

2.8 Transportation/Traffic

The following summary of transportation and circulation impacts is based upon the *Traffic Impact Analysis (TIA) Valiano*, prepared by LLG (2015), which was prepared in conformance with the County Report Requirements for Format and Content for Transportation and Traffic (August 24, 2011). Since the Proposed Project has the potential to impact road segments and intersections within the County and the cities of Escondido and San Marcos, the TIA methodology and significance thresholds utilized each jurisdiction's requirements, as discussed further in Section 2.8.2. The TIA can be found in its entirety in Appendix H, along with all supporting tables, figures, and traffic modeling results.

2.8.1 Existing Conditions

2.8.1.1 Existing Roadway Characteristics

The study area was based on the criteria identified in the County of San Diego's *Report Format & Content Requirements: Transportation & Traffic*, August 24, 2011. Based on the County's criteria, "the scope of the full direct and cumulative traffic assessment shall include those roads and intersections that will receive 25 directional peak hour trips." In addition, the County criteria states that a full traffic impact study should include all regional arterials (including all State surface routes), intersections, and mainline freeway locations where the proposed project will add 50 or more peak hour trips to the existing roadway traffic.

Based on these criteria, the Proposed Project study area evaluated in the TIA captures 17 roadway segments, 2 state route segments, 2 access roads, and 17 intersections, including future roadways and intersections with the County of San Diego and the cities of Escondido and San Marcos. Figure 2.8-1, *Existing Conditions Diagram*, shows the existing roadway network and those intersections that were included in the TIA. A brief description of the existing Project area roadways is below. Roadway widths in this description are approximate.

Barham Drive is classified in the City of San Marcos *General Plan Mobility Element* as a Six-Lane Major Arterial from South Twin Oaks Valley Road to Woodland Parkway. From Woodland Parkway to Mission Road, it is classified as a Four-Lane Secondary Arterial. East Barham Drive from South Twin Oaks Valley Road to La Moree Road is currently constructed as a five-lane roadway with a raised median, with three lanes in the eastbound (EB) direction and two lanes in the westbound (WB) direction. Bicycle lanes, sidewalks, and bus stops are provided with a posted speed limit of 45 mph. Curbside parking is prohibited. From West La Moree Road to the SR-78 EB Off-ramp, East Barham Drive is currently built as a three-lane undivided roadway with two lanes in the WB direction and one in the EB direction and a continuous two-way left turn lane. Bicycle lanes are provided and curbside parking is not allowed. Sidewalks are generally provided on at least one side of the roadway and the posted speed limit is 45 mph. From the SR-78 EB Off-ramp to Woodland Parkway, East Barham Drive is currently constructed as a two-lane undivided roadway with a posted speed limit of 35 mph. Bicycle lanes are provided at the shoulder and no curbside parking is allowed. Sidewalks are not provided. From Woodland Parkway to the SR-78 EB On-Ramp, Barham Drive is currently constructed as a four lane undivided roadway with a two-way left turn lane. Bicycle lanes are provided on both sides of the roadway, while sidewalks

are constructed only on the south side. The speed limit along this segment is 35 mph and curbside parking is prohibited. From the SR-78 EB On-Ramp to approximately Bennett Court, Barham Drive is currently built as a two-lane undivided roadway with a two-way left turn lane with a sidewalk constructed on the south side of the roadway. East of Bennett Court to Mission Road the two-way left turn lane ends and there are generally no curbs, gutters, or sidewalks provided. The posted speed limit is 35 mph and no curbside parking is permitted.

Mission Road is classified as Four-Lane Major road on the City of Escondido *General Plan Mobility Element*. East of Auto Park Way to Enterprise Street, Mission Road is currently built as a four-lane divided roadway. A bicycle lane is provided on the north side of the roadway only, as the Inland Rail Trail bicycle path parallels the south side of this segment of Mission Road. The posted speed limit on Mission Road is 45 mph and curbside parking is prohibited.

Auto Park Way is classified as a Six-Lane Super Major road on the City of Escondido *General Plan Mobility Element*. From Mission Road to Meyer Avenue, Auto Park Way is currently constructed as a six-lane divided roadway. From Meyer Avenue to Country Club Drive, it is currently built as a four-lane divided roadway. Bicycle lanes and sidewalks are provided on both sides of the roadway. Curbside parking is not allowed and the posted speed limit is 40 mph.

In terms of Auto Parkway between Mission Road and Country Club Drive, Auto Park Way approaching Mission ~~Avenue~~ Road contains nine lanes (six northbound lanes and three southbound lanes). This road narrows to five lanes and then four lanes for about 300 feet. Additional turn lanes are then provided approaching Country Club Drive. Based on these various conditions, a five-lane capacity was assumed.

Country Club Drive is classified as a Local Collector on the City of Escondido *General Plan Mobility Element* from Auto Park Way to Hill Valley Drive and is currently built as a two-lane undivided roadway. Starting at the industrial development about 0.25 mile west of Auto Park Way, frontage improvements have been completed to widen the southbound land and provide a sidewalk on the west side of the roadway allowing for curbside parking. No curbs, gutters, or sidewalks are provided, and parking is not permitted on the east side of the roadway. The posted speed limit is 45 mph.

Country Club Drive is an unclassified roadway on the County of San Diego *General Plan Mobility Element* from Hill Valley Drive to Harmony Grove Road. It is currently built as a two-lane undivided roadway from Hill Valley Drive to Kauana Loa Drive with minimal shoulders and a 45-mph speed limit. Based on these roadway characteristics, it currently functions as a 2.2F Light Collector with an LOS E capacity of 9,700 ADT. See below for further description of Country Club Drive from Kauana Loa Drive to Harmony Grove Road.

Kauana Loa Drive is an unclassified roadway on the County of San Diego *General Plan Mobility Element*. From Country Club Drive to Harmony Grove Road, Kauana Loa Drive is currently constructed as a two-lane undivided roadway. Parking is generally not allowed along the roadway and the posted speed limit is 40 mph. No curbs, gutters, or sidewalks are provided. East of Country Club Drive, Kauana Loa Drive provides a paved shoulder with a 40-mph speed limit. Based on

these roadway characteristics, it currently functions as a 2.3C Minor Collector with an LOS E capacity of 8,000 ADT.

Eden Valley Lane is a private roadway providing access to adjacent residences for its entire length extending west from Country Club Drive. It is paved for a curb-to-curb width of less than the private road standard of 24 feet.

Mt. Whitney Road is a private roadway providing access to adjacent residences for its entire length extending west from Country Club Drive. It is paved for a curb-to-curb width of less than the private road standard of 24 feet.

State Route 78 is generally a six-lane east/west freeway. Interchanges are provided at Twin Oaks Valley Road, Woodland Parkway/Barham Drive, Nordahl Road, and I-15 in the Proposed Project area. From I-15 west toward Nordahl Road, SR-78 is a six-lane freeway. East of the I-15 interchange, SR-78 becomes a four-lane freeway. Ramp meters are provided at the Nordahl Road and Woodland Parkway/Barham Drive on-ramps. The SPRINTER Nordahl Road Station with shuttle partnering through NCTD and the Palomar Medical Center and park and ride options provides multi-modal transportation options (SANDAG 2011).

It should be noted that the SR-78 Nordahl Road Widening Project has been completed (Fall 2013). This project has provided an additional eastbound lane on SR-78 between Woodland Parkway and the Barham Drive on-ramp and two additional eastbound lanes (one auxiliary lane) from the Barham Drive on-ramp to the Nordahl Road off-ramp. In the WB direction on SR-78, a fifth lane between the end of the I-15 connector ramp and Nordahl Road has recently been constructed. An auxiliary lane on WB SR-78 from the I-15 connector ramp to the Nordahl Road off-ramp has been operational since January 2012. In addition, one lane in each direction on the Nordahl Road Bridge has recently been constructed to provide additional vehicle capacity for left-turn pockets onto the SR-78 on-ramps (Caltrans 2014). Additional turn pockets have been added to the WB and EB off-ramps to Nordahl Road to accommodate future SR-78 widening and HOV lanes. Appendix A of the TIA contained in Appendix H of this EIR contains a copy of the Improvements Fact Sheet for the SR-78 project.

Harmony Grove Village

The Harmony Grove Village project located north of Harmony Grove Road and bound by Country Club Drive and Wilgen Road is currently under construction. The project is being developed as a rural residential community with a small community/commercial core. The project includes 710 residential single-family units, 32 live/work lofts with 16,500 square feet of retail, a 25,000-square foot village core, an equestrian park, public and private parks, an institutional site (assumed to be a tack and feed store), and a fire station. As part of the Harmony Grove Village project, a new road named Harmony Grove Village Parkway ~~is under~~ has been constructed to connect Country Club Drive to the southern disjointed segment of Citracado Parkway. In addition, the Valiano study area intersection of Harmony Grove Road/Country Club Drive ~~is being~~ has been improved with the to install ~~installation of~~ a traffic signal and ~~provide~~ dedicated left-turn lanes for the westbound, eastbound and southbound approaches.

Within the Valiano study area, Country Club Drive from Kauana Loa Drive to just south of Harmony Heights Road (and Future Street 5A of the Project) has recently been improved to provide a paved width of 36 feet with a 12-foot two-way left-turn lane provided for the majority of the roadway with an LOS E capacity of 9,700 ADT. This improvement also included the realigning of Country Club Drive south of Kauana Loa Drive to increase the horizontal radii along this portion of the roadway. From just south of Harmony Height Road (south of future Street 5A) to Harmony Grove Village Parkway it has recently improved to a minimum graded width of 60 feet and a paved width of 40 feet with an LOS E capacity of 16,200 ADT. South of Harmony Grove Village Parkway to Harmony Grove Road, it is being constructed to a minimum graded width of 74 feet and a paved width of 54 feet with an LOS E capacity of 19,000 ADT.

As of 2017, ~~these currently under construction~~ roadway improvements ~~have been~~ are expected to be completed and by Summer 2015. ~~Therefore, they~~ have been included in the existing street network assumptions. Appendix B of the TIA contained in Appendix H of this EIR contains a copy of the Harmony Grove Village Conditions of Approval (COA) outlining the aforementioned roadway conditions.

2.8.1.2 Existing Traffic Volumes

Weekday AM/PM peak hour intersection turning movement and 24-hour bi-directional daily traffic counts were conducted by LLG in late August, September, and October 2012 when schools were in session. The Nordahl Road/SR 78 interchange was counted in June 2014 while schools were in session. The peak hour counts were conducted between the hours of 7:00-9:00 AM and 4:00-6:00 PM.

Freeway volumes were taken from both the Caltrans 2011 and 2012 Performance Measurement System (PeMS) data. The PeMS software distributes real-time peak hour and average daily traffic volumes and provides a graphical representation of volumes at each PeMS station location. Peak hour freeway volumes were from March 2011, where available. Average daily freeway volumes were taken from Caltrans 2011 ADT data. Per the recommendations of Caltrans, October and March are the preferred months for collecting freeway data since schools are generally in session and the occurrence of national holidays is limited.

PeMS stations are located at different post-miles along the freeway. The post-mile where data was collected for a specific segment of the freeway was analyzed using the mainline conditions of that particular location.

Harmony Grove Village Traffic Volumes

As stated above, the Harmony Grove Village project is currently under construction. Sales began in May 2015. ~~With the completion of this project anticipated for the end of 2015,~~ It was determined that a conservative approach was to assume the total traffic generated by this project would be on the street system prior to the opening day of the Proposed Project and, therefore, is included under existing baseline conditions.

The trip assignment taken from the Harmony Grove Village Final EIR was added to the existing 2012 traffic data to arrive at the final existing traffic volume conditions assessed in this ~~Draft~~ EIR.

Table 2.8-1, *Existing Traffic Volumes*, contains a summary of the most recent available ADTs. Appendix C of the TIA contained in Appendix H of this EIR contains the manual count sheets and the freeway mainline traffic data as well as a copy of the project assignment for Harmony Grove Village. Figure 2.8-2, *Existing Traffic Volumes*, depicts the existing peak hour intersection turning movement and 24-hour segment volumes at the study area intersections and segments.

2.8.1.3 Existing Levels of Service

LOS is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS designation is reported differently for signalized intersections, unsignalized intersections and roadway segments.

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 16 of the *2000 Highway Capacity Manual* (HCM), with the assistance of the *Synchro* (version 7.0) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection LOS. A more detailed explanation of the signalized intersections methodology is attached in Appendix H.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and LOS were determined based upon the procedures found in Chapter 17 of the HCM, with the assistance of the *Synchro* (version 7.0) computer software. A more detailed explanation of the unsignalized intersections methodology is attached in Appendix H.

Street segment analysis is based upon the comparison of average ADTs to the County of San Diego, City of Escondido, and City of San Marcos *Roadway Classification, Level of Service, and ADT Tables*, depending on which jurisdiction the street segment is located within. These tables provide segment capacities for different street classifications, based on traffic volumes and roadway characteristics. Copies of the County of San Diego, City of Escondido, and City of San Marcos capacity tables are included in Appendix H.

Freeway segments were analyzed during the AM and PM peak hours based on the methodologies as outlined in the San Diego Traffic Engineers Council/Institute of Transportation Engineers (SANTEC/ITE) Guidelines developed by Caltrans. The freeway segments LOS is based on a Volume to Capacity (V/C) method. Page 5 of Caltrans' *Guide for the Preparation of Traffic Impact Studies*, December 2002 documents a maximum service flow rate of 2,000 passenger cars per hour per lane. The freeway segments were analyzed using the existing mainline lane conditions at the location where PeMS data was collected. The freeway LOS operations are summarized in Table 2.8-2, *Caltrans District 11 Freeway Segment Level of Service Definitions*.

Existing Roadway Segments

A total of 17 roadway segments were evaluated. All of the analyzed local roadway segments currently operate at LOS D or better (Table 2.8-3, *Existing Street Segment Operations*), except for the following:

City of San Marcos

- East Barham Drive between the SR-78 Off-Ramp and Woodland Parkway which operates at a LOS F

Existing Intersections

A total of 18 intersections were evaluated. As shown in Table 2.8-4, *Existing Intersection Operations*, all of the intersections currently operate at an acceptable LOS except for the following:

City of Escondido

- Valley Parkway/9th Avenue: LOS D/D during the AM/PM peak hours
- Valley Parkway/I-15 southbound (SB) Ramps: LOS D/D during the AM/PM peak hours

Existing Freeway Segments

Table 2.8-5, *Existing Freeway Mainline Operations*, summarizes the freeway mainline operations on SR-78. The EB and WB segments of SR-78 east and west of Nordahl Road currently operate at acceptable levels during both the AM and PM peak hours except for the following:

- West of Nordahl Road: LOS E/E during the AM/PM peak hours

2.8.1.4 Regulatory Setting

County Zoning Ordinance, Parking Regulations, Sections 6750- 6799

The County's Zoning Ordinance sets the standards for parking including requirements for new uses and structures; existing uses and structures; conversion, alterations, or expansion of existing uses or structures; computation of vehicle and bicycle space requirements; location of parking to building sites; parking space dimensions; design of bicycle storage; design standards for off-street parking; loading spaces; variances from parking regulations; and parking of commercial vehicles in residential, agricultural, and certain special purpose zones. The County of San Diego Off-Street Parking Design Manual implements Section 6793(c) of the County Zoning Ordinance. This section of the Ordinance relates to the design, dimensions, construction, landscaping, and surfacing of parking and bicycle spaces, and driveways.

San Diego County Public Road Standards

These standards provide design and construction requirements for public road improvement projects located within the unincorporated areas of San Diego County. These standards apply to County initiated public road improvement projects as well as privately initiated public road improvement projects. These standards provide minimum design and construction requirements for public roads.

San Diego County Private Road Standards

These standards provide minimum design and construction requirements for private road improvements required as conditions of land development approval in unincorporated areas of the County. Levels of service are not established for private roads. Minimum design and construction requirements, however, are established based upon the projected ADT volume on the road.

County of San Diego Consolidated Fire Code

The County of San Diego, in collaboration with the local fire protection districts, created the CFC in 2001. The CFC contains the County's and fire protection districts' amendments to the California Fire Code. Emergency ingress/egress is established by County's CFC. Ingress/egress is necessary for both citizen evacuation and to provide access for emergency vehicles in the event of a fire or other emergency. Section 902.2 of the CFC dictates minimum design standards for —Fire Apparatus Access Roads and includes minimum road standards, secondary access requirements, and restrictions for gated communities. Road standard requirements for emergency vehicles specify a minimum 12-foot paved lane or 24-foot travel- way.

County of San Diego Regulatory Ordinances, Sections 77.201 – 77.220, Transportation Impact Fee

The San Diego County TIF Ordinance, as amended in February 2008, requires the assessment and collection of fees for roadway impacts as a condition of approval of a subdivision map or prior to issuance of a development permit, including a building permit. The County TIF Ordinance defrays the actual or estimated costs of constructing planned transportation facilities necessary to accommodate increased traffic generated by future development consistent with Section 66000 et seq. of the California Government Code (Mitigation Fee Act). Application of this fee includes, but is not limited to, development for residential, commercial, and industrial land uses. The fees are collected to fund identified transportation facilities, or portions thereof, that provide increased road capacity necessitated by the cumulative impacts of future development.

2.8.2 Analysis of Project Effects and Determination as to Significance

2.8.2.1 Project Trip Generation

Trip generation rates were taken from the SANDAG (*Not So*) *Brief Guide of Vehicular Traffic Generation Rates* (April 2002). According to this reference, two residential trip rates were deemed appropriate for this analysis: “estate, urban or rural” and “single-family detached” residential. The

estate residential trip rate is used for densities averaging 1-2 units per acre. The single-family residential trip rate is used for densities averaging 3-6 units per acre.

Since preparation of the TIA prepared in April 2014, the Proposed Project's residential units have been reduced from 334 residential units to 326 residential units for a decrease of 8 units. The trip generation calculations provided in the TIA utilize the 334 residential units, which represents a conservative analysis.

For purposes of the Project trip generation rate utilized in the TIA, the Project proposes to develop 334 du within five neighborhoods, with each neighborhood incorporating different densities and minimum lot sizes. In addition, the Proposed Project includes up to 54 ~~Second Dwelling Units~~ Accessory Dwelling Units within Neighborhoods 2, 3 and 5 which could be attached or detached from the main unit. The five neighborhoods would be distributed among three separate areas. Areas 1 and 2 are situated between Hill Valley Drive and Mt. Whitney Road (Neighborhoods 1 through 4). These two areas consist of 230 homes and 35 homes, respectively, for a total of 265 du. Area 3, consisting of 69 du, is located south of Mt. Whitney Road, abutting Country Club Drive (Neighborhood 5). The trip generation calculations for neighborhoods proposed with lot sizes less than 0.5 acre assumed the single-family rate of 10 ADT per unit. Neighborhoods where the lot sizes were 0.5 acre or greater, or had lot sizes of 10,000 s.f. or more, were considered estate residential. For purposes of the ~~Second Dwelling Units~~ Accessory Dwelling Units, the "apartment" trip rate was used.

The following lists each neighborhood, by area, and their corresponding trip rates:

Area 1		
Neighborhood 1		
49 du	"4-pack" detached condos	10 ADT/du
47 du	4,640 s.f. minimum	10 ADT/du
Neighborhood 2		
58 du	8,620 s.f. minimum	6 ADT/du
23 du	Second Dwelling Unit	10 ADT/du
Neighborhood 4		
76 du	7,000 s.f. minimum	10 ADT/du
Area 2		
Neighborhood 3		
35 du	15,000 s.f. minimum	12 ADT/du
11 du	Second Dwelling Unit	6 ADT/du
Area 3		
Neighborhood 5		
21 du	0.5 acre minimum	12 ADT/du
48 du	6,000 s.f. minimum	10 ADT/du
20 du	Second Dwelling Unit	6 ADT/du

Using the above trip rates, the Proposed Project is calculated to generate 3,786 ADT. In addition to the residential units, a wastewater treatment plant and water reclamation facility (WTWRF) is proposed within Neighborhood 5. This facility is expected to generate an additional 10 trips per

day to account for the maintenance, management, and supervision of the site, as well as to account for the few monthly truck trips associated with hauling sludge to a nearby landfill.

Table 2.8-6, *Project Trip Generation*, shows the forecast trip generation for the Proposed Project. As shown in the table, the Project (including WTWRF) is calculated to generate 3,786 ADT, with a total of 304 trips during the AM peak hour (88 inbound/216 outbound trips) and 376 trips during PM peak hour (263 inbound/ 113 outbound). Since the Project proposes a General Plan Amendment to increase the allowable General Plan (GP) land use intensity, it will increase the number of trips that are planned for this property.

2.8.2.2 Project Trip Distribution and Assignment

Trip distribution percentages were calculated using a Select Zone Assignment (SZA) based on the SANDAG traffic model. The Project-generated traffic was distributed and assigned to the street system based on the results of the SZA and also based on the Project access points, characteristics of the roadway system, and the location of residential and employment opportunities in the surrounding area. A copy of the SZA is contained in Appendix M of the TIA which is contained in Appendix H-1 of this EIR.

The primary access points for Areas 1 and 2 (Neighborhoods 1 through 4) are on Eden Valley Lane and Mt. Whitney Road, connecting to Country Club Drive. It was assumed that Proposed Project trips associated with Areas 1 and 2 would be evenly distributed between these two access roads. Area 3 is assumed to take access from two new access driveways on Future Street 5A, both connecting to Country Club Drive. It was assumed that Project trips associated with Area 3 would be evenly distributed between the two access roads.

The trips generated by the WTWRF located in the southeastern corner of Neighborhood 5 were distributed out of the New Access Road 5A South. One hundred percent of these trips were assumed to travel north on Country Club Drive to the Nordahl Road/SR-78 interchange. These trips were included in the Area 3 traffic assignment analyzed herein.

The trip distribution for Areas 1 and 2 are shown together and Area 3 is shown separately since Proposed Project traffic for these areas was distributed to the street system via different access points. Traffic generated by all three areas, plus the WTWRF trips, was combined and assigned to the street system representing the total traffic generated by the Project. Any phased development that may occur across the five neighborhoods and/or three areas is unknown at this time. Therefore, construction of all 334 du and the WTWRF was assumed to occur at once in order to provide a worst-case scenario for analysis of traffic impacts.

It should be noted that, as part of the Proposed Project design, northbound left-turn pockets are proposed at each of the four Project access locations along Country Club Drive. The provision of left-turn pockets allows for northbound left-turning vehicles to be passed by northbound through vehicles without substantially slowing northbound through traffic. Given that Country Club Drive currently has a posted speed limit of 45 mph, much higher than the 30-mph limit for Residential Collector roadways, the proposed left-turn pockets would enhance the flow of northbound through traffic along Country Club Drive between Hill Valley Road and New Access Road 5A South.

Figure 2.8-3a, *Project Traffic Distribution—Areas 1 and 2*, and 2.8-3b, *Project Traffic Distribution—Area 3*, show the Project traffic distribution for the three Project areas. Figure 2.8-4, *Project Traffic Volumes*, shows the assignment of the total Project trips for all three areas and the WTWRF.

2.8.2.3 Roadway Segments

Guidelines for the Determination of Significance

A significant traffic impact would occur if:

1. The additional or redistributed ADT generated by the Proposed Project would cause on-site Mobility Element roads to operate below LOS C during peak traffic hours.
2. The additional or redistributed ADT generated by the Proposed Project would significantly increase congestion on a Mobility Element road or state highway currently operating at LOS E or F, or would cause a Mobility Element road or state highway to operate at a LOS E or F as a result of the Proposed Project as identified in Matrix 1, below.

Matrix 1 MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON MOBILITY ELEMENT ROAD SEGMENTS			
Allowable Increases on Congested Road Segments			
LOS	Two-lane Road	Four-lane Road	Six-lane Road
E	200 ADT	400 ADT	600 ADT
F	100 ADT	200 ADT	300 ADT

Notes:

1. By adding Proposed Project trips to all other trips from a list of projects, this same table is used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable LOS, when such traffic uses a significant amount of remaining road capacity.
3. The Proposed Project would cause a Mobility Element road to exceed the thresholds presented in Matrix 2, below.
4. The additional or redistributed ADT generated by the Proposed Project would cause a residential street to exceed its design capacity.

Matrix 2 MEASURE OF SIGNIFICANT PROJECT TRAFFIC IMPACTS FOR MOBILITY ELEMENT ROADS, SIGNALIZED INTERSECTIONS, AND RAMPS							
LOS with Project	Allowable Change Due to Project Impact						
	Freeways*		Roadway Segments ¹		Signalized Intersections	Ramps	Ramps with >15 min. delay
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.) ²	Delay (min.) ²	Delay (min.) ²
E and F	0.01	1	0.02	1	2	-	2

*It is noted that SANDAG does not have jurisdiction over freeways. Caltrans, the agency with jurisdiction over freeways within the study area, considers impacts to freeways significant if additional traffic causes the operations to drop one letter grade. The Caltrans thresholds are used in the analysis below.

¹ For County arterials that are not identified in SANDAG's RTP as regionally significant arterials, significance may be measured based upon an increase in ADT. The allowable change in ADT due to Proposed Project impacts in this instance would be identified in Threshold Matrix 1.

² Delay = Average stopped delay per vehicle measured in seconds (sec.) or minutes (min.)

> = greater than

City of San Marcos

A street segment is considered significantly impacted when the project traffic degrades the LOS from acceptable to unacceptable. Unacceptable LOS is E or F. If a segment is operating at LOS E or F, then a significant impact is calculated when the project causes an increase in the V/C ratio of greater than 0.02.

City of Escondido

A street segment is considered significantly impacted when the project traffic degrades the LOS from acceptable to unacceptable. Unacceptable LOS is D or below. If a segment is operating at LOS C and decreases to D, E, or F, then a significant impact is calculated.

Guideline Sources

The following criterion was utilized to evaluate potential significant impacts, based on the County Guidelines for Determining Significance – Transportation and Traffic (2011b), for study area locations within the County of San Diego. For study area intersections and segments located in the City of Escondido and the City of San Marcos, the SANTEC/ITE *Guidelines for Traffic Impact Studies in the San Diego Region*, March 2, 2000, were applied.

Analysis

As shown in Figure 2.8-5, *Existing Plus Project Traffic Volumes*, and Table 2.8-7, *Roadway Segment Operations Under Existing and Existing Plus Cumulative Plus Project Conditions*, with the addition of the Proposed Project traffic, two segments would operate at unacceptable LOS:

- East Barham Drive between SR-78 eastbound off ramp and Woodland Parkway, in the City of San Marcos would continue to operate at an LOS F; and

- Country Club Drive between Auto Park Way and Hill Valley Drive in the City of Escondido would operate at LOS D.

While the Proposed Project would not result in an increase in LOS on the East Barham Drive segment, the addition of Project traffic would result in an unacceptable decrease in LOS on the Country Club Drive segment. With regard to the County of San Diego street segments, the addition of the Proposed Project traffic would not increase congestion on any Mobility Element road or state highway, cause a Mobility Element road to exceed the thresholds in Matrix 2 (above), or cause a residential street to exceed its design capacity. However, based on the analysis, **a significant impact to the Country Club Drive roadway segment between Auto Park Way and Hill Valley Drive in the City of Escondido under Existing Plus Project conditions would occur (Impact TR-1a).**

2.8.2.4 Signalized Intersections

Guidelines for the Determination of Significance

A significant traffic impact would occur if:

5. The additional or redistributed ADT generated by the Proposed Project would significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or would cause a signalized intersection to operate at a LOS E or LOS F as identified in Matrix 3, below.
6. Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the Proposed Project would significantly impact the operations of the intersection.

Matrix 3 MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON INTERSECTIONS: ALLOWABLE INCREASES ON CONGESTED INTERSECTIONS		
LOS	Signalized	Unsignalized
E	Delay of 2 seconds or less	20 or less peak period trips on a critical movement
F	Either a delay of 1 second, or 5 or less peak period trips on a critical movement	5 or less peak period trips on a critical movement

Notes:

1. A critical movement is an intersection movement (right-turn, left-turn, through movement) that experiences excessive queues, which typically operate at LOS F. Also if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway.
2. By adding Proposed Project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's direct or cumulative impacts do not trigger an unacceptable LOS, when such traffic uses a significant amount of remaining road capacity.
4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay and the number of trips on a critical movement, exceedance of either criteria result in a significant impact.

City of San Marcos

A signalized intersection is considered to be significantly impacted when Proposed Project traffic degrades the LOS from acceptable to unacceptable. Unacceptable LOS is E or F. If an intersection is operating at LOS E or F, then a significant impact is calculated when the Proposed Project adds more than 2.0 seconds of delay.

City of Escondido

A signalized intersection is considered to be significantly impacted when Proposed Project traffic degrades the LOS from acceptable to unacceptable. Unacceptable LOS is D or below. If an intersection is operating at LOS D, E, or F, then a significant impact is calculated when the Proposed Project adds more than 2.0 seconds of delay.

Guideline Sources

For study area intersections within the County of San Diego, these guidelines are based on the County Guidelines for Determining Significance – Transportation and Traffic (2011b). For study area intersections located in the City of Escondido and the City of San Marcos, the SANTEC/ITE *Guidelines for Traffic Impact Studies in the San Diego Region* (March 2, 2000) were applied.

Analysis

As shown in Table 2.8-8, *Intersection Operations Under Existing and Existing Plus Cumulative Plus Project Conditions*, all signalized intersections are calculated to operate at acceptable levels of service with the exception of the following two intersections in the City of Escondido:

- Valley Parkway/9th Avenue: LOS D/D during the AM/PM peak hours
- Valley Parkway/I-15 Southbound Ramps: LOS D/D during the AM/PM peak hours

Although these two signalized intersections would operate at LOS D with the addition of Proposed Project traffic, these intersections were already operating at LOS D and the additional traffic did not add more than 2.0 seconds of delay. As a result, **impacts to signalized intersections under Existing Plus Project conditions would be less than significant.**

2.8.2.5 *Unsignalized Intersections*

Guidelines for the Determination of Significance

A significant traffic impact would occur if:

7. The additional or redistributed ADT generated by the Proposed Project would add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D.
8. The additional or redistributed ADT generated by the Proposed Project would add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E.
9. The additional or redistributed ADT generated by the Proposed Project would add six or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F.
10. The additional or redistributed ADT generated by the Proposed Project would add six or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F.
11. Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the Proposed Project would significantly impact the operations of the intersection.

City of San Marcos

An unsignalized intersection is considered significantly impacted when Proposed Project traffic degrades the LOS from acceptable to unacceptable. Unacceptable LOS is E or F. If an intersection is operating at LOS E or F, then a significant impact is calculated when the Proposed Project adds more than 2.0 seconds of delay.

City of Escondido

An unsignalized intersection is considered significantly impacted when Proposed Project traffic degrades the LOS from acceptable to unacceptable. Unacceptable LOS is D or below. If an intersection is operating at LOS D, E, or F, then a significant impact is calculated when the Proposed Project adds more than 2.0 seconds of delay.

Guideline Sources

For study area intersections within the County of San Diego, these guidelines are based on the County Guidelines for Determining Significance – Transportation and Traffic (2011b). For study area intersections located in the City of Escondido and the City of San Marcos, the SANTEC/ITE *Guidelines for Traffic Impact Studies in the San Diego Region* (2000) were applied.

Analysis

There are no unsignalized study area intersections in the Cities of San Marcos and Escondido; therefore, there are no impacts to unsignalized intersections in these two cities. As shown in Table 2.8-8, all unsignalized intersections in the County of San Diego are calculated to operate at acceptable levels of service with the addition of Proposed Project traffic.

In accordance with County Private and Public Road Standards, a review of the sight distance standards at Project access locations on Country Club Drive shall be done and adequate sight distance meeting County standards shall be provided or a specific design exception shall be granted by DPW. In addition, ~~a stop sign shall be installed on Mt. Whitney Road where one does not exist today, when warrants are met, and northbound left-turn pockets shall be installed at each of the four access locations.~~ As a result, **impacts to unsignalized intersections under Existing Plus Project conditions would be less than significant.**

2.8.2.6 Freeway Mainline Segments

Guidelines for the Determination of Significance

A significant traffic impact would occur if:

12. The Proposed Project would cause a freeway segment to exceed the thresholds presented in Matrix 2, above.

Guideline Source

For all freeway segments within the study area, this guideline is based on the County Guidelines for Determining Significance – Transportation and Traffic (2011b).

Analysis

Under Existing Plus Project conditions, the WB segment of SR-78 west of Nordahl Road would operate at LOS E during the AM/PM peak hours (Table 2.8-9, *Freeway Segment Operations Under Existing and Existing Plus Cumulative Plus Project Conditions*). Because the Proposed Project would contribute a small amount of traffic to this segment, the V/C would be 0.006 in the AM peak hour and 0.003 in the PM peak hour. The Proposed Project would, therefore, result in less than significant impacts to freeway segments.

2.8.2.7 Traffic Hazards Due to an Existing Transportation Design Feature

Guidelines for the Determination of Significance

The determination of significant hazards to an existing transportation design feature would be on a case-by-case basis, considering the following factors:

13. Design features/physical configurations of access roads may adversely affect the safe movement of all users along the roadway.
14. The percentage or magnitude of increased traffic on the road due to the Proposed Project may affect the safety of the roadway.
15. The physical conditions of the Project site and surrounding area, such as curves, slopes, walls, landscaping, or other barriers, may result in conflicts with other users or stationary objects.
16. Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.

Guideline Source

These guidelines, which apply to the entire study area, regardless of jurisdiction, are based on the County Guidelines for Determining Significance – Transportation and Traffic (2011b).

Analysis

The Proposed Project circulation system, including driveway corner sight distances, was designed in conformance with applicable County standards and requirements and would not significantly impact the safe movement of users along the area roadways. Access to the Project site would be taken from four locations off of Country Club Drive, the majority of which is within the County's jurisdiction: Eden Valley Lane, Mt. Whitney Road, and two Future Access Driveways located south of Mt. Whitney Road (Future Street 5A [North] and Future Street 5B [South]).

As part of the Proposed Project, improvements to Eden Valley Lane and Mt. Whitney Road would be made to bring them into conformance with County private road standards, including grading to a width of 28 feet and paving to a width of 24 feet within the graded area (refer to Figures 1-15a and b). It is possible that not all of Mt. Whitney Road would be improved to County standards; if this is the case, a design exception would be required. Future Street 5A (which would include the noted north and south Future Access Driveways) would be built to the same private road standards set by the County. The Eden Valley Lane and Mt. Whitney Road intersections with Country Club Drive exist at the time of this writing.

~~As part of Project design, a stop sign would be installed on Mt. Whitney Road where one does not exist today, provided warrants are met.~~

With the above-described improvements in place (i.e., ~~stop sign at Mt. Whitney Road/Country Club Drive~~, construction of Future Street 5A, and northbound left-turn pockets and striping at the four access locations along Country Club Drive), LOS C or better operations were calculated at the four Proposed Project Access Driveways. A queuing analysis (tabular results are presented Appendix J contained in the TIA in Appendix H of this EIR) shows that adequate queuing capacity would be provided at the four dedicated northbound left-turn Access Driveways with minor street stop-sign controls, given the low amount of northbound left-turns (up to 16 PM peak hour inbound trips) and LOS C or better operations. Based on the queuing analysis, it is recommended that the Project provide a minimum of 50 feet of storage for all dedicated left-turns with 90-foot tapered lanes at the northbound approaches along Country Club Drive.

In addition to the provision of adequate queuing, the Proposed Project would ensure that sight distance meeting County standards is provided at each of the four Project Access Driveway locations along Country Club Drive. The Proposed Project also would include the construction of numerous internal intersections, with the traffic controls installed, as appropriate, at each intersection (dependent upon signal warrants). Left-turns from private driveways along Country Club Drive cross one set of double yellow lines which allow for full movements when safe to enter the travel way. The LOS for the left-turn movements at the Project driveways along Country Club Drive, which are more similar to minor street left-turns than single-family residential driveway turns, are calculated to operate at LOS C or better. Therefore, although the Proposed Project would result in increased traffic on new and existing roadways, **impacts associated with safety of those roadways would be less than significant.**

2.8.2.8 Traffic Hazard to Pedestrians or Bicyclists or Equestrians

Guidelines for the Determination of Significance

The determination of significant hazards to pedestrians or bicyclists or equestrians would be on a case-by-case basis, considering the following factors:

17. Design features/physical configurations on a road segment or at an intersection that may adversely affect the visibility of pedestrians or bicyclists or equestrians to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists.
18. The amount of pedestrian activity at the Project access points that may adversely affect pedestrian safety.
19. The preclusion or substantial hindrance of the provision of a non-motorized trail facility on a roadway adjacent to the Project site.
20. The percentage or magnitude of increased traffic on the road due to the Proposed Project that may adversely affect non-motorized trail safety.
21. The physical conditions of the Project site and surrounding area, such as curves, slopes, walls, landscaping, or other barriers that may result in vehicle/pedestrian or vehicle/bicycle or vehicle/equestrian conflicts.

22. Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.
23. The potential for a substantial increase in non-motorized trail activity without the presence of adequate facilities.

Guideline Source

These guidelines, which apply to all of the study area, regardless of jurisdiction, are based on the County Guidelines for Determining Significance – Transportation and Traffic (2011b).

Analysis

A system of public and private trails and pathways for pedestrians, bicyclists, and equestrian users are proposed within the Proposed Project site, as described in Subsection 1.2.1.2 in Chapter 1.0. As depicted on Figure 1-17, a 10-foot wide, soft-surface public multi-use trail would run along the entire community parkway, as well as connecting with various parks, open space areas, and a private trail system. The public trail would be built to County of San Diego Trail Design Standards and would be fenced on one or both sides. The proposed private trails would be 6 to 8 feet in width, depending on the terrain. Trail safety and rules signage would be posted at strategic locations along the trails. In addition, concrete sidewalks that would connect to the proposed trail system would be located along most internal roadways. Hazards for equestrian crossings at signalized and unsignalized intersections are similar to those for pedestrians and bicyclists. Because access at signalized intersections is controlled, it is generally safer than access at unsignalized intersections; however, there are no signalized intersections within immediate vicinity of the Project access locations. Due care is required for all crossing parties and for drivers of automobiles as required by state law.

In addition to traditional traffic controls such as stop signs, crosswalks, etc., traffic “calming” devices would be implemented into the Proposed Project to slow vehicular traffic and create a safe environment for trail and vehicular users. If approved by the San Marcos Fire Protection District, features such as “chokers” to narrow the street width, and “speed tables” (i.e., long, raised speed humps) may occur at trail crossings and certain intersections to reduce speed and improve safety along the main parkway. In light of these improvements, the increased traffic on the roads due to the Proposed Project would not adversely affect pedestrian and bicycle and equestrian safety. Additionally, the proposed transportation improvements would be constructed in accordance with County standards and would not include design features or physical configurations on a road segment or at an intersection that would adversely affect the visibility of other non-motorized users to drivers entering and exiting the site, and the visibility of cars to other non-motorized users. The Proposed Project also would not preclude or substantially hinder the provision of a planned bike lane or pedestrian facility on a roadway adjacent to the Project site. For these reasons, **impacts to pedestrian, equestrian, and bicyclist safety would be less than significant.**

2.8.2.9 Alternative Transportation

Guideline for the Determination of Significance

A significant impact to alternative transportation would occur if:

24. The Proposed Project would not comply with County General Plan objectives supporting alternate forms of transportation to reduce demand on the road system.

Guideline Source

This guideline is based on the County Guidelines for Determining Significance – Transportation and Traffic (2011b). The objectives would be implemented through specific policies of the COS Element (see Section 3.1.4, *Land Use*, for a discussion of applicable General Plan policies).

Analysis

The County 2011 General Plan provides for balanced population growth and development with infrastructure needs and resource protection. The current General Plan emphasizes Smart Growth and land planning principles that will reduce VMT by locating future development in compact areas close to jobs, services, and public facilities to maximize the use of existing infrastructure, thus resulting in a reduction of greenhouse gases (GHGs). Land Use Policy LU-5.1 seeks to reduce vehicle trips within communities by incorporating plan residential densities at levels that support multi-modal transportation, including walking, bicycling, and the use of public transit, when appropriate. Conservation and Open Space Policy COS-16.1 seeks to expand opportunities for transit use and alternative transportation modes that contribute to environmental and human sustainability and minimize GHG and air pollutant emissions. The Mobility Element Policy ME-4.3 seeks to design and construct public roads to meet travel demands in Semi-Rural and Rural Lands that are consistent with rural character while safely accommodating transit stops when deemed necessary, along with bicyclists, pedestrians, and equestrians. Mobility Element Policy ME-8.1 seeks to locate transit stops and facilities in areas that facilitate transit ridership, and designate such locations as part of planning efforts for Town Centers, transit nodes, and large-scale commercial or residential development projects. With the Nordahl Road Station within one mile of the project, opportunities will be available for shuttle and bus service on Country Club Drive. Currently, there is bus service on Citracado Parkway and design plans for construction a connection of Harmony Grove Road and Avenida del Diablo and to I-15 are complete. The City of Escondido expects the construction to start in 2016. Refer to the Land Use section for analysis of the General Plan goals and policies.

The Proposed Project incorporates and would facilitate Smart Growth principles and alternative transportation, by virtue of its location and inclusion of a pedestrian and multi-use trail network. As described above, the 10-foot wide public multi-use trail would be built to County standards. The proposed multi-purpose trails, bike paths, and sidewalks would provide access to the community center and private parks for residents, and connect to public trail system and to the public park in Neighborhood 5. The Project would also include the installation of residential electric vehicle charging stations by providing sufficient electrical capacity and appropriate

circuitry in proximity to vehicle parking areas and/or garages. Placing residential uses near transportation, employment, shopping, and services, helps minimize travel times and is consistent with the goals of SB 375 (Sustainable Communities and Climate Protection Act of 2008). Specifically, the Proposed Project would be built in proximity to the nearby Palomar Medical Center, Palomar Power Plant, Stone Brewing Company, and many other manufacturing, retail, and office/business park uses within approximately one mile travel distance of the Project site. Options for alternative transportation are available at the Nordahl Road Bus and Sprinter Center, located one mile north of the project. As described in Subchapter 2.2, *Air Quality*, of this EIR, this proximity to a variety of service and employment uses is likely to reduce the average VMT for the average commuter residing in the Valiano community.

In summary, the Proposed Project incorporates smart growth principles and alternative transportation for pedestrians and cyclists. The Project would support alternate forms of transportation to reduce demand on the road system. For these reasons, **impacts to alternative transportation would be less than significant.**

2.8.2.10 Additional Access Option

Analysis was conducted for an alternate project description scenario where full Project access would be provided via Hill Valley Drive in addition to Eden Valley Lane, Mt. Whitney Road, and two future access driveways south of Mt. Whitney Road, all connecting to Country Club Drive. Based on the Project distribution discussed in Subsection 2.8.2.2, the traffic volumes at the following study locations would be affected by the addition of Hill Valley Drive as an access point:

Intersections

- Country Club Drive / Hill Valley Drive
- Country Club Drive / Eden Valley Lane

Segments

- Country Club Drive between Hill Valley Drive and Eden Valley Lane

The traffic volumes at the remaining study locations would not change.

Project trips were reassigned to the locations listed above based on the Project distribution discussed in Subsection 2.8.2.2 and the assumption that 60 percent of the trips originally accessing the Proposed Project via Eden Valley Lane would now utilize Hill Valley Drive.

Table 2.8-10, *Additional Access Scenario Intersection Operations*, summarizes the intersections LOS for the Existing, Existing + Project, Existing + Cumulative Projects and Existing + Project + Cumulative Projects scenarios. As seen in Table 2.8-10, the Country Club Drive / Hill Valley Drive and Country Club Drive / Eden Valley Lane intersections are calculated to operate at acceptable levels of service in all four scenarios. Appendix K L of the TIA in Appendix H-1 of the EIR contains the alternative access scenario intersection analysis worksheets.

Table 2.8-11, *Additional Access Scenario Street Segment Operations*, summarizes the roadway segment LOS for the Existing, Existing + Project, Existing + Cumulative Projects and Existing + Project + Cumulative Projects scenarios. As seen in Table 2.8-11, Country Club Drive between Hill Valley Drive and Eden Valley Lane is calculated to operate at the same LOS under this alternative scenario as compared to the proposed Project.

Hill Valley Drive is a public roadway from Country Club Drive along the industrial complex frontage for a quarter mile to the west. This portion of Hill Valley Drive is unclassified in the County *Mobility Element*, and is paved for a curb-to-curb width of 24 feet with a graded width of 28 feet. Beyond this portion of the road, Hill Valley Drive continues as a private dirt road where it ultimately dead-ends at the Proposed Project boundary. Hill Valley Drive would be expected to carry 1,147 ADT with the access alternative. In order for this roadway to meet private road standards set by the County, the dirt portion of the roadway connecting to the Proposed Project site would need to be improved to a graded width of 28 feet and an improved (paved) width of 24 feet with a corresponding design speed of 30 mph. These improvements would allow Hill Valley Drive to meet the private road standards for roadways carrying between 751 to 2,500 ADT.

A dedicated left-turn lane would be provided on Country Club Drive at Hill Valley Road if this alternate access scenario were to be implemented. The provision of a left-turn lane would provide a refuge lane for left-turning vehicles thus improving the flow of northbound through traffic and reducing the potential for vehicular conflict due to the slowing of northbound traffic. Adequate sight distance will also be provided per County/City standards at the Country Club Drive/Hill Valley intersection to avoid any potential access impacts.

2.8.3 Cumulative Impact Analysis

Other future development projects in the vicinity of the Proposed Project have the potential to contribute additional vehicle trips and traffic impacts to the same road segments and intersections as those evaluated in the Proposed Project traffic analysis. The impacts associated with the Proposed Project in combination with this cumulative traffic are addressed in the Existing Plus Cumulative Plus Project analysis scenario, in which existing traffic plus cumulative traffic projected to occur through Project buildout are combined with Proposed Project traffic and the Project's contribution to the impacts assessed.

The reader should note that the cumulative analysis presented below is a conservative analysis in that it likely overstates impacts because it includes all of the traffic projected to result from cumulative projects, but it does not assume that the mitigation (i.e., roadway improvements) proposed by these other projects are in place. In other words, the analysis is conservative (a “worst-case” analysis) because the projected roadway conditions that provide the basis for analysis do not include all roadway improvements likely to be constructed during the intervening years. (The reader should also note that the development applications submitted to the County for approval, and included as part of the analysis as projected cumulative conditions, frequently assume higher densities [with higher associated traffic generation] than what is ultimately permitted during project approvals.)

Based on the research conducted for the cumulative condition, three County of San Diego projects, 31 City of San Marcos projects, and seven City of Escondido projects were identified for inclusion in the TIA, for a total of 41 cumulative projects. These projects are discussed in detail in the TIA contained in Appendix H-1.

Figure 2.8-6 depicts the *Existing Plus Cumulative Traffic Volumes* and Figure 2.8-7 shows the *Existing Plus Cumulative Plus Project Traffic Volumes* in the study area.

2.8.3.1 Existing Plus Cumulative Plus Project Impacts

Several network improvements are proposed by the cumulative projects. However, since the timeframe for construction of the majority of these improvements is unknown, the existing lane geometries, with the inclusion of the Harmony Grove Village network improvements currently under construction, were assumed as the baseline conditions in the Existing Plus Cumulative scenarios.

Road Segments

As shown on Figure 2.8-7 and Table 2.8-7, four roadway segments would operate at an unacceptable LOS in the Existing Plus Cumulative Plus Project scenario. The Proposed Project traffic in conjunction with cumulative traffic would exceed the ADT limits indicated in Matrix 1 (above) at two of these roadway segments that would operate at unacceptable levels (LOS E or F), and exceed the 200 or 100 ADT contribution threshold for LOS E and F, respectively. Cumulative impacts to the following two roadway segments would be significant (Impacts TR-1b and TR-2):

City of Escondido

TR-1b: Country Club Drive from Auto Park Way to Hill Valley Drive (LOS F)

County of San Diego

TR-2: Country Club Drive from Hill Valley Drive to Kauana Loa Drive (LOS F)

State Route Segments

As shown on Figure 2.8-7 and Table 2.8-9, the segment of Westbound SR-78 west of Nordahl Road would operate at an unacceptable LOS in the Existing Plus Cumulative Plus Project scenario. The Proposed Project traffic in conjunction with cumulative traffic along the named segment of SR-78, however, would not exceed the significance criteria in Matrix 2 (above). Therefore, cumulative impacts to state route segments would be less than significant.

Signalized Intersections

Figure 2.8-7 and Table 2.8-8 illustrate the ADT for each signalized intersection analyzed in the Existing Plus Cumulative Plus Project condition. Under this scenario, two signalized intersections would operate at an unacceptable LOS (D or below in the City of Escondido) with an increase in

delay of greater than two seconds. The Proposed Project, along with other cumulative projects, would cause a significant cumulative impact to the following signalized intersections in the City of Escondido (Impacts TR-3 and TR-4):

- Auto Park Way/Mission Road (LOS D/D during the AM/PM peak periods)
- Auto Park Way/Country Club Drive (LOS D during the AM peak period)

Unsignalized Intersections

Under the Existing Plus Cumulative Plus Project scenario, one unsignalized intersection would operate at an unacceptable LOS (E or F): Harmony Grove Road/Kauana Loa Drive (Figure 2.8-7 and Table 2.8-8). However, the Project would add zero trips to the northbound critical movement; therefore, there would not be an increase in delay and cumulative impacts to unsignalized intersections would be less than significant.

2.8.4 Significance of Impacts Prior to Mitigation

The Proposed Project would result in the following significant direct and cumulative impacts to a number of roadway segments and intersections (both signalized and unsignalized):

Direct and Cumulative Impacts

Under Existing Plus Project and Existing Plus Cumulative Plus Project conditions, significant direct and cumulative impacts would occur along two analyzed roadway segments, including:

City of Escondido

Impact TR-1a Country Club Drive from Auto Park Way to Hill Valley Drive (LOS F: Direct
and TR-1b and Cumulative)

County of San Diego

Impact TR-2 Country Club Drive from Hill Valley Drive to Kauana Loa Drive (LOS F:
Cumulative Only)

Under Existing Plus Cumulative Plus Project conditions, significant cumulative impacts would occur at two analyzed signalized intersections, including:

City of Escondido

Impact TR-3 Auto Park Way/Mission Road (LOS D/D during the AM and PM peak periods)

Impact TR-4 Auto Park Way/Country Club Drive (LOS D during the AM peak period)

2.8.5 Mitigation

Mitigation for Direct and Cumulative Significant Impacts

As enumerated in Section 2.8.4, the Proposed Project would result in significant impacts to local roadway segments (in the City of Escondido and County of San Diego) and intersections (in the City of Escondido). Mitigation measures proposed to address the Proposed Project's contribution to direct and cumulative impacts are identified below.

Direct impacts are those impacts caused by project-related development. Cumulative impacts are those impacts caused collectively by all development within the community. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (CEQA Guidelines § 15355). The CEQA Guidelines recognize that mitigation for cumulative impacts may involve the adoption of ordinances or regulations (CEQA Guidelines §15130) such as, but not limited to, the County-adopted Transportation Impact Fee (TIF) Program (described below).

Roadway Segments

City of Escondido

M-TR-1a In order to mitigate this direct and cumulative impact, the EB approach at the Auto Park

and 1B Way/Country Club Drive intersection shall be restriped to provide one left-turn lane, one shared left-turn/through lane, and one right turn lane. The signal will be modified to change the east/west approach to "split" phasing. In addition, Country Club Drive will be widened to provide a paved width of 36 feet consisting of two travel lanes and a 10-foot striped center turn lane starting 220 feet southwest of Auto Park Way for a length of approximately 830 feet. Improvements will include connecting the existing sidewalk along the northern side of this roadway section with a 5-foot sidewalk complete with a 6-inch curb and gutter and providing a 4-foot decomposed granite pathway along the south side of this segment with a 6-inch asphalt berm.

~~The Applicant has proposed a prohibition on street parking along this portion of Country Club Drive that may or may not be permitted by the City of Escondido City Council. Mitigation for this impact shall be funded or constructed subject to the satisfaction of the City of Escondido.~~

County of San Diego

The County Board of Supervisors adopted a TIF ordinance, which provides a mechanism for the County to obtain funding to mitigate anticipated cumulative transportation/circulation impacts, by requiring payment of an impact fee designated in the ordinance. Typically, cumulative improvements are implemented with the Final First Map of a project. The County updated the TIF Program in December 2012. The TIF Program identifies transportation facilities needed to address cumulative impacts within designate areas of the County (TIF Areas) and then provides for payment of fees to cover a project's "fair share" of the cost. TIF fees are segregated by TIF Area,

Region, State Highway, and Ramps and are used to help fund transportation improvements within those identified locations.

The Proposed Project is located within the San Dieguito TIF Area. In order for this GPA project to promote orderly development and comply with the County's TIF Program, the TIF Program shall be updated to include potential changes to the Land Use Element and Mobility Element. The Project shall provide a fair share contribution towards the cost of updating the County's TIF program. The amount of the fair share contribution would be determined at the time the County begins the effort to update the TIF program. The cost of the TIF update would be shared by all of the approved GPAs that are being incorporated into the TIF Program to the satisfaction of the Director of PDS. Prior to the recordation of the First Final Map for any unit, the Project shall provide a fair share contribution towards the cost of updating the County's TIF program. The [PDS, LDR] shall review the County's TIF Program and update it to allow the use of a TIF payment to mitigate cumulative traffic impacts. The County's TIF Program update shall be approved by the Board of Supervisors. The following mitigation measures are proposed to partially mitigate the Project's contribution to cumulative impacts in the County of San Diego:

M-TR-2 In order to mitigate the cumulative impact along this portion of Country Club Drive, the Applicant shall pay the appropriate TIF amount.

A number of Project Design Features also contribute to improving capacity on Country Club Drive, including the following:

- ~~a stop sign shall be installed on Mt. Whitney Road where one does not exist today, when warrants are met.~~
- Sight distance meeting County standards shall be provided at each of the four access locations along Country Club Drive.
- Northbound left-turn pockets shall be installed at each of the four access locations.

Figures 1-15a and b show the off-site improvements to roadways associated with the Proposed Project. All improvements south of Mt. Whitney Road would be the responsibility of the Harmony Grove project currently under construction.

Intersections

City of Escondido

M-TR-3 This intersection is currently built to its General Plan design classification. In May 2012, the *Escondido General Plan Update FEIR* was certified by the Escondido City Council. As part of the CEQA Findings of Significant Effects, the anticipated poor operations of the Auto Park Way/Mission Road intersection were deemed significant and unavoidable and a Statement of Overriding Considerations was approved. Therefore, no mitigation measures are proposed and the impact remains significant and unavoidable. Appendix K to the TIA contained in Appendix H to this EIR contains a copy of the City Council Agenda approving the *Escondido General Plan FEIR*.

M-TR-4 The mitigation measures recommended in M-TR-1 to restripe the EB approach at this intersection to provide one left-turn lane, one shared left-turn/through lane, and one right-turn lane with a signal timing modification to change the east/west approach to “split” phasing also would mitigate this cumulative intersection impact by improving operations at this intersection to a better capacity than pre-Project conditions.

2.8.6 Conclusion

This section presents the rationale for the conclusion of the level of impact that would result after implementation of the Proposed Project with the mitigation measures. Development of the Proposed Project would result in a significant direct impact to a study area roadway segment in the City of Escondido. The Project would have cumulative impacts to two roadway segments (including one in the City of Escondido and one in the County), and two intersections (including two signalized intersections in the City of Escondido).

With implementation of the Proposed Project, direct and cumulative impacts would occur to the segment of Country Club Drive from Auto Park Way to Hill Valley Drive in the City of Escondido (Impacts TR-1a and TR-1b). TR-1a and 1b would be mitigated through M-TR-1a and 1b, which would require restriping of the EB approach at the Auto Park Way/Country Club Drive intersection, widening Country Club Drive, and provide an on-street parking prohibition along the impacted portion of Country Club Drive providing a center turn lane, and sidewalk improvements. These mitigation measures would improve traffic flow by providing improved intersection operations with re-stripped traffic lanes. ~~It would prohibit parking so that the roadway width could be efficiently used by traffic.~~ The mitigation would improve Country Club Drive operations in the City of Escondido and allow it to operate more efficiently compared to pre-Project conditions. The Escondido City Council voted on December 9, 2015 to approve the proposed mitigation. Therefore, Mitigation measures (M-TR-1a and 1b) would reduce Project impacts to less than significant. ~~However, the improvements necessary to reduce the significant direct and cumulative impacts are the responsibility of another jurisdiction (City of Escondido) and it cannot be guaranteed that the City would implement the recommended improvements or that the improvements would be completed in time to avoid the significant Project impacts. Thus, the impacts would remain significant and unmitigable. It should be noted that the Project conditions will include these mitigation measures, subject to approval by the City of Escondido.~~

With implementation of the Proposed Project, Impact TR-2 would be a considerable contribution to the cumulative impact to one segment of Country Club Drive between Hill Valley Drive and Kauana Loa Drive within the unincorporated County. Mitigation measure (M-TR-2) specified in this EIR has been imposed upon the Proposed Project as a condition of approval. The TIF and Project Design Features to improve the capacity on Country Club Drive would help offset its portion of this cumulative impact. Payment of all applicable fees to the County TIF Program, will include the changes to the Land Use and Mobility Elements proposed by the Project.

The County TIF program provides a mechanism for mitigating the impacts created by future growth within the unincorporated area. The TIF is a program designed to facilitate compliance with the CEQA mitigation for development projects’ indirect, cumulative traffic impacts. The County TIF program fee requirement applies to all new development resulting in new/added traffic. The primary purpose of the TIF is two-fold: (1) to fund the construction of identified

roadway facilities needed to reduce, or mitigate, projected cumulative traffic impacts resulting from future development within the County; and (2) to allocate the costs of these roadway facilities proportionally among future developing properties based upon their individual cumulative traffic impacts.

TIF fees are deposited into local Community Planning Area accounts, regional accounts, and regional freeway ramp accounts. TIF funds are only used to pay for improvements to roadway facilities identified in the TIF program, which includes both County roads and Caltrans highway facilities. TIF funds collected for a specific local or regional area must be spent in the same area. By ensuring TIF funds are spent for the specific roadway improvements identified in the TIF program, the CEQA mitigation requirement is satisfied, and the Mitigation Fee Act nexus is met.

As part of the TIF program process, the transportation infrastructure needs are characterized as existing deficiencies, direct impacts of future development, or indirect (cumulative) impacts of future development. Existing roadway deficiencies are the responsibility of existing developed land uses and government agencies and cannot be addressed using impact fees. The TIF program is not intended to mitigate direct impacts which will continue to be the responsibility of individual development projects. The TIF program, therefore, is designed to address only the cumulative impacts associated with new growth.

Cumulative traffic impact TR-2 would be reduced to **less than significant**.

With implementation of the Proposed Project, Impact TR-3 would add a considerable contribution to the cumulative impact at the signalized intersection of Auto Park Way and Mission Road in the City of Escondido. Impact TR-3 was anticipated in the 2012 *Escondido General Plan Update FEIR* and determined to be significantly impacted. The 2012 *Escondido General Plan Update FEIR* included intersection improvement treatments and adaptive signal control technology to improve traffic flow; however, impacts still remained significant and unavoidable after implementation of the treatment/technology improvements. As such, the Escondido City Council approved a Statement of Overriding Considerations. The Proposed Project's contribution to this cumulative impact in the City of Escondido would also remain unavoidable. The County TIF does not cover improvements to intersections in the City of Escondido and there are no reasonable improvements that this Proposed Project could implement to increase the intersection capacity. The cumulative impact would remain **significant and unavoidable**.

With implementation of the Proposed Project, Impact TR-4 would add a considerable contribution to the cumulative impact at the signalized intersection of Auto Park Way and Country Club Drive in the City of Escondido (TR-4). The mitigation measures for TR-1a and 1b specified in this EIR would mitigate direct and cumulative impacts along the segment south of the intersection in Impact TR-4. Restriping of the EB approach at the Auto Park Way/Country Club Drive intersection, ~~and an on-street parking prohibition along Country Club Drive will also help with intersection operations~~ widening Country Club Drive, providing a center turn lane, and sidewalk improvements will also help with intersection operations. The improvements would return the forecasted LOS D operations at this intersection to better than pre-Project conditions. Mitigation M-TR-1a and 1b would lessen Impact TR-4 to **less than significant**. ~~However, the improvements necessary to reduce the cumulative impact is the responsibility of another jurisdiction (City of Escondido) and it cannot be guaranteed that the City would implement the recommended improvements or that the improvements would be completed in time to avoid the significant cumulative impact. Thus, the~~

~~impact would remain **significant and unavoidable**. It should be noted that the Project conditions will include these mitigation measures, subject to approval by the City of Escondido.~~

**Table 2.8-1
EXISTING TRAFFIC VOLUMES**

Street Segment	ADT ^a	Jurisdiction
E. Barham Drive		
1. S. Twin Oaks Valley Road to Campus Way	14,840	San Marcos
2. Campus Way to W. La Moree Road	14,840	San Marcos
3. W. La Moree Road to the SR-78 Eastbound Off-Ramp	14,840	San Marcos
4. SR-78 Eastbound Off-Ramp to Woodland Parkway	19,420	San Marcos
Barham Drive		
5. Woodland Parkway to E. La Moree Road	15,750	San Marcos
6. E. La Moree Road to the SR-78 Eastbound On-Ramp	15,750	San Marcos
7. SR-78 Eastbound On-Ramp to Mission Road	11,280	San Marcos
Mission Road		
8. Auto Park Way to Enterprise Street	18,000	Escondido
Auto Park Way		
9. Mission Road to Country Club Drive	26,180	Escondido
Country Club Drive		
10. Auto Park Way to Hill Valley Drive	5,710	Escondido
11. Hill Valley Drive to Kauana Loa Drive	4,930	County
12. Kauana Loa Drive to Mount Whitney Road	3,150	County
13. Mount Whitney Road to Future Street 5A (N)	3,150	County
14. Future Street 5A (N) to Future Street 5A (S)	3,150	County
15. Future Street 5A (S) to Harmony Grove Road	3,150	County
Kauana Loa Drive		
16. Country Club Drive to Harmony Grove Road	1,480	County
Eden Valley Lane		
17. Project Access to Country Club Drive	400	County
Mount Whitney Road		
18. Project Access to Country Club Drive	200	County
Freeway Mainline Segments		
1. SR-78 West of Nordahl Road	159,000	Caltrans
2. SR-78 East of Nordahl Road	164,000	Caltrans

^a. Average Daily Traffic (ADT) Volumes collected in September and October of 2012 when schools were in session. Caltrans volumes taken from most recent Year 2011 data.

**Table 2.8–2
CALTRANS DISTRICT 11
FREEWAY SEGMENT LEVEL OF SERVICE DEFINITIONS**

LOS	V/C	Congestion/Delay	Traffic Description
Used for Freeways, Expressways and Conventional Highways			
A	<0.41	None	Free flow
B	0.42-0.62	None	Free to stable flow, light to moderate volumes.
C	0.63-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.81-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for Freeways and Expressways			
F(0)	1.01-1.25	Considerable: 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
F(1)	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
F(2)	1.36-1.45	Very Severe: 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
F(3)	>1.46	Extremely Severe: 3+ hours of delay	Gridlock

Table 2.8-3 EXISTING STREET SEGMENT OPERATIONS					
City of San Marcos Street Segments	Currently Built As	Existing Capacity (LOS E)^a	ADT^b	LOS^c	V/C^d
E. Barham Drive					
1. S. Twin Oaks Valley Road to Campus Way	5-Lane Divided	50,000	14,840	B	0.297
2. Campus Way to W. La Moree Road	5-Lane Divided	50,000	14,840	B	0.297
3. W. La Moree Road to SR-78 EB Off-Ramp	3-Lane w/ TWLTL	22,500	14,840	C	0.660
4. SR-78 EB Off-Ramp to Woodland Pkwy	2-Lane Undivided	15,000	19,420	F	1.295
Barham Drive					
5. Woodland Pkwy to E. La Moree Road	4-Lane w/ TWLTL	30,000	15,750	C	0.525
6. E. La Moree Road to SR-78 EB On-Ramp	4-Lane w/ TWLTL	30,000	15,750	C	0.525
7. SR-78 EB On-Ramp to Mission Road	2-Lane Undivided	15,000	11,280	D	0.752
City of Escondido Street Segments	Currently Built As	Existing Capacity (LOS E)^a	ADT^b	LOS^c	V/C^d
Mission Road					
8. Auto Park Way to Enterprise St	4-Lane Divided	34,200	18,000	B	0.526
Auto Park Way					
9. Mission Road to Country Club Drive ^e	5-Lane Divided	43,500 ^e	26,180	B	0.602
Country Club Drive					
10. Auto Park Way to Hill Valley Drive	2-Lane Undivided	10,000	5,710	A	0.571
County of San Diego Street Segments	Currently Built As	Existing Capacity (LOS E)^a	ADT^b	LOS^c	V/C^d
Country Club Drive					
11. Hill Valley Drive to Kauana Loa Drive	2-Lane Undivided	9,700 ^f	4,930	A	--
12. Kauana Loa Drive to Mt. Whitney Road	2-Lane Undivided	9,700 ^g	3,150	A	--
13. Mt. Whitney Road to Future Street 5A (N)	2-Lane Undivided	9,700 ^g	3,150	A	--
14. Future Street 5A (N) to Future Street 5A (S)	2-Lane Undivided	9,700 ^g	3,150	A	--
15. Future Street 5A (S) to Harmony Grove Road	2-Lane Undivided	16,200 ^h	3,150	B	--

**Table 2.8-3 (cont.)
EXISTING STREET SEGMENT OPERATIONS**

County of San Diego Street Segments (cont.)	Currently Built As	Existing Capacity (LOS E)^a	ADT^b	LOS^c	V/C^d
Kauana Loa Drive					
16. Country Club Drive to Harmony Grove Road	2-Lane Undivided	8,000 ⁱ	1,480	A	--

Notes:

^a Capacities based City of San Marcos, City of Escondido, and County of San Diego Roadway Classification Tables.

^b Average Daily Traffic Volumes.

^c Level of Service.

^d Volume to Capacity ratio.

^e Auto Park Way is currently built as a 6-Lane Major from Mission Road to Meyers Avenue and a 4-Lane Major from Meyers Avenue to Country Club Drive. Therefore, a 5-Lane Major road capacity of 43,500 was used in the analysis.

^f Although Country Club Drive is not a Mobility Element roadway, due to the increased paved width and 45 mph speed limit and reduced shoulder, the roadway functions as a 2.2F Light Collector with an LOS "E" capacity of 9,700 ADT.

^g Country Club Drive from Kauana Loa Drive to the northerly boundary of Harmony Grove Village (just south of Future Street 5A South) is currently being improved to Rural Light Collector standards per the previously adopted General Plan (corresponding with a 2.2F Light Collector on the currently adopted General Plan) with an ADT capacity of 9,700.

^h South of Future Street 5A South to Harmony Grove Village Parkway it is being improved to Rural Collector standards per the previously adopted General Plan (corresponding with 2.2E Light Collector on the currently adopted General Plan) with an ADT capacity of 16,200. From Harmony Grove Village Parkway to Harmony Grove Road, it is being improved to Town Collector standards per the previously adopted General Plan (corresponding with 2.1C Community Collector on the currently adopted General Plan) with an ADT capacity of 19,000. Since the study area segment from Future Street 5A (S) and Harmony Grove Road transitions between these two capacities, the 16,200 ADT capacity was used to provide a conservative analysis.

ⁱ Since this portion of Kauana Loa Drive has an increased paved width and 40 mph speed limit, the roadway functions as a 2.3C Minor Collector with an LOS "E" capacity of 8,000 ADT.

**Table 2.8-4
EXISTING INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Existing	
			Delay ^a	LOS ^b
City of San Marcos Jurisdiction				
1. E. Barham Drive / S. Twin Oaks Valley Road / Discovery Street	Signal	AM	28.1	C
		PM	53.3	D
2. E. Barham Drive / Woodland Pkwy	Signal	AM	17.8	B
		PM	21.3	C
3. Barham Drive / Mission Road	Signal	AM	23.9	C
		PM	24.1	C
City of Escondido Jurisdiction				
4. Nordahl Road / SR-78 WB Ramps	Signal	AM	22.6	C
		PM	25.6	C
5. Nordahl Road / SR-78 EB Ramps	Signal	AM	19.4	B
		PM	18.0	B
6. Auto Park Way / Mission Road	Signal	AM	32.2	C
		PM	31.2	C
7. Auto Park Way / Country Club Drive	Signal	AM	17.5	B
		PM	15.1	B
8. Valley Pkwy / 9th Avenue	Signal	AM	38.2	C
		PM	46.3	D
9. Valley Pkwy / Auto Park Way	Signal	AM	33.3	C
		PM	29.6	C
10. Valley Pkwy / I-15 SB Ramps	Signal	AM	37.6	D
		PM	42.6	D
11. Valley Pkwy / I-15 NB Ramps	Signal	AM	26.3	C
		PM	31.9	C
County of San Diego Jurisdiction				
12. Country Club Drive / Eden Valley Lane	MSSC ^c	AM	9.4	B
		PM	9.7	A
13. Country Club Drive / Mt. Whitney Road	MSSC	AM	8.1	A
		PM	8.8	A
14. Country Club Drive / Kauana Loa Drive	AWSC ^d	AM	9.7	A
		PM	9.9	A
15. Country Club Drive / Future Street 5A (N)	DNE	AM	DNE	DNE
		PM	DNE	DNE
16. Country Club Drive / Future Street 5A (S)	DNE	AM	DNE	DNE
		PM	DNE	DNE

**Table 2.8-4 (cont.)
EXISTING INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Existing	
			Delay ^a	LOS ^b
County of San Diego Jurisdiction (cont.)				
17. Country Club Drive / Harmony Grove Road	Signal	AM	9.5	A
		PM	9.4	A
18. Harmony Grove Road / Kauana Loa Drive	MSSC	AM	11.1	B
		PM	11.2	B

Notes:

- ^a Average delay expressed in seconds per vehicle.
^b Level of Service.
^c MSSC - Minor Street Stop Controlled intersection. Minor street left-turn delay is reported.
^d AWSC - All-Way Stop Controlled intersection. Average delay reported.

DNE = Does not exist

Signalized		Unsignalized	
Delay/LOS Thresholds		Delay/LOS Thresholds	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

**Table 2.8-5
EXISTING FREEWAY MAINLINE OPERATIONS**

Freeway Segment	Dir.	# of Lanes ^a	Hourly Capacity ^b	Volume ^c	Peak Hour Volume ^d		V/C ^e		LOS ^f	
					AM	PM	AM	PM	AM	PM
State Route 78										
West of Nordahl Road	EB	3M+1A	7,200	159,000	4,994	4,983	0.694	0.692	C	C
	WB	3M	6,000		5,862	5,625	0.977	0.938	E	E
East of Nordahl Road	EB	3M+1A	7,200	164,000	4,144	5,097	0.576	0.708	B	C
	WB	4M+1A	9,200		5,663	5,070	0.616	0.551	B	B

Notes:

- ^a Lane geometry taken from 2011 PeMS lane configurations at corresponding post mile.
^b Capacity calculated at 2000 vehicles per hour (vph) per lane (pcphpl) for mainline lanes and 1200 vph for auxiliary lanes, C. from Caltrans Guide for the Preparation of Traffic Impact Studies, Dec 2002.
^c Existing ADT volumes taken from most recent 2011 Caltrans traffic volumes
^d Peak hour volumes taken from most recent 2011 PeMS traffic volumes.
^e V/C = (Peak Hour Volume/Hourly Capacity)
^f LOS = Level of Service

M = Mainline; A = Auxiliary Lane

LOS	V/C
A	<0.41
B	0.62
C	0.80
D	0.92
E	1.00
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

**Table 2.8-6
 PROJECT TRIP GENERATION**

Table 2.8-6 PROJECT TRIP GENERATION													
Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate ^a	Volume	% of ADT	In: Out	Volume			% of ADT	In: Out	Volume		
					Split	In	Out	Total		Split	In	Out	Total
Area 1: 255-Acres													
Neighborhood 1a (4-pack detached condos)	49 DU	10/DU	490	8%	3:7	12	27	39	10%	7:3	34	15	49
Neighborhood 1b (≥ 4,640 s.f. lots)	47 DU	10/DU	470	8%	3:7	11	27	38	10%	7:3	33	14	47
Neighborhood 2a (≥ 8,260 s.f. lots)	58 DU	10/DU	580	8%	3:7	14	32	46	10%	7:3	41	17	58
Neighborhood 2b (Second Dwelling Units)	23 DU	6/DU	138	8%	2:8	2	9	11	9%	7:3	8	4	12
Neighborhood 4 (≥ 7,000 s.f. lots)	76 DU	10/DU	760	8%	3:7	18	43	61	10%	7:3	53	23	76
Subtotal Area 1	253 DU	—	2,438	—	—	57	138	195	—	—	169	73	242
Area 2: 36-Acres													
Neighborhood 3a (≥ 15,000 s.f. lots)	35 DU	12/DU	420	8%	3:7	10	24	34	10%	7:3	29	13	42
Neighborhood 3b (Second Dwelling Units)	11 DU	6/DU	66	8%	2:8	1	4	5	9%	7:3	4	2	6
Subtotal Areas 1 & 2	299 DU	—	2,924	—	—	68	166	234	—	—	202	88	290
Area 3: 48-Acres													
Neighborhood 5a (≥ 0.5 acre lots)	21 DU	12/DU	252	8%	3:7	6	14	20	10%	7:3	18	7	25
Neighborhood 5b (≥ 6,000 s.f. lots)	48 DU	10/DU	480	8%	3:7	11	27	38	10%	7:3	34	14	48
Neighborhood 5c (Second Dwelling Units)	20 DU	6/DU	120	8%	2:8	2	8	10	9%	7:3	8	3	11
Total Areas 1, 2 & 3	388 DU	—	3,776	—	—	87	215	302	—	—	262	112	374
Wastewater Treatment Plant ^b		—	10	—	—	1	1	2	—	—	1	1	2
TOTAL PROJECT		—	3,786	—	—	838	216	304	—	—	263	113	376

Notes:

^a Rate is based on SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002.

^b Few trips are expected to be generated by the water reclamation facility. 10 trips per day were estimated to account for the maintenance, management and supervision of the site.

ADT = Average daily traffic; DU = dwelling unit

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Table 2.8-7 ROADWAY SEGMENT OPERATIONS UNDER EXISTING AND EXISTING PLUS CUMULATIVE PLUS PROJECT CONDITIONS																
City of San Marcos Street Segments	Existing Capacity (LOS E) ^a	Existing			Existing + Project				Existing + Cumulative Projects			Existing + Project + Cumulative Projects				Impact Type
		ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C	Δ ^e	ADT	LOS	V/C	ADT	LOS	V/C	Δ ^e	
E. Barham Drive																
1. S. Twin Oaks Valley Road to Campus Way	50,000	14,840	B	0.297	14,915	B	0.298	0.002	16,490	B	0.330	16,565	B	0.331	0.002	None
2. Campus Way to W. La Moree Road	50,000	14,840	B	0.297	14,915	B	0.298	0.002	15,530	B	0.311	15,605	B	0.312	0.002	None
3. W. La Moree Road to SR-78 EB Off-Ramp	22,500	14,840	C	0.660	14,915	C	0.663	0.003	16,860	D	0.749	16,935	D	0.753	0.003	None
4. SR-78 EB Off-Ramp to Woodland Pkwy	15,000	19,420	F	1.295	19,646	F	1.310	0.015	21,750	F	1.450	21,976	F	1.465	0.015	None
Barham Drive																
5. Woodland Pkwy to E. La Moree Road	30,000	15,750	C	0.525	15,976	C	0.533	0.008	17,640	C	0.588	17,866	C	0.596	0.008	None
6. E. La Moree Road to SR-78 EB On-Ramp	30,000	15,750	C	0.525	15,976	C	0.533	0.008	17,640	C	0.588	17,866	C	0.596	0.008	None
7. SR-78-EB On-Ramp to Mission Road	15,000	11,280	D	0.752	11,545	D	0.770	0.018	14,996	E	0.996	15,261	F	1.017	0.018	None
City of Escondido Street Segments	Existing Capacity (LOS E) ^a	Existing			Existing + Project				Existing + Cumulative Projects			Existing + Project + Cumulative Projects				Impact Type
		ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C	Δ ^e	ADT	LOS	V/C	ADT	LOS	V/C	Δ ^e	
Mission Road																
8. Auto Park Way to Enterprise Street	34,200	18,000	B	0.526	18,143	B	0.530	0.004	21,400	C	0.626	21,543	C	0.630	0.004	None
Auto Park Way																
9. Mission Road to Country Club Drive	43,500 ^f	26,180	B	0.602	28,765	B	0.661	0.059	29,615	B	0.681	32,200	C	0.740	0.059	None
Country Club Drive																
10. Auto Park Way to Hill Valley Drive	10,000	5,710	C	0.571	8,421	D	0.842	0.271	7,983	D	0.798	10,694	E	1.069996	0.271	Direct and Cumulative
County of San Diego Street Segments	Existing Capacity (LOS E) ^a	Existing			Existing + Project				Existing + Cumulative Projects			Existing + Project + Cumulative Projects				Impact Type
		ADT		LOS	ADT		LOS	Δ ^e	ADT		LOS	ADT		LOS	Δ ^e	
Country Club Drive																
11. Hill Valley Drive to Kauana Loa Drive	9,700 ^g	4,930		A	7,641		C	2,711	7,983		D	10,694		F	2,711	Cumulative
12. Kauana Loa Drive to Mt. Whitney Road	9,700 ^h	3,150		A	5,246		A	2,096	6,367		B	8,463		D	2,096	None
13. Mt. Whitney Road to Future Project Access	9,700 ^h	3,150		A	4,193		A	1,043	6,367		B	7,410		C	1,043	None
14. Future Street 5A (N) to Future Street 5A (S)	9,700 ^h	3,150		A	3,869		A	719	6,367		B	7,086		C	719	None
15. Future Street 5A (S)to Harmony Grove Road	16,200 ⁱ	3,150		B	3,553		B	403	6,367		C	6,770		C	403	None
Kauana Loa Drive																
16. Country Club Drive to Harmony Grove Road	8,000 ^j	1,480		A	2,329		B	849	4,036		B	4,885		C	849	None

Notes:

^a Capacities based on City of San Marcos, City of Escondido, and County of San Diego Roadway Classification Tables.

^b ADT- Average Daily Traffic Volumes.

^c LOS - Level of Service.

^d V/C - Volume to Capacity ratio.

^e “Δ” denotes the Project-induced increase in V/C for City of San Marcos and Escondido roadway segments. Δ denotes the Project-induced increase in ADT for segments operating at LOS E or F located in the County of San Diego.

^f Auto Park Way is currently built as a 6-Lane Major from Mission Road to Meyers Avenue and a 4-Lane Major from Meyers Avenue to Country Club Drive. Therefore, a 5-Lane Major road capacity of 43,500 was used in the analysis.

^g Although Country Club Drive is not a Mobility Element roadway, due to the 45 mph speed limit and the provision of northbound left-turn pockets proposed by the Project, the roadway functions as a 2.3C Minor Collector with an LOS “E” capacity of 8,000 ADT.

^h Country Club Drive from Kauana Loa Drive to the northerly boundary of Harmony Grove Village (just south of Future Street 5A South) is currently being improved to Rural Light Collector standards per the previously adopted General Plan (corresponding with a 2.2F Light Collector on the currently adopted General Plan) with an ADT capacity of 9,700.

ⁱ South of Future Street 5A South to Harmony Grove Village Parkway, Country Club Drive is being improved to Rural Collector standards per the previously adopted General Plan (corresponding with 2.2E Light Collector on the currently adopted General Plan) with an ADT capacity of 16,200. From Harmony Grove Village Parkway to Harmony Grove Road, it is being improved to Town Collector standards per the previously adopted General Plan (corresponding with 2.1C Community Collector on the currently adopted General Plan) with an ADT capacity of 19,000. Since the study area segment from Future Street 5A (S) and Harmony Grove Road transitions between these two capacities, the 16,200ADT capacity was used to provide a conservative analysis.

^j Since this portion of Kauana Loa Drive has an increased paved width and 40 mph speed limit, the roadway functions as a 2.3C Minor Collector with an LOS “E” capacity of 8,000 ADT.

Bold typeface and **shading** represents a significant impact.

Table 2.8-8 INTERSECTION OPERATIONS UNDER EXISTING AND EXISTING PLUS CUMULATIVE PLUS PROJECT CONDITIONS													
Intersection	Control Type	Peak Hour	Existing		Existing + Project			Existing + Cumulative Projects		Existing + Project + Cumulative Projects			Impact Type
			Delay ^a	LOS ^b	Delay	LOS	Δ ^c	Delay	LOS	Delay	LOS	Δ	
City of San Marcos Jurisdiction													
1. E. Barham Drive / S. Twin Oaks Valley Road / Discovery Street	Signal	AM	28.1	C	283	C	0.2	101.4	F	102.0	F	0.6	None
		PM	53.3	D	53.7	D	0.4	147.8	F	148.3	F	0.5	
2. E. Barham Drive / Woodland Pkwy	Signal	AM	17.8	B	18.0	B	0.2	71.0	E	71.6	E	0.6	None
		PM	21.3	C	21.6	C	0.3	90.8	F	91.0	F	0.2	
3. Barham Drive / Mission Road	Signal	AM	23.9	C	24.0	C	0.1	33.3	C	33.7	C	0.4	None
		PM	24.1	C	24.6	C	0.5	35.1	D	36.0	D	0.9	
City of Escondido Jurisdiction													
4. Nordahl Road / SR-78 WB Ramps	Signal	AM	22.6	C	23.2	C	0.6	24.8	C	27.1	C	2.3	None
		PM	25.6	C	26.7	C	1.1	37.5	D	39.0	D	1.5	
5. Nordahl Road / SR-78 EB Ramps	Signal	AM	19.4	B	19.6	B	0.2	21.6	C	22.6	C	1.0	None
		PM	18.0	B	19.0	B	1.0	28.5	C	29.1	C	0.6	
6. Auto Park Way / Mission Road	Signal	AM	32.2	C	33.5	C	1.3	46.1	D	49.3	D	3.2	Cumulative
		PM	31.2	C	32.1	C	0.9	48.5	D	51.0	D	2.5	
7. Auto Park Way / Country Club Drive	Signal	AM	17.5	B	25.8	C	8.3	26.5	C	53.7	D	27.2	Cumulative
		PM	15.1	B	19.0	B	3.9	19.8	B	27.6	C	7.8	
8. Valley Pkwy / 9th Avenue	Signal	AM	38.2	D	39.8	D	1.6	40.6	D	41.7	D	1.1	None
		PM	46.3	D	47.1	D	0.8	49.9	D	50.5	D	0.6	
9. Valley Pkwy / Auto Park Way	Signal	AM	33.3	C	33.5	C	0.2	38.0	D	38.2	D	0.2	None
		PM	29.6	C	29.6	C	0.0	50.8	D	51.1	D	0.3	
10. Valley Pkwy / I-15 SB Ramps	Signal	AM	37.6	D	38.0	D	0.4	42.5	D	43.2	D	0.7	None
		PM	42.6	D	42.8	D	0.2	74.7	E	75.1	E	0.4	
11. Valley Pkwy / I-15 NB Ramps	Signal	AM	26.3	C	26.3	C	0.0	28.7	C	28.6	C	0.0	None
		PM	31.9	C	32.0	C	0.1	43.1	D	43.6	D	0.5	

Table 2.8-8 (cont.) INTERSECTION OPERATIONS UNDER EXISTING AND EXISTING PLUS CUMULATIVE PLUS PROJECT CONDITIONS													
Intersection	Control Type	Peak Hour	Existing		Existing + Project			Existing + Cumulative Projects		Existing + Project + Cumulative Projects			Impact Type
			Delay ^a	LOS ^b	Delay	LOS	Δ ^c	Delay	LOS	Delay	LOS	Δ	
County of San Diego Jurisdiction													
12. Country Club Drive / Eden Valley Lane	MSSC ^d	AM	9.4	A	11.3	B	—	13.1	B	19.4	C	—	None
		PM	9.7	A	12.0	B	—	13.3	B	19.8	C	—	
13. Country Club Drive / Kauana Loa Drive	AWSC ^e	AM	8.1	A	9.1	A	—	9.3	A	10.9	B	—	None
		PM	8.8	A	10.6	B	—	10.2	B	13.3	B	—	
14. Country Club Drive / Mt. Whitney Road	MSSC ^d	AM	9.7	A	11.2	B	—	10.6	B	13.1	B	—	None
		PM	9.9	A	11.9	B	—	10.6	B	13.6	B	—	
15. Country Club Drive / Future Street 5A (N)	DNE / MSSC ^d	AM	<i>DNE</i>	<i>DNE</i>	10.3	B	—	<i>DNE</i>	<i>DNE</i>	11.7	B	—	None
		PM	<i>DNE</i>	<i>DNE</i>	10.8	B	—	<i>DNE</i>	<i>DNE</i>	12.8	B	—	
16. Country Club Drive / Future Street 5A (S)	DNE / MSSC ^d	AM	<i>DNE</i>	<i>DNE</i>	10.0	B	—	<i>DNE</i>	<i>DNE</i>	11.3	B	—	None
		PM	<i>DNE</i>	<i>DNE</i>	10.5	B	—	<i>DNE</i>	<i>DNE</i>	12.3	B	—	
17. Country Club Drive / Harmony Grove Road	Signal	AM	9.5	A	10.1	B	—	26.8	C	27.9	C	—	None
		PM	9.4	A	9.8	A	—	26.2	C	26.6	C	—	
18. Harmony Grove Road / Kauana Loa Drive	MSSC	AM	11.1	B	11.6	B	—	69.0	F	95.9	F	0 ^f	None
		PM	11.2	B	11.6	B	—	182.3	F	225.5	F	0 ^f	

Notes :
^a Average delay expressed in seconds per vehicle.
^b Level of Service.
^c “Δ” denotes the Project-induced increase in delay for intersections located in the City of San Marcos and Escondido. “Δ” denotes the Project-induced increase in delay for signalized intersections and Project traffic added to the critical movement for unsignalized intersections located in the County of San Diego.
^d MSSC – Minor Street Stop-Controlled intersection. Minor street left-turn delay is reported.
^e AWSC – All-Way Stop-Controlled intersection. Average delay is reported.
^f The Project only adds traffic to the east/west uncontrolled movements. Zero Project trips are added to the northbound critical stop-controlled movement. Therefore, no significant traffic impacts were calculated.

DNE = Does not exist.
Bold typeface and **shading** represents a significant impact.

Signalized		Unsignalized	
Delay/LOS Thresholds		Delay/LOS Thresholds	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
45.1 to 55.0	Mid-D	30.1 to 35.0	Mid-D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

Table 2.8-9 FREEWAY SEGMENT OPERATIONS UNDER EXISTING AND EXISTING PLUS CUMULATIVE PLUS PROJECT CONDITIONS																		
Freeway Segment	Dir.	# of Lanes ^a	Hourly Capacity ^b	Existing ^c		V/C ^d		LOS ^e		Existing + Project		V/C		LOS		Δ ^{g/h} V/C		Impact Type
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
State Route 78 (SR-78)																		
West of Nordahl Road	EB	3M+1A	7,200	4,994	4,983	0.694	0.692	C	C	5,009	5,026	0.696	0.698	C	C	0.002	0.006	None
	WB	3M	6,000	5,862	5,625	0.977	0.938	E	E	5,897	5,643	0.983	0.941	E	E	0.006	0.003	None
East of Nordahl Road	EB	3M+1A	7,200	4,144	5,097	0.576	0.708	B	C	4,208	5,132	0.584	0.713	B	C	0.009	0.005	None
	WB	4M+1A	9,200	5,663	5,070	0.616	0.551	B	B	5,691	5,194	0.619	0.560	B	B	0.003	0.009	None
Freeway Segment	Dir.	# of Lanes ^a	Hourly Capacity ^b	Existing + Cumulative Projects		V/C ^d		LOS ^e		Existing + Project + Cumulative Projects		V/C		LOS		Δ ^{f/g} V/C		Impact Type
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
State Route 78 (SR-78)																		
West of Nordahl Road	EB	3M+1A	7,200	5,547	5,535	0.770	0.769	C	C	5,566	5,591	0.773	0.776	C	C	0.003	0.008	None
	WB	3M	6,000	6,511	6,248	1.085	1.041	F(0)	F(0)	6,556	6,272	1.093	1.045	F(0)	F(0)	0.007	0.004	None
East of Nordahl Road	EB	3M+1A	7,200	4,424	5,442	0.615	0.756	B	C	4,488	5,477	0.623	0.761	C	C	0.009	0.005	None
	WB	4M+1A	9,200	6,046	5,413	0.657	0.588	C	B	6,074	5,492	0.660	0.597	C	B	0.003	0.009	None

Notes:

^a Lane geometry taken from 2011 PeMS lane configurations at corresponding post mile.

^b Existing volumes taken from PeMS October 2011 peak hour data.

^c Capacity calculated at 2000 vehicles per hour (vph) per mainline lane (pcphpl) and 1200 vph per lane for auxiliary lanes from Caltrans Guide for the Preparation of Traffic Impact Studies, Dec 2002.

^d V/C = (Peak Hour Volume/Hourly Capacity)

^e LOS = Level of Service

^f “Δ” denotes the Project-induced increase in V/C. Per SANTEC/ITE Guidelines, a significant impact occurs when the V/C is reduced by 0.01 for LOS E or F.

^g A decrease in the V/C with the Project is due to the increase in capacity on SR-78 due to the SR-78 Improvement Project which adds one (1) auxiliary lane in each direction.

M = Mainline; A = Auxiliary Lane

LOS	V/C
A	<0.41
B	0.62
C	0.80
D	0.92
E	1.00
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

Table 2.8-10
ADDITIONAL ACCESS SCENARIO INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project			Existing + Cumulative Projects		Existing + Project + Cumulative Projects			Impact Type
			Delay ^a	LOS ^b	Delay	LOS	Δ ^c	Delay	LOS	Delay	LOS	Δ	
County of San Diego Jurisdiction													
12. Country Club Drive/ Eden Valley Lane	MSSC ^d	AM	9.4	A	10.4	B	—	13.1	B	15.9	C	—	None
		PM	9.7	A	11.3	B	—	13.3	B	18.9	C	—	
19. Country Club Drive/ Hill Valley Drive	MSSC	AM	11.7	B	14.4	B	—	14.3	B	18.7	C	—	None
		PM	11.4	B	15.3	C	—	13.5	B	20.2	C	—	

Notes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. “Δ” denotes the Project-induced increase in delay for signalized intersections and Project traffic added to the critical movement for unsignalized intersections located in the County of San Diego.
- d. MSSC = Minor Street Stop Controlled intersection. Minor street left-turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

Table 2.8-11
ADDITIONAL ACCESS SCENARIO STREET SEGMENT OPERATIONS

Table 2.8-11 ADDITIONAL ACCESS SCENARIO STREET SEGMENT OPERATIONS												
County of San Diego Street Segments	Existing Capacity (LOS E) ^a	Existing		Existing + Project			Existing + Cumulative Projects		Existing + Project + Cumulative Projects			Impact Type
		ADT	LOS	ADT	LOS	Δ ^e	ADT	LOS	ADT	LOS	Δ ^e	
Country Club Drive												
11. Hill Valley Drive to Eden Valley Lane	9,700 ^f	4,930	A	6,997	C	2,067	7,983	D	10,050	F	2,067	Cumulative

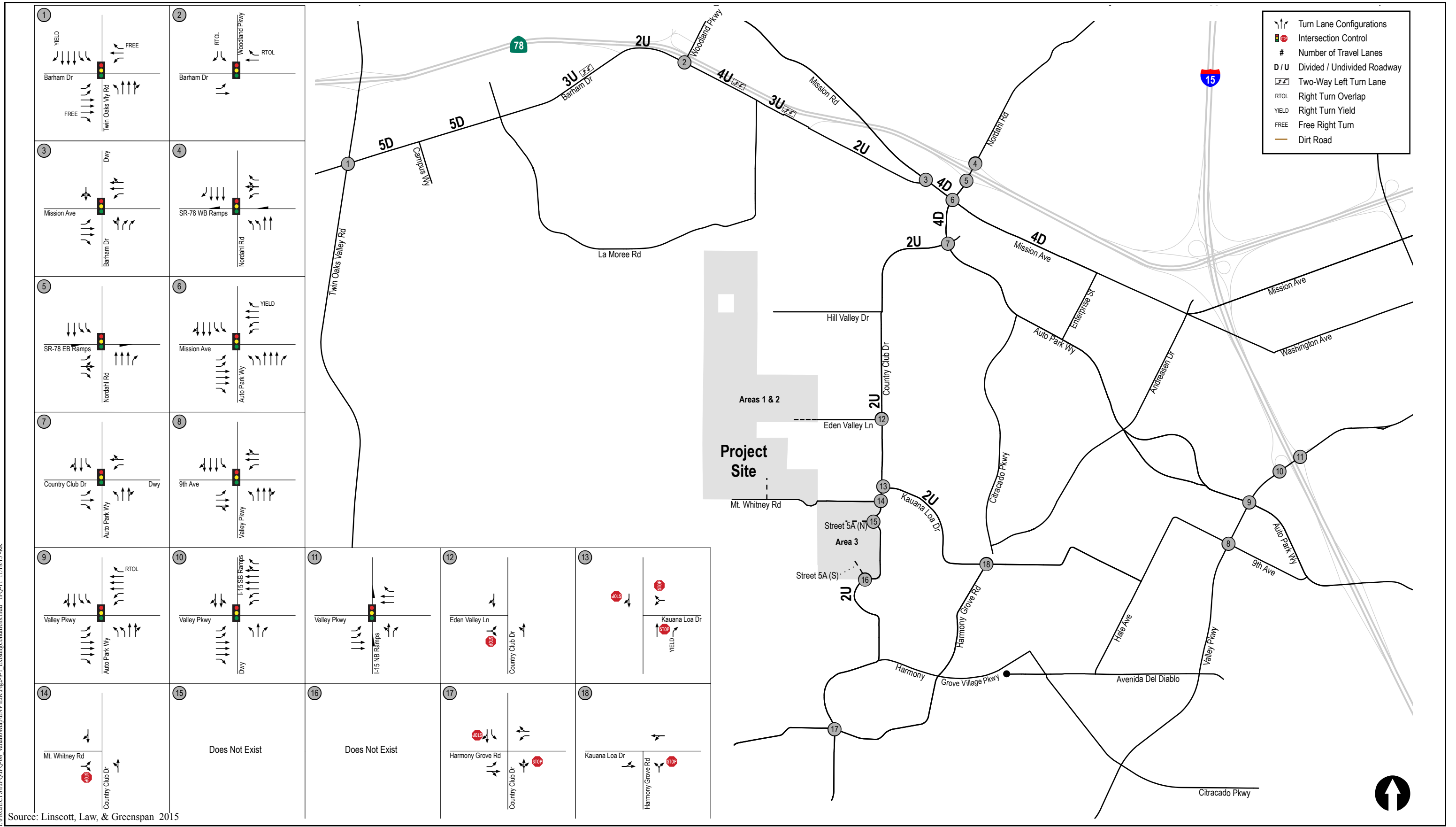
Notes:

- Capacities based on County of San Diego Roadway Classification Table.
- ADT = Average Daily Traffic Volumes.
- LOS = Level of Service.
- V/C = Volume to Capacity ratio.
- “Δ” denotes the Project-induced increase in ADT for segments operating at LOS E or F located in the County of San Diego.
- Although Country Club Drive is not a Mobility Element roadway, due to the 45 mph speed limit, reduced shoulder and the provision of northbound left-turn pockets proposed by the Project, the roadway functions as a 2.2F Light Collector with an LOS “E” capacity of 9,700 ADT.

Bold typeface and shading represents a significant impact.

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Source: Linscott, Law, & Greenspan 2015



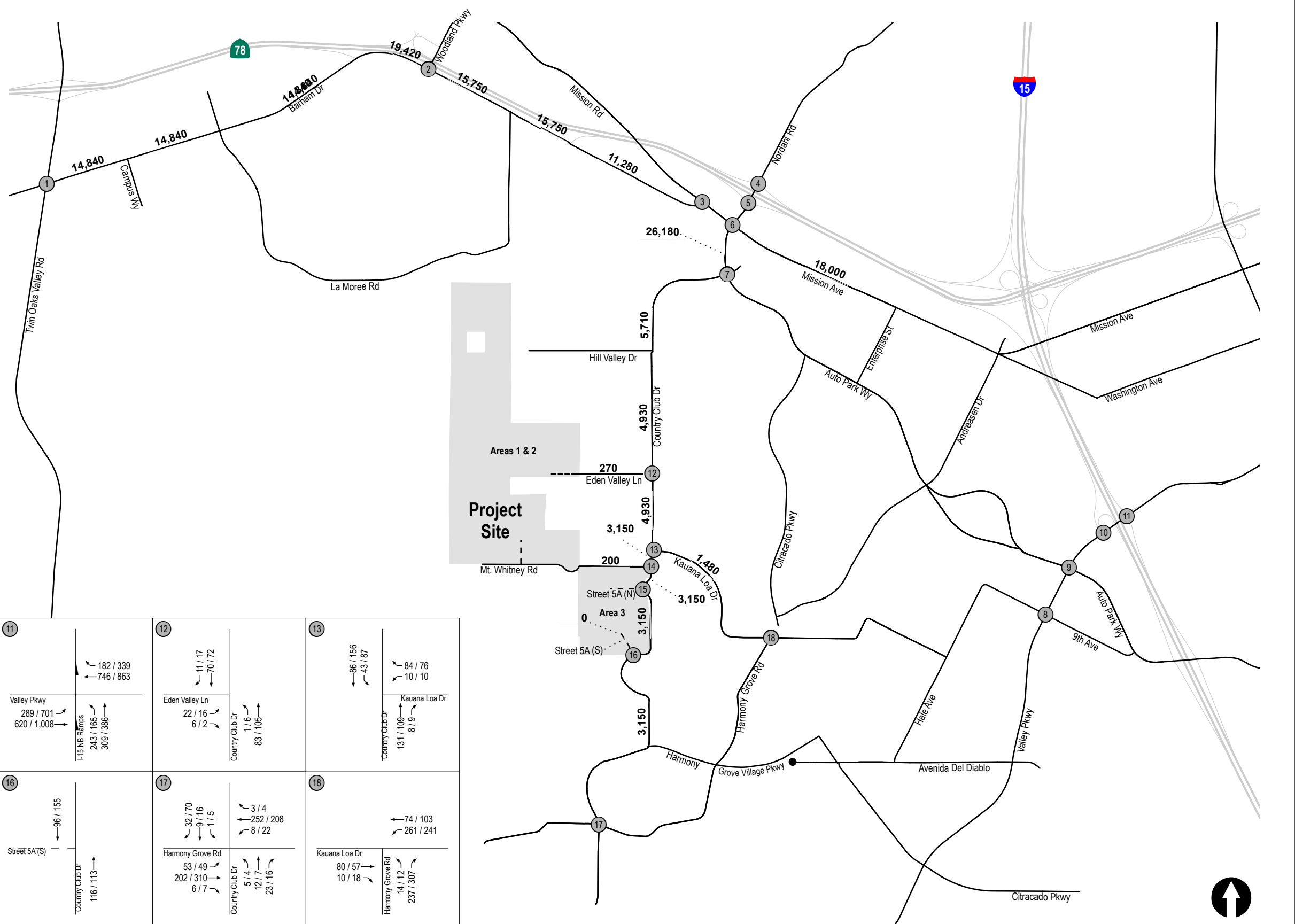
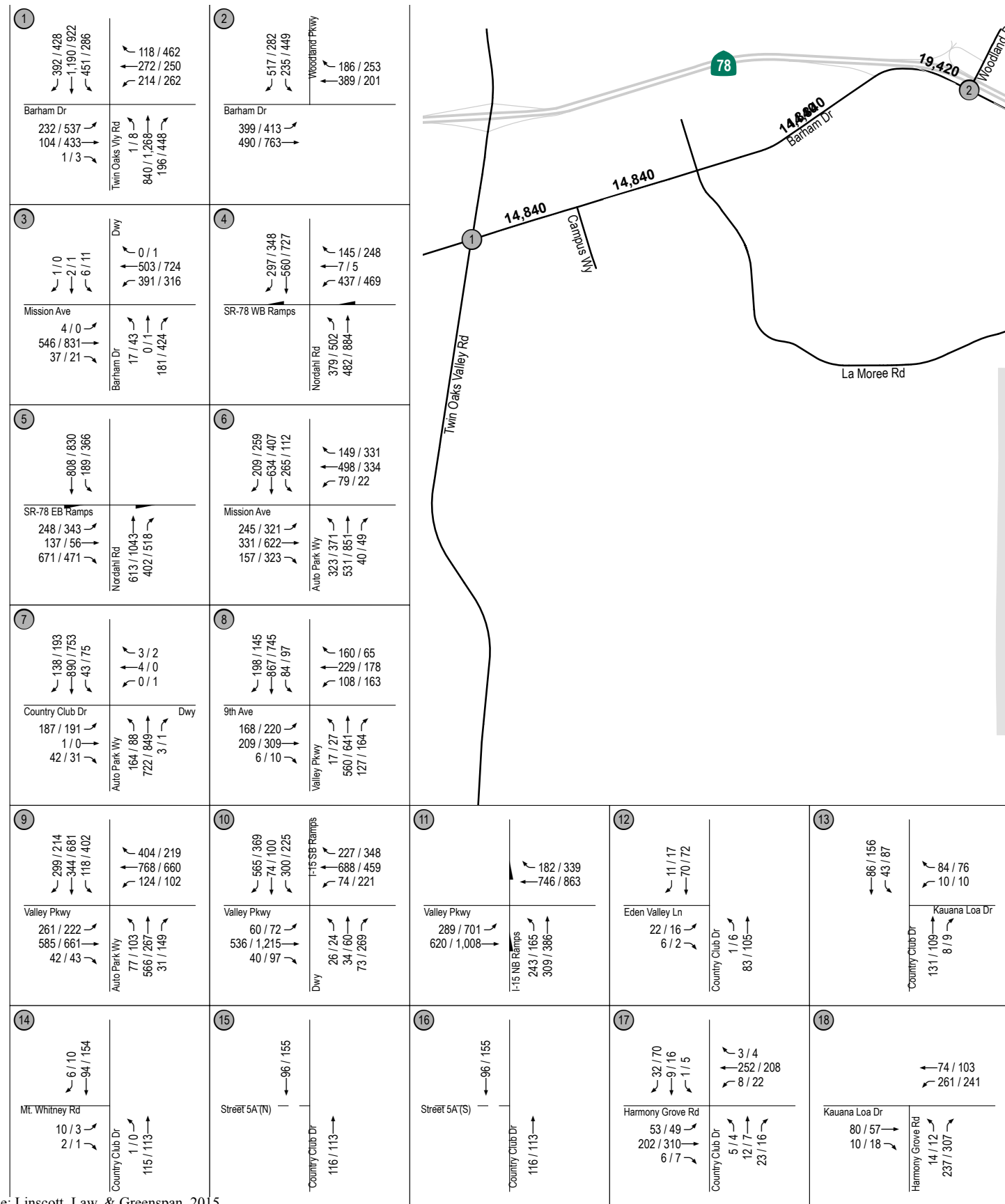
Existing Conditions Diagram

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Figure 2.8-1

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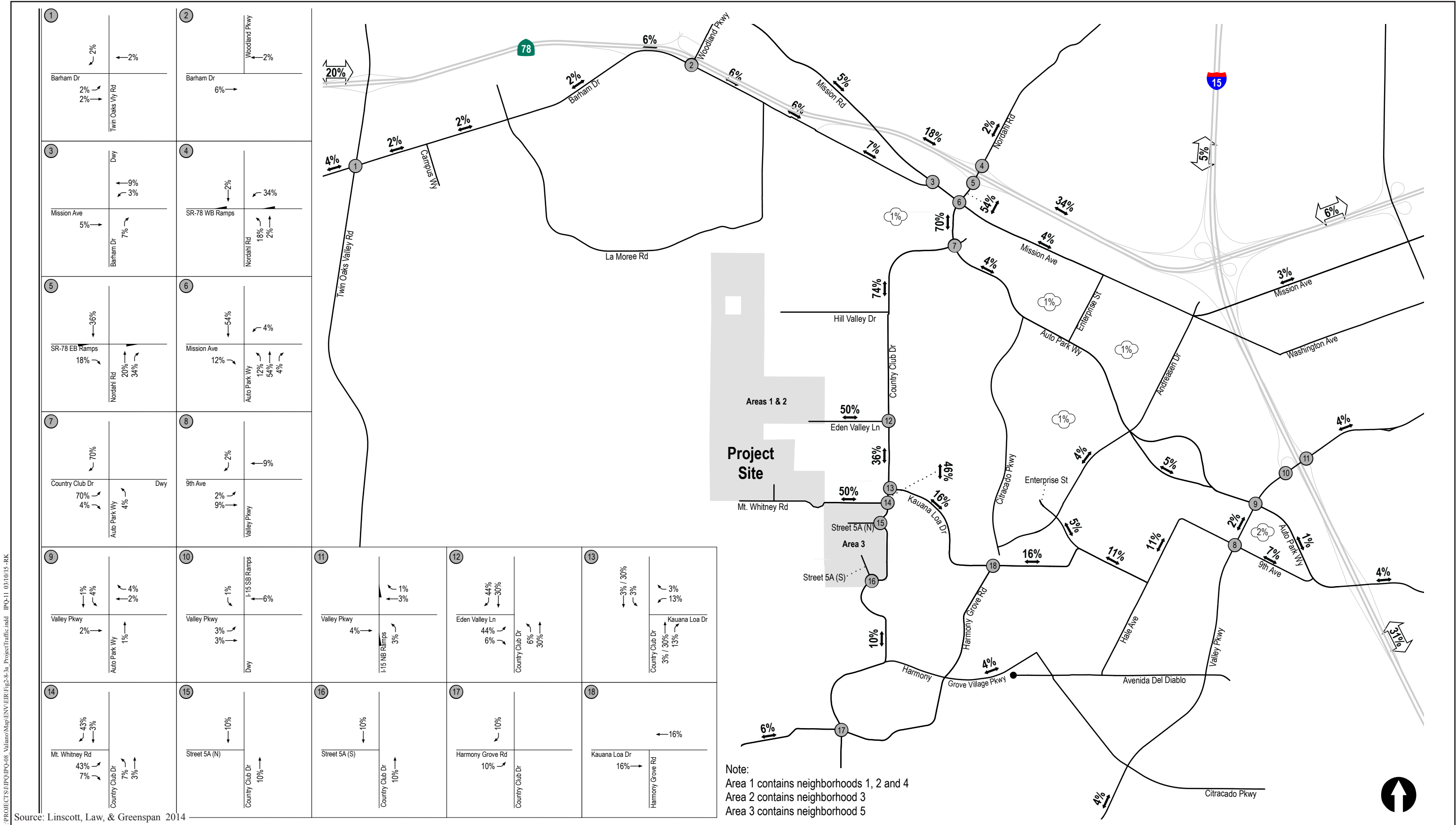
Source: Linscott, Law, & Greenspan 2015



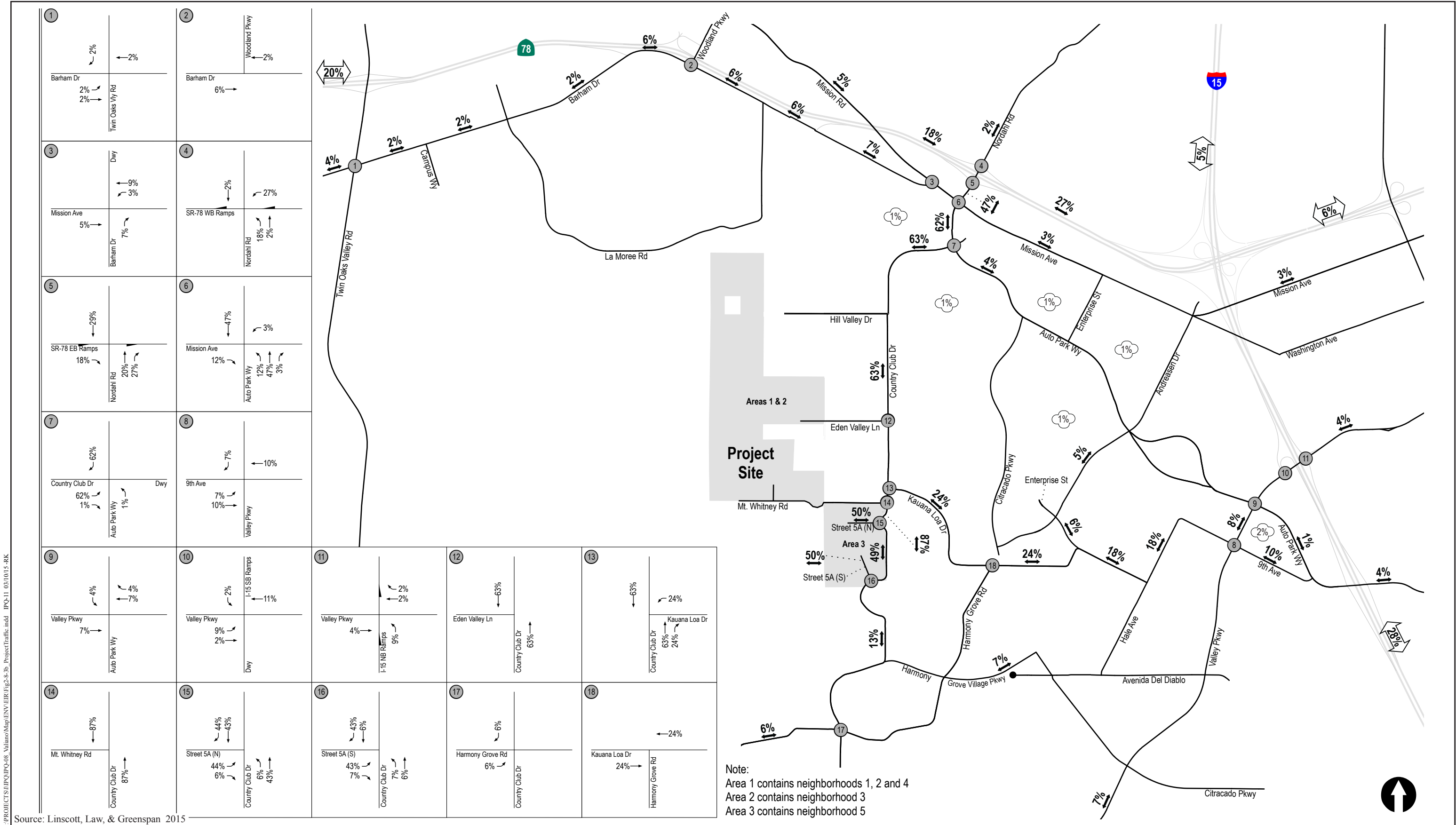
Existing Traffic Volumes

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Figure 2.8-2



Project Traffic Distribution—Areas 1 and 2



Source: Linscott, Law, & Greenspan 2015

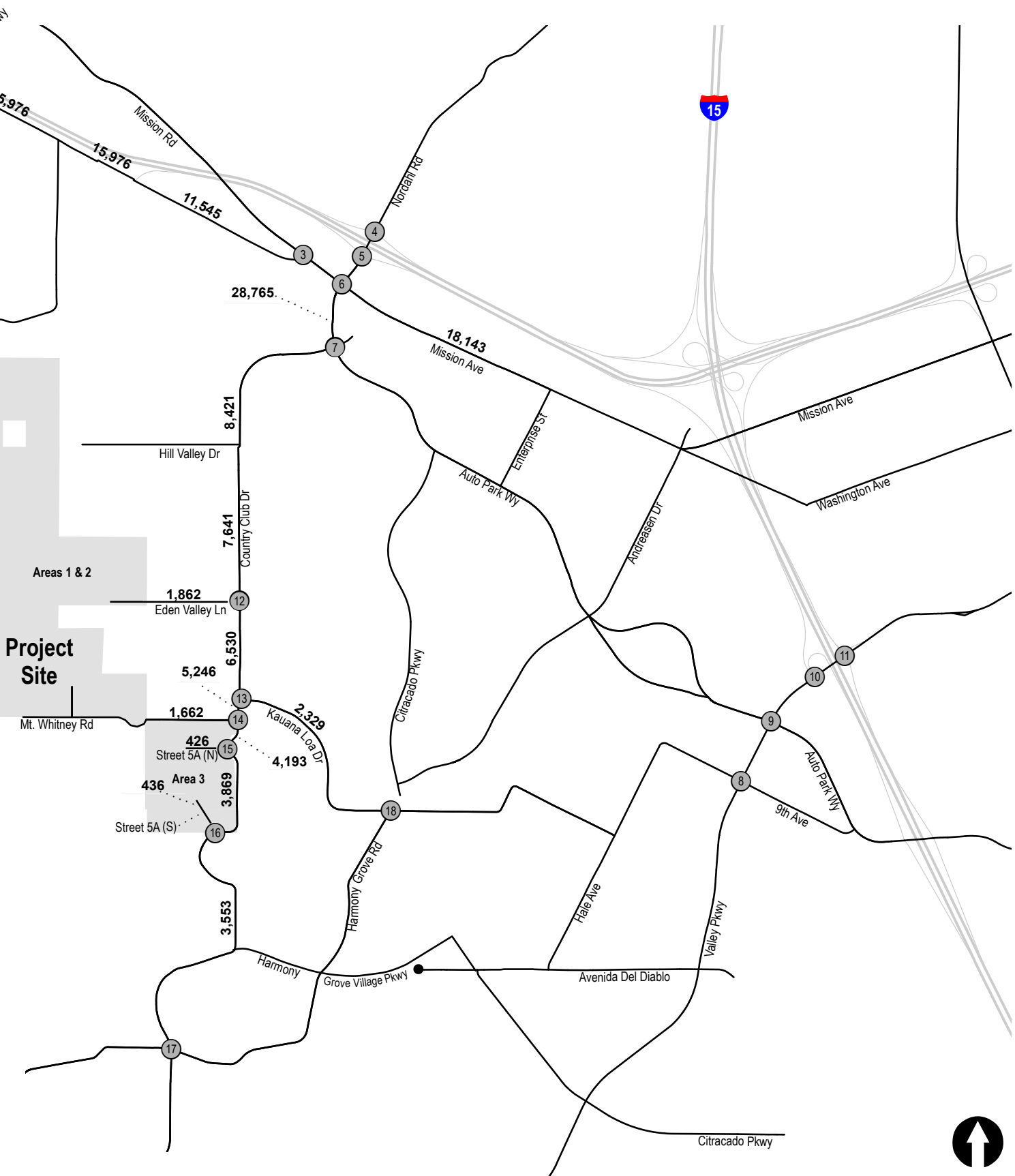
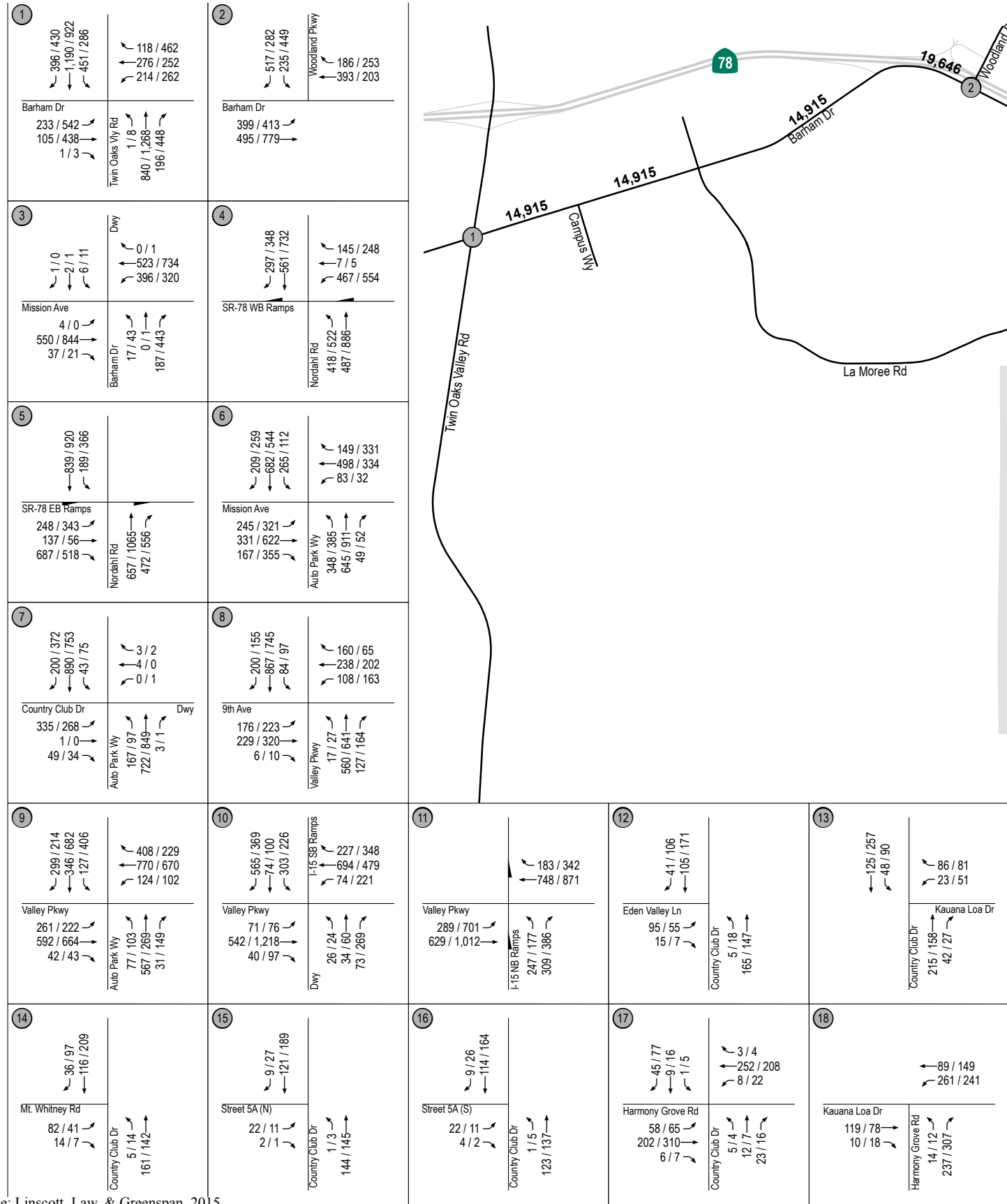
Project Traffic Distribution—Area 3

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Figure 2.8-3b

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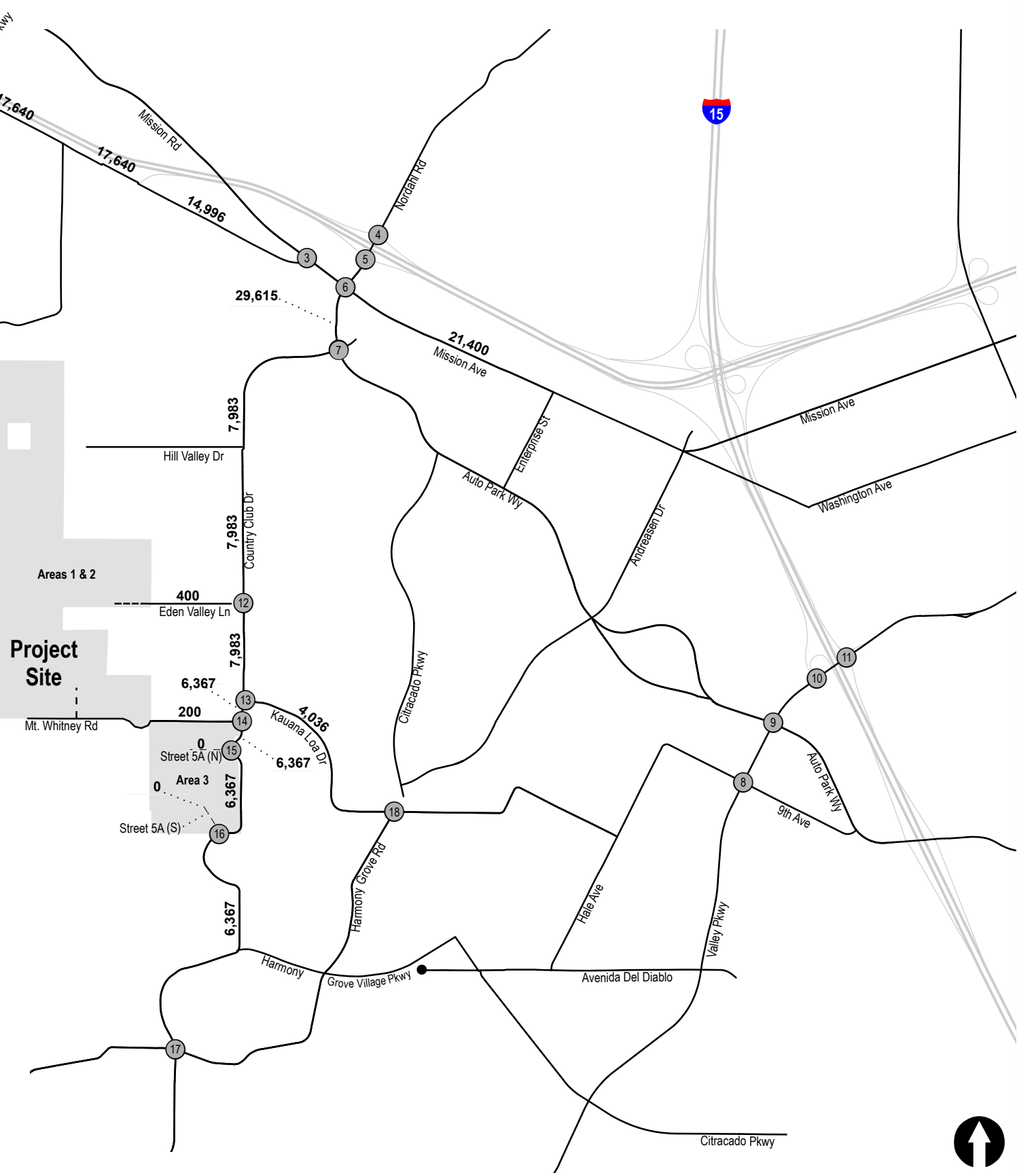
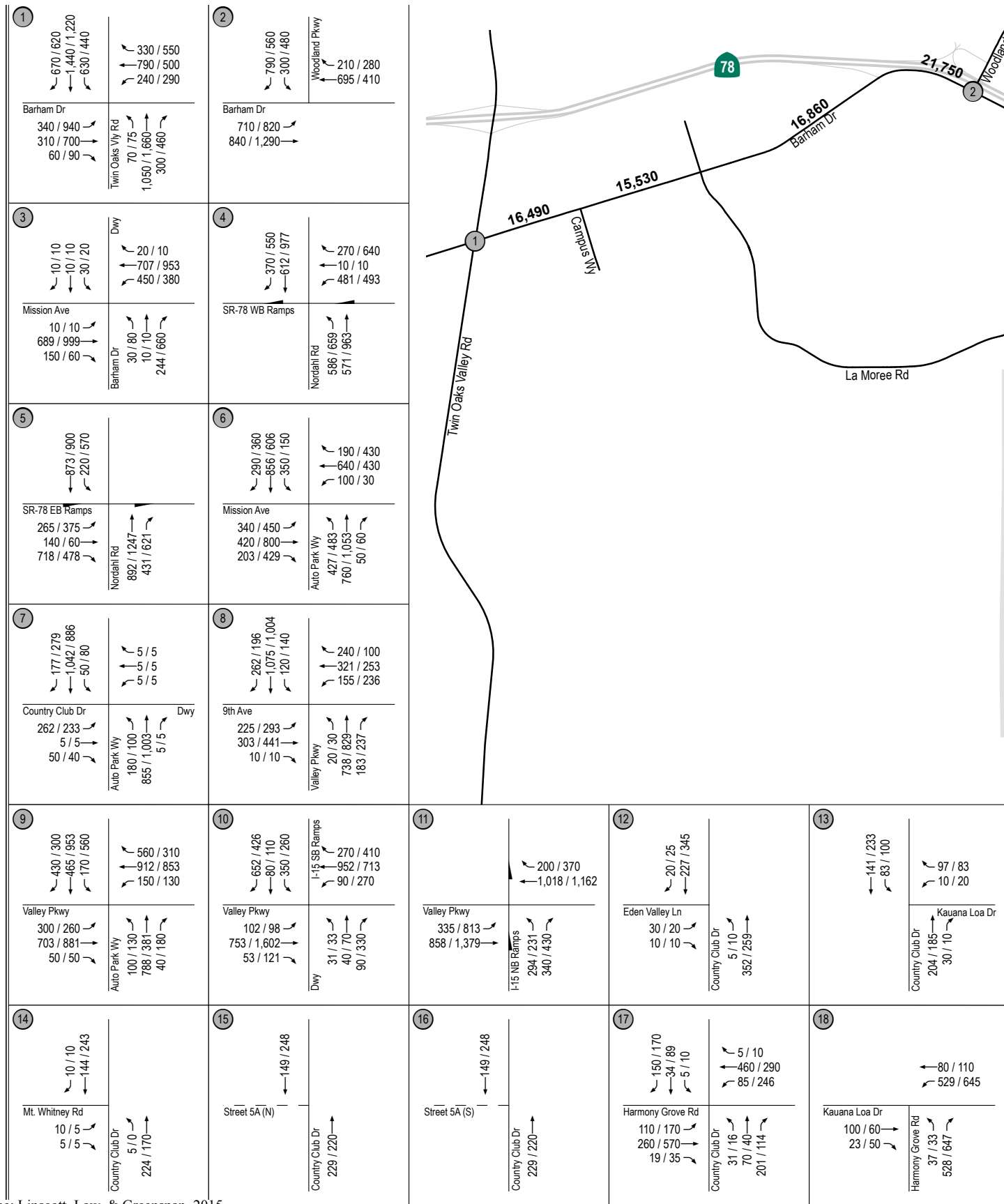
Source: Linscott, Law, & Greenspan 2015



Existing Plus Project Traffic Volumes

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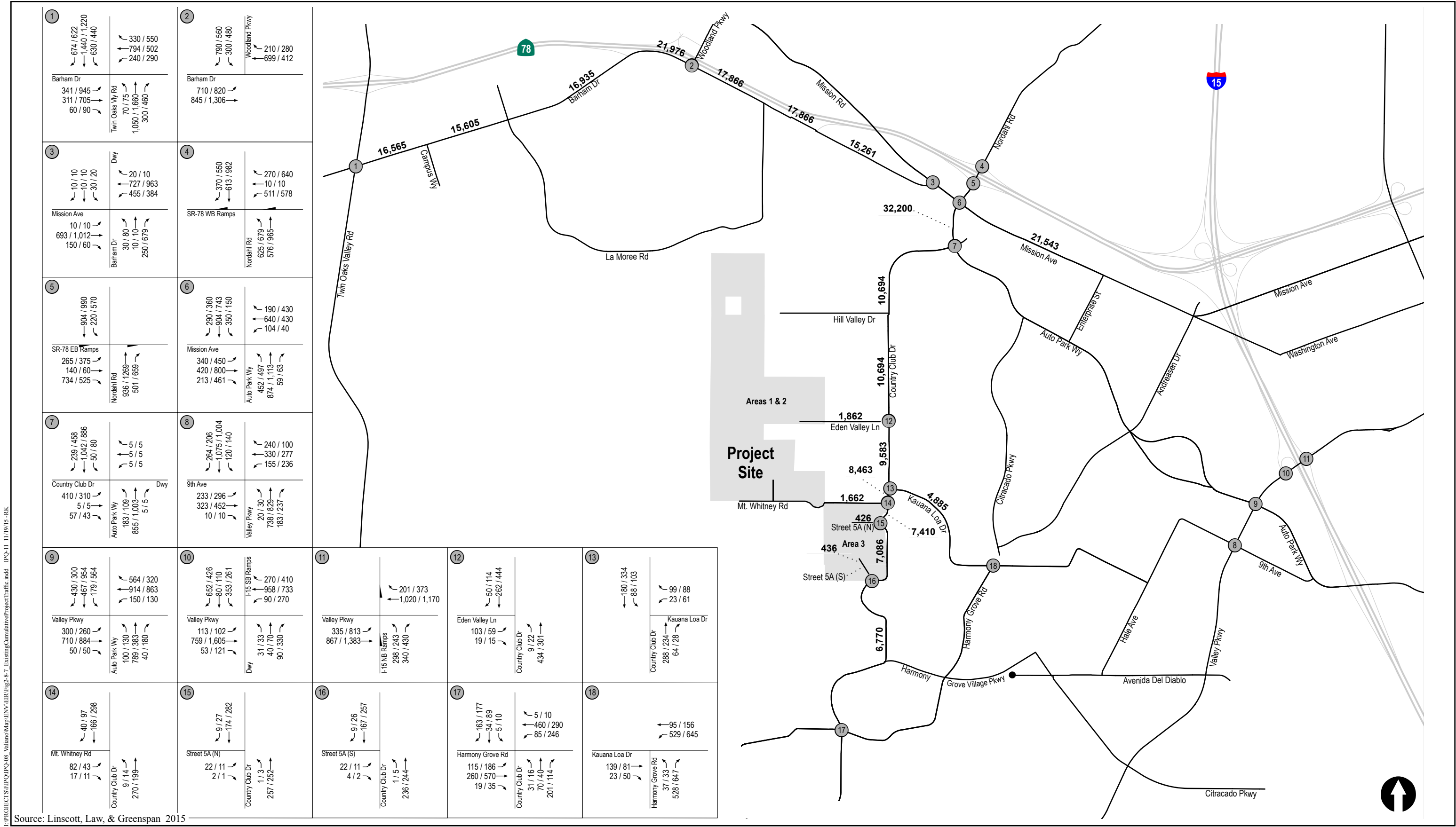
Source: Linscott, Law, & Greenspan 2015



Existing Plus Cumulative Traffic Volumes

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Source: Linscott, Law, & Greenspan 2015



Existing Plus Cumulative Plus Project Traffic Volumes