AREA CONDITIONS

▪ Existing Roadway Descriptions

Sycamore Canyon Boulevard is a divided 4-lane north/south arterial in the project area. It is classified as a 110 foot arterial in the City of Riverside General Plan Circulation Element. South of Alessandro Boulevard, it continues as Meridian Parkway.

Fair Isle Drive is an undivided 2-lane east/west collector at the north end of the study area. It is classified as a 66 foot collector in the City of Riverside General Plan Circulation Element and provides connectivity to the I-215 and SR-60 freeways. West of the freeway interchange, it continues as Box Springs Road.

Box Springs Road is a divided 4-lane east/west arterial at the north end of the study area. It is not classified in the City of Riverside General Plan Circulation Element, but is included as a divided arterial in the City of Moreno Valley General Plan Circulation Plan. It provides connectivity to the I-215 and SR-60 freeways. East of the freeway interchange, it continues as Fair Isle Drive.

Dan Kipper Drive is an undivided 2-lane east/west collector near the project site. It is classified as a 60 foot collector in the Sycamore Canyon Business Park Specific Plan.

Box Springs Boulevard is an undivided 2 to 4-lane north/south arterial in the study area. It is classified as a 88 foot arterial in the City of Riverside General Plan Circulation Element.

Sierra Ridge Drive is an undivided 4-lane collector near the project site. It is classified as a 60 foot collecter in the Sycamore Canyon Business Park Specific Plan.

Eastridge Avenue is a divided 4 to 5-lane east/west arterial in the project area. It is classified as a 120 foot arterial in the City of Riverside General Plan Circulation Element and provides connectivity with the I-215 freeway. To the east of the freeway interchange, it continues as Eucalyptus Avenue in the City of Moreno Valley.

Eucalyptus Avenue is a divided 4-alen east/west arterial in the City of Moreno Valley. It is classified as a divided major arterial in the City of Moreno Valley General Plan Circulation Plan. To the west of the I-215 freeway interchange, it continues as Eastridge Avenue in the City of Riverside.

▪ Study Intersections

The study area was determined based on the extent in which the proposed project will add 50 or more peak hour trips up to a 5 mile radius of the project location based on an understanding of existing commercial vehicle patterns in the area, per the City of Riverside Traffic Impact Analysis Preparation Guide, December 2014. The study area includes the following intersections:

1. I-215 Northbound Ramps (NS) / Fair Isle Drive-Box Springs Road (EW)
2. Sycamore Canyon Boulevard (NS) / Fair Isle Drive (EW)
3. Sycamore Canyon Boulevard (NS) / I-215 Southbound Ramps (EW)
4. Sycamore Canyon Boulevard (NS) / Dan Kipper Drive (EW)
5. Sycamore Canyon Boulevard (NS) / Box Springs Boulevard (EW)
6. Sycamore Canyon Boulevard (NS) / Sierra Ridge Drive (EW)
7. Sycamore Canyon Boulevard (NS) / Eastridge Avenue (EW)

8. Box Springs Boulevard (NS) / Eastridge Avenue (EW)
9. I-215 Ramps (NS) / Eastridge Avenue-Eucalyptus Avenue (EW)

Study Freeway Segments

For Sycamore Canyon Industrial Buildings 1 & 2, Caltrans has requested the inclusion of merge/diverge analysis for the project affected freeway ramps, see Appendix A for correspondence from Caltrans. The study area therefore includes the following freeway segments:

I-215 Northbound

1. Eastridge Ave-Eucalyptus Ave Off-Ramp
2. Eastridge Ave-Eucalyptus Ave On-Ramp
3. Fair Isle Dr-Box Springs Rd On-Ramp

I-215 Southbound

4. Sycamore Canyon Boulevard Off-Ramp
5. Truck Bypass-Eastridge Ave-Eucalyptus Ave Off-Ramp Weaving Section
6. Eastridge Ave-Eucalyptus Ave On-Ramp

Study freeway segment 4 Sycamore Canyon Boulevard Off-Ramp was analyzed as a basic segment type according to HCM 2010 since the total number of lanes leaving the diverge area is the same as the total number entering it and would be considered a major diverge area. The geometry of study freeway segment 5 would categorize this segment also not as a diverge segment but as a weaving section with the SR-60/I-215 truck bypass since the major merge area and major diverge area are too close for them to operate independently. With these six segments, all of the project affected ramps were analyzed.

Existing Traffic Controls and Intersection Geometrics

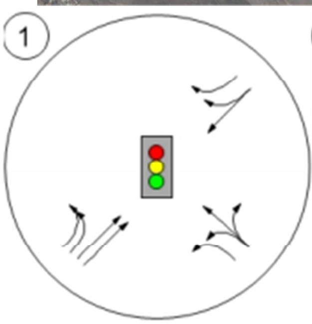
The existing roadway system is shown on Figure 3-A. It identifies the existing intersection traffic controls (i.e. signals and signage) and intersection geometrics within the study area.

Existing Traffic Volumes

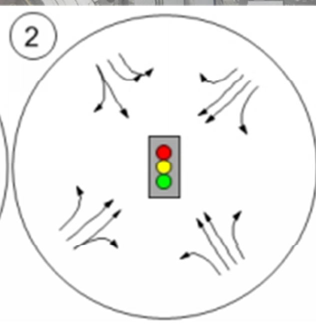
The existing AM peak period and PM peak period intersection turning movement counts were conducted in July 2015 by Counts Unlimited, Inc. Because of the high number of heavy vehicles in the area and truck-intensive land use of the project, raw turning movement counts were converted into passenger car equivalent (PCE). PCE is defined as the number of passenger cars that will result in the same operational conditions as a single heavy vehicle of a particular type. The traffic count worksheets are provided in Appendix C. The AM and PM peak hour intersection turning movement volumes in PCE are presented on Figure 3-B and Figure 3-C, respectively. Note that since counts were taken during the summer hours, adjustments were made to volumes to properly represent what counts would be while school is in session. While school is in session, traffic in the area would increase, so to perform a conservative analysis and represent the traffic conditions for most of the year, the counts were increased. These adjustments can be found through comparing the counts with the PCE calculation worksheets.

Weekend counts and analysis was not conducted because weekend analysis is typically only required for developments that experience peak traffic during the weekend, such as event centers, churches, shopping malls, etc.

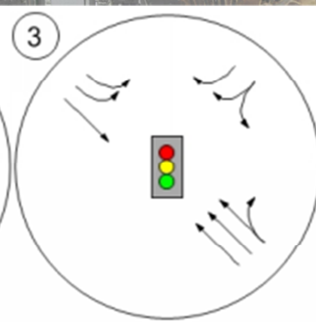
Figure 3-A – Existing Roadway System



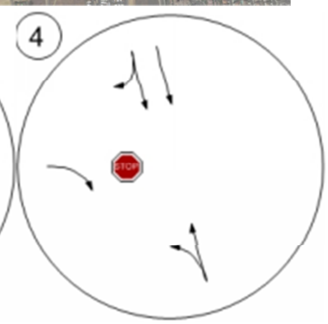
I-215 NB Ramps (NS) / Fair Isle Dr-Box Springs Dr (EW)



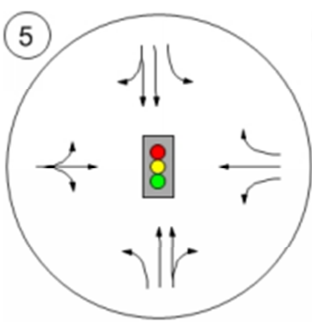
Sycamore Canyon Blvd (NS) / Fair Isle Dr (EW)



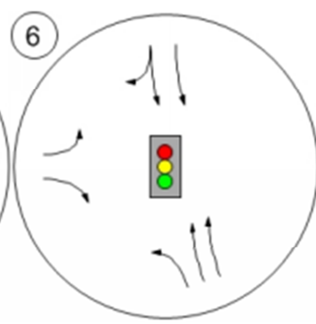
Sycamore Canyon Blvd (NS) / I-215 SB Ramps (EW)



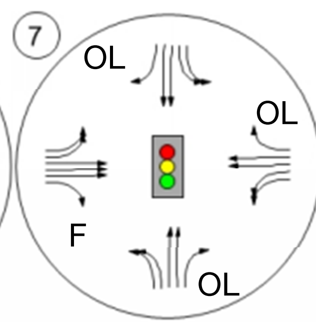
Sycamore Canyon Blvd (NS) / Dan Kipper Dr (EW)



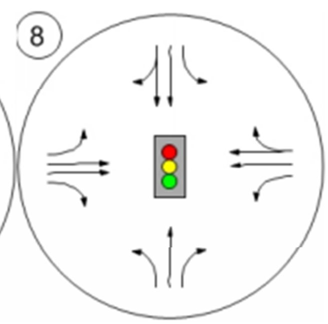
Sycamore Canyon Blvd (NS) / Box Springs Blvd (EW)



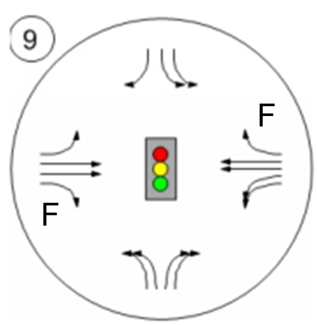
Sycamore Canyon Blvd (NS) / Sierra Ridge Dr (EW)



Sycamore Canyon Blvd (NS) / Eastridge Ave (EW)



Box Springs Blvd (NS) / Eastridge Ave (EW)



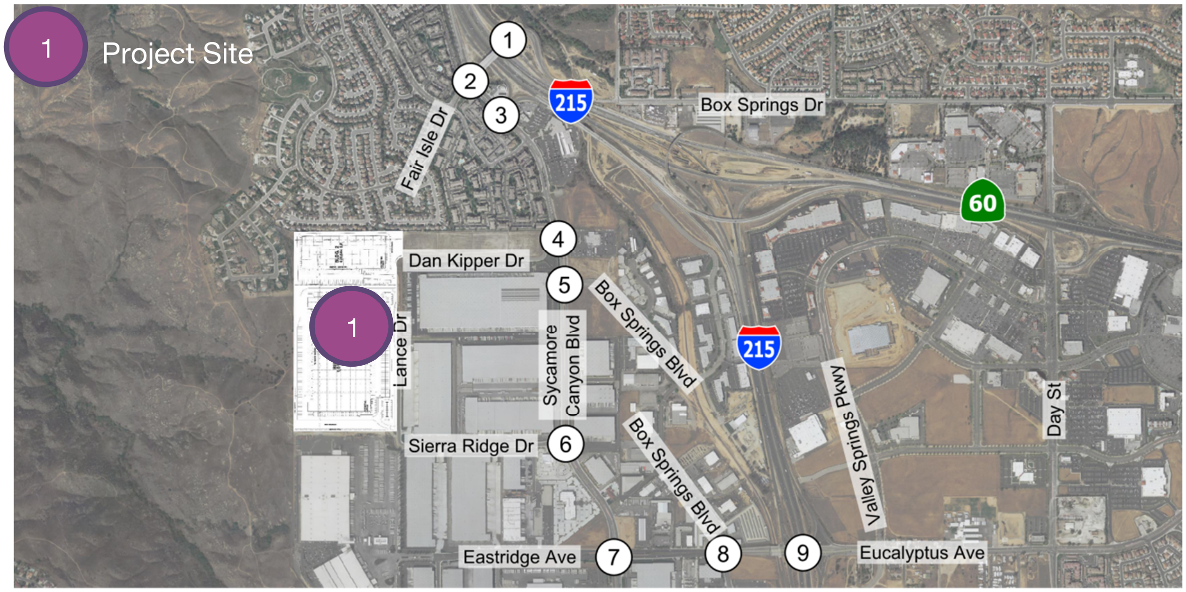
I-215 Ramps (NS) / Eastridge Ave-Eucalyptus Ave (EW)

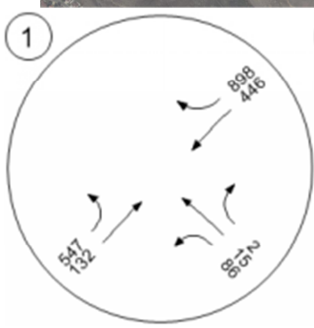
LEGEND

OL Existing Overlap Right

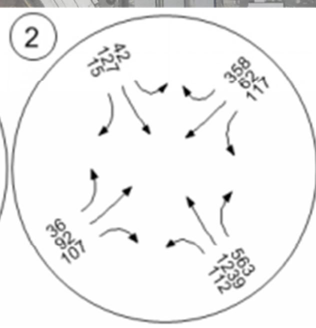
F Existing Free Right

Figure 3-B – Existing AM Peak Hour Intersection Volumes (in PCE) (2015)

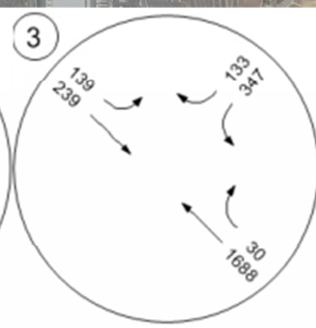




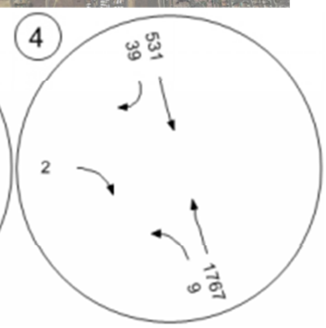
I-215 NB Ramps (NS) / Fair Isle Dr-Box Springs Dr (EW)



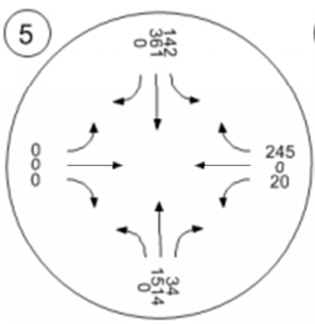
Sycamore Canyon Blvd (NS) / Fair Isle Dr (EW)



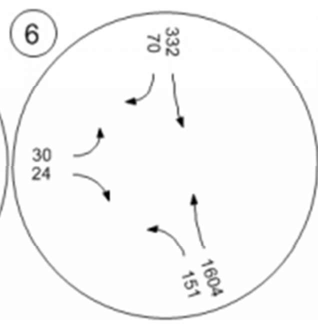
Sycamore Canyon Blvd (NS) / I-215 SB Ramps (EW)



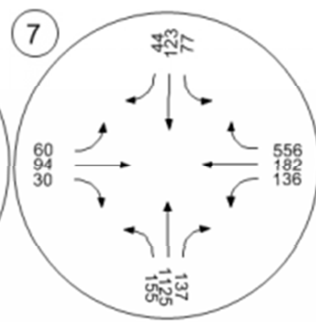
Sycamore Canyon Blvd (NS) / Dan Kipper Dr (EW)



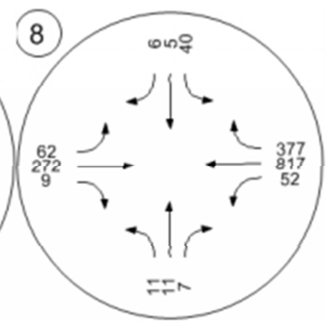
Sycamore Canyon Blvd (NS) / Box Springs Blvd (EW)



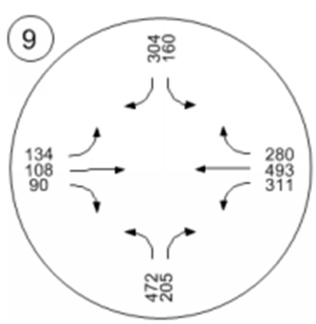
Sycamore Canyon Blvd (NS) / Sierra Ridge Dr (EW)



Sycamore Canyon Blvd (NS) / Eastridge Ave (EW)

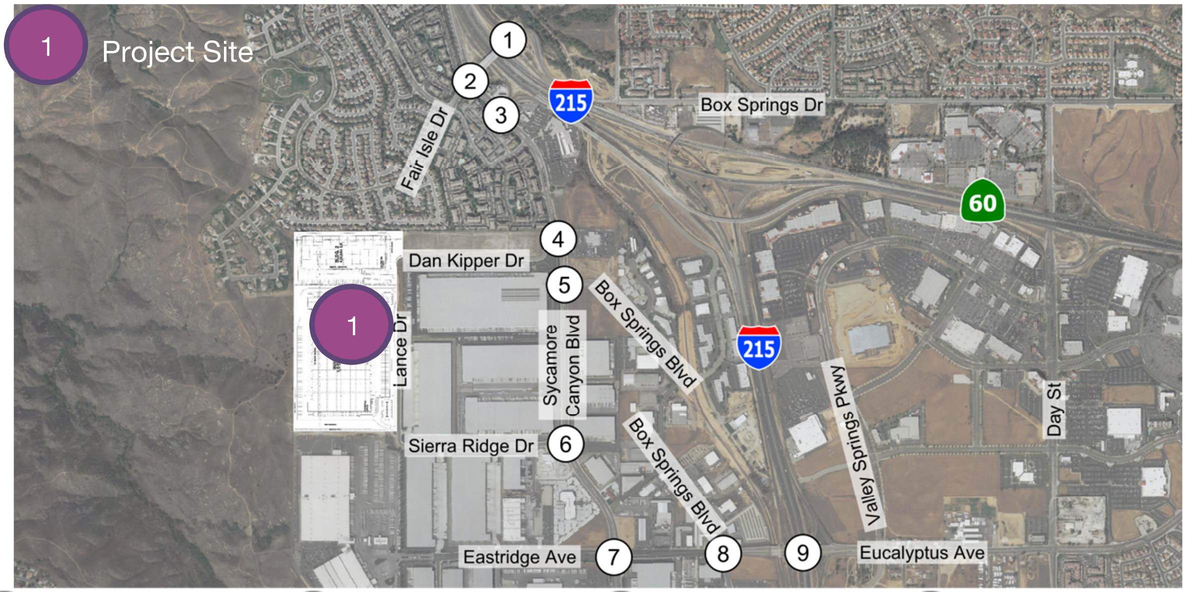


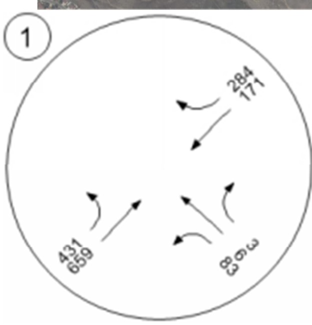
Box Springs Blvd (NS) / Eastridge Ave (EW)



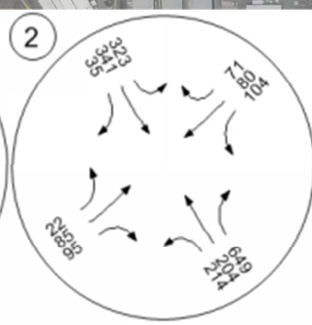
I-215 Ramps (NS) / Eastridge Ave-Eucalyptus Ave (EW)

Figure 3-C – Existing PM Peak Hour Intersection Volumes (in PCE) (2015)

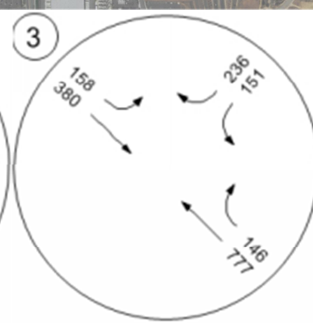




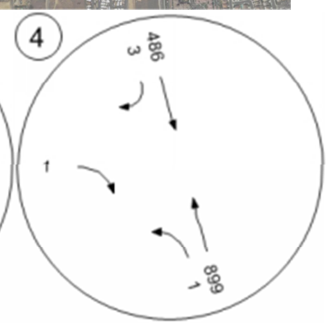
I-215 NB Ramps (NS) / Fair Isle Dr-Box Springs Dr (EW)



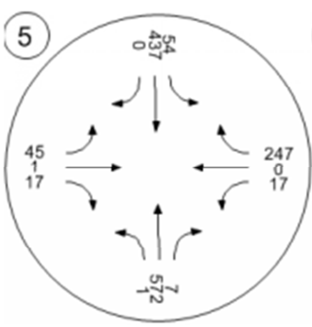
Sycamore Canyon Blvd (NS) / Fair Isle Dr (EW)



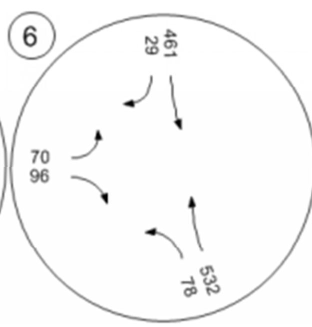
Sycamore Canyon Blvd (NS) / I-215 SB Ramps (EW)



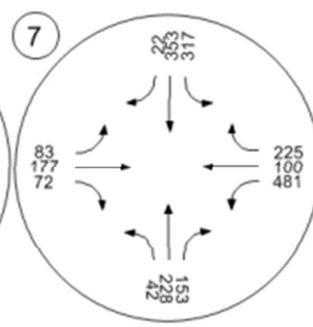
Sycamore Canyon Blvd (NS) / Dan Kipper Dr (EW)



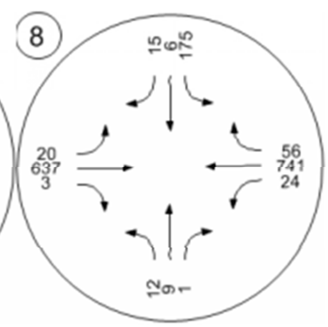
Sycamore Canyon Blvd (NS) / Box Springs Blvd (EW)



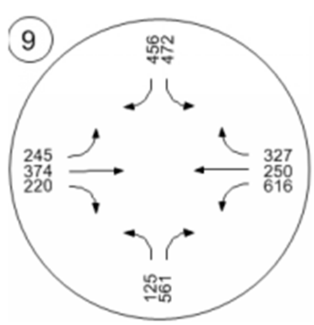
Sycamore Canyon Blvd (NS) / Sierra Ridge Dr (EW)



Sycamore Canyon Blvd (NS) / Eastridge Ave (EW)



Box Springs Blvd (NS) / Eastridge Ave (EW)



I-215 Ramps (NS) / Eastridge Ave-Eucalyptus Ave (EW)

Level of Service Methodology

The City of Riverside Traffic Engineering Division requires that the Transportation Research Board (TRB) Highway Capacity Manual 2010 (HCM2010) or the most recent release of the HCM be used to analyze Level of Service (LOS).

Quality of service describes how well a transportation facility or service operates from the traveler's perspective. Level of service (LOS) is a quantitative stratification of a performance measure or measures that represent quality of service. LOS is measured on a familiar A to F scale where LOS A represents the best conditions from a traveler's perspective and LOS F the worst. A simple LOS letter system is used to hide much of the complexity of transportation facility performance in order to simplify decision making on whether facility performance is generally acceptable and whether a future change in performance is likely to be perceived as significant by the general public. One reason for the widespread adoption of the LOS concept by agencies is the concept's ability to communicate roadway performance to nontechnical decision makers.

The HCM2010 evaluates the LOS of intersections based upon the control delay per vehicle. Control delay is defined as the delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed. The methodology used to evaluate the intersection level of service differs on whether the intersection is signalized or unsignalized. Levels of service at signalized and unsignalized intersections have been evaluated using PTV Vistro 3.00, which is based upon HCM2010 methodologies. Levels of service for freeway segments have been evaluated using HCS 2010, which is based upon HCM2010 methodologies.

Signalized Intersections

Signalized intersections have been evaluated using the Operational Method as described in Chapter 18 of the HCM2010. According to this methodology, the level of service for signalized intersections is based upon the weighted average control delay, in seconds per vehicle, of all vehicles passing through the intersection. Table 3-1 shows the criteria used to determine the level of service for signalized intersections.

Table 3-1 – Level of Service for Signalized Intersections

Level of Service	Control Delay (sec/vehicle)	Description
A	≤ 10	Minimal delay and primarily free-flow operation. Most vehicles do not stop because they arrive during the green indication or only stop for a brief amount of time as the signal changes.
B	> 10 – 20	Short delay and reasonably unimpeded operation. Many vehicles do not stop because they arrive during the green indication or only stop for a short amount of time as the signal changes. More vehicles stop than with LOS A.
C	> 20 – 35	Moderate delay and stable operation. Individual cycle failures (i.e. when queued vehicles do not clear the signal during the next green indication) may begin to appear. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	> 35 – 55	Less stable operation in which small increases in vehicles may cause substantial increases in delay. Many vehicles stop and individual cycle failures are noticeable.
E	> 55 – 80	Significant delay and unstable operation. Most vehicles stop and individual cycle failures are frequent.
F	> 80	Considerable delay and extensive queuing. Almost all vehicles stop and most cycles fail to clear the queue.

Unsignalized Intersections

Unsignalized intersections have been evaluated using Chapters 19 and 20 of the HCM2010. According to this methodology, the level of service for all-way stop intersections is based upon the weighted average control delay, in seconds per vehicle, of all vehicles passing through the intersection. For two-way stop controlled intersections, the level of service is based on the highest control delay of all controlled movements for the intersection. Table 3-2 shows the criteria used to determine the level of service for unsignalized intersections.

Table 3-2 – Level of Service for Unsignalized Intersections

Level of Service	Control Delay (sec/vehicle)	Description
A	≤ 10	Minimal delay. Usually no conflicting traffic.
B	> 10 – 15	Short delay. Occasionally some conflicting traffic.
C	> 15 – 25	Noticeable delay, but not inconveniencing. Usually some conflicting traffic.
D	> 25 – 35	Noticeable delay and irritating. A significant amount of conflicting traffic. Increased likelihood of risk taking.
E	> 35 – 50	Significant delay approaching tolerance level. Lots of conflicting traffic, but with some gaps of suitable size. Risk taking behavior likely.
F	> 50	Considerable delay exceeding tolerance level. Lots of conflicting traffic, with not enough gaps of suitable size. High likelihood of risk taking.

Freeway Segments

The HCM2010 evaluates the LOS of freeway segments based upon the density of vehicles within the segment. Density is defined as the number of vehicles occupying a given length of a lane or roadway at a particular instant and measured in passenger cars per mile per lane (pc/mi/ln). The methodology used to evaluate freeway segments differs based on the type of segment: merge and diverge segments (on-ramps and off-ramps), weaving segments (a merge segment closely followed by a diverge segment and the two are connected by a continuous auxiliary lane), and basic segments (all segments that are not merge, diverge, or weaving segments).

Basic freeway segments have been evaluated using Chapter 11 of the HCM2010. Freeway weaving segments have been evaluated using Chapter 12 of the HCM2010. Freeway merged and diverge segments have been evaluated using Chapter 13 of the HCM2010. Table 3-3 shows the criteria used to determine the LOS for basic freeway segments. Table 3-4 shows the criteria used to determine the LOS for freeway weaving segments and freeway merge and diverge segments.

Table 3-3 – Level of Service for Basic Freeway Segments

Level of Service	Density (pc/mi/ln)	Description
A	≤ 11	Free-flow operation and no delays. Free-flow speed prevails on the freeway, and vehicles are almost completely unimpeded in their ability to maneuver. Disturbances are easily absorbed.
B	> 11 – 18	Reasonably free-flow operation and no delays. Free-flow speed on the freeway is maintained, and maneuverability is only slightly restricted. Disturbances are still easily absorbed.
C	> 18 – 26	Operation near free-flow speed and minimal delays. Maneuverability is noticeably restricted, and lane changes require more care. Disturbances may still be absorbed, but deterioration in service will be significant. Queues may be expected to form behind any significant blockage.
D	> 26 – 35	Declining speeds and moderate delays. Maneuverability is seriously limited and drivers experience reduced comfort levels. Minor incidents can create queuing.
E	> 35 – 45	Operation at or near capacity with significant delays. Vehicles are closely spaced, with little room to maneuver. Any incident is expected to produce a serious breakdown and substantial queuing. Driver comfort level is poor.
F	Demand exceeds capacity > 45	Breakdown, or unstable flow with considerable delay. Generally exist within queues forming behind bottlenecks.

Table 3-4 – Level of Service for Freeway Weaving, Merge, and Diverge Segments

Level of Service	Density (pc/mi/ln)	Description
A	≤ 10	Unrestricted operations exist and the number of vehicles is low enough to permit smooth merging or diverging with very little turbulence in the traffic stream.
B	> 10 – 20	Merging and diverging maneuvers become noticeable to through drivers, and minimal turbulence occurs.
C	> 20 – 28	Speed begins to decline as turbulence levels become much more noticeable. Both ramp and freeway vehicles begin to adjust their speeds to accomplish smooth transitions.
D	> 28 – 35	Turbulence levels become intrusive, and virtually all vehicles slow to accommodate merging or diverging maneuvers. Some ramp queues may form at heavily used on-ramps, but freeway operation remains stable.
E	> 35	Operating conditions approaching or at capacity. Small changes in demand or disruptions within the traffic stream can cause both ramp and freeway queues to form.
F	Demand exceeds capacity	Operating conditions within queues that form on both the ramp and the freeway mainline when capacity is exceeded by demand.

▪ Required Level of Service

According to the City of Riverside Traffic Impact Analysis Guidelines, Exhibit F:

> *City of Riverside allows Level of Service (LOS) D to be used as the maximum acceptable threshold for the study intersections and roadways of Collector or higher classification. LOS C is to be maintained on all street intersections. For projects in conformance with the General Plan, a significant impact occurs at a study intersection when the peak hour LOS falls below C, or D per CCM-2.3 as noted below. For projects that propose uses or intensities above that contained in the General Plan, a significant impact at a study intersection is when the addition of project related trips causes either peak hour LOS to*

degrade from acceptable (LOS A thru D) to unacceptable levels (E or F) or the peak hour delay to increase as follows:

LOS A/B = By 10.0 seconds
LOS C = By 8.0 seconds
LOS D = By 5.0 seconds
LOS E = By 2.0 seconds
LOS F = By 1.0 seconds

Policy CCM-2.3:
Maintain LOS D or better on Arterial Streets wherever possible. At key locations, such as City Arterials that are used by regional freeway bypass traffic and at heavily traveled freeway interchanges, allow LOS E at peak hours as the acceptable standard on a case-by-case basis.

Since the project does not propose a use or intensity above that contained in the general plan, study intersections will be analyzed per CCM-2.3.

According to the letter from Caltrans dated August 24, 2015:

> *The LOS for operating State highway facilities is based upon Measures of Effectiveness (MOE) identified in the Highway Capacity Manual (HCM). Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway 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 MOE should be maintained. In general, the region-wide goal for an acceptable LOS on all freeways, roadway segments, and intersections is "D". For undeveloped or not densely developed locations, the goal may be to achieve LOS "C".*

Therefore, the target LOS for freeway segments, roadway segments, and roadway intersections will be considered "D" for consistency with the region-wide goal. Any highway facility operating at less than "D" will be maintained at the existing LOS.

▪ Levels of Service – Existing Conditions (2015)

The intersection levels of service for existing conditions shown on Table 3-5 are based upon the existing roadway system shown on Figure 3-A and the existing AM and PM peak hour intersection volumes shown on Figure 3-B and Figure 3-C, respectively. The level of service calculation worksheets are provided in Appendix E.

Table 3-5 – Intersection Levels of Service – Existing Conditions (2015)

Intersection	Peak Hour	Traffic Control	Delay (sec)	LOS
1. I-215 Northbound Ramps (NS) Fair Isle Drive-Box Springs Road (EW)	AM PM	Signal	36.7 19.7	D B
2. Sycamore Canyon Boulevard (NS) Fair Isle Drive (EW)	AM PM	Signal	25.6 25.6	C C
3. Sycamore Canyon Boulevard (NS) I-215 Southbound Ramps (EW)	AM PM	Signal	17.5 12.2	B B
4. Sycamore Canyon Boulevard (NS) Dan Kipper Drive (EW)	AM PM	OWSC	12.2 12.0	B B
5. Sycamore Canyon Boulevard (NS) Box Springs Boulevard (EW)	AM PM	Signal	14.2 12.1	B B
6. Sycamore Canyon Boulevard (NS) Sierra Ridge Drive (EW)	AM PM	Signal	10.3 11.1	B B
7. Sycamore Canyon Boulevard (NS) Eastridge Avenue (EW)	AM PM	Signal	32.6 23.7	C C
8. Box Springs Boulevard (NS) Eastridge Avenue (EW)	AM PM	Signal	31.3 28.2	C C
9. I-215 Ramps (NS) Eastridge Avenue-Eucalyptus Avenue (EW)	AM PM	Signal	24.1 22.8	C C

OWSC = One Way Stop Controlled
Delay and LOS were calculated in the TIA using Vistro (version 3.00, 2014) for signalized and unsignalized intersections. Per the 2010 Highway Capacity Manual, overall average intersection delay and LOS are shown for intersections with a traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and LOS for the worst individual movement (or movements sharing a single lane) are shown.

The freeway segment levels of service for existing conditions shown on Table 3-6 are based upon existing freeway volumes. The table also shows AM and PM peak hour non-PCE volumes on the freeway mainline and ramps. There were no freeway segments that are currently operating at an unacceptable LOS.

Table 3-6 – Freeway Segment Levels of Service – Existing Conditions (2015)

Freeway/Direction of Travel From/To or Junction	Segment Type	Lanes		AM Peak Hour Volume				PM Peak Hour Volume			
		Main	Ramp	Mainline Vol.	Ramp Vol.	Density (pc/mi/ln)	LOS	Mainline Vol.	Ramp Vol.	Density (pc/mi/ln)	LOS
I-215 Northbound											
1. Eastridge-Eucalyptus Off	Diverge	3	1	4569	642	30.8	D	5313	660	34.1	D
2. Eastridge-Eucalyptus On	Merge	3	1	3927	331	24.6	C	4653	509	29.6	D
3. Fair Isle-Box Springs On[1]	Merge	4	1	5802	1334	32.7	D	6856	674	23.8	C
I-215 Southbound											
4. Sycamore Canyon Blvd Off[1]	Basic	5	NA	4496	NA	13.1	B	6749	NA	20.3	C
5. Truck Bypass/Eastridge Off	Weave	4	1	4562	1044	25.2	C	5375	1069	29.4	D
		4	2	5239	367			5567	877		
6. Eastridge-Eucalyptus On	Merge	3	1	4195	374	24.4	C	4498	815	29.5	D

[1] HOV lanes and HOV volumes not included in the mainline volume.
NA = Not applicable
Density and LOS for freeway segments were calculated in the TIA using HCS 2010 (version 6.60, 2014) . Per the 2010 Highway Capacity Manual, freeway segment density and LOS are shown for merge and diverge segments, weaving segments, and basic segments.

▪ General Plan Circulation

The current City of Riverside General Plan circulation element is shown on Figure 3-D.

▪ Transit Service

The project area is served by Riverside Transit Agency (RTA) route 208 (Riverside Downtown Terminal to Promenade Mall in Temecula (via Moreno Valley)). The nearest bus stop is located on Sycamore Canyon Boulevard south of Sierra Ridge Drive.

Figure 3-D – City of Riverside General Plan Circulation Element

LEGEND

	66 FT LOCAL	2 LANES *
	66 FT COLLECTOR	2 LANES
	80 FT COLLECTOR	2 LANES
	88 FT ARTERIAL	4 LANES
	100 FT ARTERIAL	4 LANES
	110 FT ARTERIAL	4 LANES
	120 FT ARTERIAL	6 LANES
	144 FT ARTERIAL	8 LANES
	RIVERSIDE CITY BOUNDARY	
	RIVERSIDE PROPOSED SPHERE OF INFLUENCE	

NOTE:

* LOCAL STREETS ARE NOT SHOWN ON THIS PLAN EXCEPT WHERE NEEDED FOR CLARITY.

5 THE STREETS IN SYCAMORE CANYON BUSINESS PARK SPECIFIC PLAN VARY IN SIZE. SEE THE SPECIFIC PLAN FOR DETAILS.

SOURCE: CITY OF RIVERSIDE

Method of Projection

The method of traffic projection is based on the following criteria:

- Existing traffic conditions (2015);
- Ambient growth projections;
- Project generated traffic; and
- Cumulative project generated traffic.

This report uses a project buildout year of 2018 for analysis purposes.

Ambient Growth

In order to evaluate traffic conditions for the study year, area wide growth on existing roadways must be projected. The majority of the anticipated growth within the study area is accounted for with cumulative project traffic. Per discussion with City of Riverside staff, this study will utilize a 2 percent per year growth rate. The agreed upon ambient growth rate is the industry standard for estimating growth in the region.

Project Generated Traffic

Project Trip Generation

Trip Generation Rates

Trip generation represents the amount of traffic traveling to and from the proposed project. The traffic generation figures used in this study are based upon the development of 1,433,599 SF logistics center modeled as using the ITE high-cube warehouse land use category (152). Table 4-1 shows the peak hour and daily trip generation rates for the proposed project.

The trip generation rates for high-cube warehousing are based on the weighted average trip generation rates provided in the *Trip Generation Manual (9th Edition)* by the Institute of Transportation Engineers (ITE), 2012. The inbound and outbound peak hour trip generation rates are calculated by multiplying the total peak hour generation rate by the directional distribution provided in the *Trip Generation Manual*.

Table 4-1 – Trip Generation Rates

Land Use	Unit	AM Peak Hour			PM Peak Hour			Daily
		Total	In	Out	Total	In	Out	
High-Cube Warehouse Land Use Category: 152	TSF							
Passenger Cars		*0.080*	*0.055*	*0.025*	*0.080*	*0.025*	*0.055*	*1.040*
Trucks (2 Axle)		*0.005*	*0.004*	*0.004*	*0.007*	*0.002*	*0.002*	*0.108*
Trucks (3 Axle)		*0.007*	*0.005*	*0.005*	*0.009*	*0.003*	*0.003*	*0.145*
Trucks (4+ Axle)		*0.018*	*0.013*	*0.013*	*0.024*	*0.007*	*0.007*	*0.386*
LAND USE TOTAL		0.110	0.076	0.034	0.120	0.037	0.083	1.680

TSF = 1,000 Square Feet Gross Floor Area.
Average trip generation rates from *Trip Generation Manual, ITE, 9th Edition* (2012).
2 axle / 3 axle / 4+ axle truck split from *Truck Trip Generation Study* by the City of Fontana, 2003.

Project Trip Generation

Table 4-2 presents the daily and peak hour trip generation for the proposed project. These values are calculated by multiplying the trip generation rates from Table 4-1 by the project size. Table 4-3 presents the project trip generation in PCE. As shown, the proposed project is anticipated to generate approximately 3,801 PCE daily trip-ends, including 223 PCE trip-ends during the AM peak hour and 260 PCE trip-ends during the PM peak hour.

Table 4-2 – Project Trip Generation

Land Use	Qty	Unit	AM Peak Hour			PM Peak Hour			Daily
			Total	In	Out	Total	In	Out	
High-Cube Warehouse (Building 1)	1013	TSF							
Passenger Cars			*81*	*56*	*25*	*81*	*25*	*56*	*1,054*
Trucks (2 Axle)			*5*	*3*	*2*	*7*	*2*	*5*	*110*
Trucks (3 Axle)			*7*	*5*	*2*	*9*	*3*	*6*	*147*
Trucks (4+ Axle)			*18*	*13*	*5*	*25*	*8*	*17*	*391*
LAND USE TOTAL			111	77	34	122	38	84	1,702
High-Cube Warehouse (Building 2)	420.6	TSF							
Passenger Cars			*33*	*23*	*10*	*33*	*11*	*22*	*438*
Trucks (2 Axle)			*2*	*2*	*1*	*3*	*1*	*2*	*46*
Trucks (3 Axle)			*3*	*2*	*1*	*4*	*1*	*3*	*61*
Trucks (4+ Axle)			*8*	*5*	*2*	*10*	*3*	*7*	*162*
LAND USE TOTAL			46	32	14	50	16	34	707
PROJECT TOTAL			157	109	48	172	54	118	2,409

TSF = 1,000 Square Feet Gross Floor Area.

Table 4-3 – Project Trip Generation (in PCE)

Land Use	Qty	Unit	AM Peak Hour			PM Peak Hour			Daily
			Total	In	Out	Total	In	Out	
High-Cube Warehouse (Building 1)	1013	TSF							
Passenger Cars (PCE = 1.0)			*81*	*56*	*25*	*81*	*25*	*56*	*1,054*
Trucks (2 Axle, PCE = 1.5)			*8*	*5*	*3*	*11*	*3*	*8*	*165*
Trucks (3 Axle, PCE = 2.0)			*14*	*10*	*4*	*18*	*6*	*12*	*294*
Trucks (4+ Axle, PCE = 3.0)			*54*	*39*	*15*	*75*	*24*	*51*	*1,173*
LAND USE TOTAL (IN PCE)			157	110	47	185	58	127	2,686
High-Cube Warehouse (Building 2)	420.6	TSF							
Passenger Cars (PCE = 1.0)			*33*	*23*	*10*	*33*	*11*	*22*	*438*
Trucks (2 Axle, PCE = 1.5)			*3*	*3*	*2*	*5*	*2*	*3*	*69*
Trucks (3 Axle, PCE = 2.0)			*6*	*4*	*2*	*8*	*2*	*6*	*122*
Trucks (4+ Axle, PCE = 3.0)			*24*	*15*	*6*	*30*	*9*	*21*	*486*
LAND USE TOTAL (IN PCE)			66	45	20	76	24	52	1,115
PROJECT TOTAL (IN PCE)			223	155	67	260	82	179	3,801

TSF = 1,000 Square Feet Gross Floor Area.
PCE = Passenger Car Equivalent for Trucks

Project Trip Distribution

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is influenced by the geographical location of the site, type of land use in the study area, such as shopping centers and recreational sites, and proximity to the regional freeway system.

The trip directional orientation of traffic for the proposed project was determined based upon the existing roadway system, existing traffic patterns, and existing and future land uses. The directional distribution for the proposed project traffic assumed in this study is shown on Figure 4-A thru Figure 4-D for passenger cars and trucks separately.

After a preliminary analysis of the possibility of using Dan Kipper Drive as a point of egress for passenger cars and/or trucks, it was determined based on future nearby development of the area, the existing and future geometry of the intersection and nearby intersections, that it would not be advantageous for the Project or for the City to allow the Project egress at Dan Kipper Drive. Therefore, the traffic analysis assumes the trip distribution of vehicles as shown in the figures below, i.e. without project egress at Dan Kipper Drive and left turns onto Dan Kipper Drive from Sycamore Canyon Boulevard.

Project Modal Split

The traffic reducing potential of public transit has not been considered in this study. Therefore, the traffic projections provided in this report are considered conservative since public transit could reduce traffic volumes in the project area.

Project Trip Assignment

Trip assignment is the result of assigning the previously discussed trip generation numbers to the circulation system using the previously discussed trip distribution.

The project related AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 4-E and Figure 4-F, respectively.