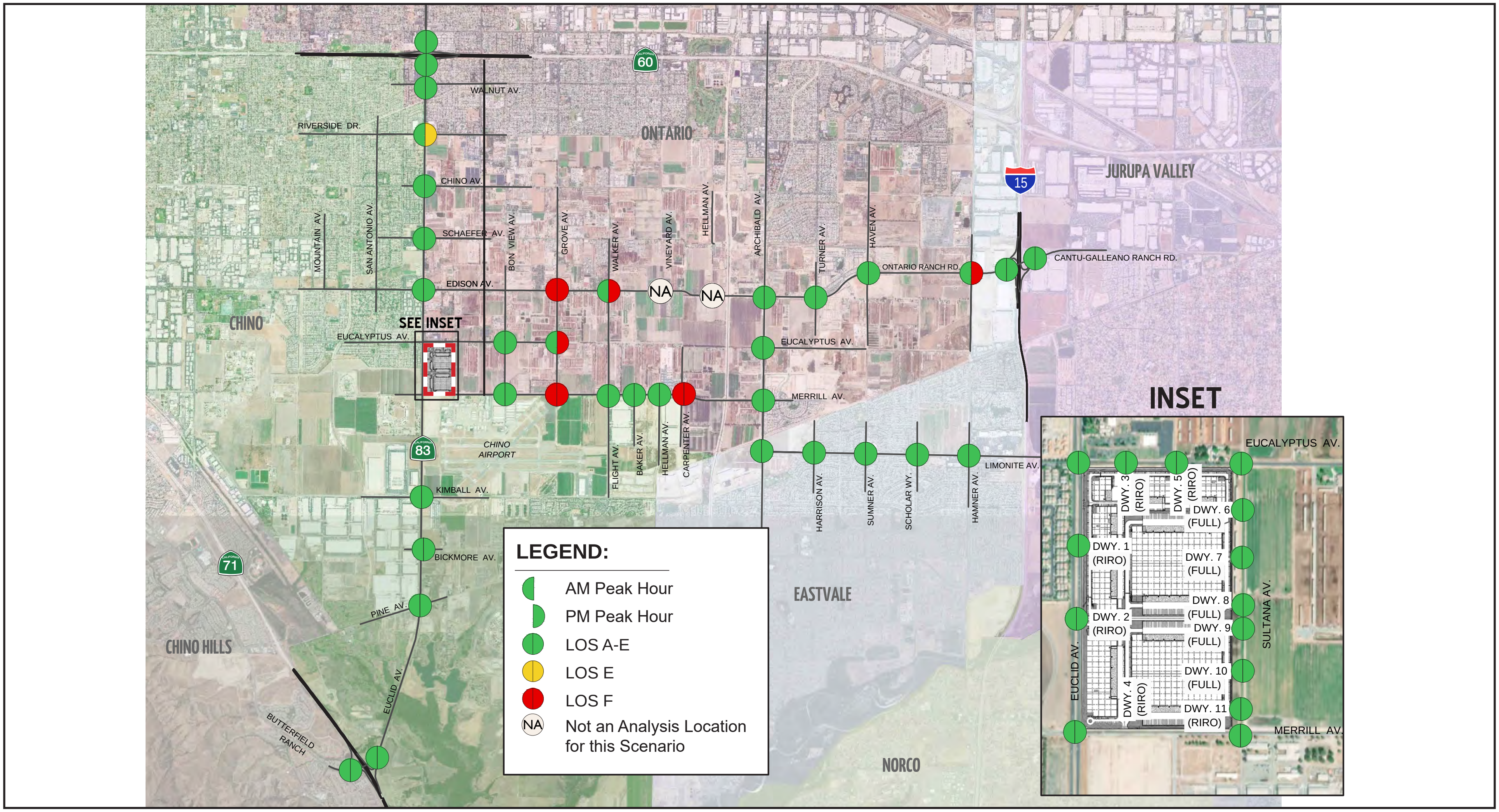
As shown on Table 5.14-11, there are no additional freeway segments or merge/diverge ramp junctions that are anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours for Existing + Project traffic conditions, in addition to the location previously identified under Existing traffic conditions. Existing + Project freeway facility analysis worksheets are provided in Appendix 5.4 to the TIA. Additionally, Existing + Project mainline directional volumes for the AM and PM peak hours are provided on Exhibit 5-4 in the TIA.

Table 5.14-11 Existing Freeway Facility Analysis

Direction[4]	Ramp or Segment	Lanes on Freeway[1]	Existing (2019)				Existing + Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Density[2]	LOS[3]	Density[2]	LOS[3]	Density[2]	LOS[3]	Density[2]	LOS[3]
SB	Southbound Loop On-Ramp at Euclid Avenue (SR-83)	2	9.7	A	10.4	B	9.7	A	10.6	B
	South of Euclid Avenue (SR-83)	2	12.2	B	12.9	B	12.3	B	13.1	B
NB	Northbound Off-Ramp at Euclid Avenue (SR-83)	3	13.7	B	21.1	C	14.0	B	21.2	C
	South of Euclid Avenue (SR-83)	3	8.9	A	15.6	B	9.1	A	15.7	B
Westbound	West of Euclid Avenue (SR-83)	4	33.9	D	31.5	D	34.0	D	32.2	D
	Westbound On-Ramp at Euclid Avenue (SR-83)	4	28.5	D	27.2	C	28.7	D	27.6	C
	Westbound Off-Ramp at Euclid Avenue (SR-83)	4	32.0	E	35.8	E	36.8	E	35.9	E
	East of Euclid Avenue (SR-83)	4	34.6	D	33.3	D	34.8	D	33.4	D
Eastbound	West of Euclid Avenue (SR-83)	4	31.2	D	25.7	C	31.4	D	25.8	C
	Eastbound Off-Ramp at Euclid Avenue (SR-83)	4	32.3	D	28.6	D	32.6	D	28.8	D
	Eastbound On-Ramp at Euclid Avenue (SR-83)	4	28.1	D	24.0	C	28.3	D	24.2	C
	East of Euclid Avenue (SR-83)	4	32.9	D	26.4	D	33.0	D	26.6	D
SB	North of Cantu Galleano Ranch Road	4	18.5	C	14.8	B	18.7	C	14.8	B
	Southbound Off-Ramp at Cantu Galleano Ranch Road	4	27.2	C	22.8	C	27.6	C	22.9	C
NB	North of Cantu Galleano Ranch Road	5	16.2	B	14.1	B	16.2	B	14.2	B
	Northbound On-Ramp at Cantu Galleano Ranch Road	3	34.5	D	30.8	D	34.5	D	31.1	D

Source: Urban Crossroads, 2019.
* BOLD = Unacceptable Level of Service
1 Number of lanes are in the specified direction and is based on existing conditions.
2 Density is measured by passenger cars per mile per lane (pc/mi/ln).
3 LOS = Level of Service
4 SB = Southbound; NB = Northbound

Figure 5.14-3 - Existing Plus Project Summary of LOS



Specific Plan Boundary

0 1.5
Scale (Miles)

Source: Urban Crossroads, 2019

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The queuing analysis for this scenario shows that there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows with the addition of project traffic. A table of this analysis and worksheets is provided in Table 5-2 and Appendix 5.3 of the TIA, respectively. There no peak hour queuing issues at the study area interchanges.

Opening Year Cumulative (2022)

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2022) conditions are consistent with those shown previously on Exhibit 3-1 in the TIA 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 conditions only (e.g., intersection and roadway improvements along the project's frontage and driveways).

- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Opening Year Cumulative conditions only.

The Opening Year Cumulative includes two scenarios: "With Project" and "Without Project." The "Without Project" scenario includes Existing traffic volumes plus an ambient growth of 6.12 percent 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 which can be expected for Opening Year Cumulative (2022) Without Project traffic conditions are shown on Exhibits 6-1 and 6-2 in the TIA, respectively. The "With Project" scenario includes Opening Year Cumulative (2022) Without Project traffic in conjunction with the addition of project traffic. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Opening Year Cumulative (2022) With Project traffic conditions are shown on Exhibits 6-3 and 6-4 in the TIA, respectively.

LOS calculations were conducted for the study intersections to evaluate their operations under Opening Year Cumulative (2022) Without Project conditions with roadway and intersection geometrics consistent with the roadway improvements discussed above. Table 5.14-12 summarizes the intersection delay and LOS of the Opening Year Cumulative (2022) scenarios. For the "Without Project" scenario, the following study area intersections are anticipated to operate at an unacceptable LOS:

- Euclid Avenue (SR-83) & Riverside Drive (#4) – LOS E AM and PM peak hours
- Euclid Avenue (SR-83) & Merrill Avenue (#11) – LOS E PM peak hour only
- Euclid Avenue (SR-83) & Pine Avenue (#14) – LOS E PM peak hour only
- Grove Avenue & Edison Avenue (#30) – LOS F AM and PM peak hours
- Grove Avenue & Eucalyptus Avenue (#31) – LOS F PM peak hour only
- Grove Avenue & Merrill Avenue (#32) – LOS F AM and PM peak hours
- Walker Avenue & Edison Avenue (#33) – LOS F PM peak hour only
- Walker Avenue/Flight Avenue & Merrill Avenue (#34) – LOS E AM and PM peak hours
- Vineyard Avenue/Hellman Avenue & Merrill Avenue (#37) – LOS E AM peak hour only

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- Carpenter Avenue & Merrill Avenue (#38) – LOS F AM and PM peak hours
- Archibald Avenue & Limonite Avenue (#43) – LOS E AM peak hour only
- Hamner Avenue & Ontario Ranch Road (#49) – LOS F PM peak hour only

A summary of the peak hour intersection LOS for Opening Year Cumulative (2022) Without Project conditions is shown on Exhibit 6-5 in the TIA (contained in Appendix L1 to this Draft EIR). The intersection operations analysis worksheets for Opening Year Cumulative (2022) Without Project traffic conditions are included in Appendix 6.1 of the TIA.

As shown on Table 5.14-12 and illustrated in Figure 5.14-4 below, the following study area intersection is anticipated to operate at a deficient LOS during one or both peak hours for Opening Year Cumulative (2022) With Project traffic conditions with the addition of project traffic, in addition to the locations identified above for Opening Year Cumulative (2022) Without Project traffic conditions.

- Euclid Avenue (SR-83) & Edison Avenue (#7) – LOS E PM peak hour only

The intersection operations analysis worksheets for Opening Year Cumulative (2022) With Project traffic conditions are included in Appendix 6.2 of the TIA (Appendix L1).

The intersection Vineyard Avenue/Hellman Avenue & Merrill Avenue (#37) is anticipated to warrant a peak hour volume-based traffic signal under Opening Year Cumulative (2022) Without Project traffic conditions beyond those previous mentioned under existing conditions. There are no additional traffic signals warranted for Opening Year Cumulative (2022) With Project traffic conditions beyond those previous mentioned under existing conditions.

Table 5.14-12 Opening Year Cumulative (2022) Intersection Delay and Level of Service

ID	Study Intersection	Traffic Control	2022 Without Project				2022 With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	Euclid Av. (SR-83) & SR-60 WB Ramps	TS	25.6	C	21.3	C	27.6	C	23.2	C
2	Euclid Av. (SR-83) & SR-60 EB Ramps	TS	32.8	C	24.5	C	36.7	D	25.5	C
3	Euclid Av. (SR-83) & Walnut Av.	TS	32.2	C	35.2	D	32.5	C	35.7	D
4	Euclid Av. (SR-83) & Riverside Dr.	TS	56.9	E	75.0	E	61.0	E	90.1	F
5	Euclid Av. (SR-83) & Chino Av.	TS	23.6	C	26.4	C	24.3	C	27.9	C
6	Euclid Av. (SR-83) & Schaefer Av.	TS	28.8	C	31.5	C	31.7	C	34.7	C
7	Euclid Av. (SR-83) & Edison Av.	TS	47.0	D	53.5	D	53.7	D	57.2	E
8	Euclid Av. (SR-83) & Eucalyptus Av.	TS	15.8	B	16.2	B	21.0	C	18.8	B
9	Euclid Av. (SR-83) & Driveway 1 – Future Intersection	CSS	Future Intersection				15.6	C	17.3	C
10	Euclid Av. (SR-83) & Driveway 2 – Future Intersection	CSS	Future Intersection				15.7	C	17.1	C
11	Euclid Av. (SR-83) & Merrill Av.	TS	39.8	D	60.2	E	50.6	D	78.2	E
12	Euclid Av. (SR-83) & Kimball Av.	TS	41.0	D	51.5	D	42.8	D	52.9	D
13	Euclid Av. (SR-83) & Bickmore Av.	TS	19.2	B	16.2	B	19.4	B	16.3	B

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Table 5.14-12 Opening Year Cumulative (2022) Intersection Delay and Level of Service

			2022 Without Project				2022 With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
ID	Study Intersection	Traffic Control	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
14	Euclid Av. (SR-83) & Pine Av.	TS	44.8	D	68.5	E	46.8	D	73.1	E
15	SR-71 NB Ramps & Euclid Av. (SR-83)	TS	33.7	C	49.7	D	35.1	D	54.1	D
16	SR-71 SB Ramps & Butterfield Ranch Rd.	TS	43.6	D	48.7	D	46.8	D	54.2	D
17	Driveway 3 & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				9.2	A	10.1	B
18	Driveway 4 & Merrill Av. – Future Intersection	CSS	Future Intersection				12.4	B	11.6	B
19	Driveway 5 & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				9.1	A	10.2	B
20	Sultana Av. & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				10.5	B	11.1	B
21	Sultana Av. & Driveway 6 – Future Intersection	CSS	Future Intersection				9.3	A	9.3	A
22	Sultana Av. & Driveway 7 – Future Intersection	CSS	Future Intersection				9.2	A	9.2	A
23	Sultana Av. & Driveway 8 – Future Intersection	CSS	Future Intersection				8.9	A	9.0	A
24	Sultana Av. & Driveway 9 – Future Intersection	CSS	Future Intersection				8.8	A	8.9	A
25	Sultana Av. & Driveway 10 – Future Intersection	CSS	Future Intersection				8.8	A	9.1	A
26	Sultana Av. & Driveway 11 – Future Intersection	CSS	Future Intersection				8.5	A	9.0	A
27	Sultana Av. & Merrill Av. – Future Intersection	CSS	Future Intersection				13.7	B	15.1	C
28	Bon View Av. & Eucalyptus Av.	AWS	8.8	A	9.3	A	9.5	A	10.4	B
29	Bon View Av. & Merrill Av.	CSS	15.7	C	19.9	C	17.0	C	22.4	C
30	Grove Av. & Edison Av.	AWS	>100.0	F	>100.0	F	>100.0	F	>100.0	F
31	Grove Av. & Eucalyptus Av.	CSS	29.4	D	>100.0	F	41.8	E	>100.0	F
32	Grove Av. & Merrill Av.	AWS	>100.0	F	87.2	F	>100.0	F	>100.0	F
33	Walker Av. & Edison Av.	CSS	32.3	D	>100.0	F	36.3	E	>100.0	F
34	Walker Av./Flight Av. & Merrill Av.	CSS	54.7	E	41.7	E	71.2	F	55.5	F
35	Baker Av./Van Vliet Av. & Merrill Av.	CSS	17.8	C	19.6	C	19.3	C	21.7	C
36	Vineyard Av. & Edison Av. – 2040 Analysis Location Only	--	2040 Analysis Location				2040 Analysis Location			
37	Vineyard Av./Hellman Av. & Merrill Av.	CSS	37.9	E	27.1	D	46.1	E	30.7	D
38	Carpenter Av. & Merrill Av.	AWS	>100.0	F	>100.0	F	>100.0	F	>100.0	F
39	Hellman Av. & Edison Av. – 2040 Analysis Location Only	--	2040 Analysis Location				2040 Analysis Location			
40	Archibald Av. & Ontario Ranch Rd.	TS	44.7	D	30.9	C	54.5	D	32.2	C
41	Archibald Av. & Eucalyptus Av.	TS	6.5	A	3.6	A	6.5	A	3.6	A
42	Archibald Av. & Merrill Av.	TS	46.9	D	44.6	D	53.6	D	52.9	D
43	Archibald Av. & Limonite Av.	TS	69.6	E	53.4	D	77.8	E	61.6	E
44	Turner Av. & Ontario Ranch Rd.	TS	17.3	B	15.4	B	17.6	B	15.8	B
45	Harrison Av. & Limonite Av.	TS	20.0	B	17.5	B	20.1	C	17.5	B
46	Haven Av. & Ontario Ranch Rd.	TS	27.1	C	23.9	C	27.6	C	24.0	C
47	Sumner Av. & Limonite Av.	TS	19.6	B	19.8	B	19.8	B	20.0	B
48	Scholar Wy. & Limonite Av.	TS	16.9	B	15.3	B	17.0	B	15.4	B
49	Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.	TS	51.9	D	134.5	F	54.5	D	137.1	F
50	Hamner Av. & Limonite Av.	TS	25.6	C	29.2	C	26.0	C	29.6	C

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Table 5.14-12 Opening Year Cumulative (2022) Intersection Delay and Level of Service

			2022 Without Project				2022 With Project			
		Traffic	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
ID	Study Intersection	Control	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
51	I-15 SB Ramps & Cantu Galleano Ranch Rd.	TS	15.8	B	13.5	B	16.3	B	13.7	B
52	I-15 NB Ramps & Cantu Galleano Ranch Rd.	TS	21.2	C	13.1	B	21.2	C	13.3	B

Source: Urban Crossroads, 2019.
Notes: SR-60: State Route 60; I-10: Interstate 10; TS: Traffic Signal; CSS: Cross Street Stop; AWS: All Way Stop; LOS: level of service
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.

Freeway Analysis

Opening Year Cumulative (2022) Without and With Project mainline directional volumes for the AM and PM peak hours are provided on Exhibits 6-7 and 6-8 in the TIA, respectively. As shown on Table 5.14-13, the following additional freeway segments and merge/diverge ramp junctions are anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours for Opening Year Cumulative (2022) Without Project conditions, in addition to those previously identified under Existing and Existing + Project traffic conditions:

- SR-60 Freeway Westbound, West of Euclid Avenue (SR-83) (#5) – LOS E AM and PM peak hours
- SR-60 Freeway Westbound, East of Euclid Avenue (SR-83) (#8) – LOS E AM and PM peak hours
- SR-60 Freeway Eastbound, East of Euclid Avenue (#12) – LOS E AM peak hour only
- I-15 Freeway Northbound, On-Ramp at Cantu Galleano Ranch Road (#16) – LOS E AM peak hour only

The following additional freeway diverge ramp junction is anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hour with the addition of project traffic:

- SR-60 Freeway Eastbound, Off-Ramp at Euclid Avenue (SR-83) (#10) – LOS E AM peak hour only

Opening Year Cumulative (2022) Without and With Project freeway facility analysis worksheets are provided in Appendix 6.7 and 6.8 in the TIA, respectively.

Queuing analysis findings for Opening Year Cumulative (2022) Without and With Project traffic conditions are shown on Table 6.2 in the TIA (Appendix L1). As shown on 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 with the addition of project traffic. Worksheets for Opening Year Cumulative (2022) Without and With Project traffic conditions off-ramp queuing analysis are provided in Appendices 6.5 and 6.6 in the TIA, respectively.

Table 5.14-13 Opening Year Cumulative (2022) Freeway Capacity Analysis

Direction[4]	Ramp or Segment	Lanes on Freeway[1]	2022 Without Project				2022 Without Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Density[2]	LOS[3]	Density[2]	LOS[3]	Density[2]	LOS[3]	Density[2]	LOS[3]
SB	Southbound Loop On-Ramp at Euclid Avenue (SR-83)	2	10.6	B	11.6	B	10.7	B	11.8	B
	South of Euclid Avenue (SR-83)	2	13.4	B	14.3	B	13.4	B	14.5	B
NB	Northbound Off-Ramp at Euclid Avenue (SR-83)	3	15.1	B	22.8	C	15.2	B	22.9	C
	South of Euclid Avenue (SR-83)	3	9.8	A	17.0	B	10.0	A	17.0	B
Westbound	West of Euclid Avenue (SR-83)	4	**37.9**	**E**	**35.7**	**E**	**38.0**	**E**	**36.0**	**E**
	Westbound On-Ramp at Euclid Avenue (SR-83)	4	30.6	D	29.4	D	30.7	D	29.8	D
	Westbound Off-Ramp at Euclid Avenue (SR-83)	4	**38.8**	**E**	**38.2**	**E**	**39.1**	**E**	**38.3**	**E**
	East of Euclid Avenue (SR-83)	4	**38.6**	**E**	**37.2**	**E**	**38.9**	**E**	**37.2**	**E**
Eastbound	West of Euclid Avenue (SR-83)	4	34.7	D	28.1	D	34.8	D	28.1	D
	Eastbound Off-Ramp at Euclid Avenue (SR-83)	4	34.7	D	30.8	D	**35.1**	**E**	30.9	D
	Eastbound On-Ramp at Euclid Avenue (SR-83)	4	30.1	D	25.7	C	30.2	D	26.0	C
	East of Euclid Avenue (SR-83)	4	**36.6**	**E**	28.8	D	**37.3**	**E**	29.0	D
SB	North of Cantu Galleano Ranch Road	4	19.9	C	15.8	B	20.3	C	15.9	B
	Southbound Off-Ramp at Cantu Galleano Ranch Road	4	29.2	D	24.4	C	29.8	D	24.5	C
NB	North of Cantu Galleano Ranch Road	5	17.2	B	15.1	B	17.3	B	15.2	B
	Northbound On-Ramp at Cantu Galleano Ranch Road	3	**36.4**	**E**	32.7	D	**36.5**	**E**	33.2	D

Source: Urban Crossroads, 2019.
* BOLD = Unacceptable Level of Service
1 Number of lanes are in the specified direction and is based on existing conditions.
2 Density is measured by passenger cars per mile per lane (pc/mi/ln).
3 LOS = Level of Service
4 SB = Southbound; NB = Northbound

Horizon Year (2040)

The lane configurations and traffic controls assumed to be in place for Horizon Year (2040) conditions are consistent with those shown previously on Exhibit 3-1 in the TIA, 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).
- 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 (e.g., intersection and roadway

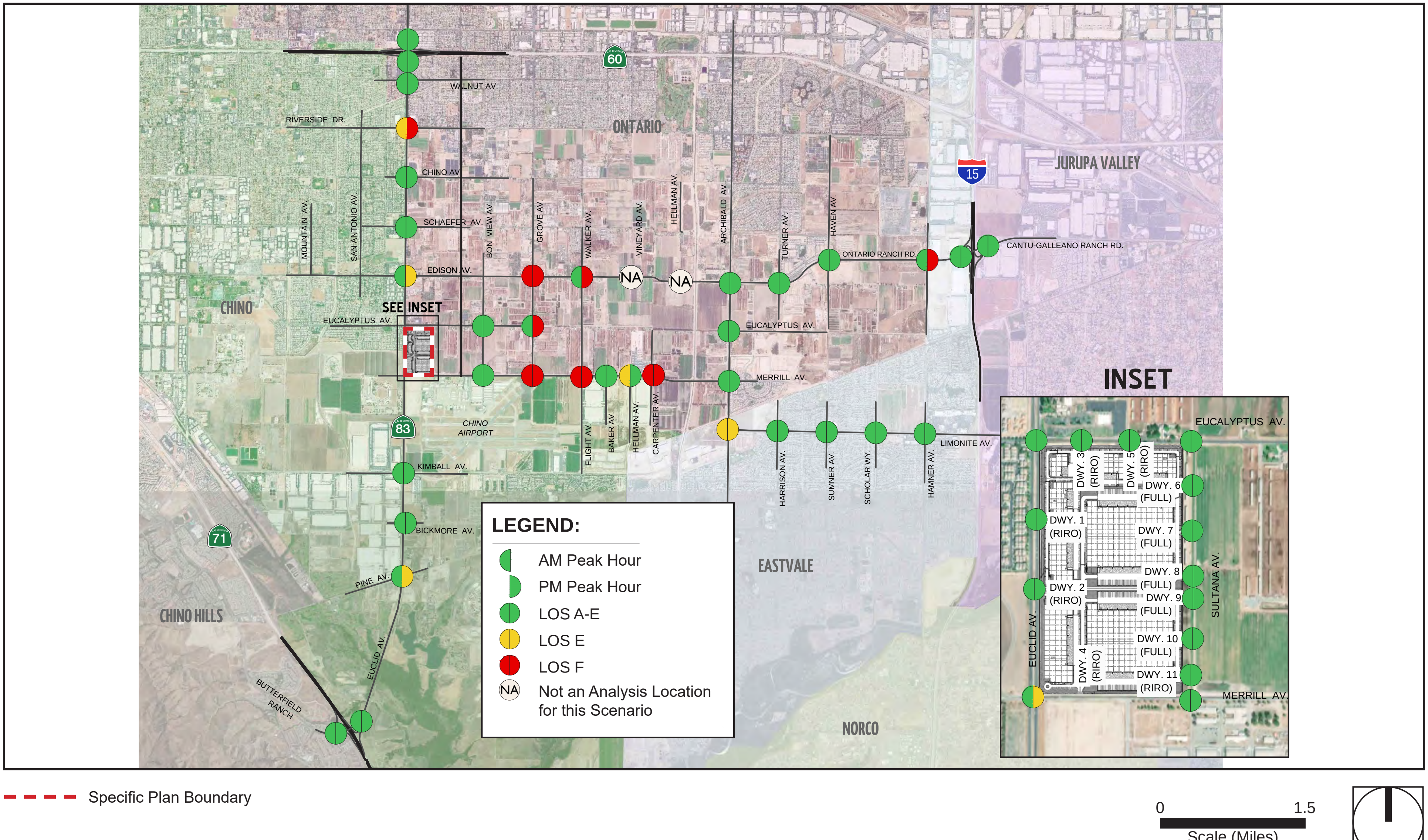
improvements along the cumulative development's frontages and driveways such as the northern extension of Meadow Valley Avenue on Kimball Avenue and the northern extension of Hellman Avenue north of Kimball Avenue).

- The Pine Avenue extension between its El Prado Road and the SR-71 Freeway.
- The Kimball Avenue/Limonite Avenue extension between Hellman Avenue and Archibald Avenue.
- Other parallel facilities, that although not evaluated for the purposes of this analysis, are anticipated to be in place for Horizon Year traffic conditions and would affect the travel patterns within the study area (e.g., new future roadways within the New Model Colony area such as Schaefer Avenue east of Archibald Avenue, Eucalyptus Avenue east of Archibald Avenue, Merrill Avenue east of Archibald Avenue, The Preserve Specific Plan roadway network within the City of Chino, etc.).

The Horizon Year (2040) without Project scenario and the Horizon Year with Project scenario both include the refined post-process volumes obtained from the SBTAM/RivTAM as discussed above and in Section 4.7 of the TIA. In addition, for the "With Project" scenario, the traffic generated by the proposed project is added.

The weekday ADT and weekday AM and PM peak hour volumes which can be expected for the "Without Project" traffic conditions are shown on Exhibits 7-1 and 7-2 of the TIA, respectively. The weekday ADT and weekday AM and PM peak hour volumes that are anticipated for the "With Project" scenario are shown in Exhibits 7-3 and 7-4 of the TIA, respectively.

Figure 5.14-4 - Opening Year Cumulative (2022) With Project Summary of LOS



Source: Urban Crossroads, 2019

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As shown in Table 5.14-14, below the following additional study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2040) Without Project traffic conditions:

- Euclid Avenue (SR-83) & SR-60 Westbound Ramps (#1) – LOS E AM and PM peak hours
- Euclid Avenue (SR-83) & SR-60 Eastbound Ramps (#2) – LOS F AM peak hour; LOS E PM peak hour
- Euclid Avenue (SR-83) & Riverside Drive (#4) – LOS F AM and PM peak hours
- Euclid Avenue (SR-83) & Chino Avenue (#5) – LOS F PM peak hour only
- Euclid Avenue (SR-83) & Schaefer Avenue (#6) – LOS F AM and PM peak hours
- Euclid Avenue (SR-83) & Edison Avenue (#7) – LOS F AM and PM peak hours
- Euclid Avenue (SR-83) & Eucalyptus Avenue (#8) – LOS F PM peak hour only
- Euclid Avenue (SR-83) & Merrill Avenue (#11) – LOS F AM and PM peak hours
- Euclid Avenue (SR-83) & Kimball Avenue (#12) – LOS F AM and PM peak hours
- Euclid Avenue (SR-83) & Pine Avenue (#14) – LOS F AM and PM peak hours
- SR-71 Southbound Ramps & Butterfield Ranch Road (#16) – LOS E AM and PM peak hours
- Bon View Avenue & Eucalyptus Avenue (#28) – LOS F PM peak hour only
- Bon View Avenue & Merrill Avenue (#29) – LOS F AM and PM peak hours
- Grove Avenue & Edison Avenue (#30) – LOS F AM and PM peak hours
- Grove Avenue & Eucalyptus Avenue (#31) – LOS F AM and PM peak hours
- Grove Avenue & Merrill Avenue (#32) – LOS F AM and PM peak hours
- Walker Avenue & Edison Avenue (#33) – LOS F AM and PM peak hours
- Walker Avenue/Flight Avenue & Merrill Avenue (#34) – LOS F AM and PM peak hours
- Baker Avenue/Van Vliet Avenue & Merrill Avenue (#35) – LOS E AM peak hour; LOS F PM peak hour
- Vineyard Avenue & Edison Avenue (#36) – LOS F AM and PM peak hours
- Vineyard Avenue/Hellman Avenue & Merrill Avenue (#37) – LOS F AM and PM peak hours
- Carpenter Avenue & Merrill Avenue (#38) – LOS F AM and PM peak hours
- Hellman Avenue & Edison Avenue (#39) – LOS F AM and PM peak hours
- Archibald Avenue & Ontario Ranch Road (#40) – LOS F AM and PM peak hours
- Archibald Avenue & Eucalyptus Avenue (#41) – LOS F AM and PM peak hours
- Archibald Avenue & Merrill Avenue (#42) – LOS F AM and PM peak hours
- Archibald Avenue & Limonite Avenue (#43) – LOS F AM and PM peak hours
- Turner Avenue & Ontario Ranch Road (#44) – LOS F AM and PM peak hours
- Haven Avenue & Ontario Ranch Road (#46) – LOS F AM and PM peak hours
- Hamner Avenue & Ontario Ranch Road (#49) – LOS F AM and PM peak hours

Exhibit 7-5 in the TIA provides a summary of the peak hour intersection LOS for the Horizon Year (2040) Without Project condition. Corresponding worksheets are provided in Appendix 7.1 of the TIA (Appendix L1).

In addition, the identified deficient intersections identified under the "Without Project" condition, the following intersection is anticipated to operate at a deficient LOS under the "With Project" condition:

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- Sultana Avenue & Merrill Avenue (#27) – LOS F PM peak hour only

Figure 5.14-5 below depicts the deficient intersections under the "With Project" condition. Corresponding worksheets are provided in Appendix 7.2 of the TIA (Appendix L1).

Table 5.14-14 Horizon Year (2040) Intersection Delay and Level of Service

			2040 Without Project				2040 With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
ID	Study Intersection	Traffic Control	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
1	Euclid Av. (SR-83) & SR-60 WB Ramps	TS	79.7	E	72.6	E	87.7	F	81.0	F
2	Euclid Av. (SR-83) & SR-60 EB Ramps	TS	81.4	F	58.9	E	90.9	F	67.8	E
3	Euclid Av. (SR-83) & Walnut Av.	TS	54.8	D	54.1	D	55.9	E	55.5	E
4	Euclid Av. (SR-83) & Riverside Dr.	TS	108.5	F	182.8	F	121.4	F	197.8	F
5	Euclid Av. (SR-83) & Chino Av.	TS	51.4	D	107.4	F	61.8	E	122.4	F
6	Euclid Av. (SR-83) & Schaefer Av.	TS	136.1	F	173.8	F	152.4	F	188.0	F
7	Euclid Av. (SR-83) & Edison Av.	TS	>200.0	F	>200.0	F	>200.0	F	>200.0	F
8	Euclid Av. (SR-83) & Eucalyptus Av.	TS	52.2	D	122.5	F	62.9	E	140.2	F
9	Euclid Av. (SR-83) & Driveway 1 – Future Intersection	CSS	Future Intersection				20.5	C	29.4	D
10	Euclid Av. (SR-83) & Driveway 2 – Future Intersection	CSS	Future Intersection				20.7	C	29.1	D
11	Euclid Av. (SR-83) & Merrill Av.	TS	126.7	F	>200.0	F	137.4	F	>200.0	F
12	Euclid Av. (SR-83) & Kimball Av.	TS	94.9	F	182.5	F	98.7	F	187.6	F
13	Euclid Av. (SR-83) & Bickmore Av.	TS	50.9	D	53.3	D	52.0	D	54.3	D
14	Euclid Av. (SR-83) & Pine Av.	TS	>200.0	F	>200.0	F	>200.0	F	>200.0	F
15	SR-71 NB Ramps & Euclid Av. (SR-83)	TS	42.6	D	12.5	B	42.4	D	12.5	B
16	SR-71 SB Ramps & Butterfield Ranch Rd.	TS	57.9	E	78.0	E	58.2	E	78.1	E
17	Driveway 3 & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				9.8	A	16.8	C
18	Driveway 4 & Merrill Av. – Future Intersection	CSS	Future Intersection				17.1	C	21.3	C
19	Driveway 5 & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				9.6	A	17.2	C
20	Sultana Av. & Eucalyptus Av. – Future Intersection	CSS	Future Intersection				14.3	B	24.6	C
21	Sultana Av. & Driveway 6 – Future Intersection	CSS	Future Intersection				7.6	A	9.4	A
22	Sultana Av. & Driveway 7 – Future Intersection	CSS	Future Intersection				9.3	A	9.4	A
23	Sultana Av. & Driveway 8 – Future Intersection	CSS	Future Intersection				9.1	A	9.1	A
24	Sultana Av. & Driveway 9 – Future Intersection	CSS	Future Intersection				8.8	A	9.0	A
25	Sultana Av. & Driveway 10 – Future Intersection	CSS	Future Intersection				8.5	A	8.9	A
26	Sultana Av. & Driveway 11 – Future Intersection	CSS	Future Intersection				8.5	A	9.0	A
27	Sultana Av. & Merrill Av. – Future Intersection	CSS	Future Intersection				21.1	C	59.9	F
28	Bon View Av. & Eucalyptus Av.	AWS	22.3	C	>100.0	F	37.0	E	>100.0	F
29	Bon View Av. & Merrill Av.	CSS	70.5	F	>100.0	F	>100.0	F	>100.0	F
30	Grove Av. & Edison Av.	AWS	>100.0	F	>100.0	F	>100.0	F	>100.0	F
31	Grove Av. & Eucalyptus Av.	CSS	>100.0	F	>100.0	F	>100.0	F	>100.0	F
32	Grove Av. & Merrill Av.	AWS	>100.0	F	>100.0	F	>100.0	F	>100.0	F

Table 5.14-14 Horizon Year (2040) Intersection Delay and Level of Service

ID	Study Intersection	Traffic Control	2040 Without Project				2040 With Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
33	Walker Av. & Edison Av.	CSS	>100.0	F	>100.0	F	>100.0	F	>100.0	F
34	Walker Av./Flight Av. & Merrill Av.	CSS	>100.0	F	>100.0	F	>100.0	F	>100.0	F
35	Baker Av./Van Vliet Av. & Merrill Av.	CSS	48.4	E	68.9	F	59.1	F	88.3	F
36	Vineyard Av. & Edison Av. – 2040 Analysis Location Only	CSS	>200.0	F	>200.0	F	>200.0	F	>200.0	F
37	Vineyard Av./Hellman Av. & Merrill Av.	CSS	>100.0	F	>100.0	F	>100.0	F	>100.0	F
38	Carpenter Av. & Merrill Av.	AWS	>100.0	F	>100.0	F	>100.0	F	>100.0	F
39	Hellman Av. & Edison Av. – 2040 Analysis Location Only	CSS	>200.0	F	>200.0	F	>200.0	F	>200.0	F
40	Archibald Av. & Ontario Ranch Rd.	TS	>200.0	F	>200.0	F	>200.0	F	>200.0	F
41	Archibald Av. & Eucalyptus Av.	TS	111.2	F	181.5	F	112.0	F	183.9	F
42	Archibald Av. & Merrill Av.	TS	>200.0	F	>200.0	F	>200.0	F	>200.0	F
43	Archibald Av. & Limonite Av.	TS	>200.0	F	>200.0	F	>200.0	F	>200.0	F
44	Turner Av. & Ontario Ranch Rd.	TS	155.4	F	122.7	F	166.8	F	132.6	F
45	Harrison Av. & Limonite Av.	TS	29.9	C	26.3	C	30.3	C	27.8	C
46	Haven Av. & Ontario Ranch Rd.	TS	185.8	F	83.7	F	195.3	F	86.0	F
47	Sumner Av. & Limonite Av.	TS	30.5	C	39.5	D	31.1	C	40.7	D
48	Scholar Wy. & Limonite Av.	TS	22.2	C	30.3	C	22.6	C	30.8	C
49	Hamner Av. & Ontario Ranch Rd./Cantu Galleano Ranch Rd.	TS	152.5	F	>200.0	F	156.8	F	>200.0	F
50	Hamner Av. & Limonite Av.	TS	42.6	D	53.3	D	43.2	D	53.8	D
51	I-15 SB Ramps & Cantu Galleano Ranch Rd.	TS	18.7	B	15.6	B	19.7	B	15.9	B
52	I-15 NB Ramps & Cantu Galleano Ranch Rd.	TS	36.0	D	43.4	D	37.4	D	50.7	D

Source: Urban Crossroads, 2019.
Notes: SR-60: State Route 60; I-10: Interstate 10; TS: Traffic Signal; CSS: Cross Street Stop; AWS: All Way Stop; LOS: level of service
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.

The following study area intersections are anticipated to meet peak hour or planning level (ADT) volume-based traffic signal warrants for Horizon Year (2040) Without Project traffic conditions (see Appendix 7.3 of the TIA, contained in Appendix L1 to this DEIR), in addition to those previously warranted under Existing, Existing + Project, and Opening Year Cumulative traffic conditions:

- Bon View Avenue & Eucalyptus Avenue (#28)
- Bon View Avenue & Merrill Avenue (#29)
- Baker Avenue/Van Vliet Avenue & Merrill Avenue (#35)
- Vineyard Avenue & Edison Avenue (#36)
- Hellman Avenue & Edison Avenue (#39)

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The following study area intersections are anticipated to meet peak hour volume-based traffic signal warrant for Horizon Year (2040) With Project traffic conditions (see Appendix 7.4 of the TIA, contained in Appendix L1 to this DEIR), in addition to those previously warranted under Horizon Year (2040) Without Project traffic conditions:

- Sultana Avenue & Eucalyptus Avenue (#20)
- Sultana Avenue & Merrill Avenue (#27)

Freeway Analysis

Horizon Year (2040) mainline directional volumes for the AM and PM peak hours are provided on Exhibits 7-7 and 7-8 of the TIA. As shown on Table 5.14-15 below, the following freeway segments and merge/diverge ramp junctions analyzed for this study are anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours for Horizon Year (2040) Without and With Project traffic conditions:

- SR-60 Freeway Westbound, West of Euclid Avenue (SR-83) (#5) – LOS E AM and PM peak hours
- SR-60 Freeway Westbound, Off-Ramp at Euclid Avenue (SR-83) (#7) – LOS E AM peak hour; LOS F PM peak hour
- SR-60 Freeway Westbound, East of Euclid Avenue (SR-83) (#8) – LOS E AM peak hour; LOS F PM peak hour
- SR-60 Freeway Eastbound, West of Euclid Avenue (SR-83) (#9) – LOS F PM peak hour only
- SR-60 Freeway Eastbound, Off-Ramp at Euclid Avenue (SR-83) (#10) – LOS E AM peak hour; LOS F PM peak hour
- SR-60 Freeway Eastbound, On-Ramp at Euclid Avenue (SR-83) (#11) – LOS F PM peak hour only
- SR-60 Freeway Eastbound, East of Euclid Avenue (#12) – LOS F PM peak hour only
- I-15 Freeway Southbound, Off-Ramp at Cantu Galleano Ranch Road (#14) – LOS E AM peak hour; LOS F PM peak hour
- I-15 Freeway Northbound, On-Ramp at Cantu Galleano Ranch Road (#16) – LOS E AM and PM peak hours

Table 5.14-15 Horizon Year (2040) Freeway Capacity Analysis

Direction[4]	Ramp or Segment	Lanes on Freeway[1]	2040 Without Project				2040 Without Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Density[2]	LOS[3]	Density[2]	LOS[3]	Density[2]	LOS[3]	Density[2]	LOS[3]
SB	Southbound Loop On-Ramp at Euclid Avenue (SR-83)	2	21.2	C	17.0	B	21.2	C	17.2	B
	South of Euclid Avenue (SR-83)	2	30.9	D	24.0	C	31.0	D	24.3	C
NB	Northbound Off-Ramp at Euclid Avenue (SR-83)	3	17.5	B	30.2	D	17.9	B	30.3	D
	South of Euclid Avenue (SR-83)	3	13.1	B	24.7	C	13.3	B	24.8	C
Westbound	West of Euclid Avenue (SR-83)	4	35.5	E	42.5	E	35.5	E	42.9	E
	Westbound On-Ramp at Euclid Avenue (SR-83)	4	31.6	D	34.1	D	31.7	D	34.5	D
	Westbound Off-Ramp at Euclid Avenue (SR-83)	4	41.3	E	43.5	F	41.6	E	43.6	F
	East of Euclid Avenue (SR-83)	4	37.9	E	45.0	F	38.2	E	45.0	F
Eastbound	West of Euclid Avenue (SR-83)	4	32.7	D	45.0	F	33.0	D	45.0	F
	Eastbound Off-Ramp at Euclid Avenue (SR-83)	4	36.1	E	43.3	F	36.5	E	43.4	F
	Eastbound On-Ramp at Euclid Avenue (SR-83)	4	31.2	D	37.1	F	31.3	D	37.3	F
	East of Euclid Avenue (SR-83)	4	34.7	D	38.4	F	34.8	D	38.4	F
SB	North of Cantu Galleano Ranch Road	4	31.6	D	20.1	C	31.9	D	20.2	C
	Southbound Off-Ramp at Cantu Galleano Ranch Road	4	40.9	E	32.2	F	41.2	F	32.3	F
NB	North of Cantu Galleano Ranch Road	5	19.3	C	17.5	B	19.3	C	17.7	B
	Northbound On-Ramp at Cantu Galleano Ranch Road	3	41.1	E	37.5	E	41.2	E	37.8	E

Source: Urban Crossroads, 2019.
* BOLD = Unacceptable Level of Service
1 Number of lanes are in the specified direction and is based on existing conditions.
2 Density is measured by passenger cars per mile per lane (pc/mi/ln).
3 LOS = Level of Service
4 SB = Southbound; NB = Northbound

Horizon Year (2040) Without and With Project freeway facility analysis worksheets are provided in Appendix 7.7 and 7.8 of the TIA, respectively.

The queuing analysis for both the "Without Project" and "With Project" scenarios for the Horizon Year (2040) show that no movements are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows with the addition of project traffic. A summary table (Table 7-2) and corresponding worksheets (Appendices 7.5 and 7.6) are provided in the TIA.

Level of Significance Before Mitigation: The proposed project would have a significant impact on 7 intersections in the Existing plus Project scenario, 13 intersections in the Opening Year Cumulative with Project scenario, and 30 intersections in the Horizon Year with Project scenario. Additionally, the project would have a significant impact to 1 freeway segment in the Existing plus Project scenario, 6 freeway ramps/segments in the Opening Year Cumulative with Project scenario, and 9 freeway ramps/segments in the Horizon Year with Project scenario. Traffic impacts to these intersections and freeway facilities is considered a significant impact.

Impact 5.14-2: The project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, bicycle, and pedestrian facilities. [Threshold T-1]

The proposed project is located within the City of Ontario. As such, the City of Ontario's General Plan Mobility Element guides mobility and transportation in the City, including transit, bicycle and pedestrian facilities. A significant impact may occur if the proposed project conflicts with the Mobility Element's goals for transit, bicycle and pedestrian facilities.

Bicycle and Pedestrian Facilities

The City of Ontario proposes a Class II and multipurpose trails along Merrill Avenue, Campus Avenue, and Euclid Avenue (SR-83) adjacent to the project. As discussed in Chapter 3, *Project Description*, the proposed project would improve all trails and bikeways along the project frontages in conjunction with street improvements. The proposed project would provide 5-foot wide sidewalks along all street abutting the project site, and multipurpose trails would be provided on the east side of Euclid Avenue, the south side of Eucalyptus Avenue, and the north side of Merrill Avenue. A bikeway on Merrill Avenue would connect to the City's existing bike path system. As such, the proposed project supports the City's goal of encouraging bicycling and walking by increasing the connectivity of the City's bicycle and pedestrian system. The sidewalks and trails would be designed to ensure pedestrian and bicyclist safety consistent with the City's Mobility Element. Therefore, a less than significant impact would occur.

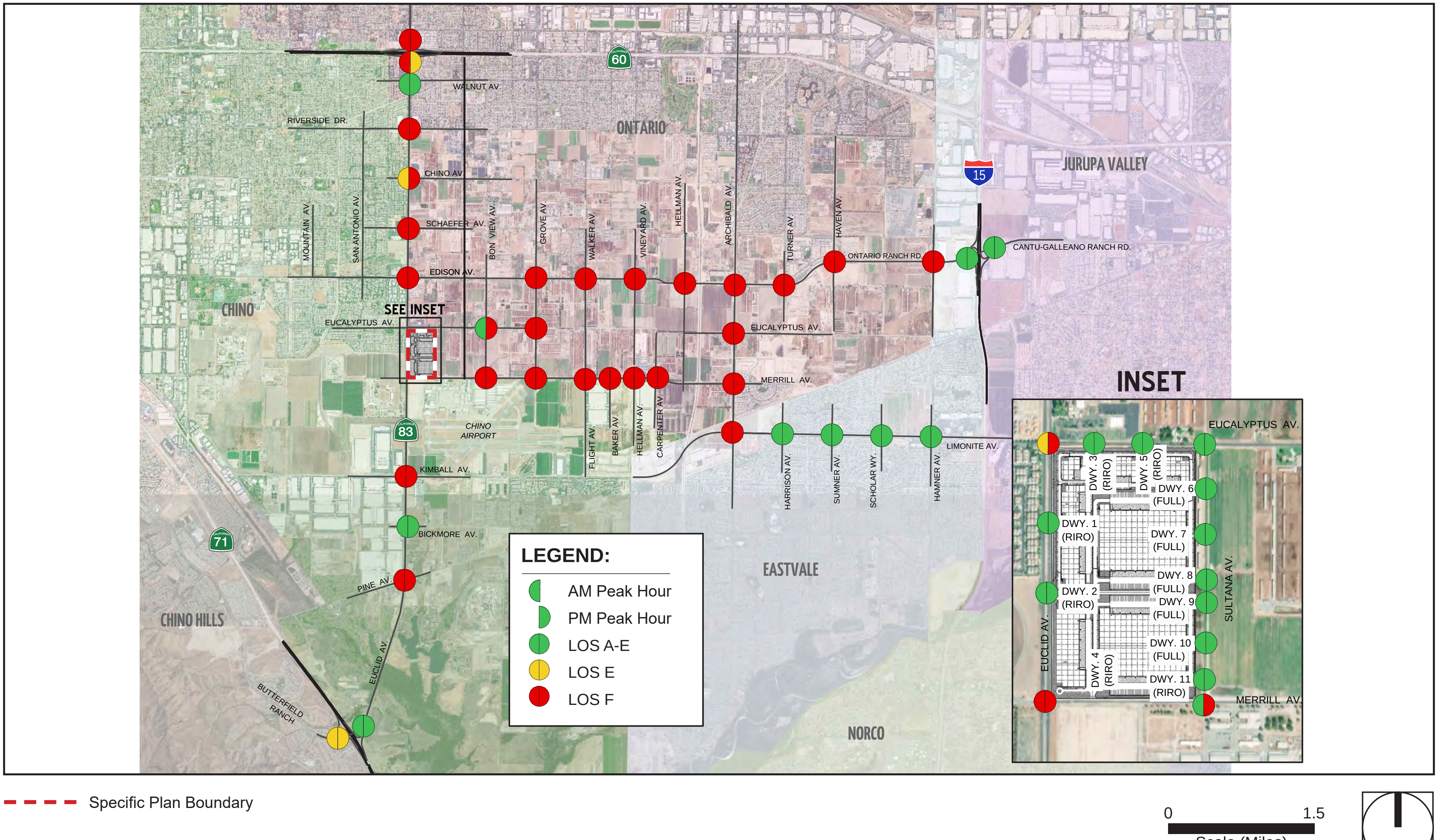
Transit Facilities

Transit options provide an alternative mode of transportation for motorists and a primary mode for the transit dependent. The City is coordinating with regional transit agencies to implement Bus Rapid Transit (BRT) service to target destinations and along corridors, including Euclid Avenue on the western boundary of the Specific Plan area. The proposed project is located near the Omnitrans Route 83 route. Omnitrans Route 83 operates on Euclid Avenue (SR-83) north of the site and runs on Eucalyptus Avenue and Euclid Avenue near the project site. The proposed project would not permanently interrupt or displace the existing Omnitrans Route 83 service or route.

The City of Ontario strives to provide a transit system that serves as a viable alternative to automobile travel. The proposed project would support transit use by improving existing pedestrian and bicycle facilities in the project area. The proposed project would also increase the number of employees in the area that may access the site by public transit. The proposed project would not introduce new features to any public road that would affect transit in the project area. As such, a less than significant impact would occur.

Level of Significance Before Mitigation: Less than significant impact.

Figure 5.14-5 - Horizon Year (2040) With Project Summary of LOS



Source: Urban Crossroads, 2019

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Impact 5.14-3: The proposed project would not reduce total VMT/SP by at least 15 percent compared to the citywide average. [Threshold T-2]

CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. It eliminates auto delay, LOS, and similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts:

> Generally, VMT is the most appropriate measure of transportation impacts. For the purposes of this section, VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) … (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact.

As of December 2018, the Natural Resources Agency finalized updates to CEQA Guidelines to incorporate SB 743 (i.e., VMT). Lead agencies have the option to immediately apply the new VMT based criteria, however statewide application of the new guidelines is not required until July 1, 2020. The City of Ontario has not formally adopted VMT thresholds of significance. However, as discussed above, a threshold of 15 percent below baseline average VMT/SP for the City to determine the project's impact. As such, a significant impact may occur if the proposed project's VMT/SP is less than the 15 percent reduction threshold when compared to the City wide average.

The calculation of VMT for a development project has two components – the total number of vehicle trips generated and the average trip length of each vehicle. Utilizing the SBTAM, the average trip length was calculated for automobiles based on a select-zone model run for the traffic analysis zone (TAZ) in which the project is located. Where applicable, adjustments were made to the socio-economic data (i.e., number of employees) to reflect the project's land use. The VMT Memo utilized South Coast Air Quality Management District (SCAQMD) documents for the implementation of the Facility-Based Mobile Source Measures to determine the average trip length for heavy trucks. For the proposed project. the VMT Memo determined that the average trip length for automobiles and heavy trucks are 16.5 and 40.0 miles, respectively.

The ITE Trip Generation Manual, 10th Edition (2017) provides trip generation rates in order to calculate daily vehicle trips. The proposed project is anticipated to generate a net total of 4,328 trip-ends per day with 3,532 daily automobile trips and 796 daily truck trips.

Table 5.14-16, provides the project's anticipated VMT based on the average trip lengths for passenger cars and heavy trucks along with the daily vehicle trips discussed above.

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Table 5.14-16 Project VMT

Vehicle Type	Project Trip Generation (Daily)	Average Trip Length (Miles)	Project VMT (Vehicle-Miles)
Automobiles	3,532	16.5	58,278
Trucks	796	40.0	31,840
Total	**4,328**	**20.82**	**90,118**

Source: Urban Crossroads, July 2019.

Since the proposed project does not have a residential component, the project SP consists of employees only. The number of jobs that the proposed project would generate was based on employment estimates using employment density factors of 0.65 Employees/Thousand Square Feet (TSF) for non-office portions and 2.86 Employees/TSF for office portions of industrial and business park, which is consistent with the Ontario General Plan Buildout Methodology document (April 2015). Based on these employment generation rates, the project is expected to create approximately 1,950 jobs. As shown on Table 5.14-17, the project's VMT/SP is 29.89 for automobiles and 46.21 total VMT, which includes trucks.

Table 5.14-17 Project Automobile VMT/SP

Project Employment	1,950
Project Automobile VMT	58,278
Project Truck VMT	31,840
Project Total VMT	**90,118**
Project Automobile VMT/Employee	29.89
Project Total VMT/Employee	**46.21**

Source: Urban Crossroads, July 2019.

The Citywide Average VMT was calculated based on select-zone model runs for all the TAZs within the City of Ontario using 2012 and 2040 SBTAM. The population and employment data were added for all the SBTAM TAZs within the City of Ontario to calculate the citywide service population. Table 5 in the VMT Memo (Appendix L2) provides a summary of the citywide VMT, population and employment. Attachment A of the VMT Memo contains detail from the SBTAM 2012 and 2040 models. The baseline VMT/SP for the year 2019 was calculated by linearly interpolating between 2012 and 2040. As shown in Table 5.14-18, the Baseline average VMT/SP for City of Ontario is 37.6 for automobiles and 42.3 total, including trucks. The threshold level of 15 percent below the baseline average based on OPR's 2018 Technical Advisory recommendation is 31.96 for automobile VMT/SP and 35.96 for total VMT/SP.

Table 5.14-18 Citywide Automobile VMT/SP

Vehicle Type	2012 VMT/SP	2012 VMT/SP	2040 VMT/SP
Automobile	37.5	37.9	37.6
Total (Auto + Trucks)	42.1	42.8	42.3

Source: Urban Crossroads, July 2019.

The project generates 29.89 VMT/SP, which is 2.07 VMT/SP lower than the 31.96 VMT/SP threshold based on OPR's 2018 Technical Advisory recommendation. Additionally, the project generates 46.21 total VMT/SP, which is 10.25 total VMT/SP higher than the 35.96 Total VMT/SP threshold. Therefore, project's transportation impact based on VMT would be potentially significant.

Level of Significance Before Mitigation: Potentially significant impact.

Impact 5.14-4: The project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). [Threshold T-3]

Construction

The roadway improvements and installation of driveways that would be implemented during construction of the proposed project could require the temporary closure of travel lanes, but full roadway closure and traffic detours are not expected to be necessary. However, construction activities may temporarily restrict vehicular traffic that could increase hazards. Therefore, in order to ensure the safe passage of persons and vehicles through construction zones, the project would be required to comply with Municipal Code Section 7-3.07, which requires that prior to any activity that would encroach into a right-of-way, the area be safeguarded through the installation of safety devices that would be specified by the City's Engineering Department during the construction permitting process to ensure that construction activities would not increase hazards. Implementation of the Specific Plan through the City's permitting process would reduce potential construction related increases in hazards to a less than significant level.

Operation

As discussed under section 5.14.4, *Project Design Features*, the proposed project includes driveway and intersection improvements that would be implemented as part of the proposed project. In addition, the proposed project includes improvements to allow for heavy truck access to the project site. Conflicts have the potential to occur if: 1) there is inadequate site access or 2) there is inadequate turning radii in and out of the site.

Site Access

The proposed project includes the construction and/or improvement of 11 driveways to and from the project site from adjacent roadways. Exhibit 1-4 in the TIA (Appendix L1) illustrates and describes access to the project site. As discussed under Impact 5.14-1 above, all driveway intersections would operate at an adequate LOS under all "With Project" scenarios. Therefore, direct access to the project site would not substantially increase hazards due to geometric design features or dangerous intersections and a less than significant impact would occur.

Turning Radii

The TIA evaluated heavy trucks' turning radii to determine necessary intersection improvements in the study area. The TIA overlaid a truck turning template on the site plan at each applicable project driveway and site adjacent intersections anticipated to be utilized by heavy trucks in order to determine appropriate curb radii and to verify that trucks will have sufficient space to execute turning maneuvers. The project design features identified above are based on this study and would ensure adequate heavy truck access to and from the project site and adjacent intersections. Implementation of the identified project design features would ensure that impacts would be less than significant, and the proposed project would not substantially increase hazards due to heavy truck maneuvers.

Level of Significance Before Mitigation: Less than significant impact.

5.14.6 Cumulative Impacts

Cumulative traffic impacts are created when the proposed project—combined with other future projects—contribute to the overall traffic impacts, requiring additional improvements to maintain acceptable level of service operations with or without the proposed project. A significant cumulative impact is identified when a facility is projected to operate at a deficient LOS due to cumulative future traffic in combination with project-related traffic increases. Cumulative traffic impacts were analyzed under Impact 5.14-1 above. Impacts and mitigation measures are discussed in Sections 5.14.7 and 5.14.8, below. As discussed in these sections, the proposed project's incremental effect on congested intersections would be significant at identified study area intersections. The City of Ontario requires the payment of DIF or a fair share contribution to improvements to mitigate local traffic impacts. The project's contribution to cumulative traffic impacts at the identified intersections and freeway facilities would be cumulatively considerable and therefore significant.

As summarized in WRCOG SB 743 Implementation Pathway Document Package . . . "VMT thresholds based on an efficiency form of the metric such as VMT per capita, can address project and cumulative impacts in a similar manner that some air districts do for criteria pollutants and GHGs (WRCOG SB 743 Implementation Pathway Document Package, p. 67). In this respect, significant and unavoidable VMT impacts at the project level would also be considered cumulatively significant.

Level of Significance before Mitigation: Cumulatively considerable and significant.

5.14.7 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.14-2 and 5.14-4.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.14-1** The proposed project would have a significant impact on 7 intersections in the Existing plus Project scenario, 13 intersections in the Opening Year Cumulative with Project scenario, and 31 intersections in the Horizon Year with Project scenario. Additionally, the project would have a significant impact to 1 freeway segment in the Existing plus Project scenario, 6 freeway ramps/segments in the Opening Year Cumulative with Project scenario, and 9 freeway ramps/segments in the Horizon Year with Project scenario.

- **Impact 5.14-3** The proposed project would not reduce total VMT/SP by at least 15 percent compared to the citywide average.

5.14.8 Mitigation Measures

Mitigation Measures Incorporated

Impact 5.14-1

TRAF-1 Prior to issuance of occupancy permits for buildings that would be accommodated by the Ontario Ranch Business Park Specific Plan, the project applicant shall make fair-share payments to the City of Ontario, or agencies with jurisdiction over the improvement, toward the construction of the traffic improvements listed below. The following traffic improvements and facilities are necessary to mitigate impacts of the Ontario Ranch Business Park Specific Plan and shall be included in the fee mechanism(s):

Existing With Project Improvements

- Euclid Avenue (SR-83) & Riverside Drive (#4): Add an eastbound right turn lane.
- Grove Avenue & Edison Avenue (#30): Install traffic signal.
- Grove Avenue & Eucalyptus Avenue (#31): Install traffic signal.
- Grove Avenue & Merrill Avenue (#32): Install traffic signal.
- Walker Avenue & Edison Avenue (#33): Install traffic signal.
- Carpenter Avenue & Merrill Avenue (#38): Install traffic signal.
- Hamner Avenue & Ontario Ranch Road (#49): (1) Modify the traffic signal to extend cycle length to 130-seconds. (2) Restripe the southbound approach to accommodate two left turn lanes, two through lanes, and one shared through-right turn lane.

Opening Year (2022) Cumulative With Project Improvements

In addition to the improvements identified under Existing + Project, this scenario includes:

- Euclid Avenue (SR-83) & Riverside Drive (#4): Add 3rd southbound through lane.
- Euclid Avenue (SR-83) & Edison Avenue (#7): Add westbound right turn lane.
- Euclid Avenue (SR-83) & Pine Avenue (#14): (1) Add northbound free right turn lane; (2) Add 3rd northbound through lane; and (3) Add 3rd southbound through lane.
- Grove Avenue & Merrill Avenue (#32): (1) Add eastbound left turn lane.
- Walker Avenue/Flight Avenue & Merrill Avenue (#34): (1) Install traffic signal; (2) Add northbound left turn lane; (3) Restripe the northbound right turn lane to a shared through-

right turn lane; (4) Add southbound left turn lane; (5) Add southbound shared through-right turn lane; (6) Add eastbound left turn lane

- Vineyard Avenue/Hellman Avenue & Merrill Avenue (#37): (1) Add northbound through lane; (2) Add southbound left turn lane; and (3) Add eastbound left turn lane.
- Archibald Avenue & Limonite Avenue (#43): (1) Add 2nd westbound right turn lane and (2) Add 2nd southbound left turn lane.

Horizon Year (2040) With Project Improvements

In addition to the improvements identified under Existing + Project and Opening Year Cumulative with Project, this scenario includes:

- Euclid Avenue (SR-83) & Riverside Drive (#4): (1) Add 2nd eastbound through lane; (2) Add 2nd northbound left turn lane; (3) Add 2nd southbound left turn lane; and (4) Add northbound right turn lane
- Euclid Avenue (SR-83) & Chino Avenue (#5): (1) Add westbound left turn lane
- Euclid Avenue (SR-83) & Schaefer Avenue (#6): (1) Add 2nd northbound left turn lane; (2) Add 2nd southbound left turn lane; and (3) Add 2nd eastbound left turn lane
- Euclid Avenue (SR-83) & Edison Avenue (#7): (1) Add 2nd northbound left turn lane; (2) Add 2nd southbound left turn lane; (3) Add 2nd eastbound left turn lane; (4) Add 2nd eastbound through lane; (5) Add 3rd eastbound through lane; (6) Add 2nd westbound left turn lane; and (7) Modify the traffic signal to protect the eastbound and westbound left turns, and implement overlap phasing for the southbound and westbound right turn lanes.
- Euclid Avenue (SR-83) & Eucalyptus Avenue (#8): (1) Add 2nd westbound left turn lane; (2) Add westbound right turn lane
- Euclid Avenue (SR-83) & Merrill Avenue (#11): (1) Add 3rd northbound through lane; (2) Add eastbound left turn lane; (3) Add 2nd westbound left turn lane; and (4) Modify the traffic signal to implement overlap phasing for the northbound right turn lane
- Euclid Avenue (SR-83) & Kimball Avenue (#12): (1) Add 3rd northbound through lane; (2) Add 3rd southbound through lane; (3) Add 2nd westbound left turn lane; (4) Add eastbound right turn lane; (5) Add westbound right turn lane; and (6) Modify the traffic signal to implement overlap phasing for the westbound right turn lane
- Euclid Avenue (SR-83) & Pine Avenue (#14): (1) Add 2nd eastbound through lane; (2) Add 2nd northbound left turn lane; (3) Add 2nd southbound left turn lane; (4) Add southbound right turn lane; (5) Add 2nd westbound through lane; and (6) Add westbound right turn lane
- Sultana Avenue & Merrill Avenue (#27): (1) Install a stop control on the southbound approach and a southbound shared left-right turn lane; (2) Add an eastbound left turn

lane with a minimum of 100-feet of storage; and (3) Add a westbound right turn lane with a minimum of 100-feet of storage.

- Bon View Avenue & Eucalyptus Avenue (#28): (1) Install a traffic signal; (2) Add eastbound left turn lane; and (3) Add westbound left turn lane
- Bon View Avenue & Merrill Avenue (#29): (1) Install a traffic signal and (2) Add eastbound left turn lane
- Grove Avenue & Edison Avenue (#30): (1) Install a traffic signal; (2) Add northbound left turn lane; (3) Add northbound right turn lane; (4) Add southbound left turn lane; (5) Add eastbound left turn lane; and (6) Add westbound left turn lane
- Grove Avenue & Eucalyptus Avenue (#31): (1) Add northbound left turn lane; (2) Add southbound left turn lane; (3) Add eastbound left turn lane; and (4) Add westbound left turn lane
- Grove Avenue & Merrill Avenue (#32): Add southbound left turn lane
- Walker Avenue & Edison Avenue (#33): (1) Add northbound left turn lane; (2) Add southbound left turn lane; (3) Add eastbound left turn lane; and (4) Add westbound left turn lane
- Baker Avenue/Van Vliet Avenue & Merrill Avenue (#35): (1) Add southbound shared left-through-right turn lane; (2) Add eastbound left turn lane; and (3) Install a traffic signal
- Vineyard Avenue & Edison Avenue (#36): (1) Add eastbound left turn lane; (2) Add westbound left turn lane; (3) Add northbound left turn lane; (4) Add northbound right turn lane; (5) Add southbound left turn lane; and (6) Install a traffic signal
- Vineyard Avenue/Hellman Avenue & Merrill Avenue (#37): (1) Install a traffic signal; (2) Add westbound right turn lane; and (3) Add southbound right turn lane
- Hellman Avenue & Edison Avenue (#39): (1) Add eastbound left turn lane; (2) Add westbound left turn lane; (3) Add northbound left turn lane; (4) Add southbound left turn lane; and (5) Install a traffic signal
- Archibald Avenue & Ontario Ranch Road (#40): (1) Add 2nd northbound left turn lane; (2) Add 2nd southbound left turn lane; and (3) Modify the traffic signal to implement overlap phasing for the southbound right turn lane
- Archibald Avenue & Merrill Avenue (#42): (1) Stripe southbound right turn lane (in place of defacto); (2) Modify the traffic signal to implement overlap phasing for the southbound right turn lane; (3) Add 2nd eastbound left turn lane; and (4) Add eastbound free right turn lane
- Archibald Avenue & Limonite Avenue (#43): (1) Add northbound left turn lane; (2) Add 2nd westbound left turn lane; (3) Add 2nd northbound through lane; (4) Add 3rd

northbound through lane; (5) Add 2nd southbound through lane; (6) Add 3rd southbound through lane; (7) Add 2nd eastbound left turn lane; (8) Add 2nd eastbound through lane; and (9) Add 2nd westbound through lane; and (10) 2nd westbound right turn lane no longer needed

- Hamner Avenue & Ontario Ranch Road (#49): (1) Add 3rd westbound through lane; (2) Add eastbound right turn lane; and (3) Modify the traffic signal to implement overlap phasing for the northbound and eastbound right turn lanes

TRAF-2 Prior to issuance of occupancy permits for buildings that would be accommodated by the Ontario Ranch Business Park Specific Plan, the project applicant shall pay DIF fees to the City of Ontario toward construction of the traffic improvements listed below. The following traffic improvements and facilities are necessary to mitigate impacts of the Ontario Ranch Business Park Specific Plan:

Opening Year (2022) Cumulative With Project Improvements

In addition to the improvements identified under Existing + Project, this scenario includes:

- Euclid Avenue (SR-83) & Riverside Drive (#4): (1) Restripe the northbound approach to provide a left turn lane, two through lanes, and one shared through-right turn lane
- Grove Avenue & Eucalyptus Avenue (#31): (1) Add 2nd northbound through lane.
- Grove Avenue & Merrill Avenue (#32): (1) Add 2nd westbound through lane.
- Walker Avenue/Flight Avenue & Merrill Avenue (#34): (1) Add 2nd eastbound through lane and (2) Add 2nd westbound through lane.
- Vineyard Avenue/Hellman Avenue & Merrill Avenue (#37): (1) Add southbound through lane and (2) Add 2nd westbound through lane

Horizon Year (2040) With Project Improvements

In addition to the improvements identified under Existing + Project and Opening Year Cumulative with Project, this scenario includes:

- Euclid Avenue (SR-83) & SR-60 Westbound Ramps (#1): Add 2nd northbound left turn lane
- Euclid Avenue (SR-83) & SR-60 Eastbound Ramps (#2): (1) Add eastbound right turn lane and (2) Add 2nd left turn lane
- Euclid Avenue (SR-83) & Chino Avenue (#5): (1) Add 3rd northbound through lane and (2) Add 3rd southbound through lane
- Euclid Avenue (SR-83) & Schaefer Avenue (#6): (1) Add 3rd northbound through lane and (2) Add 3rd southbound through lane

- Euclid Avenue (SR-83) & Edison Avenue (#7): (1) Add 3rd northbound through lane; (2) Add 3rd southbound through lane; and (3) Add 2nd westbound through lane
- Euclid Avenue (SR-83) & Eucalyptus Avenue (#8): (1) Add 3rd northbound through lane and (2) Add 3rd southbound through lane.
- Euclid Avenue (SR-83) & Merrill Avenue (#11): Add 3rd southbound through lane
- Sultana Avenue & Merrill Avenue (#27): (1) Install a stop control on the southbound approach and a southbound shared left-right turn lane; (2) Add an eastbound left turn lane with a minimum of 100-feet of storage; and (3) Add a westbound right turn lane with a minimum of 100-feet of storage.
- Bon View Avenue & Merrill Avenue (#29): (1) Add 2nd eastbound through lane and (2) Add 2nd westbound through lane
- Grove Avenue & Edison Avenue (#30): (1) Add 2nd northbound through lane; (2) Add 2nd southbound through lane; (3) Add 2nd eastbound through lane; (4) Add 3rd eastbound through lane; (5) Add 2nd westbound through lane; and (6) Add 3rd westbound through lane
- Grove Avenue & Eucalyptus Avenue (#31): Add 2nd southbound through lane
- Grove Avenue & Merrill Avenue (#32): Add 2nd eastbound through lane
- Walker Avenue & Edison Avenue (#33): (1) Add 2nd eastbound through lane; (2) Add 3rd eastbound through lane; (3) Add 2nd westbound through lane; and (4) Add 3rd westbound through lane
- Baker Avenue/Van Vliet Avenue & Merrill Avenue (#35): Add 2nd westbound through lane
- Vineyard Avenue & Edison Avenue (#36): (1) Add 2nd eastbound through lane; (2) Add 3rd eastbound through lane (3) Add 2nd westbound through lane (4) Add 3rd westbound through lane (5) Add northbound through lane (6) Add southbound through lane
- Carpenter Avenue & Merrill Avenue (#38): (1) Add 2nd eastbound through lane and (2) Add 2nd westbound through lane
- Hellman Avenue & Edison Avenue (#39): (1) Add 2nd eastbound through lane; (2) Add 3rd eastbound through lane; (3) Add 2nd westbound through lane; (4) Add 3rd westbound through lane; (5) Add northbound through lane; and (6) Add southbound through lane
- Archibald Avenue & Ontario Ranch Road (#40): (1) Add 2nd westbound through lane; (2) Add 3rd northbound through lane; (3) Add 3rd southbound through lane; (4) Add 3rd eastbound through lane; (5) Add 4th eastbound through lane; (6) Add 3rd westbound through lane; and (7) Add 4th westbound through lane

- Archibald Avenue & Merrill Avenue (#42): (1) Add 3rd northbound through lane and (2) Add 3rd southbound through lane
- Turner Avenue & Ontario Ranch Road (#44): (1) Add 3rd eastbound through lane and (2) Add 3rd westbound through lane
- Haven Avenue & Ontario Ranch Road (#46): (1) Add 2nd northbound through lane; (2) Add 2nd southbound through lane; and (3) Add 3rd westbound through lane

Impact 5.14-3

TRAF-3 Prior to issuance of occupancy permits, the project applicant shall prepare a Transportation Demand Management (TDM) strategy report for review and approval by the City Traffic/Transportation Manager. The TDM strategy shall include measures to reduce employee VMT, including but not limited to:

- **Measure 6: Encourage Telecommuting and Alternative Work Schedule.** Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks. The effectiveness of this measure is dependent on the ultimate building tenant(s) which are unknown at this time, however, this CAPCOA notes that implementation of this measure could reduce commute VMT by 0.07 – 5.50 percent (Quantifying Greenhouse Gas Mitigation Measures, p. 236).
- **Measure 7: Provide Ride-Sharing Programs. Encourage carpooling and vanpooling.** The effectiveness of this measure is dependent on the ultimate building tenant(s) which are unknown at this time, however, CAPCOA notes that implementation of this measure could reduce commute VMT by 1.0 – 15.0 percent (Quantifying Greenhouse Gas Mitigation Measures, p. 227).

Mitigation Measures Considered and Rejected

Transportation demand management (TDM) strategies have been evaluated for reducing VMT impacts determined to be potentially significant. The effectiveness of TDM strategies to reduce VMT has been determined based on the SB 743 Implementation TDM Strategy Assessment (February 26, 2019, Fehr & Peers) prepared for the WRCOG. The memo evaluated 50 transportation measures presented in the CAPCOA 2010 report Quantifying Greenhouse Gas Mitigation Measures and indicated 41 are applicable at building and site level. The remaining measures are functions of, or depend on, site location and/or actions by local and regional agencies or funders.

Based on available research, WRCOG has determined that for projects located within a suburban context, a maximum 10 percent reduction in VMT is achievable when combining multiple mitigation strategies. Furthermore, to even achieve a 10 percent reduction in VMT, a project would need to contain a diverse land use mix, workforce housing and project-specific transit options.

Review of the 41 transportation measures identified by CAPCOA, indicates that only 7 of those measures may be effective at the project level, which is consistent with WRCOGs findings. Evaluation of potentially applicable TDM strategies in the context of the project is summarized below. As shown in Table 5.14-19, of the five of the seven TDMs with potential application to the project would not provide for any potentially meaningful reduction in VMT, the remaining two have been incorporated into the project as identified in Mitigation Measure TRAF-3.

Table 5.14-19 Evaluation of Applicable TDM Strategies

Measure	Evaluation
Measure 1: Increase Diversity of Land Uses. Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example, when residential areas are in the same neighborhood as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs.	The project proposes the construction of up to 1,905,027 square feet of high-cube fulfillment center, high-cube cold storage warehouse, warehousing and business park uses. In order for the above measure to apply, at least three of the following will be located on or off-site within ¼ mile of the project: residential development, retail development, park, open space, or office. There may be office space located on-site and off-site within ¼ mile of the project; and residential development exists off-site within ¼ mile of the project. However, there are no existing or proposed retail developments proposed within a ¼ mile of the project, nor is there existing or proposed designated open space. This measure is therefore not evaluated further as means of providing a reduction in project VMT. It is however recognized that the project would introduce additional employment opportunities, acting to generally improve the City and region jobs/housing balance. The resulting improved jobs/housing balance could reduce area commute VMT. This analysis however conservatively assumes no such VMT reduction.
Measure 2: Provide Pedestrian Network Improvements. Providing a pedestrian access network to link areas of the project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT.	Although there are existing sidewalks off-site along portions of Eucalyptus Avenue and Euclid Avenue as illustrated at Exhibit 3-17 of the TIA (Appendix L1), field observations conducted at the time the TIA was prepared indicate there is nominal pedestrian activity in the study area likely due to the lack of diversity of land uses. Furthermore, given the industrial nature of the project and surrounding uses, it is unlikely that there would be substantive pedestrian activity even if a pedestrian network were to be expanded. This measure is therefore not evaluated further as means of providing a reduction in VMT.
Measure 3: Provide Traffic Calming Measure. Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.	Given the industrial nature of the project and similar characteristics of surrounding uses, there is limited opportunity for pedestrian and bicycle activity. This measure is therefore not evaluated further as means of providing a reduction in VMT.
Measure 4: Implement Car-Sharing Program. Implementing a car-sharing program would allow individuals to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees.	It is possible that employers within the project site could implement car-sharing programs. This may provide car access for employees on an as-needed basis, and thereby alleviate some of the costs and responsibilities of individual car ownership. However, this would not necessarily result in a reduction of VMT, but would rather transfer the VMT source from individually-owned autos to employee-subsidized autos. Moreover, CAPCOA indicates that this measure would at most result in 0.4 to 0.7 percent reduction in VMT (CAPCOA, Quantifying Greenhouse Gas Mitigation Measures, p. 245). This measure is therefore not evaluated further as means of providing a reduction in VMT.
Measure 5: Increase Transit Service Frequency and Speed. This measure serves to reduce transit-passenger travel time through more reduced headways and increased speed	The study area is currently served by Omnitrans, a public transit agency serving various jurisdictions within San Bernardino County. Omnitrans Route 83 operates on Euclid Avenue (SR-83) north of the site. Route 83 could potentially serve the project. Transit service is reviewed and updated by RTA periodically to address ridership, budget and

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Table 5.14-19 Evaluation of Applicable TDM Strategies

Measure	Evaluation
and reliability. This makes transit service more attractive and may result in a mode shift from auto to transit which reduces VMT.	community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. It is recommended that the project applicant work in conjunction with the Lead Agency and Omnitrans to coordinate potential bus service to the project site. Since implementation of this strategy would require agency implementation, it is not applicable for individual development projects. This measure is therefore not evaluated further as means of providing a reduction VMT.

Source: Urban Crossroads, August 2019.

5.14.9 Level of Significance After Mitigation

Impact 5.14-1

With the implementation of mitigation measure TRAF-1, which requires contribution of fair-share fees. Table 5-4 in the TIA shows that the identified improvements would mitigate traffic impacts at the identified intersections. However, many intersections are under the jurisdiction of Caltrans or the City of Chino, and the City of Ontario cannot guarantee implementation of the improvements within these jurisdictions. Also, the improvements identified under TRAF-1 within the City of Ontario are not part of an adopted plan or program that will guarantee construction of the improvements within a specified period. As a result, traffic impacts would be ***significant and unavoidable***.

The discussion below provides a level of significance statement for each identified intersection:

Existing + Project

- **Euclid Avenue (SR-83) & Riverside Drive (#4):** With Mitigation Measure TRAF-1, operations are improved to an acceptable LOS D during the PM peak hours. However, the improvement fall under the jurisdiction of other public agencies (Caltrans, Chino and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable***.

- **Grove Avenue & Edison Avenue (#30):** With Mitigation Measure TRAF-1, operations are improved to an acceptable LOS B during the AM and PM peak hours. Therefore, the impact is considered ***less than significant with mitigation***.

- **Grove Avenue & Eucalyptus Avenue (#31):** With Mitigation Measure TRAF-1, operations are improved to an acceptable LOS D during the PM peak hours. Therefore, the impact is considered ***less than significant with mitigation***.

- **Grove Avenue & Merrill Avenue (#32):** With Mitigation Measure TRAF-1, operations are improved to an acceptable LOS B and LOS C during the AM and PM peak hours, respectively. However, the improvement fall under the jurisdiction of another public agency (Ontario and Chino), not solely the lead agency (City of Ontario), and would require approval from the Cities of Ontario and Chino. Therefore, the impact is considered ***significant and unavoidable***.

- **Walker Avenue & Edison Avenue (#33):** With Mitigation Measure TRAF-1, operations are improved to an acceptable LOS B during the PM peak hours. Therefore, the impact is considered ***less than significant with mitigation***.

- **Carpenter Avenue & Merrill Avenue (#38):** With Mitigation Measure TRAF-1, operations are improved to an acceptable LOS C and LOS B during the AM and PM peak hours, respectively. However, the improvement fall under the jurisdiction of another public agency (Ontario and Chino), not solely the lead agency (City of Ontario), and would require approval from both the Cities of Ontario and Chino. Therefore, the impact is considered ***significant and unavoidable***.

- **Hamner Avenue & Ontario Ranch Road (#49):** With Mitigation Measure TRAF-1, operations are improved to an acceptable LOS D during the PM peak hours. However, the improvement fall under the jurisdiction of another public agency (Ontario and Eastvale), not solely the lead agency (City of Ontario), and would require approval from the Cities of Ontario and Eastvale. Therefore, the impact is considered ***significant and unavoidable***.

Opening Year (2022) Cumulative Plus Project

With the implementation of mitigation measure TRAF-1 and TRAF-2, Table 6-4 in the TIA shows that the identified improvements would mitigate traffic impacts at the identified intersections. The discussion below provides a level of significance statement for each identified intersection:

- **Euclid Avenue (SR-83) & Riverside Drive (#4):** With Mitigation Measure TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvements fall under the jurisdiction of other public agencies (Caltrans, Chino and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Edison Avenue (#7):** With Mitigation Measure TRAF-1, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Caltrans, Chino and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Pine Avenue (#14):** With Mitigation Measure TRAF-1, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvements fall under the jurisdiction of other public agencies (Caltrans and Chino), not the lead agency (City of Ontario), and would require approval from these agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Grove Avenue & Merrill Avenue (#32):** With Mitigation Measure TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS C during the AM and PM peak hours. However, the improvements fall under the jurisdiction of other public agencies (Chino and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Walker Avenue/Flight Avenue & Merrill Avenue (#34):** With Mitigation Measure TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS B during the AM and PM peak hours. However, the improvements fall under the jurisdiction of other public agencies (Chino and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Vineyard Avenue/Hellman Avenue & Merrill Avenue (#37):** With Mitigation Measure TRAF-1 and TRAF-2, the intersection would operate at acceptable LOS C and D during the AM and PM peak hours, respectively. However, the improvements fall under the jurisdiction of other public agencies (Chino and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Archibald Avenue & Limonite Avenue (#43):** With Mitigation Measure TRAF-1, the intersection would operate at an acceptable LOS C during the AM and PM peak hours. However, the improvements fall under the jurisdiction of another public agencies (City of Eastvale), not the lead agency (City of Ontario), and would require approval from the City of Eastvale. Therefore, the impact is considered ***significant and unavoidable.***

Horizon Year (2040) Plus Project

With the implementation of mitigation measure TRAF-1 and TRAF-2, Table 7-4 in the TIA shows that the identified improvements would mitigate traffic impacts at the identified intersections. The discussion below provides a level of significance statement for each identified intersection:

- **Euclid Avenue (SR-83) & SR-60 Westbound Ramps (#1):** With Mitigation Measure TRAF-2, the intersection would operate at an acceptable LOS D and C during the AM and PM peak hours, respectively. However, the improvement falls under the jurisdiction of other public agencies (Caltrans and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & SR-60 Eastbound Ramps (#2):** With Mitigation Measure TRAF-2, the intersection would operate at an acceptable LOS C during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Caltrans and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Riverside Drive (#4):** With Mitigation Measure TRAF-1, the intersection would operate at an acceptable LOS D during the AM and PM peak hours, respectively. However, the improvement falls under the jurisdiction of other public agencies (Caltrans, Chino, and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Chino Avenue (#5):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS C and D during the AM and PM peak hours, respectively. However, the improvement falls under the jurisdiction of other public agencies (Caltrans, Chino, and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Schaefer Avenue (#6):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Caltrans, Chino, and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Edison Avenue (#7):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Caltrans, Chino, and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Eucalyptus Avenue (#8):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS C and D during the AM and PM peak hours, respectively. However, the improvement falls under the jurisdiction of other public agencies (Caltrans, Chino, and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Merrill Avenue (#11):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS C and D during the AM and PM peak hours, respectively. However, the improvement falls under the jurisdiction of other public agencies (Caltrans, Chino, and Ontario), not solely the lead agency (City of Ontario), and would require approval from all three agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Kimball Avenue (#12):** With Mitigation Measures TRAF-1, the intersection would operate at an acceptable LOS D during the AM and PM peak hours, respectively. However, the improvement falls under the jurisdiction of other public agencies (Caltrans and Chino), not the lead agency (City of Ontario), and would require approval from the two agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Euclid Avenue (SR-83) & Pine Avenue (#14):** With Mitigation Measures TRAF-1, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Caltrans and Chino), not the lead agency (City of

Ontario), and would require approval from the two agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Bon View Avenue & Eucalyptus Avenue (#28):** With Mitigation Measure TRAF-1, the intersection would operate at an acceptable LOS B during the AM and PM peak hours. Therefore, the impact is considered ***less than significant with mitigation***.

- **Bon View Avenue & Merrill Avenue (#29):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS B during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Chino, and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Grove Avenue & Edison Avenue (#30):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS D and E during the AM and PM peak hours, respectively. Therefore, the impact is considered ***less than significant with mitigation***.

- **Grove Avenue & Eucalyptus Avenue (#31):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS C and D during the AM and PM peak hours, respectively. Therefore, the impact is considered ***less than significant with mitigation***.

- **Grove Avenue & Merrill Avenue (#32):** With Mitigation Measure TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Chino and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Walker Avenue & Edison Avenue (#33):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS C and D during the AM and PM peak hours, respectively. Therefore, the impact is considered ***less than significant with mitigation***.

- **Baker Avenue/Van Vliet Avenue & Merrill Avenue (#35):** With Mitigation Measure TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS B during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Chino and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Vineyard Avenue & Edison Avenue (#36):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS B and E during the AM and PM peak hours, respectively. Therefore, the impact is considered ***less than significant with mitigation***.

- **Vineyard Avenue/Hellman Avenue & Merrill Avenue (#37):** With Mitigation Measures TRAF-1, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Caltrans and Chino), not the lead agency

(City of Ontario), and would require approval from the two agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Carpenter Avenue & Merrill Avenue (#38):** With Mitigation Measures TRAF-2, the intersection would operate at an acceptable LOS B during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Caltrans and Chino), not the lead agency (City of Ontario), and would require approval from the two agencies. Therefore, the impact is considered ***significant and unavoidable.***

- **Hellman Avenue & Edison Avenue (#39):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS C and D during the AM and PM peak hours, respectively. Therefore, the impact is considered ***less than significant with mitigation***.

- **Archibald Avenue & Ontario Ranch Road (#40):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS E during the AM and PM peak hours. Therefore, the impact is considered ***less than significant with mitigation***.

- **Archibald Avenue & Merrill Avenue (#42):** With Mitigation Measures TRAF-1 and TRAF-2, the intersection would operate at an acceptable LOS E during the AM and PM peak hours. Therefore, the impact is considered ***less than significant with mitigation***.

- **Archibald Avenue & Limonite Avenue (#43):** With Mitigation Measures TRAF-1, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvement falls under the jurisdiction of the City of Eastvale, not the lead agency (City of Ontario), and would require approval from the City of Eastvale. Therefore, the impact is considered ***significant and unavoidable.***

- **Turner Avenue & Ontario Ranch Road (#44):** With Mitigation Measure TRAF-2, the intersection would operate at an acceptable LOS C during the AM and PM peak hours. Therefore, the impact is considered ***less than significant with mitigation***.

- **Haven Avenue & Ontario Ranch Road (#46):** With Mitigation Measure TRAF-2, the intersection would operate at an acceptable LOS E and D during the AM and PM peak hours, respectively. Therefore, the impact is considered ***less than significant with mitigation***.

- **Hamner Avenue & Ontario Ranch Road (#49):** With Mitigation Measure TRAF-1, the intersection would operate at an acceptable LOS D during the AM and PM peak hours. However, the improvement falls under the jurisdiction of other public agencies (Eastvale and Ontario), not solely the lead agency (City of Ontario), and would require approval from both agencies. Therefore, the impact is considered ***significant and unavoidable.***

Freeway Segments

As discussed above, SHS facilities are owned and maintained by Caltrans. As such, any improvement would fall outside of the City of Ontario's jurisdiction. Since freeway improvements to the SHS is Caltrans' responsibility, impacts would remain ***significant and unavoidable***.

Additionally, improvements to freeway facilities LOS deficiencies is addressed through Caltrans regional improvement plans and programs. At this time, Caltrans has no plans or programs in place to address development-specific deficiencies affecting the SHS. There are no feasible measures to address LOS deficiencies that can be autonomously implemented by the Lead Agency or project applicant.

Impact 5.14-3

TDM Strategies

Implementation of applicable TDM strategies (Measure 6: Encourage Telecommuting and Alternative Work Schedule and Measure 7: Provide Ride-Sharing Programs) required pursuant to Mitigation Measure TRAF-3 have the potential to reduce the project Automobile and Total VMT/SP. The effectiveness of the above-noted TDM measures would be dependent in part on final project designs and occupancies, which are unknown at this time. Beyond project design and tenancy considerations, land use context is a major factor relevant to the potential application and effectiveness of TDM measures. More specifically, the land use context of the project is characteristically suburban. Of itself, the project's suburban context acts to reduce the range of feasible TDM measures and moderates their potential effectiveness. Relevant discussion in this regard is presented in WRCOG SB 743 Implementation Pathway Document Package (Fehr + Peers [for WRCOG]) March 2019, excerpted in pertinent part below:

> The Technical Advisory relies on the Quantifying Greenhouse Gas Mitigation Measures, (CAPCOA) 2010 resource document to help justify the 15 percent reduction in VMT threshold stating, " . . . fifteen percent reduction in VMT are achievable at the project level in a variety of place types . . . ". A more accurate reading of the CAPCOA document is that a fifteen percent is the maximum reduction when combining multiple mitigation strategies for the suburban center3 place type. For suburban4 place types 10 percent is the maximum and requires a project to contain a diverse land use mix, workforce housing, and project-specific transit. It is also important to note that the maximum percent reductions were not based on data or research comparing the actual performance of VMT reduction strategies in these place types. Instead, the percentages were derived from a limited comparison of aggregate citywide VMT performance for Sebastopol, San Rafael, and San Mateo where VMT performance ranged from 0 to 17 percent below the statewide VMT/capita average based on data collected prior to 2002. Little evidence exists about the long-term performance of similar TDM strategies in different land use contexts. As such, VMT reductions from TDM strategies cannot be guaranteed in most cases (WRCOG SB 743 Implementation Pathway Document Package, pp. 65 – 66)

As indicated, even under the most favorable circumstances, projects located within a suburban context, such as the project evaluated here, could realize a maximum 10 percent reduction in VMT through implementation of feasible TDM measures. For the project, this could result in 26.9 Automobile VMT/SP which is below the applicable threshold of 31.96 Automobile VMT/SP. A 10 percent reduction in total project VMT/SP would yield 41.59 VMT/SP, which would still exceed the applicable threshold of 35.96 VMT/SP.

It is also recognized that as the project area and City develop as envisioned under the City of Ontario Policy Plan, new residential, commercial/retail, and industrial development would be implemented. These actions could collectively alter transportation patterns, improve the City's jobs/housing ratio, diminish VMT/SP, and support implementation of new or alternative TDM measures. There is no means however to quantify any VMT reductions that could result. Additionally, the effectiveness of the TDM strategies that have potential to reduce the project VMT/SP are dependent on as yet unknown final project designs building tenant(s); and as noted above, "VMT reductions from TDM strategies cannot be guaranteed in most cases." Further, the identified TDM measures are not likely to reduce project truck VMT. Pointedly, CAPCOA provides no TDM measures targeted at truck traffic.

Truck VMT Strategies

The state strategy for the transportation sector for medium and heavy-duty trucks is focused on making trucks more efficient and expediting truck turnover rather than reducing VMT from trucks. This is in contrast to the passenger vehicle component of the transportation sector where both per-capita VMT reductions and an increase in vehicle efficiency are forecasted to be needed to achieve the overall state emissions reductions goals.

Emissions associated with heavy duty trucks involved in goods movements are generally controlled on the technology side and through fleet turnover of older trucks and engines to newer and cleaner trucks and engines. The first battery-electric heavy-heavy duty trucks are being tested this year and SCAQMD is looking to integrate this new technology into large-scale truck operations (SCAQMD 2019). The following state strategies reduce GHG emissions from the medium and heavy duty trucks:

- **CARB's Mobile Source Strategy** focuses on reducing GHGs through the transition to zero and low emission vehicles and from medium-duty and heavy-duty trucks (CARB 2017b).
- **CARB's Sustainable Freight Action Plan** establishes a goal to improve freight efficiency by 25 percent by 2030, deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030 (CARB 2017b).
- **CARB's Emissions Reduction Plan for Ports and Goods Movement (Goods Movement Plan) in California** focuses on reducing heavy-duty truck-related emissions focus on establishment of emissions standards for trucks, fleet turnover, truck retrofits, and restriction on truck idling (CARB 2006). While the focus of Goods Movement Plan is to reduce criteria air pollutant and air toxic emissions, the strategies to reduce these pollutants would also generally have a beneficial effect in reducing GHG emissions.
- **CARB's On-Road Truck and Bus Regulation (2010)** requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced

starting January 1, 2015. By January 1, 2023 nearly all trucks and buses will need to have 2010 model year engines or equivalent (https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm).

- **CARB's Heavy-Duty (Tractor-Trailer) GHG Regulation** requires SmartWay tractor trailers that include idle-reduction technologies, aerodynamic technologies, and low-rolling resistant tires that would reduce fuel consumption and associated GHG emissions.

Summary

In summary, unmitigated project VMT/SP (Total VMT/SP) would exceed applicable thresholds. The project would implement TDM measures that could potentially reduce Automobile VMT/SP impacts to levels that would be less than significant. Even with implementation of TDM measures, Total VMT/SP impacts could not be reduced to levels that would be less than significant. In any case, the efficacy of TDM measures and reduction of VMT impacts below thresholds cannot be assured at this concept stage of project development. The project VMT impact is therefore considered ***significant and unavoidable***.

As a point of interest, the significant and unavoidable VMT impact determination for the project parallels conclusions of the San Bernardino Countywide Plan (CWP) Draft Program EIR. The CWP Draft Program EIR concludes that . . . "[t]rip generation related to land use development under the projected 2040 buildout of the CWP would exceed the County's VMT reduction threshold (4 percent reduction in VMT/person (residential) and 4 percent reduction in VMT/employee in comparison to existing VMT/person (or employee)" (Draft Program EIR, p. 1-36, et al.).

5.14.10 References

Ontario, City of. 2010, January. The Ontario Plan Mobility Element. http://www.ontarioplan.org/policy-plan/mobility-element/.

Urban Crossroads. 2019, December 5. Ontario Ranch Business Park Traffic Impact Analysis.

Urban Crossroads. 2019, November 26. Ontario Ranch Business Park Vehicle Miles Travelled (VMT) Assessment.