

Appendix H

Transportation Impact Analysis

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TRANSPORTATION IMPACT ANALYSIS

MARISOL

Del Mar, California
December 11, 2019

LLG Ref. 3-19-3108

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TRANSPORTATION IMPACT ANALYSIS

MARISOL

Del Mar, California

December 11, 2019

1.0 INTRODUCTION

This transportation analysis has been prepared to determine and evaluate the traffic impacts of developing the Marisol Project. The proposed Project is located south of Border Avenue and west of Camino Del Mar, in the northwestern corner of the City of Del Mar. The proposed project will include a multiple-building resort complex including 65 resort guest rooms and up to 27 attached villas, 4 detached villas, 22 affordable units.

Various intersections, segments, freeway mainline segments and ramp meters within the study area will be analyzed to determine Project related impacts, as set forth in the following sections.

- Project Description
- Existing Conditions Description
- Study Area, Analysis Approach and Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Cumulative Projects
- Trip Generation/Distribution/Assignment
- Analysis of Near-Term Scenarios – Typical Periods
- Analysis of Near-Term Scenarios – During Fair
- Analysis of Near-Term Scenarios – During Horse Races
- Analysis of Long-Term Scenarios
- Project Access
- Pedestrian, Bike, Transit Assessment
- Significance of Impacts and Mitigation Measures

2.0 PROJECT DESCRIPTION

2.1 Project Location

The project site is located south of Border Avenue and west of Camino Del Mar, in the northwestern corner of the City of Del Mar. The site comprises eight parcels, seven of which are vacant. A one-story 5,800 square foot residence (with accessory garage structure and pool cabana building) is located on the most southern parcel of the project site.

The Plan Area comprises eight parcels, seven of which are vacant (APNs 298-241-06, 07, 29, -34, -35, and -36, and 299-030-14 and -15) as shown on the aerial photo on the next page. As of 2018, the Plan Area is mostly disturbed, vacant land with a 5,800-square-foot residence remaining on the most southern parcel of the Plan Area with an accessory garage structure and pool cabana building (APN 299-030-1500).

The Plan Area is bordered by high-density residential and Border Avenue to the north, Camino del Mar and floodway to the east, floodway and North Beach to the south, and the Pacific Ocean to the west. Other nearby uses include the Del Mar Fairgrounds, the San Dieguito Lagoon and River, and single-family and multi-family housing south of the San Dieguito Lagoon overpass. The Plan Area totals approximately 22.83 acres.

The project area (also known as specific plan area) includes approximately 17.41 acres located south of Border Avenue and Via de la Valle and mostly west of Camino Del Mar, in the northwestern corner of the City of Del Mar. Assessor's Parcel Numbers include 298-241-06, 07, 29, 34, 35, 36, and 299-030-14 and 15. The project area also includes an isolated parcel on the east side of Camino Del Mar, Assessor's Parcel Number 298-241-07; no development is proposed on this portion of the project area. Additionally, the project area includes Camino del Mar public right-of-way easterly and adjacent to the site, and a City coastal viewing access easement (Assessor's Parcel Number: 298-241-18) located at the northern extent of the project site. Therefore, the area includes a total of nine parcels, seven of which are vacant. A one-story, 5,800 square foot residence (with accessory garage structure and pool cabana building) is located on the most southern parcel of the project site (Assessor's Parcel Number: 299-030-15).

2.2 Project Description

The project consists of a Specific Plan to allow for visitor-serving accommodations and associated amenities, as outlined in *Table 2-1*.

The Specific Plan allows for the development of 65 hotel guest rooms, 31 villas (27 of which may be divisible into additional hotel guest rooms when not in use by their owners, for a maximum of 146 hotel guest rooms), 22 affordable housing units, 10 family-friendly, low-cost visitor serving accommodations, and 408 off-street parking spaces, 27 of which shall be made available to the general public. The visitor serving use will include restaurants and a bar and lounge, which will be open to the public, as well as the provision of community meeting space. Amenities also include a spa and a walking trail along the bluff and circumference of the site.

TABLE 2-1
PROPOSED LAND USES

Land Use	Units ^a	Square Feet (SF) / Acreage ^a
Visitor-Serving Accommodations (VSA)	N/A	11.80 Acres
Hotel Guest Rooms ^b	65 ^b	61,000 SF
Hotel Amenities ^c	N/A	8,900 SF ^c
Ancillary Commercial Retail	N/A	19,200 SF
Special Event Space, Meeting Space ^d	N/A	14,300 SF
Back of House Facilities	N/A	32,000 SF
Lower-Cost Shared Visitor-Serving Accommodations ^e	10 ^e	6,800 SF ^e
Attached / Detached Villas ^f	31 ^f	158,400 SF ^f
Villa Amenities	N/A	13,200 SF
Affordable Housing	22	16,100 SF
Parkland/Passive Open Space (PPOS)	N/A	3.07 acres
Public Recreational Area	N/A	1.69 miles of trails ^g
Coastal Bluff Protection Area (CBPA)	N/A	1.21 Acres
Steep Slope Protection Area (SSPA)	N/A	1.37 Acres
City Right-of-Way Areas ^h	N/A	0.90 Acres
Total Privately-Owned Acreage	—	16.55 Acres
Total Plan Area Acreage	—	17.45 Acres

Footnotes:

- a. The acreages listed for each land use sub-designation (VSA, PPOS, CBPA and SSPA) are as shown on Figure 3-1, Land Use Plan. The square footage and unit count for associated uses are approximate and may be revised during the review of the design review permit and coastal development permit, provided the project totals do not exceed the maximum FAR allowed by this Specific Plan.
- b. Some of the villas (27 of the 31) may be divisible into additional hotel guest rooms when not in use by owners as described in Section 3.3.N and footnote no. 6 below. Therefore, the total number of guestrooms may be a maximum of 146.
- c. Includes specialty restaurant, bar/lounge, restaurant, pool bar, and retail. Does not include outdoor amenity space.
- d. Meeting space shall be made available free of rental charge to the City, City-affiliated organizations, and bona fide non-profit groups for no less than 10 events per year on a first-come, first-served basis subject to space availability for the time requested.
- e. Alternatively, the low-cost visitor-serving accommodations requirement may be met, subject to approval by the Coastal Commission, via payment of in lieu fees to be used for construction of low-cost visitor-serving accommodations in another location within the City of Del Mar.
- f. When not occupied by their owners, 27 of the 31 villas may be divisible into 3 units each for an additional 81 hotel guest rooms. The remaining 4 Villas are detached villas.
- g. Includes 0.19 miles of existing trails and 1.50 miles of new trails.
- h. The City right-of-way areas are included in the SSPA and PPOS land use sub-designations.

General Note:

N/A – Not Applicable

The attached Villas are single ownership and “resort - branded”, i.e. they may be available for rent by the resort when the owner is not there. In reality, the attached Villas will accommodate many folks that do not live year-round on-site and do not go to work each day during peak commuter periods. Even if these villas are rented, they may remain unoccupied for extended periods of time, since like any hotel, 100% occupancy is not guaranteed. It is believed that assuming a 100% occupancy means overstating the number of trips generated by the attached Villas, particularly during peak hours.

Ancillary commercial retail uses are subordinate in area, extent, and purpose to the principal visitor-serving accommodation use and contribute to the comfort, convenience, or necessity of occupants or visitors of the principal visitor-serving accommodation use. Examples of ancillary commercial uses include, but are not limited to, convenience and specialty shopping facilities, gift shops, art galleries, snack shops, recreation and spa facilities, and beach-equipment rental operations.

Lower-Cost Shared Visitor-Serving Accommodations are overnight accommodations that will provide lower-income members of the public, including those that live farther from the coast, access and recreation opportunities at the coast. Consistent with the California Coastal Act’s requirement to maximize access and promote lower-cost visitor and recreational facilities, the Lower-Cost Shared Visitor-Serving Accommodations will provide opportunities for individuals and families from underserved communities to visit the coast when they might not be able to do so otherwise due to costs, including costs for overnight accommodations.

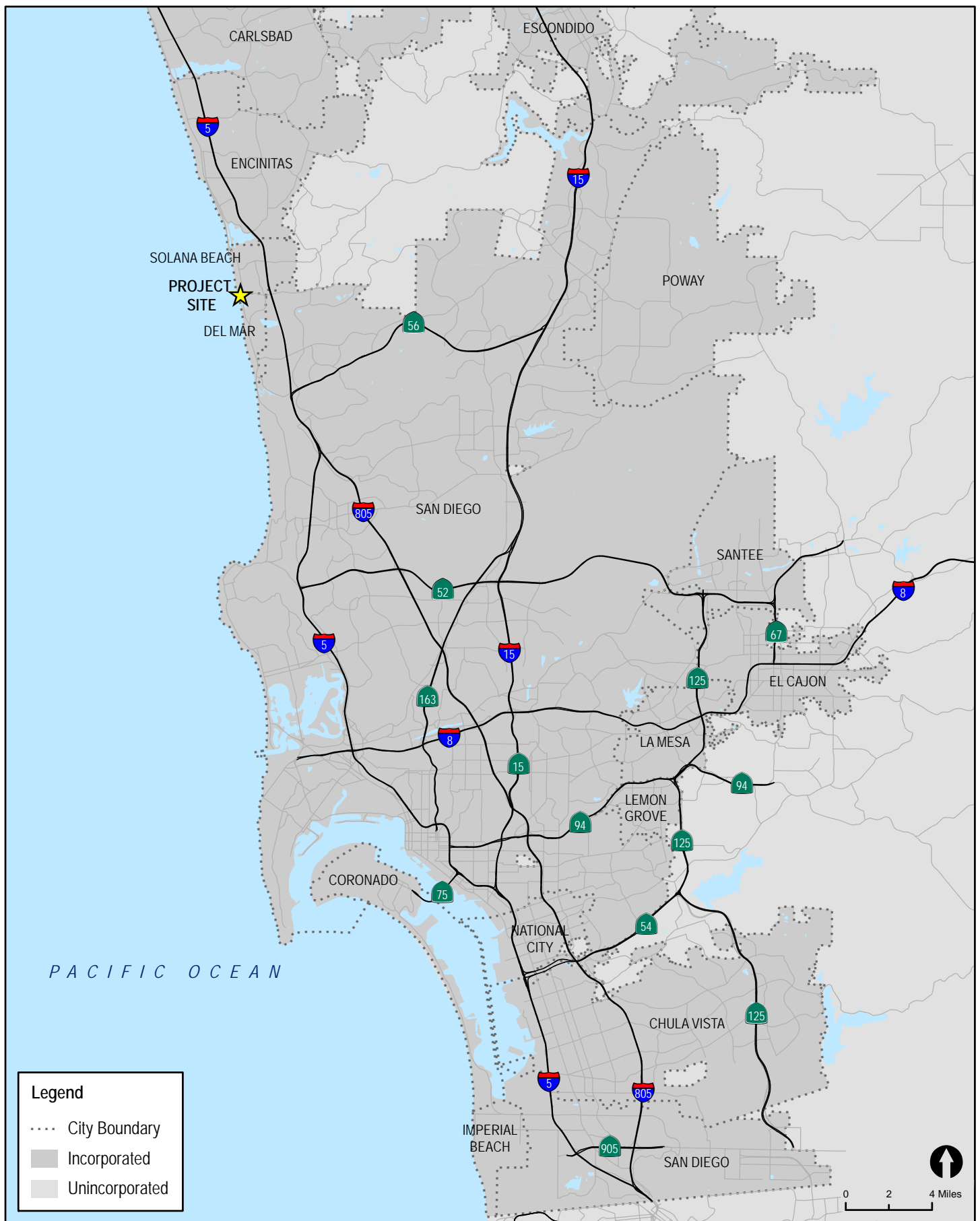
Affordable Housing Units are for-rent housing units reserved at rental rates affordable to persons or households that qualify as being of extremely-low income, very-low income, and low income based on the area median income for San Diego County, as adopted and as may be amended by time to time, by the California Department of Housing and Community Development, pursuant to state law.

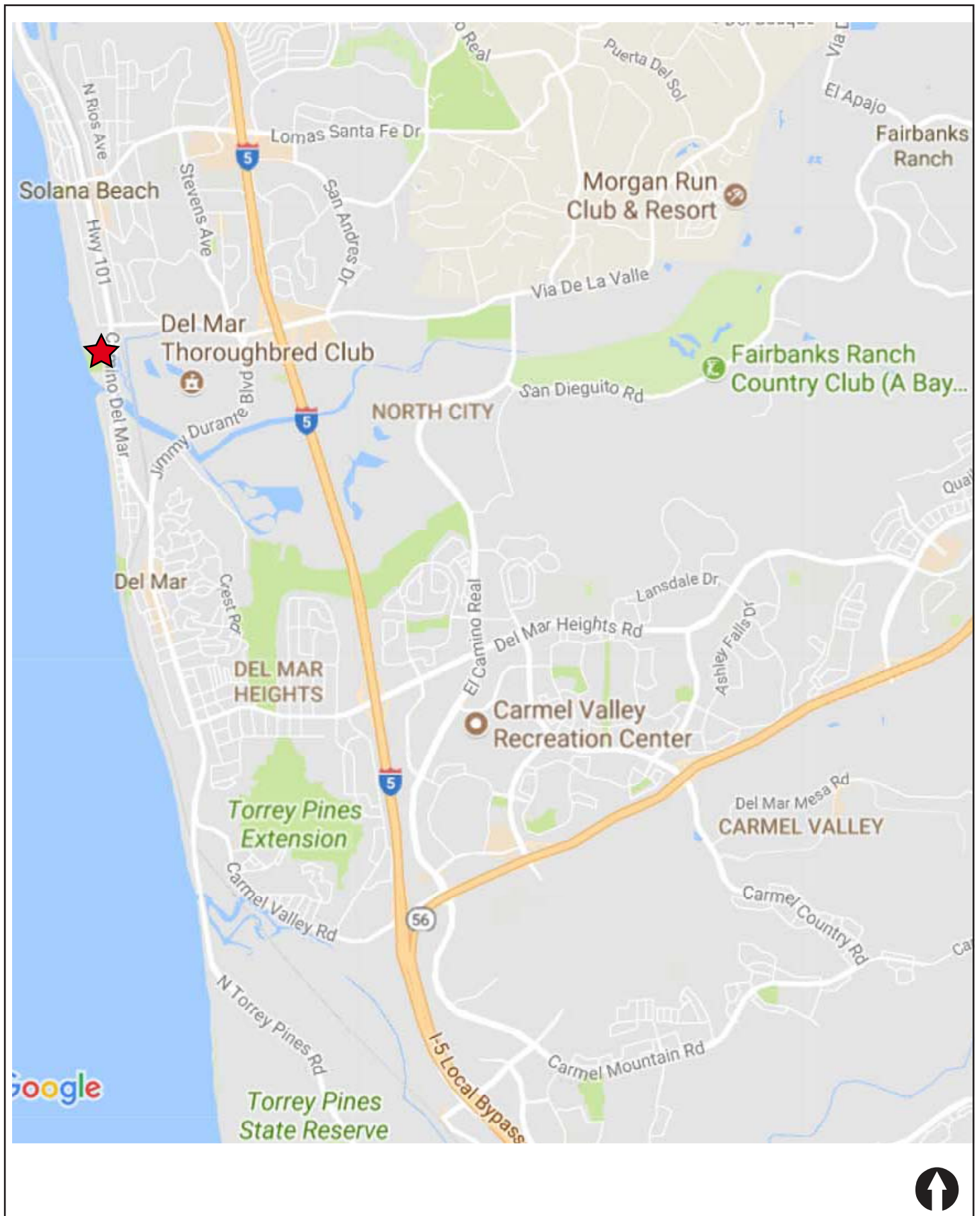
2.3 Project Access

Access to the proposed project would be provided via Border Avenue near the intersection of Border Avenue and S. Sierra Avenue. Outbound access from the Project to Sierra Avenue will be prohibited.

Figure 2–1 is the Project Vicinity map while **Figure 2–2** is the Project Area Map. **Figure 2–3** depicts the Conceptual Site Plan.







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Figure 2-2

Project Area Map

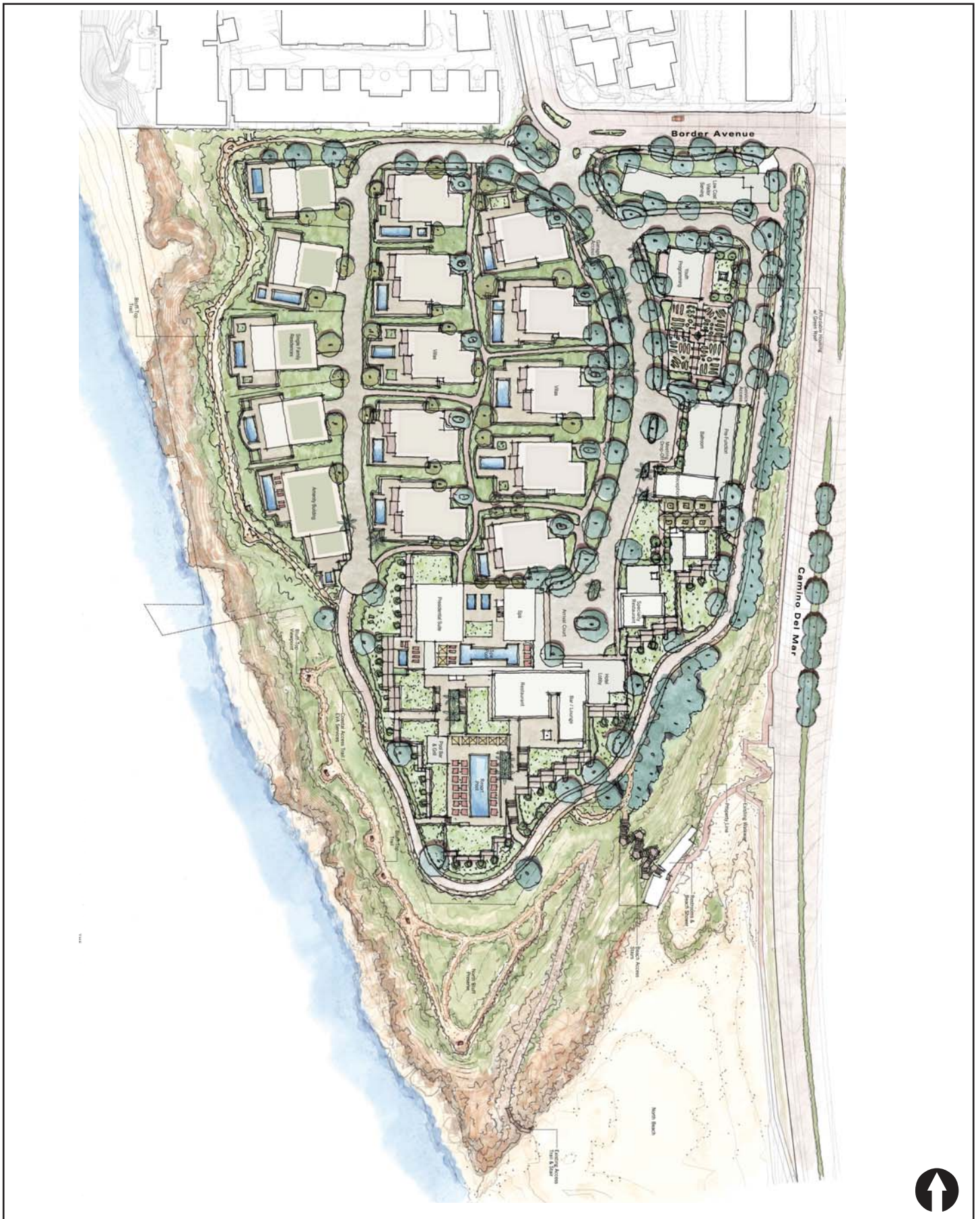


Figure 2-3
Site Plan

MARISOL

3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the project area. *Figure 3-1* depicts the existing conditions, including signalized intersections and lane configurations.

3.1 Existing Street Network

The following is a description of the existing street network in the study area.

Via De La Valle

Via De La Valle provides inland and beach access, as well as interregional access via an interchange with I-5. Via De La Valle also provides direct access to the Del Mar Fairgrounds, a major seasonal traffic generator.

Via De La Valle is an east-west street. West of Jimmy Durante Boulevard, Via De La Valle is located within the City of Del Mar and is currently built as a two-lane road with a center two-way-left-turn lane between Jimmy Durante Boulevard and Highway 101. Curb, gutter and sidewalk are provided. Additional through lanes / turn lanes are provided at the Jimmy Durante Boulevard and Highway 101 intersections. Bike lanes and bike buffers are provided along Via De La Valle. The posted speed limit is 45 mph. Curbside parking is permitted along the entire southern curb and most of the way on the north curb between Highway 101 and the Jimmy Durante Boulevard.

To the east of Jimmy Durante Boulevard, Via De La Valle is primarily located within the City of San Diego. Between Jimmy Durante Boulevard and I-5, Via De La Valle is a four-lane roadway. On-street parking is not permitted and bike lanes are not provided.

The photo below left shows the section of Via De La Valle east of Jimmy Durante Boulevard and the photo below right shows the section of Via De La Valle west of Jimmy Durante Boulevard.



Highway 101

The section of Highway 101 between north of Lomas Santa Fe Drive and Via De La Valle is a four-lane major arterial. It provides the primary north-south access to numerous beaches and parks along the coast as well as connections to the communities of Encinitas, Carlsbad and Oceanside to the north and Del Mar and La Jolla to the south. Highway 101 is also a popular route for bicyclists. In 2013 a City revitalization project made significant improvements to Highway 101. The Highway 101 West Side Improvement project includes an increase in the number of parking spaces, creation of a bicycle and pedestrian friendly corridor, improvements to the aesthetics of the surrounding area, traffic calming along Highway 101, installation of two new traffic signals and two new mid-block crosswalks.

The photo below left depicts Highway 101 just north of Via De La Valle and the photo above right depicts Camino Del Mar, south of Via De La Valle.



Camino Del Mar

Camino Del Mar is generally a two-lane road with a raised / landscaped median. The northern section up to 600 feet south of Via De La Valle is built as a four-lane Major Road with a raised median. Curb, gutter and sidewalk are provided. Bike lanes are also provided. The posted speed limit is 30 mph. curbside parking is permitted on the west curb up to the bridge and continues on both curbs south of the bridge.

The photo on the next page depicts the section of Camino Del Mar south of Via de La Valle. As seen in the photo, a buffer is provided between the bike lane and the curbside parking.



Sierra Avenue

Sierra Avenue is parallel to and west of Highway 101. It is a two-lane roadway with a posted speed limit of 25 mph. Although there is no designated bicycle facility along this roadway, it is regularly used by bicyclists as it provides a strong north-south connection parallel to Highway 101 with lower vehicular traffic volumes.

The photo below depicts S. Sierra Avenue north of Border Avenue.



Border Avenue

The west leg of the Highway 101 / Via De La Valle intersection is Border Avenue. It is a short road between Highway 101 and S. Sierra Avenue and is within the jurisdiction of the City of Del Mar. It is a two-lane roadway with parking permitted on both curbs. Although there is no designated bicycle facility along this roadway, it is regularly used by cyclists as it provides a strong north-south connection parallel to Highway 101 with lower vehicular traffic volumes.

Lomas Santa Fe Drive

Lomas Santa Fe Drive runs east-west and is a four-lane divided roadway with limited on-street parking. It provides coastal and inland access for Solana Beach and access to and from I-5. Posted speeds are 35 mph. A bike lane is striped on both sides of the street. The existing functional classification of Lomas Santa Fe Drive is a four-lane major roadway.

Cedros Avenue

Cedros Avenue is parallel to and east of Highway 101 and is within the jurisdiction of the City of Solana Beach. It is a two-lane roadway with a posted speed limit of 25 mph. The primary function of Cedros Avenue is to provide local access to businesses and residences adjacent to the roadway. It should be noted that South Cedros Avenue between Marsolan Avenue and Via De La Valle is fronted entirely by residential properties. There are bicycle sharrows along Cedros Avenue. The existing functional classification of Cedros Avenue is a two-lane collector roadway.

3.2 Existing Bicycle Network

Currently, bike lanes are provided along both curbs of Via De La Valle and Highway 101 / Camino Del Mar within the project study area.

3.3 Existing Pedestrian Conditions

Continuous sidewalks are provided along both sides of S. Sierra Avenue, Border Avenue, Via De La Valle and Highway 101. Sidewalks are provided along the entire west side of Camino Del Mar, on the east side, sidewalks are provided for most of the length of Camino De Mar except for a portion north of 29th Street.

3.4 Existing Transit Conditions

Two NCTD Breeze routes, 101 and 308 run along Highway 101. Route 101 runs between Oceanside and V.A./UCSD via Highway 101. The schedule indicates that the route runs once every half-an-hour.

Route 308 runs between Solana Beach and Escondido via Del Dios Highway. The terminus in Solana Beach is located on Highway 101, just south of Lomas Santa Fe Drive. The schedule indicates that the route runs hourly, with the first bus leaving Escondido at around 5:00 AM and the last at around 7:30 PM.

3.5 Existing Traffic Volumes

The proposed Project is located adjacent to the Del Mar Fairgrounds and the Fairgrounds related activities greatly affect traffic patterns in the area. The main two activities at the Fairgrounds are the Del Mar Fair and the Horse Races. Therefore, the schedule of activities was reviewed and based on discussions with the City, it was decided to analyze the following scenarios:

1. A Typical Weekday
2. A Typical Weekend day
3. A Weekday During the Fair

4. A Weekend day During the Fair
5. A Weekday During the Horse Races
6. A Weekend day During the Horse Races

The schedule of events at the Fairgrounds is included in *Appendix A*.

Gates open at nine AM most days during the fair and at noon most days during the Horse Races. Thus, only PM peak hour counts were conducted on a weekday during the Fair and Horse Races. The schedule of events at the Fair and Horse Races is included in *Appendix A*.

3.5.1 Pear Hour Intersection Volumes

Manual hand counts at the study area intersections, including bicycle and pedestrian counts, were conducted. *Table 3-1* summarizes the dates and times the existing counts were conducted on a typical weekday and weekend, as well as on a weekday with the Del Mar Fair.

Appendix A also contains the signal timing plans for all signalized intersections obtained from the Cities of Del Mar and Solana Beach.

3.5.2 Daily Segment Volumes

Table 3-2 summarizes the dates and times of the existing segment counts during the three times of the year and the average daily traffic volumes (ADTs). Segment analysis was conducted on weekdays, but not on weekend days since street segment analysis uses roadway capacities that are calculated assuming typical commuter peak hours and the spread of traffic throughout the day assuming workday travel patterns. Weekends do not have commuter peak periods. For this reason, it is the standard of practice in traffic engineering to not conduct segment analysis during weekend days.

Intersection and segment count sheets are included in *Appendix A*.

3.5.3 Freeway Mainline and Metered on-Ramp Volumes

Weekday freeway mainline and metered on-ramp volumes were obtained from the PeMs website for the various conditions. *Appendix A* contains the manual count sheets, Truck and K&D factors.

**TABLE 3-1
INTERSECTION COUNTS**

Intersections	Typical		Fair		Horse Races	
	Weekday	Weekend	Weekday	Weekend	Weekday ^a	Weekend
1. Hwy 101 / Lomas Santa Fe Dr	Thu 6/1/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
2. Lomas Santa Fe Dr / Cedros Avenue	Tue 7/18/17	Sat 7/15/17	b	b	Tue 7/25/17	Sat 7/22/17
3. Lomas Santa Fe Dr / I-5 SB Ramps	Tue 7/18/17	Sat 7/15/17	b	b	Tue 7/25/17	Sat 7/22/17
4. Lomas Santa Fe Dr / I-5 NB Ramps	Tue 7/18/17	Sat 7/15/17	b	b	Tue 7/25/17	Sat 7/22/17
5. Dahlia Dr / S Sierra Ave	Tue 7/18/17	Sat 7/15/17	b	b	Tue 7/25/17	Sat 7/22/17
6. Dahlia Dr / Highway 101	Thu 6/1/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
7. Border Ave /S. Sierra Ave	Thu 5/4/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
8. Hwy 101 (Camino Del Mar) / Via De La Valle (Border Ave)	Thu 5/4/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
9. Via De La Valle / S. Cedros Ave	Thu 5/4/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
10. Via De La Valle / Jimmy Durante Blvd	Wed 5/17/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
11. Via De La Valle / I-5 SB Ramps	Thu 6/1/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
12. Via De La Valle / I-5 NB Ramps	Thu 6/1/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
13. Camino Del Mar / 27 th St	Thu 6/1/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
14. Camino Del Mar / Coast Blvd	Thu 6/1/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
15. Camino Del Mar / L'Auberge Del Mar	Tue 7/18/17	Sat 7/15/17	b	b	Tue 7/25/17	Sat 7/22/17
16. Camino Del Mar / 15 th St	Thu 5/4/17	Sat 7/15/17	Tue 6/27/17	Sat 6/8/2019	Tue 7/25/17	Sat 7/22/17
17. Camino Del Mar / Del Mar Heights Rd	Tue 7/18/17	Sat 7/15/17	b	b	Tue 7/25/17	Sat 7/22/17
18. Camino Del Mar / Carmel Valley Rd	Tue 7/18/17	Sat 7/15/17	b	b	Tue 7/25/17	Sat 7/22/17
19. Via De La Valle / Solana Cir				b		

Footnotes:

- a. Only PM peak hour counts were conducted since the horse races do not begin until 2:00 PM.
- b. Counts were not conducted.

General Note:

All counts were conducted during the current year (2017).

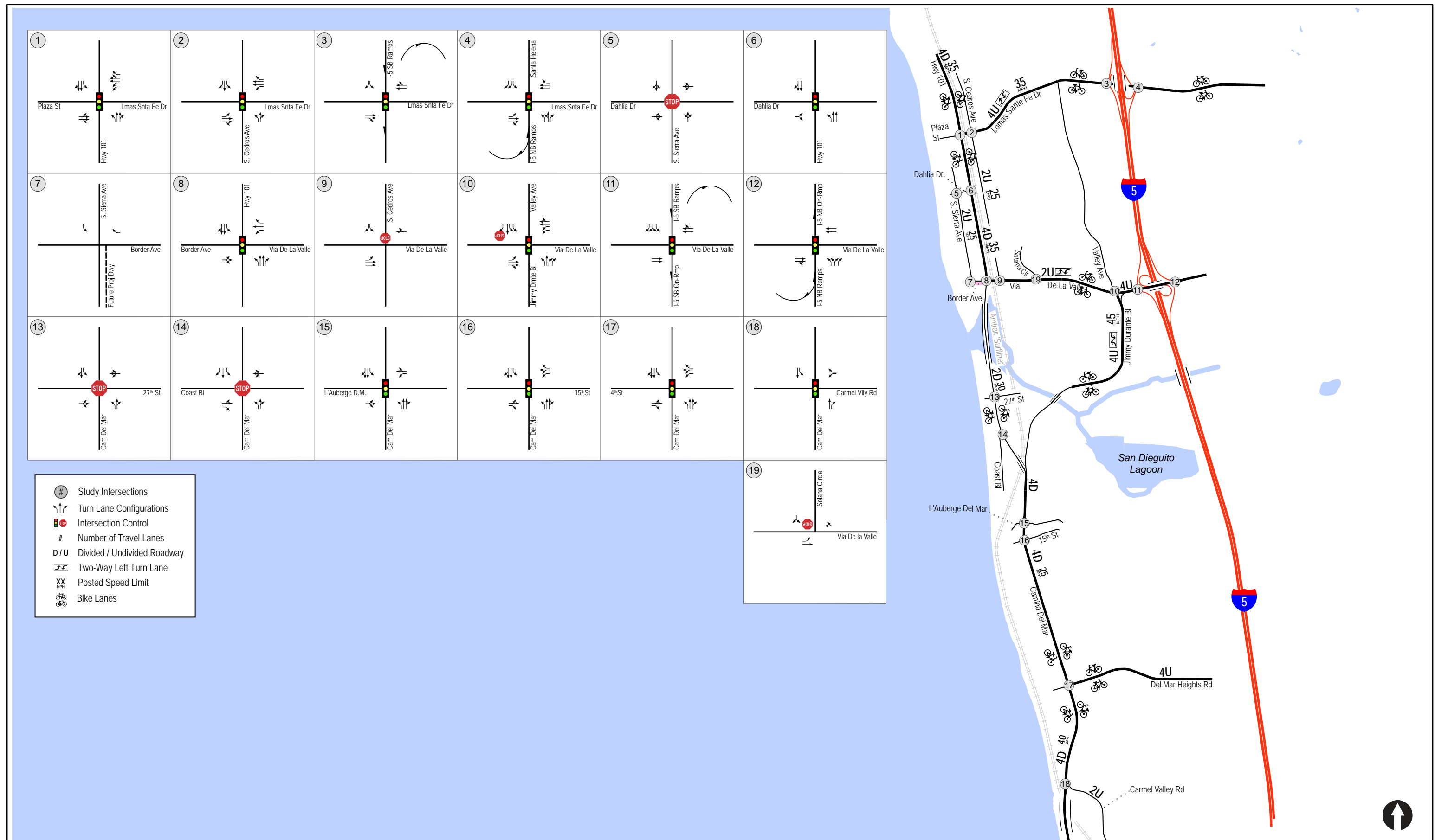
**TABLE 3-2
EXISTING WEEKDAY TRAFFIC VOLUMES**

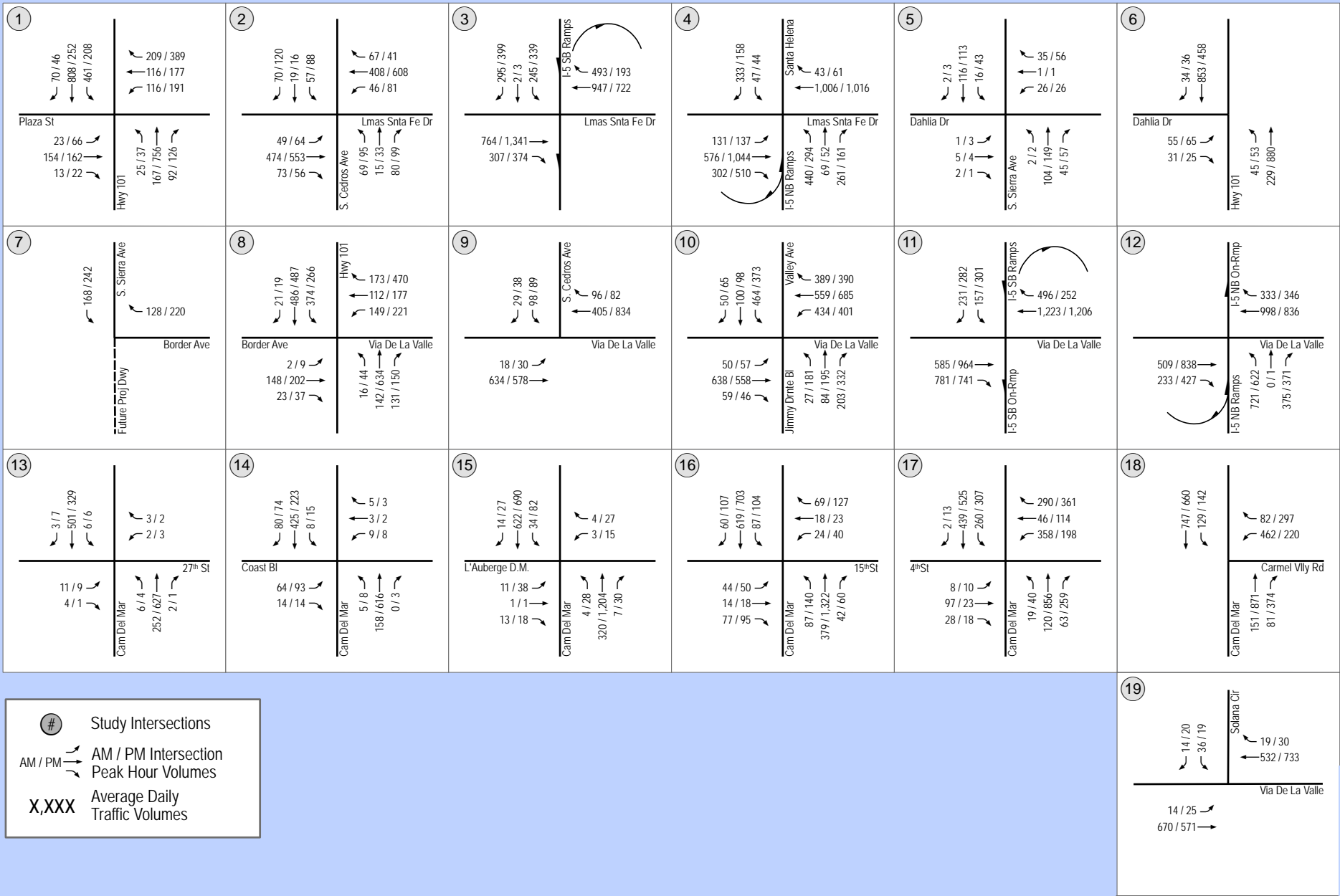
Street Segment	Typical Weekday ^a		Fair ^b		Horse Races ^c	
	ADT ^c	Date ^d	ADT ^c	Date	ADT ^c	Date
S. Sierra Avenue						
Del Mar Shore Ter to Beach Club Dr	3,400	May 03	3,500	Jun 27	4,300	Jul 25
Highway 101						
Lomas Santa Fe Dr to Dahlia Dr	15,000	May 31	18,700	Jun 28	19,400	Jul 25
Dahlia Dr to Via De La Valle	17,900	May 03	19,000	Jun 28	20,400	Jul 25
Camino Del Mar						
Via De La Valle to 27 th St	15,300	May 03	17,700	Jun 28	16,900	Jul 25
27 th St to Coast Blvd	10,900	May 31	16,800	Jun 28	18,500	Jul 25
Coast Blvd to Jimmy Durante Blvd	8,900	May 31	11,300	Jun 28	12,800	Jul 25
Via De La Valle						
Highway101 (Camino Del Mar) to S. Cedros Ave	16,500	May 03	15,600	Jun 28	18,500	Jul 25
S. Cedros Ave to Jimmy Durante Blvd	18,800	May 03	24,300	Jun 28	23,700	Jul 25
Jimmy Durante Blvd to I-5 SB Ramps	44,200	May 31	58,200	Jun 28	45,200	Jul 25

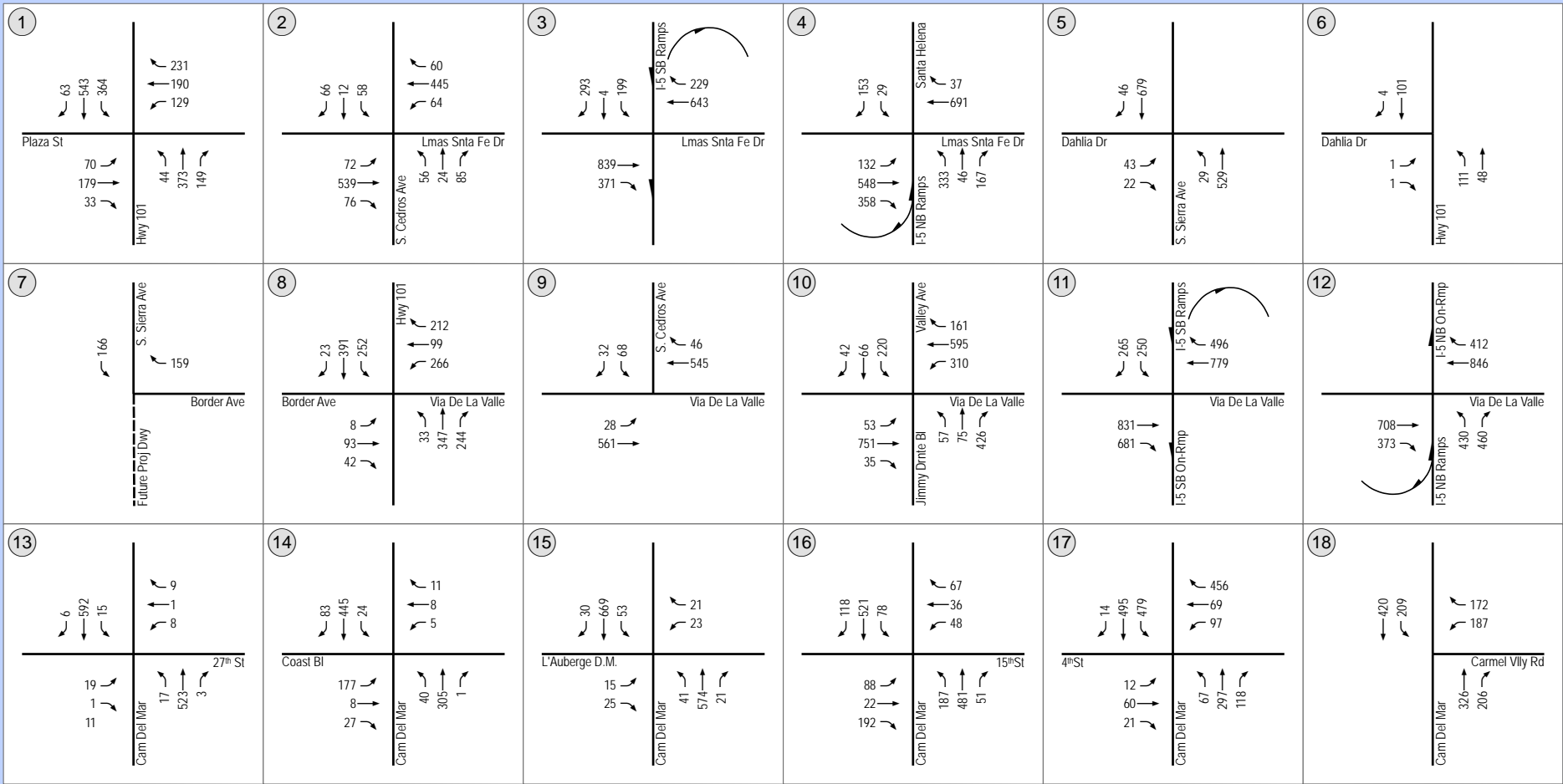
Footnotes:

- a. Traffic volumes with no event at the Del Mar Fairgrounds rounded to the nearest 100.
- b. Traffic volumes with a fair at the Del Mar Fairgrounds rounded to the nearest 100.
- c. Traffic volumes with horse races at the Del Mar Fairgrounds rounded to the nearest 100.
- d. Average Daily Traffic Volumes.
- e. All counts were conducted during the current year (2017).

Source: Accurate Video Counts, Inc.







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Study Intersections

PM

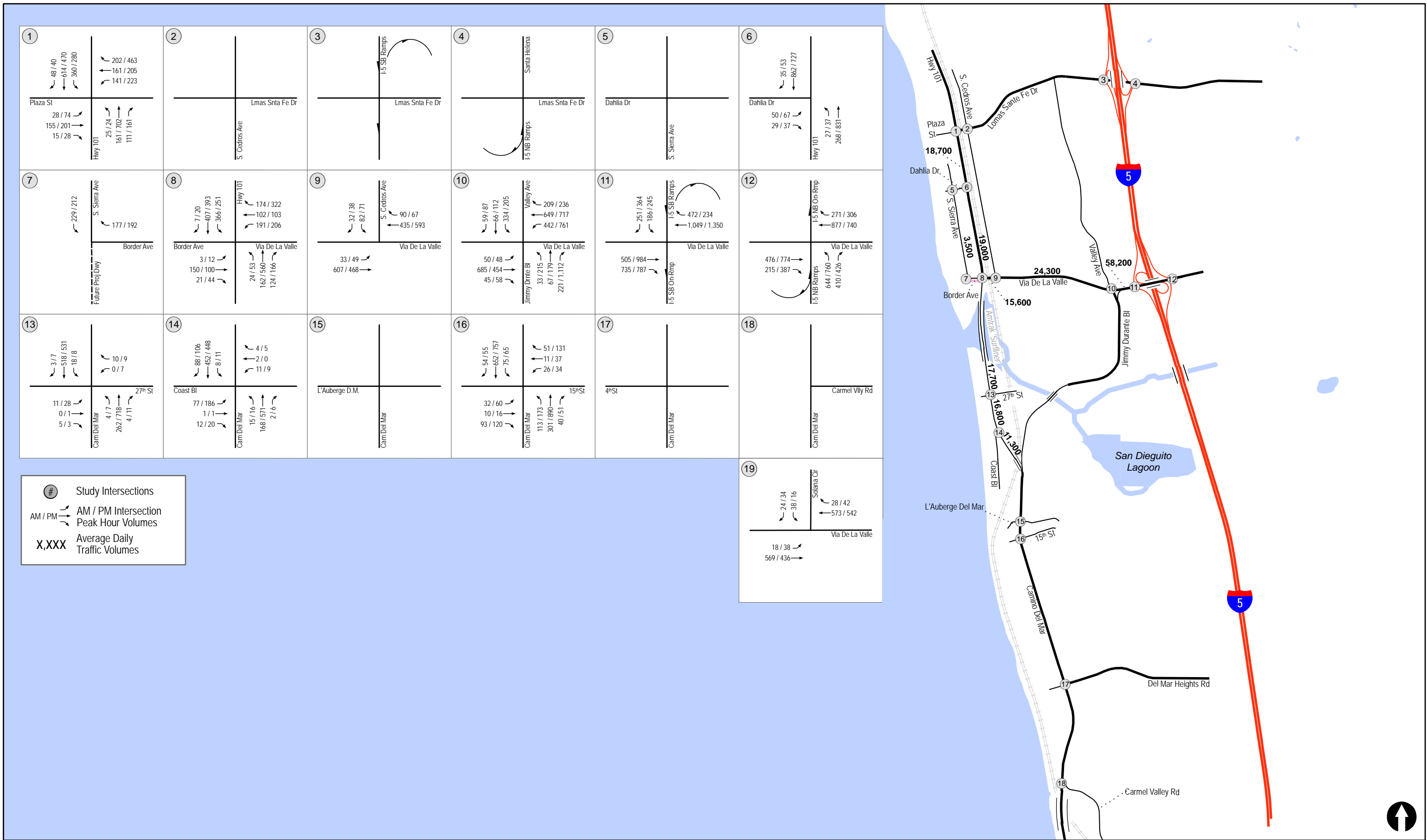
PM Intersection

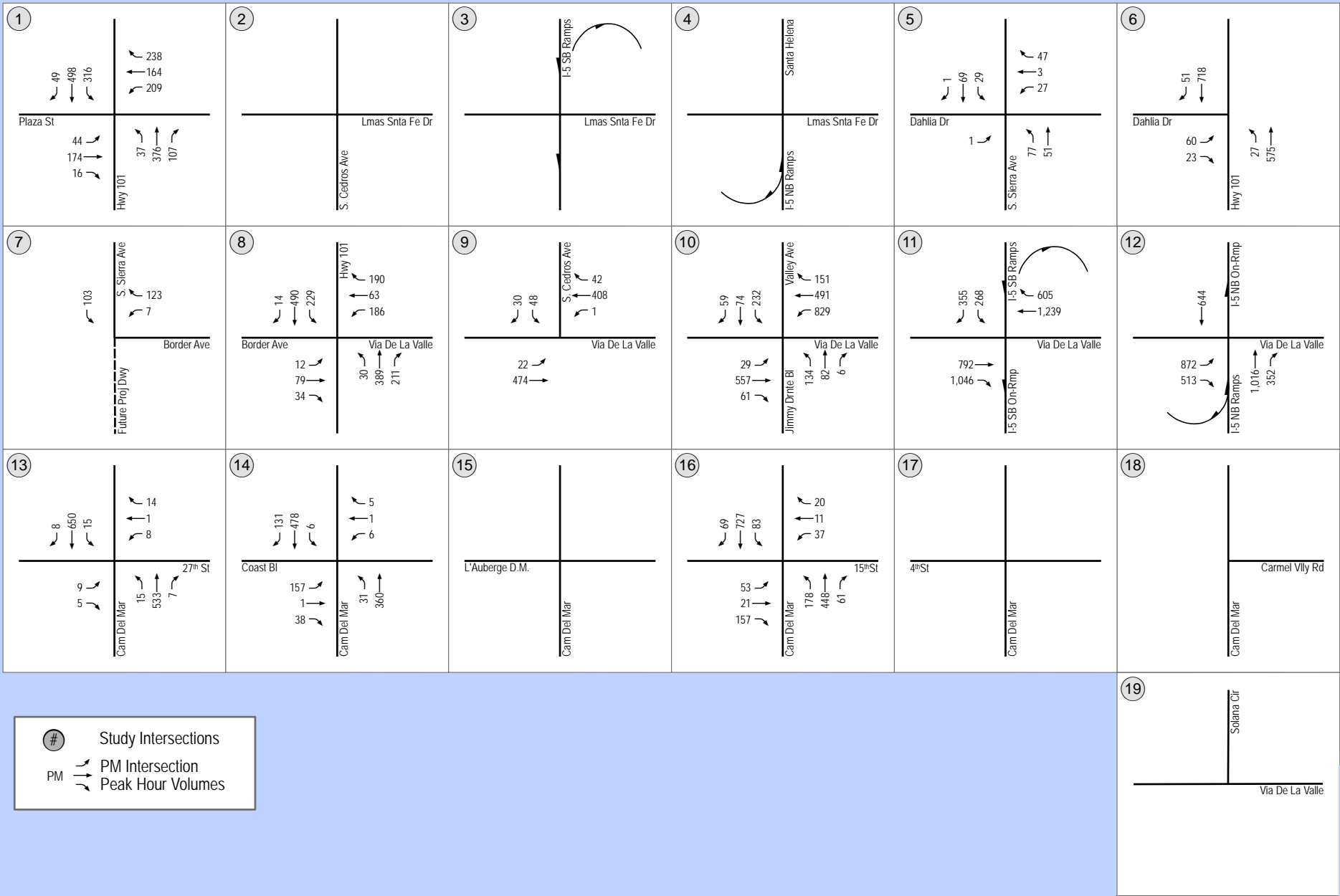
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Peak Hour Volumes



Figure 3-3
Existing Traffic Volumes
Typical Weekend





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Study Intersections

PM

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PM Intersection
Peak Hour Volumes



Figure 3-5
 Existing Traffic Volumes
 Weekend - During Fair

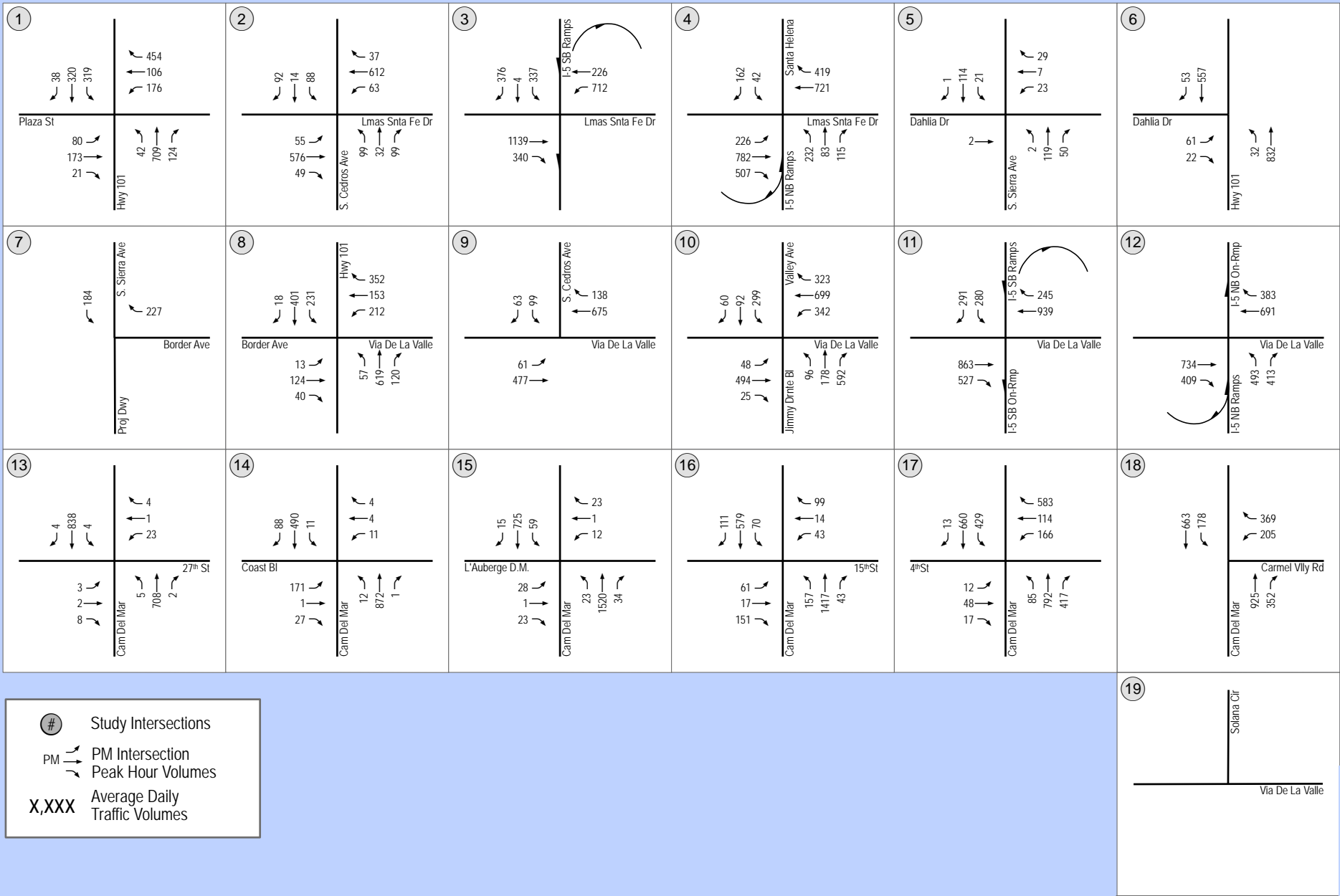
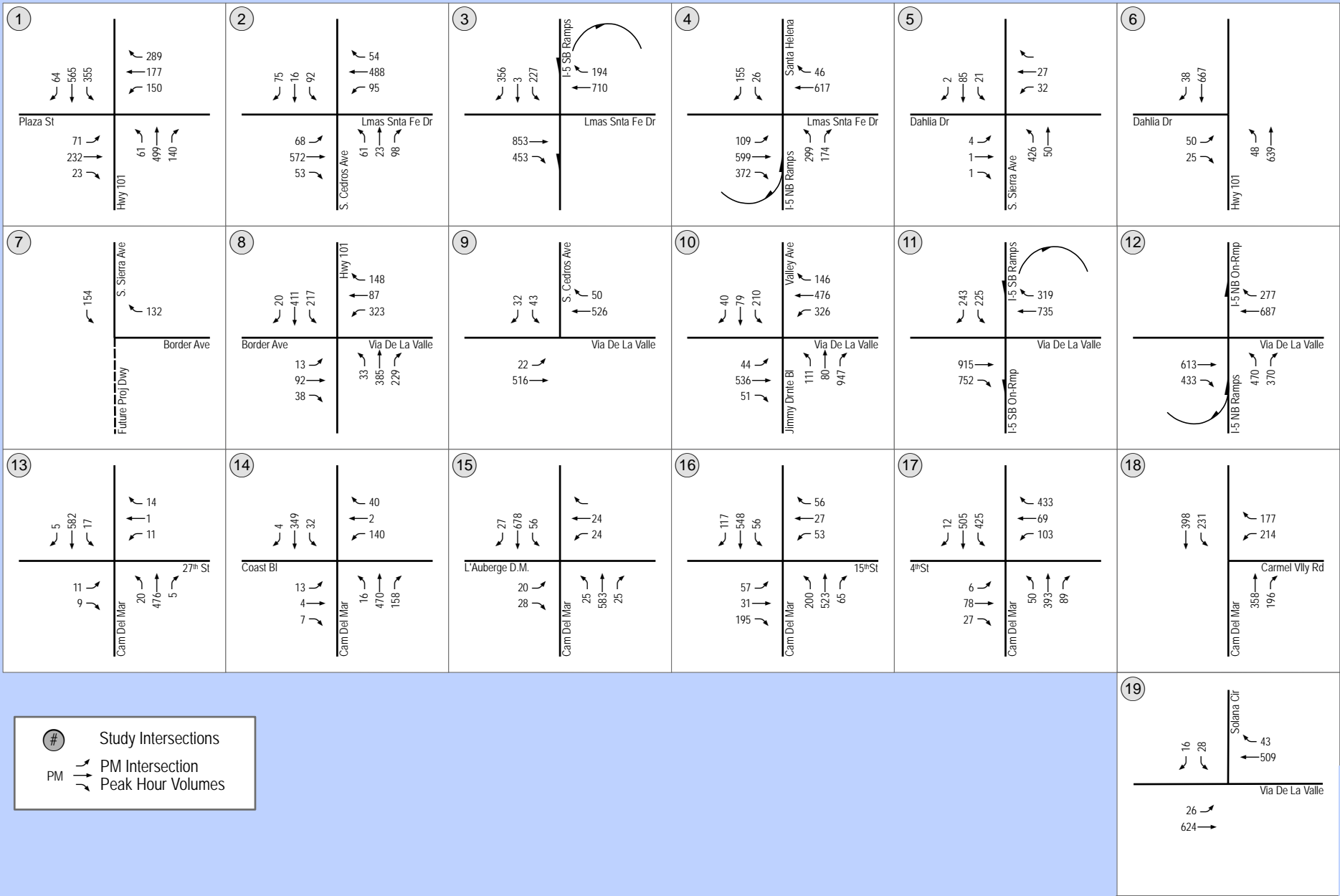


Figure 3-6
Existing Traffic Volumes
Weekday - During Horse Races



Study Intersections

PM

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PM Intersection

Peak Hour Volumes



4.0 STUDY AREA, ANALYSIS APPROACH AND METHODOLOGY

4.1 Study Area

4.1.1 *Determining The Project Study Area*

The study area was determined based on the SANTEC/ITE Regional Guidelines for Traffic Impact Studies which require that a Project study area be established as follows:

- Intersections and street segments where the Project will add 50 or more peak hour trips in either direction.
- Mainline freeway locations where the Project will add 50 or more peak hour trips in either direction.
- Metered Freeway Ramps where the Project will add 20 or more peak hour trips.

In addition, the study area locations were selected based on the Project's trip distribution and are the most likely locations to be impacted by Project. The Project study area includes the following locations:

INTERSECTIONS

1. Highway 101 / Lomas Santa Fe Drive
2. Cedros Avenue / Lomas Santa Fe Drive
3. I-5 SB Ramps / Lomas Santa Fe Drive
4. I-5 NB Ramps / Lomas Santa Fe Drive
5. S. Sierra Avenue / Dahlia Drive
6. Highway 101 / Dahlia Drive
7. Border Avenue/S. Sierra Avenue
8. Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue)
9. Via De La Valle / S. Cedros Avenue
10. Via De La Valle / Jimmy Durante Boulevard
11. Via De La Valle / I-5 SB Ramps
12. Via De La Valle / I-5 NB Ramps
13. Camino Del Mar / 27th Street
14. Camino Del Mar / Coast Boulevard
15. Camino Del Mar / L'Auberge Del Mar
16. Camino Del Mar / 15th Street
17. Camino Del Mar / Del Mar Heights Road
18. Camino Del Mar / Carmel Valley Road
19. Via de la Valle / Solana Circle

SEGMENTS

- A. S. Sierra Avenue: Del Mar Shore Terrace to Beach Club Drive
- B. Highway 101: Lomas Santa Fe Drive to Dahlia Drive
- C. Highway 101: Dahlia Drive to Via De La Valle
- D. Camino Del Mar: Via De La Valle to 27th Street

- E. Camino Del Mar: 27th Street to Coast Boulevard
- F. Camino Del Mar: Coast Boulevard to Jimmy Durante Boulevard
- G. Via De La Valle: Highway 101 (Camino Del Mar) to S. Cedros Avenue
- H. Via De La Valle: S. Cedros Avenue to Jimmy Durante Boulevard
- I. Via De La Valle: Jimmy Durante Boulevard to I-5 SB Ramps

FREEWAY MAINLINE SEGMENTS

- 1. **I-5:** Lomas Santa Fe Drive to Via De La Valle
- 2. **I-5:** Via De La Valle to Del Mar Heights Road
- 3. **I-5:** Del Mar Heights Road to SR 56

METERED ON-RAMPS

- 1. Eastbound Via De La Valle / I-5 Southbound on-ramp
- 2. Eastbound Via De La Valle / I-5 Northbound on-ramp

Consideration was given to including the Lomas Santa Fe Drive intersections at Nardo Avenue and Stevens Avenue within the City of Solana Beach, in the traffic study but based on the computer based Select Zone Analysis (SZA) conducted by SANDAG specifically for this site (Section 8), the project adds fewer than 10 trips to these intersections during the weekday or weekend. This is far below the San Diego Traffic Engineers' Council (SANTEC) threshold of a minimum of 50 peak hour trips to include in a Study Area. Therefore, they were not included for analysis (please see *Figures 8-2 and 8-3*).

4.2 Analysis Scenarios

This study includes analysis of the following scenarios:

- Typical Weekday and Weekend
 - Existing
 - Existing + Project
 - Existing + Cumulative Projects
 - Existing + Cumulative Projects + Project
 - Year 2035 Without Project (Weekday only)
 - Year 2035 + Project (Weekday only)
- During Fair Weekday (Weekday and Weekend)
 - Existing
 - Existing + Project
 - Existing + Cumulative Projects
 - Existing + Cumulative Projects + Project

- During Horse Races Weekday and Weekend
 - Existing
 - Existing + Project
 - Existing + Cumulative Projects
 - Existing + Cumulative Projects + Project

The Del Mar Fairgrounds hosts roughly 52 days of horse races annually. Roads within the study area are therefore affected by the horse races for 14% of the year. The San Diego County Fair at the Del Mar Fair Grounds occurs 26 days out of the year. This represents 7% of the year, when the roads experience an increase in trips due to the fair. On the whole, any impact due to the fair and horse races together lasts for about 78 days in a year or 21% of a year.

4.3 Methodology

There are various methodologies used to analyze signalized intersections, unsignalized intersections, and street segments. The measure of effectiveness for intersection and segment operations is level of service (LOS), which denotes the operating conditions which occur at a given intersection or on a given roadway segment under various traffic volume loads.

LOS 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. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Levels of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments. In the 2010 Highway Capacity Manual (HCM), Level of Service for signalized intersections is defined in terms of delay. The level of service analysis results in seconds of delay expressed in terms of letters A through F. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

Table 4–1 summarizes the signalized intersections levels of service descriptions. **Table 4–2** depicts the intersection LOS and corresponding delay ranges, which are based on overall intersection delay (signalized intersections) and the average control delay for any particular minor movement (unsignalized intersections), respectively. LOS relative to signalized and unsignalized intersection is further described below.

4.3.1 Signalized Intersections

For signalized intersections, level of service criteria is stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

TABLE 4-1
INTERSECTION LEVEL OF SERVICE DESCRIPTIONS

Level of Service	Description
A	Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
C	Generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	Considered to be unacceptable to most drivers. This condition often occurs with over saturation i.e. when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels

TABLE 4-2
INTERSECTION LOS & DELAY RANGES

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

Source: 2010 Highway Capacity Manual

Level of service B describes operations with delay in the range 10.1 seconds and 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of Average delay.

Level of service C describes operations with delay in the range 20.1 seconds and 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of service D describes operations with delay in the range 35.1 seconds and 55.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or higher volume (demand) / capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are frequent.

Level of service E describes operations with delay in the range of 55.1 seconds to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of service F describes operations with delay in excess of over 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

4.3.2 Unsignalized Intersections

For unsignalized intersections, level of service is determined by the computed or measured control delay and is defined for each minor movement: level of service is not defined for the intersection as a whole. Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

4.3.3 Street Segments

The Cities of Del Mar and Solana Beach do not provide segment capacity tables. The City of Solana Beach Circulation June 2015 states the “Functional roadway classifications are based on County of San Diego Public Roadway Standards”.

Based on the above, the analysis of the study are intersections and segments within the jurisdiction of the Cities of Del Mar and Solana Beach street segment is based upon the comparison of daily traffic volumes (ADTs) to the County of San Diego's Roadway Classification, Level of Service, and ADT Table. **Table 4-3** is the County of San Diego's Average Daily Vehicle Trips table. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics.

TABLE 4-3
AVERAGE DAILY VEHICLE TRIPS – COUNTY OF SAN DIEGO

MOBILITY ELEMENT ROADS		LEVELS OF SERVICE				
Roadway Classification	#of Travel Lanes	A	B	C	D	E
Expressway (6.1)	6	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial (6.2)	6	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	w/ Raised Median (4.1A)	4	<14,800	<24,700	<29,600	<33,400
	w/ Intermittent Turn Lanes (4.1B)	4	<13,700	<22,800	<27,400	<30,800
Boulevard	w/ Raised Median (4.2A)	4	<18,000	<21,000	<24,000	<27,000
	w/ Intermittent Turn Lanes (4.2B)	4	<16,800	<19,600	<22,500	<25,000
Community Collector	w/ Raised Median (2.1A)	2	<10,000	<11,700	<13,400	<15,000
	w/ Continuous Left-Turn Lane (2.1B)	2	<3,000	<6,000	<9,500	<13,500
	w/ Intermittent Turn Lanes (2.1C)	2	<3,000	<6,000	<9,500	<13,500
	w/ Passing Lane (2.1D)	2	<3,000	<6,000	<9,500	<13,500
	No Median (2.1E)	2	<1,900	<4,100	<7,100	<10,900
Light Collector	w/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500
	w/ Continuous Left-Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500
	w/ Intermittent Turn Lanes (2.2C)	2	<3,000	<6,000	<9,500	<13,500
	W/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900
	w/ Reduced Shoulder (2.2F)	2	<5,800	<6,800	<7,800	<8,700
Minor Collector	w/ Raised Median (2.3A)	2	<3,000	<6,000	<7,000	<8,000
	w/ Intermittent (Turn Lane (2.3B)	2	<3,000	<6,000	<7,000	<8,000
	No Median (2.3C)	2	<1,900	<4,100	<6,000	<7,000
NON-MOBILITY ELEMENT ROADS **		LEVELS OF SERVICE				
Residential Collector	2	-	-	<4,500	-	-
Rural Residential Collector ***	2	-	-	<4,500	-	-
Residential Road	2	-	-	<1,500	-	-
Rural Residential Road ***	2	-	-	<1,500	-	-
Residential Cul-de-Sac or Loop Road	2	-	-	<200	-	-

The values shown may be subject to adjustment based on the geometry of the roadway side frictions, and other relevant factors as determined by the Director, Department of Public Works.

**Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

***Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

****See Tables 2A and 28 for roadway surfacing and right-of-way widths.

4.3.4 Freeway Mainline Operations

Freeway segments were analyzed for all analysis scenarios. Freeway segment LOS is based on the volume to capacity ratio on the freeway. The analysis of freeway segment LOS is based on the procedure developed by CALTRANS District 11 based on methods described in the *Highway Capacity Manual*. The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C).

Table 4–4 summarizes the Freeway Segment level of service definitions.

TABLE 4–4
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

The procedure for calculating freeway LOS involves the estimation of volume to capacity (V/C) ratio using the following equation:

$$V/C = \frac{(\text{Daily Volume} * \text{Peak Hour Percent} * \text{Directional Factor} * \text{Truck Factor})}{\text{Capacity}}$$

Notes:

- a. Daily Volume = Annual Average Daily Traffic (AADT)
- b. Peak Hour Percent = Percentage of ADT occurring during the peak hour.
- c. Directional Factor = Percentage of peak hour traffic occurring in peak direction.
- d. Truck Factor = Truck/terrain factor to represent influence of heavy vehicles & grades.
- e. Capacity = 2,000 vehicles/lane/hour/lane for mainline, and 1,200 for auxiliary lanes.

The resulting V/C is then compared to accepted ranges of V/C values corresponding to the various Levels of Service for each facility classification, as shown in *Table 4–4*. The corresponding Level of Service represents an approximation of existing or anticipated future freeway operating conditions in the peak direction of travel during the peak hour.

The Year 2015 Freeway Volumes obtained from the Caltrans Performance Measurement System (PeMS) and the most current available Truck Factors are included in *Appendix A*.

4.3.5 Metered Freeway Ramps

A ramp meter analysis was conducted at the metered ramps in the study area to which the Project would add the specified amount of traffic. The following two metered on-ramps to SR 78 are analyzed since the Project would add more than 20 peak hour trips to the on-ramps.

- Eastbound Via De La Valle to Southbound I-5
- Eastbound Via De La Valle to Northbound I-5

BACKGROUND

The measure of effectiveness (MOE) for the metered freeway ramp analysis is delay in minutes. Ramp meter flow rates characteristically vary throughout the peak hour based on the performance of the freeway mainline. As the mainline becomes more congested, the ramp meter rates decline, allowing fewer vehicles onto the freeway in the same time period.

ANALYSIS METHODOLOGY

The ramp meters were analyzed using the Fixed Rate Method. With the Fixed Rate Method, using the most restrictive flow rate during the peak hour, the total discharge and delay (in minutes) are calculated and the corresponding queue lengths are calculated.

The metering information was obtained from Caltrans for the ramps listed above and is included in *Appendix A*.

4.3.6 Arterial Analysis

A peak hour arterial analysis was conducted on Via De La Valle in addition to the ADT segment analysis. The speed of vehicles on urban streets is influenced by three main factors: street environment, interaction among vehicles, and traffic control. As a result, these factors affect quality of service. There is a distinct set of urban street LOS for each urban street class. Levels of service based on prevailing speeds and class of arterials determine the operations of arterials. The Arterial Class is calculated automatically by the Synchro software used for this analysis based on the distances between intersections and the link speeds.

Table 4–5 is based on FHWA research that shows longer running times on networks with short segments. This will cause longer travel times and lower LOS than using the free flow speeds.

$$\text{Travel Time} = \text{Running Time} + \text{Signal Delay (intersection delay)}$$

Arterial Speed = Total Distance / Total Travel Time

Segment Distance = Total Distance / Number of Segments

Flow Speed = Free Flow Speed (FFS) / Link.

TABLE 4-5
ARTERIAL ANALYSIS DEFINITIONS

Speed (mph)	Segment Distance	Class
1 to 29	any	IV
30 to 35	< 2000 ft	IV
30 to 35	>= 2000 ft	III
36 to 45	any	II
above 45	any	I

5.0 SIGNIFICANCE CRITERIA

A project is considered to have a significant impact if the new project traffic has decreased the operations of surrounding roadways by a defined threshold. The defined thresholds shown in *Table 5-1* below for freeway segments, roadway segments, intersections, and ramp meter facilities are based on published San Diego Traffic Engineers' Council (SANTEC) guidelines with LOS D being the minimum acceptable LOS. If the project exceeds the thresholds in *Table 5-1*, then the project may be considered to have a significant project impact. A feasible mitigation measure will need to be identified to return the impact within the thresholds (pre-project + allowable increase) or the impact will be considered significant and unmitigated.

**TABLE 5-1
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS**

Level of Service with Project ^a	Allowable Increase Due to Project Impacts ^b					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (seconds)	Delay (minutes)
E & F (or ramp meter delays above 15 minutes)	0.01	1	0.02	1	2	2 ^c

Footnotes:

- All level of service measurements are based upon HCM procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 2 or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.
- If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are deemed to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigations (within the Traffic Impact Study [TIS] report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note a above), or if the project adds a significant amount of peak hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating significant impact changes.
- The impact is only considered significant if the total delay exceeds 15 minutes.

General Notes:

- V/C = Volume to Capacity Ratio
- Speed = Arterial speed measured in miles per hour
- Delay = Average stopped delay per vehicle measured in seconds for intersections, or minutes for ramp meters.
- LOS = Level of Service

6.0 ANALYSIS OF EXISTING CONDITIONS

6.1 Typical Weekday / Weekend

6.1.1 Peak Hour Intersection Levels of Service (Typical Weekday / Weekend)

Table 6–1 summarizes the Existing (Typical Weekday / Weekend) peak hour intersection operations. As seen in *Table 6–1*, on a Typical Weekday, all study area intersections are calculated to currently operate at LOS D or better except the following intersections:

- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS E during the PM peak hour)

On a Typical Weekend, all study area intersections are calculated to currently operate at LOS D or better except the following intersections:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the Weekend PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the Weekend PM peak hour)

Appendix B-1 contains the Existing (Typical Weekday) peak hour intersection analysis worksheets and *Appendix B-2* contains the Existing (Typical Weekend) peak hour intersection analysis worksheets.

6.1.2 Daily Street Segment Levels of Service (Typical Weekday)

Table 6–2 summarizes the Existing (Typical Weekday) segment operations. As seen in *Table 6–2*, all study area segments are calculated to currently operate at LOS D or better except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS E)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS E)

Segment analysis was not conducted during a Typical Weekend.

VIA DE LA VALLE PEAK HOUR OPERATIONS

Table 6–3 summarizes the most recent available 85th percentile speeds recorded at two locations on Via De La Valle between Highway 101 and Jimmy Durante Boulevard on a typical weekday, ON June 1, 2017. The prevailing 85th percentile speeds were observed to vary between 39 and 43 mph in either direction during the AM and PM peak hours. The observed speeds shown in *Table 6-3* are the lower of the two observed speeds.

An existing peak hour arterial analysis was conducted to compare the existing 85th percentile speed on Via De La Valle during the peak hour and the calculated speed on Via De La Valle between I-5 and Highway 101. *Table 6-3* also summarizes the results of the observed and calculated arterial speed along this corridor. As seen in *Table 6-3*, the observed and calculated speed are LOS C, except in the eastbound direction during the PM peak hour, which is calculated to operate at LOS D.

Based on the look-up table, daily LOS E capacity of (19,000 ADT), the existing level of service on Via de la Valle between Cedros Avenue and Jimmy Durante Boulevard is LOS E (almost LOS F). However, the peak hour arterial analysis of Via de la Valle between Highway 101 and I-5 indicates LOS C operations (*Table 6-3*). This indicates that the actual functional capacity of Via de La Valle is higher than 19,000.

Appendix B-3 contains the Existing peak hour arterial analysis worksheets.

6.1.3 Freeway Mainline Segments

Table 6-4 summarizes the Existing (Typical Weekday) Freeway Mainline segment operations. Currently, the following freeway mainline segments are calculated to operate at LOS E or worse:

- **I-5: Lomas Santa Fe Drive and Via De La Valle** – LOS F(0) in the NB direction during the PM peak hour
- **I-5: Via De La Valle and Del Mar Heights Road** – LOS E in the SB direction during the AM peak hour and in the LOS F(0) NB direction during the PM peak hour

Freeway mainline Segment analysis was not conducted during a Typical Weekend.

6.1.4 Metered Freeway On-Ramps

Table 6-5 summarizes the Existing (Typical Weekday) Metered On-Ramp operations using the fixed rate analysis methodology. As shown in *Table 6-5*, no delay is calculated during the AM and PM peak hours using this methodology. This is due to the fact that the ramp meter discharge rate exceeds the peak hour demand. It is widely accepted among the industry that this methodology lacks accuracy in depicting “real world” conditions and often grossly overstates the calculated queues and delays.

In order to confirm the actual queue, observations were made in the field at the Eastbound Via De La Valle to southbound I-5 on-ramp. The field observations indicate that there is a nominal queue of up to a maximum of 7 vehicles in the SOV lane during the PM peak hour but the queues are generally between 2 and 4 vehicles, most of the time. The analysis assumes even distribution of the vehicles throughout the peak hour. However, in general, vehicles would be expected to arrive in platoons due to the upstream traffic signal. At the entrance to this ramp, traffic utilizes the exclusive right-turn lane on eastbound Via de la Valle and traffic enters the ramp fairly evenly. Based on observations, at the ramp, there are nominal queues at times and often, no queues.

TABLE 6-1
EXISTING INTERSECTION OPERATIONS – TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Delay ^a	LOS ^b
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	32.8	C
		WkDay PM	41.8	D
		WkEnd PM	60.3	E
2. Cedros Ave / Lomas Santa Fe Dr	Signal	WkDay AM	33.4	C
		WkDay PM	21.7	C
		WkEnd PM	20.7	C
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	14.8	B
		WkDay PM	29.4	C
		WkEnd PM	12.4	B
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	16.1	B
		WkDay PM	14.3	B
		WkEnd PM	13.1	B
5. S. Sierra Ave / Dahlia Dr	AWSC ^c	WkDay AM	8.0	A
		WkDay PM	8.6	A
		WkEnd PM	8.0	A
6. Hwy 101/ Dahlia Dr	Signal	WkDay AM	7.7	A
		WkDay PM	5.9	A
		WkEnd PM	6.2	A
7. Border Ave / S. Sierra Ave	^d	WkDay AM	DNE	NA
		WkDay PM	DNE	NA
		WkEnd PM	DNE	NA
8. Hwy 101 (Border Ave)/ Via De La Valle	Signal	WkDay AM	13.4	B
		WkDay PM	29.1	C
		WkEnd PM	23.3	C

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TABLE 6-1 (CONTINUED)
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Delay ^a	LOS ^b
9. Via De La Valle/ S. Cedros Ave	MSSC ^c	WkDay AM	21.8	C
		WkDay PM	33.0	D
		WkEnd PM	22.9	C
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay AM	36.7	D
		WkDay PM	40.1	D
		WkEnd PM	29.6	C
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay AM	10.4	B
		WkDay PM	11.1	B
		WkEnd PM	9.8	A
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay AM	24.2	C
		WkDay PM	27.0	C
		WkEnd PM	24.8	C
13. Camino Del Mar/ 27 th St	AWSC	WkDay AM	16.2	C
		WkDay PM	28.9	D
		WkEnd PM	34.5	D
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay AM	15.0	B
		WkDay PM	62.0	F
		WkEnd PM	30.2	D
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay AM	6.4	A
		WkDay PM	10.6	B
		WkEnd PM	8.9	A
16. Camino Del Mar/ 15 th St	Signal	WkDay AM	21.8	C
		WkDay PM	31.8	C
		WkEnd PM	33.3	C

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TABLE 6-1 (CONTINUED)
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Delay ^a	LOS ^b
17. Camino Del Mar/ Del Mar Heights Rd	Signal	WkDay AM	32.8	C
		WkDay PM	77.5	E
		WkEnd PM	129.0	F
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay AM	22.6	C
		WkDay PM	22.6	C
		WkEnd PM	12.2	B
19. Via de la Valle / Solana Circ	MSSC	WkDay AM	19.0	C
		WkDay PM	18.9	C
		WkEnd PM	15.4	C

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. AWSC – All-Way Stop Controlled intersection. Overall intersection delay reported.
- d. This is a turn in the road without traffic control
- e. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay reported.

General Notes:

WkDay AM – Weekday AM
WkDay PM – Weekday PM
WkEnd PM – Weekend PM

SIGNALIZED		UNSIGNALIZED	
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 6-2
EXISTING STREET SEGMENT OPERATIONS – TYPICAL WEEKDAY

Street Segment	Jurisdiction	Functional Classification	Capacity (LOS E) ^a	ADT ^b	LOS ^c	V/C ^d
S. Sierra Avenue						
Del Mar Shore Ter to Beach Club Dr	Solana Beach	Minor Collector	8,000	3,400	B	0.425
Highway 101						
Lomas Santa Fe Dr to Dahlia Dr	Solana Beach	4-lane Major Art	37,000	15,000	B	0.405
Dahlia Dr to Via De La Valle	Solana Beach	4-lane Major Art	37,000	17,900	B	0.484
Camino Del Mar						
Via De La Valle to 27 th St	Del Mar	Comm Collector	19,000	15,300	E	0.805
27 th St to Coast Blvd	Del Mar	Comm Collector	19,000	10,900	B	0.574
Coast Blvd to Jimmy Durante Blvd	Del Mar	Comm Collector	19,000	8,900	A	0.468
Via De La Valle						
Hwy 101 to S. Cedros Ave	Del Mar	Town Collector	19,000	16,500	E	0.868
S. Cedros Ave to Jimmy Durante Blvd	Del Mar	Town Collector	19,000	18,800	E	0.989
Jimmy Durante Blvd to I-5 SB Ramps	San Diego	4-Ln Major Arterial ^e	50,000	44,200	E	0.884

Footnotes:

- a. Capacities based on the San Diego County capacity at which the roadway operates.
- b. Average Daily Traffic Volumes.
- c. Level of Service.
- d. Volume to Capacity.
- e. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

TABLE 6-3
EXISTING VIA DE LA VALLE ARTERIAL PEAK HOUR OPERATIONS – TYPICAL WEEKDAY
BETWEEN HIGHWAY 101 AND I-5

Direction	Actual Observed				Calculated			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Travel Speed (mph)	LOS	Travel Speed (mph)	LOS	Travel Speed (mph)	LOS	Travel Speed (mph)	LOS
Westbound	39.0	C	39.0	C	25.6	C	25.1	C
Eastbound	39.0	C	39.0	C	25.5	C	22.7	D

TABLE 6-4
EXISTING FREEWAY MAINLINE SEGMENT OPERATIONS – TYPICAL WEEKDAY

Freeway Segment	Dir.	# of Lanes	Hourly Cap ^a	AADT ^b	K Factor		D Factor		Truck Factor ^c	Peak Hour Volume ^d		V/C ^e		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 5															
Lomas Santa Fe Dr to Via De La Valle	NB	4ML + 1HOV + 1Aux	9,200	204,200	0.0752	0.0798	0.4446	0.5476	0.9309	7,334	9,586	0.797	1.042	C	F(0)
	SB	5ML + 1Aux	10,000		0.0752	0.0798	0.5554	0.4524		9,162	7,919	0.916	0.792	D	C
Via De La Valle to Del Mar Heights Rd	NB	4ML + 1HOV + 1Aux	9,200	209,600	0.0752	0.0798	0.4446	0.5476	0.9309	7,528	9,839	0.818	1.069	D	F(0)
	SB	5ML + 1HOV	10,000		0.0752	0.0798	0.5554	0.4524		9,404	8,129	0.940	0.813	E	D
Del Mar Heights Rd to SR 56	NB	6ML + 1Aux+1HOV	12,800	176,100	0.0752	0.0798	0.4446	0.5476	0.9309	6,325	8,267	0.494	0.646	B	C
	SB	5ML + 1Aux+1HOV	11,000		0.0752	0.0798	0.5554	0.4524		7,901	6,829	0.718	0.621	C	C

Footnotes:

- Capacity calculated at 1800 vph per lane and 1200 vph per Auxiliary lane
- Existing Average Annual Daily Traffic Volumes from Caltrans PeMS (3-month period beginning March 2016).
- Truck Factor from "2016 Annual Average Daily Truck Traffic on the California State Highway System".
- Peak Hour Volumes factored using Passenger Car Equivalent for trucks.
- V/C = (Peak Hour volume/Truck Factor/Capacity)

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 6-5
EXISTING METERED RAMPS OPERATIONS – TYPICAL WEEKDAY

Location/Condition	Peak Hour Flow (F) (veh/hr/ln) ^a	Calculated (Most Restrictive)			
		Discharge Rate ^b (veh/hr/ln)	Excess Demand E (veh/hr/ln)	Delay (min/ln)	Queue (ft)
EB Via De La Valle to SB I-5		1 SOV + 1 HOV			
AM					
SOV	665	996	0	0	0
HOV ^b	117	996	0	0	0
PM					
SOV	529	996	0	0	0
HOV ^b	93	996	0	0	0
EB Via De La Valle to NB I-5		2 SOV			
PM					
SOV	209	372	0	0	0

Footnotes:

- a. Existing volumes - Average of volumes from March through April, 2017, from PeMS.
- b. Discharge rates obtained from Caltrans (*Appendix A*).
- c. A 15% Reduction in volume is applied to the volume in SOV lanes due to HOV lane

General Notes:

SOV – Single Occupancy Vehicle Lane
HOV – High Occupancy Vehicle Lane

6.2 During Fair

6.2.1 Peak Hour Intersection Levels of Service (During Fair)

The study area for the “During the Fair” scenario includes the intersections closest to the fair. **Table 6–6** summarizes the Existing During Fair peak hour intersection operations at intersections where the counts were conducted. Since the Fair activities occur outside of the AM peak hour, only PM peak hour analysis was conducted during the Fair. **Table 6–6** shows that the following study area intersections are calculated to currently operate at LOS E or worse during the Fair on weekdays:

- **Via De La Valle / Jimmy Durante Boulevard** (LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)

It may be noted that the Jimmy Durante / Via De La Valle intersection operates with manual control during the Fair. The analysis of this intersection was conducted assuming the existing “Typical” signal timing which provides a conservative analysis.

During the Fair on a weekend, in the PM peak hour, the following study area intersection is calculated to currently operate at LOS E:

- **Camino Del Mar / Coast Boulevard** (LOS E during the PM peak hour)

The Existing During Fair Weekday and Weekend peak hour intersection analysis worksheets are included in **Appendix C**.

6.2.2 Daily Street Segment Levels of Service (During Fair)

Table 6–7 summarizes the Existing During Fair segment operations. As seen in **Table 6–7**, all study area segments are calculated to currently operate at LOS D or better During the Fair except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Camino Del Mar:** 27th Street to Coast Boulevard (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS F)

It may be noted that an arterial analysis of the Via de la Valle corridor would not be appropriate during the fair since the traffic signal at the Via de la Valle / Jimmy Durante intersection is controlled by personnel manually and not by the traffic signal controller.

TABLE 6-6
EXISTING INTERSECTION OPERATIONS – DURING FAIR

Intersection	Control Type	Peak Hour	Delay ^a	LOS ^b
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	31.7	C
		WkDay PM	48.6	D
		WkEnd PM	40.5	D
6. Hwy 101/ Dahlia Dr	Signal	WkDay AM	6.9	A
		WkDay PM	8.2	A
		WkEnd PM	6.5	A
8. Hwy 101 (Border Ave)/ Via De La Valle	Signal	WkDay AM	14.9	B
		WkDay PM	24.0	C
		WkEnd PM	21.4	C
9. Via De La Valle/ S. Cedros Ave	MSSC ^c	WkDay AM	22.7	C
		WkDay PM	23.0	C
		WkEnd PM	17.7	C
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay AM	37.3	D
		WkDay PM	64.9	E
		WkEnd PM	52.1	D
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay AM	10.3	B
		WkDay PM	12.4	B
		WkEnd PM	17.7	B
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay AM	24.0	C
		WkDay PM	29.9	C
		WkEnd PM	29.4	C
13. Camino Del Mar/ 27 th St	AWSC ^d	WkDay AM	17.3	C
		WkDay PM	68.4	F
		WkEnd PM	45.7	E

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TABLE 6-6 (CONTINUED)
EXISTING INTERSECTION OPERATIONS – DURING FAIR WEEKDAY

Intersection	Control Type	Peak Hour	Delay ^a	LOS ^b
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay AM	17.6	C
		WkDay PM	93.4	F
		WkEnd PM	39.0	E
16. Camino Del Mar/ 15 th St	Signal	WkDay AM	21.7	C
		WkDay PM	31.0	C
		WkEnd PM	30.9	C
19. Via de la Valle / Solana Circ	MSSC	WkDay AM	17.2	C
		WkDay PM	14.5	B
		WkEnd PM	DNA	DNA

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

c. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay reported.

d. AWSC – All-Way Stop Controlled intersection. Overall intersection delay reported.

General Notes:

WkDay AM – Weekday AM

WkDay PM – Weekday PM

WkEnd PM – Weekend PM

DNA – Did not analyze

SIGNALIZED		UNSIGNALIZED	
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 6-7
EXISTING STREET SEGMENT OPERATIONS – DURING FAIR

Street Segment	Jurisdiction	Functional Classification	Capacity (LOS E) ^a	ADT ^b	LOS ^c	V/C ^d
S. Sierra Avenue						
Del Mar Shore Ter to Beach Club Dr	Solana Beach	Minor Collector	8,000	3,500	B	0.438
Highway 101						
Lomas Santa Fe Dr to Dahlia Dr	Solana Beach	4-lane Major Art	37,000	18,700	B	0.505
Dahlia Dr to Via De La Valle	Solana Beach	4-lane Major Art	37,000	19,000	B	0.514
Camino Del Mar						
Via De La Valle to 27 th St	Del Mar	Comm Collector	19,000	17,700	E	0.932
27 th St to Coast Blvd	Del Mar	Comm Collector	19,000	16,800	E	0.884
Coast Blvd to Jimmy Durante Blvd	Del Mar	Comm Collector	19,000	11,300	B	0.595
Via De La Valle						
Hwy 101 to S. Cedros Ave	Del Mar	Town Collector	19,000	15,600	E	0.821
S. Cedros Ave to Jimmy Durante Blvd	Del Mar	Town Collector	19,000	24,300	F	1.279
Jimmy Durante Blvd to I-5 SB Ramps	San Diego	4-Lane Maj Art ^e	50,000	58,200	F	1.164

Footnotes:

- a. Capacities based on the San Diego County capacity at which the roadway operates.
- b. Average Daily Traffic Volumes.
- c. Level of Service.
- d. Volume to Capacity.
- e. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

6.3 During Horse Races

6.3.1 Peak Hour Intersection Levels of Service (During Horse Races)

Table 6–8 summarizes the Existing Weekday and Weekend During Horse Races PM peak hour intersection operations. Since the horse races do not begin until after noon, only PM peak hour analysis was conducted during the Horse Races. *Table 6–8* shows that During Horse Races on a Weekday, the following study area intersections are calculated to currently operate at LOS E or worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS F during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

On a Weekend, the following study area intersections are calculated to currently operate at LOS E or worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The Existing During Horse Races Weekday and Weekend peak hour intersection analysis worksheets are included in *Appendix D-1 and D-2* respectively.

6.3.2 Daily Street Segment Levels of Service During Horse Races

Table 6–9 summarizes the Existing During Horse Races segment operations. As seen in *Table 6–9*, all study area segments are calculated to currently operate at LOS D or better During Horse Races except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Camino Del Mar:** 27th Street to Coast Boulevard (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS E)

TABLE 6-8
EXISTING INTERSECTION OPERATIONS – DURING HORSE RACES TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Delay ^a	LOS ^b
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay PM	61.0	E
		WkEnd PM	68.1	E
2. Cedros Ave / Lomas Santa Fe Dr	Signal	WkDay PM	20.7	C
		WkEnd PM	21.7	C
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	20.6	C
		WkEnd PM	14.7	B
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	14.3	B
		WkEnd PM	12.5	B
5. S. Sierra Ave / Dahlia Dr	MSSC ^c	WkDay PM	8.1	A
		WkEnd PM	13.6	B
6. Hwy 101/ Dahlia Dr	Signal	WkDay PM	5.8	A
		WkEnd PM	6.5	A
7. Border Ave / S. Sierra Ave	^d	WkDay PM	DNE	^d
		WkEnd PM	DNE	^d
8. Hwy 101 (Border Ave) /Via De La Valle	Signal	WkDay PM	24.4	C
		WkEnd PM	23.6	C
9. Via De La Valle/ S. Cedros Ave	MSSC	WkDay PM	31.3	D
		WkEnd PM	18.1	C
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay PM	35.6	D
		WkEnd PM	30.6	C
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay PM	9.1	A
		WkEnd PM	8.7	A
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay PM	25.8	C
		WkEnd PM	24.8	C

CONTINUED ON THE NEXT PAGE

TABLE 6-8 (CONTINUED)
EXISTING INTERSECTION OPERATIONS – DURING HORSE RACES WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Delay ^a	LOS ^b
13. Camino Del Mar/ 27 th St	AWSC ^d	WkDay PM	35.1	E
		WkEnd PM	29.4	D
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay PM	257.9	F
		WkEnd PM	88.6	F
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay PM	9.2	A
		WkEnd PM	9.6	A
16. Camino Del Mar/ 15 th St	Signal	WkDay PM	31.6	C
		WkEnd PM	33.4	C
17. Camino Del Mar/ Del Mar Heights Rd	Signal	WkDay PM	164.4	F
		WkEnd PM	113.9	F
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay PM	28.2	C
		WkEnd PM	13.8	B
19. Via de la Valle / Solana Circ	MSSC	WkDay PM	22.4	C
		WkEnd PM	16.5	C

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay reported.
- d. This is a turn in the road with no traffic control.
- e. AWSC – All-Way Stop Controlled intersection. Overall intersection delay reported.

General Notes:

WkDay PM – Weekday PM
WkEnd PM – Weekend PM
DNE – Does not Exist

SIGNALIZED		UNSIGNALIZED	
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 6-9
EXISTING STREET SEGMENT OPERATIONS – DURING HORSE RACES (WEEKDAY)

Street Segment	Jurisdiction	Functional Classification	Capacity (LOS E) ^a	ADT ^b	LOS ^c	V/C ^d
S. Sierra Avenue						
Del Mar Shore Ter to Beach Club Dr	Solana Beach	Minor Collector	8,000	4,300	C	0.538
Highway 101						
Lomas Santa Fe Dr to Dahlia Dr	Solana Beach	4-lane Major Art	37,000	19,400	B	0.524
Dahlia Dr to Via De La Valle	Solana Beach	4-lane Major Art	37,000	20,400	B	0.551
Camino Del Mar						
Via De La Valle to 27 th St	Del Mar	Comm Collector	19,000	16,900	E	0.889
27 th St to Coast Blvd	Del Mar	Comm Collector	19,000	18,500	E	0.974
Coast Blvd to Jimmy Durante Blvd	Del Mar	Comm Collector	19,000	12,800	C	0.674
Via De La Valle						
Hwy 101 to S. Cedros Ave	Del Mar	Town Collector	19,000	18,500	E	0.974
S. Cedros Ave to Jimmy Durante Blvd	Del Mar	Town Collector	19,000	23,700	F	1.247
Jimmy Durante Blvd to I-5 SB Ramps	San Diego	4-Lane Maj Art ^e	50,000	45,200	E	0.904

Footnotes:

- a. Capacities based on the San Diego County capacity at which the roadway operates.
- b. Average Daily Traffic Volumes.
- c. Level of Service.
- d. Volume to Capacity.
- e. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

7.0 CUMULATIVE PROJECTS

7.1 Description of Projects

Research was conducted to identify cumulative projects within the Cities of Del Mar, Solana Beach and San Diego. In addition, projects within the County of San Diego and at the Del Mar Fairgrounds are included.

A. Del Mar Cumulative Projects

1. The *Watermark Project* in the City of Del Mar is located at the Jimmy Durante Boulevard / San Dieguito Drive intersection and includes the development of 48 Multi-family units generating an estimated 384 daily trips.
2. The *Garden Del Mar Project* in the City of Del Mar is located at the 10th Street / Camino Del Mar intersection and includes the development of 18 Multi-family units and a 1,458 SF restaurant, generating an estimated 363 daily trips.
3. The *Bully's* of Del Mar is located at the 14th Street / Camino Del Mar intersection and includes the development of a 5,000 SF restaurant, generating an estimated 500 daily trips.
4. The *Shores Park / Winston School Project* in the City of Del Mar is located at the 9th Street / Strafford Court intersection and includes the development of a recreation center and 80 parking stalls. This project will provide additional facilities to an existing school and therefore is not expected to generate additional traffic.
5. The *Del Mar City Hall* is located at the 11th Street / Camino Del Mar intersection and includes the development of a parking lot with 150 parking stalls. This project will provide additional facilities to the existing City Hall and therefore is not expected to generate additional traffic.

B. Solana Beach Cumulative Projects

6. *Solana Highlands* is located at 661 to 781 South Nardo Avenue. The existing 194 multi-family units would be demolished and 260 multi-family units would be constructed in 24 two and three-story buildings. Also proposed is a new recreation facility and clubhouse.
7. *The Pearl*, located at 555 South Sierra Avenue is a proposed three-story building designed to provide 10 housing units, commercial office space, and 53 parking spaces. Residential units would range from one to four bedrooms.
8. *Ocean Ranch Estates* located on 512 - 538 S. Nardo Avenue is a proposed Subdivision and construction of eight additional single-family homes as well as purchasing one off-site affordable accessible dwelling unit (ADU). The CEQA document is currently in process.
9. *330 S. Cedros Mixed Use* is located at 330 S. Cedros Avenue. This project includes the construction of a new 26,127 SF, two-story, mixed-use project with four (4) dwelling units, four (4) retail suites, and one (1) restaurant. This project was approved in December 2016.

10. The *NCTD Train Station Project* is located at 101 – 441 N. Cedros Avenue. The proposed project includes a mix of approximately 48,000 SF of restaurant, retail and office; 32,000 SF boutique hotel with approximately 45 rooms; 28,000 – 30,000 SF multi-family residential (30 units); 1250 underground parking spaces; plaza and green space. The project is currently in the Planning. The conceptual plan has been presented to the City Council. There is no application on file.
11. *Feather Acres* is a 7- lot subdivision located at 980 Avocado Place. The seven-lot subdivision to be graded and the lots are to be developed individually. The Final Map is approved and grading is underway.
12. *Genevieve Street* is a 99-bed Senior Care Facility Specific Plan located at 959 Genevieve Street. This is an 85-unit residential care facility that could accommodate up to 99 beds. The CEQA document in process.
13. *Solana 101* is a mixed-use development consisting of 31 Apartments; 24,284 square feet of Specialty Supermarket; 14,137 square feet of Standard Commercial Office; 5,125 square feet of High Turnover Restaurant; and 5,090 square feet of Quality Restaurant.
14. *San Andres Drive Median Improvements* includes Construction of curb medians, pedestrian ramps, asphalt concrete overlays, traffic striping and markings, and traffic signage along San Andres Drive. This project is estimated to generate no new trips.
15. *Stevens Ave CATS Project* includes complete streets improvements. This project is estimated to generate no new trips.
16. *Lomas Santa Fe Corridor Study* is the study of the Lomas Santa Fe Drive corridor. This project is estimated to generate no new trips.
17. *Skyline Elementary School Reconstruction* includes reconstruction of the school campus. This project is estimated to generate no new trips.
18. *Earl Warren Middle School Reconstruction* includes reconstruction of the school campus. This project is estimated to generate no new trips.
19. *Solana Beach School District Office and Child Development Center Modular Building Replacement Project* includes construction of a replacement of an office building. This project is estimated to generate no new trips.
20. *Santa Fe Christian School Master Plan Update* includes K-12th grade campus wide improvement plan.

C. City of San Diego Cumulative Projects

21. The *Via De La Valle Town Home Project* is located in the City of San Diego and includes 22 residential units. This Project is estimated to generate 176 daily trips.

22. The *St. John Armenian Church Project* located in the City of San Diego includes an 8,800 SF church, 6,200 SF assembly area, 11,900 SF offices and ancillary space, an Education Center with 10 classrooms and a gymnasium. This Project is estimated to generate a total of 404 daily trips. This Project is under review by the City of San Diego.
23. The *Hacienda Del Mar Project* is a proposed Senior Care Facility consisting of 71 units of independent living, 45 units of assisted living, and 34 memory care rooms. The facility would provide a total of 195 beds.

D. San Diego County

24. The *Morgan Country Club Project* is located in the County of San Diego and consists of a 9,400 SF health club. This Project is estimated to generate 283 daily trips. This Project is under review by the County.

E. Other Agencies

25. The *22nd District Agricultural Association Master Plan* includes various developments generating a total of 6,960 daily trips. The Master Plan traffic study included is project also includes a hotel and a health club. For the purpose of this analysis these uses are included in the long-term analysis.
26. The *Surfside Race Place* is a 1,869 seat concert venue along with an approximately 7,000 square foot beer tasting area/exhibit (“History of Beer”). It is anticipated that the concert venue would operate year-round; however, during the annual San Diego County Fair, the venue would be a part of the concert venues associated with the Fair (similar to the Grandstand stage). Existing food service areas would continue to operate as well as the off-track betting component of the facility. No alterations to the exterior or expansion of the existing structure is proposed. All improvements would be internal.

7.2 Summary of Cumulative Projects Trips

As seen in *Table 7-1*, the cumulative projects are calculated to generate a total of 20,303 daily trips. Weekend trip generation rates are not available from SANDAG. Hence, the weekend trip rates in the ITE Trip Generation Manual were reviewed. Weekend trip rates are not available for many land uses and for those where rates were available, the rates are generally lower during the weekend than the weekday. In order to provide a conservative analysis, the weekend PM peak hour cumulative trips were assumed to be the same as the weekday cumulative trips.

The following figures are included at the end of this section:

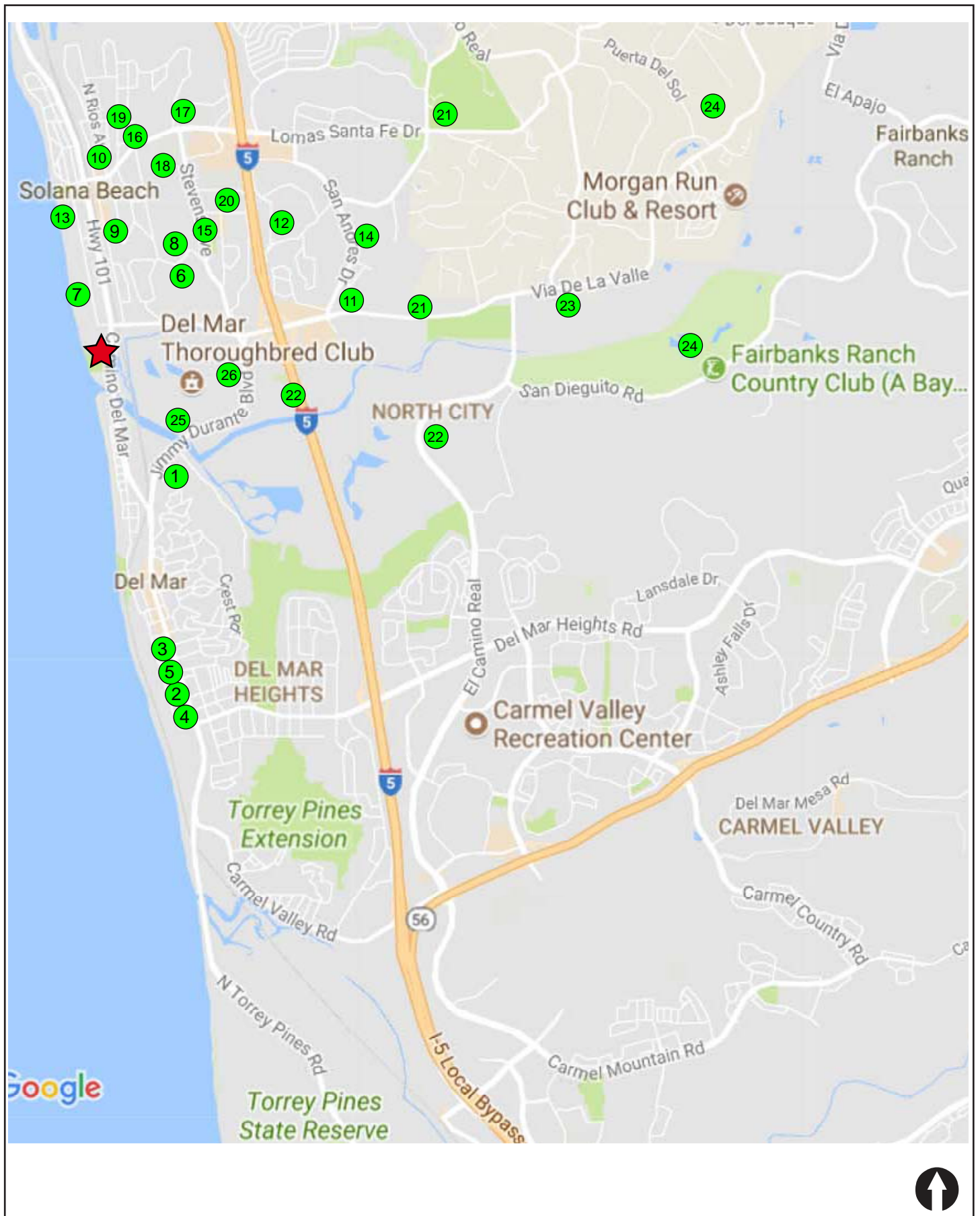
- **Figure 7-1** Cumulative Projects Location Map
- **Figure 7-2** Cumulative Projects Traffic Volumes
- **Figure 7-3** Typical Weekday Existing + Cumulative Projects Traffic Volumes
- **Figure 7-4** Typical Weekend Existing + Cumulative Projects Traffic Volumes
- **Figure 7-5** Weekday During Fair Existing + Cumulative Projects Traffic Volumes
- **Figure 7-6** Weekday During Horse Races Existing + Cumulative Projects Traffic Volumes
- **Figure 7-7** Weekend During Horse Races Existing + Cumulative Projects Traffic Volumes

**TABLE 7-1
CUMULATIVE PROJECTS DAILY TRIPS**

Project	Land Use Description	Units	Daily
A. City of Del Mar			
1. Watermark	Multi-Family Residential	48 DU	384
2. Garden Del Mar	Multi-Family Residential, Restaurant		363
3. Bully's	Restaurant	5,000 SF	500
4. Shores Park / Winston School	Active Recreation Center		0
5. Del Mar City Hall ^b	Parking	150 Stalls	
Subtotal Del Mar			1,247
B. Solana Beach			
6. Solana Highlands	Multi-Family Residential	66 DU	528
7. The Pearl	Single Family Residential	8 DU	80
8. Ocean Ranch Estates	Mixed Use, Office, Restaurant		888
9. 330. S. Cedros Mixed Use	Retail, restaurant, Office, Residential		494
10. NCTD Train Station Project	Restaurant, Retail / Office, Hotel, Multi-Fam		2,520
11. Feather Acres 7- lot subdivision	Single Family Residential	7 DU	70
12. Genevieve St. Senior Care Facility	Residential Care	99 Beds	248
13. Solana 101	Retail, Restaurant, Office, Residential		1,705
14. San Andres Drive Median Improvements ^b	Roadway Improvements		
15. Stevens Ave CATS Project ^b	Complete Streets Improvement		
16. Lomas Santa Fe Corridor Study ^b	Corridor Study		
17. Skyline Elementary School Reconstruction ^b	School Campus Reconstruction		
18. Earl Warren Middle School Reconstruction ^b	School Campus Reconstruction		
19. Solana Beach School District Office and Child Development Center Modular Building Replacement Project ^b	replacing office building		
20. Santa Fe Christian School Master Plan Update ^b	campus wide improvement plan	172.336 KSF	2,580
Subtotal Solana Beach			8,933
C. City of San Diego			
21. Via De La Valle Townhomes	Residential	22 DU	176
22. St. John Armenian Church	Church, Assembly, Offices, School, Gym	8,800 SF	404
23. Hacienda del Mar	Assisted Living	Various	590
Subtotal City of San Diego			1,170
D. San Diego County			
24. Morgan Country Club	Health Club	9,400 SF	283
Subtotal City of San Diego			283
E. Other Agencies			
25. 22 nd District Agricultural Association Master Plan	Various	Various	6,960
26. Surfside Race Place	Special Events		1,530
Subtotal Other Agencies			8,490
Total Cumulative Projects			20,303

Footnotes:

- a. Trip rates from *(Not So) Brief guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002, SANDAG.
- b. Does not generate any new trips.



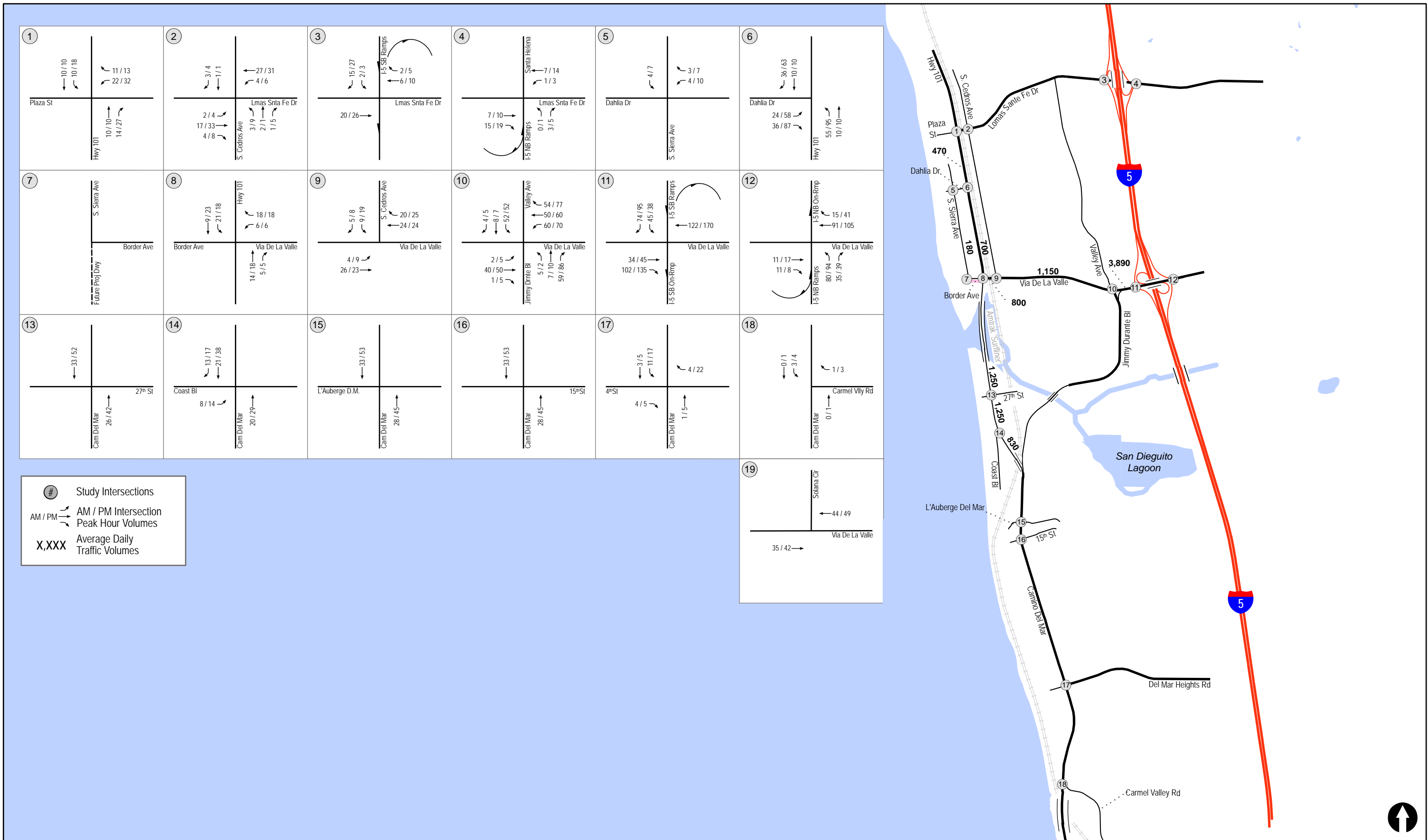


Figure 7-2
Cumulative Projects Traffic Volumes
Typical Weekday

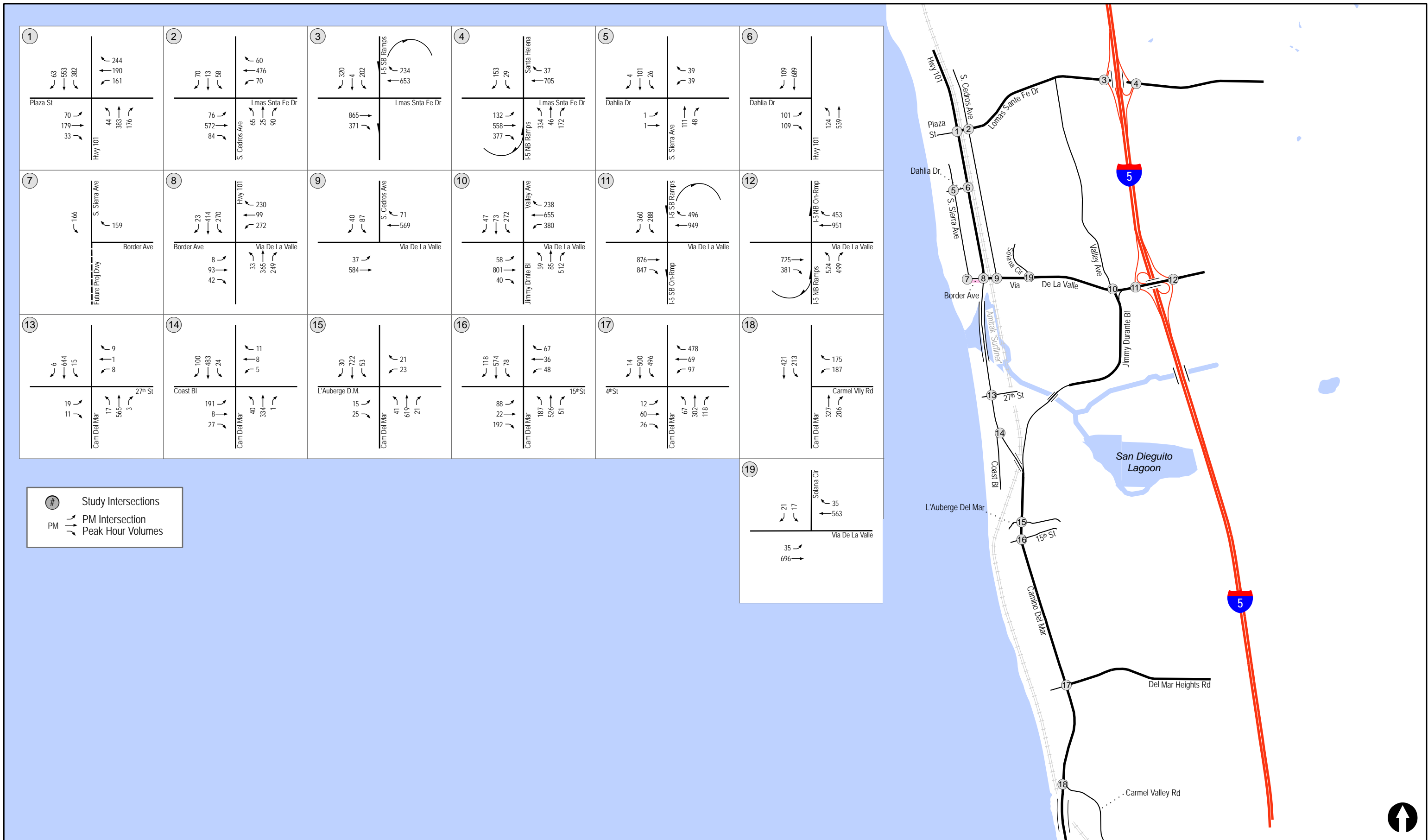


Figure 7-4
Existing + Cumulative Projects Traffic Volumes
Typical Weekend

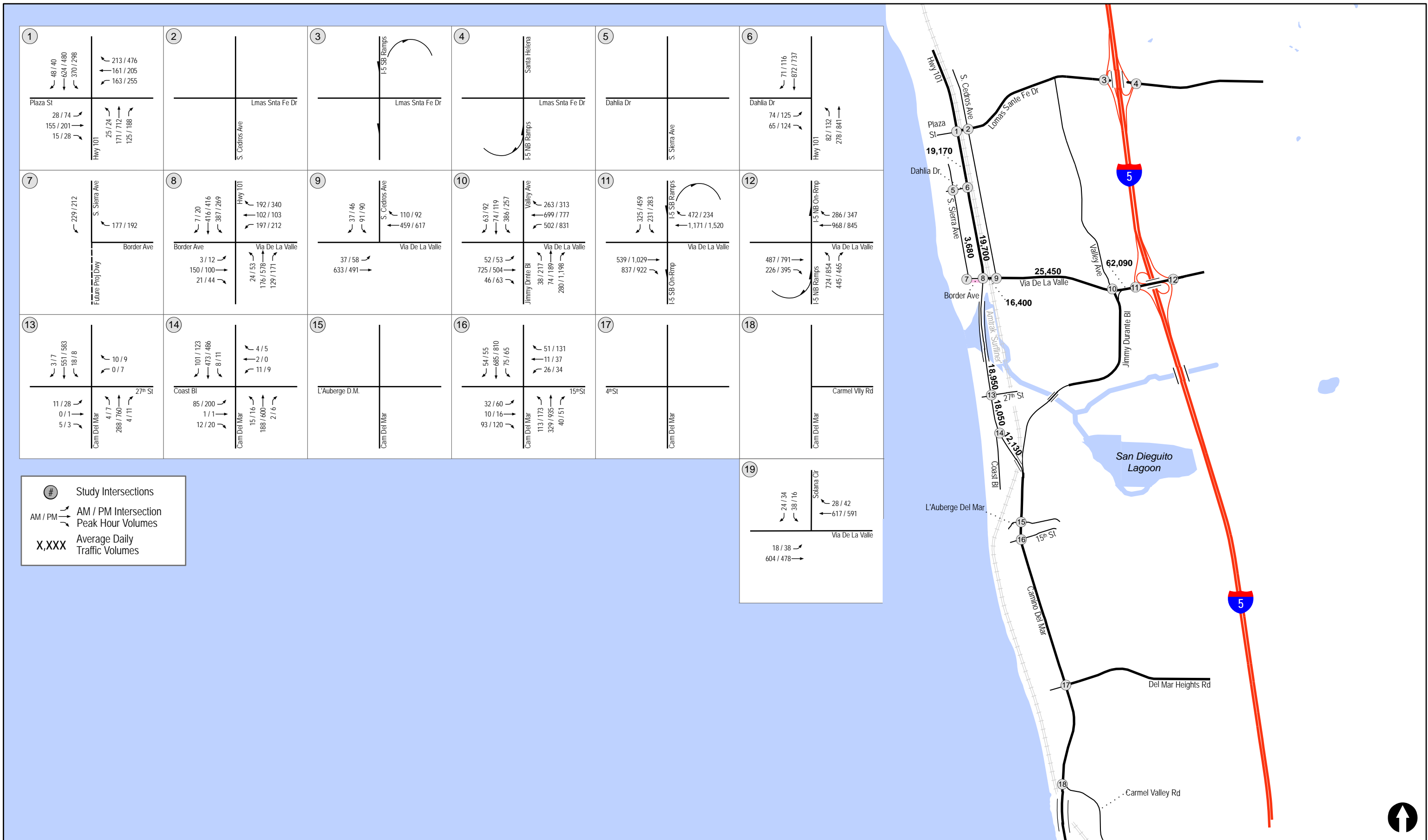
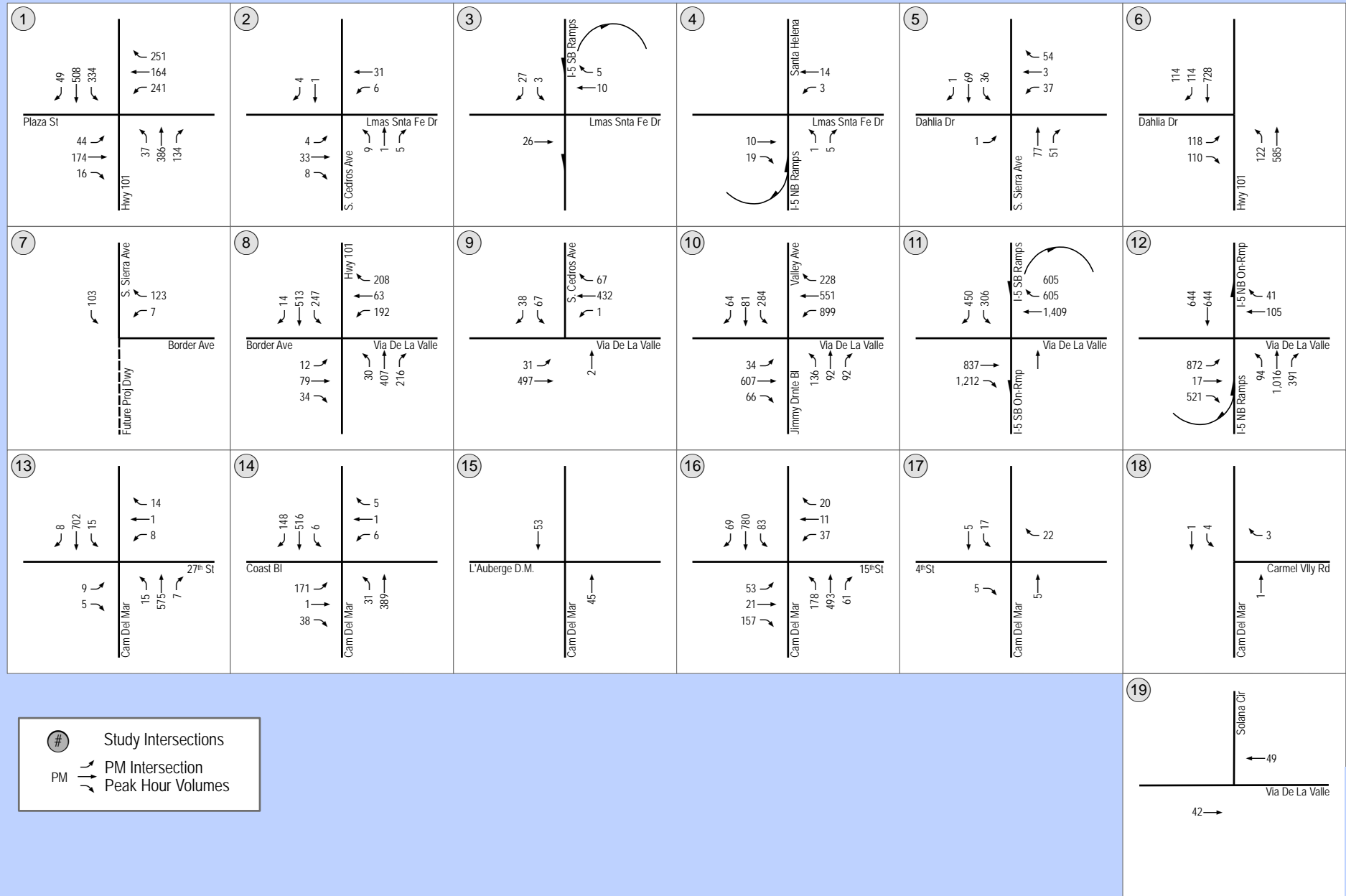
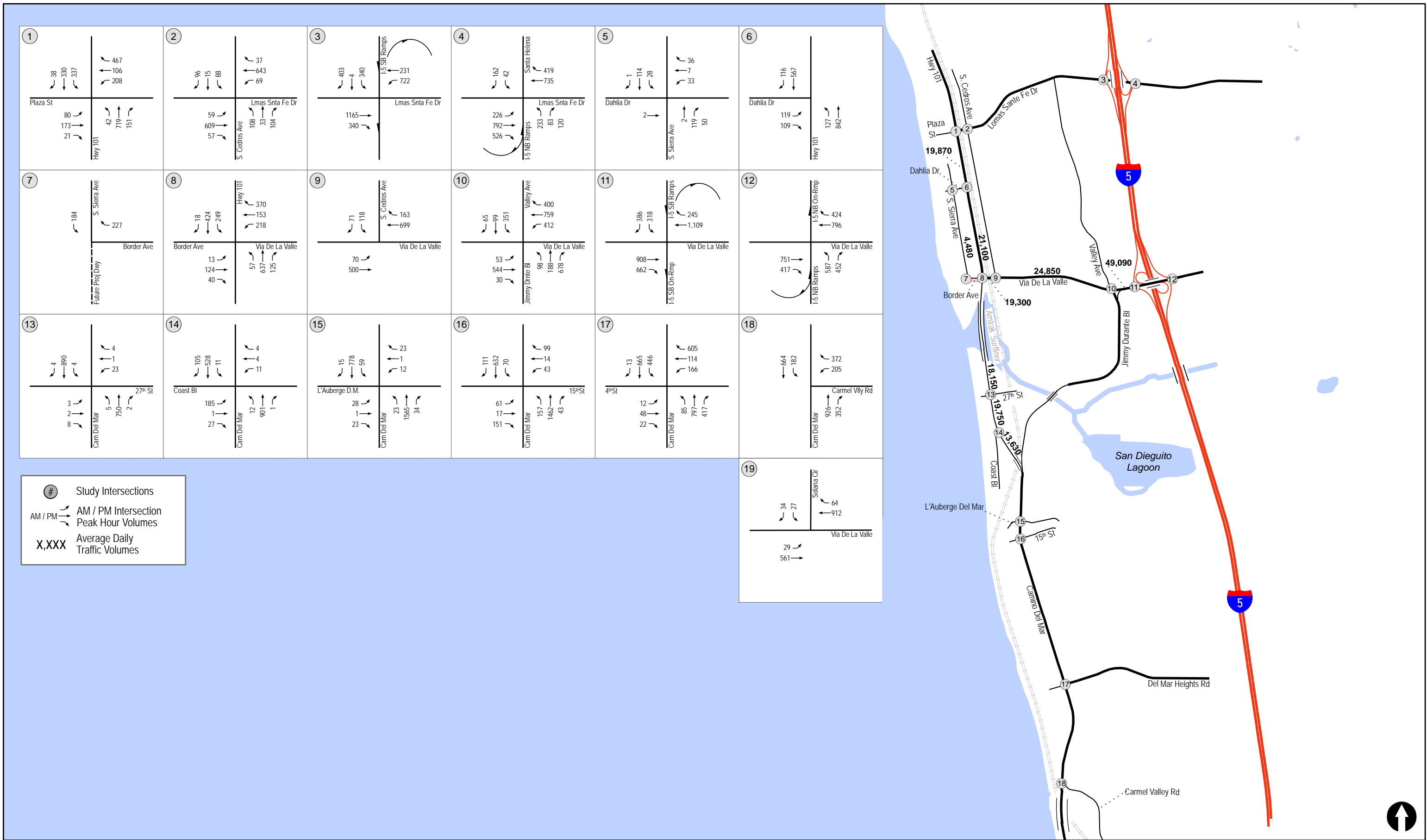


Figure 7-5
Existing + Cumulative Projects Traffic Volumes
Weekday - During Fair





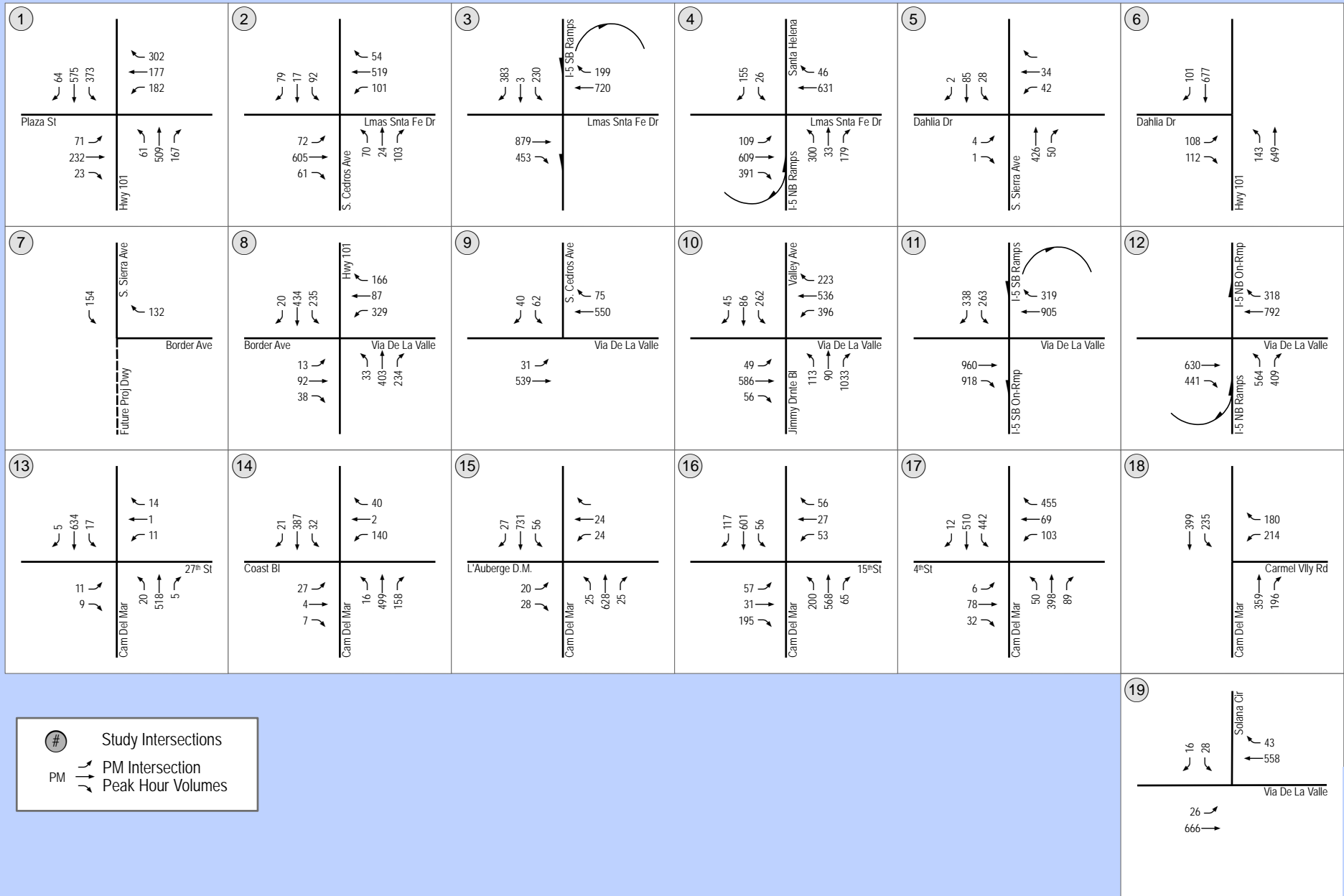


Figure 7-8
Existing + Cumulative Projects Traffic Volumes
Weekend - During Horse Races

8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

8.1 Trip Generation

Weekday rates and splits for Resort Hotel and Villas land uses are based on the *(Not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002, published by SANDAG. The following is a description of the trip rates used for each land use:

Weekday

- The SANDAG trip rates were used for the Hotel Rooms and the detached Villas
- No specific trip rates are available for the “Attached Villas”. Therefore, the trip rates for condominiums were used.
- No specific SANDAG rates are available for “Affordable Housing” and “Shared Visitor Accommodation”. Therefore, the rates for Apartment land use was used.

Weekend

SANDAG does not provide Weekend trip rates. Therefore, the trips rates from *Trip Generation*, 10th Edition, Institute of Transportation Engineers (ITE), was used.

- The Saturday rates for Land Use 310 - Hotel from *Trip Generation* was used for the Hotel Rooms since that is the closest description to the proposed land use.
- The Saturday rates for Land Use 210 - Single Family Homes from *Trip Generation* was used for Saturday for Detached Villas.
- The rates for Land Use 220 - Multi-family Housing (Low Rise) from *Trip Generation* for was used for “Affordable Housing” and “Shared Visitor Accommodation” since that is the closest description to the proposed land use.

The trip generation for the hotel was not reduced to account for walk/bike trips, employees using transit to reach the site or any other Transportation Demand Management (TDM) measures. In addition, trips were not reduced to account for workers living-on-site.

The attached Villas were assumed to generate trips similar to condominiums and therefore include trips generated by residents with jobs. The Attached Villas are single ownership and “resort - branded”, i.e. they may be available for rent by the resort when the owner is not there. In reality, the Villa Hotel Rooms will house many folks that do not live year-round on-site and do not go to work each day during peak commuter periods. Even if these villas are rented, they may remain unoccupied for extended periods of time, since like any hotel, 100% occupancy is not guaranteed. Therefore, it is believed that the number of trips generated by the Villa Hotel Rooms is overstated, particularly during peak hours.

There are 27 attached villas and each Villa has three keys. In order to provide a worst-case analysis, the trip generation assumes each attached Villa includes three sets of guests and a total of 81 “guest units”.

8.1.1 Weekday Trip Generation

As seen in *Table 8-2*, the project is estimated to generate a total of 1,408 daily trips with 98 AM peak hour trips (50 inbound and 48 outbound) and 123 PM peak hour trips (63 inbound and 60 outbound).

8.1.2 Weekend Trip Generation

As seen in *Table 8-2*, the project is estimated to generate a total of 1,650 daily trips with 139 PM peak hour trips (71 inbound and 66 outbound).

8.2 Trip Distribution/Assignment

A Select Zone Assignment (SZA) plot was obtained from SANDAG. Based on this SZA plot, the project distribution was developed. The project traffic was assigned using this distribution. The project entrance is designed in such a way that traffic exiting the project driveway will not physically be able to turn to northbound S. Sierra Avenue. In addition, traffic will be discouraged from entering the site via Sierra Avenue, but it is not possible to physically prohibit the movement. Therefore, to be conservative, a portion of the total inbound traffic was assigned to S. Sierra Avenue. All outbound traffic from the site is assigned to Highway 101.

The following figures are included at the end of this section:

- **Figure 8-1** depicts the project trip distribution percentages.
- **Figure 8-2** depicts the Weekday Project traffic assignment based on the distribution percentages shown on *Figure 8-1*.
- **Figure 8-3** depicts the Weekend Project traffic assignment based on the distribution percentages shown on *Figure 8-1*.
- **Figure 8-4** depicts the Existing + Project (Typical Weekday) daily and AM & PM peak hour traffic volumes.
- **Figure 8-5** depicts the Existing + Project (Typical Weekend) peak hour traffic volumes.
- **Figure 8-6** depicts the Existing + Project (During Fair Weekday) daily and AM & PM peak hour traffic volumes.
- **Figure 8-7** depicts the Existing + Project (During Horse Races Weekday) daily and PM peak hour traffic volumes.
- **Figure 8-8** depicts the Existing + Project (During Horse Races Weekend) peak hour traffic volumes.
- **Figure 8-9** depicts the Existing + Cumulative projects + Project (Typical Weekday) daily and AM & PM peak hour traffic volumes.
- **Figure 8-10** depicts the Existing + Cumulative projects + Project (Typical Weekend) peak hour traffic volumes.
- **Figure 8-11** depicts the Existing + Cumulative projects + Project (During Fair Weekday) daily and AM & PM peak hour traffic volumes.
- **Figure 8-12** depicts the Existing + Cumulative projects + Project (During Horse Races Weekday) daily and PM peak hour traffic volumes.
- **Figure 8-13** depicts the Existing + Cumulative projects + Project (During Horse Races Weekend) peak hour traffic volumes.

**TABLE 8-1
TRIP GENERATION**

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate ^a	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Weekday													
Hotel Rooms	65 Rooms	8 /Room	520	5%	60:40	13	13	26	7%	40:60	18	18	36
Attached Villas	81 DU	8 /DU	648	8%	20:80	26	26	52	10%	70:30	33	32	65
Detached Villas	4 DU	12 /DU	48	8%	30:70	2	2	4	10%	70:30	3	2	5
Affordable Housing ^b	22 DU	6 /DU	132	8%	20:80	6	5	11	9%	70:30	6	6	12
Shared Visitor Accommodation ^b	10 DU	6 /DU	60	8%	20:80	3	2	5	9%	70:30	3	2	5
Total Weekday Trips			1,408			50	48	98			63	60	123
Weekend													
Hotel Rooms ^c	65 Rooms	10.5 /Room	683	AM ANALYSIS WAS NOT CONDUCTED DURING THE WEEKEND					0.87	50:50	28	28	56
Attached Villas ^d	81 DU	8.14 /DU	659						0.70	54:46	31	26	57
Detached Villas ^e	4 DU	$\text{Ln}(T) = 0.94 \text{Ln}(X) + 2.56$	48						0.93	54:46	2	2	4
Affordable Housing ^f	22 DU	8.14 /DU	179						0.70	54:46	8	7	15
Shared Visitor Accommodation ^f	10 DU	8.14 /DU	81						0.70	54:46	4	3	7
Total Weekend Trips			1,650								73	66	139

Footnotes:

- Weekday rates and splits for Resort Hotel, and Condominiums are based on the *(Not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002, published by SANDAG. Weekend rates are based on the Saturday rates from *Trip Generation*, Institute of Transportation Engineers (ITE) 10th Edition.
- No specific SANDAG weekday rates are available for Affordable Housing and Shared Visitor Accommodation. The rates for Apartment was used.
- The Saturday rates for Land Use 310 - Hotel, *Trip Generation* was used for Resort hotel since that is the closest description to the proposed land use.
- The Saturday rates for Land Use 220 - Multi-family Housing (Low Rise), *Trip Generation* was used for Affordable Housing since that is the closest description to the proposed land use.
- The Saturday rates for Land Use 210 - Single Family Homes, *Trip Generation* was used for Saturday.
- No specific ITE Saturday rates are available for Affordable Housing and Shared Visitor Accommodation. The rates for Land Use 220 - Multi-family Housing (Low Rise), *Trip Generation* was used.

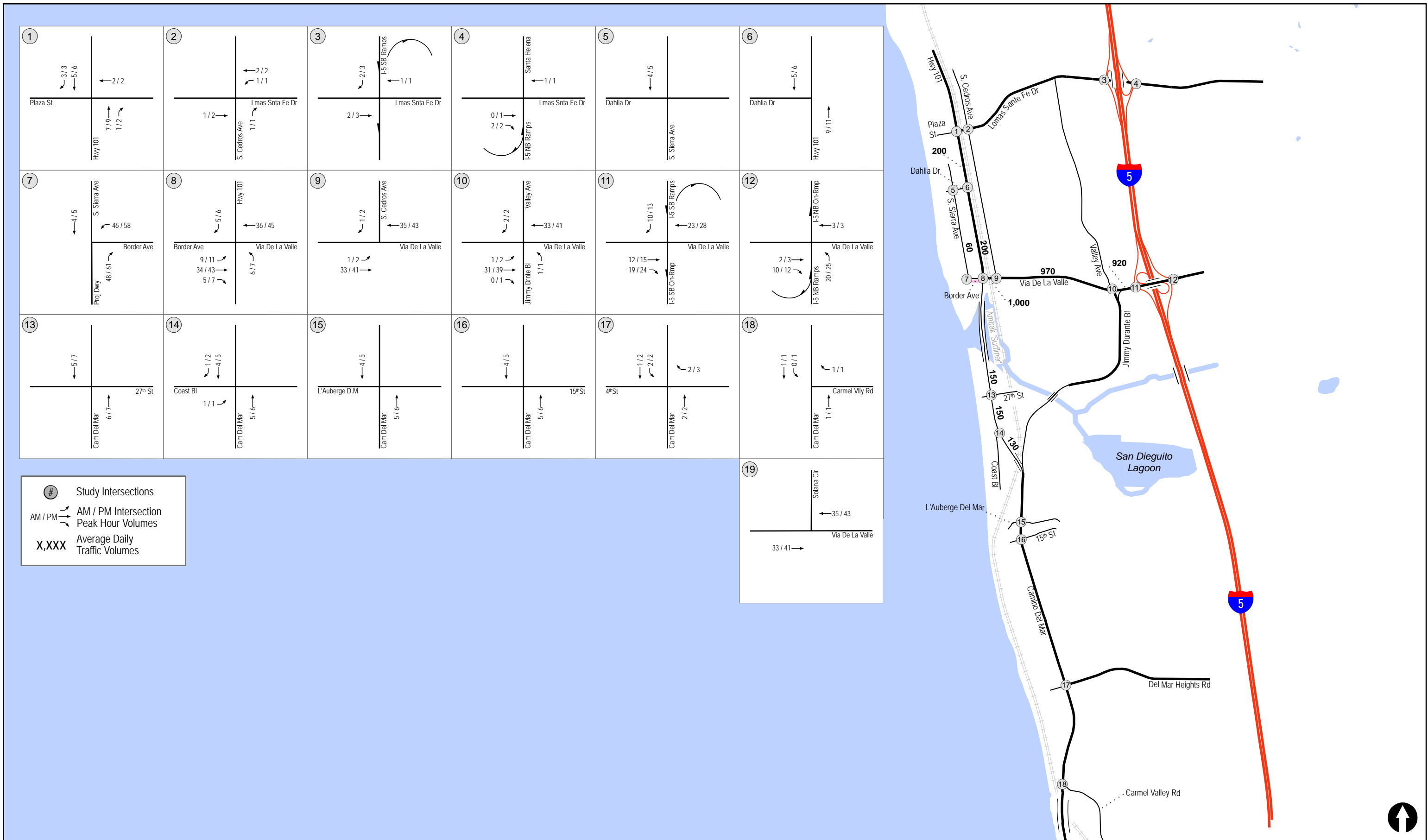
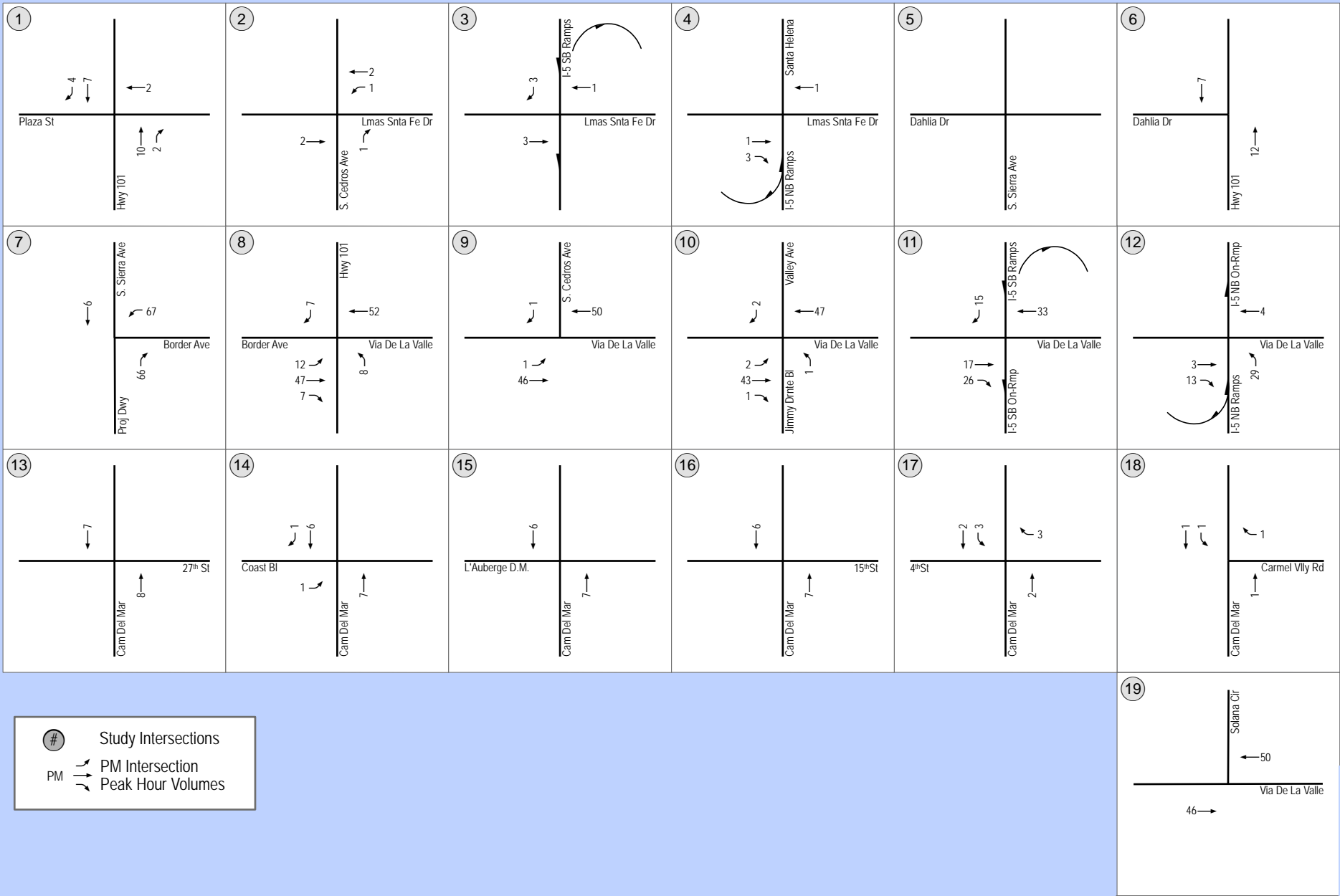


Figure 8-2
Project Traffic Volumes
Typical Weekday



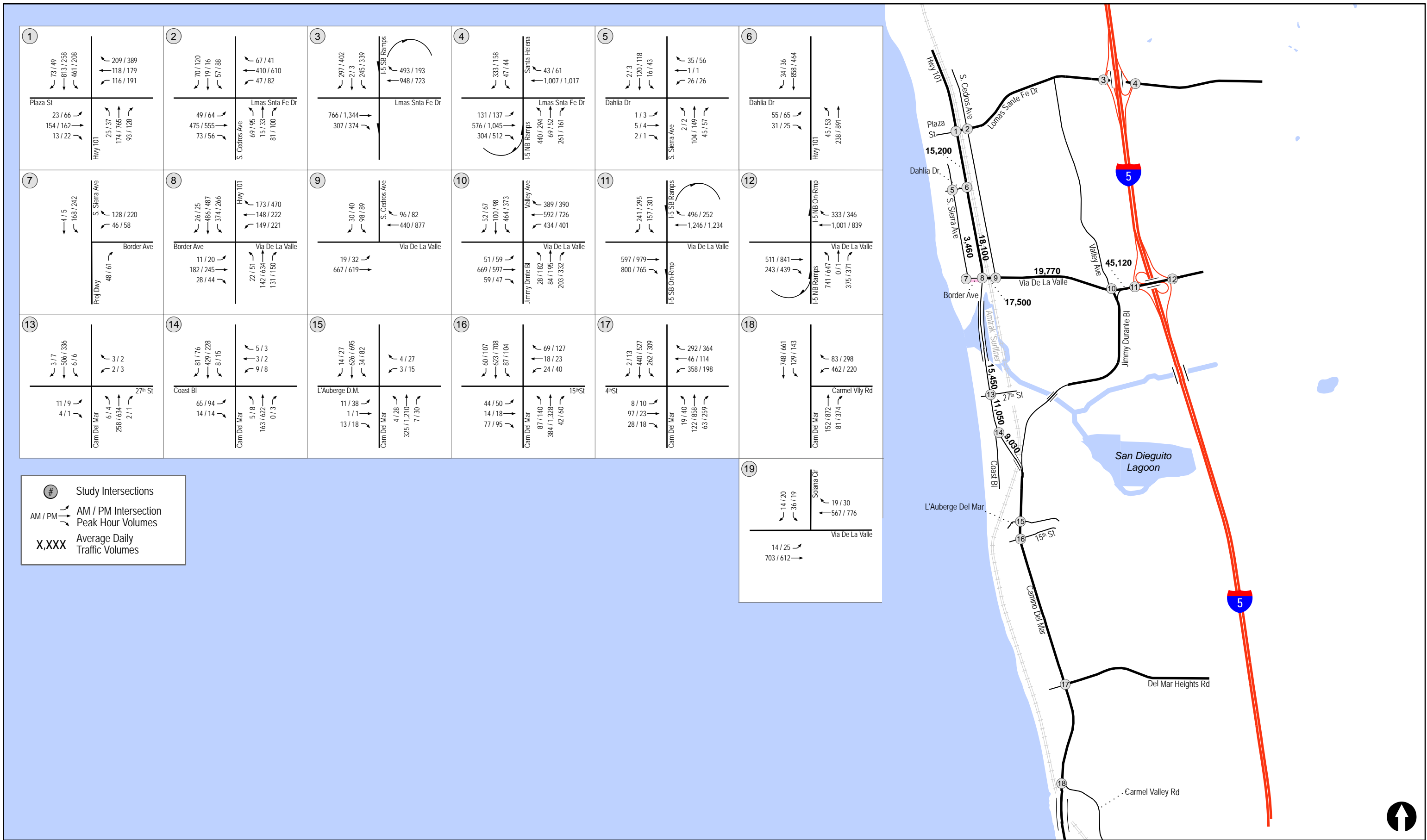
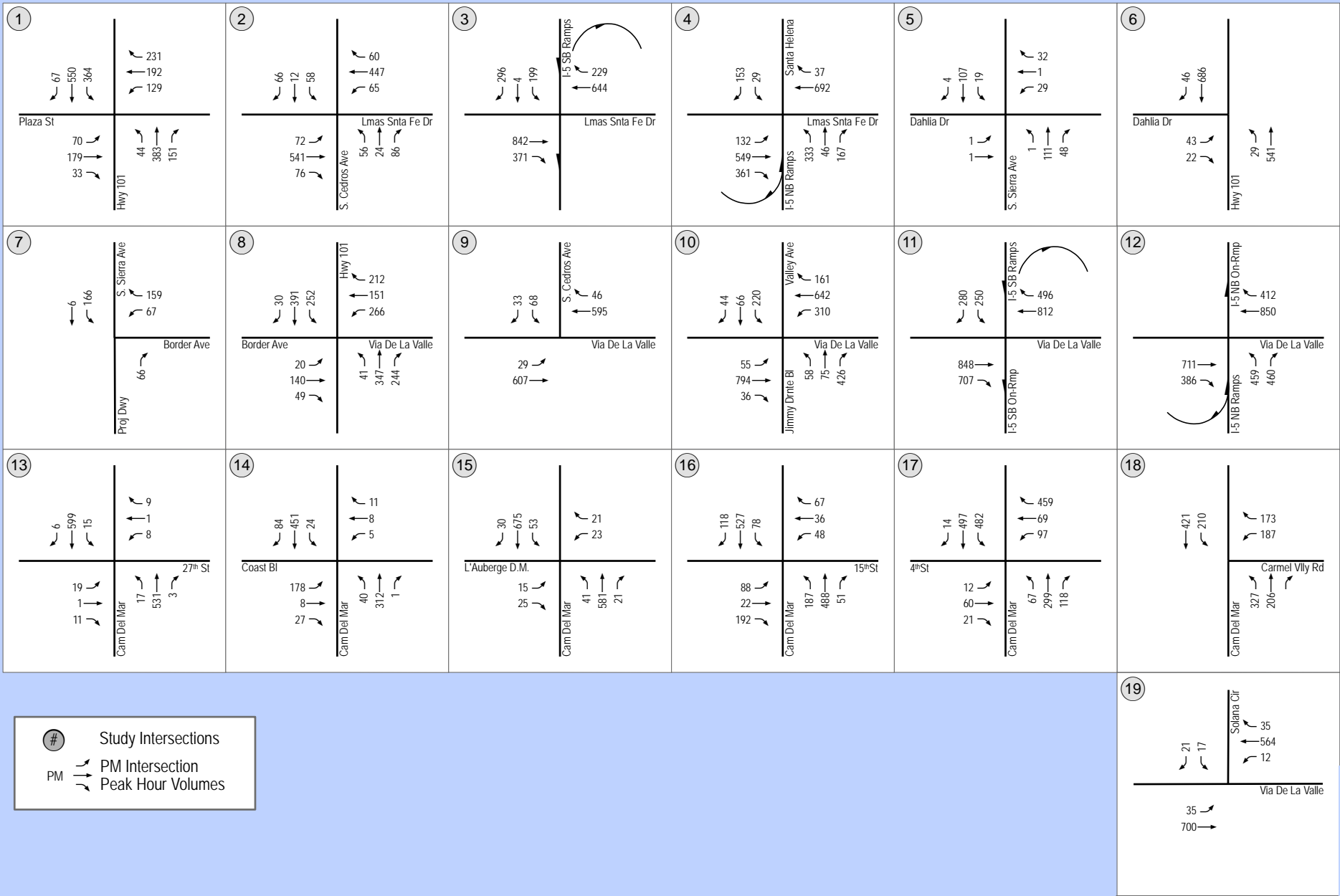
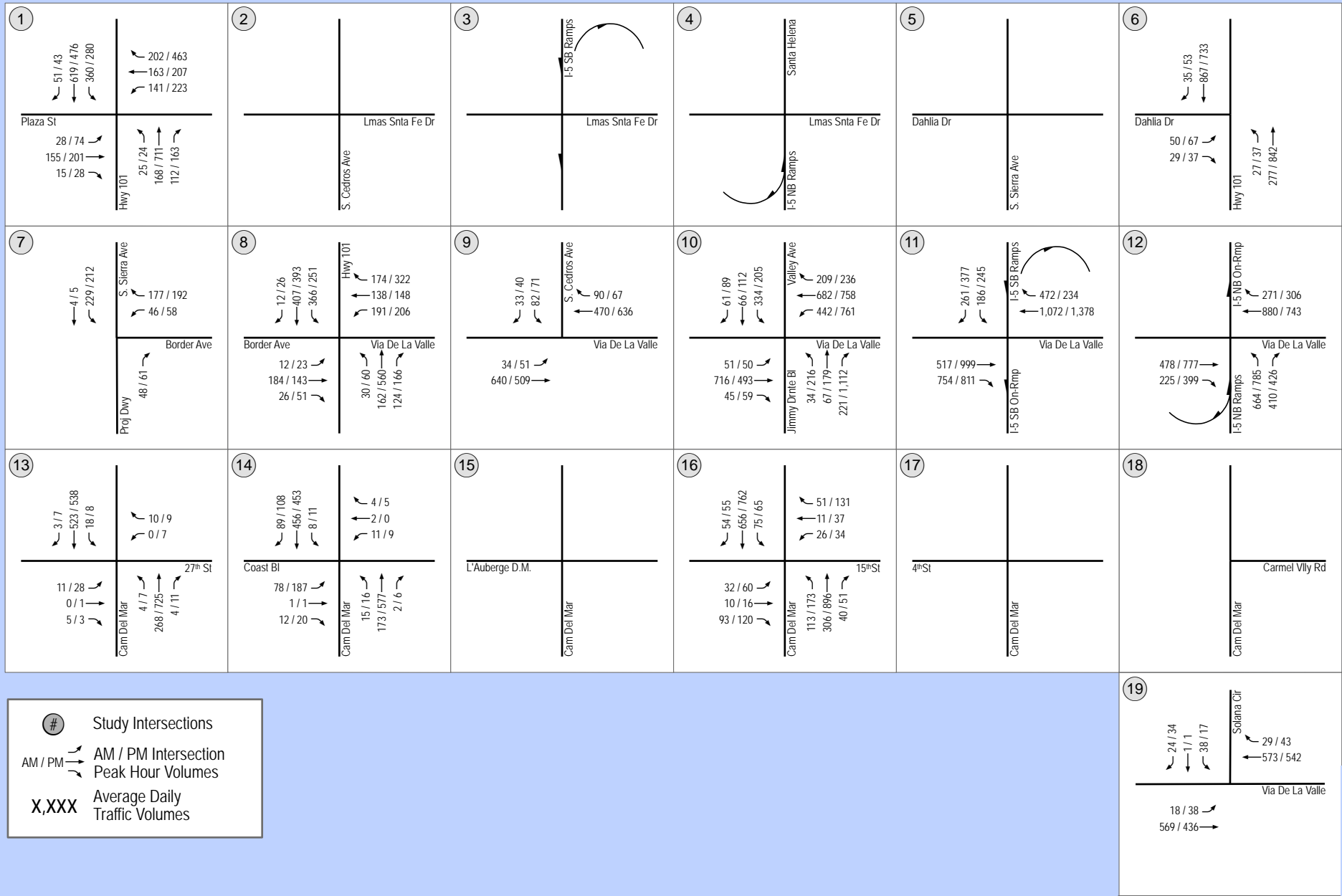
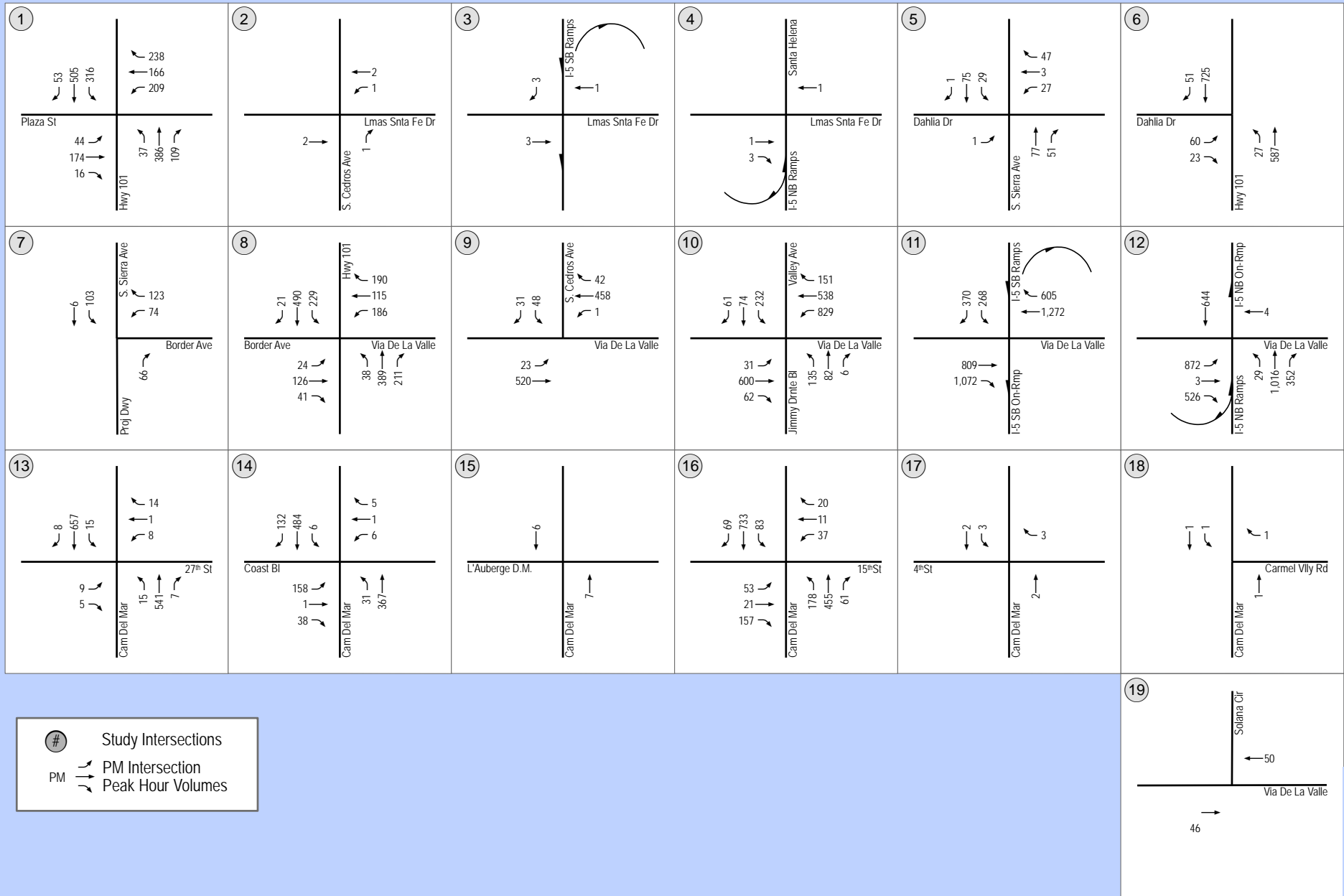
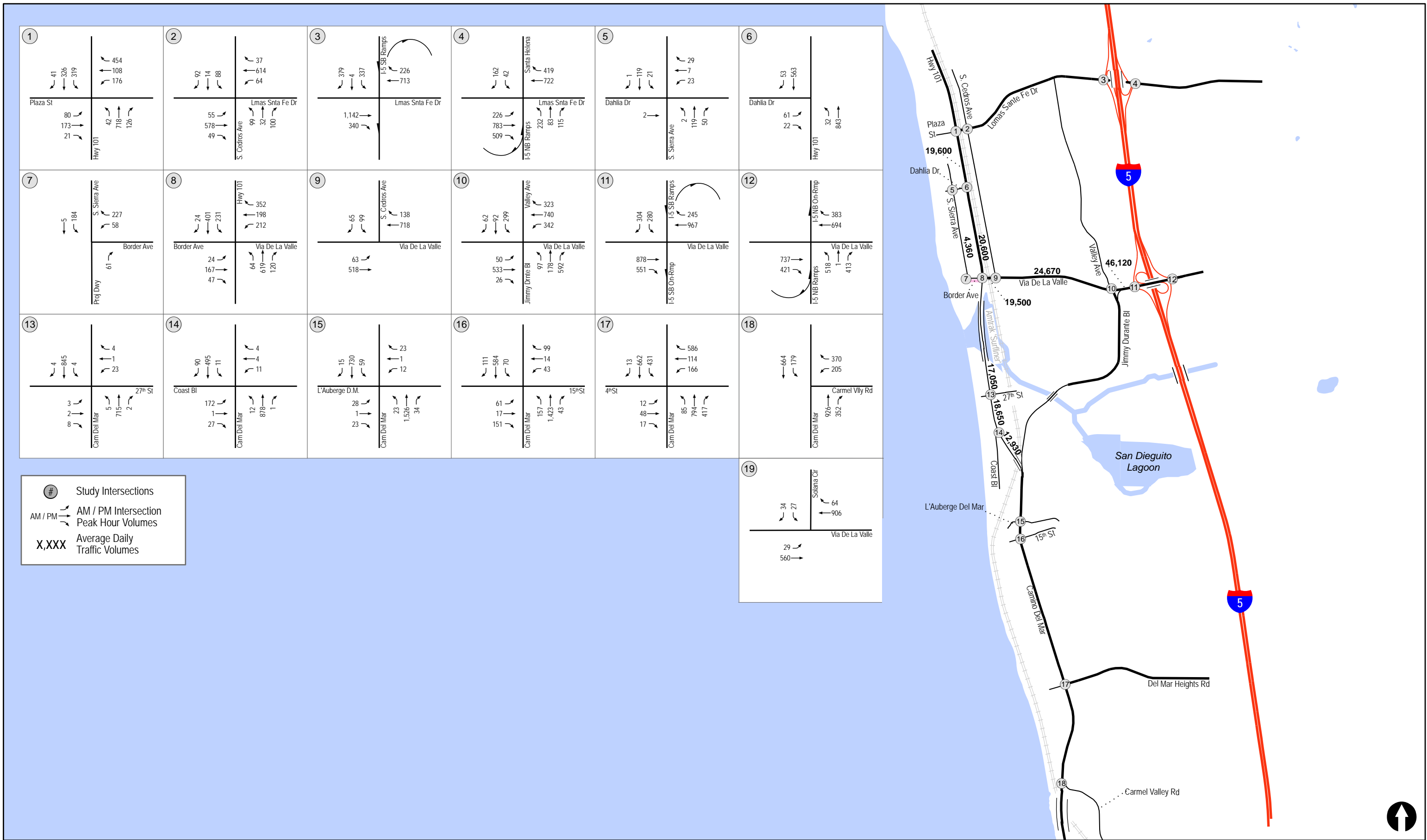


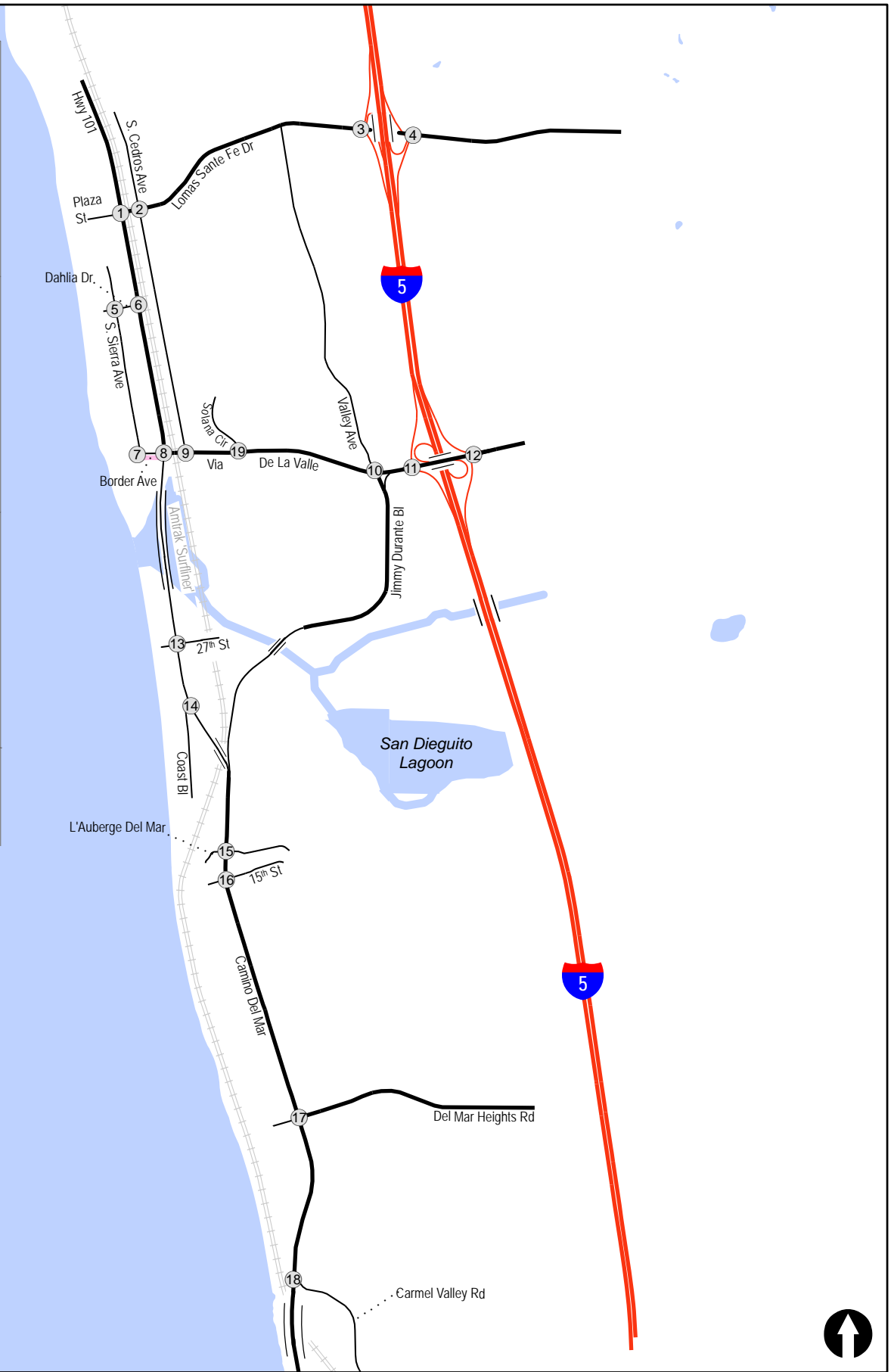
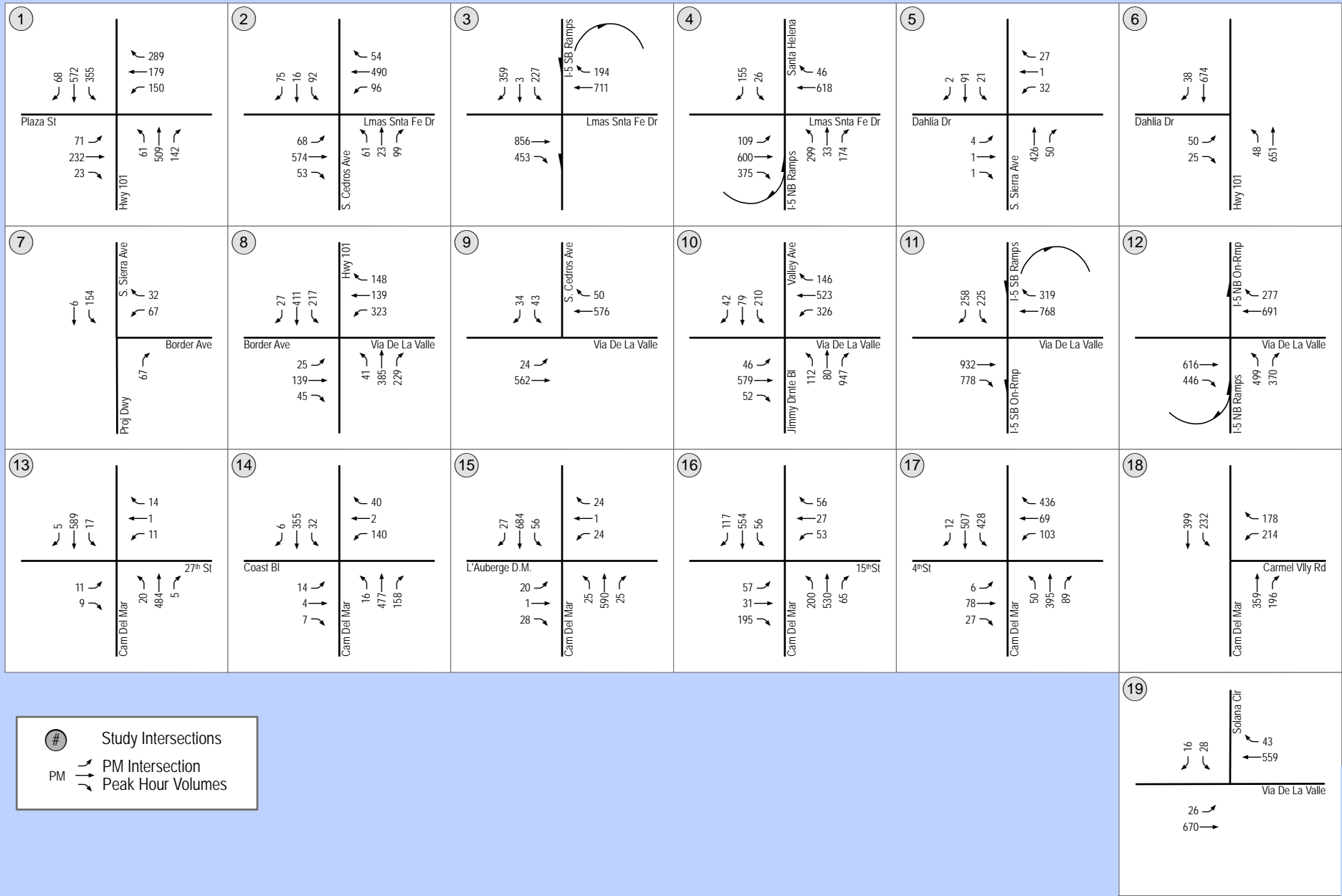
Figure 8-4
Existing + Project Traffic Volumes
Typical Weekday

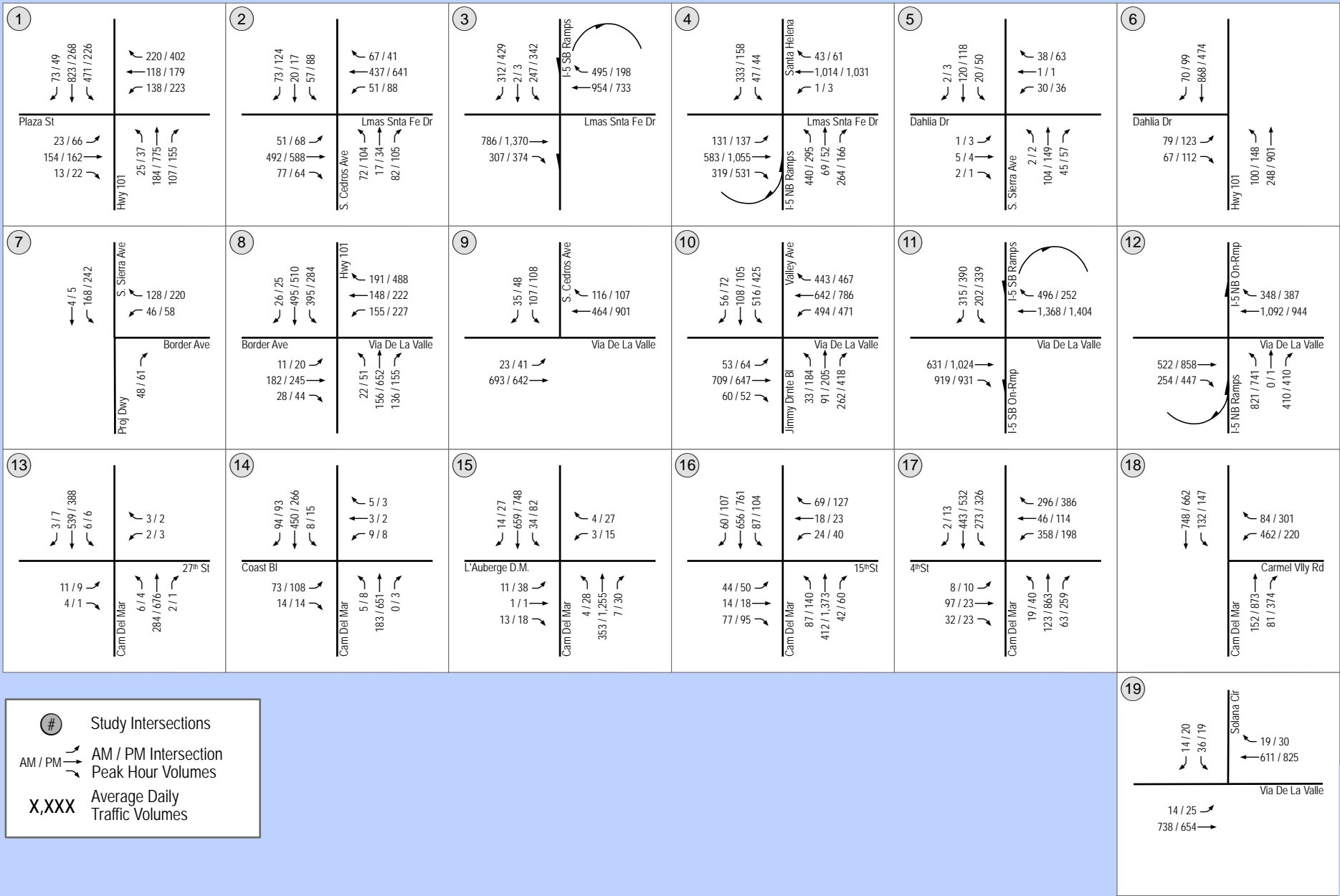


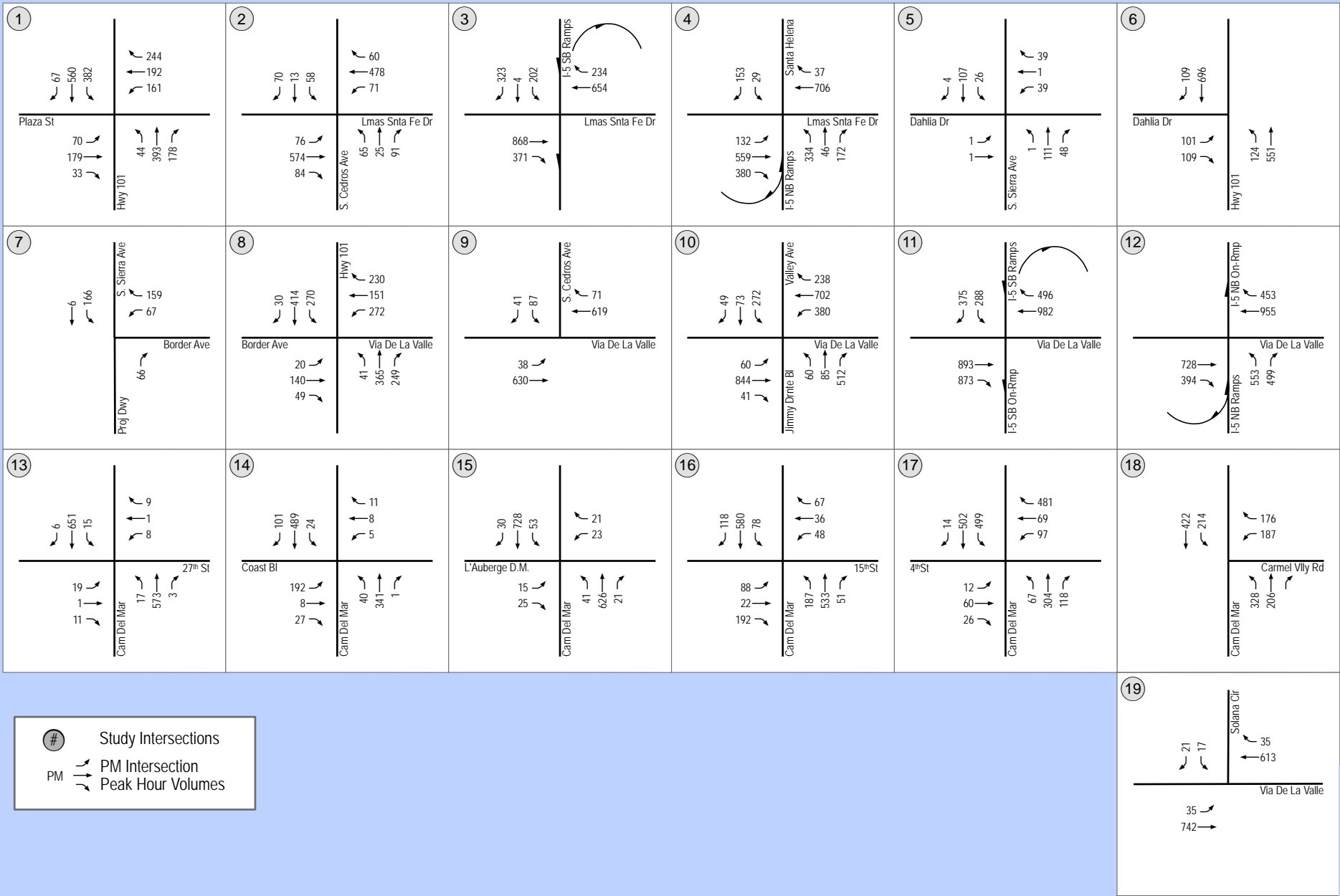












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Study Intersections

PM

PM Intersection

Peak Hour Volumes



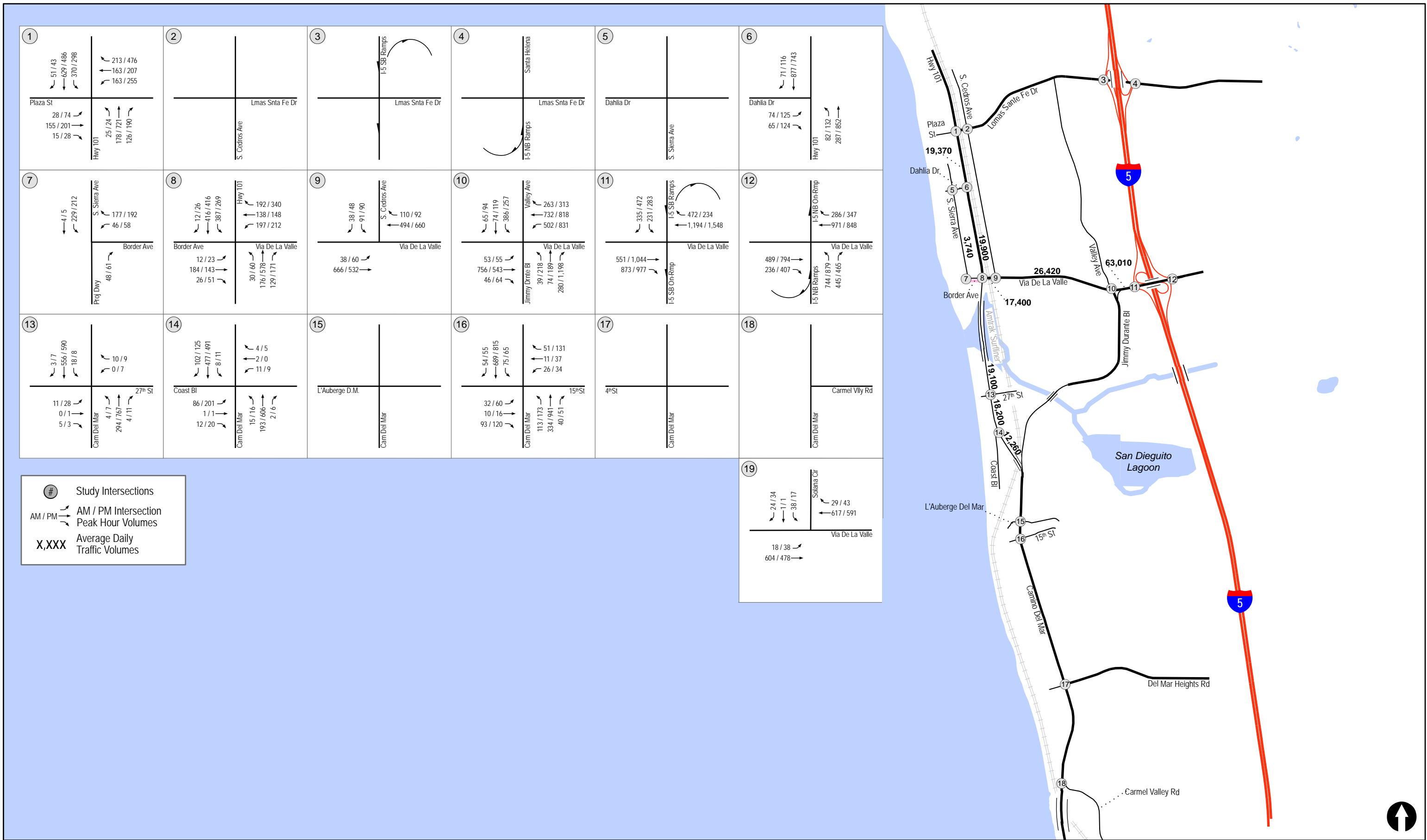


Figure 8-12
Existing + Cumulative Projects + Project Traffic Volumes
Weekday - During Fair

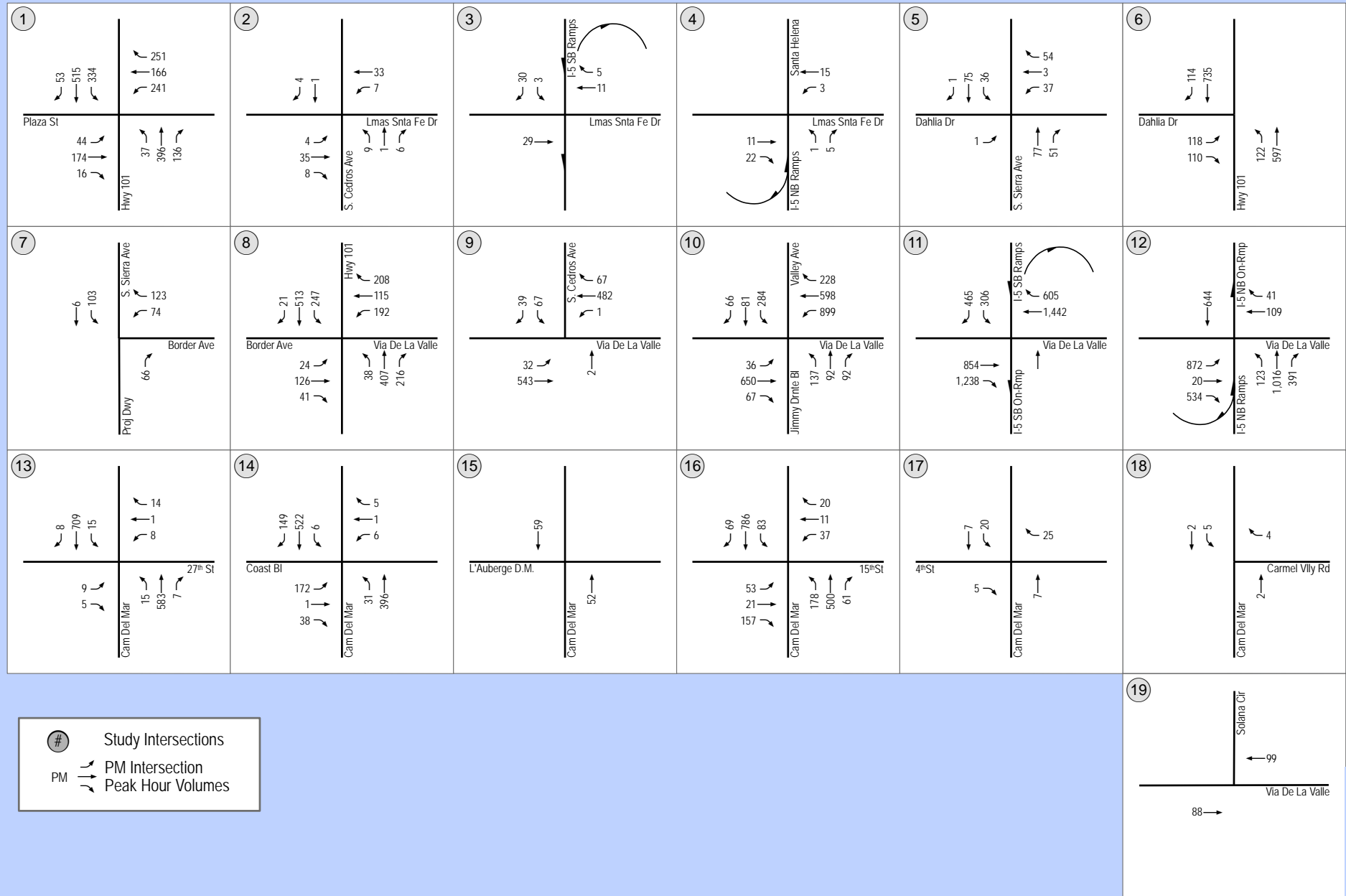


Figure 8-13
Existing + Cumulative Projects + Project Traffic Volumes
Weekend - During Fair

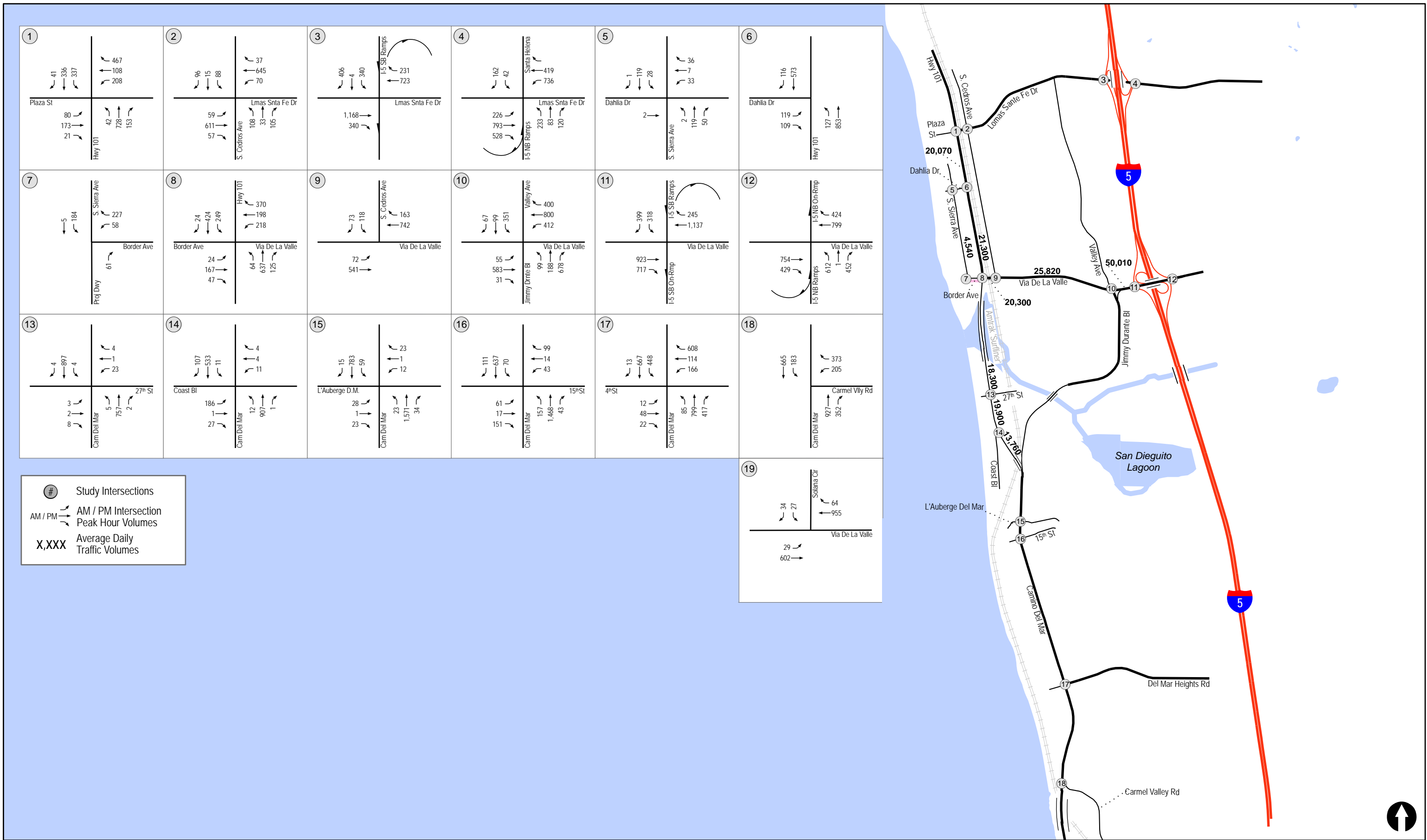


Figure 8-14
Existing + Cumulative Projects + Project Traffic Volumes
Weekday - During Races

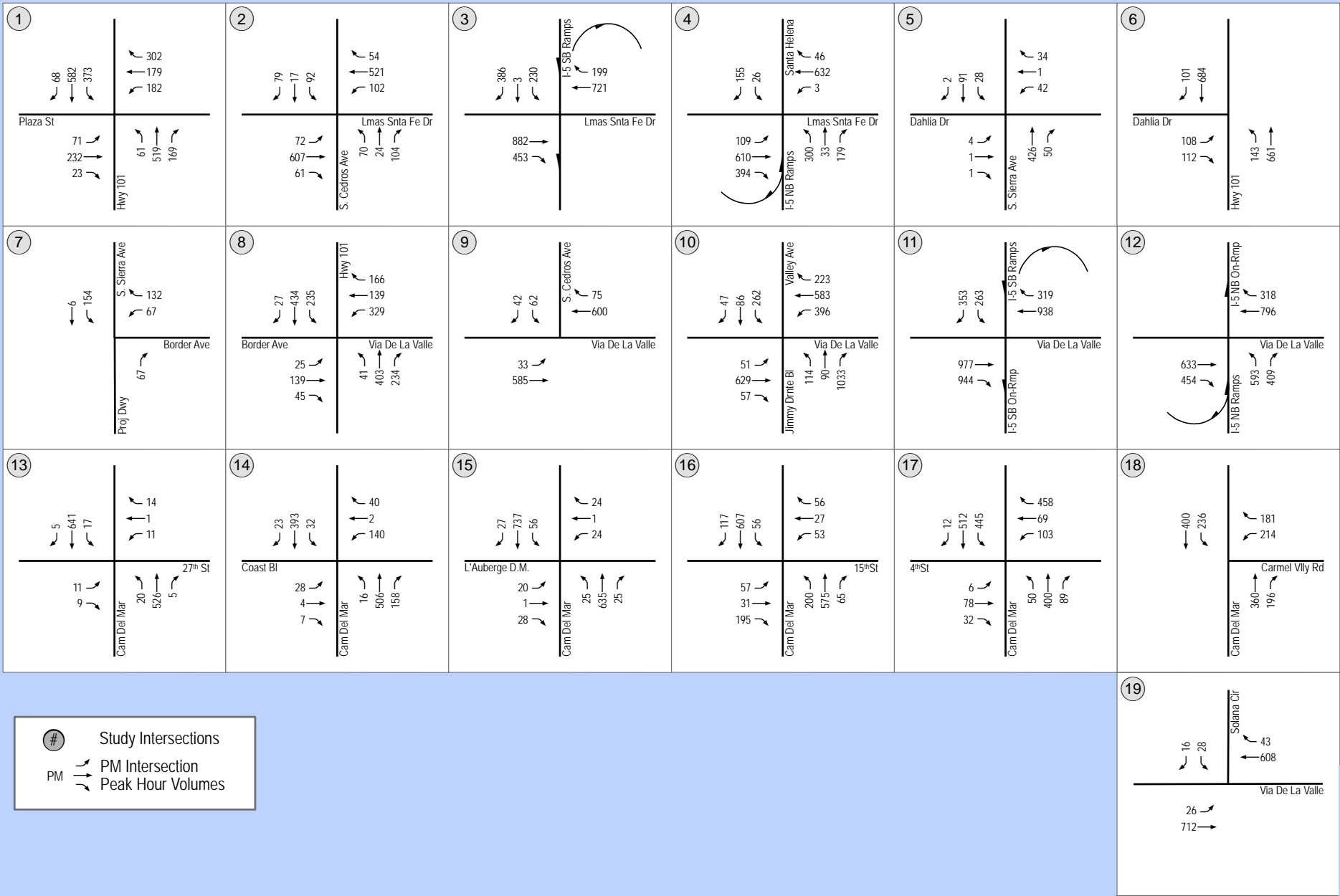


Figure 8-15
Existing + Cumulative Projects + Project Traffic Volumes
Weekend - During Horse Races

9.0 ANALYSIS OF NEAR-TERM SCENARIOS – TYPICAL WEEKDAY / WEEKEND

9.1 Existing + Project – Typical Weekday / Weekend

9.1.1 Intersection Analysis

Table 9–1 summarizes the Existing + Project – Typical Weekday / Weekend peak hour intersection operations. As seen in *Table 9–1*, on a Typical Weekday, with the addition of Project traffic, the following study area intersections are calculated to operate at LOS E or worse:

- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS E during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Camino Del Mar / Del Mar Heights Road intersection. Hence, a significant direct impact is not calculated at this intersection. However, significant direct impacts are calculated at the remaining intersections.

On a Weekend, with the addition of Project traffic, the following study area intersections are calculated to operate at LOS E or worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Highway 101 / Lomas Santa Fe Drive and the Camino Del Mar / Del Mar Heights Road intersections. Hence, significant direct impacts are not calculated at these intersections. However, significant direct impacts are calculated at the remaining two intersections.

Appendix E-1 contains the Existing + Project – Typical Weekday peak hour intersection analysis worksheets and *Appendix E-2* contains the Existing + Project – Typical Weekend peak hour intersection analysis worksheets.

9.1.2 Daily Street Segment Levels of Service

Table 9–2 summarizes the Existing + Project – Typical Weekday segment operations. As seen in *Table 9–2*, with the addition of Project traffic, the following study area segments are calculated to operate at LOS E or worse:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS E)

The increase in V/C ratio due to the project traffic is less than the allowable 0.02 for the segment of Camino Del Mar between Via De La Valle and 27th Street and therefore the Project does not have a

significant impact on this segment. The potential impact on the Via de la Valle segments is explained below.

VIA DE LA VALLE

The segment of Via De La Valle is calculated currently operate at LOS F on a daily basis. This roadway was visited in the field during peak periods and further analyzed on a peak hour basis and it is noted that:

- (1) The roadway is built to its ultimate classification per the City of Del Mar Community Plan,
- (2) LOS D or better operations are calculated during the peak hours at the signalized intersections at each end of the study segment and
- (3) LOS D or better operations are calculated using the HCM peak hour arterial analysis method.

As seen in *Table 9-1*, both signalized intersections along Via De La Valle at Highway 101 and Jimmy Durante Boulevard are calculated to operate at LOS D or better.

The increase in V/C on the segments along Via De La Valle due to Project traffic indicates a potential significant impact. **Table 9-3** summarizes the peak hour arterial analysis along Via De La Valle on a Typical Weekday. As seen in *Table 9-3*, the level of service based on the calculated speed along this corridor of Via De La Valle between I-5 and Highway 101 is LOS D or better. Since peak hour intersection operations are more indicative of actual operations than ADT operations, based on the peak hour arterial analysis, no significant direct impact is calculated on Via de la Valle.

Appendix G-3 contains the Existing and Existing + Project peak hour arterial analysis worksheets.

9.1.3 Freeway Mainline Segments

Table 9-4 summarizes the Existing + Project – Typical Weekday Freeway Mainline segment operations. As seen in *Table 9-4*, on a Typical Weekday, with the addition of Project traffic, the following Freeway Mainline segments are calculated to operate at LOS E or worse:

- **I-5: Lomas Santa Fe Drive and Via De La Valle** – LOS F(0) in the NB direction during the PM peak hour
- **I-5: Via De La Valle and Del Mar Heights Road** – LOS E in the in the SB direction during the AM peak hour and LOS F(0) in the NB direction during the PM peak hour

The increase in V/C ratio due to the project traffic is less than the allowable 0.01 for segments operating at LOS E. Hence, no significant direct impacts are calculated.

9.1.4 Freeway Metered On-Ramps

Table 9–5 summarizes the Existing + Project – Typical Weekday Metered On-Ramp operations using the fixed rate analysis methodology. As shown in *Table 9–5*, no delay is calculated during the AM and PM peak hours using this methodology. This is due to the fact that the ramp meter discharge rate exceeds the peak hour demand. It is widely accepted among the industry that this methodology lacks accuracy in depicting “real world” conditions and often grossly overstates the calculated queues and delays.

9.1.5 Queuing Analysis

A queuing analysis was conducted to determine the increase in queues due to project traffic on the existing PM peak hour queues at select closely spaced intersections. The intersections in the Lomas Santa Fe Drive and Via de la Valle corridors between Highway 101 and the I-5 NB ramps were selected for this queuing analysis. The following intersections are included in this analysis:

LOMAS SANTA FE DRIVE CORRIDOR

1. Hwy 101/ Lomas Santa Fe Drive
2. Cedros Avenue/ Lomas Santa Fe Drive
3. I-5 SB Ramps/ Lomas Santa Fe Drive
4. I-5 NB Ramps/ Lomas Santa Fe Drive

VIA DE LA VALLE CORRIDOR

7. Border Avenue /S. Sierra Avenue / Project Driveway
8. Hwy 101 (Border Avenue)/Via De La Valle (Camino del Mar)
9. Via de la Valle / S. Cedros Avenue
10. Via de la Valle / Jimmy Durante Avenue
11. I-5 SB Ramps / Via de la Valle
12. I-5 NB Ramps / Via de la Valle

Table 9-6 summarizes the results of the queuing analysis. As seen in *Table 9-6*, currently, the calculated 95th percentile queue length exceeds the available storage in a few movements at the subject intersections. With the addition of Project traffic, the queue lengths increase by less than 10 feet in most movements at these intersections, where the queue currently exceeds the available storage length. The increase in the calculated queue length is greater than 10 feet in two movements at the following two intersections:

- The westbound left-turn movement at the Hwy 101 (Border Avenue)/Via De La Valle (Camino del Mar) intersection.
- The westbound through movement at the Via de la Valle / Jimmy Durante Avenue intersection

See Section 19.5 for post mitigation queue analysis.

TABLE 9-1
EXISTING + PROJECT INTERSECTION OPERATIONS – TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	32.8	C	33.5	C	0.7	None
		WkDay PM	41.8	D	42.2	D	0.4	None
		WkEnd PM	60.3	E	61.0	E	0.7	None
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay AM	33.4	C	33.6	C	0.2	None
		WkDay PM	21.7	C	21.8	C	0.1	None
		WkEnd PM	20.7	C	20.7	C	0.0	None
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	14.8	B	14.9	B	0.1	None
		WkDay PM	29.4	C	29.7	C	0.3	None
		WkEnd PM	12.4	B	12.5	B	0.1	None
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	16.1	B	16.2	B	0.1	None
		WkDay PM	14.3	B	14.4	B	0.1	None
		WkEnd PM	13.1	B	13.1	B	0.0	None
5. S. Sierra Ave / Dahlia Dr	AWSC ^d	WkDay AM	8.0	A	8.0	A	0.0	None
		WkDay PM	8.6	A	8.6	A	0.0	None
		WkEnd PM	8.0	A	8.0	A	0.0	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay AM	7.7	A	7.7	A	0.0	None
		WkDay PM	5.9	A	5.9	A	0.0	None
		WkEnd PM	6.2	A	6.2	A	0.0	None

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TABLE 9-1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS – TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
7. Border Ave / S. Sierra Ave	e	WkDay AM	e	e	8.5	A	NA	None
		WkDay PM	e	e	8.5	A	NA	None
		WkEnd PM	e	e	9.1	A	NA	None
8. Hwy 101 (Border Ave) / Via De La Valle (Camino Del Mar)	Signal	WkDay AM	13.4	B	13.8	B	0.4	None
		WkDay PM	29.1	C	29.3	C	0.2	None
		WkEnd PM	23.3	C	23.9	C	0.6	None
9. Via De La Valle/ S. Cedros Ave	MSSC ^f	WkDay AM	21.8	C	23.3	C	1.5	None
		WkDay PM	33.0	D	36.5	E	3.5	Direct
		WkEnd PM	22.9	C	24.9	C	2.0	None
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay AM	36.7	D	37.7	D	1.0	None
		WkDay PM	40.1	D	42.1	D	2.0	None
		WkEnd PM	29.6	C	30.2	C	0.6	None
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay AM	10.4	B	10.8	B	0.4	None
		WkDay PM	11.1	B	11.5	B	0.4	None
		WkEnd PM	9.8	A	10.0	A	0.2	None

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TABLE 9-1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS – TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay AM	24.2	C	24.4	C	0.2	None
		WkDay PM	27.0	C	27.5	C	0.5	None
		WkEnd PM	24.8	C	25.3	C	0.5	None
13. Camino Del Mar/ 27 th St	AWSC	WkDay AM	16.2	C	16.5	C	0.3	None
		WkDay PM	28.9	D	30.2	D	1.3	None
		WkEnd PM	34.5	D	36.2	E	1.7	Direct
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay AM	15.0	B	15.7	C	0.7	None
		WkDay PM	62.0	F	65.4	F	3.4	Direct
		WkEnd PM	30.2	D	31.7	D	1.5	None
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay AM	6.4	A	6.4	A	0.0	None
		WkDay PM	10.6	B	10.6	B	0.0	None
		WkEnd PM	8.9	A	8.9	A	0.0	None
16. Camino Del Mar/ 15 th St	Signal	WkDay AM	21.8	C	21.8	C	0.0	None
		WkDay PM	31.8	C	32.1	C	0.3	None
		WkEnd PM	33.3	C	33.6	C	0.3	None

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TABLE 9-1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS –TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
17. Camino Del Mar/ Del Mar Heights Rd	MSSC	WkDay AM	32.8	C	33.0	C	0.2	None
		WkDay PM	77.5	E	78.2	E	0.7	None
		WkEnd PM	129.0	F	129.9	F	0.9	None
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay AM	22.6	C	23.1	C	0.5	None
		WkDay PM	22.6	C	23.1	C	0.5	None
		WkEnd PM	12.2	B	12.3	B	0.1	None
19. Via de La Valle / Solana Circ	MSSC	WkDay AM	19.0	C	19.9	C	0.9	None
		WkDay PM	18.9	C	19.9	C	1.0	None
		WkEnd PM	15.4	C	16.2	C	0.8	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
- e. Turn in the road. No traffic control exists.
- f. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay AM – Weekday AM
WkDay PM – Weekday PM
WkEnd PM – Weekend Peak

SIGNALIZED		UNSIGNALIZED	
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 9-2
EXISTING + PROJECT STREET SEGMENT OPERATIONS – TYPICAL WEEKDAY

Street Segment	Functional Classification ^a	Capacity (LOS E)	Existing			Existing + Project			Δ V/C ^e	Impact Type
			ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
S. Sierra Avenue										
Del Mar Shore Ter to Beach Club Dr	Minor Collector	8,000	3,400	B	0.425	3,460	B	0.433	0.008	None
Highway 101										
Lomas Santa Fe Dr to Dahlia Dr	4-lane Major Art	37,000	15,000	B	0.405	15,200	B	0.411	0.006	None
Dahlia Dr to Via De La Valle	4-lane Major Art	37,000	17,900	B	0.484	18,100	B	0.489	0.005	None
Camino Del Mar										
Via De La Valle to 27 th St	Comm Collector	19,000	15,300	E	0.805	15,450	E	0.813	0.008	None
27 th St to Coast Blvd	Comm Collector	19,000	10,900	B	0.574	11,050	B	0.582	0.008	None
Coast Blvd to Jimmy Durante Blvd	Comm Collector	19,000	8,900	A	0.468	9,030	A	0.475	0.007	None
Via De La Valle										
Hwy 101 to S. Cedros Ave	Town Collector	19,000	16,500	E	0.868	17,500	E	0.921	0.053	None ^f
S. Cedros Ave to Jimmy Durante Blvd	Town Collector	19,000	18,800	E	0.989	19,770	F	1.041	0.052	None ^f
Jimmy Durante Blvd to I-5 SB Ramps	4-Ln Major Arterial ^g	50,000	44,200	E	0.884	45,120	E	0.902	0.018	None ^f

Footnotes:

- a. The San Diego County capacity at which the roadway currently functions.
- b. Existing daily segment volumes from *Table 3-2*.
- c. Level of Service.
- d. The Volume / Capacity ratio.
- e. Increase in V/C ratio due to the addition of project traffic.
- f. Not an impact. See text for explanation.
- g. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

TABLE 9-3
EXISTING + PROJECT PEAK HOUR ARTERIAL ANALYSIS – TYPICAL WEEKDAY
VIA DE LA VALLE: HIGHWAY 101 (CAMINO DEL MAR) TO I-5 RAMPS

Direction	Existing						Existing + Project					
	AM			PM			AM			PM		
	Time ^a	Speed ^b	LOS	Time	Speed	LOS	Time	Speed	LOS	Time	Speed	LOS
Eastbound	117.9	25.6	C	120.3	25.1	C	118.8	25.5	C	121	25.0	C
Westbound	118.7	25.5	C	133.3	22.7	C	120.2	25.2	C	135.7	22.3	C

Footnotes:

- a. Travel time in seconds
- b. Speed in miles per hour.

TABLE 9-4
EXISTING + PROJECT FREEWAY MAINLINE SEGMENT OPERATIONS – TYPICAL WEEKDAY

Freeway Segment	Dir	# of Lanes	Hourly Cap ^a	AADT	Peak Hour Traffic						V/C ^d				LOS		Δ V/C	
					Existing ^b		Project ^c		Existing + Project		Existing		Existing + Project					
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 5																		
Lomas Santa Fe Drive to Via De La Valle	NB	4ML + 1HOV + 1Aux	9,200	204,540	7,334	9,586	10	12	7,344	9,598	0.797	1.042	0.798	1.043	C	F(0)	0.001	0.001
	SB	5ML + 1Aux	10,000		9,162	7,919	10	13	9,172	7,932	0.916	0.792	0.917	0.793	D	C	0.001	0.001
Via De La Valle to Del Mar Heights Road	NB	4ML + 1HOV + 1Aux	9,200	210,160	7,528	9,839	20	25	7,548	9,864	0.818	1.069	0.820	1.072	D	F(0)	0.002	0.003
	SB	5ML + 1HOV	10,000		9,404	8,129	19	24	9,423	8,153	0.940	0.813	0.942	0.815	E	D	0.002	0.002
Del Mar Heights Road to SR 56	NB	6ML + 1Aux+1HOV	12,800	176,660	6,325	8,267	20	25	6,345	8,292	0.494	0.646	0.496	0.648	B	C	0.002	0.002
	SB	5ML + 1Aux+1HOV	11,000		7,901	6,829	19	24	7,920	6,853	0.718	0.621	0.720	0.623	C	C	0.002	0.002

Footnotes:

- a. Capacity calculated at 1800 vph per lane and 1000 vph per Auxiliary lane and HOV lane as explained in the text.
- b. Existing Average Annual Daily Traffic Volumes from Caltrans PeMS June 2017).
- c. Project traffic at the ramps.
- d. V/C = (Peak Hour volume/Capacity)

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 9-5
NEAR-TERM METERED RAMPS OPERATIONS – TYPICAL WEEKDAY**

Location/Condition	Peak Hour	Peak Hour Flow (F) (veh/hr/ln)	Calculated (Most Restrictive)			
			Discharge Rate ^b (veh/hr/ln)	Excess Demand E (veh/hr/ln)	Delay (min/ln)	Queue (ft)
EB Via De La Valle to SB I-5			1 SOV + 1 HOV			
AM						
SOV						
Existing	665	996	0	0	0	0
Existing + Project	681	996	0	0	0	0
Existing + Cumulative	751	996	0	0	0	0
Existing + Cumulative Projects + Project	838	996	0	0	0	0
HOV ^b						
Existing	117	996	0	0	0	0
Existing + Project	120	996	0	0	0	0
Existing + Cumulative	133	996	0	0	0	0
Existing + Cumulative Projects + Project	148	996	0	0	0	0
PM						
SOV						
Existing	529	996	0	0	0	0
Existing + Project	549	996	0	0	0	0
Existing + Cumulative	643	996	0	0	0	0
Existing + Cumulative Projects + Project	758	996	0	0	0	0
HOV ^b						
Existing	93	498	0	0	0	0
Existing + Project	97	498	0	0	0	0
Existing + Cumulative	114	498	0	0	0	0
Existing + Cumulative Projects + Project	134	498	0	0	0	0
EB Via De La Valle to NB I-5			2 SOV			
PM						
SOV						
Existing	209	372	0	0	0	0
Existing + Project	221	372	0	0	0	0
Existing + Cumulative	213	372	0	0	0	0
Existing + Cumulative Projects + Project	217	372	0	0	0	0

Footnotes:

- Existing volumes - Average of volumes from March through April 2017, from PeMS.
- Discharge rates obtained from Caltrans (*Appendix A*).
- A 15% Reduction in volume is applied to the volume in SOV lanes due to HOV lane

General Notes:

SOV – Single Occupancy Vehicle Lane
HOV – High Occupancy Vehicle Lane

TABLE 9-6
PM PEAK HOUR FORECASTED QUEUE IN FEET (95TH PERCENTILE)

Intersection	Movement	Storage Length (Feet)	Existing	Existing + Project
1. Hwy 101/ Lomas Santa Fe Dr	SB Through	>500	134	137
	SB Left to EB	335	#359	#359
	WB Right to NB	220	54	54
	WB Through	220	134	139
	WB Left to SB	100 ^b	111	111
	NB Through	>800	#564	#576
2. Cedros Ave/ Lomas Santa Fe Dr	NB Left to WB	200	73	73
	EB Through	170	145	145
	SB Right to WB	100	31	31
	SB Through	>300	17	17
	SB Left to EB	65	63	63
	WB Right to NB	265	9	9
	WB Through	265	196	196
	WB Left to SB	80	87	88
	NB Through	>300	45	45
	NB Left to WB	70	66	65
3. I-5 SB Ramps/ Lomas Santa Fe Dr	EB Through	220	198	199
	EB Left to NB	70	73	73
	SB Right to WB	>400	261	266
	SB Left to EB	>400	#508	#508
4. I-5 NB Ramps/ Lomas Santa Fe Dr	WB Through	>600	252	253
	EB Through	340	745	747
	WB Through	430	337	337
	NB Right to EB	610	90	90
	NB Through	610 ^c	202	202
7. Border Ave/S. Sierra Ave/ Proj Dwy	NB Left to WB	610	196	196
	EB Left to NB	200	#208	#208
8. Hwy 101 (Border Ave)/ Via De La Valle (Camino del Mar)	EB Through	650	#830	#833
	WB Left to SB	70	DNE	3
8. Hwy 101 (Border Ave)/ Via De La Valle (Camino del Mar)	NB Right to EB	50	DNE	5
	SB Through	>500	193	194
	SB Left to EB	300	307	307
	WB Right to NB	120	113	113
	WB Through	300	162	203
	WB Left to SB	120	#282	#309
	NB Right to EB	90	90	92
	NB Through	>500	324	324
	NB Left to WB	100	77	86
	EB Through	300	224	287

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TABLE 9-6 (CONTINUED)
PM PEAK HOUR FORECASTED QUEUE IN FEET (95TH PERCENTILE)

Intersection	Movement	Storage Length (Feet)	Existing	Existing + Project
9. Via de la Valle / S. Cedros Ave	SB Right to WB	60	13	15
	SB Left to EB	>200	100	55
	EB Left to NB	90	5	5
19. Via de la Valle / Solana Circ	SB Right to WB	>100	12	13
	SB Left to EB	>100	12	13
	EB Left to NB	150	1	3
10. Via de la Valle / Jimmy Durante Ave	SB Lt to EB/Rt to WB	100	0	0
	SB Through	>300	115	115
	SB Left to EB	120	#253	#253
	WB Through	550	#555	#598
	WB Left to SB	130	#267	#267
	NB Right to EB	>400	40	40
	NB Through	>400	213	213
	NB Left to WB	170	#285	#288
	EB Through	>400	303	326
	EB Left to NB	125	#126	#129
11. I-5 SB Ramps / Via de la Valle	SB Right to WB	>500	153	167
	SB Left to EB	>500	163	172
	WB Through	>500	387	416
	EB Through	>500	202	215
12. I-5 NB Ramps / Via de la Valle	WB Through	>500	269	274
	NB Right to EB	>500	280	291
	NB Left to WB	>500	372	380
	EB Through	>500	462	475

Footnotes:

- a. Shared through/right lane.
- b. Per lane.
- c. Shared through/left lane.

General Note:

- 95th percentile volume exceeds capacity. Queue may be longer. Queue shown after two cycles.

Bold indicates queue exceeds available storage

Bold indicates increase in the calculated queue exceeds 10 feet with the addition of Project traffic.

9.2 Existing + Cumulative Projects – Typical Weekday / Weekend

9.2.1 Intersection Analysis

Table 9-7 summarizes the Existing + Cumulative projects – Typical Weekday / Weekend peak hour intersection operations. As seen in **Table 9-7**, with the addition of Cumulative projects traffic the following study area intersections are calculated to operate at LOS E or worse during a Typical Weekday:

- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

On a Weekend, with the addition of Cumulative projects traffic, the following study area intersections are calculated to operate at LOS E or worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS E during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS E during the PM peak hour)

Appendix F-1 contains the Existing + Cumulative Projects – Typical Weekday peak hour intersection analysis worksheets and **Appendix F-2** contains the Existing + Cumulative Projects – Typical Weekend peak hour intersection analysis worksheets.

9.2.2 Daily Street Segment Levels of Service

Table 9-8 summarizes the Existing + Cumulative projects – Typical Weekday / Weekend segment operations. As seen in **Table 9-8**, with the addition of Cumulative projects traffic the following segments are calculated to operate at LOS E or worse:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS E)

9.2.3 Freeway Mainline Segments

Table 9-9 summarizes the Existing + Cumulative projects – Typical Weekday / Weekend Freeway Mainline segment operations. As seen in **Table 9-9**, with the addition of Cumulative projects traffic the following Freeway Mainline segments are calculated to operate at LOS E or worse:

- **I-5: Lomas Santa Fe Drive and Via De La Valle** – LOS E in the SB direction during the AM peak hour and LOS F(0) in the NB direction during the PM peak hour
- **I-5: Via De La Valle and Del Mar Heights Road** – LOS E in the in the SB direction during the AM peak hour and F(0) in the NB direction during the PM peak hour

9.2.4 Freeway Metered On-Ramps

Table 9-5 summarizes the Existing + Cumulative projects – Typical Weekday / Weekend Metered On-Ramp operations using the fixed rate analysis methodology. As shown in Table 9-5, no delay is calculated during the AM and PM peak hours using this methodology. This is due to the fact that the ramp meter discharge rate exceeds the peak hour demand. It is widely accepted among the industry that this methodology lacks accuracy in depicting “real world” conditions and often grossly overstates the calculated queues and delays.

9.3 Existing + Cumulative Projects + Project – Typical Weekday / Weekend

9.3.1 Intersection Analysis

Table 9-7 summarizes the Existing + Cumulative projects + Project – Typical Weekday / Weekend peak hour intersection operations. As seen in Table 9-7, with the addition of Project traffic, with the addition of Project traffic, the following study area intersections are calculated to operate at LOS E or worse during a Typical Weekday:

- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS E during the PM peak hour)
- **Via De La Valle / Jimmy Durante Boulevard** (LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Camino Del Mar / Del Mar Heights Road intersection. Hence, a significant direct impact is not calculated at this intersection. However, significant direct impacts are calculated at the remaining intersections.

On a Weekend, with the addition of Project traffic, the following study area intersections are calculated operate at LOS E or worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS E during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS E during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Highway 101 / Lomas Santa Fe Drive and the Camino Del Mar / Del Mar Heights Road intersections. Hence, significant direct impacts are not calculated at these intersections. However, significant direct impacts are calculated at the remaining intersections.

Appendix G-1 contains the Existing + Cumulative Projects + Project – Typical Weekday peak hour intersection analysis worksheets and **Appendix G-2** contains the Existing + Cumulative Projects + Project – Typical Weekend peak hour intersection analysis worksheets.

9.3.2 Daily Street Segment Levels of Service

Table 9-8 summarizes the Existing + Cumulative projects + Project – Typical Weekday segment operations. As seen in Table 9-8, with the addition of Project traffic, the following study area segments are calculated to operate at LOS E or worse:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOSE)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS E)

The increase in V/C ratio due to the project traffic is less than the allowable 0.02 for the segment of Camino Del Mar between Via De La Valle and 27th Street. The increase in V/C on the remaining segments along Via De La Valle is more than the allowable.

The segment of Via De La Valle is calculated currently operate at LOS F on a daily basis. This roadway was visited in the field during peak periods and further analyzed on a peak hour bases and it is noted:

As seen in Table 9-7, both signalized intersections along Via De La Valle at Highway 101 and Jimmy Durante Boulevard are calculated to operate at LOS D or better.

The increase in V/C on the segments along Via De La Valle due to Project traffic indicates a potential significant impact. Table 9-9 summarizes the peak hour arterial analysis along Via De La Valle on a Typical Weekday. As seen in Table 9-9, the level of service based on the calculated speed along this corridor of Via De La Valle between I-5 and Highway 101 is LOS D or better. Since peak hour intersection operations are more indicative of actual operations than ADT operations, based on the peak hour arterial analysis, no significant direct impact is calculated on Via de la Valle.

9.3.3 Freeway Mainline Segments

Table 9-10 summarizes the Existing + Cumulative projects + Project – Typical Weekday Freeway Mainline segment operations. As seen in Table 9-10, with the addition of Project traffic, the following Freeway Mainline segments are calculated to operate at LOS E or worse:

- **I-5: Lomas Santa Fe Drive and Via De La Valle** – LOS E in the SB direction during the AM peak hour and LOS F(0) in the NB direction during the PM peak hour
- **I-5: Via De La Valle and Del Mar Heights Road** – LOS E in the in the SB direction during the AM peak hour and F(0) in the NB direction during the PM peak hour

The increase in V/C ratio due to the project traffic is less than the allowable 0.01 for segments operating at LOS E. Hence, no significant direct impacts are calculated.

9.3.4 Freeway Metered On-Ramps

Table 9-5 summarizes the Existing + Cumulative projects + Project – Typical Weekday Metered On-Ramp operations using the fixed rate analysis methodology. As shown in *Table 9–5*, no delay is calculated during the AM and PM peak hours using this methodology. This is due to the fact that the ramp meter discharge rate exceeds the peak hour demand. It is widely accepted among the industry that this methodology lacks accuracy in depicting “real world” conditions and often grossly overstates the calculated queues and delays.

TABLE 9-7
NEAR-TERM INTERSECTION OPERATIONS – TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	34.1	C	34.4	C	0.3	None
		WkDay PM	45.5	D	46.0	D	0.5	None
		WkEnd PM	61.6	E	62.1	E	0.5	None
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay AM	33.5	C	36.1	D	2.6	None
		WkDay PM	22.2	C	22.2	C	0.0	None
		WkEnd PM	21.0	C	21.0	C	0.0	None
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	15.4	B	15.5	B	0.1	None
		WkDay PM	32.4	C	32.9	C	0.5	None
		WkEnd PM	13.2	B	13.3	B	0.1	None
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	16.4	B	16.4	B	0.0	None
		WkDay PM	14.8	B	14.8	B	0.0	None
		WkEnd PM	13.3	B	13.3	B	0.0	None
5. S. Sierra Ave / Dahlia Dr	AWSC ^d	WkDay AM	8.0	A	8.1	A	0.1	None
		WkDay PM	8.7	A	8.7	A	0.0	None
		WkEnd PM	8.1	A	8.2	A	0.2	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay AM	10.9	B	10.9	B	0.0	None
		WkDay PM	10.5	B	10.6	B	0.1	None
		WkEnd PM	11.5	B	11.5	B	0.0	None

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TABLE 9-7 (CONTINUED)
NEAR-TERM INTERSECTION OPERATIONS – TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
7. Border Ave / S. Sierra Ave	e	WkDay AM	e	e	9.0	A	NA	None
		WkDay PM	e	e	9.5	A	NA	None
		WkEnd PM	e	e	9.1	A	NA	None
8. Hwy 101 (Border Ave) / Via De La Valle (Camino Del Mar)	Signal	WkDay AM	14.2	B	14.6	B	0.4	None
		WkDay PM	31.4	C	31.9	C	0.5	None
		WkEnd PM	22.8	C	24.0	C	1.2	None
9. Via De La Valle/ S. Cedros Ave	MSSC ^f	WkDay AM	24.2	C	26.1	D	1.9	None
		WkDay PM	42.6	E	48.5	E	5.9	Direct
		WkEnd PM	24.5	C	26.7	D	2.2	None
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay AM	43.8	D	45.3	D	1.5	None
		WkDay PM	53.9	D	57.1	E	3.2	Direct
		WkEnd PM	31.2	C	32.1	C	0.9	None
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay AM	14.4	B	15.0	B	0.6	None
		WkDay PM	14.6	B	15.1	B	0.5	None
		WkEnd PM	12.7	B	13.0	B	0.3	None

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TABLE 9-7 (CONTINUED)
NEAR-TERM INTERSECTION OPERATIONS – TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay AM	25.6	C	25.9	C	0.3	None
		WkDay PM	29.3	C	29.9	C	0.6	None
		WkEnd PM	27.0	C	27.5	C	0.5	None
13. Camino Del Mar/ 27 th St	AWSC	WkDay AM	18.3	C	18.8	C	0.5	None
		WkDay PM	38.4	E	40.2	E	1.8	None
		WkEnd PM	49.6	E	52.5	F	2.9	Direct
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay AM	17.0	C	17.4	C	0.4	None
		WkDay PM	81.5	F	84.9	F	3.4	Direct
		WkEnd PM	43.5	E	45.9	E	2.4	Direct
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay AM	6.5	A	6.5	A	0.0	None
		WkDay PM	10.6	B	10.6	B	0.0	None
		WkEnd PM	8.9	A	8.9	A	0.0	None
16. Camino Del Mar/ 15 th St	Signal	WkDay AM	22.0	C	22.0	C	0.0	None
		WkDay PM	32.5	C	33.0	C	0.5	None
		WkEnd PM	33.7	C	35.0	D	1.3	None

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TABLE 9-7 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS – TYPICAL WEEKDAY / WEEKEND

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
17. Camino Del Mar/ Del Mar Heights Rd	MSSC	WkDay AM	33.7	C	33.9	C	0.2	None
		WkDay PM	89.3	F	90.1	F	0.8	None
		WkEnd PM	145.6	F	146.2	F	0.6	None
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay AM	22.7	C	23.2	C	0.5	None
		WkDay PM	23.1	C	23.6	C	0.5	None
		WkEnd PM	12.2	B	12.3	B	0.1	None
19. Via de la Valle / Solana Circ	MSSC	WkDay AM	20.1	C	21.1	C	1.0	None
		WkDay PM	20.1	C	21.3	C	1.2	None
		WkEnd PM	16.3	C	17.2	C	0.9	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
- e. Turn in the road. No traffic control exists.
- f. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay AM – Weekday AM
WkDay PM – Weekday PM
WkEnd PM – Weekend Peak

SIGNALIZED		UNSIGNALIZED	
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 9-8
NEAR-TERM STREET SEGMENT OPERATIONS – TYPICAL WEEKDAY

Street Segment	Functional Classification ^a	Capacity (LOS E)	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Δ V/C ^d	Impact Type
			ADT	LOS ^b	V/C ^c	ADT	LOS	V/C		
S. Sierra Avenue										
Del Mar Shore Ter to Beach Club Dr	Minor Collector	8,000	3,580	B	0.448	3,640	B	0.455	0.008	None
Highway 101										
Lomas Santa Fe Dr to Dahlia Dr	4-In Major Arterial	37,000	15,470	B	0.418	15,670	B	0.424	0.006	None
Dahlia Dr to Via De La Valle	4-In Major Arterial	37,000	18,600	B	0.503	18,800	B	0.508	0.005	None
Camino Del Mar										
Via De La Valle to 27th St	Comm Collector	19,000	16,550	E	0.871	16,700	E	0.879	0.008	None
27 th St to Coast Blvd	Comm Collector	19,000	12,150	C	0.639	12,300	C	0.647	0.008	None
Coast Blvd to Jimmy Durante Blvd	Comm Collector	19,000	9,730	A	0.512	9,860	A	0.519	0.007	None
Via De La Valle										
Hwy 101 to S. Cedros Ave	Town Collector	19,000	17,300	E	0.911	18,300	E	0.963	0.052	None ^e
S. Cedros Ave to Jimmy Durante Blvd	Town Collector	19,000	19,950	F	1.050	20,920	F	1.101	0.051	None ^e
Jimmy Durante Blvd to I-5 SB Ramps	4-In Major Arterial ^f	50,000	48,090	E	0.962	49,010	E	0.980	0.018	None ^e

Footnotes:

- a. The San Diego County capacity at which the roadway currently functions.
- b. Level of Service.
- c. The Volume / Capacity ratio.
- d. Increase in V/C ratio due to the addition of project traffic.
- e. Not an impact. See text for explanation.
- f. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

TABLE 9-9
VIA DE LA VALLE NEAR-TERM PEAK HOUR ARTERIAL ANALYSIS – TYPICAL WEEKDAY

Direction	Existing + Cumulative Projects						Existing + Cumulative Projects + Project					
	AM			PM			AM			PM		
	Time ^a	Speed ^b	LOS	Time	Speed	LOS	Time	Speed	LOS	Time	Speed	LOS
Eastbound	120.7	25.1	C	122.6	24.7	C	121.1	25.0	C	124.4	24.3	C
Westbound	122.4	24.7	C	148.1	20.4	D	123.6	24.5	C	158.2	19.1	D

Footnotes:

- a. Time in seconds
- b. Speed in miles per hour.

TABLE 9-10
NEAR-TERM FREEWAY MAINLINE SEGMENT OPERATIONS – TYPICAL WEEKDAY

Freeway Segment	Dir.	# of Lanes	AADT	Hourly Cap	Cumulative Projects Volume		Existing + Cumulative Projects ^a						Project Volume		Existing + Cumulative Projects + Project							
							Volume		V/C ^b		LOS				Volume		V/C		LOS		Δ V/C	
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 5																						
Lomas Santa Fe Dr to Via De La Valle	NB	4ML + 1HOV + 1Aux	211,080	9,200	29	55	7,363	9,641	0.800	1.048	D	F(0)	10	12	7,373	9,653	0.801	1.049	D	F(0)	0.001	0.001
	SB	5ML + 1Aux		10,000	119	133	9,281	8,052	0.928	0.805	E	D	10	13	9,291	8,065	0.929	0.807	E	D	0.001	0.001
Via De La Valle to Del Mar Heights Rd	NB	4ML + 1HOV + 1Aux	224,760	9,200	230	302	7,758	10,141	0.843	1.102	D	F(0)	20	25	7,778	10,166	0.845	1.105	D	F(0)	0.002	0.003
	SB	5ML + 1HOV		10,000	102	135	9,506	8,264	0.951	0.826	E	D	19	24	9,525	8,288	0.952	0.829	E	D	0.002	0.002
Del Mar Heights Rd to SR 56	NB	6ML + 1Aux+1HOV	191,260	12,800	230	302	6,555	8,569	0.512	0.669	B	C	20	25	6,575	8,594	0.514	0.671	B	C	0.002	0.002
	SB	5ML + 1Aux+1HOV		11,000	102	135	8,003	6,964	0.728	0.633	C	C	19	24	8,022	6,988	0.729	0.635	C	C	0.002	0.002

Footnotes:

- a. Existing + Cumulative Projects Volumes
b. V/C = (Peak Hour volume/Capacity)

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

10.0 ANALYSIS OF NEAR-TERM SCENARIOS – DURING FAIR

10.1 Existing + Project – During Fair

10.1.1 Intersection Analysis

Table 10-1 summarizes the Existing + Project – During Fair peak hour intersection operations on a weekday. As seen in *Table 10-1*, with the addition of Project traffic, the following study area intersections are calculated to operate at LOS E or worse:

- **Via De La Valle / Jimmy Durante Boulevard** (LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)

Significant direct impacts are calculated at all of the above intersections.

On a Weekend, with the addition of Project traffic, the following study area intersections are calculated to operate at LOS E or worse:

- **Via De La Valle / Jimmy Durante Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)

Significant direct impacts are calculated at all of the above intersections.

The Existing + Project – During Fair peak hour intersection analysis worksheets are included in *Appendix H*.

10.1.2 Daily Street Segment Levels of Service

Table 10-2 summarizes the Existing + Project – During Fair segment operations. As seen in *Table 10-2*, with the addition of Project traffic, the following study area segments are calculated to continue to operate at LOS D or better except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Camino Del Mar:** 27th Street to Coast Boulevard (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS F)

The increase in daily V/C ratio due to the project traffic is less than the allowable 0.02 for the segments of Camino Del Mar between Via De La Valle and Coast Boulevard.

The increase in V/C on the segments along Via De La Valle indicates a potential significant impact.

TABLE 10-1
EXISTING + PROJECT INTERSECTION OPERATIONS – TYPICAL WEEKDAY DURING FAIR

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	31.7	C	31.8	C	0.1	None
		WkDay PM	48.6	D	49.0	D	0.4	None
		WkEnd PM	40.5	D	44.2	D	3.7	None
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
5. S. Sierra Ave / Dahlia Dr	AWSC ^d	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
6. Hwy 101 / Dahlia Dr	Signal	WkDay AM	6.9	A	6.9	A	0.0	None
		WkDay PM	8.2	A	8.2	A	0.0	None
		WkEnd PM	6.5	A	6.5	A	0.0	None

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TABLE 10-1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS – DURING FAIR

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
7. Border Ave / S. Sierra Ave	e	WkDay AM	e	e	12.5	B	N/A	N/A
		WkDay PM	e	e	14.0	B	N/A	N/A
		WkEnd PM	e	e	9.0	A	N/A	N/A
8. Hwy 101 (Border Ave) / Via De La Valle (Camino Del Mar)	MSSC ^f	WkDay AM	14.9	B	15.8	B	0.9	None
		WkDay PM	24.0	C	24.2	C	0.2	None
		WkEnd PM	21.4	C	22.0	C	0.6	None
9. Via De La Valle/ S. Cedros Ave	Signal	WkDay AM	22.7	C	24.3	C	1.6	None
		WkDay PM	23.0	C	25.0	C	2.0	None
		WkEnd PM	17.7	C	19.1	C	1.4	None
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay AM	37.3	D	38.1	D	0.8	None
		WkDay PM	64.9	E	67.2	E	2.3	Direct
		WkEnd PM	52.1	D	89.7	F	37.6	Direct
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay AM	10.3	B	10.5	B	0.2	None
		WkDay PM	12.4	B	12.9	B	0.5	None
		WkEnd PM	17.7	B	18.8	B	1.1	None
12. Via De La Valle / I-5 NB Ramps	AWSC ^f	WkDay AM	24.0	C	24.2	C	0.2	None
		WkDay PM	29.9	C	30.3	C	0.4	None
		WkEnd PM	29.4	C	29.7	C	0.3	None

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TABLE 10-1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS – DURING FAIR

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
13. Camino Del Mar/ 27 th St	AWSC	WkDay AM	17.3	C	17.7	C	0.4	None
		WkDay PM	68.4	F	71.6	F	3.2	Direct
		WkEnd PM	45.7	E	48.4	E	2.7	Direct
14. Camino Del Mar/ Coast Blvd	Signal	WkDay AM	17.6	C	17.9	C	0.3	None
		WkDay PM	93.4	F	97.4	F	4.0	Direct
		WkEnd PM	39.0	E	41.6	E	2.6	Direct
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
16. Camino Del Mar/ 15 th St	MSSC	WkDay AM	21.7	C	21.7	C	0.0	None
		WkDay PM	31.0	C	31.1	C	0.1	None
		WkEnd PM	30.9	C	32.3	C	1.4	None
17. Camino Del Mar/ Del Mar Heights Rd	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A

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TABLE 10-1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS – DURING FAIR

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
19. Via de la Valle / Solana Circ	Signal	WkDay AM	17.2	C	17.2	C	0.0	None
		WkDay PM	14.5	B	14.6	B	0.1	None
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.
- e. Turn in the road. No traffic control exists.
- f. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay AM – Weekday AM
WkDay PM – Weekday PM
DNA – Did not Analyze
N/A – Not Applicable

SIGNALIZED		UNSIGNALIZED	
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 10-2
EXISTING + PROJECT STREET SEGMENT OPERATIONS – DURING FAIR (WEEKDAY)

Street Segment	Functional Classification ^a	Capacity (LOS E)	Existing			Existing + Project			Δ V/C ^e	Impact Type
			ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
S. Sierra Avenue										
Del Mar Shore Ter to Beach Club Dr	Minor Collector	8,000	3,500	B	0.438	3,560	B	0.445	0.007	None
Highway 101										
Lomas Santa Fe Dr to Dahlia Dr	4-In Major Arterial	37,000	18,700	B	0.505	18,900	B	0.511	0.006	None
Dahlia Dr to Via De La Valle	4-In Major Arterial	37,000	19,000	B	0.514	19,200	B	0.519	0.005	None
Camino Del Mar										
Via De La Valle to 27th St	Comm Collector	19,000	17,700	E	0.932	17,850	E	0.939	0.007	None
27 th St to Coast Blvd	Comm Collector	19,000	16,800	E	0.884	16,950	E	0.892	0.008	None
Coast Blvd to Jimmy Durante Blvd	Comm Collector	19,000	11,300	B	0.595	11,430	B	0.602	0.007	None
Via De La Valle										
Hwy 101 to S. Cedros Ave	Town Collector	19,000	15,600	E	0.821	16,600	E	0.874	0.053	Direct
S. Cedros Ave to Jimmy Durante Blvd	Town Collector	19,000	24,300	F	1.279	25,270	F	1.330	0.051	Direct
Jimmy Durante Blvd to I-5 SB Ramps	4-In Major Arterial ^f	50,000	58,200	F	1.164	59,120	F	1.182	0.018	Direct

Footnotes:

- a. The San Diego County capacity at which the roadway currently functions.
- b. Existing daily segment volumes from *Table 3-2*.
- c. Level of Service.
- d. The Volume / Capacity ratio.
- e. Increase in V/C ratio due to the addition of project traffic.
- f. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

10.2 Existing + Cumulative Projects During Fair

10.2.1 Intersection Analysis

Table 10-3 summarizes the Existing + Cumulative projects During Fair peak hour intersection operations. As seen in *Table 10-3*, with the addition of Cumulative projects traffic the following study area intersections are calculated to continue to operate at LOS D or better except the following:

- **Via De La Valle / Jimmy Durante Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)

On a Weekend, the following study area intersections are calculated to operate at LOS E or worse:

- **Via De La Valle / Jimmy Durante Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)

Significant direct impacts are calculated at all of the above intersections.

The Existing + Cumulative projects During Fair peak hour intersection analysis worksheets are included in *Appendix I*.

10.2.2 Daily Street Segment Levels of Service

Table 10-4 summarizes the Existing + Cumulative projects During Fair segment operations. As seen in *Table 10-4*, with the addition of Cumulative projects traffic the following study area segments are calculated to currently operate at LOS D or better except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Camino Del Mar:** 27th Street to Coast Boulevard (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS F)

10.3 Existing (During Fair) + Cumulative Projects + Project

10.3.1 Intersection Analysis

Table 10-3 summarizes the Existing + Cumulative projects + Project During Fair peak hour intersection operations. As seen in *Table 10-3*, with the addition of Project traffic, the following study area intersections are calculated to currently operate at LOS D or better except the following:

- **Via De La Valle / Jimmy Durante Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)

Significant direct impacts are calculated at all of the above intersections.

On a Weekend, with the addition of Project traffic, the following study area intersections are calculated to operate at LOS E or worse:

- **Via De La Valle / Jimmy Durante Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)

Significant direct impacts are calculated at all of the above intersections.

The Existing + Cumulative projects + Project During Fair peak hour intersection analysis worksheets are included in *Appendix J*.

10.3.2 Daily Street Segment Levels of Service

Table 10-4 summarizes the Existing + Cumulative projects + Project During Fair segment operations. As seen in *Table 10-4*, with the addition of Project traffic, the following study area segments are calculated to currently operate at LOS D or better except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS F)
- **Camino Del Mar:** 27th Street to Coast Boulevard (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS F)

The increase in V/C ratio due to the project traffic is less than the allowable 0.02 for the segments of Camino Del Mar between Via De La Valle and Coast Boulevard.

The increase in V/C on the segments along Via De La Valle indicates a significant impact.

TABLE 10-3
NEAR-TERM INTERSECTION OPERATIONS DURING FAIR

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	32.2	C	32.3	C	0.1	None
		WkDay PM	52.3	D	52.9	D	0.6	None
		WkEnd PM	49.5	D	49.9	D	0.4	
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
5. S. Sierra Ave / Dahlia Dr	MSSC ^d	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
6. Hwy 101 / Dahlia Dr	Signal	WkDay AM	10.1	B	10.1	B	0.0	None
		WkDay PM	14.6	B	14.7	B	0.1	None
		WkEnd PM	12.6	B	12.6	B	0.0	None

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TABLE 10-3 (CONTINUED)
NEAR-TERM INTERSECTION OPERATIONS DURING FAIR

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
7. Border Ave / S. Sierra Ave	e	WkDay AM	e	e	12.5	B	NA	N/A
		WkDay PM	e	e	14.0	B	NA	N/A
		WkEnd PM	e	e	9.0	A	NA	N/A
8. Hwy 101 (Border Ave) / Via De La Valle (Camino Del Mar)	Signal	WkDay AM	15.8	B	16.7	B	0.9	None
		WkDay PM	24.4	C	24.6	C	0.2	None
		WkEnd PM	21.7	C	22.3	C	0.6	None
9. Via De La Valle/ S. Cedros Ave	MSSC	WkDay AM	25.4	D	27.2	D	1.8	None
		WkDay PM	27.5	D	30.1	D	2.6	None
		WkEnd PM	20.1	C	21.8	C	1.7	None
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay AM	43.9	D	45.1	D	1.2	None
		WkDay PM	84.4	F	87.4	F	3.0	Direct
		WkEnd PM	110.3	F	112.0	F	1.7	None
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay AM	13	B	13.4	B	0.4	None
		WkDay PM	17	B	17.8	B	0.8	None
		WkEnd PM	27	C	28.8	C	1.8	None
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay AM	25.2	C	25.4	C	0.2	None
		WkDay PM	31.8	C	32.2	C	0.4	None
		WkEnd PM	29.5	C	29.9	C	0.4	None

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TABLE 10-3 (CONTINUED)
NEAR-TERM INTERSECTION OPERATIONS DURING FAIR

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
13. Camino Del Mar/ 27 th St	AWSC ^f	WkDay AM	19.9	C	20.3	C	0.4	None
		WkDay PM	89.7	F	93.4	F	3.7	Direct
		WkEnd PM	64.6	F	68.0	F	3.4	Direct
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay AM	19.9	C	20.5	C	0.6	None
		WkDay PM	115.6	F	119.7	F	4.1	Direct
		WkEnd PM	53	F	56.3	F	3.3	Direct
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay AM	DNA	DNA	DNA	DNA	DNA	N/A
		WkDay PM	DNA	DNA	DNA	DNA	DNA	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	N/A
16. Camino Del Mar/ 15 th St	Signal	WkDay AM	21.9	C	21.9	C	0.0	None
		WkDay PM	31.4	C	31.4	C	0.0	None
		WkEnd PM	32.3	C	32.3	C	0.0	None
17. Camino Del Mar/ Del Mar Heights Rd	MSSC	WkDay AM	DNA	DNA	DNA	DNA	N/A	N/A
		WkDay PM	DNA	DNA	DNA	DNA	N/A	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	N/A	N/A

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TABLE 10-3 (CONTINUED)
NEAR-TERM INTERSECTION OPERATIONS DURING FAIR

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Cumulative Projects + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay AM	DNA	DNA	DNA	DNA	N/A	N/A
		WkDay PM	DNA	DNA	DNA	DNA	N/A	N/A
		WkEnd PM	DNA	DNA	DNA	DNA	N/A	N/A
19. Via de la Valle / Solana Circ	Signal	WkDay AM	18.2	C	18.2	C	0.0	None
		WkDay PM	15.4	C	15.5	C	0.1	None
		WkEnd PM	DNA	DNA	DNA	DNA	DNA	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.
- e. Turn in the road. No traffic control exists.
- f. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay AM – Weekday AM
WkDay PM – Weekday PM
DNA – Did Not Analyze
N/A – Not Applicable

SIGNALIZED		UNSIGNALIZED	
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 10-4
NEAR-TERM STREET SEGMENT OPERATIONS – DURING FAIR (WEEKDAY)

Street Segment	Functional Classification ^a	Capacity (LOS E)	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Δ V/C ^d	Impact Type
			ADT	LOS ^b	V/C ^c	ADT	LOS	V/C		
S. Sierra Avenue										
Del Mar Shore Ter to Beach Club Dr	Minor Collector	8,000	3,680	B	0.460	3,740	B	0.468	0.008	None
Highway 101										
Lomas Santa Fe Dr to Dahlia Dr	4-ln Major Arterial	37,000	19,170	B	0.518	19,370	B	0.524	0.006	None
Dahlia Dr to Via De La Valle	4-ln Major Arterial	37,000	19,700	B	0.532	19,900	B	0.538	0.006	None
Camino Del Mar										
Via De La Valle to 27 th St	Comm Collector	19,000	18,950	E	0.997	19,100	F	1.005	0.008	None
27 th St to Coast Blvd	Comm Collector	19,000	18,050	E	0.950	18,200	E	0.958	0.008	None
Coast Blvd to Jimmy Durante Blvd	Comm Collector	19,000	12,130	C	0.638	12,260	C	0.645	0.007	None
Via De La Valle										
Hwy 101 to S. Cedros Ave	Town Collector	19,000	16,400	E	0.863	17,400	E	0.916	0.053	Direct
S. Cedros Ave to Jimmy Durante Blvd	Town Collector	19,000	25,450	F	1.339	26,420	F	1.391	0.051	Direct
Jimmy Durante Blvd to I-5 SB Ramps	4-ln Major Arterial ^e	50,000	62,090	F	1.242	63,010	F	1.260	0.018	Direct

Footnotes:

- a. The San Diego County capacity at which the roadway currently functions.
- b. Level of Service.
- c. The Volume / Capacity ratio.
- d. Increase in V/C ratio due to the addition of project traffic.
- e. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

11.0 ANALYSIS OF NEAR-TERM SCENARIOS – DURING RACES

11.1 Existing + Project During Horse Races

11.1.1 Intersection Analysis

Table 11-1 summarizes the Existing + Project During Horse Races Weekday and Weekend peak hour intersection operations. As seen in *Table 11-1*, with the addition of Project traffic, the following study area intersections are calculated to operate at LOS E or worse for the Weekday PM peak hour:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Highway 101 / Lomas Santa Fe Drive and the Camino Del Mar / Del Mar Heights Road intersections. Hence, significant direct impacts are not calculated at these intersections. However, significant direct impacts are calculated at the remaining intersections.

The Existing + Project on a weekday During Horse Races peak hour intersection analysis worksheets are included in *Appendix K-1*.

On a Weekend, with the addition of Project traffic, the following study area intersections are calculated to operate at LOS E or worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Highway 101 / Lomas Santa Fe Drive and the Camino Del Mar / Del Mar Heights Road intersections. Hence, significant direct impacts are not calculated at these intersections. However, significant a significant direct impact is calculated at the remaining intersection.

The Existing + Project on a weekend During Horse Races peak hour intersection analysis worksheets are included in *Appendix K-2*.

11.1.2 Daily Street Segment Levels of Service

Table 11-2 summarizes the Existing + Project During Horse Races segment operations. As seen in *Table 11-2*, with the addition of Project traffic, the following study area segments are calculated to continue to operate at LOS D or better except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Camino Del Mar:** 27th Street to Coast Boulevard (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS F)

- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS E)

The increase in V/C ratio due to the project traffic is less than the allowable 0.02 for the segments of Camino Del Mar between Via De La Valle and Coast Boulevard.

VIA DE LA VALLE

The segment of Via De La Valle is calculated currently operate at LOS F on a daily basis During Horse Races on a weekday. As seen in *Table 9-7*, both signalized intersections along Via De La Valle at Highway 101 and Jimmy Durante Boulevard are calculated to operate at LOS D or better During Horse Races.

The increase in V/C on the segments along Via De La Valle due to Project traffic indicates a potential significant impact. **Table 11-3** summarizes the peak hour arterial analysis along Via De La Valle During Horse Races on a weekday. As seen in *Table 11-3*, the level of service based on the calculated speed along this corridor of Via De La Valle between I-5 and Highway 101 is LOS D or better. Since peak hour intersection operations are more indicative of actual operations than ADT operations, based on the peak hour arterial analysis, no significant direct impact is calculated on Via de la Valle.

Appendix G-4 contains the Existing + Project Arterial Analysis Worksheets during the Horse Races on a weekday.

**TABLE 11-1
EXISTING + PROJECT INTERSECTION OPERATIONS – DURING HORSE RACES**

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay PM	61.0	E	61.5	E	0.5	None
		WkEnd PM	68.1	E	68.7	E	0.6	None
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay PM	20.7	C	20.7	C	0.0	None
		WkEnd PM	21.7	C	21.7	C	0.0	None
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	20.6	C	21.3	C	0.7	None
		WkEnd PM	14.7	B	14.8	B	0.1	None
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	14.3	B	14.3	B	0.0	None
		WkEnd PM	12.5	B	12.5	B	0.0	None
5. S. Sierra Ave / Dahlia Dr	AWSC ^d	WkDay PM	8.1	A	8.1	A	0.0	None
		WkEnd PM	13.6	B	13.9	B	0.3	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay PM	5.8	A	7.5	A	1.7	None
		WkEnd PM	6.5	A	6.5	A	0.0	None
7. Border Ave / S. Sierra Ave	^e	WkDay PM	^e	^e	13.0	B	N/A	N/A
		WkEnd PM	^e	^e	12.2	B	N/A	N/A
8. Hwy 101 (Border Ave) / Via De La Valle (Camino Del Mar)	Signal	WkDay PM	24.4	C	24.9	C	0.5	None
		WkEnd PM	23.6	C	26.2	C	2.6	None

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TABLE 11-1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS – DURING HORSE RACES

Intersection	Control Type	Peak Hour	Existing ^a		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
9. Via De La Valle/ S. Cedros Ave	MSSC ^f	WkDay PM	31.3	D	35.6	E	4.3	Direct
		WkEnd PM	18.1	C	19.5	C	1.4	None
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay PM	35.6	D	40.6	D	5.0	None
		WkEnd PM	30.6	C	31.0	C	0.4	None
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay PM	9.1	A	10.1	B	1.0	None
		WkEnd PM	8.7	A	8.9	A	0.2	None
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay PM	25.8	C	26.3	C	0.5	None
		WkEnd PM	24.8	C	25.3	C	0.5	None
13. Camino Del Mar/ 27 th St	AWSC	WkDay PM	35.1	E	139.3	F	4.2	Direct
		WkEnd PM	29.4	D	30.9	D	1.5	None
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay PM	257.9	F	262.4	F	4.5	Direct
		WkEnd PM	88.6	F	92.9	F	4.3	Direct
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay PM	9.2	A	9.5	A	0.3	None
		WkEnd PM	9.6	A	9.6	A	0.0	None
16. Camino Del Mar/ 15 th St	Signal	WkDay PM	31.6	C	31.9	C	0.3	None
		WkEnd PM	33.4	C	33.6	C	0.2	None

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TABLE 11-1 (CONTINUED)
EXISTING + PROJECT INTERSECTION OPERATIONS – DURING HORSE RACES

Intersection	Control Type	Peak Hour	Existing ^a		Existing + Project		Δ Delay ^d	Impact Type
			Delay ^b	LOS ^c	Delay	LOS		
17. Camino Del Mar/ Del Mar Heights Rd	MSSC	WkDay PM	164.4	F	164.9	F	0.5	None
		WkEnd PM	113.9	F	114.9	F	1.0	None
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay PM	28.2	C	28.7	C	0.5	None
		WkEnd PM	13.8	B	13.9	B	0.1	None
19. Via de la Valle/ Solana Circle	Signal	WkDay PM	22.4	C	23.9	C	1.5	None
		WkEnd PM	16.5	C	17.6	C	1.1	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
- e. Turn in the road. No traffic control exists.
- f. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay AM – Weekday AM

WkDay PM – Weekday PM

N/A – Not Applicable

SIGNALIZED		UNSIGNALIZED	
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 11-2
EXISTING + PROJECT STREET SEGMENT OPERATIONS – DURING HORSE RACES (WEEKDAY)

Street Segment	Functional Classification ^a	Capacity (LOS E)	Existing ^b			Existing + Project			Δ V/C ^e	Impact Type
			ADT ^b	LOS ^c	V/C ^d	ADT	LOS	V/C		
S. Sierra Avenue										
Del Mar Shore Ter to Beach Club Dr	Minor Collector	8,000	4,300	C	0.538	4,360	C	0.545	0.007	None
Highway 101										
Lomas Santa Fe Dr to Dahlia Dr	4-ln Major Arterial	37,000	19,400	B	0.524	19,600	B	0.530	0.006	None
Dahlia Dr to Via De La Valle	4-ln Major Arterial	37,000	20,400	B	0.551	20,600	B	0.557	0.006	None
Camino Del Mar										
Via De La Valle to 27th St	Comm Collector	19,000	16,900	E	0.889	17,050	E	0.897	0.008	None
27 th St to Coast Blvd	Comm Collector	19,000	18,500	E	0.974	18,650	E	0.982	0.008	None
Coast Blvd to Jimmy Durante Blvd	Comm Collector	19,000	12,800	C	0.674	12,930	C	0.681	0.007	None
Via De La Valle										
Hwy 101 to S. Cedros Ave	Town Collector	19,000	18,500	E	0.974	19,500	F	1.026	0.052	None ^f
S. Cedros Ave to Jimmy Durante Blvd	Town Collector	19,000	23,700	F	1.247	24,670	F	1.298	0.051	None ^f
Jimmy Durante Blvd to I-5 SB Ramps	4-ln Major Arterial ^g	50,000	45,200	F	0.904	46,120	E	0.922	0.018	None ^f

Footnotes:

- a. The San Diego County capacity at which the roadway currently functions.
- b. Existing daily segment volumes from *Table 3-2*.
- c. Level of Service.
- d. The Volume / Capacity ratio.
- e. Increase in V/C ratio due to the addition of project traffic.
- f. Not an impact. See text for explanation.
- g. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

TABLE 11-3
VIA DE LA VALLE EXISTING + PROJECT PEAK HOUR ARTERIAL ANALYSIS – DURING HORSE RACES WEEKDAY

Direction	Existing						Existing + Project					
	Weekday PM			Weekend PM			Weekday PM			Weekend PM		
	Time ^a	Speed ^b	LOS	Time	Speed	LOS	Time	Speed	LOS	Time	Speed	LOS
Eastbound	119.2	25.4	C	123.6	24.5	C	123	24.6	C	128.1	23.6	C
Westbound	133.6	22.6	C	119.4	25.3	C	149.8	20.2	D	122.5	24.7	C

Footnotes:

- a. Time in Seconds
- b. Speed in miles per hour.

11.2 Existing + Cumulative Projects – During Horse Races

11.2.1 Intersection Analysis

Table 11–4 summarizes the Existing + Cumulative projects (During Horse Races) peak hour intersection operations. As seen in *Table 11–4*, with the addition of Cumulative projects traffic the following study area intersections are calculated to continue to operate at LOS E or worse during the Weekday PM peak hour:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The Existing + Cumulative Projects on a weekday During Horse Races peak hour intersection analysis worksheets are included in *Appendix L-1*.

On a Weekend, with the addition of Cumulative projects traffic, the following study area intersections are calculated to operate at LOS E or worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The Existing + Cumulative Projects on a weekend During Horse Races peak hour intersection analysis worksheets are included in *Appendix L-2*.

11.2.2 Daily Street Segment Levels of Service

Table 11–5 summarizes the Existing + Cumulative projects (During Horse Races) segment operations. As seen in *Table 11–5*, with the addition of Cumulative projects traffic the following study area segments are calculated to continue to operate at LOS E or worse:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Camino Del Mar:** 27th Street to Coast Boulevard (LOS F)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS F)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS E)

11.3 Existing (During Horse Races) + Cumulative Projects + Project

11.3.1 Intersection Analysis

Table 11–4 summarizes the Existing + Cumulative projects + Project (During Horse Races) peak hour intersection operations. As seen in *Table 11–4*, with the addition of Project traffic, the following study area intersections are calculated to continue to operate at LOS E or worse during the Weekday PM peak hour:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS F during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Highway 101 / Lomas Santa Fe Drive and the Camino Del Mar / Del Mar Heights Road intersections. Hence, significant direct impacts are not calculated at these intersections. However, significant direct impacts are calculated at the remaining intersections.

The Existing + Cumulative Projects + Project on a weekday During Horse Races peak hour intersection analysis worksheets are included in *Appendix M-1*.

On a Weekend, with the addition of Project traffic, the following study area intersections are calculated operate at LOS E or worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS F during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Highway 101 / Lomas Santa Fe Drive and the Camino Del Mar / Del Mar Heights Road intersections. Hence, significant direct impacts are not calculated at these intersections. However, significant a significant direct impact is calculated at the remaining intersections.

The Existing + Cumulative Projects + Project on a weekday During Horse Races peak hour intersection analysis worksheets are included in *Appendix M-2*.

11.3.2 Daily Street Segment Levels of Service

Table 11-4 summarizes the Existing + Cumulative projects + Project (During Horse Races) segment operations. As seen in *Table 11-4*, with the addition of Project traffic, the following study area segments are calculated to continue to operate at LOS E or worse:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Camino Del Mar:** 27th Street to Coast Boulevard (LOS F)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS F)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS F)

VIA DE LA VALLE

The segment of Via De La Valle is calculated to operate at LOS F with the additional of Cumulative projects and Project traffic on a daily basis During Horse Races. As seen in *Table 11-4*, both signalized intersections along Via De La Valle at Highway 101 and Jimmy Durante Boulevard are calculated to operate at LOS D or better During Horse Races.

The increase in V/C on the segments along Via De La Valle due to Project traffic indicates a potential significant impact. **Table 11-6** summarizes the peak hour arterial analysis along Via De La Valle During Horse Races on a weekday. As seen in *Table 11-6*, the level of service based on the calculated speed along this corridor of Via De La Valle between I-5 and Highway 101 is LOS D or better. Since peak hour intersection operations are more indicative of actual operations than ADT operations, based on the peak hour arterial analysis, no significant direct impact is calculated on Via de la Valle.

TABLE 11-4
EXISTING + PROJECT + CUMULATIVE PROJECTS INTERSECTION OPERATIONS – DURING HORSE RACES

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Project + Cumulative Projects		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay PM	68.1	E	68.7	E	1.6	None
		WkEnd PM	74.2	E	74.8	E	0.6	None
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay PM	21.1	C	21.1	C	0.0	None
		WkEnd PM	22.1	C	22.1	C	0.0	None
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	22.5	C	24.1	C	1.6	None
		WkEnd PM	15.8	B	15.9	B	0.1	None
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	15.0	B	15.0	B	0.0	None
		WkEnd PM	12.7	B	12.7	B	0.0	None
5. S. Sierra Ave / Dahlia Dr	AWSC ^d	WkDay PM	8.2	A	8.3	A	0.1	None
		WkEnd PM	12.3	B	14.3	B	2.0	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay PM	10.6	B	12.4	B	1.8	None
		WkEnd PM	12.1	B	12.4	B	0.3	None
7. Border Ave / S. Sierra Ave	^e	WkDay PM	^e	^e	13.0	B	N/A	N/A
		WkEnd PM	^e	^e	12.0	B	N/A	N/A
8. Hwy 101 (Border Ave) / Via De La Valle (Camino Del Mar)	Signal	WkDay PM	25.0	C	25.4	C	0.4	None
		WkEnd PM	24.1	C	26.8	C	2.7	None

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TABLE 11-4 (CONTINUED)
EXISTING + PROJECT + CUMULATIVE PROJECTS INTERSECTION OPERATIONS – DURING HORSE RACES

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Project + Cumulative Projects		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
9. Via De La Valle/ S. Cedros Ave	MSSC	WkDay PM	40.6	E	48.1	E	7.5	Direct
		WkEnd PM	21.4	C	22.1	C	0.7	None
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay PM	46.4	D	54.0	D	7.6	Direct
		WkEnd PM	32.2	C	35.3	D	3.1	None
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay PM	12.3	B	12.7	B	0.4	None
		WkEnd PM	10.5	B	10.8	B	0.3	None
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay PM	27.9	C	28.4	C	0.5	None
		WkEnd PM	26.8	C	27.3	C	0.5	None
13. Camino Del Mar/ 27 th St	AWSC ^f	WkDay PM	165.1	F	169.4	F	4.3	Direct
		WkEnd PM	41.7	E	43.7	E	2.0	Direct
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay PM	285.3	F	290.0	F	4.7	Direct
		WkEnd PM	112.7	F	117.2	F	4.5	Direct
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay PM	9.2	A	9.5	A	0.3	None
		WkEnd PM	8.6	A	9.5	A	0.9	None
16. Camino Del Mar/ 15 th St	Signal	WkDay PM	32.2	C	32.6	C	0.4	None
		WkEnd PM	32.6	C	33.3	C	0.7	None

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TABLE 11-4 (CONTINUED)
EXISTING + PROJECT + CUMULATIVE PROJECTS INTERSECTION OPERATIONS – DURING HORSE RACES

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Project + Cumulative Projects		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
17. Camino Del Mar/ Del Mar Heights Rd	MSSC	WkDay PM	175.7	F	176.2	F	0.5	None
		WkEnd PM	127.6	F	128.7	F	1.1	None
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay PM	28.9	C	29.6	C	0.7	None
		WkEnd PM	13.9	B	14.2	B	0.3	None
19. Via de la Valle / Solana Cir	MSSC	WkDay PM	24.1	C	25.9	D	1.8	None
		WkEnd PM	17.5	C	18.5	C	1.0	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
- e. Turn in the road. No traffic control exists.
- f. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay AM – Weekday AM
WkDay PM – Weekday PM
N/A – Not Applicable

SIGNALIZED		UNSIGNALIZED	
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 11-5
NEAR-TERM STREET SEGMENT OPERATIONS – DURING HORSE RACES (WEEKDAY)**

Street Segment	Functional Classification ^a	Capacity (LOS E)	Existing + Cumulative Projects			Existing + Cumulative Projects + Project			Δ V/C ^d	Impact Type
			ADT	LOS ^b	V/C ^c	ADT	LOS	V/C		
S. Sierra Avenue										
Del Mar Shore Ter to Beach Club Dr	Minor Collector ^g	8,000	4,480	C	0.560	4,540	C	0.568	0.008	None
Highway 101										
Lomas Santa Fe Dr to Dahlia Dr	4-In Major Arterial	37,000	19,870	B	0.537	20,070	B	0.542	0.005	None
Dahlia Dr to Via De La Valle	4-In Major Arterial	37,000	21,100	B	0.570	21,300	B	0.576	0.006	None
Camino Del Mar										
Via De La Valle to 27 th St	Comm Collector ^g	19,000	18,150	E	0.955	18,300	E	0.963	0.008	None
27 th St to Coast Blvd	Comm Collector ^g	19,000	19,750	F	1.039	19,900	F	1.047	0.008	None
Coast Blvd to Jimmy Durante Blvd	Comm Collector ^g	19,000	13,630	D	0.717	13,760	D	0.724	0.007	None
Via De La Valle										
Hwy 101 to S. Cedros Ave	Town Collector	19,000	19,300	F	1.016	20,300	F	1.068	0.052	None ^e
S. Cedros Ave to Jimmy Durante Blvd	Town Collector	19,000	24,850	F	1.308	25,820	F	1.359	0.051	None ^e
Jimmy Durante Blvd to I-5 SB Ramps	4-In Major Arterial ^f	40,000	49,090	E	0.982	50,010	F	1.000	0.018	None ^e

Footnotes:

- a. The San Diego County capacity at which the roadway currently functions.
- b. Level of Service.
- c. The Volume / Capacity ratio.
- d. Increase in V/C ratio due to the addition of project traffic.
- e. Not an impact. See text for explanation.
- f. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

TABLE 11-6
NEAR-TERM PEAK HOUR ARTERIAL ANALYSIS – DURING HORSE RACES WEEKDAY
VIA DE LA VALLE: HIGHWAY 101 TO I-5

Direction	Existing + Cumulative Projects						Existing + Cumulative Projects + Project					
	AM			PM			AM			PM		
	Time ^a	Speed ^b	LOS	Time	Speed	LOS	Time	Speed	LOS	Time	Speed	LOS
Eastbound	122.2	24.7	C	126.6	23.9	C	121.1	25.0	C	124.4	24.3	C
Westbound	144.2	21.0	D	121.7	24.8	C	123.6	24.5	C	158.2	19.1	D

Footnotes:

- a. Time in Seconds
- b. Speed in miles per hour.

12.0 ANALYSIS OF LONG-TERM SCENARIOS

12.1 Year 2035 Horizon Year Traffic Volumes

Year 2035 volumes were obtained from the Series 12 Regional model. In order to determine the Year 2035 “with Project” volumes, the assigned Project traffic volumes were added to the Year 2035 volumes. On some segments, the Year 2035 volumes were less than the Existing + Cumulative projects volumes. In those cases, the Year 2035 volumes were assumed to be 10% in excess of the Existing + Cumulative projects volumes.

The SANDAG Model outputs daily segment and peak hour volumes. However, the SANDAG Model output is not as accurate in determining peak hour intersection turn movements. Therefore, Year 2035 peak hour turning movement volumes were estimated using a template in Excel developed by LLG to determine peak hour traffic at an intersection from future (Year 2035) ADT volumes using the relationship between existing peak hour turn movements and the existing ADT volumes. This same relationship can be assumed to generally continue in the future. For example, if the segment ADT on the roadway is forecast to double by the Year 2035, it is reasonable to assume that the peak hour intersection turning movement volumes will generally double.

Figure 12–1 depicts the Year 2035 Without Project traffic volumes, while *Figure 12–2* depicts the Year 2035 With Project traffic volumes.

12.2 Year 2035 Analyses

12.2.1 Intersection Analysis

The Year 2035 analysis used existing roadway network and intersection geometry. *Table 12-1* summarizes the Year 2035 without Project peak hour intersection operations. As seen in *Table 12-1*, in the Year 2035 without project, the following study area intersections are calculated to operate at LOS E or better worse:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **I-5 SB Ramps / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue)** (LOS E during the PM peak hour)
- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS F during the AM and PM peak hours)
- **Via De La Valle / Jimmy Durante Boulevard** (LOS E during the AM and PM peak hours)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS E during the AM peak hour and LOS F during the PM peak hour)

Appendix N contains the Year 2035 without Project peak hour intersection analysis worksheets.

12.2.2 Daily Street Segment Levels of Service

Table 12-2 summarizes the Year 2035 without Project segment operations. As seen in *Table 12-2*, in the Year 2035 without project, all study area segments are calculated to currently operate at LOS D or better except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS E)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS F)

12.2.3 Freeway Mainline Segments

Table 12-3 summarizes the Year 2035 without Project Freeway Mainline segment operations. As seen in *Table 12-3*, in the Year 2035 without Project the following Freeway Mainline segments are calculated to operate at LOS E or worse:

- **I-5: Lomas Santa Fe Drive and Via De La Valle** – In the NB direction, LOS F(0) during the PM peak hour and in the SB direction, LOS F(2) during the AM peak hour and LOS F(0) during the PM peak hour
- **I-5: Via De La Valle and Del Mar Heights Road** – In the NB direction, LOS F(0) during the AM peak hour and F(2) during the PM peak hour and in the SB direction, LOS F(2) during the AM peak hour and LOS F(0) during the PM peak hour
- **I-5: Del Mar Heights Road and SR 56** – In the NB direction, LOS F(0) during the PM peak hour and in the SB direction, LOS F(0) during the AM peak hour and LOS E during the PM peak hour

12.2.4 Freeway Metered On-Ramps

Table 12-4 summarizes the Year 2035 without Project Metered On-Ramp operations using the fixed rate analysis methodology. As shown in *Table 12-4*, no delay is calculated during the AM and PM peak hours using this methodology. This is due to the fact that the ramp meter discharge rate exceeds the peak hour demand. It is widely accepted among the industry that this methodology lacks accuracy in depicting “real world” conditions and often grossly overstates the calculated queues and delays.

12.3 Year 2035 + Project

12.3.1 Intersection Analysis

Table 12-1 summarizes the Year 2035 with Project peak hour intersection operations. As seen in *Table 10-1*, in the Year 2035 with project, all study area intersections are calculated to currently operate at LOS D or better except the following:

- **Highway 101 / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **I-5 SB Ramps / Lomas Santa Fe Drive** (LOS E during the PM peak hour)
- **Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue)** (LOS E during the PM peak hour)
- **Via De La Valle / S. Cedros Avenue** (SB left-turn LOS F during the AM and PM peak hours)

- **Via De La Valle / Jimmy Durante Boulevard** (LOS E during the AM peak hour and LOS F during the PM peak hour)
- **Camino Del Mar / 27th Street** (LOS E during the PM peak hour)
- **Camino Del Mar / Coast Boulevard** (LOS F during the PM peak hour)
- **Camino Del Mar / Del Mar Heights Road** (LOS E during the AM peak hour and LOS F during the PM peak hour)

The increase in delay due to project traffic is less than the allowable 2.0 seconds at the Highway 101 / Lomas Santa Fe Drive, I-5 SB Ramps / Lomas Santa Fe Drive and the Camino Del Mar / Del Mar Heights Road intersections. Hence, significant impacts are not calculated at these intersections. However, significant impacts are calculated at the remaining five intersections.

The Year 2035 with Project peak hour intersection analysis worksheets are included in *Appendix O*.

12.3.2 Daily Street Segment Levels of Service

Table 12-2 summarizes the Year 2035 with Project segment operations. As seen in *Table 10-2*, in the Year 2035 with project, all study area segments are calculated to currently operate at LOS D or better except the following:

- **Camino Del Mar:** Via De La Valle to 27th Street (LOS E)
- **Via De La Valle:** Hwy 101 to S. Cedros Avenue (LOS F)
- **Via De La Valle:** S. Cedros Avenue to Jimmy Durante Boulevard (LOS F)
- **Via De La Valle:** Jimmy Durante Boulevard to I-5 SB Ramps (LOS F)

The increase in V/C ratio due to the project traffic is less than the allowable 0.02 for the segment of Camino Del Mar between Via De La Valle and 27th Street.

The increase in V/C on the segments along Via De La Valle indicates a potential significant impact. *Table 12-5* summarizes the peak hour arterial analysis along Via De La Valle. As seen in *Table 12-5*, the level of service based on the calculated speed along this corridor of Via De La Valle between I-5 and Highway 101 is LOS D or better. Since peak hour operations are more indicative of actual operations than ADT operations, based on the peak hour arterial analysis, no significant impact is calculated on these segments.

12.3.3 Freeway Mainline Segments

Table 12-6 summarizes the Year 2035 with Project Freeway Mainline segment operations. As seen in *Table 12-6*, in the Year 2035 with the addition of Project traffic, the following Freeway Mainline segments are calculated to operate at LOS E or worse:

- **I-5: Lomas Santa Fe Drive and Via De La Valle** – In the NB direction, LOS F(0) during the PM peak hour and in the SB direction, LOS F(2) during the AM peak hour and LOS F(0) during the PM peak hour
- **I-5: Via De La Valle and Del Mar Heights Road** – In the NB direction, LOS F(0) during the AM peak hour and F(2) during the PM peak hour and in the SB direction, LOS F(2) during the AM peak hour and LOS F(0) during the PM peak hour

- **I-5: Del Mar Heights Road and SR 56** – In the NB direction, LOS F(0) during the PM peak hour and in the SB direction, LOS F(0) during the AM peak hour and LOS E during the PM peak hour

The increase in V/C ratio due to the project traffic is less than the allowable 0.01 for segments operating at LOS E. Hence, no significant impacts are calculated.

12.3.4 Freeway Metered On-Ramps

Table 12–4 summarizes the Year 2035 with Project Metered On-Ramp operations using the fixed rate analysis methodology. As shown in *Table 12–4*, no delay is calculated during the AM and PM peak hours using this methodology. This is due to the fact that the ramp meter discharge rate exceeds the peak hour demand. It is widely accepted among the industry that this methodology lacks accuracy in depicting “real world” conditions and often grossly overstates the calculated queues and delays.

**TABLE 12-1
YEAR 2035 INTERSECTION OPERATIONS**

Intersection	Control Type	Peak Hour	Year 2035		Year 2035 + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	45.0	D	45.5	D	0.5	None
		WkDay PM	77.4	E	78.3	E	0.9	None
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay AM	32.7	C	37.1	D	4.4	None
		WkDay PM	27.8	C	37.7	D	9.9	None
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	23.3	C	23.5	C	0.2	None
		WkDay PM	57.7	E	58.5	E	0.8	None
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay AM	17.0	B	17.0	B	0.0	None
		WkDay PM	15.3	B	15.4	B	0.1	None
5. S. Sierra Ave / Dahlia Dr	AWSC ^d	WkDay AM	9.0	A	9.0	A	0.0	None
		WkDay PM	10.3	B	10.3	B	0.0	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay AM	4.0	A	4.0	A	0.0	None
		WkDay PM	2.4	A	2.4	A	0.0	None
7. Border Ave / S. Sierra Ave	^e	WkDay AM	^e	^e	12.9	B	N/A	N/A
		WkDay PM	^e	^e	16.5	C	N/A	N/A
8. Hwy 101 (Border Ave) / Via De La Valle (Camino Del Mar)	Signal	WkDay AM	17.6	B	19.1	B	1.5	None
		WkDay PM	60.6	E	63.9	E	3.3	Cumulative

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TABLE 12-1 (CONTINUED)
YEAR 2035 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2035		Year 2035 + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay ^a	LOS ^b		
9. Via De La Valle/ S. Cedros Ave	MSSC ^f	WkDay AM	50.4	F	58.7	F	8.3	Cumulative
		WkDay PM	130.2	F	159.1	F	28.9	Cumulative
10. Via De La Valle/ Jimmy Durante Blvd	Signal	WkDay AM	59.5	E	62.0	E	2.5	Cumulative
		WkDay PM	75.9	E	79.2	E	3.3	Cumulative
11. Via De La Valle / I-5 SB Ramps	Signal	WkDay AM	12.9	B	13.5	B	0.6	None
		WkDay PM	12.9	B	13.4	B	0.5	None
12. Via De La Valle / I-5 NB Ramps	Signal	WkDay AM	27.7	C	28.1	C	0.4	None
		WkDay PM	33.5	C	34.6	C	1.1	None
13. Camino Del Mar/ 27 th St	AWSC	WkDay AM	20.3	C	20.8	C	0.5	None
		WkDay PM	45.5	E	47.8	E	2.3	Cumulative
14. Camino Del Mar/ Coast Blvd	AWSC	WkDay AM	20.1	C	20.8	C	0.7	None
		WkDay PM	103.5	F	107.4	F	3.9	Cumulative
15. Camino Del Mar/ L'Auberge Del Mar	Signal	WkDay AM	6.7	A	6.7	A	0.0	None
		WkDay PM	11.5	B	11.5	B	0.0	None
16. Camino Del Mar/ 15 th St	Signal	WkDay AM	22.5	C	22.6	C	0.1	None
		WkDay PM	34.5	C	34.9	C	0.4	None

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TABLE 12-1 (CONTINUED)
YEAR 2035 INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Year 2035		Year 2035 + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay ^a	LOS ^b		
17. Camino Del Mar/ Del Mar Heights Rd	Signal	WkDay AM	67.7	E	68.7	E	1.0	None
		WkDay PM	193.0	F	194.0	F	1.0	None
18. Camino Del Mar/ Carmel Valley Rd	Signal	WkDay AM	32.2	C	33.0	C	0.8	None
		WkDay PM	33.0	C	33.9	C	0.9	None
19. Via de la Valle / Solana Circ	MSSC	WkDay AM	26.6	D	28.1	D	1.5	None
		WkDay PM	26.6	D	28.4	D	1.8	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. AWSC – All-Way Stop Controlled intersection. Minor street left turn delay is reported.
- e. Turn in the road. No traffic control exists.
- f. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay AM – Weekday AM

WkDay PM – Weekday PM

N/A – Not Applicable

SIGNALIZED		UNSIGNALIZED	
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 12-2
LONG-TERM STREET SEGMENT OPERATIONS**

Street Segment	Functional Classification	Capacity (LOS E)	Year 2035 No Project			Year 2035 + Project			Δ V/C ^d	Impact Type
			ADT	LOS ^b	V/C ^c	ADT	LOS	V/C		
S. Sierra Avenue										
Del Mar Shore Ter to Beach Club Dr	Minor Collector	8,000	3,900	B	0.488	3,960	B	0.495	0.007	None
Highway 101										
Lomas Santa Fe Dr to Dahlia Dr	4-ln Major Arterial	37,000	22,500	B	0.608	22,700	B	0.614	0.006	None
Dahlia Dr to Via De La Valle	4-ln Major Arterial	37,000	26,600	C	0.719	26,800	C	0.724	0.005	None
Camino Del Mar										
Via De La Valle to 27th St	Comm Collector	19,000	18,200	E	0.958	18,350	E	0.966	0.008	None
27 th St to Coast Blvd	Comm Collector	19,000	13,400	C	0.705	13,550	D	0.713	0.008	None
Coast Blvd to Jimmy Durante Blvd	Comm Collector	19,000	10,100	B	0.532	10,230	B	0.538	0.006	None
Via De La Valle										
Hwy 101 to S. Cedros Ave	Town Collector	19,000	19,000	E	1.000	20,000	F	1.053	0.053	None ^e
S. Cedros Ave to Jimmy Durante Blvd	Town Collector	19,000	21,700	F	1.142	22,670	F	1.193	0.051	None ^e
Jimmy Durante Blvd to I-5 SB Ramps	4-ln Major Arterial ^f	50,000	52,900	F	1.058	53,820	F	1.076	0.018	None ^e

Footnotes:

- a. The San Diego County capacity at which the roadway currently functions.
- b. Level of Service.
- c. The Volume / Capacity ratio.
- d. Increase in V/C ratio due to the addition of project traffic.
- e. Not an impact. See text for explanation.
- f. A third eastbound through lane is provided along this segment, which merges into the I-5 SB on-ramp. Hence the capacity of an additional lane is assumed.

TABLE 12-3
YEAR 2035 WITHOUT PROJECT FREEWAY MAINLINE SEGMENT OPERATIONS

Freeway Segment	Dir.	# of Lanes	Hourly Cap ^a	AADT ^b	K Factor		D Factor		Truck Factor ^c	Peak Hour Volume ^d		V/C ^e		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 5															
Lomas Santa Fe Dr to Via De La Valle	NB	5ML + 1Aux+ 2 HOV	12,000	307,200	0.0752	0.0798	0.4446	0.5476	0.9309	11,033	14,421	0.919	1.202	D	F(0)
	SB	4ML + 1Aux + 2 HOV	10,200		0.0752	0.0798	0.5554	0.4524		13,783	11,914	1.351	1.168	F(2)	F(0)
Via De La Valle to Del Mar Heights Rd	NB	5ML + 1HOV	10,000	301,100	0.0752	0.0798	0.4446	0.5476	0.9309	10,814	14,134	1.081	1.413	F(0)	F(2)
	SB	5ML + 1HOV	10,000		0.0752	0.0798	0.5554	0.4524		13,509	11,677	1.351	1.168	F(2)	F(0)
Del Mar Heights Rd to SR 56	NB	5ML + 1Aux+2HOV	12,000	306,400	0.0752	0.0798	0.4446	0.5476	0.9309	11,005	14,383	0.917	1.199	D	F(0)
	SB	5ML + 1Aux+2HOV	12,000		0.0752	0.0798	0.5554	0.4524		13,747	11,883	1.146	0.990	F(0)	E

Footnotes:

- Capacity calculated at 1800 vph per lane and 1000 vph per Auxiliary lane and HOV lane
- Year 2035 without Project traffic from Series 12 2035 volumes from SANDAG.
- Truck Factor from "2016 Annual Average Daily Truck Traffic on the California State Highway System".
- Peak Hour Volumes factored using Passenger Car Equivalent for trucks.
- V/C = (Peak Hour volume/Truck Factor/Capacity)

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 12-4
LONG-TERM METERED RAMPS OPERATIONS

Location/Condition		Peak Hour Flow (F) (veh/hr/ln) ^a	Calculated (Most Restrictive)			
			Discharge Rate ^b (veh/hr/ln)	Excess Demand E (veh/hr/ln)	Delay (min/ln)	Queue
EB Via De La Valle to SB I-5						
1 SOV + 1 HOV						
AM						
SOV						
	Year 2035	978	996	0	0	0
	Project	16				
	Year 2035 + Project	994	996	0	0	0
HOV ^b						
	Year 2035	173	996	0	0	0
	Project	3				
	Year 2035 + Project	175	996	0	0	0
PM						
SOV						
	Year 2035	927	996	0	0	0
	Project	20				
	Year 2035 + Project	947	996	0	0	0
HOV ^b						
	Year 2035	164	498	0	0	0
	Project	4				
	Year 2035 + Project	167	498	0	0	0
EB Via De La Valle to NB I-5						
2 SOV						
PM						
SOV						
	Year 2035	250	372	0	0	0
	Project	12				
	Year 2035 + Project	2621	372	0	0	0

Footnotes:

- Existing volumes - Average of volumes from March through April 2017, from PeMS.
- Discharge rates obtained from Caltrans (*Appendix A*).
- A 15% Reduction in volume is applied to the volume in SOV lanes due to HOV lane

General Notes:

SOV – Single Occupancy Vehicle Lane
HOV – High Occupancy Vehicle Lane

TABLE 12-5
VIA DE LA VALLE YEAR 2035 + PROJECT PEAK HOUR ARTERIAL ANALYSIS – TYPICAL WEEKDAY

Direction	Year 2035						Year 2035+ Project ^c					
	AM			PM			AM			PM		
	Time ^a	Speed ^b	LOS	Time	Speed	LOS	Time	Speed	LOS	Time	Speed	LOS
Eastbound	148.1	20.4	D	138.8	21.8	D	137.3	18.6	D	117.9	21.7	D
Westbound	136.4	22.2	C	159.9	18.9	D	82.7	30.9	B	89.3	28.6	B

Footnotes:

- a. Time in seconds.
- b. Speed in miles per hour
- c. Includes recommended improvements.

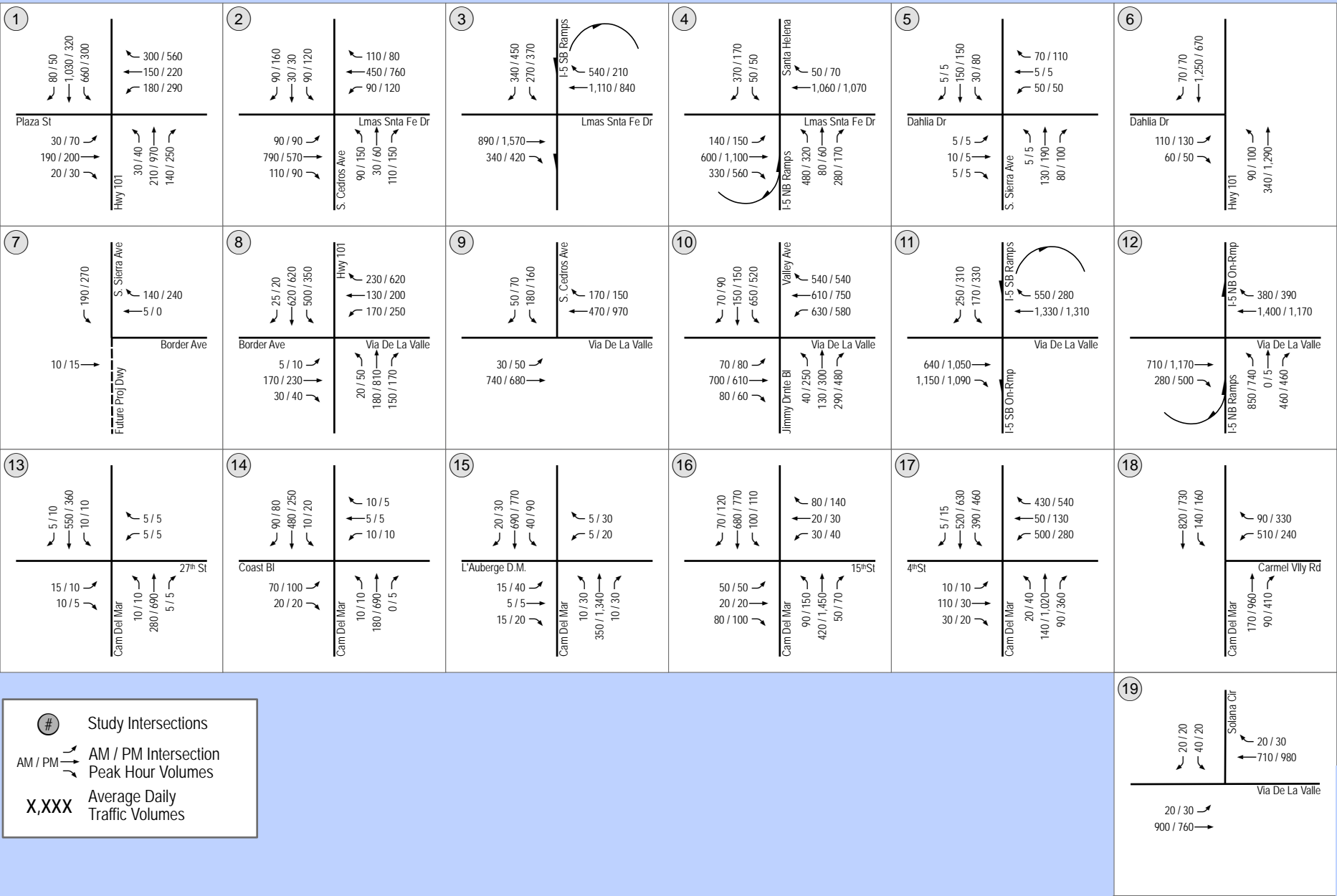
TABLE 12-6
YEAR 2035 + PROJECT FREEWAY MAINLINE SEGMENT OPERATIONS

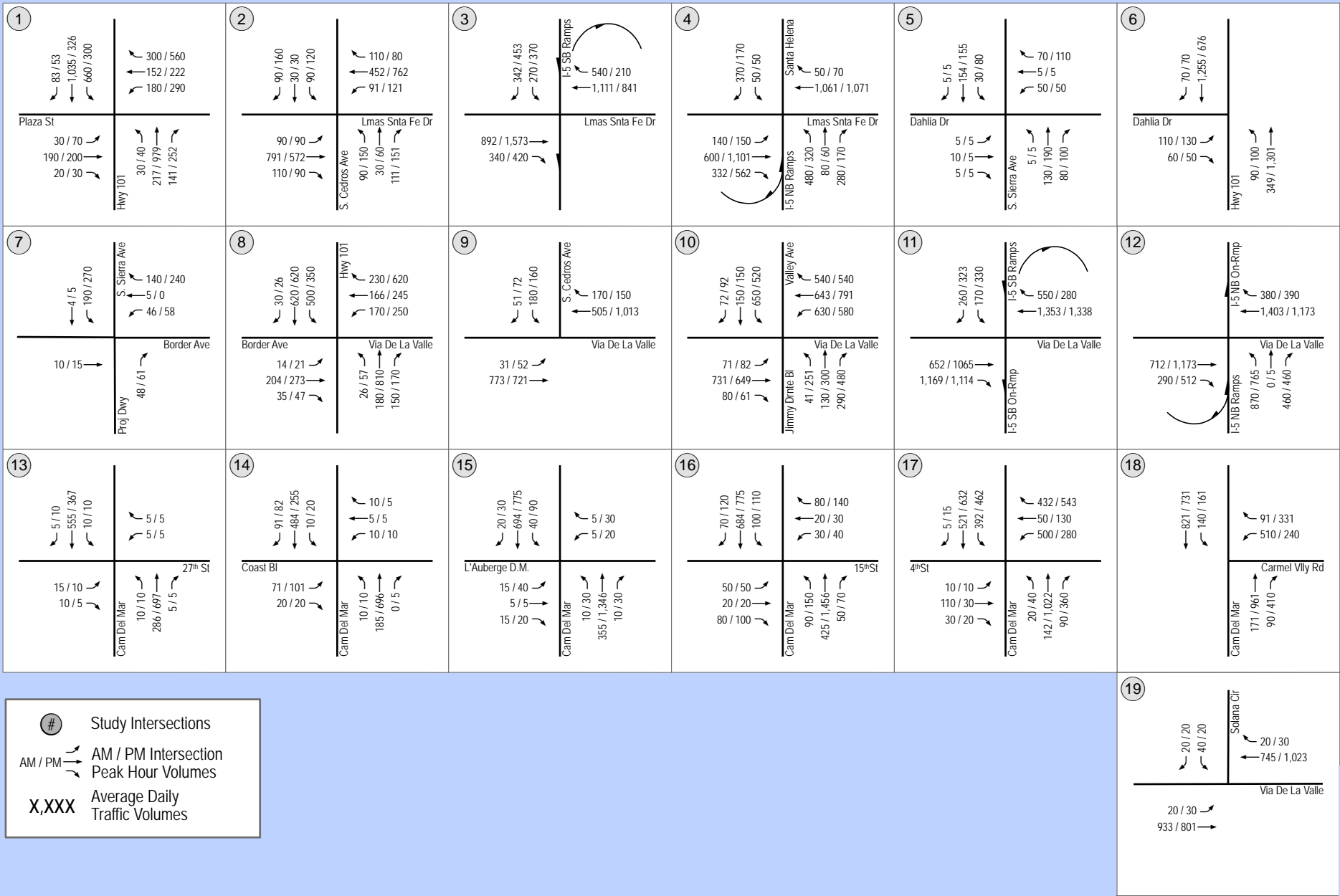
Freeway Segment	Dir	# of Lanes	Hourly Cap ^a	AADT	Peak Hour Traffic						V/C ^h				LOS		Δ V/C	
					Year 2035 ^b		Project ^c		Year 2035 + Project		Year 2035		Year 2035 + Project					
					AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 5																		
Lomas Santa Fe Drive to Via De La Valle	NB	5ML + 1Aux+ 2 HOV	12,000	307,960	11,033	14,421	10	12	11,043	14,433	0.919	1.202	0.920	1.203	D	F(0)	0.001	0.001
	SB	4ML + 1Aux + 2 HOV	10,200		13,783	11,914	10	13	13,793	11,927	1.351	1.168	1.352	1.169	F(2)	F(0)	0.001	0.001
Via De La Valle to Del Mar Heights Road	NB	5ML + 1HOV	10,000	302,360	10,814	14,134	20	25	10,834	14,159	1.081	1.413	1.083	1.416	F(0)	F(2)	0.002	0.002
	SB	5ML + 1HOV	10,000		13,509	11,677	19	24	13,528	11,701	1.351	1.168	1.353	1.170	F(2)	F(0)	0.002	0.002
Del Mar Heights Road to SR 56	NB	5ML + 1Aux+2HOV	12,000	307,660	11,005	14,383	20	25	11,025	14,408	0.917	1.199	0.919	1.201	D	F(0)	0.002	0.002
	SB	5ML + 1Aux+2HOV	12,000		13,747	11,883	19	24	13,766	11,907	1.146	0.990	1.147	0.992	F(0)	E	0.002	0.002

Footnotes:

- Capacity calculated at 1800 vph per lane and 1000 vph per Auxiliary lane as explained in the text.
- Existing Average Annual Daily Traffic Volumes from Caltrans PeMS June 2017).
- V/C = (Peak Hour volume/Truck Factor/Capacity)
- Project traffic at the ramps.

LOS	v/c
A	<0.41
B	0.62
C	0.8
D	0.92
E	1.00
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46





13.0 ALTERNATE PROJECT TRAFFIC ASSIGNMENT

An alternate analysis was conducted at the intersection along Lomas Santa Fe Drive during the Fair and the Horse Races to address a potentially higher percentage of Project traffic using Lomas Santa Fe Drive to access the site instead of Via de la Valle. The SANDAG model forecasted 5% of Project traffic using Lomas Santa Fe Drive during typical times of the year. In order to estimate the amount of traffic that would utilize Lomas Santa Fe Drive due to the Fair and Horse Races, the existing Fair, Horse Races and non-event volumes in the following key movements were compared, at the Highway 101 / Lomas Santa Fe Drive:

- Total entering volumes in the AM and PM peak hour
- Westbound left-turn, Northbound right-turn, Southbound left-turn and Westbound Right-turn volumes in the AM and PM peak hour.

It was determined that the volumes during the fair and the horse races are not always higher than the typical weekday or weekend volumes. In some movements, the volumes were found to decrease. The average increase varied between 9% and 21% over the Typical Weekday. The SANDAG SZA analysis conducted for a typical weekday indicated that 5% of the project traffic would utilize Lomas Santa Fe Drive. Even though the comparison of volumes discussed above showed a maximum increase of 21% over the Typical Weekday, for a conservative analysis, it was assumed that the project traffic using Lomas Santa Fe Drive would double (not increase by 21%) during the Fair and Horse Races.

13.1 During the Fair

13.1.1 Existing + Project

As mentioned previously, Existing traffic volume data was collected for only two intersections in the City of Solana Beach during the Fair. Therefore, analysis was conducted only at two intersections during the Fair. **Table 13-1** summarizes the Levels of service with the addition of Project traffic during the Fair, assuming a 100% increase in Project traffic on Lomas Santa Fe Drive. Only the intersections affected by the reassignment of project traffic are included in this table. As seen in **Table 13-1**, with the addition of Cumulative projects traffic, the two intersections are calculated to operate at LOS D or better.

Appendix P-1 contains the peak hour intersection analysis worksheets for the Existing + Project scenario with the Fair.

13.1.2 Existing + Cumulative Projects

Table 13-1 summarizes the Levels of service with the addition of Cumulative Projects traffic during the Fair. As seen in **Table 13-1**, with the addition of Cumulative Projects traffic, the two intersections are calculated to operate at LOS D or better.

Appendix P-2 contains the peak hour intersection analysis worksheets for the Existing + Cumulative Projects.

TABLE 13-1
NEAR-TERM INTERSECTION OPERATIONS WITH ALTERNATE PROJECT DISTRIBUTION – DURING FAIR

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	31.7	C	31.9	C	0.2	None
		WkDay PM	48.6	D	49.2	D	0.6	None
		WkEnd PM	40.5	D	44.3	D	3.8	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay AM	6.9	A	6.9	A	0.0	None
		WkDay PM	8.2	A	8.2	A	0.0	None
		WkEnd PM	6.5	A	6.5	A	0.0	None
Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Project + Cumulative Projects		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay AM	32.2	C	32.4	C	0.2	None
		WkDay PM	52.3	D	53.0	D	1.4	None
		WkEnd PM	49.5	D	50.0	D	0.5	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay AM	10.1	B	10.1	B	0.0	None
		WkDay PM	14.6	B	14.7	B	0.1	None
		WkEnd PM	12.6	B	12.6	B	0.0	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Increase in delay due to the Project.

General Notes:

WkDay AM – Weekday AM
WkDay PM – Weekday PM
WkEnd PM – Weekend PM

SIGNALIZED

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

13.1.3 Existing + Project + Cumulative Projects

Table 13-1 summarizes the Levels of service with the addition of Cumulative Projects and Project traffic during the Fair. As seen in *Table 13-1*, with the addition of Project traffic, the two intersections are calculated to operate at LOS D or better. *Appendix P-3* contains the peak hour intersection analysis worksheets for the Existing + Project + Cumulative Projects scenarios with the Fair.

13.2 During the Horse Races

13.2.1 Existing + Project

Table 13-2 summarizes the Levels of service with the addition of Project traffic during Horse Races, assuming a 100% increase in Project traffic on Lomas Santa Fe Drive. As seen in *Table 13-2*, with the addition of Project traffic, the Highway 101 / Lomas Santa Fe Drive intersection is calculated to operate at LOS E during the AM and PM peak hours. However, the increase in delay due to the project traffic is less than the allowable 2.0 seconds. Hence, the Project does not have a significant direct impact at this intersection. *Appendix Q-1* contains the peak hour intersection analysis worksheets for the Existing + Project scenario with Horse Races.

13.2.2 Existing + Cumulative Projects

Table 13-3 summarizes the Levels of service with the addition of Cumulative Projects traffic during Horse Races. As seen in *Table 13-3*, with the addition of Cumulative Projects traffic, the Highway 101 / Lomas Santa Fe Drive intersection is calculated to operate at LOS E during the AM and PM peak hours. *Appendix Q-2* contains the peak hour intersection analysis worksheets for the Existing + Cumulative Projects

13.2.3 Existing + Project + Cumulative Projects

Table 13-3 summarizes the Levels of service with the addition of Project and Cumulative Projects traffic during Horse Races. As seen in *Table 13-3*, with the addition of Cumulative Projects and Project traffic, the Highway 101 / Lomas Santa Fe Drive intersection is calculated to operate at LOS E during the AM and PM peak hours. However, the increase in delay due to the project traffic is less than the allowable 2.0 seconds. Hence, the Project does not have a significant direct impact at this intersection. *Appendix Q-3* contains the peak hour intersection analysis worksheets for the Existing + Project + Cumulative Projects scenarios with Horse Races.

13.3 Conclusions

From the above analyses, it is concluded that assuming a higher percentage of Project traffic would utilize Lomas Santa Fe Drive as an alternate route during the Fair and Horse Races, the Project would not have a significant direct or cumulative impact on the intersections along Lomas Santa Fe / in the City of Solana Beach.

TABLE 13-2
EXISTING + PROJECT INTERSECTION OPERATIONS – DURING HORSE RACES

Intersection	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay PM	61.0	E	61.7	E	0.7	None
		WkEnd PM	68.1	E	68.5	E	0.4	None
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay PM	20.7	C	20.7	C	0.0	None
		WkEnd PM	21.7	C	21.7	C	0.0	None
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	20.6	C	21.6	C	1.0	None
		WkEnd PM	14.7	B	15.0	B	0.3	None
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	14.3	B	14.3	B	0.0	None
		WkEnd PM	12.5	B	12.5	B	0.0	None
5. S. Sierra Ave / Dahlia Dr	MSSC ^d	WkDay PM	8.1	A	8.1	A	0.0	None
		WkEnd PM	13.6	B	13.9	B	0.3	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay PM	5.8	A	7.5	A	1.7	None
		WkEnd PM	6.5	A	6.5	A	0.0	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay PM – Weekday PM
WkEnd PM – Weekend Peak

SIGNALIZED		UNSIGNALIZED	
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 13-3
EXISTING + PROJECT + CUMULATIVE PROJECTS INTERSECTION OPERATIONS – DURING HORSE RACES

Intersection	Control Type	Peak Hour	Existing + Cumulative Projects		Existing + Project + Cumulative Projects		Δ Delay ^c	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
1. Hwy 101 / Lomas Santa Fe Dr	Signal	WkDay PM	68.1	E	69.0	E	0.9	None
		WkEnd PM	74.2	E	74.5	E	0.3	None
2. Cedros Avenue / Lomas Santa Fe Dr	Signal	WkDay PM	21.1	C	21.1	C	0.0	None
		WkEnd PM	22.1	C	22.1	C	0.0	None
3. I-5 SB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	22.5	C	24.5	C	2.0	None
		WkEnd PM	15.8	B	15.9	B	0.1	None
4. I-5 NB Ramps / Lomas Santa Fe Dr	Signal	WkDay PM	15.0	B	15.0	B	0.0	None
		WkEnd PM	12.7	B	12.7	B	0.0	None
5. S. Sierra Ave / Dahlia Dr	MSSC ^d	WkDay PM	8.2	A	8.3	A	0.1	None
		WkEnd PM	12.3	B	14.3	B	2.0	None
6. Hwy 101 / Dahlia Dr	Signal	WkDay PM	10.7	B	12.4	B	1.7	None
		WkEnd PM	12.1	B	12.5	B	0.4	None

Footnotes:

- a. Average delay expressed in seconds per vehicle.
- b. Level of Service.
- c. Increase in delay due to the Project.
- d. MSSC – Minor Street Stop Controlled intersection. Minor street left turn delay is reported.

General Notes:

WkDay PM – Weekday PM
WkEnd PM – Weekend PM

SIGNALIZED		UNSIGNALIZED	
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

14.0 LOMAS SANTA FE DRIVE CORRIDOR STUDY

The City of Solana Beach is currently conducting a study to identify transportation issues and proposals along Lomas Santa Fe Drive from Highway 101 to Highland Drive. The analysis of this corridor has been divided into the following three sections:

- The western section from Highway 101 to Solana Hills Drive
- Caltrans Improvements from I-5 SB ramps to I-5 NB Ramps, and
- The Eastern Corridor from I-5 NB Ramps (Santa Helena) to Highland Drive

The purpose of the Lomas Santa Fe Drive Corridor Study is to identify ideas for improving driving, walking, and biking in Solana Beach. This project consists of four phases as outlined below. Currently, Phases I & II of this process have been completed.

- Phase I
 - Research
 - Fact Finding
 - Initial Recommendations
- Phase II
 - Feasibility Analysis
 - Preliminary Engineering
 - Cost Estimating
- Phase III
 - Environmental Review
 - 30% Design
 - Permitting
 - Project Funding
- Phase IV
 - Final Engineering
 - Construction

Further information regarding the Lomas Santa Fe Drive Corridor Study project is included in ***Appendix R-1***.

One of the ideas to improve traffic operations on this corridor is the modification of the existing intersection geometry at the Highway 101 / Lomas Santa Fe Drive intersection, by eliminating one westbound through lane. Since this intersection is within the study area of the Marisol Project. This section examines the effect of this modification.

14.1 Near-Term Analysis

Table 14-1 summarizes the results of the Near-Term peak hour intersection analysis for several scenarios assuming the Lomas Santa Fe Drive Corridor improvement at this intersection is implemented. As seen in *Table 14-1*, in the near-term, with the addition of Project traffic, under all scenarios, the increase due to Project traffic is less than the allowable threshold, of 2.0 seconds, if the intersection is operating at LOS E or worse. In other scenarios, the intersection is calculated to operate at LOS D or better. Therefore, there is no impact due to the Project at this intersection.

The Near-Term peak hour intersection analysis worksheets are included in *Appendix R-2*.

14.2 Long-Term Analysis

Table 14-2 summarizes the results of the Long-Term peak hour intersection analysis for several scenarios assuming the Lomas Santa Fe Drive Corridor improvement at this intersection is implemented. As seen in *Table 14-2*, with the addition of Project traffic, the subject intersection is calculated to operate at LOS F with a delay increase of less than 2.0 seconds. Thus, the Project would not have a significant cumulative impact.

The Long-Term peak hour intersection analysis worksheets are included in *Appendix R-3*.

TABLE 14-1
LOMAS SANTA FE DRIVE CORRIDOR STUDY
NEAR-TERM INTERSECTION OPERATIONS AT THE HIGHWAY 101 / LOMAS SANTA FE DRIVE INTERSECTION

Scenario	Control Type	Peak Hour	Existing		Existing + Project		Δ Delay	Impact Type	Near-Term		Near-Term + Project		Δ Delay	Impact Type
			Delay ^a	LOS ^b	Delay	LOS			Delay	LOS	Delay	LOS		
Typical Weekday / Weekend	Signal	WkDay AM	33.7	D	33.9	D	0.2	None	35.2	D	35.5	D	0.3	None
		WkDay PM	49.9	D	50.5	D	0.6	None	55.4	E	55.9	E	0.5	None
		WkEnd PM	57.5	E	57.9	E	0.4	None	59.1	E	59.5	E	0.4	None
Weekday /Weekend During Fair	Signal	WkDay AM	33.0	C	33.1	C	0.1	None	33.5	C	33.6	C	0.1	None
		WkDay PM	53.4	D	53.8	D	0.4	None	57.2	E	57.8	E	0.6	None
		WkEnd PM	43.8	D	44.1	D	0.3	None	49.7	D	50.1	D	0.4	None
Weekday /Weekend During Horse Races	Signal	WkDay AM	56.8	E	57.3	E	0.5	None	61.3	E	61.7	E	0.4	None
		WkEnd PM	54.3	E	54.8	E	0.5	None	58.7	E	59.3	E	0.6	None

Footnotes:

- a. Delay in seconds per vehicle.
- b. Level of Service
- c. Not a significant impact since the increase in delay due to the project is less than the significance threshold.

TABLE 14-2
LOMAS SANTA FE DRIVE CORRIDOR STUDY
LONG-TERM INTERSECTION OPERATIONS AT THE HIGHWAY 101 / LOMAS SANTA FE DRIVE INTERSECTION

Scenario	Control Type	Peak Hour	Year 2035		Year 2035 + Project		Δ Delay	Impact Type
			Delay ^a	LOS ^b	Delay	LOS		
Long-Term	Signal	AM	49.0	D	49.5	D	0.5	None
		PM	91.0	F	92.1	F	1.1	None

Footnotes:

- a. Delay in seconds per vehicle.
- b. Level of Service
- c. Not a significant impact since the increase in delay due to the project is less than the significance threshold.

15.0 ACCESS

The only access to the project is proposed via Border Avenue, just east of S. Sierra Avenue. Raised medians would be provided on Border Avenue and S. Sierra Avenue at the Project entrance. This configuration would allow inbound left from Border Avenue, prohibit outbound project traffic from using Sierra Avenue and prohibit U-turns on Sierra Avenue southbound to northbound.

Figure 15–1 depicts the recommended median treatment at the Project driveway.



Figure 15-1

Recommended Access Configuration



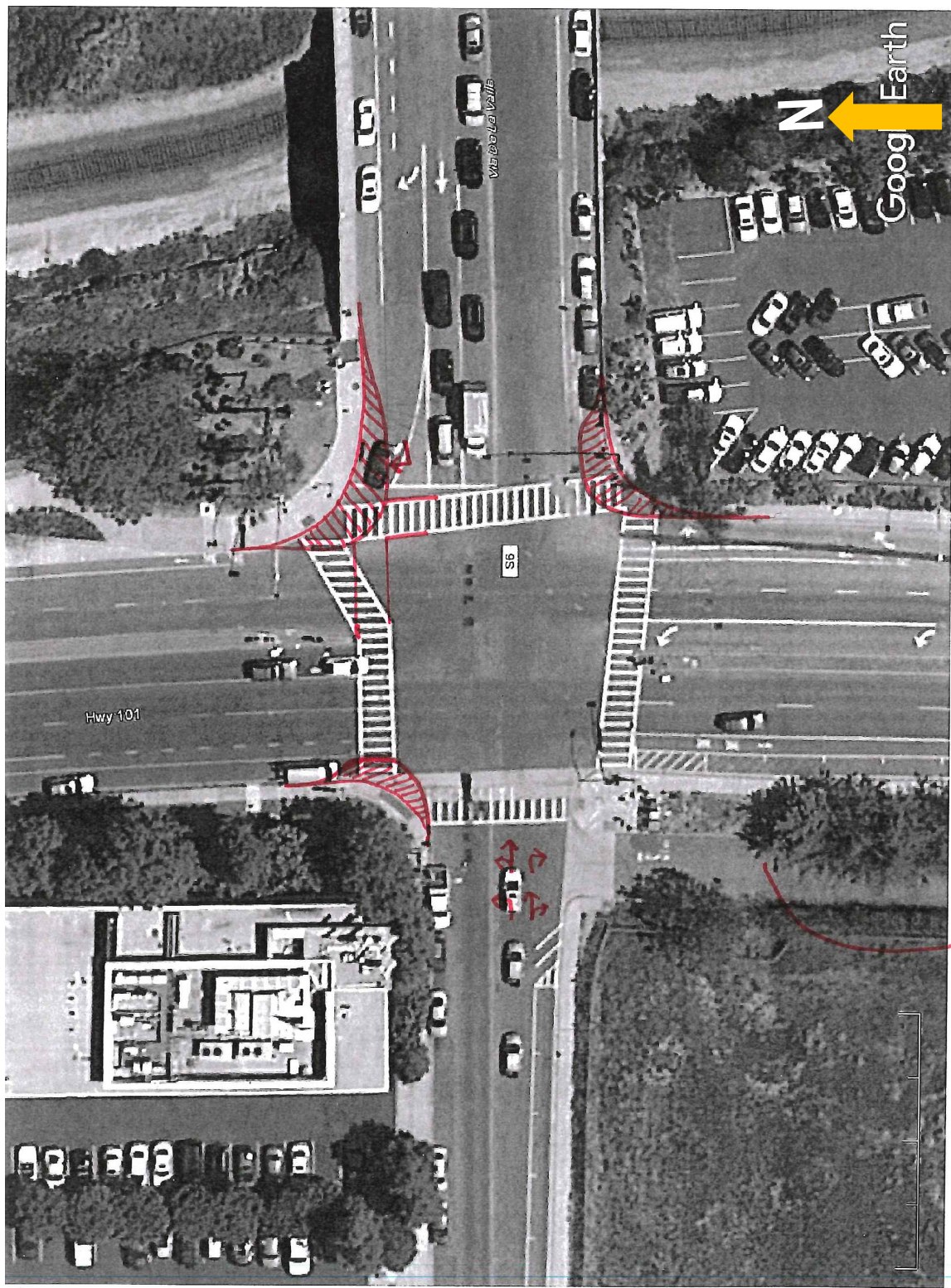
16.0 PEDESTRIAN ASSESSMENT

16.1 Pedestrian Improvements

The following pedestrian improvements / enhancements are recommended for consideration at the Via De La Valle / Highway 101 / Border intersection:

- Replace permissive phasing with protected or split phasing and increase the cycle length to provide additional crossing time for pedestrians. This is better for pedestrians as they can cross during a protected phase.
- Installing an Accessible Pedestrian Signal (APS)
- Evaluate walk timings to ensure long enough walk time for all pedestrians
- Evaluate and provide pedestrian / vehicle lag time.
- Provide bulb-outs (see aerial photo below) and other pedestrian improvements

The photo on the next page depicts these recommendations.



17.0 TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation Demand Management (TDM) Measures have been addressed in a separate report entitled *Marisol Transportation Demand Management Plan* dated November 12, 2019 and is included in **Appendix S**. With the implementation of the recommended TDM plan, the Project generated trips will reduce by 12.2% during the weekday and 11.7% during the weekend. This equates to 172 fewer weekday Project trips and 193 fewer weekend Project trips.

18.0 CONSTRUCTION

18.1 Purpose

Following is a brief description of the construction traffic activities and schedule.

18.2 Schedule

The planned duration of construction is about 20 months, which includes 11 months of actual building construction. Several of the construction activities will overlap and hence, the duration of the construction is not expected to exceed 20 months.

18.3 Passenger Car Equivalency

Much of the traffic generated during construction consists of large trucks. The traffic performance of these heavy vehicles is significantly different from that of automobiles. The differences relate to vehicle acceleration and deceleration characteristics, as reflected in their weight-to-power ratios and lengths. Two categories of heavy vehicles are defined: single-unit trucks (SUTs) and tractor trailers (TTs). Buses and recreational vehicles are treated as SUTs in the HCM. Chapter 3, Modal Characteristics, provides a more detailed discussion of the types of heavy vehicles and compares the HCM and Federal Highway Administration (FHWA) vehicle classification schemes. FHWA Classifications 4 and 5 are treated as SUTs by the HCM, while FHWA Classifications 6 and higher are considered as TTs.

Two distinct methodologies are offered to assess the effect of heavy vehicles on capacity and LOS on freeways in the HCM:

1. Traditional passenger car equivalency (PCE) factors that allow the analyst to convert a mixed stream of cars and trucks to a single uniform PCE stream for purpose of analysis; and,
2. A mixed-flow model that directly assesses the capacity, speed, and density of traffic streams that include a significant percentage of heavy vehicles operating on a single or composite grade.

Per *Exhibit 12-25* PCEs for General Terrain Segments, Highway Capacity Manual (HCM) Version 6.0, the PCE for trucks is 2.0 for flat terrain. Based on the above discussion, a passenger car equivalency of 2.0 is applied to the truck trips to account for the reduction in capacity and the increase in density.

18.4 Construction Phase Generating the Highest Traffic

Table 18-1 summarizes the schedule for the various construction activities. The activities for each construction phase were reviewed. Two Phases, Grading and Building construction are estimated to generate the most traffic.

18.4.1 Grading Phase Traffic

The Grading Phase is estimated to generate a total of 692 daily trips. This comprises 334 daily Heavy Heavy Duty Truck (HHDT) trips. Applying the PCE factor, the total daily trips due to the construction

trips is 668. It is estimated that there will be 20 daily worker trips and 4 daily vendor trips, for a total of 692 daily trips during the Grading Phase.

18.4.2 Building Construction Phase Traffic

The Building Construction Phase is estimated to generate a total of 400 daily trips. It is estimated that there will be 300 daily worker trips (150 workers entering and leaving) and 100 daily vendor trips, for a total of 400 daily trips during the Building Construction Phase. Construction traffic during the remaining construction phases are estimated to be less than 64 ADT.

18.5 Haul Routes

Construction vehicles are recommended to utilize the I-5 to Via de la Valle access route.

18.6 Maximum Construction Traffic

As seen in *Table 18-1*, the maximum traffic generated during construction is 692 ADT during the Grading Phase of 1 month. Also, during the Building Construction Phase, the maximum traffic generated is 400 ADT trips over a period of 11 months.

This could be considered the “worst-case” traffic generated by construction traffic. It is assumed that all construction workers drive individually to the project site. No reduction due to carpooling or transit is assumed.

As seen above, the construction traffic is far less than the traffic generated by the post construction day-to-day project operations (1,408 during the weekday and 1,650 during the weekend). It is recommended that a construction traffic management plan be implemented to ensure the majority of construction trips would occur off-peak and that construction traffic utilize the I-5 travel route. Traffic control plans should also be implemented to ensure construction traffic moves safely to and from the Project site.

TABLE 18–1
ESTIMATED DURING CONSTRUCTION TRIP GENERATION

Phase Name	Phase Duration		Approximate Number of Working Days ^a	Truck Trips				Worker Trips		Vendor Trips		Total Daily Trips
				Number of Trucks	Total Truck Trips ^{b, c}	Daily Trips		Daily Round Trips ^b	Total Daily Trips	Daily Round Trips ^b	Total Daily Trips	
						Trucks	With PCE ^d					
Site Preparation and Demolition	0.5	Month	15	20	40	3	6	9	18	2	4	28
Grading	1	Months	30	5,000	10,000	334	668	10	20	2	4	692
Building Construction	11	Months	330	-	0	0	0	150	300	50	100	400
Paving	11	Months	330	-	0	0	0	10	20	2	4	24
Architectural Coating	0.75	Months	23	-	0	0	0	30	60	2	4	64

Footnotes:

- a. Working Days include Monday through Friday.
- b. Each trip represents one round trip to and from the site.
- c. Truck trips are associated with import/export activities. The assumed capacity of each truck is 16 cubic yards.
- d. Per Exhibit 12-25 PCEs for General Terrain Segments, Highway Capacity Manual (HCM) Version 6.0, the PCE for trucks is 2.0 for flat terrain (I-15).

19.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

19.1 Significance of Impacts

Based on the established significance criteria, the analyses of the study area intersections, segments, freeway mainline segments and metered ramps, the following direct and cumulative impacts are determined.

19.1.1 *Direct and Cumulative impacts*

Intersections:

- Via De La Valle / Cedros Avenue
- Via De La Valle / Jimmy Durante Boulevard
- Camino Del Mar / 27th Street
- Camino Del Mar / Coast Boulevard

Segments:

- Via De La Valle between Highway 101 and I-5 During Fair

Freeway Mainline Segments:

No significant direct impacts were calculated on any study area freeway mainline segments.

Metered On-Ramps

No significant direct impacts were calculated on any study area metered on-ramps.

19.1.2 *Cumulative Only Impacts*

Intersections:

- Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue)

Segments:

No significant impacts were calculated on any study area segments.

Freeway Mainline Segments:

No significant impacts were calculated on any study area freeway mainline segments.

Metered On-Ramps

No significant impacts were calculated on any study area metered on-ramps.

19.2 Mitigation Measures

19.2.1 Direct and Cumulative Impacts

Intersections:

▪ **Via De La Valle / Cedros Avenue**

Install a traffic signal at the Via De La Valle / Cedros Avenue intersection and hardwire coordinate the signal with the Highway 101 / Via de la Valle intersection. If a signal is installed at this intersection, the significant direct impact will be mitigated to a level below significance.

A peak hour signal warrant analysis was conducted and is included in Section 19.4. With the addition of Project traffic, the peak hour signal warrant is satisfied during the PM peak hour at this intersection.

The following optional mitigation measures were also considered:

1. Install a roundabout control at this intersection. This option was rejected since it would be too close to the Highway 101 / Via de la Valle intersection.
2. Prohibit the southbound left-turn movement on Cedros Avenue. This option was rejected since westbound to eastbound U-turns are not possible on Via de la Valle at Highway 101.

▪ **Via De La Valle / Jimmy Durante Boulevard**

Figure 19-1 depicts the modified striping at this intersection providing the exclusive westbound right-turn lane. As shown on *Figure 19-1*, provide an exclusive westbound right-turn lane at the Via De La Valle / Jimmy Durante Boulevard intersection and a bike lane on westbound Via de la Valle between the right turn lane and the through lane, east of Jimmy Durante Boulevard. With this improvement, the significant direct impact will be mitigated to a level below significance.

▪ **Camino Del Mar / 27th Street**

Five (5) optional mitigation measures were evaluated at this intersection. As explained in Section 19.3.1, only the first four options will mitigate the impact.

1. Install a traffic signal
2. Install a Roundabout
3. Provide manual control of the intersection during the peak hours until such time as a permanent mitigation measure is decided.
4. Provide a second through lane on Camino Del Mar at 27th Street.
5. Remove the STOP signs on Camino Del Mar and modify the intersection control to a Two-Way STOP-Control (TWSC).

The increase in traffic at this intersection due to the Project is 1.4% in both the AM and PM peak hours. The Project adds a maximum of 14 peak hour trips (total of both directions) during weekday and 15 peak hour trips to this intersection during the weekend, that is the equivalent of one additional car every 4 minutes. The increase in delay due to Project traffic is less than 5 seconds.

▪ **Camino Del Mar / Coast Boulevard**

Five (5) optional mitigation measures were evaluated at this intersection. As explained in Section 19.3.1, only the first four options will mitigate the impact.

1. Install a traffic signal
2. Install a Roundabout
3. Provide manual control of the intersection during the peak hours until such time as a permanent mitigation measure is decided.
4. Provide a second through lane on Camino Del Mar at Coast Boulevard.
5. Remove the STOP signs on Camino Del Mar and modify the intersection control to a Two-Way STOP-Control (TWSC).

The increase in traffic at this intersection due to the Project is 1.4% in the AM and 1.3% in the PM peak hour. The Project adds a maximum of 14 peak hour trips (total of both directions) during weekday and 15 peak hour trips to this intersection during the weekend, that is the equivalent of one additional car every 4 minutes. The increase in delay due to Project traffic is less than 5 seconds.

Segments

▪ **Via De La Valle between Highway 101 and I-5 During Fair**

With the implementation of the recommended intersection improvements at the Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue) and the Via De La Valle / Jimmy Durante Boulevard intersections, the flow of traffic on Via De La Valle is improved. Combined with the proposed TDM measures, this impact is partially mitigated during the Fair.

19.2.2 Cumulative Only Impacts

▪ **Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue)**

The following optional mitigation measures were considered:

Option 1

- EB – Provide 1 exclusive left-turn lane, one through lane and one shared through-right lane
- Provide a second eastbound through lane on Via De La Valle from Highway 101 for approximately 200 feet east of Cedros Avenue.

Option 2

- EB – Provide 1 exclusive left-turn lane, one through lane and one shared through-right lane
- WB – Restripe Via de la Valle with one right-turn lane, one shared through-left lane and one left-turn lane and install east/west split phasing
- Provide a second eastbound through lane on Via De La Valle from Highway 101 for approximately 200 feet east of Cedros Avenue.

Option 3

- SB – Restripe Highway 101 south with one left-turn lane, one shared through-left lane and one shared through-right lane and install north/south split phasing
- EB – Provide 1 exclusive left-turn lane, one through lane and one shared through-right lane
- Provide a second eastbound through lane on Via De La Valle from Highway 101 through approximately 200 feet east of Cedros Avenue.

With the above Option 3 improvements, this intersection is calculated to operate at LOS F and hence this option was rejected.

Figure 19-2 depicts the recommended Option 1 improvements at this intersection. Option 2 will have a shared westbound through-left lane in place of the westbound through lane in Option 1. With either of these two optional improvements, the impact will be mitigated to a level below significance. The improvements recommended on *Figure 19-2* will require widening of Border Avenue to the south and also result in the loss of 10 parking spaces along the north curb and 5 car and 2 motorcycle spaces along the south curb for a total of 15 parking spaces and 2 motorcycle spaces..

Figure 19-3 depicts the additional eastbound through lane on Via De La Valle from Highway 101 to 200 feet east of Cedros Avenue. This restriping will result in the loss of 13 parking spaces, 9 spaces on the north curb and 4 spaces on the south curb of Via de la Valle, between Highway 101 and Cedros Avenue.

The Project will provide 54 public parking spaces onsite that offset the loss of 28 (15+13) spaces.

19.3 Post Mitigation Analysis

A post mitigation analysis was conducted to determine if the recommended mitigation measures would mitigation the Project related significant direct and cumulative impacts to a level below significance.

19.3.1 Near Term Direct Impacts

Tables 19-1, 19-2 and 19-3 summarize the results of the mitigation analysis for the significant direct intersection impacts for a typical weekday / weekend, during the Fair and during the Horse Races,

respectively. It is recommended that the intersections of Camino del Mar / 27th Street and Camino Del Mar / Coast Boulevard be manually controlled during the peak hours. The LOS and delay with signal are reported at these two intersections.

As seen in *Tables 19-1, 19-2 and 19-3*, with the recommended mitigation measures, all intersections are calculated to operate at acceptable LOS D or better. The Via de la Valle / Jimmy Durante Boulevard intersection is calculated to operate at LOS E in the weekday PM peak hour during the Fair. However, the post-mitigation delay with the Project (64.9 seconds) is the same as the without Project condition (64.9 seconds).

As explained previously, five (5) optional mitigation measures are proposed at the Camino Del Mar / 27th Street and Camino Del Mar / Coast Boulevard intersections they are as follows:

1. Signalization
2. A Roundabout
3. Providing manual control of the intersection during the peak hours
4. Providing two through lanes through the intersection and maintaining the All-Way-STOP-Control.
5. Changing the intersection control to a Two-Way STOP-Control with traffic on the minor street (27th Street and Coast Boulevard) being stopped.

As seen in the tables, the Camino Del Mar / 27th Street and Camino Del Mar / Coast Boulevard intersections are calculated to operate at an acceptable LOS D or better with all optional mitigation measures, except the fifth (TWSC).

Based on the above, if the mitigation measures are implemented, all significant direct intersection impacts are mitigated to a level below significance. As explained in Section 16.2.1, the segment impact on Via de la Valle between Highway 101 and I-5 during the Fair is partially mitigated with the improvements at Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue) and the Via De La Valle / Jimmy Durante Boulevard intersections. **Appendix T-1** contains the mitigation analysis worksheets for the significant direct impacts.

19.3.2 Near-Term Cumulative Impacts

Tables 19-4, 18-5 and 19-6 summarize the results of the mitigation analysis for the significant cumulative intersection impacts under the Existing + Project + Cumulative projects condition for a typical weekday / weekend, during the Fair and during the Horse Races, respectively. As in the case of the mitigation for Existing + Project condition, optional mitigation measures are analyzed at the Camino del Mar / 27th Street and Camino del Mar / Coast Boulevard intersections.

As seen in *Tables 19-4, 19-5 and 19-6*, with the recommended mitigation measures, all intersections are calculated to operate at acceptable LOS D or better except the Via de la Valle / Jimmy Durante Boulevard intersection during the weekday PM during the Fair. However, the post-mitigation delay

with the Project (82.7 seconds) is less than the without Project condition (84.4 seconds, *Table 10-4*). Hence, all the significant direct impacts at the intersections are mitigated to a level below significance.

Five (5) optional mitigation measures are proposed at the Camino Del Mar / 27th Street and Camino Del Mar / Coast Boulevard intersections. As seen in the following tables, with the Project traffic, the Camino Del Mar / 27th Street and Camino Del Mar / Coast Boulevard intersections are calculated to operate at an acceptable LOS D or better with all optional mitigation measures, except the fifth (TWSC).

As explained in Section 19.2.1, the segment impact on Via de la Valle between Highway 101 and I-5 during the Fair is partially mitigated with the improvements at Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue) and the Via De La Valle / Jimmy Durante Boulevard intersections.

Appendix T-2 contains the mitigation analysis worksheets for the Near-Term significant cumulative impacts.

TABLE 19-1
EXISTING + PROJECT INTERSECTION MITIGATION ANALYSIS – TYPICAL WEEKDAY / WEEKEND

Intersection	Traffic Control ^a	Peak Hour	Pre-Mitigation ^b		Post-Mitigation ^c	
			Delay	LOS	Delay	LOS
9. Via de la Valle / Cedros Ave	Signal	WkDay PM	36.5	E	18.6	B
13. Camino del Mar / 27 th St						
Option 1	Signal	WkEnd PM	36.2	E	10.4	B
Option 2	Roundabout		36.2	E	7.7	A
Option 3	Manual Control ^d		36.2	E	10.6	B
Option 4	2 through lanes		36.2	E	13.8	B
Option 5	MSSC		36.2	E	33.4	D
14. Camino del Mar / Coast Blvd						
Option 2	Signal	WkEnd PM	65.4	F	7.6	A
Option 3	Roundabout		65.4	F	7.9	A
Option 4	Manual Control ^d		65.4	F	6.6	A
Option 5	2 through lanes		65.4	F	16.7	C
Option 2	MSSC		65.4	F	37.1	E

Footnotes:

- a. Mitigated traffic control shown in **Bold**.
- b. Delay and level of service with Project traffic, prior to the implementation of mitigation.
- c. Delay and level of service with Project traffic and mitigation.
- d. Intersection will be essentially function as a signal with manual control during the peak hours.

TABLE 19-2
EXISTING + PROJECT INTERSECTION MITIGATION ANALYSIS – FAIR

Intersection		Traffic Control ^a	Peak Hour	Pre-Mitigation ^b		Post-Mitigation ^c	
				Delay	LOS	Delay	LOS
10.	Via de la Valle / Jimmy Durante Blvd	Signal ^d	WkDay PM	67.2	E	64.9	E
			WkEnd PM	89.7	F	53.7	D
13.	Camino del Mar / 27 th St						
	Option 1	Signal	WkDay PM	67.2	E	8.8	A
	Option 2	Roundabout		67.2	E	8.9	A
	Option 3	Manual Control ^d		67.2	E	8.8	A
	Option 4	2 through lanes		67.2	E	17.4	C
	Option 5	MSSC		67.2	E	53.4	F
	Option 1	Signal	WkEnd PM	89.7	F	10.3	B
	Option 2	Roundabout		89.7	F	8.2	A
	Option 3	Manual Control ^d		89.7	F	10.3	B
	Option 4	2 through lanes		89.7	F	14.8	B
	Option 5	MSSC		89.7	F	33.6	D
14.	Camino del Mar / Coast Blvd						
	Option 1	Signal	WkDay PM	97.4	F	14.4	B
	Option 2	Roundabout		97.4	F	9.2	A
	Option 3	Manual Control ^d		97.4	F	14.4	B
	Option 4	2 through lanes		97.4	F	25.9	D
	Option 5	MSSC		97.4	F	>100.0	F

Footnotes:

- a. Mitigated traffic control shown in **Bold**.
- b. Delay and level of service with Project traffic, prior to the implementation of mitigation.
- c. Delay and level of service with Project traffic and mitigation.
- d. Intersection will be essentially function as a signal with manual control during the peak hours.

TABLE 19-3
EXISTING + PROJECT INTERSECTION MITIGATION ANALYSIS – HORSE RACES

Intersection	Traffic Control ^a	Peak Hour	Pre-Mitigation ^b		Post-Mitigation ^c	
			Delay	LOS	Delay	LOS
9. Via de la Valle / Cedros Ave	Signal	WkDay PM	35.6	E	19.8	B
13. Camino del Mar / 27 th St						
Option 1	Signal	WkDay PM	139.3	F	9.4	A
Option 2	Roundabout		139.3	F	11.0	B
Option 3	Manual Control ^d		139.3	F	9.4	A
Option 4	2 through lanes		139.3	F	31.5	D
Option 5	MSSC		139.3	F	95.2	F
14. Camino del Mar / Coast Blvd						
Option 1	Signal	WkDay PM	262.4	F	17.4	B
Option 2	Roundabout		262.4	F	17.3	C
Option 3	Manual Control ^d		262.4	F	17.4	B
Option 4	2 through lanes		262.4	F	81.1	F
Option 5	MSSC		262.4	F	>300.0	F
Option 1	Signal	WkEnd PM	92.9	F	8.8	A
Option 2	Roundabout		92.9	F	8.1	A
Option 3	Manual Control ^d		92.9	F	8.8	A
Option 4	2 through lanes		92.9	F	18.5	C
Option 5	MSSC		92.9	F	>100.0	F

Footnotes:

- a. Mitigated traffic control shown in **Bold**.
- b. Delay and level of service with Project traffic, prior to the implementation of mitigation.
- c. Delay and level of service with Project traffic and mitigation.
- d. Intersection will be essentially function as a signal with manual control during the peak hours.

TABLE 19-4
EXISTING + PROJECT + CUMULATIVE PROJECTS INTERSECTION MITIGATION ANALYSIS – TYPICAL WEEKDAY / WEEKEND

Intersection	Traffic Control ^a	Peak Hour	Pre-Mitigation ^b		Post-Mitigation ^c	
			Delay	LOS	Delay	LOS
9. Via de la Valle / Cedros Ave	Signal	WkDay PM	48.5	F	21.8	C
10. Via de la Valle / Jimmy Durante Blvd	Signal	WkDay PM	57.1	E	42.8	D
13. Camino del Mar / 27 th St						
Option 1	Signal	WkEnd PM	52.5	F	7.9	A
Option 2	Roundabout		52.5	F	8.4	A
Option 3	Manual Control ^d		52.5	F	7.9	A
Option 4	2 through lanes		52.5	F	15.5	C
Option 5	MSSC		52.5	F	39.0	E
14. Camino del Mar / Coast Blvd						
Option 1	Signal	WKDay PM	84.9	F	11.3	B
Option 2	Roundabout		84.9	F	8.4	A
Option 3	Manual Control ^d		84.9	F	11.3	B
Option 4	2 through lanes		84.9	F	19.4	C
Option 5	MSSC		84.9	F	52.1	F
Option 1	Signal	WkEnd PM	45.9	E	33.3	C
Option 2	Roundabout		45.9	E	8.2	A
Option 3	Manual Control ^d		45.9	E	33.3	C
Option 4	2 through lanes		45.9	E	18.2	C
Option 5	MSSC		45.9	E	>100.0	F

Footnotes:

- a. Mitigated traffic control shown in **Bold**.
- b. Delay and level of service with Project traffic, prior to the implementation of mitigation.
- c. Delay and level of service with Project traffic and mitigation.
- d. Intersection will be essentially function as a signal with manual control during the peak hours.

TABLE 19-5
EXISTING + PROJECT + CUMULATIVE PROJECTS INTERSECTION MITIGATION ANALYSIS – FAIR

Intersection	Traffic Control ^a	Peak Hour	Pre-Mitigation ^b		Post-Mitigation ^c	
			Delay	LOS	Delay	LOS
9. Via de la Valle / Jimmy Durante Blvd	Signal	WkDay PM	87.4	F	82.7	F
	Signal	WkEnd PM	112.0	F	68.7	E
13. Camino del Mar / 27 th St						
	Option 1 Signal	WkDay PM	93.4	F	9.6	A
	Option 2 Roundabout		93.4	F	9.6	A
	Option 3 Manual Control ^d		93.4	F	9.6	A
	Option 4 2 through lanes		93.4	F	21.1	C
	Option 5 MSSC		93.4	F	67.2	F
	Option 1 Signal	WkEnd PM	68.0	E	10.7	B
	Option 2 Roundabout		68.0	E	8.6	A
	Option 3 Manual Control ^d		68.0	E	10.7	B
	Option 4 2 through lanes		68.0	E	16.8	C
	Option 5 MSSC		68.0	E	39.0	E
14. Camino del Mar / Coast Blvd						
	Option 1 Signal	WkDay PM	119.7	F	12.3	B
	Option 2 Roundabout		119.7	F	10.0	B
	Option 3 Manual Control ^d		119.7	F	12.3	B
	Option 4 2 through lanes		119.7	F	32.7	D
	Option 5 MSSC		119.7	F	>100.0	F
	Option 1 Signal	WkEnd PM	56.3	E	15.0	B
	Option 2 Roundabout		56.3	E	8.9	A
	Option 3 Manual Control ^d		56.3	E	15.0	B
	Option 4 2 through lanes		56.3	E	18.3	C
	Option 5 MSSC		56.3	E	>100.0	F

Footnotes:

- a. Mitigated traffic control shown in **Bold**.
- b. Delay and level of service with Project traffic, prior to the implementation of mitigation.
- c. Delay and level of service with Project traffic and mitigation.
- d. Intersection will be essentially function as a signal with manual control during the peak hours.

TABLE 19-6
EXISTING + PROJECT + CUMULATIVE PROJECTS INTERSECTION MITIGATION ANALYSIS – HORSE RACES

Intersection	Traffic Control ^a	Peak Hour	Pre-Mitigation ^b		Post-Mitigation ^c	
			Delay	LOS	Delay	LOS
9. Via de la Valle / Cedros Ave	Signal	WkDay PM	48.1	E	13.3	B
13. Camino del Mar / 27 th St						
Option 1	Signal	WkDay PM	169.4	F	9.8	A
Option 2	Roundabout		169.4	F	12.2	B
Option 3	Manual Control ^d		169.4	F	9.8	A
Option 4	2 through lanes		169.4	F	40.7	E
Option 5	MSSC		169.4	F	121.7	F
Option 1	Signal	WkEnd PM	43.7	E	12.5	B
Option 2	Roundabout		43.7	E	8.1	A
Option 3	Manual Control ^d		43.7	E	12.5	B
Option 4	2 through lanes		43.7	E	14.8	B
Option 5	MSSC		43.7	E	33.2	D
14. Camino del Mar / Coast Blvd						
Option 1	Signal	WkDay PM	290.0	F	17.2	B
Option 2	Roundabout		290.0	F	20.5	C
Option 3	Manual Control ^d		290.0	F	17.2	B
Option 4	2 through lanes		290.0	F	96.6	F
Option 5	MSSC		290.0	F	>300.0	F
Option 1	Signal	WkEnd PM	117.2	F	14.4	B
Option 2	Roundabout		117.2	F	8.8	A
Option 3	Manual Control ^d		117.2	F	14.4	B
Option 4	2 through lanes		117.2	F	21.4	C
Option 5	MSSC		117.2	F	43.0	E

Footnotes:

- a. Mitigated traffic control shown in **Bold**.
- b. Delay and level of service with Project traffic, prior to the implementation of mitigation.
- c. Delay and level of service with Project traffic and mitigation.
- d. Intersection will be essentially function as a signal with manual control during the peak hours.

19.3.3 Long-Term Cumulative Impacts

Table 19-7 summarizes the results of the mitigation analysis for the significant long-term intersection impacts. At the intersections of Highway 101 / Via de la Valle, Camino del Mar / 27th Avenue and Camino del Mar / Coast Boulevard, optional mitigation measures are analyzed. At the Highway 101 (Camino del Mar) / Via de la Valle (Border Avenue) intersection the two mitigation options are optional geometry improvements. Option 1 mitigation measure consists of widening eastbound Border Avenue to provide an exclusive left-turn lane, one through lane and one shared through-right lane in the eastbound direction. Option 2 mitigation measures includes restriping westbound Via de la Valle with one right-turn lane, one shared through-left lane and one left-turn lane with east/west split phasing in addition to the Option 1 improvements.

As seen in *Table 19-7*, with the implementation of the recommended mitigation measures, all intersections are calculated to operate at acceptable LOS D or better except the Via de la Valle / Jimmy Durante Boulevard intersection during the weekday PM during the Fair. However, the post-mitigation delay with the Project (57.5 / 63.0 seconds during the AM / PM peak hours) is less than the pre-mitigation without Project condition (59.5 / 75.9 seconds during the AM / PM peak hours).

Hence, all the significant cumulative impacts at the intersections are mitigated to a level below significance.

Five (5) optional mitigation measures are proposed at the Camino Del Mar / 27th Street and Camino Del Mar / Coast Boulevard intersections. As seen in the *Table 19-7*, with the addition of Project traffic, the two intersections are calculated to operate at LOS D or better with all optional mitigation measures. The Camino Del Mar / Coast Boulevard intersection is calculated to operate at LOS E with the fifth (TWSC) option.

As explained in Section 19.2.1, the segment impact on Via de la Valle between Highway 101 and I-5 during the Fair is partially mitigated with the improvements at Highway 101 (Camino Del Mar) / Via De La Valle (Border Avenue) and the Via De La Valle / Jimmy Durante Boulevard intersections.

Appendix T-3 contains the mitigation analysis worksheets for the Long-Term significant cumulative impacts.

TABLE 19-7
LONG-TERM MITIGATION ANALYSIS - INTERSECTIONS

Intersection	Traffic Control ^a	Peak Hour	Without Project		With Project		With Project and With Mitigation	
			Delay	LOS	Delay	LOS	Delay	LOS
8. Hwy 101 (Camino del Mar) / Via de la Valle (Border Ave)	Option 1 Geometry	WkDay PM	60.6	E	63.9	E	48.3	D
	Option 2 Geometry	WkDay PM	60.6	E	63.9	E	58.5	E
9. Via de la Valle / Cedros Ave	Signal	WkDay AM	50.4	F	58.7	F	9.6	A
		WkDay PM	130.2	F	159.1	F	30.6	C
10. Via de la Valle / Jimmy Durante Blvd	Signal	WkDay AM	59.5	E	62.0	E	58.5	E
		WkDay PM	75.9	E	79.2	E	64.4	E
13. Camino del Mar / 27 th St								
Option 1	Signal	WkDay PM	45.5	E	47.8	E	7.5	A
Option 2	Roundabout	WkDay PM	45.5	E	47.8	E	8.0	A
Option 3	Manual Control ^d	WkDay PM	45.5	E	47.8	E	7.5	A
Option 4	2 through lanes	WkDay PM	45.5	E	47.8	E	14.1	B
Option 5	MSSC	WkDay PM	45.5	E	47.8	E	26.3	D
14. Camino del Mar / Coast Blvd								
Option 1	Signal	WkDay PM	103.5	F	107.4	F	9.9	A
Option 2	Roundabout	WkDay PM	103.5	F	107.4	F	9.2	A
Option 3	Manual Control ^d	WkDay PM	103.5	F	107.4	F	9.9	A
Option 4	2 through lanes	WkDay PM	103.5	F	107.4	F	22.9	C
Option 5	MSSC	WkDay PM	103.5	F	107.4	F	64.4	F

Footnotes:

- a. Mitigated traffic control shown in **Bold**.
- b. Delay and level of service with Project traffic, prior to the implementation of mitigation.
- c. Delay and level of service with Project traffic and mitigation.
- d. Intersection will be essentially function as a signal with manual control during the peak hours.

19.4 Signal Warrant Analysis

A peak hour signal warrant analysis was conducted for the Via de la Valle / Cedros Avenue, Camino Del Mar / 27th Street and the Camino Del Mar / Coast Boulevard intersections for which traffic signals are recommended as the mitigation measure.

The following assumptions are made in determining the conditions at the subject intersection:

- *Approach Lanes* – One right-turn lane and one left-turn lane will be provided in the southbound direction.

Page 847 of the California Manual On Uniform Traffic Control Devices (MUTCD) 2014 Edition states “*for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.*”

- *Approach Volumes* – As stated in the MUTCD, “engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.”

The peak hour signal warrant analysis for the three intersections are included in the following pages.

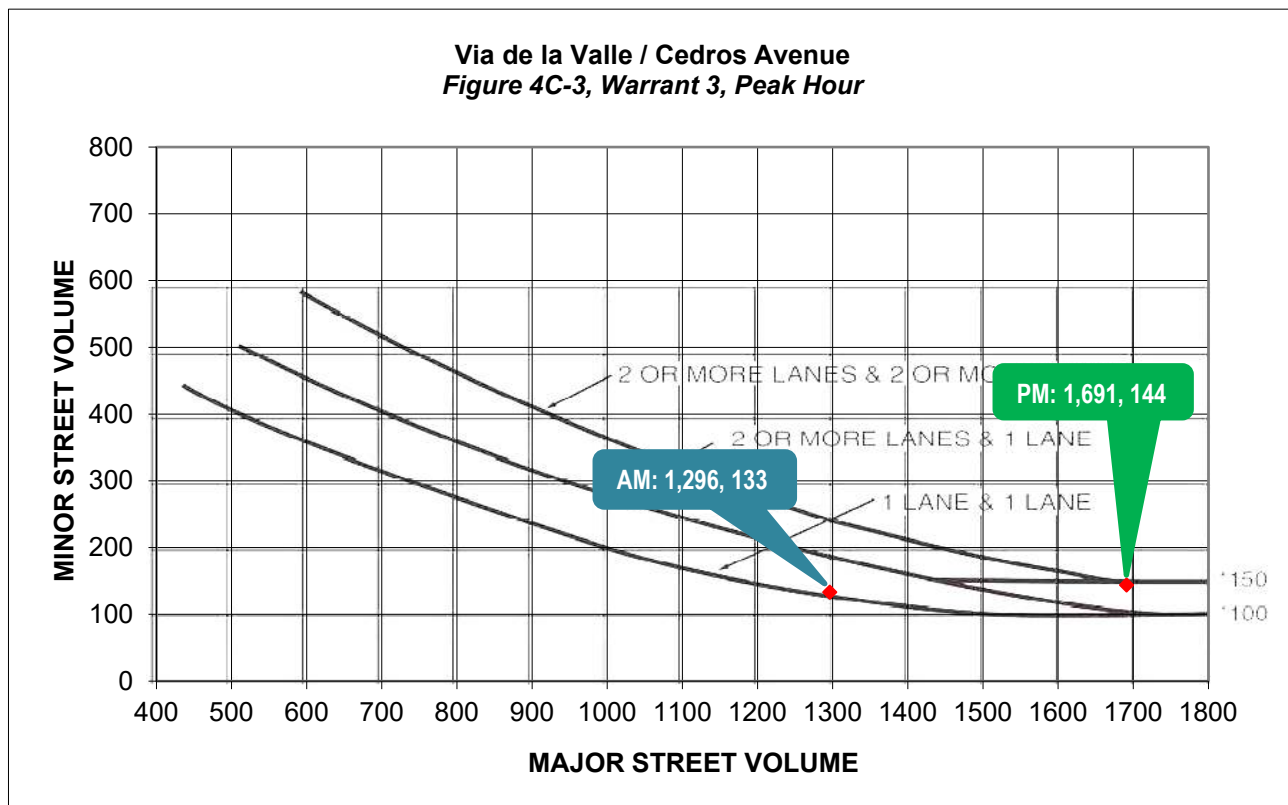
19.4.1 Via de la Valle / Cedros Avenue

This intersection is impacted in the Existing + Project condition. Hence, the signal warrants analysis was conducted using Existing + Project volumes. The following assumptions are made:

- At this location, Cedros Avenue is a two-lane road (one lane in each direction) with dedicated left-turn and right-turn lanes at the intersection and it is not considered to be possible for traffic to enter Via de la Valle from Cedros Avenue with “minimal conflict”. The storage in the left-turn lane will not be sufficient to accommodate the entire left-turning traffic. Hence, this approach will function and is analyzed as a one lane approach.
- As described above, a right-turn lane and a left-turn lane is provided on southbound Cedros Avenue at Via de la Valle. Based on the number of approach lanes and the MUTCD (previous bullet item), a 25% reduction in right-turning traffic is assumed since this is considered a one-lane approach (see above) and right-turning traffic has to enter a busy 2-Lane road that functions as one of the main arterials in both the Del Mar and Solana Beach communities. The recorded speed on Via de la Valle at this location is just under 40 mph.

Chart 1 below, depicts the Peak hour warrant plot for the Via de la Valle / Cedros Avenue intersection. As seen in the plot, the warrant is satisfied in the AM peak hour where the plot point falls on the curve and in the PM peak hour where the plot point falls above the curve. A simulation of the operations conducted for the Via de la Valle corridor indicates that this mitigation will result in a good traffic flow on Via de la Valle between Cedros Avenue and Border Avenue.

CHART 1



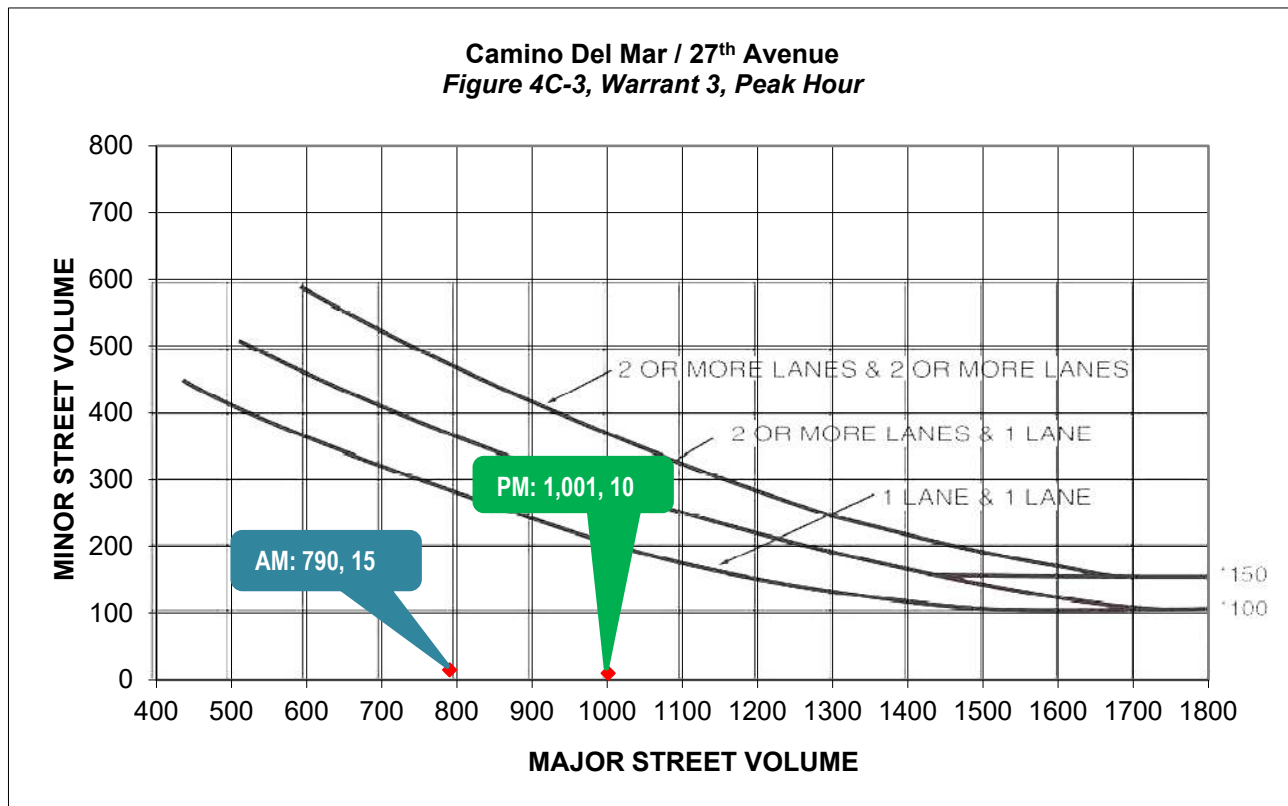
19.4.2 Camino Del Mar / 27th Street

This intersection is impacted in the Existing + Project condition. Hence, the signal warrants analysis was conducted using Existing + Project volumes. The following assumptions are made:

- At this location, 27th Street is a two-lane road (one lane in each direction) and Camino del Mar is also a two-lane road with one lane in each direction. The approaches on 27th Street will function and is analyzed as a one lane approach.
- As described above, a single lane approach is provided on eastbound and westbound 27th Street at Camino Del Mar. Based on the number of approach lanes and the MUTCD (previous bullet item), no reduction in right-turning traffic is assumed since this is considered a one-lane approach (see above).

Chart 2 below, depicts the peak hour warrant plot. As seen in the plot, the plotted points fall far below the curve for both the AM and PM peak hours and hence, the warrant is not satisfied in either the AM or the PM peak hours.

CHART 2



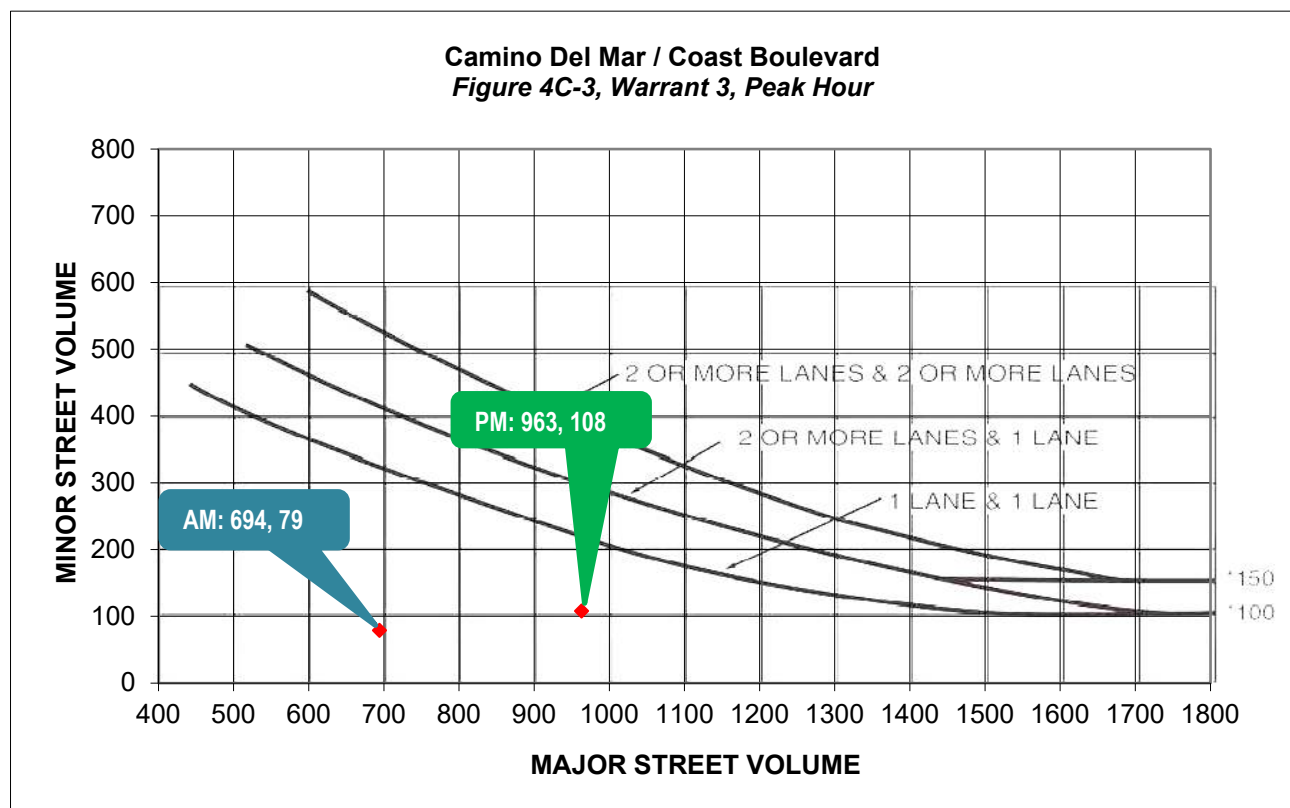
19.4.3 Camino Del Mar / Coast Boulevard

This intersection is impacted in the Existing + Project condition. Hence, the signal warrants analysis was conducted using Existing + Project volumes. The following assumptions are made:

- At this location, Coast Boulevard is a two-lane road (one lane in each direction) and Camino del Mar is also a two-lane road with one lane in each direction. The approaches on 27th Street will function and is analyzed as a one lane approach.
- As described above, a single lane approach is provided on eastbound and westbound 27th Street at Camino Del Mar. Based on the number of approach lanes and the MUTCD (previous bullet item), no reduction in right-turning traffic is assumed since this is considered a one-lane approach (see above).

Chart 3 below, depicts the peak hour warrant plot. As seen in the plot, the plotted points fall far below the curve for both the AM and PM peak hours and hence, the warrant is not satisfied in either the AM or the PM peak hours.

CHART 3



19.5 Queuing at Highway 101 / Via de la Valle

Tables 19-8 and 19-9 summarize the future queuing analysis with the mitigation measures at the Highway 101 / Via de La Valle and the Via de La Valle / Jimmy Durante Boulevard intersections, respectively.

19.5.1 Highway 101 / Via de la Valle Intersection

As seen in the queuing analysis in *Table 9-6*, the existing queue (282 feet) in the westbound left turn movement exceeds the available storage (120 feet). As mentioned previously, the following two Optional mitigation measures are proposed:

Option 1

- Eastbound – 1 exclusive left-turn lane, one through lane and one shared through-right lane

Option 2

- Eastbound – 1 exclusive left-turn lane, one through lane and one shared through-right lane
- Westbound – Via de la Valle with one right-turn lane, one shared through-left lane and one left-turn lane with east/west split phasing

With the addition of project traffic, the queue is estimated to increase to 309 feet, approximately 2 vehicle lengths more than existing. With the Option 1 mitigation, the queue will reduce to 302 feet, almost the same as without the mitigation. With the Option 2 mitigation, the queue will reduce to 246 feet or, approximately 1 vehicle length *less* than existing.

TABLE 19-8
QUEUING ANALYSIS: HIGHWAY 101 / VIA DE LA VALLE – PM PEAK HOUR

Movement	Available Storage Length (Feet)	Existing	Existing + Project		
			Pre-Mitigation	Post- Mitigation Option 1	Post- Mitigation Option 2
WB Left	120	#282	#309	#302	246

Footnote:

– 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.

19.5.2 Via de la Valle / Jimmy Durante Boulevard Intersection

As seen in the queuing analysis in *Table 9-6*, the existing queue (555 feet) in the westbound through movement exceeds the available storage (550 feet). In the Year 2035 with the Project traffic, the queue in the westbound through movement increases to 731 feet. As mentioned previously, installing a westbound right-turn lane is recommended at this intersection. As seen in *Table 19-9*, with the recommended mitigation measure, the calculated queue length reduces to 370 feet, less than the available storage. *Appendix R-4* contains the queuing analysis worksheets.

TABLE 19-9
QUEUING ANALYSIS: VIA DE LA VALLE / JIMMY DURANTE BOULEVARD – AM PEAK HOUR

Movement	Available Storage Length (Feet)	Existing	Year 2035 without Project	Year 2035 + Project	
				Pre-Mitigation	Post- Mitigation
WB Through	550	555	#668	#731	370

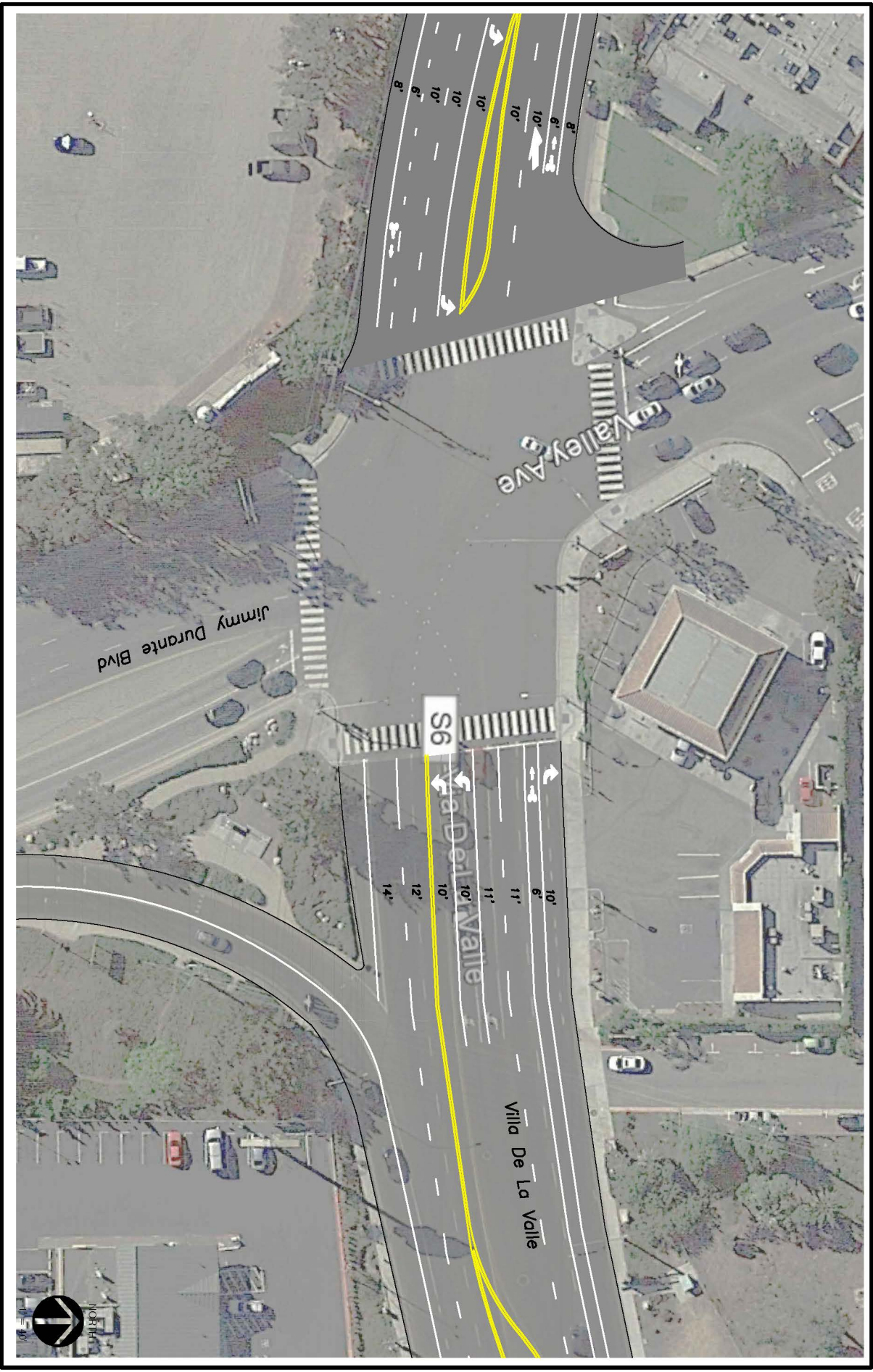
Footnote:

– 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is maximum after two cycles.

Figure 19–1 Via De La Valle / Jimmy Durante Boulevard Intersection Improvements

**Figure 19–2 Via De La Valle (Border Avenue) / Highway 101 (Camino Del Mar)
Intersection Improvements**

**Figure 19–3 Proposed Conceptual Plan - Via De La Valle Two Through Lanes from
Highway 101 to 400' east of Cedros Avenue**



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Date: 06/24/19

Figure 19-1

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engineers

Via De La Valle / Jimmy Durante Boulevard Intersection Improvements

DEL MAR RESORT

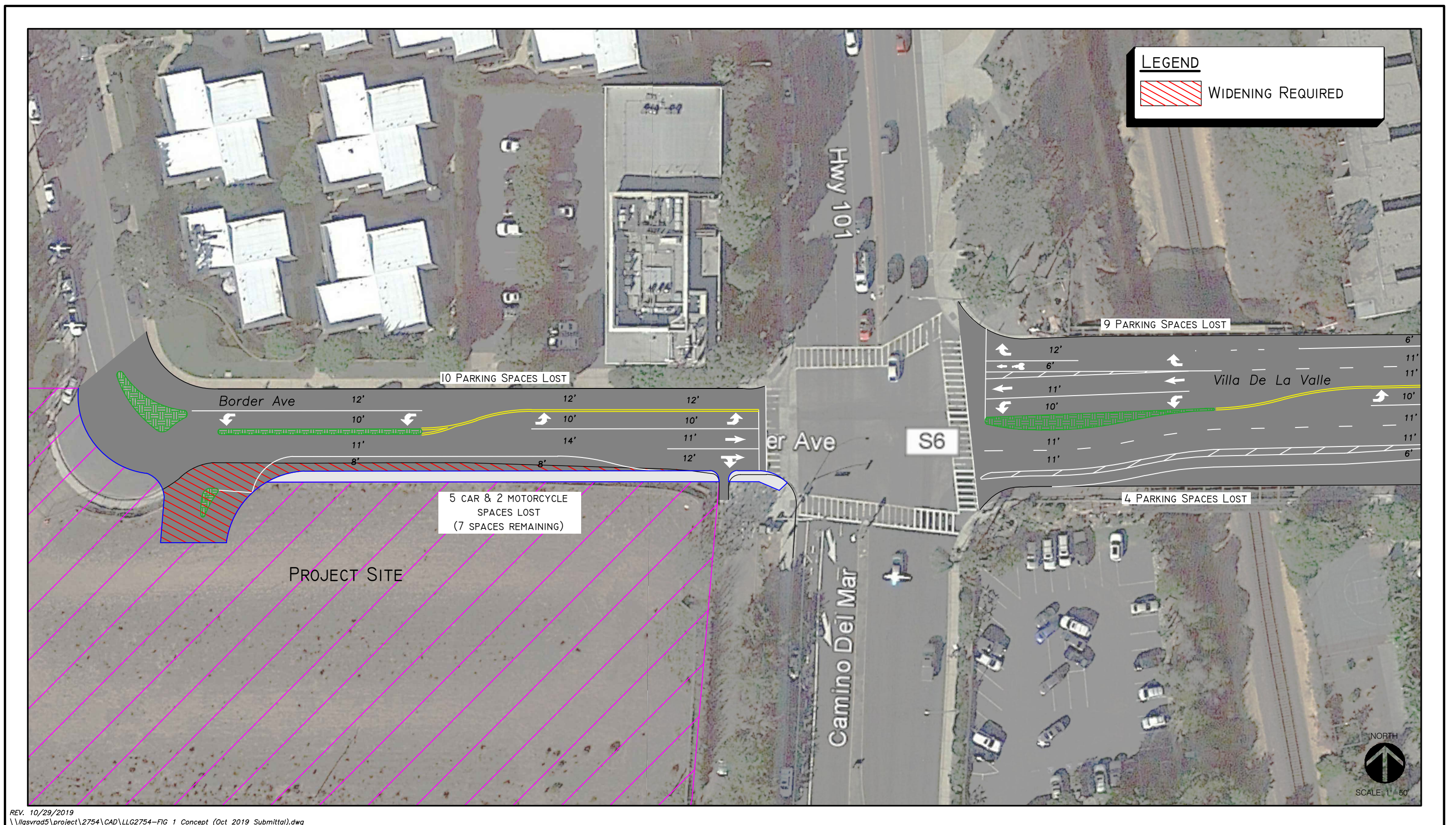
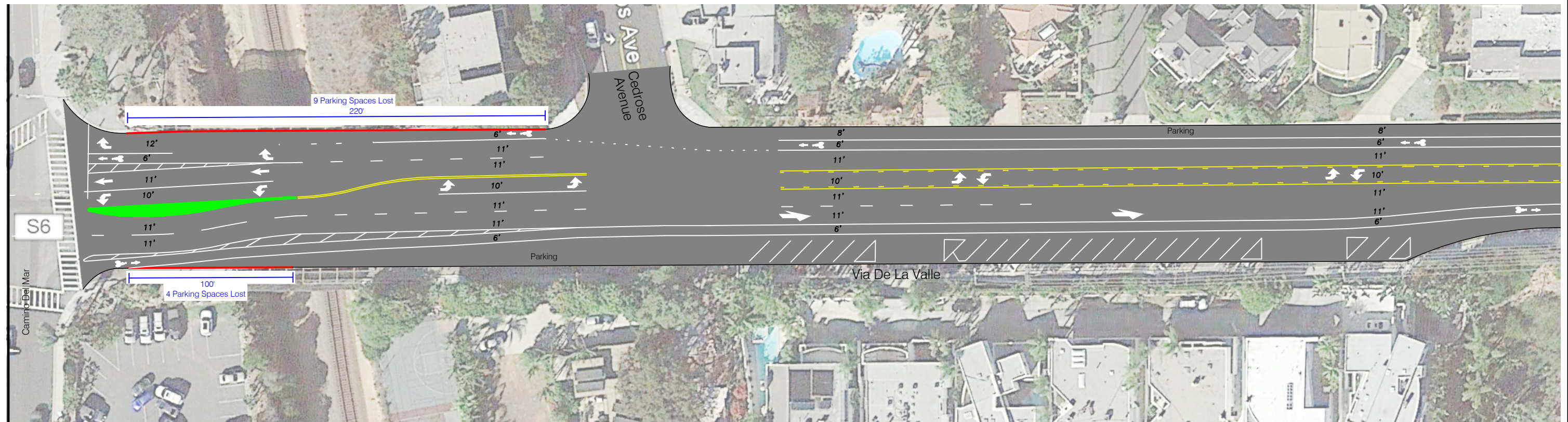


Figure 19-2
 Via De La Valle (Border Avenue) / Highway 101 (camino Del Mar)
 Intersection Improvements

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 engineers

MARISOL



LEGEND
 — Edge of Pavement
 — No Parking



SCALE: 1"=60'

REV. 11/4/2019
 N:\2754\CAD\LLG2754-FIG 8 Alternative 2 with 200' two through lanes.dwg

NOTE: Total of 13 parking spaces lost.

LINSCOTT
 LAW &
 GREENSPAN
 engineers

CONCEPTUAL ONLY

Figure 19-3
Proposed Conceptual Plan - Via De La Valle
Two Through Lanes from Highway 101 to 200' east of Cedros Avenue

DEL MAR RESORT