Beyer Park

Access Analysis Report

Prepared for:

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TABLE OF CONTENTS

LIST OF EXHIBITS

LIST OF TABLES

APPENDICES

1 EXECUTIVE SUMMARY

San Ysidro is a vibrant community located in the City of San Diego and adjacent to Mexico, offering a culturally diverse environment and wealth of recreational opportunities. The proposed Beyer Park project's vision is to build and construct a community park located just east of Interstate 805 off Beyer Boulevard. With an estimated size of 32 acres, the proposed park will include many attractive facilities such as a turf area, children's play area, a fitness area, a skatepark, and many others that will greatly enhance the community of San Ysidro.

The neighboring Otay Mesa community is in the process of developing the Southwest Village Plan that includes future extension of Beyer Boulevard. Once constructed, Beyer Boulevard will be extended east connecting to the Otay Mesa community. The extension will help improve multimodal linkages to the park and connectivity between the two communities.

Access to the project site will be from Beyer Boulevard via Enright Drive and Delany Drive. Two driveways will be accessible from Beyer Boulevard. The first is located on the south end of Enright Drive which is currently a semi-improved cul-de-sac. The second is located at the south end of Delany Drive, which is also a semi-improved cul-de-sac. The east side of Enright Drive is currently unimproved, and an existing fence separates the residential neighborhood from City property.

It is anticipated with the addition of Beyer Park parking demand will increase in the area, with the highest parking demand on the weekend. The amount of parking provided on-site as well as on the improved eastern side of Enright Drive is based on the City of San Diego's Consultants Guide to Park Design and Development (2011). The parking requirements are based on the expected demand for parks based on useable area and amenities provided at the park. The project provides a total of 69 parking spaces, meeting the minimum parking requirement of 63 parking spaces.

Analysis was conducted to forecast the number of trips generated by the Beyer Park project. The project is forecast to generate approximately 458 weekday trips per day, which includes approximately 18 AM peak hour trips (9 in, 9 out) and approximately 37 PM peak hour trips (19 in, 18 out). The results of the existing conditions analysis showed that both the study intersections and roadway segments operate at acceptable LOS C or better. Under Existing Plus Project conditions analysis, with the addition of project traffic, both the study intersections and roadway segments are forecast to operate at acceptable LOS C or better.

Analysis was also conducted to forecast project traffic generated for Opening Year 2020 conditions. Traffic expected due to approved or pending projects was added to existing traffic volumes. These reasonably foreseeable projects are forecast to generate approximately 2,081 trips per day, which includes approximately 134 AM peak hour trips and approximately 194 PM peak hour trips. The results of the Opening Year 2020 without Project conditions showed that both the study intersections and roadway segments are forecast to operate at acceptable LOS C or better. Under Opening Year 2020 with Project

conditions analysis, with the addition of project traffic, both the study intersections and roadway segments are forecast to operate at acceptable LOS C or better.

It can be concluded that with the project being built, the addition of project traffic to the existing roadway network, will not cause direct significant near term impact to the roadway segment and intersection levels of service.

2 INTRODUCTION

This access analysis evaluates the traffic conditions associated with the proposed Beyer Park Project (herein referred to as "the project") located in the San Ysidro community, on approximately 31.7-acre site east of E. Beyer Boulevard and south of Beyer Boulevard, in the City of San Diego. **Exhibit 2-1** illustrates the regional project location.

2.1 PROJECT DESCRIPTION

The project proposes to construct a community park on approximately 31.7-acre project site. The site is currently vacant. The park will consist of turf area (4.78-acre), children's play area (0.24-acre), skatepark (0.45-acre), fitness area (0.02-acre), half basketball court (0.1-acre), picnic / gathering spaces (0.28-acre), dog park (0.78-acre), planting area (6.36-acre), basin (0.28-acre) and undeveloped area of 18.45-acres. Within the project site boundary, approximately 12.1-acres of Multi-Habitat Planning Area (MHPA), not included in the total site area, runs through the site.

Access to the project site will be from Beyer Boulevard via Enright Drive and Delany Drive. Two driveways will be accessible from Beyer Boulevard. The first is located on the south end of Enright Drive which is currently a semi-improved cul-de-sac. The second is located at the south end of Delany Drive, which is also a semi-improved cul-de-sac. The east side of Enright Drive is currently unimproved, and an existing fence separates the residential neighborhood from the City property. Additionally the project will provide three bike racks in order to facilitate bike riding to the park.

Once the Otay Mesa Southwest Village Plan development is constructed, Beyer Boulevard will be extended east connecting the Otay Mesa community to San Ysidro, improving multimodal linkages to the park and overall connecting the two communities. **Exhibit 2-2** illustrates the project site context in relation to the surrounding community. **Exhibit 2-3** and **Exhibit 2-4** illustrates the project site plan and conceptual site plan, respectively.

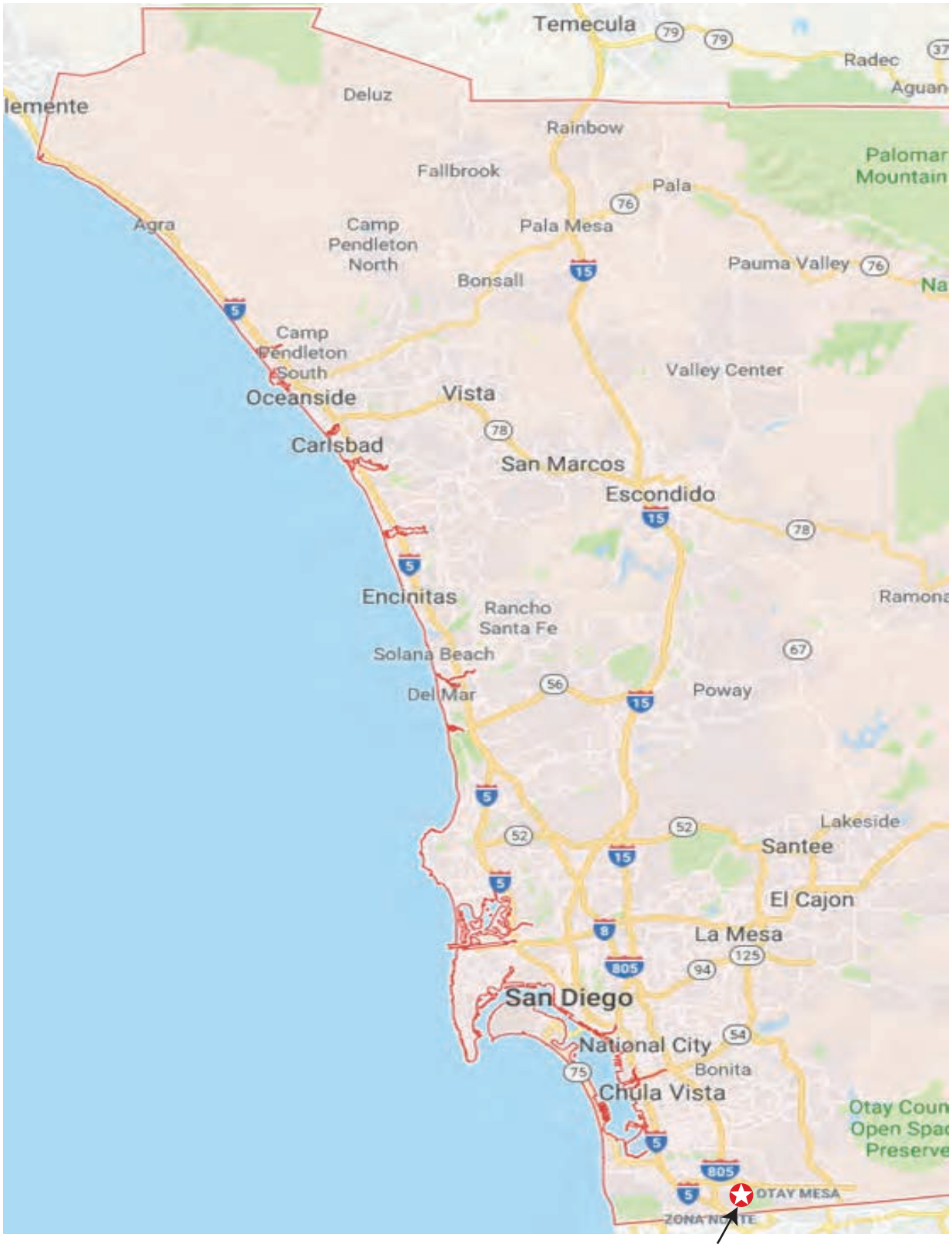

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Exhibit 2-1
Regional Poject Location

Beyer Park Access Analysis

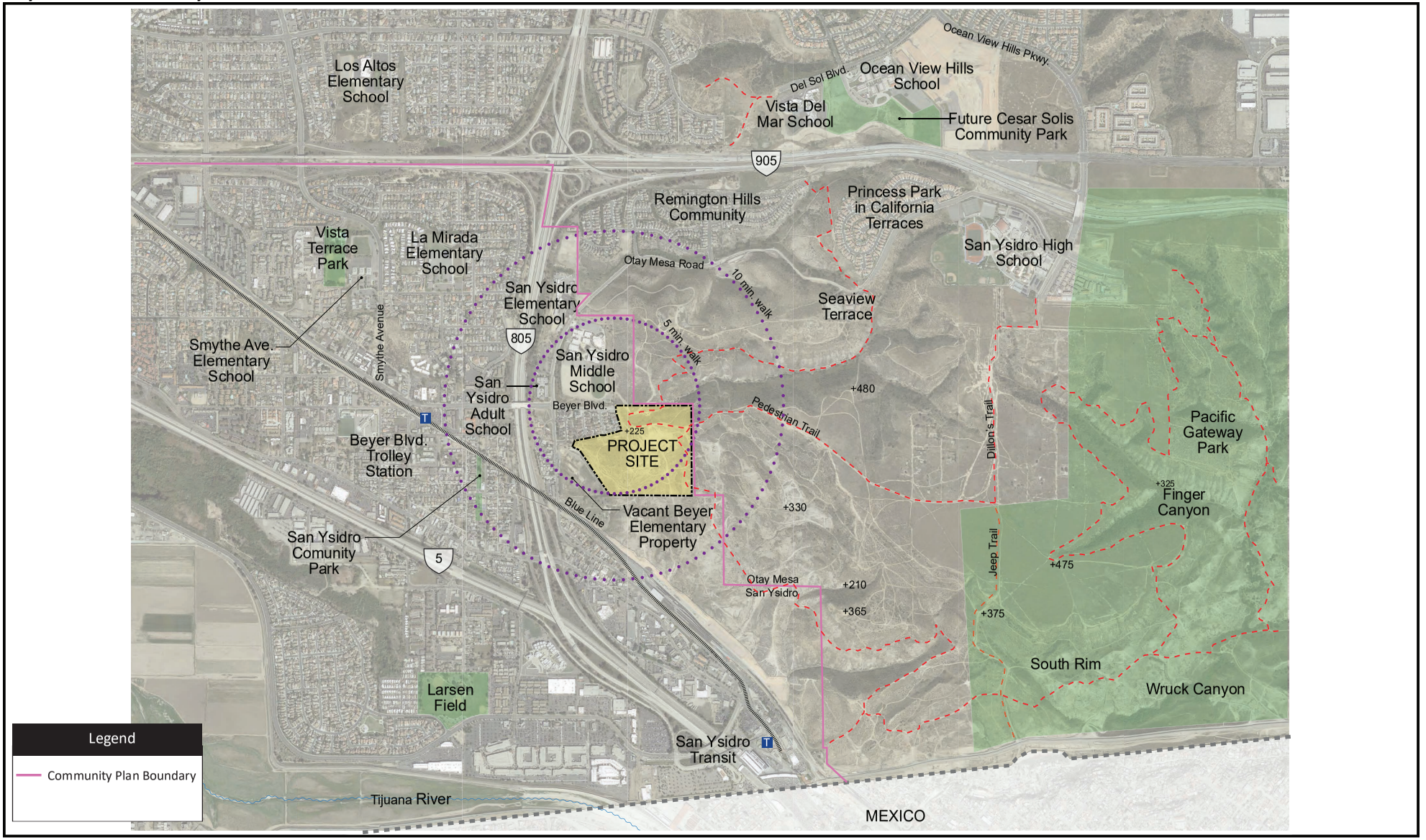

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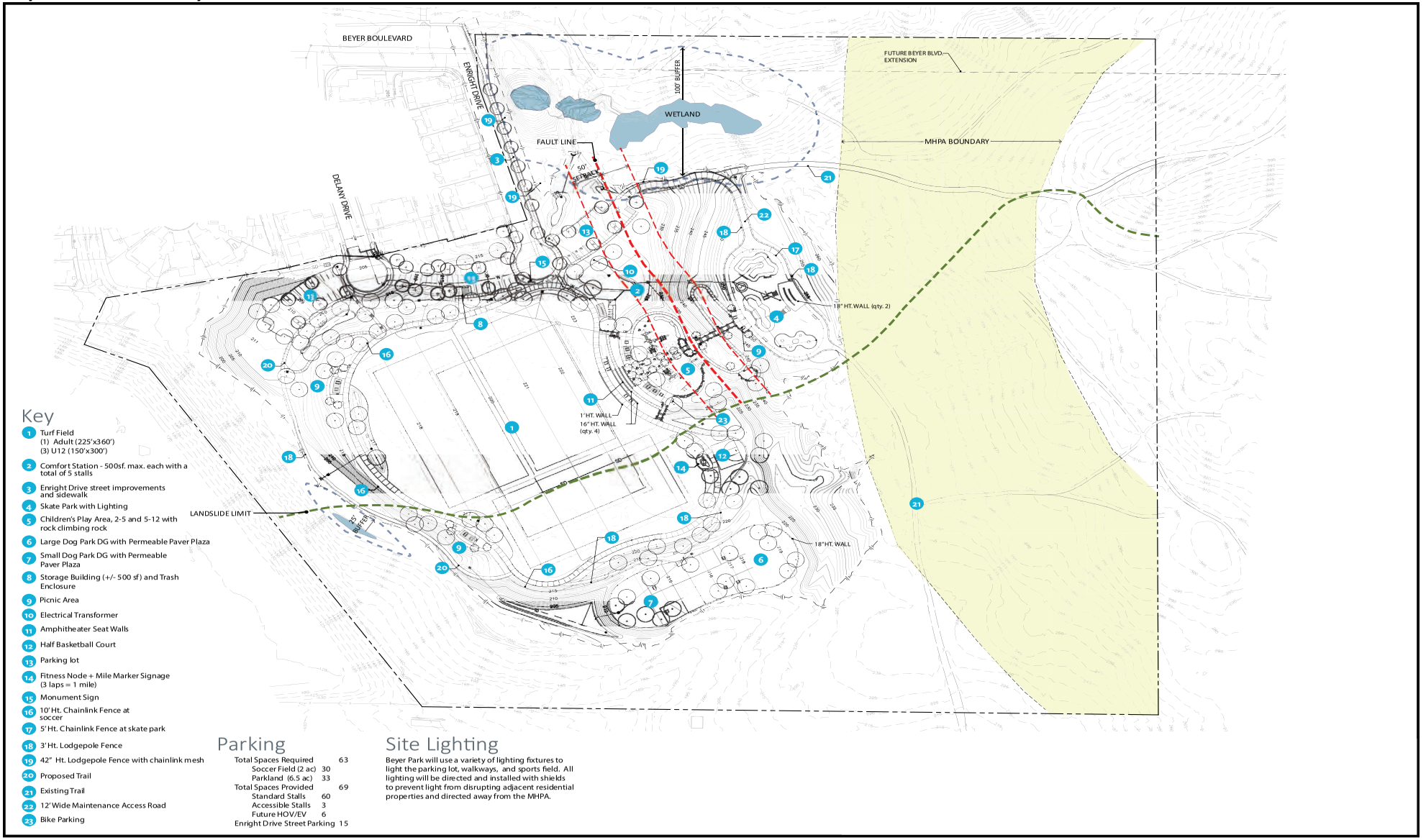
Exhibit 2-2
Project Site Context

Beyer Park Access Analysis



Key

1. Turf Field (1) Adult (225'x360') (3) U12 (150'x300')
2. Comfort Station - 500sf. max. each with a total of 5 stalls
3. Enright Drive street improvements and sidewalk
4. Skate Park with Lighting
5. Children's Play Area, 2-5 and 5-12 with rock climbing rock
6. Large Dog Park DG with Permeable Paver Plaza
7. Small Dog Park DG with Permeable Paver Plaza
8. Storage Building (+/- 500 sf) and Trash Enclosure
9. Picnic Area
10. Electrical Transformer
11. Amphitheater Seat Walls
12. Half Basketball Court
13. Parking lot
14. Fitness Node + Mile Marker Signage (3 laps = 1 mile)
15. Monument Sign
16. 10' Ht. Chainlink Fence at soccer
17. 5' Ht. Chainlink Fence at skate park
18. 3' Ht. Lodgepole Fence
19. 42" Ht. Lodgepole Fence with chainlink mesh
20. Proposed Trail
21. Existing Trail
22. 12' Wide Maintenance Access Road
23. Bike Parking

Parking

Total Spaces Required	63
Soccer Field (2 ac)	30
Parkland (6.5 ac)	33
Total Spaces Provided	69
Standard Stalls	60
Accessible Stalls	3
Future HOV/EV	6
Enright Drive Street Parking	15

Site Lighting

Beyer Park will use a variety of lighting fixtures to light the parking lot, walkways, and sports field. All lighting will be directed and installed with shields to prevent light from disrupting adjacent residential properties and directed away from the MHPA.

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Exhibit 2-3
Project Site Plan

Beyer Park Access Analysis

Key

1. Turf Field
   (1) Adult (225'x360')
   (3) U12 (150'x300')
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13. Parking lot
14. Fitness Node + Mile Marker Signage (3 laps = 1 mile)
15. Monument Sign
16. 10' Ht. Chainlink Fence at soccer
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18. 3' Ht. Lodgepole Fence
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Parking

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Exhibit 2-4
Conceptual Project Site Plan

2.2 STUDY AREA

This access analysis addresses potential operational impacts that could result from the addition of the project traffic to the local circulation system. The study area contains intersections and roadway segments that could be impacted by the project traffic. Based on the discussion with City of San Diego's staff, the following two (2) intersections and two (2) roadway segments were included in the study:

Intersections

1. E. Beyer Boulevard/ Otay Mesa Road/ Beyer Boulevard (signalized)
2. Beyer Boulevard/ W. Park Avenue/ Alaquinas Drive (signalized)

Roadway Segments

1. Beyer Boulevard, from Enright Drive to Otay Mesa Road
2. Beyer Boulevard, from Otay Mesa Road to W. Park Avenue/ Alaquinas Drive

Exhibit 2-5 illustrates the project study area.

Beyer Park Access Analysis

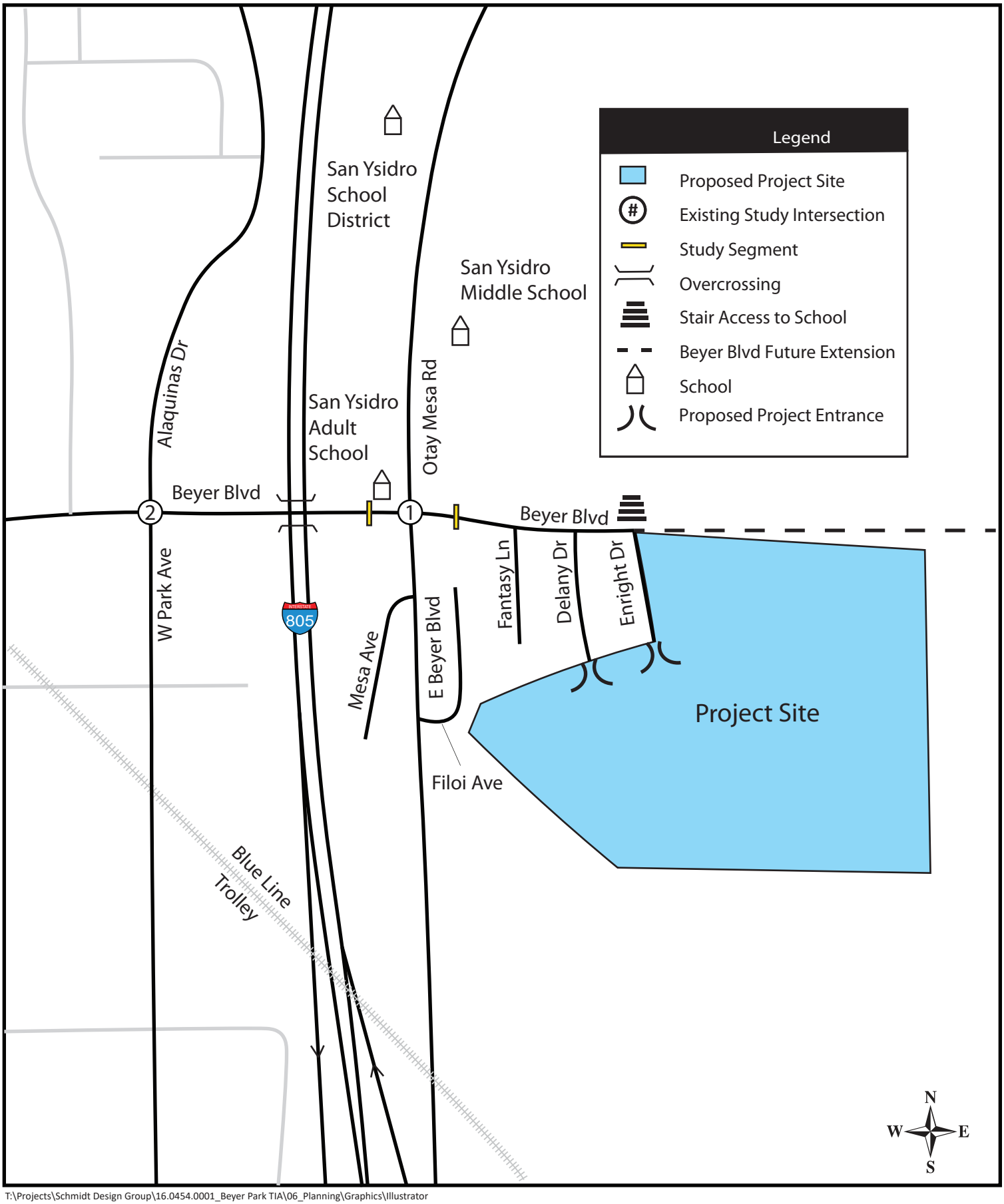

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Exhibit 2-5
Project Study Area

3 ANALYSIS APPROACH AND METHODOLOGY

This section summarizes the analysis approach and methodology used to evaluate the study intersections and roadway segments associated with the proposed project. The analysis is consistent with the City of San Diego Traffic Impact Study Manual (July 1998) and the City's Significance Determination Thresholds (January 2016).

3.1 ANALYSIS SCENARIOS

The following scenarios were evaluated in this transportation impact analysis:

- **Existing Conditions (2018):** This scenario reflects the conditions on the ground at the time the traffic volume data was obtained (Tuesday March 20, 2018).
- **Existing Plus Project Buildout:** This scenario reflects existing conditions with the addition of project buildout traffic.
- **Opening Year 2020 Without Project:** This scenario reflects the anticipated roadway conditions of the project opening year 2020, with the addition of traffic from approved and pending projects around the proposed project site. This scenario does not include the proposed project traffic. The existing roadway network is assumed for the Opening Year 2020 conditions.
- **Opening Year 2020 With Project:** This scenario reflects the Opening Year 2020 roadway conditions with the addition of project traffic.

3.2 METHODOLOGY

3.2.1 Intersection Analysis

Levels of service (LOS) were determined at the study area intersections for the AM and PM weekday peak hours. The AM intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 7:00 AM and 9:00 AM. The PM intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 4:00 PM and 6:00 PM.

Due to the limited capabilities of the 2010 Highway Capacity Manual (HCM) with regards to permissive left turn phases, intersection operations were analyzed based on the 2000 HCM methodology for signalized and unsignalized intersections. The Synchro 9.1 software program was used as an interface for the 2000 HCM methodology.

Signal timing data and parameters such as cycle lengths, splits, clearance intervals, etc. were obtained from the current signal timing sheets provided by the City and calibrated into the Synchro model. Signal timing sheets are included in **Appendix A**. Synchro reports delays, which correspond to a particular LOS, to describe the overall operation of an intersection. The criteria for the LOS grade designations are provided in **Table 3-1**. LOS provides a quick overview of how an intersection is performing. The City of San Diego considers LOS D or better to be acceptable peak hour intersection operation.

Table 3-1
LOS Criteria for Intersections

LOS	Control Delay (sec/veh)		Description
	Signalized Intersections (a)	Unsignalized Intersections (b)	
A	≤10	≤10	Operations with very low delay and most vehicles do not stop.
B	>10 and ≤20	>10 and ≤15	Operations with good progression but with some restricted movements.
C	>20 and ≤35	>15 and ≤25	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35 and ≤55	>25 and ≤35	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55 and ≤80	>35 and ≤50	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80	>50	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Source: 2000 Highway Capacity Manual (HCM).

3.2.2 Roadway Segment Capacity Analysis

The basis for roadway segment analysis is the ratio of daily volumes to LOS thresholds according to roadway classifications. **Table 3-2** presents the roadway segment capacity and LOS standards utilized by the City of San Diego.

Table 3-2
LOS Criteria for Roadway Segments

Street Classification	Level of Service (LOS)				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (8-lane)	< 30,000	< 40,000	< 59,000	< 65,000	< 70,000
Prime Arterial (7-lane)	< 27,000	< 38,000	< 54,000	< 60,000	< 65,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Collector (4-lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (4-lane, no center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane, continuous left-turn lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane, no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane, commercial/industrial fronting property)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane, multi-family)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Sub-Collector (2-lane, single family)	--	--	< 2,200	--	--

Source: *City of San Diego Traffic Impact Study Manual*, Table 2, Page 8, July 1998.

Notes:

The volumes and the average daily level of service listed above are only intended as a general planning guideline. 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.

3.3 SIGNIFICANCE CRITERIA

According to the *City of San Diego's Significance Determination Thresholds Report, dated January 2016*, a project is considered to have a significant impact if the new project traffic exceeds the thresholds summarized in **Table 3-3** or takes a facility from acceptable to unacceptable operations. Project impacts are considered "direct" or "cumulative".

Direct traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational, but which are anticipated to be operational at that time (near term).

Cumulative traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when the affected community plan area reaches full planned build out (long-term cumulative).

For intersections and roadway segments affected by the project, LOS D or better is considered acceptable under both direct and cumulative conditions.

Table 3-3
Summary of Significance Thresholds

LOS	Allowable Increase Due to Project		
	Roadway v/c ratio	Freeway v/c ratio	Intersection Delay (sec)
E	0.02	0.01	2.0
F	0.01	0.005	1.0

Source: *City of San Diego's Significance Determination Thresholds Report, dated January 2016.*

4 EXISTING CONDITIONS

This section summarizes the existing roadway network, peak hour and daily traffic volumes, and operations at the study area intersections and roadway segments.

4.1 EXISTING ROADWAY NETWORK

Beyer Boulevard within the project study area west of Otay Mesa Road/ E. Beyer Boulevard is classified as a four-lane Major and currently built as four lanes of travel within 82 feet curb-to-curb and a continuous two-way left turn lane. Sidewalks are provided along the roadway on both sides of the street. Parking is permitted both sides of the street. The posted speed limit west of Otay Mesa Road/ E. Beyer Boulevard is 35 mph. Chapter 3 (Mobility) of the San Ysidro Community Plan and Local Coastal Program Land Use Plan (2015) identifies this segment's ultimate classification as a four-lane Major. Class II bike facility are planned on Beyer Boulevard within the project study area, but do not exist today.

Beyer Boulevard east of Otay Mesa Road/ E. Beyer Boulevard has two lanes of travel. Currently the street ends at Enright Drive. This segment of Beyer Boulevard is currently built to its half width from its future

planned four-lane Collector. Therefore, the westbound approach at Otay Mesa Road/ E. Beyer Boulevard/Beyer Boulevard intersection is offset to the south from the westbound receiving lanes. Sidewalk is provided on the south side of the street. Parking is permitted on south side of the street. The prima facie speed limit is 25 mph. The curb to curb width is 40 feet. Chapter 3 (Mobility) of the San Ysidro Community Plan and Local Coastal Program Land Use Plan (2015) identifies this segment's ultimate classification as a four-lane Collector.

Enright Drive **is a residential local street with** 2 lanes of travel with a semi-improved cul-de-sac to the south and intersecting Beyer Boulevard at the north end. Curb, gutter and sidewalk is provided on the west side of the street. Parking is permitted on west side of the street. The east side of the street is unimproved and abuts the park. The prima facie speed limit is 25 mph. This road has a curb to edge of pavement distance of 28 feet.

Delany Drive **is a residential local street with** 2 lanes of travel with a semi-improved cul-de-sac to the south and intersecting Beyer Boulevard at the north end. Curb, gutter and sidewalk is provided on both sides of the street. Parking is permitted on both sides of the street. The prima facie speed limit is 25 mph. The curb to curb width is 36 feet.

E. Beyer Boulevard/ Otay Mesa Road within the project study area is a two-lane Collector oriented in the north-south direction. South of Beyer Boulevard, the roadway is E. Beyer Boulevard and changes to Otay Mesa Road north of Beyer Boulevard. Chapter 3 (Mobility) of the San Ysidro Community Plan and Local Coastal Program Land Use Plan (2015) identifies this segment's ultimate classification as a two-lane Collector. Sidewalk is provided on both sides of the street. Parking is not permitted within the project study area. The posted speed limit is 35 mph. East Beyer Boulevard and Otay Mesa Road is currently signed as a Bike Route. Class II bike facilities are planned on Otay Mesa Road, north of Beyer Boulevard.

Alaquinas Drive/ W. Park Avenue within the project study area is a two-lane Collector oriented in the north-south direction. Chapter 3 (Mobility) of the San Ysidro Community Plan and Local Coastal Program Land Use Plan (2015) identifies this segment's ultimate classification as a two-lane Collector. The street south of Beyer Boulevard is named W. Park Avenue and changes to Alaquinas Drive north of Beyer Boulevard. Sidewalk is provided on both sides of the street. Parking on W. Park Avenue is permitted on east side of the street and parking on Alaquinas Drive is permitted both sides of the street. The posted speed limit on Alaquinas Drive is 25 mph. There is no posted speed limit on W. Park Avenue. Currently there are no bike facilities within the project study area. A Class II or Class III bike facility is planned on W. Park Avenue.

Exhibit 4-1 illustrates the existing lane geometrics and controls at the study intersections and roadway classifications.

4.2 OTHER MODES OF TRAVEL

San Ysidro has many features that allow the community to utilize all modes of transportation. Around the project site, there are many bike routes and sidewalks that pedestrians and bicyclists can use that will

enable them to safely arrive at the community park. The proposed park will have bicycle and pedestrian facilities to help facilitate all modes of travel to and from the project site including bicycle racks and paved pathways. The San Diego Metropolitan Transit System(MTS) trolley station and various bus stops are located less than a mile from the vicinity of the proposed park, giving community members the ability to utilize different travel modes to the park. In addition to the vehicular roadway network, other modes of travel are provided within the study area and described in the following sections.

4.2.1 Transit Service

There are currently no transit facilities within walking distance (1/4 of a mile) of the proposed community park site. The San Diego Metropolitan Transit System (MTS) operates the local transit service within the City of San Diego. The trolley station, with park and ride facility is located on Beyer Boulevard, 0.6 miles from the proposed project site. There are no bus routes operating along E. Beyer Boulevard - Otay Mesa Road and Beyer Boulevard in the vicinity of the project site. The closest bus stop is located on E San Ysidro Boulevard, 0.76 miles from the proposed project site. Route 906/907 operates from Iris Avenue Transit Center to San Ysidro Transit Center. **Exhibit 4-2** illustrates the existing transit routes and stops in the vicinity of the project site.

4.2.2 Pedestrian and Bicycle Access

Currently a Class III bike facility is present on E. Beyer Boulevard/ Otay Mesa Road and Beyer Boulevard in the vicinity of the project site. The Bike Route sign (D11-1), found in the California Manual on Uniform Traffic Control Devices (CAMUTCD), is being used to facilitate the presence of bike facilities around the project site. Bicycle route signage is present along Otay Mesa Road approximately 650 feet North of Remington Hills Drive. Along Beyer Boulevard, bicycle route signage is present approximately 40 feet West of Beyer Boulevard - W. Park Avenue/ Alaquinas Drive. Bicycle signage is present on E. Beyer Boulevard approximately 40 feet South of Beyer Boulevard – E. Beyer Boulevard/ Otay Mesa Road. Sidewalks are provided on most parts of the roadway along E. Beyer Boulevard - Otay Mesa Road and Beyer Boulevard. A gap in the sidewalk is present on the north side of Beyer Boulevard, East of Otay Mesa Road, as well as on the east side of Enright Drive. **Exhibit 4-3** illustrates existing pedestrian and bicycle facilities in the vicinity of the project site.

4.3 TRAFFIC VOLUMES

Traffic volumes at the study area intersections were collected on Tuesday, March 20, 2018 for the AM peak period (7:00 AM to 9:00 AM) and PM peak period (4:00 PM to 6:00 PM) during typical weekday conditions with schools in session. Daily volumes on the study area roadway segments were also collected on Tuesday, March 20, 2018 over a 24-hour period in both directions of travel.

Exhibit 4-4 illustrates the existing conditions peak hour traffic volumes at the study intersections and daily traffic volumes on the study roadway segments. Chapter 3 (Mobility) of the San Ysidro Community Plan and Local Coastal Program Land Use Plan (2015) is provided in **Appendix B**. **Appendix C** contains the traffic count data sheets.

Beyer Park Access Analysis

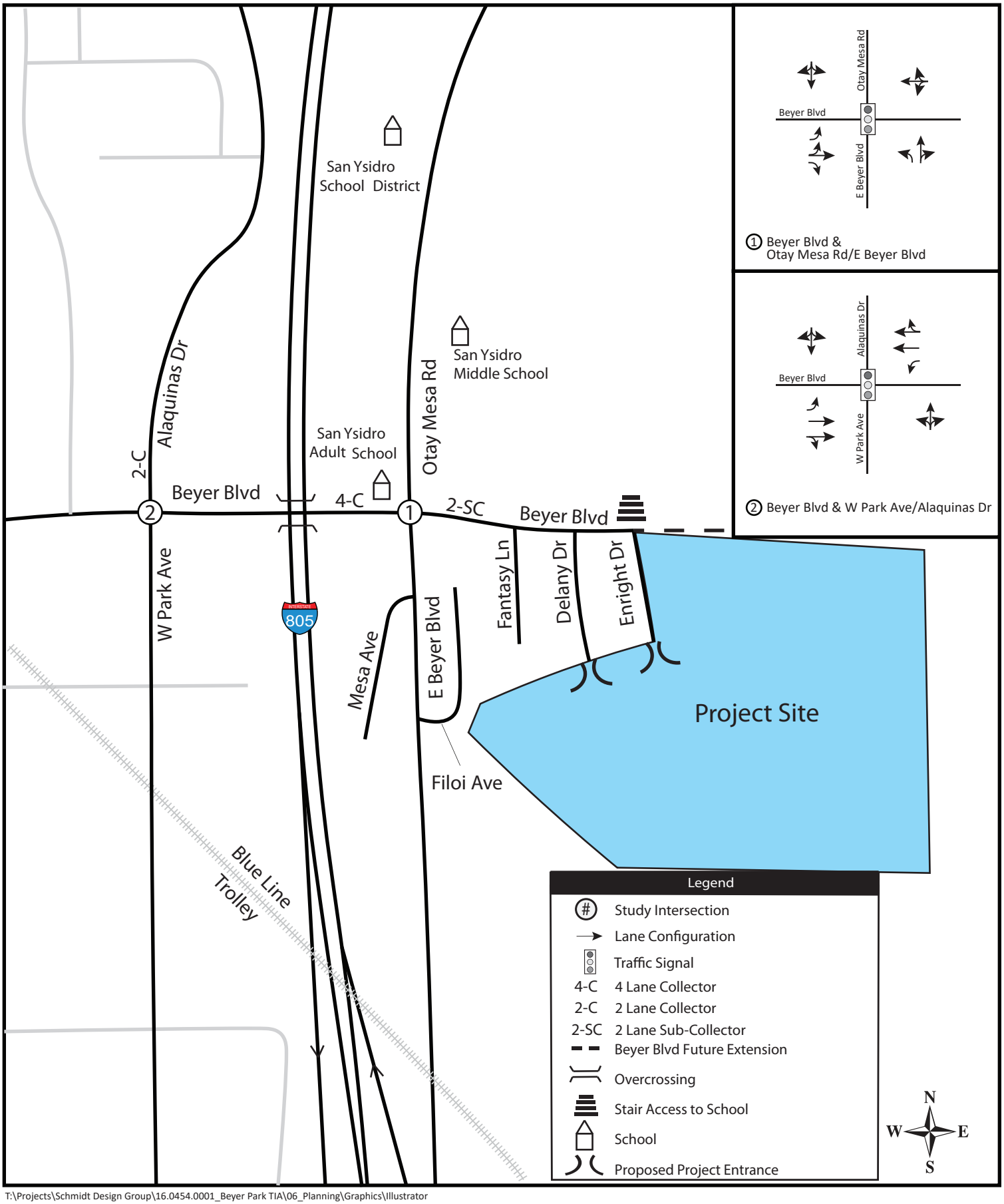

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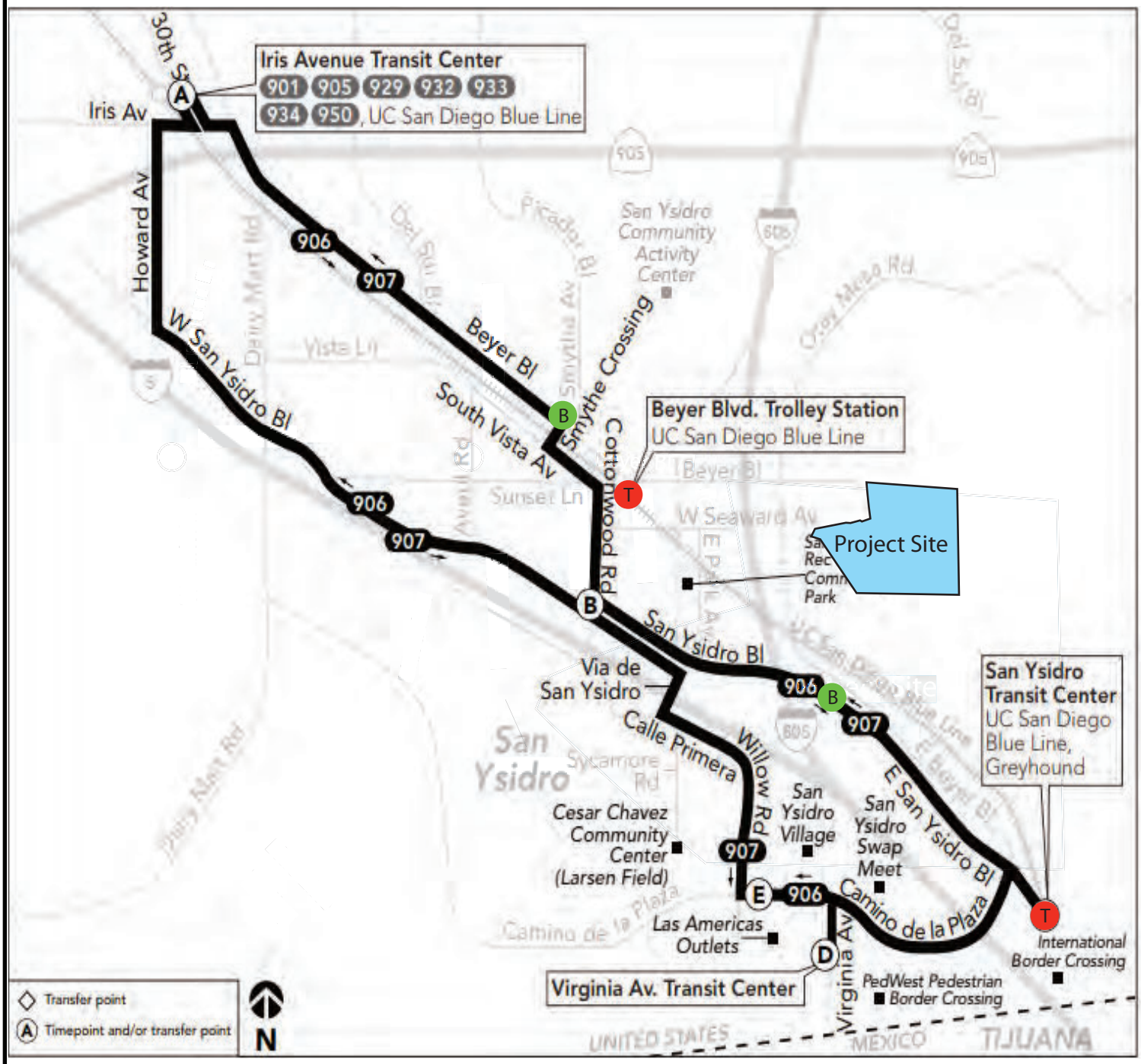
Exhibit 4-1
Existing Intersection Lane Geometry and Roadway Classification



T Trolley Station

B Bus Stop

N
W E
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Exhibit 4-2
Existing Transit Routes and Stops

Beyer Park Access Analysis

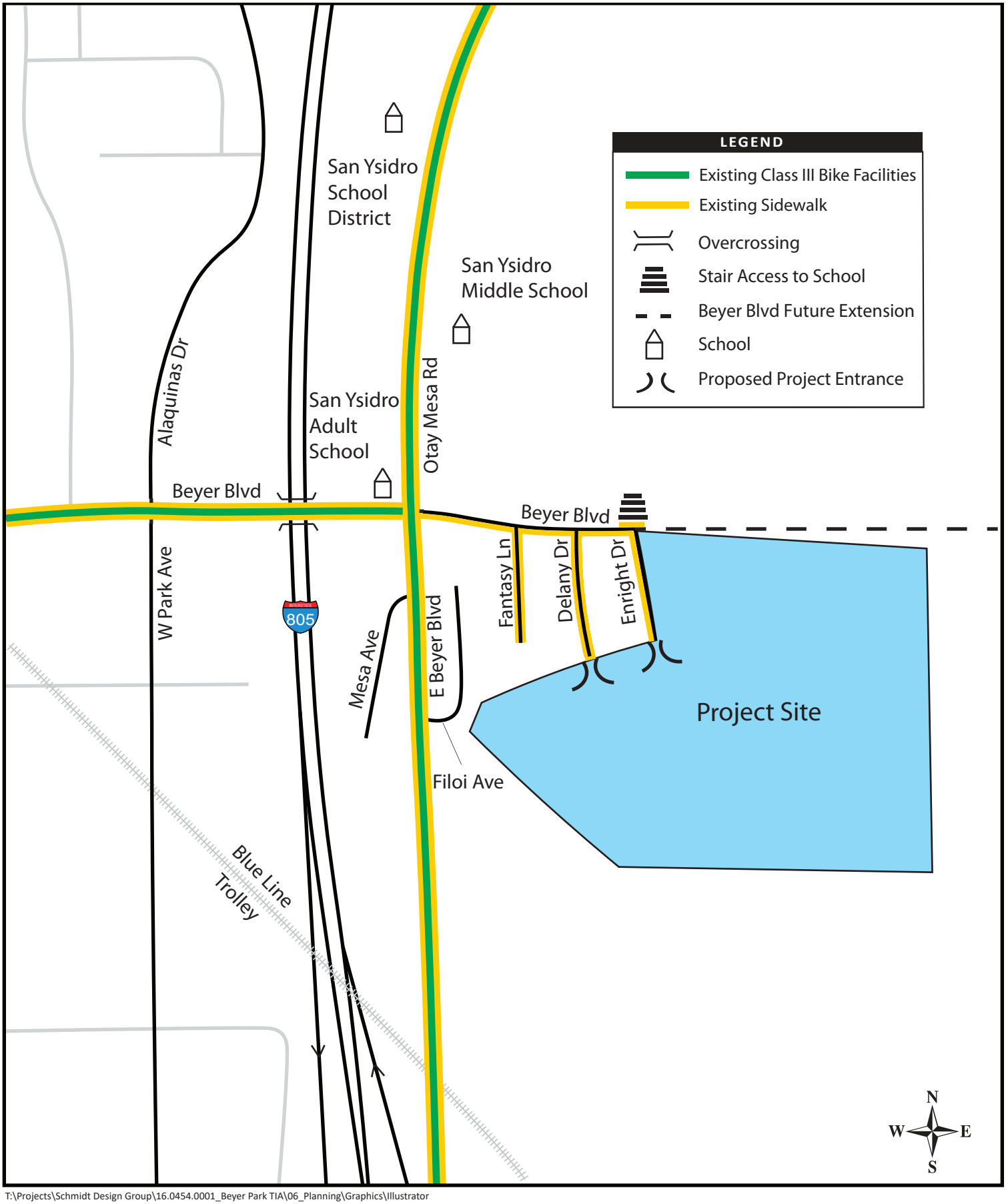

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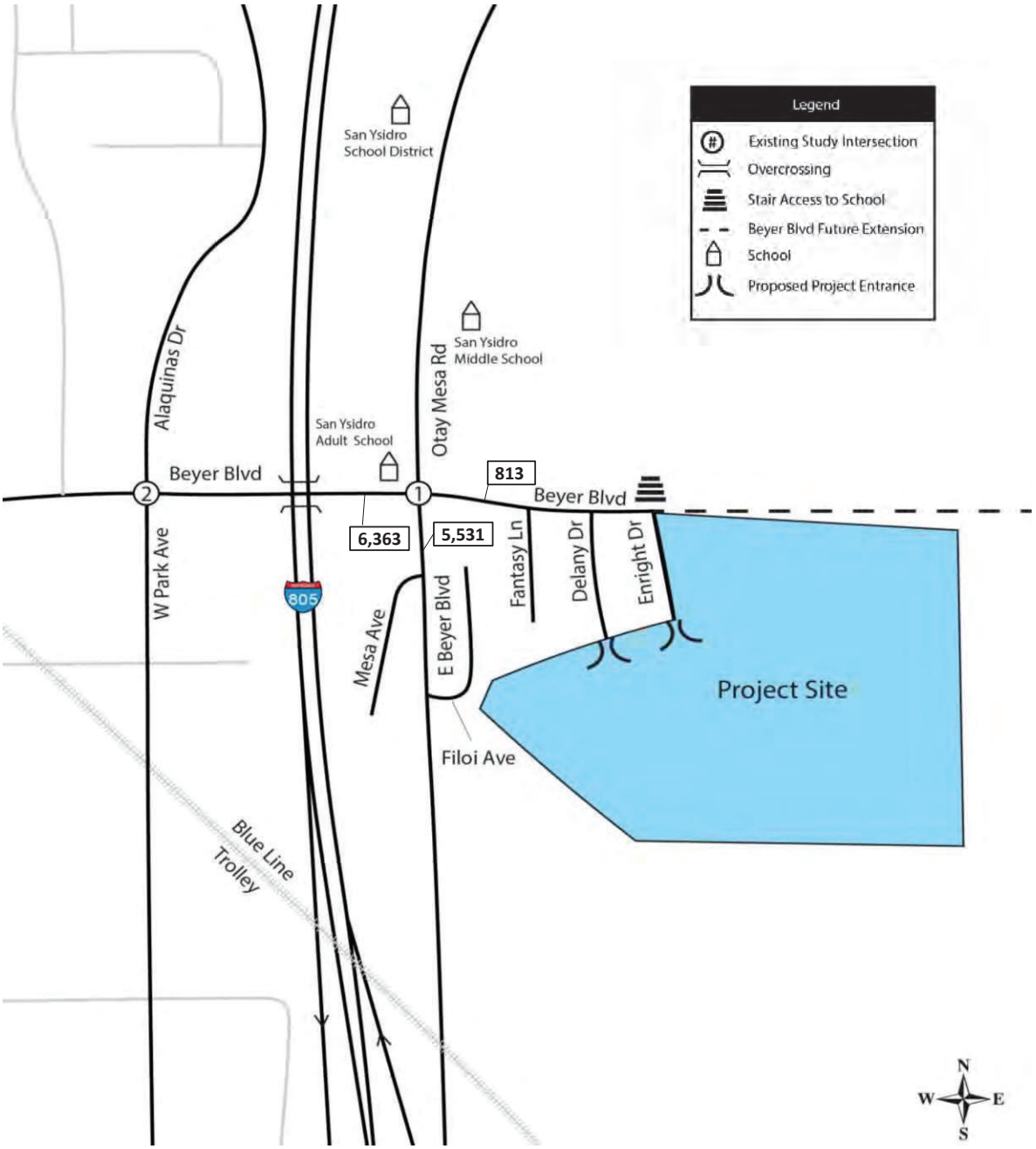
Exhibit 4-3
Existing Pedestrian and Bicycle Facilities

Beyer Park Access Analysis



Otay Mesa Rd / E. Beyer Blvd @ Beyer Blvd		
298 / 67 ←	148 / 66 ↓	3 / 1 →
292 / 98 ↑	11 / 22 →	120 / 139 ↓
↑ 4 / 1	← 17 / 18	↓ 16 / 12
←	↑	→
79 / 84	114 / 63	5 / 14

Alaquinas Dr / W. Park Ave @ Beyer Blvd		
41 / 44 ←	45 / 41 ↓	68 / 40 →
48 / 44 ↑	258 / 218 →	108 / 82 ↓
↑ 69 / 26	← 242 / 122	↓ 82 / 22
←	↑	→
90 / 57	52 / 28	99 / 27

LEGEND

XXX = ADT volume

xx / yy = AM / PM Peak-Hour Turning Movement Volumes

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Exhibit 4-4

Existing Peak Hour Intersection and Daily Roadway Segment Volumes

4.4 Intersection Analysis

Table 4-1 displays the LOS analysis results for the study intersections under Existing Conditions. **Appendix D** contains the intersection LOS worksheets.

Table 4-1
Existing Peak Hour Intersection LOS Summary

Intersection		Control	Peak Hour	Existing Conditions	
				Delay [(a)]	LOS
1	Beyer Blvd. and E. Beyer Blvd. / Otay Mesa Rd.	Signal	AM	22.5	C
			PM	11.5	B
2	Beyer Blvd. and W. Park Ave. / Alaquinas Dr.	Signal	AM	20.0	C
			PM	11.2	B

(a) Seconds of delay are reported as the average control delay for the entire intersection at signalized intersections.

As shown in Table 4-1, the study intersections currently operate at an acceptable LOS C or better during both the AM and PM peak hours.

4.5 Roadway Segment Analysis

Table 4-2 summarizes the daily operations of the study area roadway segments under Existing Conditions. As shown in Table 4-2, the segment from Otay Mesa Road/ East Beyer Boulevard to Fantasy Lane is currently operating better than acceptable LOS C, while the segment from West Park Ave/ Alaquinas Drive to Otay Mesa Road/ East Beyer Boulevard is currently operating at an acceptable LOS A based on the existing daily volumes and roadway classifications for each segment.

Table 4-2
Existing Daily Roadway Segment LOS Summary

Roadway Segment	Classification	LOS E Capacity	ADT	v/c Ratio	LOS
Beyer Boulevard					
Otay Mesa Rd./ E. Beyer Blvd. to Fantasy Ln.	Sub-Collector/2	2,200[(a)]	813	0.370	Better than LOS C
W. Park Ave./ Alaquinas Dr. to Otay Mesa Rd./ E. Beyer Blvd.	Collector/4 (with TWLTL)	30,000	6,363	0.212	A

V/C = Volume to Capacity
(a) LOS C capacity for two lane residential sub-collector

5 PROJECT TRAFFIC

This section describes the proposed project, forecast trip generation, trip distribution, and trip assignment on the adjacent roadway network.

5.1 PROJECT DESCRIPTION

The project proposes to construct a community park on approximately 31.7-acre project site. The site is currently vacant. The park will consist of turf area (4.78-acre), children's play area (0.24-acre), skatepark (0.45-acre), fitness area (0.02-acre), half basketball court (0.1-acre), picnic / gathering spaces (0.28-acre), dog park (0.78-acre), planting area (6.36-acre), basin (0.28-acre) and undeveloped area of 18.45-acres. The turf area can be striped as one adult soccer field or three youth soccer fields.

Access to the project site will be from Beyer Boulevard via Enright Drive and Delany Drive. Two driveways will be accessible from Beyer Boulevard. The first is located on the south end of Enright Drive which is currently a semi-improved cul-de-sac. The second is located at the south end of Delany Drive, which is also a semi-improved cul-de-sac. The existing cul-de-sacs will be modified to provide access to the new parking lots of the proposed Beyer Park.

5.2 PROJECT TRIP GENERATION

To determine the trips forecast to be generated by the proposed project, *City of San Diego Trip Generation Manual, May 2003* trip generations rates were utilized in accordance with City of San Diego Traffic Study Manual. **Table 5-1** summarizes the trip generation rates and the forecast project trips by the proposed project.

As shown in Table 5-1, the proposed project is forecast to generate approximately 458 trips per weekday, which includes approximately 18 AM peak hour trips (9 in, 9 out) and approximately 37 PM peak hour trips (19 in, 18 out).

Table 5-1
Trip Generation Summary

Land Use	Unit	Daily (per unit)	AM Peak Hour			PM Peak Hour		
			Total (% of daily)	Inbound (% AM)	Outbound (% AM)	Total (of daily)	Inbound (% PM)	Outbound (% PM)
Trip Generation Rates								
Park (Developed)	Acre	50	4%	50%	50%	8%	50%	50%
Park (Undeveloped)	Acre	5	4%	50%	50%	8%	50%	50%

Forecast Project Generated Trips for Proposed Uses									
Land Use	**Size**	**Unit**	**Daily Trips**	**AM Peak Hour**			**PM Peak Hour**		
				Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**
Beyer Park (Developed)	6.65	Acre	333	13	6	7	27	14	13
Beyer Park (Undeveloped)	25.1	Acre	126	5	3	2	10	5	5
Total Trips			**458**	**18**	**9**	**9**	**37**	**19**	**18**

Source: *City of San Diego Trip Generation Manual, May 2003*

Note: Inbound and Outbound splits were obtained from SANDAG (Not So Brief) Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002, since City of San Diego Trip Generation Manual does not report any splits.

5.3 PROJECT TRIP DISTRIBUTION

The project trip distribution was developed based on existing travel patterns and access to the major roadway network in the study area and locations of existing residential density. Additional residential density is located to the west of the project site along Enchanted Place. **Exhibit 5-1** illustrates the trip distribution for the proposed project at the study intersections.

5.4 PROJECT TRIP ASSIGNMENT

Based on the trip distribution shown in Exhibit 5-1, project trips were assigned to the study area roadway network. **Exhibit 5-2** illustrates the AM/PM peak hour project trip assignment at the study intersections and the daily project trip assignment on the study roadway segments.

Beyer Park Access Analysis

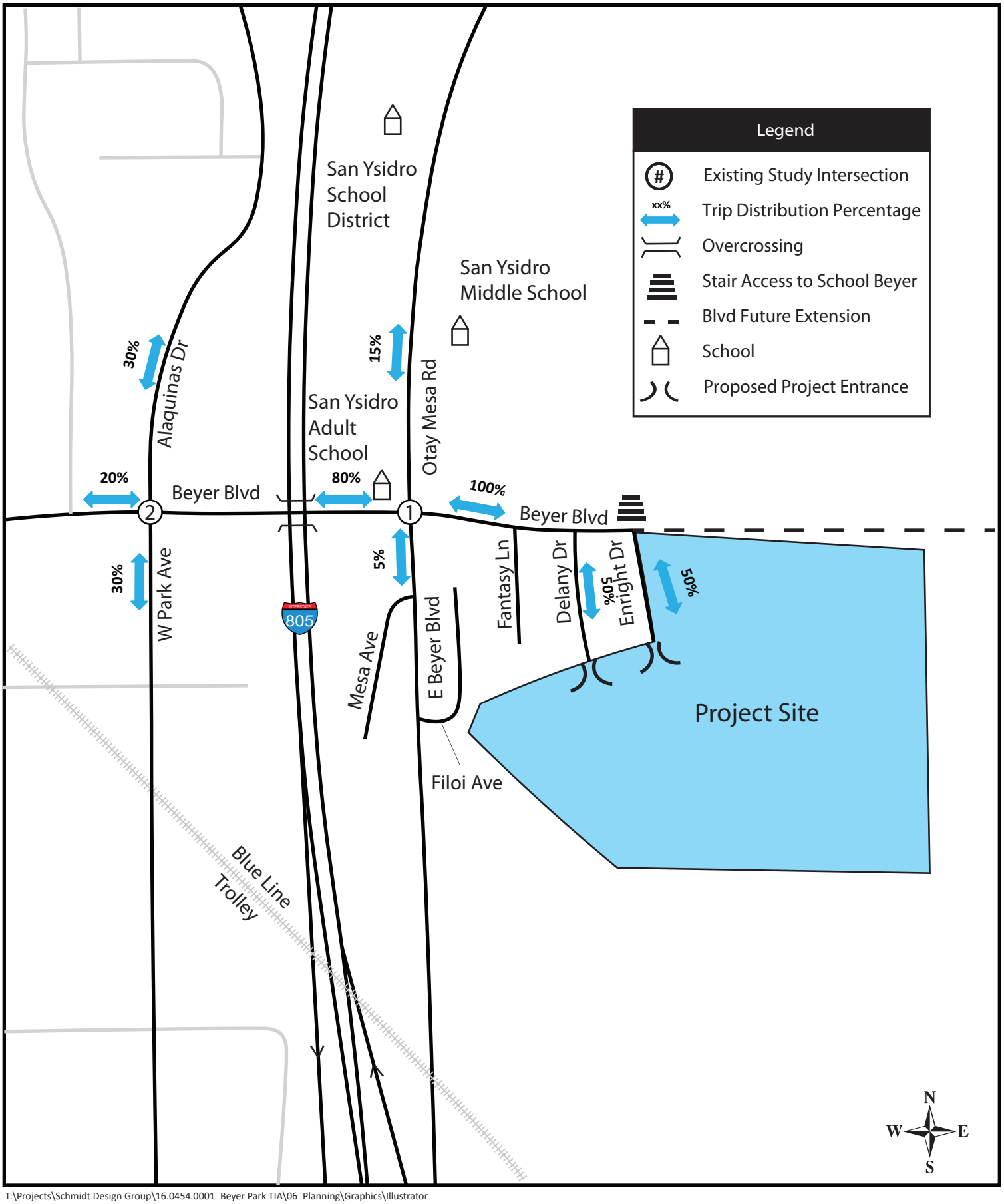

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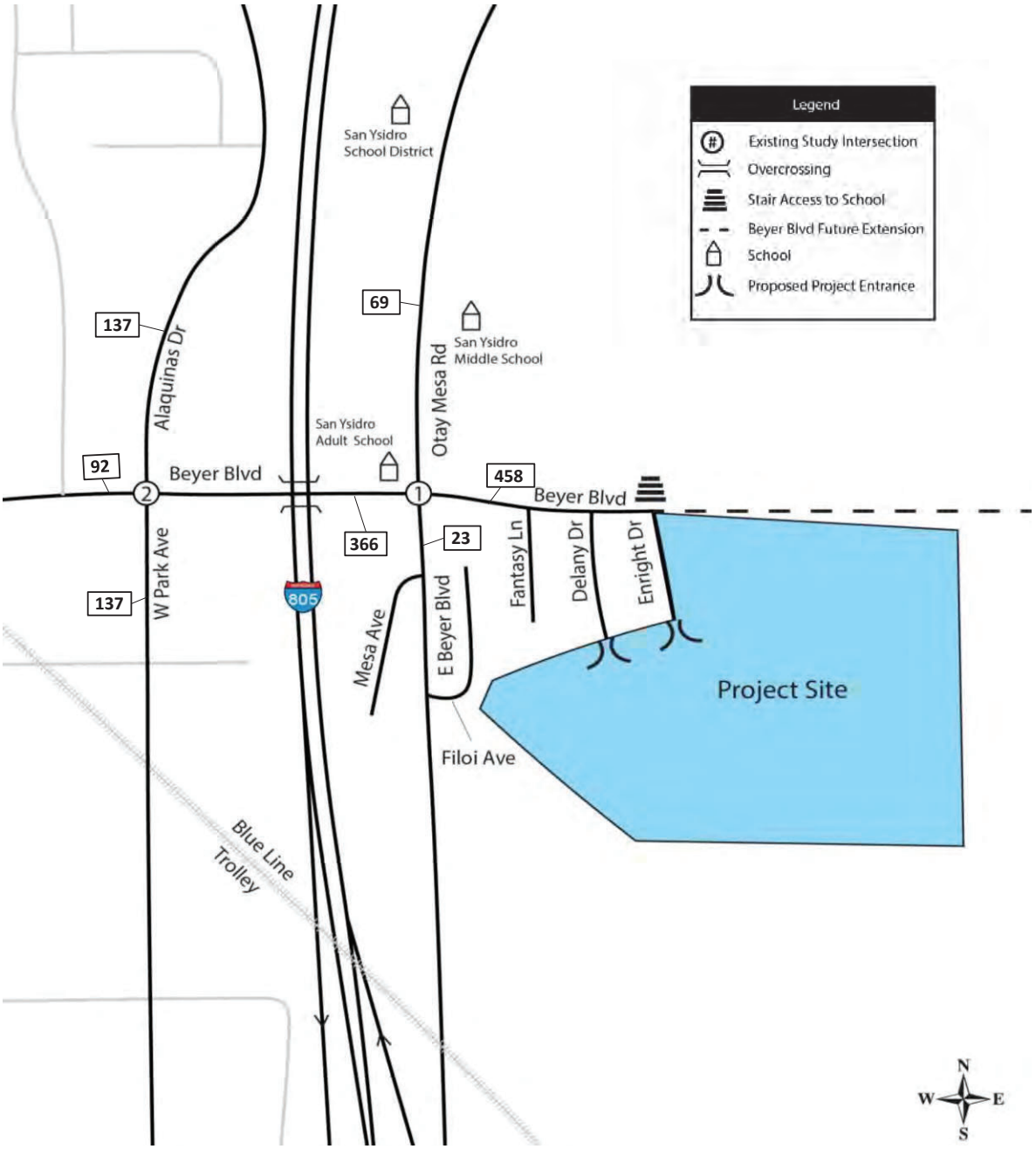
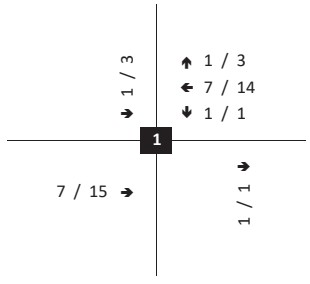
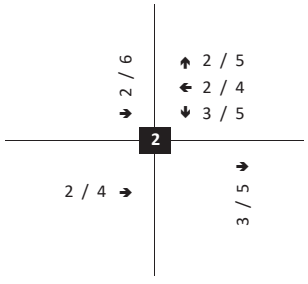
Exhibit 5-1
Project Trip Distribution



Otay Mesa Rd / E. Beyer Blvd @ Beyer Blvd	Alaquinas Dr / W. Park Ave @ Beyer Blvd
	

LEGEND

XXX = ADT volume

xx / yy = AM / PM Peak-Hour Turning Movement Volumes

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Exhibit 5-2

Peak Hour Intersection and Daily Roadway Segment Project Trip Assignment

6 EXISTING PLUS PROJECT CONDITIONS

This section provides a summary of operations at the study area intersections and roadway segments with the addition of project traffic to the existing traffic conditions.

6.1 TRAFFIC VOLUMES

Exhibit 6-1 illustrates the Existing Plus Project peak hour traffic volumes at the study intersections and daily traffic volumes on the study roadway segments.

6.2 INTERSECTION ANALYSIS

Table 6-1 displays the LOS analysis results for the study intersections under the Existing Plus Project scenario. **Appendix E** contains the intersection LOS worksheets.

Table 6-1
Existing Plus Project Peak Hour Intersection LOS Summary

	Intersection	Control	Peak Hour	Existing Conditions		Existing Plus Project		Change in Delay
				Delay [a]	LOS	Delay [a]	LOS	
1	Beyer Blvd. and E Beyer Blvd. / Otay Mesa Rd.	Signal	AM	22.5	C	23.4	C	0.9
			PM	11.5	B	13.5	B	2.0
2	Beyer Blvd. and W Park Ave. / Alaquinas Dr.	Signal	AM	20.0	C	20.3	C	0.3
			PM	11.2	B	12.0	B	0.8

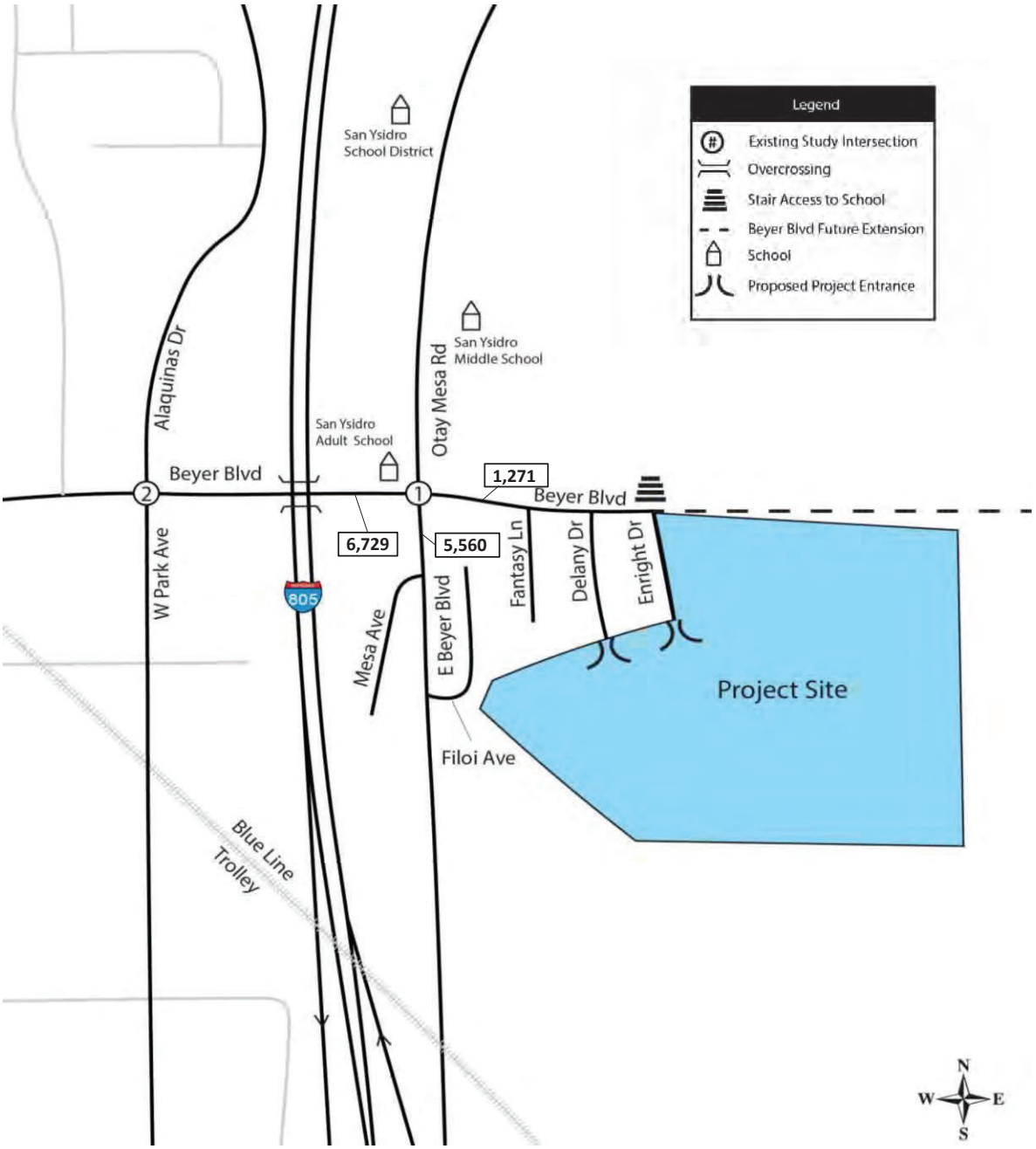
[a] Seconds of delay are reported as the average control delay for the entire intersection at signalized intersections.

As shown in Table 6-1, both the study intersections operate at acceptable LOS C or better for both the AM and PM peak hours with the addition of project-related traffic to existing traffic conditions.

6.3 ROADWAY SEGMENT ANALYSIS

Table 6-2 summarizes the daily operations of the study area roadway segments under Existing Plus Project conditions. As shown in Table 6-2, both study segments will continue to operate at an acceptable LOS C or better under existing plus project traffic conditions.

Beyer Park Access Analysis



Otay Mesa Rd / E. Beyer Blvd @ Beyer Blvd			Alaquinas Dr / W. Park Ave @ Beyer Blvd		
298 / 67 ←	5 / 4 ↑		41 / 44 ←	71 / 31 ↑	
148 / 66 ↓	24 / 32 ←		45 / 41 ↓	244 / 126 ←	
4 / 4 →	17 / 13 ↓		70 / 46 →	85 / 27 ↓	
1			2		
292 / 98 ↑	←	79 / 84	48 / 44 ↑	←	90 / 57
18 / 37 →	↑	114 / 63	260 / 222 →	↑	52 / 28
120 / 139 ↓	→	6 / 15	108 / 82 ↓	→	102 / 32

LEGEND

XXX = ADT volume

xx / yy = AM / PM Peak-Hour Turning Movement Volumes

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Exhibit 6-1

Existing Plus Project Peak Hour Intersection and Daily Roadway Segment Volumes

Table 6-2
Existing Plus Project Daily Roadway Segment LOS Summary

Roadway Segment	Classification	LOS E Capacity	Existing			Existing Plus Project			Change in V/C
			ADT	v/c Ratio	LOS	ADT	v/c Ratio	LOS	
Beyer Boulevard									
Otay Mesa Rd./ E. Beyer Blvd. to Fantasy Ln.	Sub-Collector/2	2,200[(a)]	813	0.370	Better than LOS C	1,271	0.578	Better than LOS C	0.208
W. Park Ave./ Alaquinas Dr. to Otay Mesa Rd./ E. Beyer Blvd.	Collector/4 (with TWLTL)	30,000	6,363	0.212	A	6,729	0.224	A	0.012

V/C = Volume to Capacity
(a) LOS C capacity for two lane residential sub-collector

7 OPENING YEAR 2020 CONDITIONS

7.1 CUMULATIVE PROJECTS

To determine the Opening Year 2020 conditions in the project study area, forecast project traffic associated with approved or pending projects was added to existing traffic volumes. The City of San Diego provided a list of six (6) cumulative projects that would generate traffic into the study area by the project opening year.

The list of cumulative projects and the trips generated by each project are presented in **Table 7-1**. **Exhibit 7-1** shows the locations of the cumulative projects. **Appendix F** provides the trip generation, distribution and assignment for each of the cumulative projects on the study roadway segments.

Table 7-1
Cumulative Projects Trip Generation

Land Use	Unit	Daily (per Unit)	AM Peak Hour			PM Peak Hour		
			Total (% of daily)	Inbound (% AM)	Outbound (% AM)	Total (% of Daily)	Inbound (% AM)	Outbound (% PM)
Trip Generation Rates								
Condominiums (under 20 du/acre)	DU	8	8%	20%	80%	10%	70%	30%
Apartments (over 20 du/acre)	DU	6	8%	20%	80%	9%	70%	30%
Single-Family (urbanized area)	DU	9	8%	20%	80%	10%	70%	30%
Specialty Retail Center/Strip Commercial	TSF	40	3%	60%	40%	9%	50%	50%

Cumulative Project Trips

ID #	Project Name	Type	Size	Unit	Daily Trips	AM Peak Hour			PM Peak Hour		
						Total	Inbound	Outbound	Total	Inbound	Outbound
1	Raintree Terrace	Condominium	18	DU	144	11	2	9	14	10	4
2	Olive Drive Townhomes	Condominium	8	DU	64	5	1	4	6	4	2
3	SY Affordable Apartments	Apartment	138	DU	828	66	13	53	75	52	23
4	Pacifica Ridge	Single-Family	44	DU	396	32	6	26	40	28	12
5	626 - 628 East San Ysidro Blvd	Retail Center	8.000	TSF	320	10	6	4	29	15	14
6	The Boulevard at 165	Retail Center	8.219	TSF	329	10	6	4	30	15	15
TOTAL CUMULATIVE PROJECT TRIPS					**2,081**	**134**	**34**	**100**	**194**	**124**	**70**

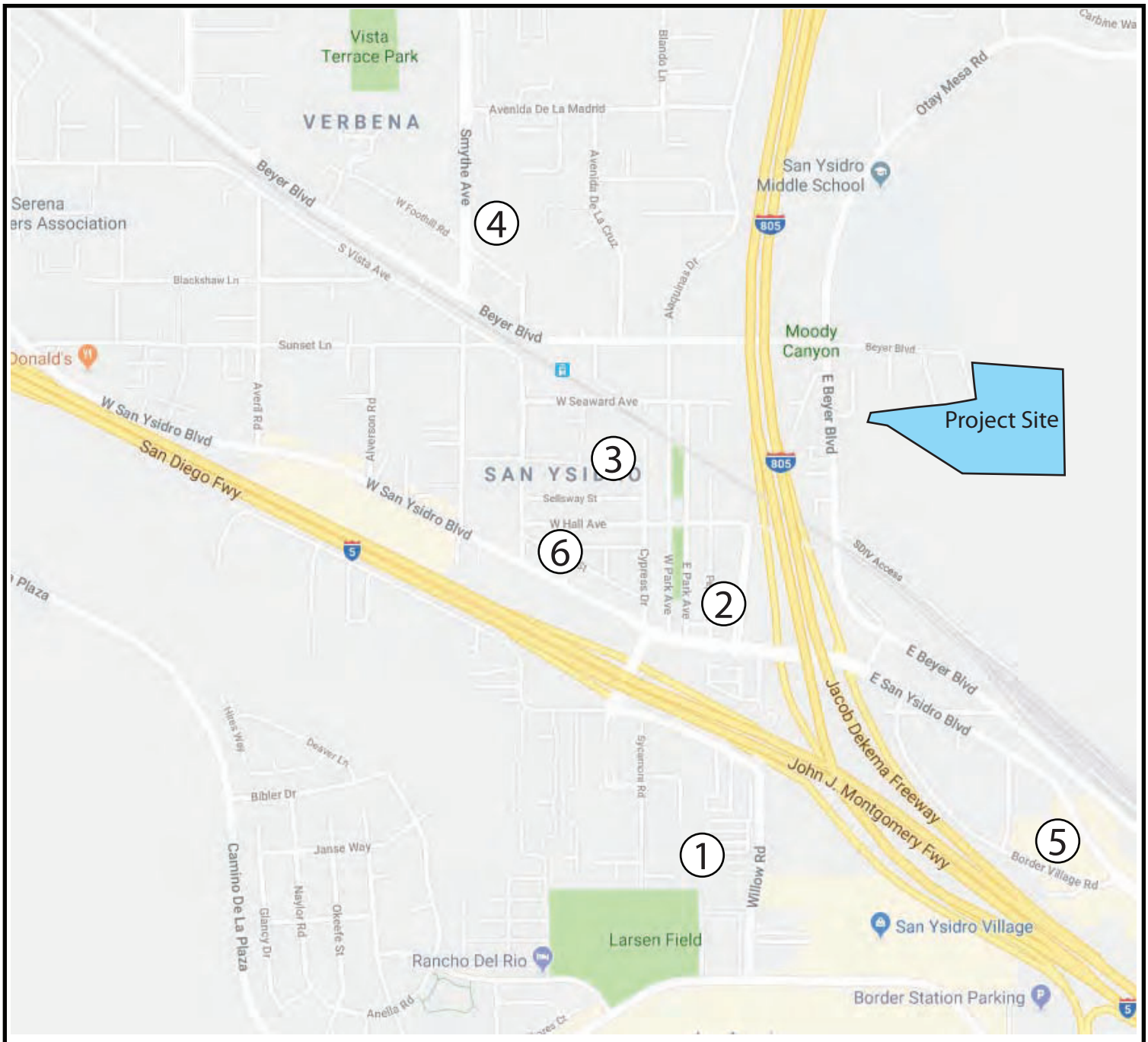
Source: *City of San Diego Trip Generation Manual, May 2003*

As presented in Table 7-1, the cumulative projects within the City of San Diego are forecast to generate approximately 2,081 trips per day, which includes approximately 134 AM peak hour trips and approximately 194 PM peak hour trips. Exhibit 7-2 illustrates the peak hour and daily cumulative project trips at the study intersections and roadway segments.

7.2 TRAFFIC VOLUMES

To determine the Opening Year 2020 without Project operating conditions in the study area, the cumulative project trips were added to the existing traffic volumes at the study intersection and roadway segment locations. **Exhibit 7-3** illustrate the peak hour intersection and daily roadway segment traffic volumes at the study intersections and roadway segments under Opening Year 2020 without Project conditions. To determine the Opening Year 2020 with Project volume, the project trips were overlaid on the Opening Year 2020 without Project volumes. Opening Year 2020 with Project conditions peak hour intersection and daily roadway segment traffic volumes at the study intersections and roadway segments are illustrated in **Exhibit 7-4**.

Beyer Park Access Analysis



	Location	ADT	STATUS
1	Raintree Terrace (392-396 Sycamore Rd)	144	In Construction
2	Olive Drive Townhomes (133 West Olive Dr.)	64	In Review
3	SY Affordable Apartments (238-263 Cypress Dr and 160 W Seaward Ave)	828	In Construction
4	Pacifica Ridge (1975 1/3 SMYTHE AV)	396	In Review
5	626 - 628 East San Ysidro Blvd	320	In Review
6	The Boulevard at 165 (165 W. San Ysidro Blvd.)	329	In Review

Legend

Ⓧ Cumulative Projects

N
W E
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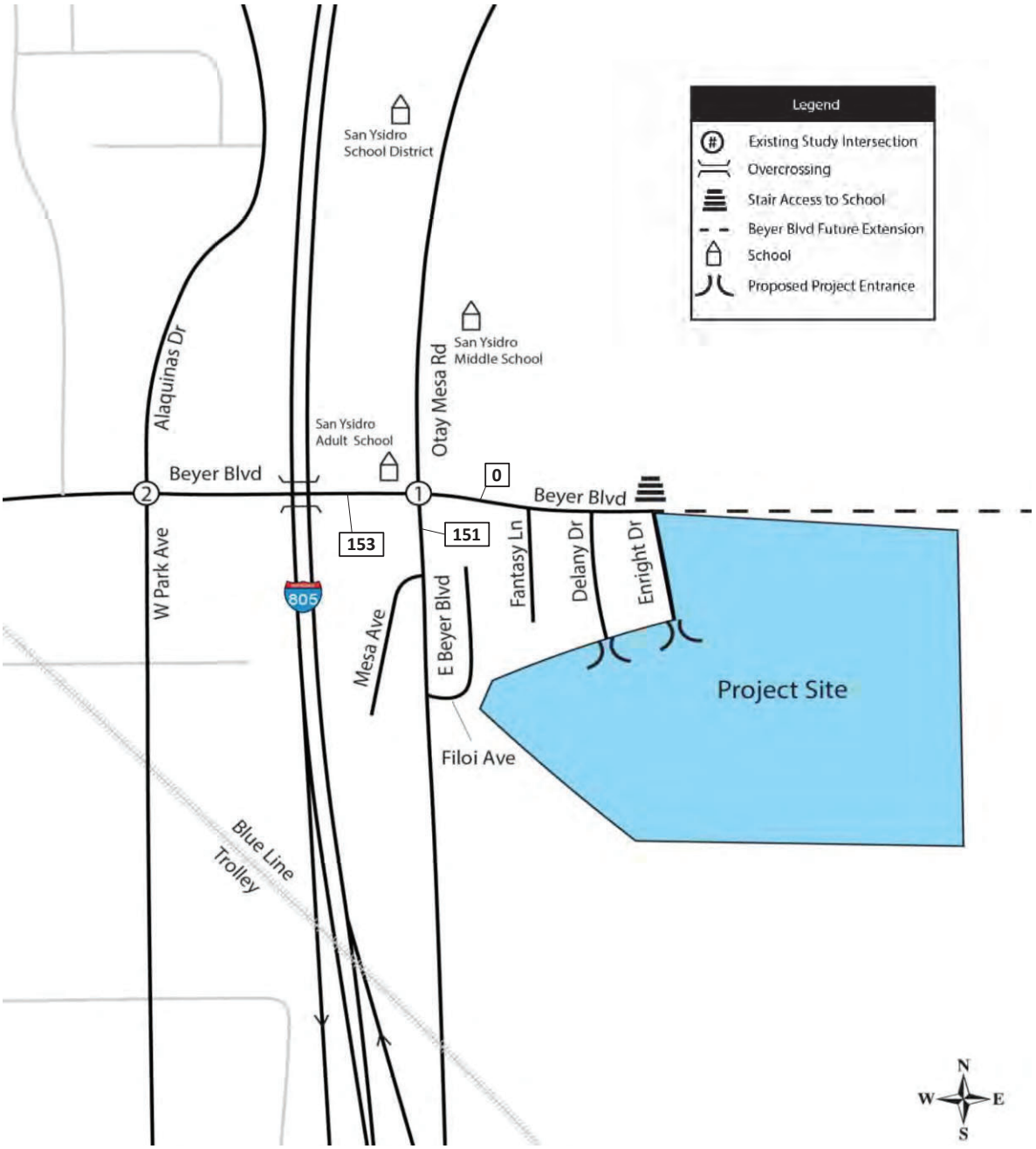
Exhibit 7-1
Cumulative Project Locations



Otay Mesa Rd / E. Beyer Blvd @ Beyer Blvd	Alaquinas Dr / W. Park Ave @ Beyer Blvd
1 / 3 ← 1 / 2 ↓ 3 / 1 ↑ 2 / 2 ↓ ← 1 / 3 ↑ 1 / 2	1 / 3 ↓ 0 / 1 → ↑ 0 / 1 ← 1 / 2 ↓ 1 / 3 2 / 1 → 1 / 5 ↓ ← 6 / 2 ↑ 3 / 2 → 3 / 1

LEGEND

XXX = ADT volume

xx / yy = AM / PM Peak-Hour Turning Movement Volumes

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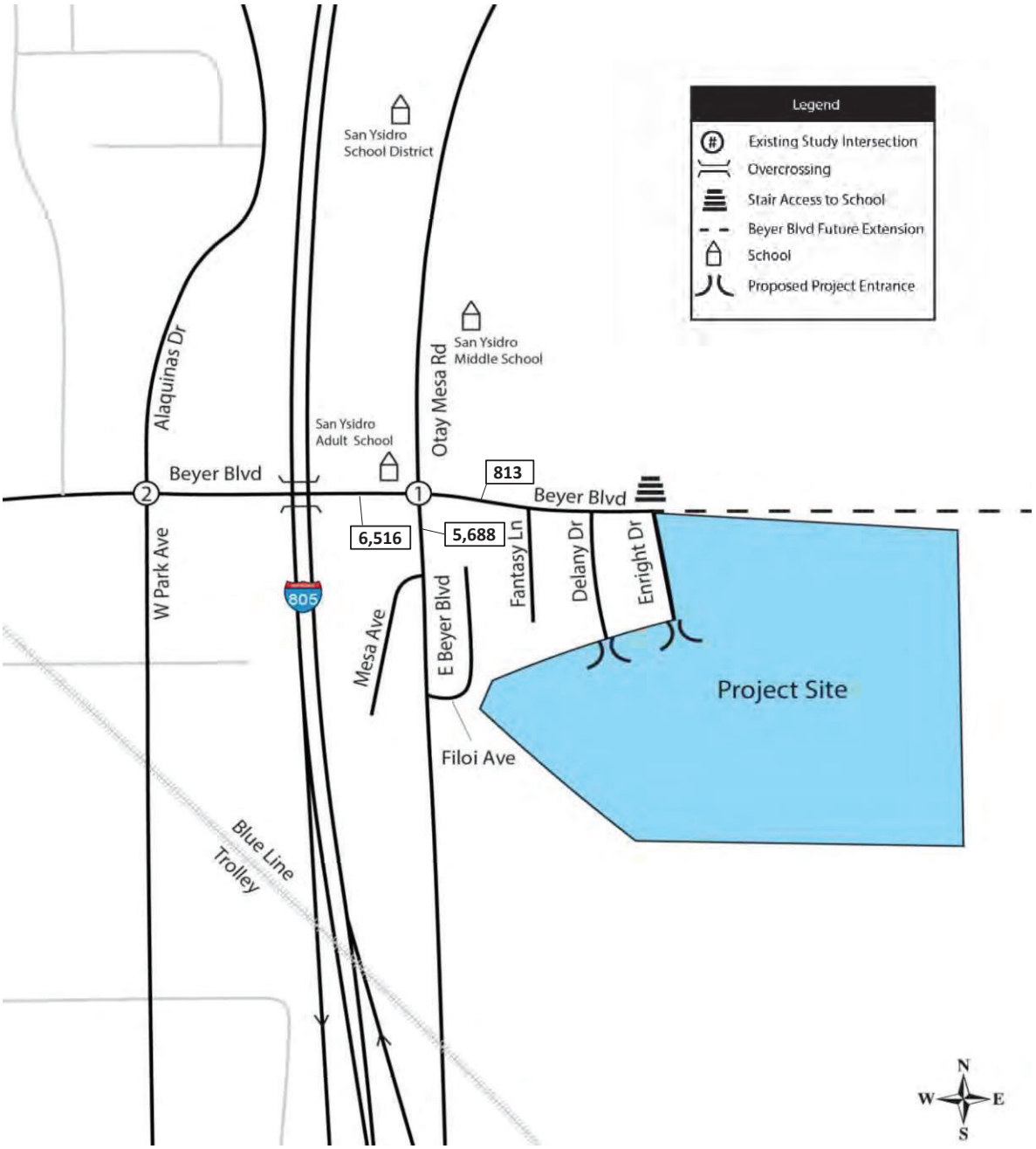
Exhibit 7-2

Cumulative Projects Peak Hour Intersection and Daily Roadway Segment Volumes



Otay Mesa Rd / E. Beyer Blvd @ Beyer Blvd		
299 / 70 ←	149 / 68 ↓	3 / 1 →
295 / 99 ↑	11 / 22 →	122 / 141 ↓
4 / 1 ↑	17 / 18 ←	16 / 12 ↓
80 / 87 ←	115 / 65 ↑	5 / 14 →

Alaquinas Dr / W. Park Ave @ Beyer Blvd		
41 / 44 ←	46 / 44 ↓	68 / 41 →
48 / 44 ↑	260 / 219 →	109 / 87 ↓
69 / 27 ↑	243 / 124 ←	83 / 25 ↓
96 / 59 ←	55 / 30 ↑	102 / 28 →

LEGEND

XXX = ADT volume

xx / yy = AM / PM Peak-Hour Turning Movement Volumes

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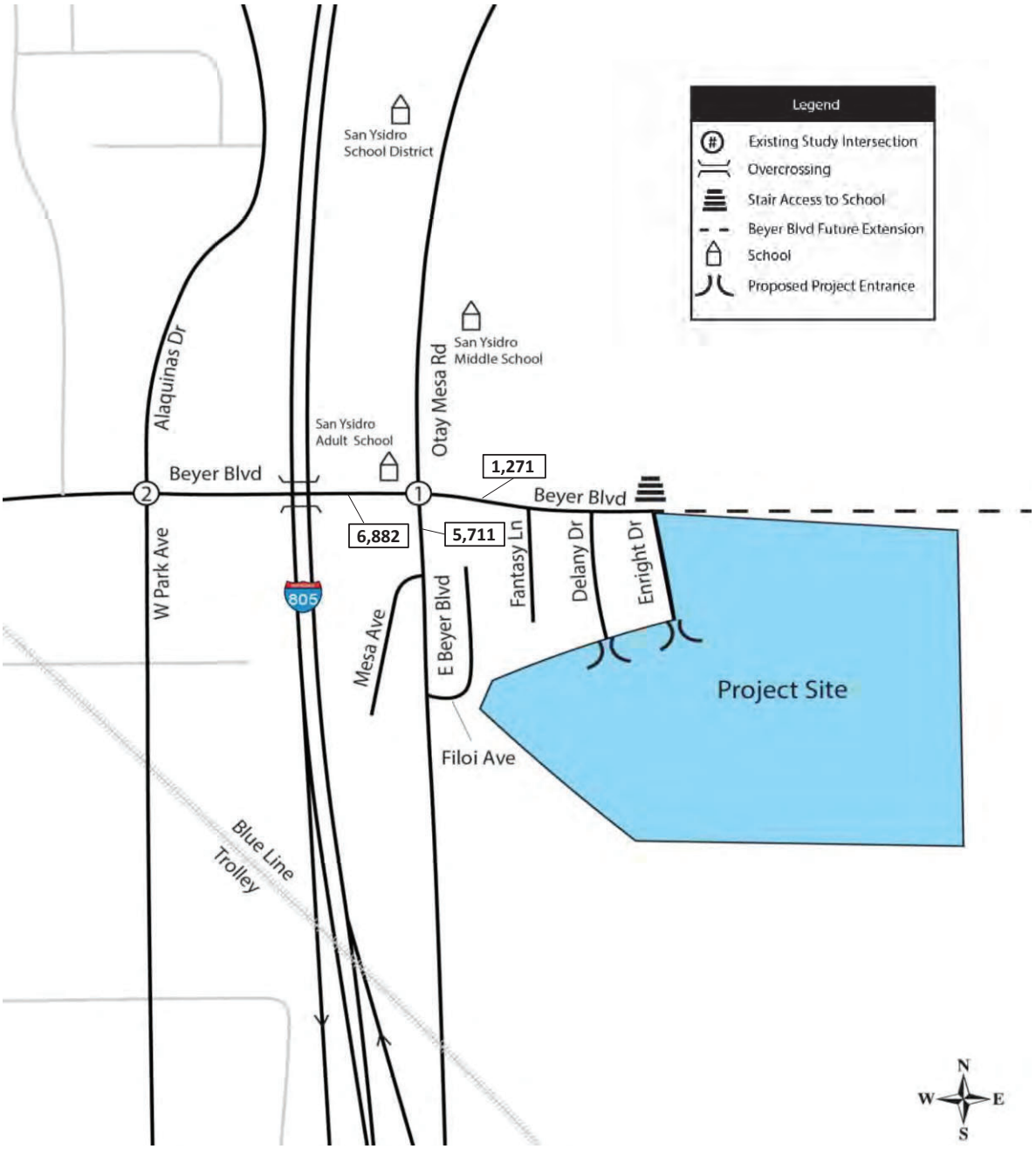
Exhibit 7-3

Opening Year 2020 without Project Peak Hour Intersection and Daily Roadway Segment Volumes



Otay Mesa Rd / E. Beyer Blvd @ Beyer Blvd			Alaquinas Dr / W. Park Ave @ Beyer Blvd		
299 / 70 ←	5 / 4 ↑		41 / 44 ←	71 / 32 ↑	
149 / 68 ↓	24 / 32 ←		46 / 44 ↓	245 / 128 ←	
4 / 4 →	17 / 13 ↓		70 / 47 →	86 / 30 ↓	
295 / 99 ↑	← ↑ →		48 / 44 ↑	← ↑ →	
18 / 37 →	80 / 87	115 / 65	6 / 15	262 / 223 →	96 / 59	55 / 30	105 / 33
122 / 141 ↓			109 / 87 ↓		
1			2		

LEGEND

XXX = ADT volume

xx / yy = AM / PM Peak-Hour Turning Movement Volumes

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Exhibit 7-4

Opening Year 2020 with Project Peak Hour Intersection and Daily Roadway Segment Volumes

7.3 INTERSECTION ANALYSIS

Table 7-2 displays the LOS analysis results for the study intersections under Opening Year 2020 conditions without and with the proposed project. **Appendix G** contains the intersection LOS worksheets for Opening Year 2020 conditions without the project, and the Opening Year 2020 with the project conditions intersection LOS worksheets are provided in **Appendix H**.

As shown in Table 7-2, both the study intersections operate at acceptable LOS C or better for both the AM and PM peak hours under both the Opening Year 2020 without and with Project conditions.

Table 7-2
Opening Year 2020 Conditions Without and With Project Peak Hour Intersection LOS Summary

	Intersection	Control	Peak Hour	Opening Year 2020 Without Project		Opening Year 2020 With Project		Change in Delay	Significant?
				Delay [(a)]	LOS	Delay [(a)]	LOS		
1	Beyer Blvd. and E. Beyer Blvd. / Otay Mesa Rd.	Signal	AM	22.7	C	23.5	C	0.8	No
			PM	13.1	B	13.5	B	0.4	No
2	Beyer Blvd. and W. Park Ave. / Alaquinas Dr.	Signal	AM	20.9	C	21.2	C	0.3	No
			PM	12.0	B	12.3	B	0.3	No

[(a)] Seconds of delay are reported as the average control delay for the entire intersection at signalized intersections.

7.4 ROADWAY SEGMENT ANALYSIS

Table 7-3 summarizes the daily operations of the study area roadway segments under Opening Year 2020 conditions without and with the proposed project. As shown in Table 7-3, both study roadway segments will continue to operate at acceptable LOS C or better under opening year plus project conditions.

Table 7-3
Opening Year 2020 Without and With Project Daily Roadway Segment LOS Summary

Roadway Segment	Classification	LOS Capacity	Opening Year 2020 Without Project			Opening Year 2020 With Project			Change in V/C	Significant?
			ADT	v/c Ratio	LOS	ADT	v/c Ratio	LOS		
Beyer Boulevard										
Otay Mesa Rd./ E. Beyer Blvd. to Fantasy Ln.	Sub-Collector/2	2,200 [(a)]	813	0.370	Better than LOS C	1,271	0.578	Better than LOS C	0.208	No
W. Park Ave./ Alaquinas Dr. to Otay Mesa Rd/ E. Beyer Blvd.	Collector/4 (with TWLTL)	30,000	6,516	0.217	A	6,882	0.229	A	0.012	No

V/C = Volume to Capacity
(a) LOS C capacity for two lane residential sub-collector

8 SITE ACCESS EVALUATION

As previously described, the project will take access from both Delany Drive and Enright Drive which are both currently local street semi-improved cul-de-sacs. The project will upgrade the existing cul-de-sacs to provide access to the new parking lots of the proposed Beyer Park. Both Enright Drive and Delany Drive intersect with the east terminus of Beyer Boulevard.

The project proposes to construct curb, gutter and sidewalk on east side of Enright Drive. The project proposes to construct a concrete sidewalk on the east terminus of Beyer Boulevard to help create a contiguous path to the proposed sidewalk on Enright Drive to the south and the existing sidewalk on the north side of Beyer Boulevard, to the north. This sidewalk would provide pedestrian access and connection from San Ysidro Middle School to the proposed Beyer Park.

9 PARKING

The project site is currently undeveloped, with the addition of the project it is anticipated that parking demand in the area will increase with the highest parking demand occurring on the weekends. The project requires parking to be provided based on the land use. The following sections discuss parking on and off the site.

9.1 ON-SITE PARKING

The project will provide on-site parking that can be accessed from Delaney Drive and Enright Drive. The amount of parking provided on-site as well as on the improved eastern side of Enright Drive is based on the City of San Diego's Consultants Guide to Park Design and Development (2011). The parking requirements are based on the expected demand for parks based on useable area and amenities provided at the park. Based on the guide, the proposed soccer field (2 ac) requires 30 parking spaces, and the proposed parkland (6.5 ac) requires 33 parking spaces. The total on-site spaces required based on park uses is 63 spaces. The project will provide a total of 69 parking spaces on-site, which exceeds the requirement of 63 parking spaces. On-site parking will consist of 60 standard stalls, 3 accessible stalls, and 6 EV/HOV stalls. Additionally, a turn-around space will be provided.

9.2 OFF-SITE PARKING

The park project will widen Enright Drive and construct curb, gutter and sidewalk on the east side, which will allow an additional approximately 15 on street parking spaces.

10 SUMMARY AND CONCLUSIONS

The access analysis evaluates the traffic conditions associated with the proposed Beyer Park project located in the San Ysidro community in the City of San Diego. Currently a 31.7-acre vacant site east of E. Beyer Boulevard and south of Beyer Boulevard, in the City of San Diego. The park will consist of turf area (4.78-acre), children's play area (0.24-acre), skatepark (0.45-acre), fitness area (0.02-acre), half basketball court (0.1-acre), picnic / gathering spaces (0.28-acre), dog park (0.78-acre), planting area (6.36-acre), basin (0.28-acre) and undeveloped area of 18.45-acres. The turf area can be striped as one adult soccer field or three youth soccer fields.

The neighboring Otay Mesa community is in the process of developing the Southwest Village Plan. Once constructed, Beyer Boulevard will be extended east connecting to the Otay Mesa community. The extension will help improve multimodal linkages to the park and connectivity between the two communities creating opportunity.

Access to the project site will be from Beyer Boulevard via Enright Drive and Delany Drive. Two driveways will be accessible from Beyer Boulevard. The first is located on the south end of Enright Drive which is currently a semi-improved cul-de-sac. The second is located at the south end of Delany Drive, which is also a semi-improved cul-de-sac. The cul-de-sacs will be upgraded to more standard City street requirements and provide access to the new parking lots of the proposed Beyer park.

The amount of parking provided on-site as well as on the improved eastern side of Enright Drive is based on the City of San Diego's Consultants Guide to Park Design and Development (2011). The parking requirements are based on the expected demand for parks based on useable area and amenities provided at the park. Based on the guide, the proposed soccer field (2 ac) requires 30 parking spaces, and the proposed parkland (6.5 ac) requires 33 parking spaces. The total on-site spaces required based on park uses is 63 spaces. The project will provide a total of 69 parking spaces on-site, which exceeds the requirement of 63 parking spaces.

Currently Class III bike facility is present on E. Beyer Boulevard/ Otay Mesa Road and Beyer Boulevard in the vicinity of the project site. To help bridge connectivity in the area, the project will provide bicycle routes and pathways throughout the project site that will help connect surrounding neighborhoods and uses, including nearby schools. Additionally, the project will provide three bike racks to help facilitate bike riding to the park. Sidewalks exists on most parts of the roadway along E. Beyer Boulevard/ Otay Mesa Road and Beyer Boulevard. The project proposes to construct sidewalk on east side of Enright Drive. The project proposes to construct a concrete sidewalk on the east terminus of Beyer Boulevard contiguous to the proposed sidewalk on Enright Drive to the south and the existing sidewalk on the north side of Beyer Boulevard, to the north. This sidewalk would provide pedestrian access connection from San Ysidro Middle School to the proposed Beyer Park while internal pathways will provide pedestrian and bicycle attraction.

The project is forecast to generate approximately 458 weekday trips per day, which includes approximately 18 AM peak hour trips and approximately 37 PM peak hour trips.

The results of the existing conditions analysis showed that both the study intersections and roadway segments operate at acceptable LOS C or better. Under Existing Plus Project conditions analysis, with the addition of project traffic, both the study intersections and roadway segments are forecast to operate at acceptable LOS C or better.

To determine the Opening Year 2020 conditions forecast project traffic associated with approved or pending projects was added to existing traffic volumes. The cumulative projects are forecast to generate approximately 2,081 trips per day, which includes approximately 134 AM peak hour trips and approximately 194 PM peak hour trips.

The results of the Opening Year 2020 without Project conditions showed that both the study intersections and roadway segments are forecast to operate at acceptable LOS C or better. Under Opening Year 2020 with Project conditions analysis, with the addition of project traffic, both the study intersections and roadway segments are forecast to operate at acceptable LOS C or better.

It can be concluded that with the project being built, the addition of project traffic to the existing roadway network, will not cause significant direct impact to the roadway segment and intersection levels of service.

APPENDIX A

Signal Timing Sheets

INTERSECTION: BEYER BL / E BEYER BL / OTAY MESA RD

Group Assignment:
Field Master Assignment: None

N/S Street Name: Otay Mesa Rd/E Beyer Bl
E/W Street Name: E Beyer Bl/Beyer Bl

Last Change: 06/26/02
Timing Sheet By: DRH
Approved By:

Drawing Number: 883-1-D
System Ref. Number:
Timing implemented on: 03/15/00

Row	Phase # ---->	1	2	3	4	5	6	7	8
	Column # ---->	E. Beyer	Beyer		Otay Mesa				Otay Mesa
		N							
0	Ped Walk	7	7		7				7
1	Ped FDW	11	12		21				10
2	Min Green	4	7		7				7
3	Type 3 Limit								
4	Add/Veh				①				
5	Veh Extn	2.9	2.9		4.5 ~~3.7~~				3.8
6	Max Gap	2.9	2.9		4.5 ~~3.7~~				3.8
7	Min Gap	0.2	0.2		0.2				0.2
8	Max Limit	30	50		40				40
9	Max Limit 2								
A	Bus Adv								
B	Call to Phs								
C	Reduce By	0.1	0.1		0.1				0.1
D	Every	① 1.1	1.1		0.9				0.8
E	Yellow	3.9 ~~3.7~~	3.9 ~~3.7~~		4.2				3.9
F	Red Clear	1.0	1.0		1.0				1.0

(1) SEQ 12/14/04

Phase Timing - Bank 1 <F Page>
F + Phase + Row

Row		E
0	RR-1 Delay	
1	RR-1 Clear	
2	EV-A Delay	
3	EV-A Clear	0
4	EV-B Delay	
5	EV-B Clear	0
6	EV-C Delay	
7	EV-C Clear	0
8	EV-D Delay	
9	EV-D Clear	0
A	RR-2 Delay	
B	RR-2 Clear	
C	View EV Delay	---
D	View EV Clear	---
E	View RR Delay	---
F	View RR Clear	---

Preempt Timing
F + E + Row

Row		F
0	Permit	12_4___8
1	Red Lock	
2	Yellow Lock	
3	Min Recall	_2_____
4	Ped Recall	
5	Peds (View)	
6	Rest In Walk	
7	Red Rest	
8	Dbl Entry	___4___8
9	Max Recall	
A	Soft Recall	
B	Max 2	
C	Cond Serv	
D	Ped Lock	12345678
E	Yellow Start	___4___8
F	1st Phases	1_____

Phase Functions <F Page>
F + F + Row

Max Initial	0	F + 0 + E
Red Revert	5.0	F + 0 + F
All Red Start	0.0	F + C + O

Start / Revert Times

Drop Number		C + 0 + 0
Zone Number		C + 0 + 1
Area Number		C + 0 + 2
Area Address		C + 0 + 3
QuicNet Channel		(QuicNet)

Communication Addresses

	F	Row
C + F + O		
Free Lag	_2_4___8	0

Lag Phases <C Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A				
B	Overlap B				
C	Overlap C				
D	Overlap D				

Overlap Timing <F Page> <D Page>
F + COLOR + D + 0 + OVERLAP

Manual Plan	14 C + A + 1
Manual Offset	0 C + B + 1

Manual Selection

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset 0
= Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Downtime Flash	255 (minutes)

Downtime Before Auto Manual Flash
F + 0 + 8

Disable Ports	234

Disable Communications Ports
D + D + 9

INTERSECTION: BEYER BL / E BEYER BL / OTAY MESA RD

223 Program

Row	Time	Function	Day of Week	Column F Phases/Bits
0	0745	E	23456	2
1	0830	E	23456	
2	1400	E	23456	2
3	1500 1530	E	23456	
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

TOD Function <D Page>

7 + ROW D + F + ROW

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Row		F
0		
1	RR Overlap A - Phases	
2	RR Overlap B - Phases	
3	RR Overlap C - Phases	
4	RR Overlap D - Phases	
5	Ped 2P	_2_____
6	Ped 6P	1_____
7	Ped 4P	___4____
8	Ped 8P	_____8
9	Yellow Flash Phases	
A	Overlap A - Phases	
B	Overlap B - Phases	
C	Overlap C - Phases	
D	Overlap D - Phases	
E	Restricted Phases	
F	Assign 5 Outputs	

Configuration <E Page>

E + F + ROW

Row		E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	_2_____
B	EV-B Phases	___4____
C	EV-C Phases	1_____
D	EV-D Phases	_____8
E	Extra 1 Config. Bits	1_345___
F	IC Select (Interconnect)	_2_____

Configuration

For access, set F + 9 + E = 1 E + E + ROW

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Remote Download
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Day of Week

1 = Sunday
2 = Monday
3 = Tuesday
4 = Wednesday
5 = Thursday
6 = Friday
7 = Saturday

Assign 5 Outputs
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Time and Date

8-0 Hour, Minute, Day-of-Week
8-1 Day-of-Month, Year, Month
8-F Seconds

Disable Parity	0	D+B+0

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

(This parameter is NOT downloaded)

Program Information

C + C + 0 = program
C + C + F = version

Remote Download

C + 0 + 4 = 1 -255
w/ E + E + E bit 5 on

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0				1I1	14
1		1.8		2I2U	1
2	10.0			2I2L	5
3				2I3U	21
4				2I3L	25
5				2I4	9
6				3I5	16
7		1.8		4I6U	3
8				4I6L	7
9				4I7U	23
A				4I7L	27
B				4I8	11
C		1.8		1I9U	18
D				3I9L	20
E		---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0				5J1	13
1				6J2U	2
2				6J2L	6
3				6J3U	22
4				6J3L	26
5				6J4	10
6				7J5	15
7		1.8		8J6U	4
8				8J6L	8
9				8J7U	24
A				8J7L	28
B				8J8	12
C				5J9U	17
D				7J9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

D + X (across) + ROW

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	5678
E	-- -- -- -- -- -- -- --	1234
F	-- 25 26 27 28 -- -- --	2345

Active Detectors <D Page>

Row		0 Detector #
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (min)	5	D+A+E
Max OFF (min)	60	D+A+F

Detector Failure Monitor

Phase Number	0	F+C+1
Time Before Yellow	0.0	F+C+3

Advance Warning Beacon - Sign 1

Phase Number	0	F+D+1
Time Before Yellow	0.0	F+D+3

Advance Warning Beacon - Sign 2

Long Failure	0.5	F+0+6
Short Failure	0.5	F+0+7

Power Cycle Correction (Default = 0.5)

(These parameters are NOT downloaded.)

INTERSECTION:

223 Program

Row	Column # ----> / Plan Name ---->	Plan 1	2	3	4	5	6	7	8	9
0	Cycle Length									
1	Phase 1 - ForceOff									
2	Phase 2 - ForceOff									
3	Phase 3 - ForceOff									
4	Phase 4 - ForceOff									
5	Phase 5 - ForceOff									
6	Phase 6 - ForceOff									
7	Phase 7 - ForceOff									
8	Phase 8 - ForceOff									
9	Ring Offset									
A	Offset A									
B	Offset B									
C	Offset C									
D	Permissive									
E	Hold Release									
F	Ped Shift									

Coordination <C Page>

C + Plan + ROW

Coordination Timing By:

Implemented On:

FOR OBSERVATION ONLY

Master Plan	C + A + 2
Current Plan	C + A + 3
Next Plan	C + A + 4
T.O.D. Plan	C + A + 5
Master Cycle	C + A + 0
Ring A Cycle	C + B + 0
Ring B Cycle	C + D + 0
Min Cycle	C + A + E
Max Cycle	C + B + E

Row	Time	Plan	Offset	Day of Week
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

TOD Coordination

<9 Key with C+0+9=1>

Plan Select
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

	E	Row	F
		0	Free Lag
Plan 1		1	Plan 1 - Lag
Plan 2		2	Plan 2 - Lag
Plan 3		3	Plan 3 - Lag
Plan 4		4	Plan 4 - Lag
Plan 5		5	Plan 5 - Lag
Plan 6		6	Plan 6 - Lag
Plan 7		7	Plan 7 - Lag
Plan 8		8	Plan 8 - Lag
Plan 9		9	Plan 9 - Lag
Coord Ped*		A	Coord Max *
NEMA Hold		B	Coord Lag *
		C	
		D	
		E	
		F	

Sync Phases **Lag Phases** <C Page>

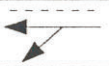
C + E + FUNCTION # C + F + FUNCTION #

Transition Type	0

TBC Transition
C + D + D

Transition Type
0 = Shortway
Non-zero = Lengthen

INTERSECTION: BEYER BL & E. BEYER BL / OTAY MESA RD **223 Program**

N		E. Beyer	Beyer		Otay Mesa				Otay Mesa
	Column # ---->	Phase							
	Phase # ---->	1	2	3	4	5	6	7	8
Row	N								
0	Ped Walk	15	15		15				15
1	Ped FDW	11	12		21				10
2	Min Green	4	7		7				7
3	Type 3 Limit								
4	Added Initial				①				
5	Veh Extension	2.9	2.9		4.5 ~~3.7~~				4.5 ~~3.8~~
6	Max Gap	2.9	2.9		4.5 ~~3.7~~				4.5 ~~3.8~~
7	Min Gap	0.2	0.2		0.2				0.2
8	Max Limit	25	35		40 ~~30~~				40 ~~30~~
9	Max Limit 2								
A	Bus Advance								
B	Call To Phase								
C	Reduce By	0.1	0.1		0.1				0.1
D	Reduce Every	1.1	1.1		0.9				0.8
E	Yellow Change	3.9 ~~3.7~~	3.9 ~~3.7~~		4.2				3.9
F	Red Clear	1.0	1.0		1.0				1.0

<F Page>

① SEC 12/14/04

Phase Timing - Bank 2

F + Phase + Location

INTERSECTION: ALAQUINAS DR / WEST PARK DR @ BEYER BL

22? Program

Group Assignment:
Field Master Assignment:

N/S Street Name: Alaquinas Dr / Park Dr
E/W Street Name: Beyer Bl

Last Database Change:
System Ref. Number:

Beyer Bl — Alaquinas Dr/W Park Dr — Beyer Bl

Phase

Row	Column # ----> / Phase # ---->	1	2	3	4	5	6	7	8
0	Ped Walk		10		10		10		
1	Ped FDW		12		25		14		
2	Min Green	4	10		4	4	10		
3	Type 3 Limit								
4	Add/Veh								
5	Veh Extn	2.0	5.6		2.0	2.0	5.7		
6	Max Gap	2.0	5.6		2.0	2.0	5.7		
7	Min Gap	2.0	0.2		2.0	2.0	0.2		
8	Max Limit	30	60		40	30	60		
9	Max Limit 2								
A	Bus Adv								
B	Call to Phs								
C	Reduce By		0.1				0.1		
D	Every		0.6				0.5		
E	Yellow	3.4	3.9		3.9	3.4	3.9		
F	Red Clear	1.0	1.0		1.0	1.0	1.0		
	Grade								

Phase Timing - Bank 1
F + Phase + Row
<F Page>

Row	E
RR-1 Delay	
RR-1 Clear	
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	
EV-D Clear	
RR-2 Delay	
RR-2 Clear	
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing
F + E + Row

Row	F
Permit	12_456__
Red Lock	
Yellow Lock	
Min Recall	
Ped Recall	
Peds (View)	_2_4_6__
Rest In Walk	
Red Rest	
Dbl Entry	
Max Recall	
Soft Recall	_2___6__
Max 2	
Cond Serv	
Ped Lock	12345678
Yellow Start	_2___6__
1st Phases	___4____

Phase Functions <F Page>
F + F + Row

Max Initial	0
Red Revert	5.0
All Red Start	0.0

F + 0 + E
F + 0 + F
F + C + O

Start / Revert Times

Drop Number	8
Zone Number	8
Area Number	7
Area Address	57
QuicNet Channel	COM68:

C + 0 + 0
C + 0 + 1
C + 0 + 2
C + 0 + 3
(QuicNet)

Communication Addresses

Overlap Timing

Row	9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
Overlap A	A				
Overlap B	B				
Overlap C	C				
Overlap D	D				

<F Page>
F + COLOR +
<D Page>
D + 0 + OVERLAP

Manual Plan	14
Manual Offset	0

C + A + 1
C + B + 1

Manual Selection

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

C + F + O	F	Row
Free Lag	_2_4_6__	0

Lag Phases <C Page>

Downtime Flash	255	(minutes)

Downtime Before Auto Manual Flash
F + 0 +8

Disable Ports	_234____

Disable Communication Ports
D + D + 9

Timing Sheet By: JDS
Approved By: FLG
Drawing Number: 16245-17-D
Timing Implemented On:

INTERSECTION: ALAQUINAS DR / WEST PARK DR @ BEYER BL

223 Program

Row	Time	Function	Day of Week	Column F Phases/Bits
0	:			
1	:			
2	:			
3	:			
4	:			
5	:			
6	:			
7	:			
8	:			
9	:			
A	:			
B	:			
C	:			
D	:			
E	:			
F	:			

TOD Function

7 + ROW

<D Page>

D + F + ROW

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Row		F
0		
1	RR Overlap A - Phases	
2	RR Overlap B - Phases	
3	RR Overlap C - Phases	
4	RR Overlap D - Phases	
5	Ped 2P	2
6	Ped 6P	6
7	Ped 4P	4
8	Ped 8P	
9	Yellow Flash Phases	
A	Overlap A - Phases	
B	Overlap B - Phases	
C	Overlap C - Phases	
D	Overlap D - Phases	
E	Restricted Phases	
F	Assign 5 Outputs	

Configuration

<E Page>

E + F + ROW

Row		E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4
C	EV-C Phases	1 6
D	EV-D Phases	
E	Extra 1 Config. Bits	1 345
F	IC Select (Interconnect)	2

Configuration

For access, set F + 9 + E = 1

E + E + ROW

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Remote Download
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Day of Week

1 = Sunday
2 = Monday
3 = Tuesday
4 = Wednesday
5 = Thursday
6 = Friday
7 = Saturday

Assign 5 Outputs
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Time and Date

8-0 Hour, Minute, Day-of-Week
8-1 Day-of-Month, Year, Month
8-F Seconds

Disable Parity	0	D+B+0

Dial-Up Telephone Communications

(If set to a non-zero value, parity will be disabled)

Program Information

C + C + 0 = program
C + C + F = version

Remote Download

C + 0 + 4 = 1 -255
w/ E + E + E bit 5 on

Row	1 Delay	3 Carry-over
0		
1		1.8
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E	---	---
F	---	---

Detector Name	332 Input File	Detector Number
	1I1	14
	2I2U	1
	2I2L	5
	2I3U	21
	2I3L	25
	2I4	9
	3I5	16
	4I6U	3
	4I6L	7
	4I7U	23
	4I7L	27
	4I8	11
	1I9U	18
	3I9L	20
---	---	---
---	---	---

Row	2 Delay	4 Carry-over
0		
1		1.8
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E	---	---
F	---	---

Detector Name	332 Input File	Detector Number
	5J1	13
	6J2U	2
	6J2L	6
	6J3U	22
	6J3L	26
	6J4	10
	7J5	15
	8J6U	4
	8J6L	8
	8J7U	24
	8J7L	28
	8J8	12
	5J9U	17
	7J9L	19
---	---	---
---	---	---

Detector Delay & Carryover <D Page>

D + X (across) + ROW

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234____
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	____5678
E	-- -- -- -- -- -- -- --	1234____
F	-- 25 26 27 28 -- -- --	_2345___

Active Detectors <D Page>

Row		0 Detector #
0		
1	System Det. # 1	
2	System Det. # 2	
3	System Det. # 3	
4	System Det. # 4	
5	System Det. # 5	
6	System Det. # 6	
7	System Det. # 7	
8	System Det. # 8	

System Detectors <D Page>

Max ON (min)	5	D+A+E
Max OFF (min)	60	D+A+F

Detector Failure Monitor

Phase Number		F+C+1
Time Before Yellow		F+C+3

Advance Warning Beacon - Sign 1

Phase Number		F+D+1
Time Before Yellow		F+D+3

Advance Warning Beacon - Sign 2

Long Failure	0.5	F+0+6
Short Failure	0.5	F+0+7

Power Cycle Correction (Default = 0.5)

APPENDIX B

San Ysidro Community Plan and Local Coastal Program Land Use Plan
Chapter 3 (Mobility)

Mobility | 3

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3.1 INTRODUCTION

San Ysidro is a community bounded by an international border and divided by converging highways and a rail line. Its location within the San Diego region creates a unique dynamic to achieve balance between neighborhood connectivity and regional access to Mexico. Working in conjunction with the world's busiest Port of Entry, the transportation network in this area has a significant physical and cultural impact on the community of San Ysidro, as well as the economy of the region.

Urban form and transportation are interdependent and the mix of land uses and intensity associated with urban development affects travel. A balanced multi-modal transportation network increases quality of life by ensuring all people regardless of ability or modal choice can access destinations within the community. A multi-modal network recognizes that not all people use an automobile as their primary mode of travel. Legitimate multi-modal travel choices need to be broadened so that a good portion of trips can be made without a car. Walking, cycling, and transit should not be modes of last resort; rather they should be convenient, pleasant, safe and desirable modes of travel. To this end, the Mobility Element includes goals, policies, and recommendations that will lead to a robust multi-modal network that encourages walking, bicycling, and taking transit while continuing to provide for needed vehicular access in the community.

"The Community Plan update presents a unique opportunity to provide the context, the firm implementation and financing plans to mitigate, with creative traffic solutions, the reality of a San Ysidro physically divided by two freeways and the trolley line. The overarching goal is nothing less than 're'-connecting the community!"

- Steve Otto, Resident of San Ysidro

Goals

- Pedestrian-friendly facilities throughout the community with emphasis on the San Ysidro Historic Village and Border Village areas in order to minimize or reduce pedestrian/vehicular conflicts.
- A complete, safe, and efficient bicycle network that connects community destinations and links to surrounding communities and the regional bicycle network.
- High-quality public transit as the preferred transportation mode for employees and residents centered around transit oriented development and individuals using the border crossing.
- A circulation system that provides for complete streets and adequate capacity and improved regional access for vehicle traffic.
- An Intermodal Transportation Center (ITC) at the border.
- Interagency coordination to provide additional comprehensive mobility strategies and opportunities, funding sources, and inter-jurisdictional cooperation.
- Efficient use of parking resources through parking management strategies that support more intensive land uses around the San Ysidro Historic Village, Border Village, and Port of Entry areas.
- Safe and efficient truck access to the San Ysidro Freight Yard, industrial sites located at the northeastern part of the community, and the commercial sites along Calle Primera, west of Via de San Ysidro.
- Wayfinding programs to support efficiency and enhance use of all transportation modes.

The objective of the Mobility Element is to enhance the unique neighborhood feel within San Ysidro while supporting a full, equitable range of choices for the movement of people and goods to, within, and through the community. The unique dynamics of the community and border region provide a challenging landscape to achieve a balanced mobility network. The Mobility Element promotes the concept of "complete streets," in which roadways are designed and operated to enable safe, attractive, and comfortable access and travel for all users. Pedestrians, bicyclists, motorists, and public transport users of all ages and abilities are able to safely and comfortably move along and across a complete street. Complete streets create a sense of place and improve social interaction and may include sidewalks and buffer areas, bicycle lanes, well-designed and well-placed crosswalks, raised crosswalks, medians, crossing islands (in appropriate mid-block locations), transit priority measures, accessible pedestrian traffic signals, sidewalk bulb-outs, street trees, planter strips, and ground cover. These streets also use staggered parking, center medians with trees and ground cover, fewer driveways, pedestrian scale lighting, and 'traffic calming' techniques, which tend to lower speeds and define edges to multi-modal travel ways within the street.

Example of scramble pedestrian crossing intersection

3.2 WALKABILITY

The City's Pedestrian Master Plan ranks San Ysidro as the ninth most walkable community within San Diego. Walking is a popular mode of travel in the San Ysidro community. San Ysidro has important characteristics of a walkable community, such as a basic gridded street network, a generally flat topography, and a fine-grained mixture of residential and neighborhood-serving commercial uses in village areas. Existing pedestrian facilities in San Ysidro are classified based on definitions presented in the City's Pedestrian Master Plan and are presented in Figure 3-1.

Deficiencies in the pedestrian environment include the barriers presented by the rail and freeway infrastructure and inadequate sidewalks and pedestrian facilities on higher pedestrian and vehicular volume streets. The pedestrian connectivity within San Ysidro is negatively impacted by the location of Interstate 5 (I-5), Interstate 805 (I-805), and the Metropolitan Transit System (MTS) Trolley Blue Line. These major transportation facilities divide the community into four areas with a limited number of existing pedestrian crossings across each interstate and rail line. Existing pedestrian bridges over I-805 and I-5 are inconvenient, as they are not well-integrated with nearby land uses, and many other crossings are in need of improvements to enhance their safety, accessibility, and attractiveness to pedestrians. Additional mobility limitations are imposed by State Route 905 (SR-905), which acts as a pedestrian barrier between San Ysidro and the nearby community of Otay Mesa Nestor.

Recommended improvements in the Mobility Element were developed with the consideration of implementing complete streets on the community's existing roadways. Pedestrian policies developed for

San Ysidro are numbered on the following pages as Policy 3.2.1 through 3.2.14 with specific locations addressed under each policy, where applicable. Additional policy information may be found in the City of San Diego's General Plan Policies ME-A.1 through ME-A.9 and the Traffic Calming Toolbox, specifically Tables ME-1 and ME- 2. Additional pedestrian related policies may be found in the Community Plan in Sections 4.5 and 4.6.

Policies

3.2.1 Support and promote walkability and connectivity through the construction of sidewalk and intersection improvements throughout the community at, but not limited to; the following locations:

a. Dairy Mart Road (**Refer to Figure 3-11**)

b. Smythe Crossing (**Refer to Figure 3-12**)

c. San Ysidro Boulevard

d. San Ysidro Historic Village

e. Border region

f. Along the north side of Otay Mesa Road from Beyer Boulevard

g. Along Seaward Avenue and West Park Avenue

h. At intersections along East Calle Primera, between Willow Road and Via de San Ysidro

i. Along Cottonwood, from S. Vista Ln. to W. San Ysidro Boulevard

East San Ysidro Boulevard and I-5 northbound ramp at the Port of Entry is one of the most pedestrian-used intersections within the City of San Diego (left)

j. Along both sides of Smythe Avenue

k. Along Olive Dr. (**Refer to Figure 3-2**)

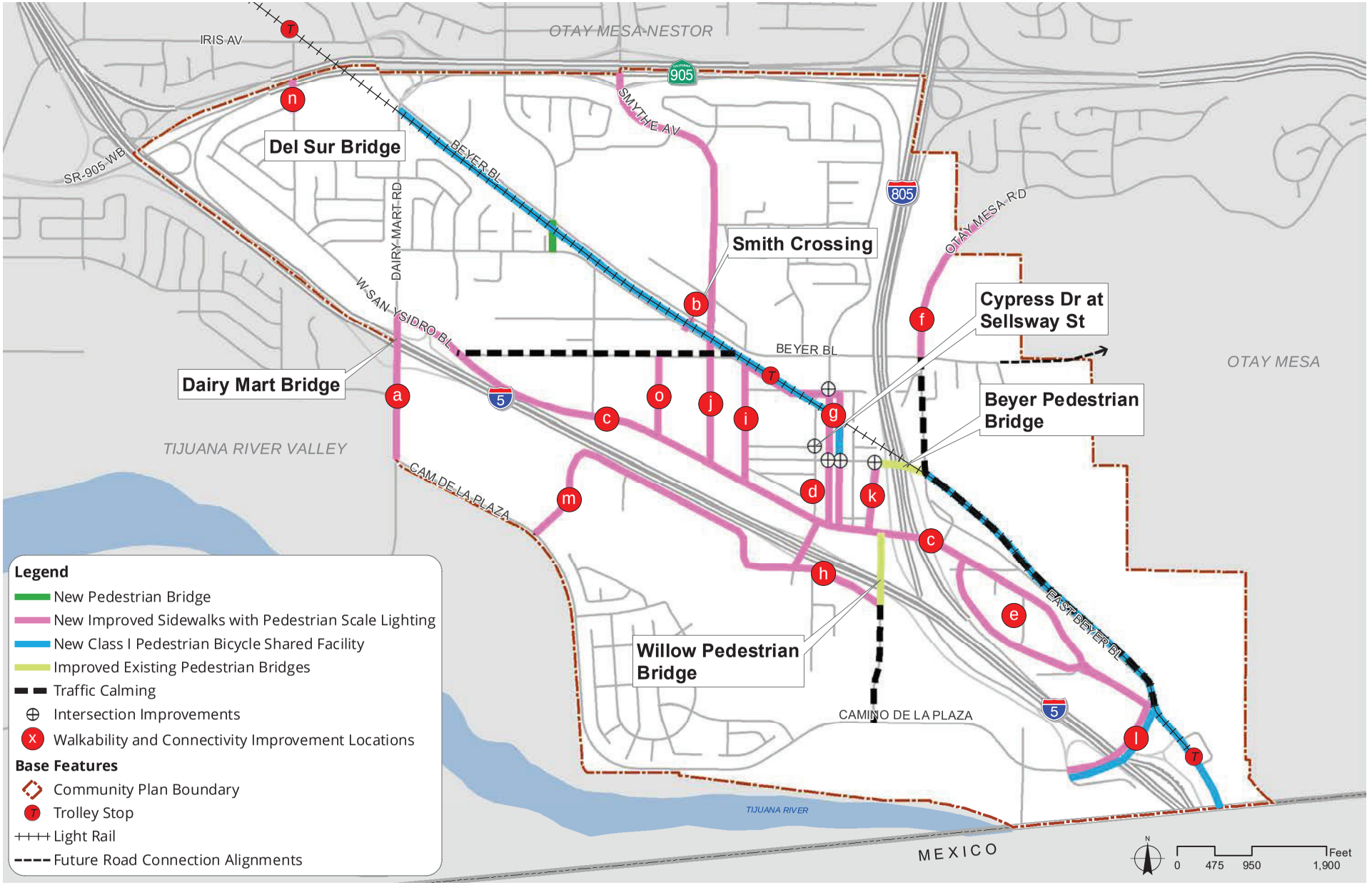
l. Camino de la Plaza (**Refer to Figure 3-7**)

m. Calle Primera (**Refer to Figure 3-8**)

n. Howard Avenue

o. Alverson Road

Figure 3-1: Improved Street Locations



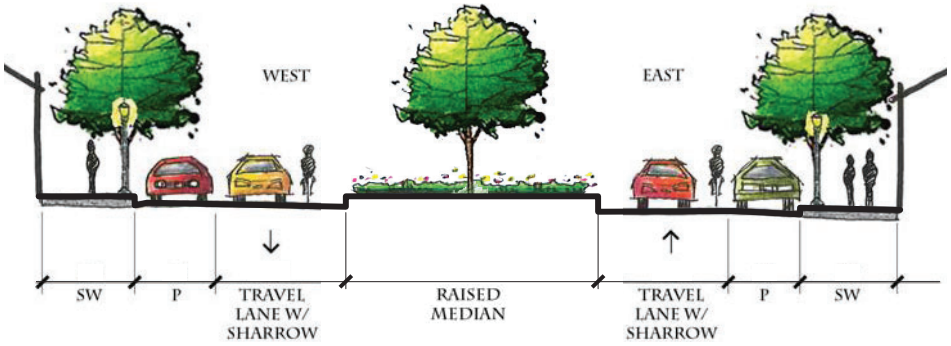
3.2.2 Install missing sidewalks and curb ramps and remove accessibility barriers throughout the community. This will include the undergrounding of public utilities and relocation of transit shelters to widen the pedestrian pathways (also see Policies 6.1.18-20).

3.2.3 Provide marked crosswalks and pedestrian countdown timers at all signalized intersections.

3.2.4 Improve the pedestrian environment, adjacent to transit stops and schools, through the installation and maintenance of signs, lighting, high-visibility crosswalks, and other appropriate traffic calming measures (also see Policy 3.4.1).

3.2.5 Provide shade-producing street trees and street furnishings concentrating within the village areas (also see Section 8.4).

3.2.6 Retrofit and/or reconstruct freeway pedestrian overpasses with architectural lighting to foster pedestrian connections between neighborhoods. Design the entrances to the bridges to accommodate public gathering spaces while maintaining the safety and accessibility of pedestrian traffic (also see Policy 4.5.14b).



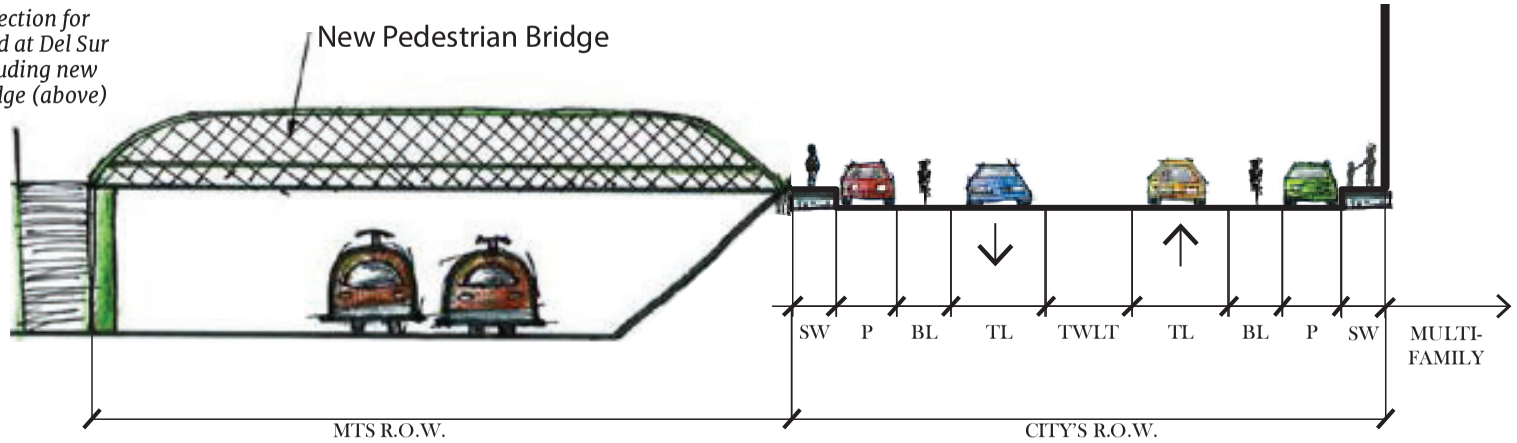
Example of enhanced Streetscape with improved pedestrian connectivity.

Figure 3-2: Olive Drive Concept

Example Streetscape in plan view, featuring traffic calming and pedestrian improvements.

Figure 3-3: Del Sur Boulevard Concept

Planned cross section for Beyer Boulevard at Del Sur Boulevard, including new pedestrian bridge (above)



3.2.7 Transform unused rail and freeway rights-of-way into landscaped features to provide a pleasant and safe route, where possible, for pedestrians. Prioritize improvements for the areas along the south side of Beyer Boulevard, adjacent to the Trolley Blue Line.

3.2.8 Improve existing alleys and implement innovative walkabilty improvements within the San Ysidro Historic Village area in order to connect the commercial area along West San Ysidro Boulevard and the transit-oriented development around the Beyer Trolley Station (also see the subsection "Alleys" under Section 4.9).

3.2.9 Construct a new pedestrian bridge crossing over the Trolley Blue Line, at Del Sur Boulevard, to improve connections between residential areas north and south of the trolley tracks (**see Figure 3-3**).

3.2.10 Maintain routes leading to schools by regularly removing debris for safe access and walkability.

3.2.11 Install adequate street lighting along pedestrian corridors throughout the community with priority on key pedestrian/vehicle conflict areas.

3.2.12 Install accessible traffic signals at key intersections along major pedestrian corridors to facilitate pedestrian crossings.

3.2.13 Include pedestrian paths or paseos, within the village areas, between and/or through developments to provide better connectivity to adjacent streets, commercial amenities, parks and schools.

3.2.14 Support the implementation of pedestrian connections to the Hillside development, which will be evaluated as part of the future Hillside development process. See also Section 2.7 for the Hillside Land use policies.

3.3 BICYCLING

The development of a well-connected, effective bicycle network, including protected facilities where feasible, will facilitate cycling and help meet community travel needs. Health studies along the border region have helped to understand the public health benefits related to walking and biking. The recommendations in this Plan not only take into consideration the mobility needs for better circulation, but also the positive impact of social and physical improvements on individual and community health.

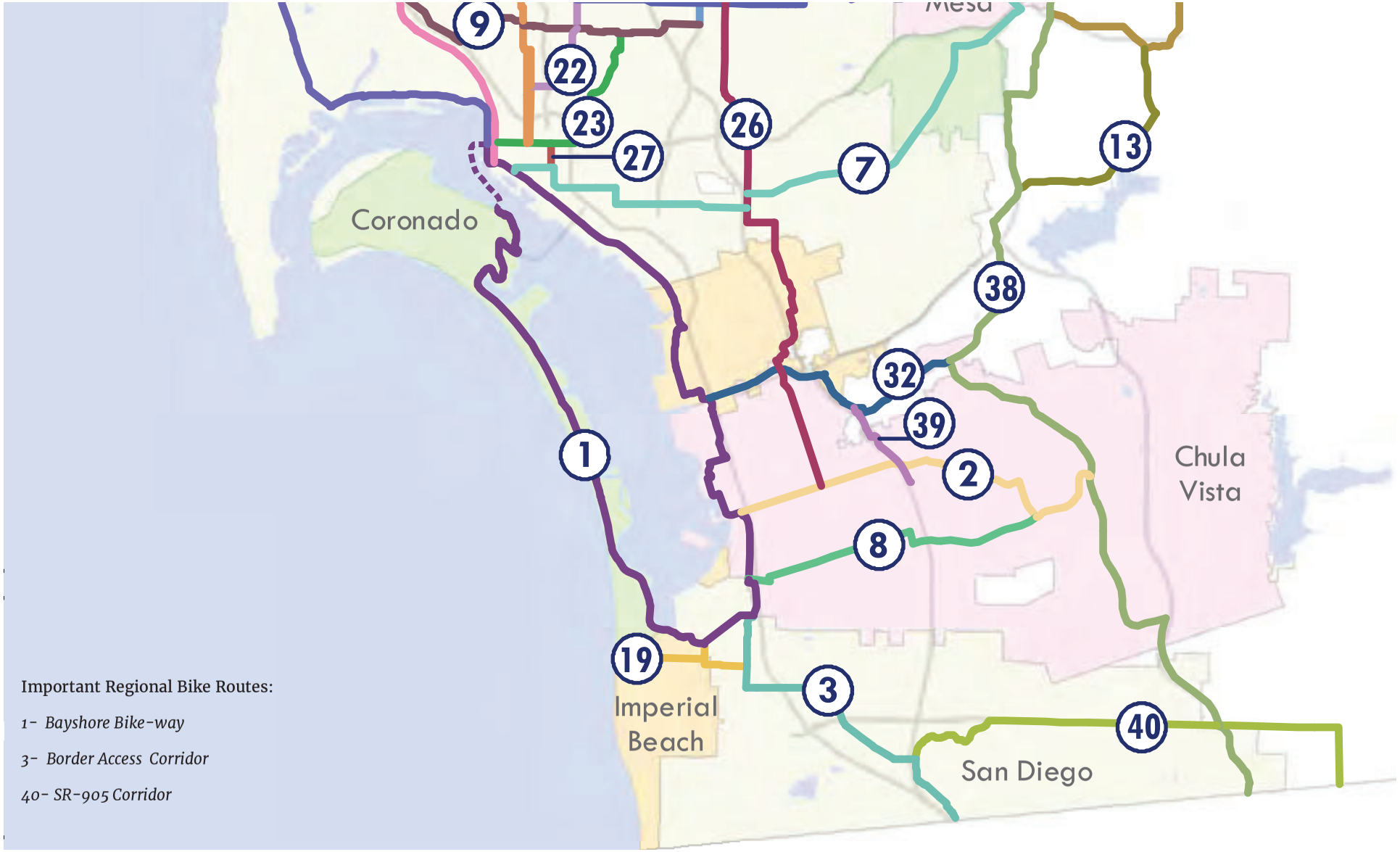
Separated bicycle facilities are known to be safer, contribute to lower levels of rider stress, and promote increased cycling rates among the general population. A complete bicycle network can help users overcome the barriers presented by the divisive rail and freeway infrastructure, which create a lack of connectivity and accessibility of major attractors within the community. Existing bicycle facilities within the community of San Ysidro are presented in **Figure 3-5** and future planned bicycle facilities are presented in **Figure 3-6**. The different types of bicycle facilities typically used in the City of San Diego are illustrated in **Figure 3-13.** A brief description of each facility is presented alongside a diagram.

Bicycle Racks and Shared Bicycle Programs encourage bicycle use and healthy communities.

The San Diego Association of Government's (SANDAG) regional bike plan, Riding to 2050, identifies three bike routes of regional importance within or near San Ysidro, **see Figure 3-4**.

- **The Border Access Corridor** is primarily located within San Ysidro. This 6.4-mile route connects the international border crossing in San Ysidro with the Bayshore Bikeway route in Otay Mesa Nestor. Within San Ysidro, the route uses Beyer Boulevard and East Beyer Boulevard.
- **The SR-905 Corridor** is a nine-mile facility planned to operate as a Class I bike path along the Otay Mesa/SR-905 Corridor. This route would connect to the Border Access Corridor in San Ysidro via Old Otay Mesa Road, and then to the third border crossing in eastern Otay Mesa. Within San Ysidro, this portion of the corridor currently operates as a Class III bike route.
- **The Bayshore Bikeway** is a 23.8-mile route around the southern portions of San Diego Bay. The existing route is currently a combination of Class I and II facilities which pass through San Diego, National City, Chula Vista, Imperial Beach, and Coronado. The route is planned to be upgraded to a Class I bike path for the entire route.

Figure 3-4: Regional Bicycle Network



Clip from the updated Regional Bicycle Network, "Riding to 2050" SANDAG Regional Bike Plan

Bicycle policies developed for San Ysidro are numbered below as Policy 3.3.1 through 3.3.5 with specific locations addressed under each policy, where applicable. Additional bicycling related policies may be found in the Community Plan (Section 7.3). Additional policy information may be found in the City of San Diego's General Plan Policies ME-F.1 and ME-F.6.

Policies

3.3.1 Provide and support a continuous network of safe, convenient, and attractive bicycle facilities that connect San Ysidro to the citywide bicycle network and implement the San Diego Bicycle Master Plan and the Regional Bike Plan.

3.3.2 Implement bicycle connectivity through the villages and throughout the community. Provide secure, accessible, and adequate bicycle parking, particularly at Beyer Trolley Station and the future ITC, within shopping areas, and at concentrations of employment and education throughout the community (see also Policy 3.2.8).

3.3.3 Support and promote increased connectivity through the construction of bicycle facilities, in conjunction with other improvements discussed in Section 3.5 and as standalone improvements at the following locations:

a. Dairy Mart Road, from West San Ysidro Boulevard to Camino De La Plaza (**see Figure 3-11**).

b. Camino de la Plaza bridge, from Camiones Way to East San Ysidro Boulevard (**see Figure 3-7**).

c. Class I facility along MTS right-of-way, from the future ITC to the northwestern side of the community.

d. Beyer Boulevard, between Dairy Mart Road and East Beyer Boulevard **(see Figure 3-9).**

e. East and West Park Avenue, from East San Ysidro Boulevard to MTS right-of-way at trolley tracks (**see Figure 3-10**).

f. Intersection of Smythe Crossing and Beyer Boulevard (**see Figure 3-12**).

g. Willow Road and Olive Street Bridge connection improvements.

3.3.4 Increase level of comfort and safety for bicycling as well as accessibility for all levels of bicycle riders with improvements such as wayfinding and markings, actuated signal timing, bicycle parking, wider bike lanes, and protected bicycle facilities.

3.3.5 Implement bike share programs to reduce the necessity for automobile use in the community and provide the "first mile last mile" connectivity.

Proposed bridge gateway improvements at Olive Drive

Figure 3-5: Existing Bicycle Facilities

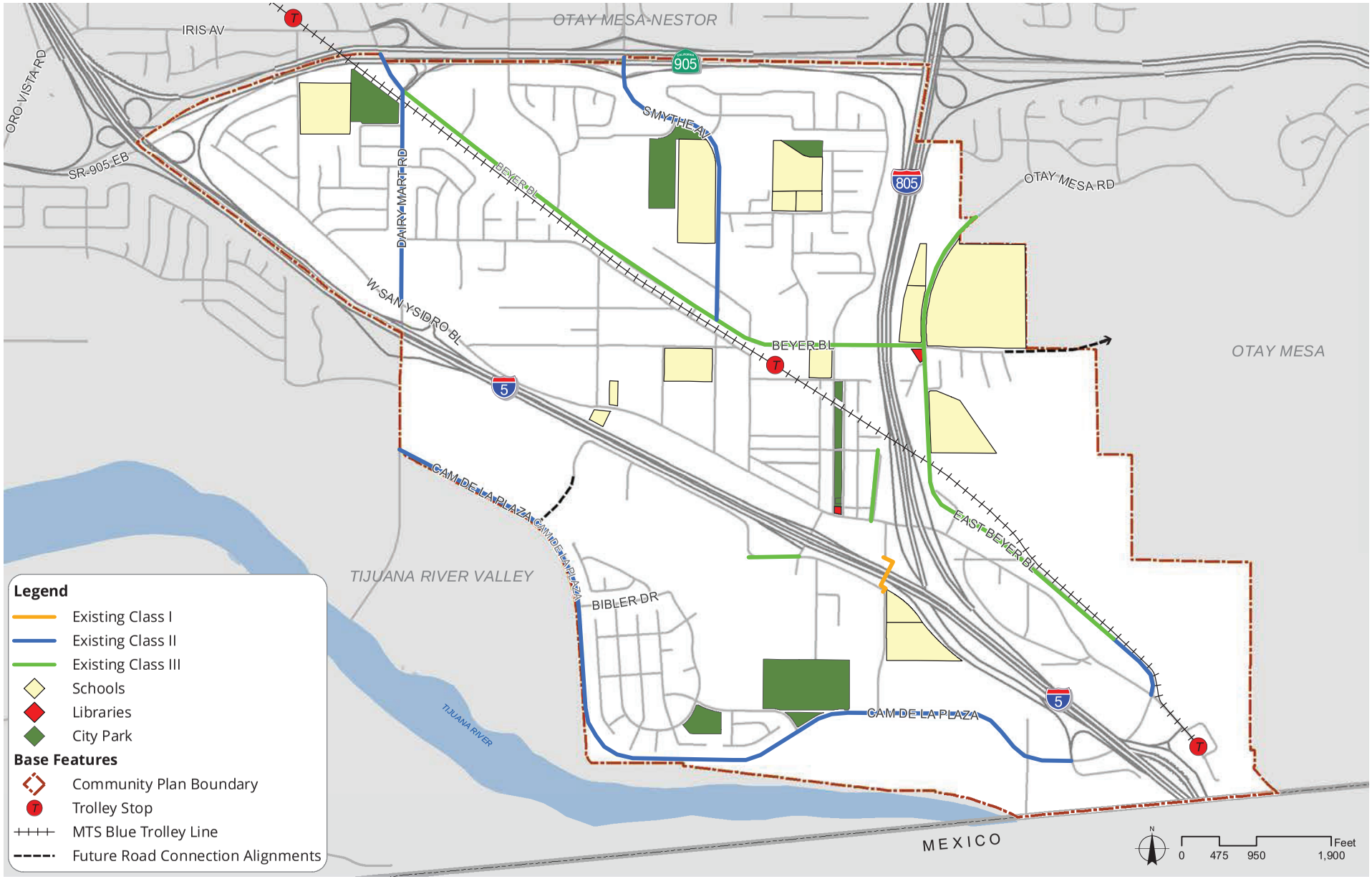


Figure 3-6: Future Planned Bicycle Facilities

Note: Facility alignments and classifications were developed at a planning level and may be refined upon further analysis at the project level.

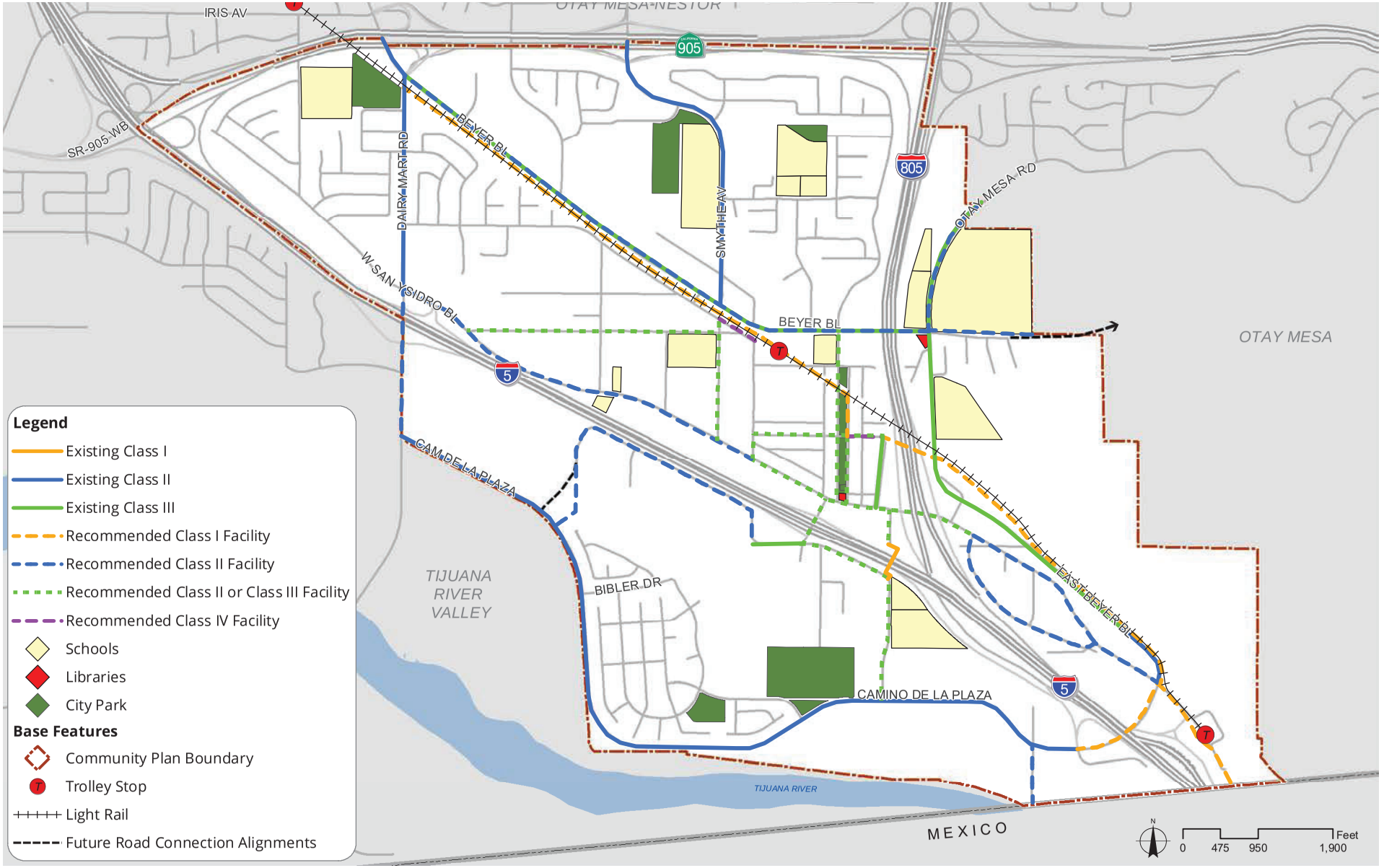
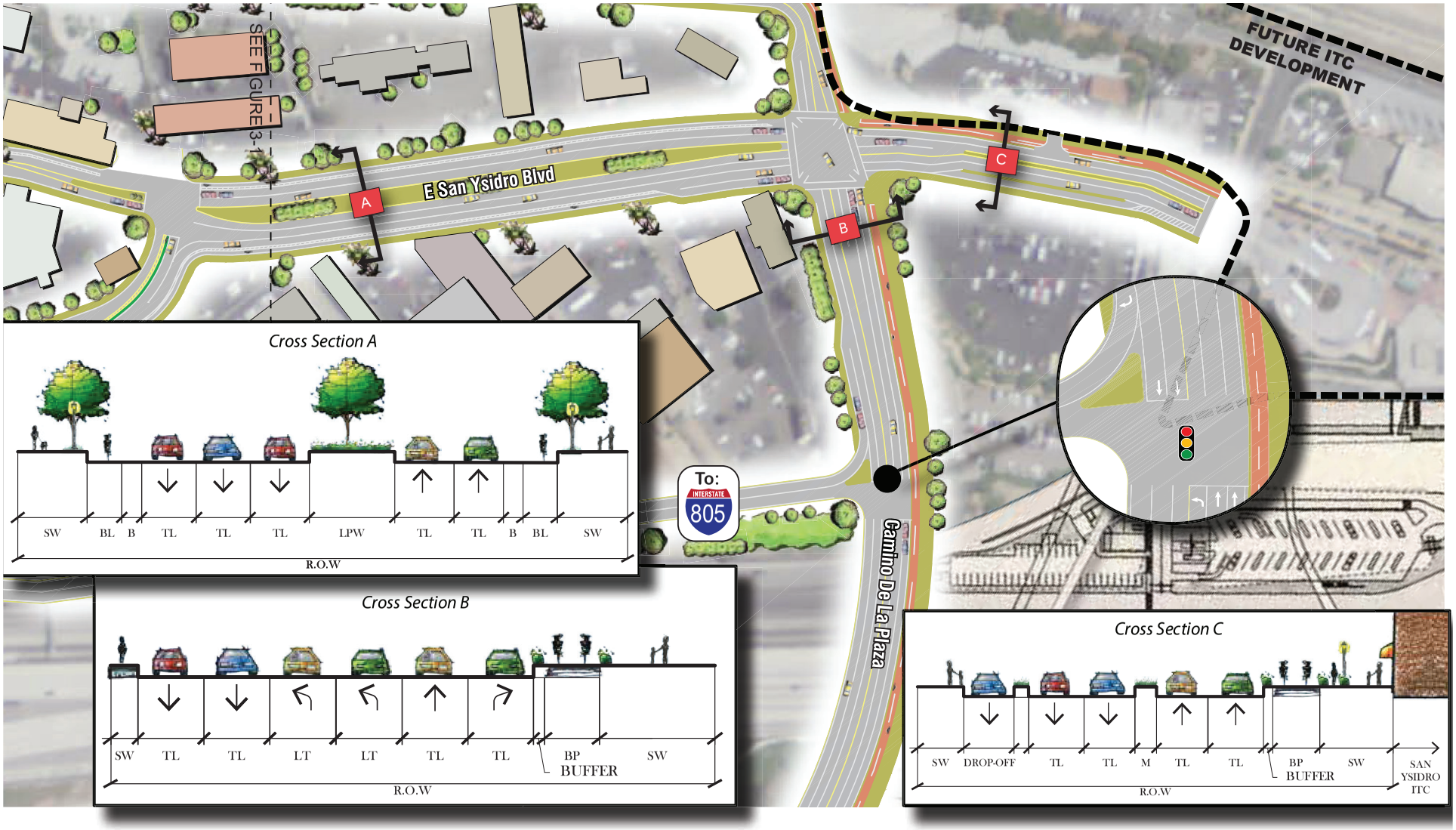


Figure 3-7: Camino de la Plaza and E. San Ysidro Boulevard



BL	Bike Lane	LT	Left-Turn Lane	LPW	Landscaped Parkway
P	Parking	TWLT	Two-way Left Turn		New Traffic Signal
SW	Sidewalk	BP	Bike Path		
TL	Travel Lane	B	Buffer		

Figure 3-8: Calle Primera

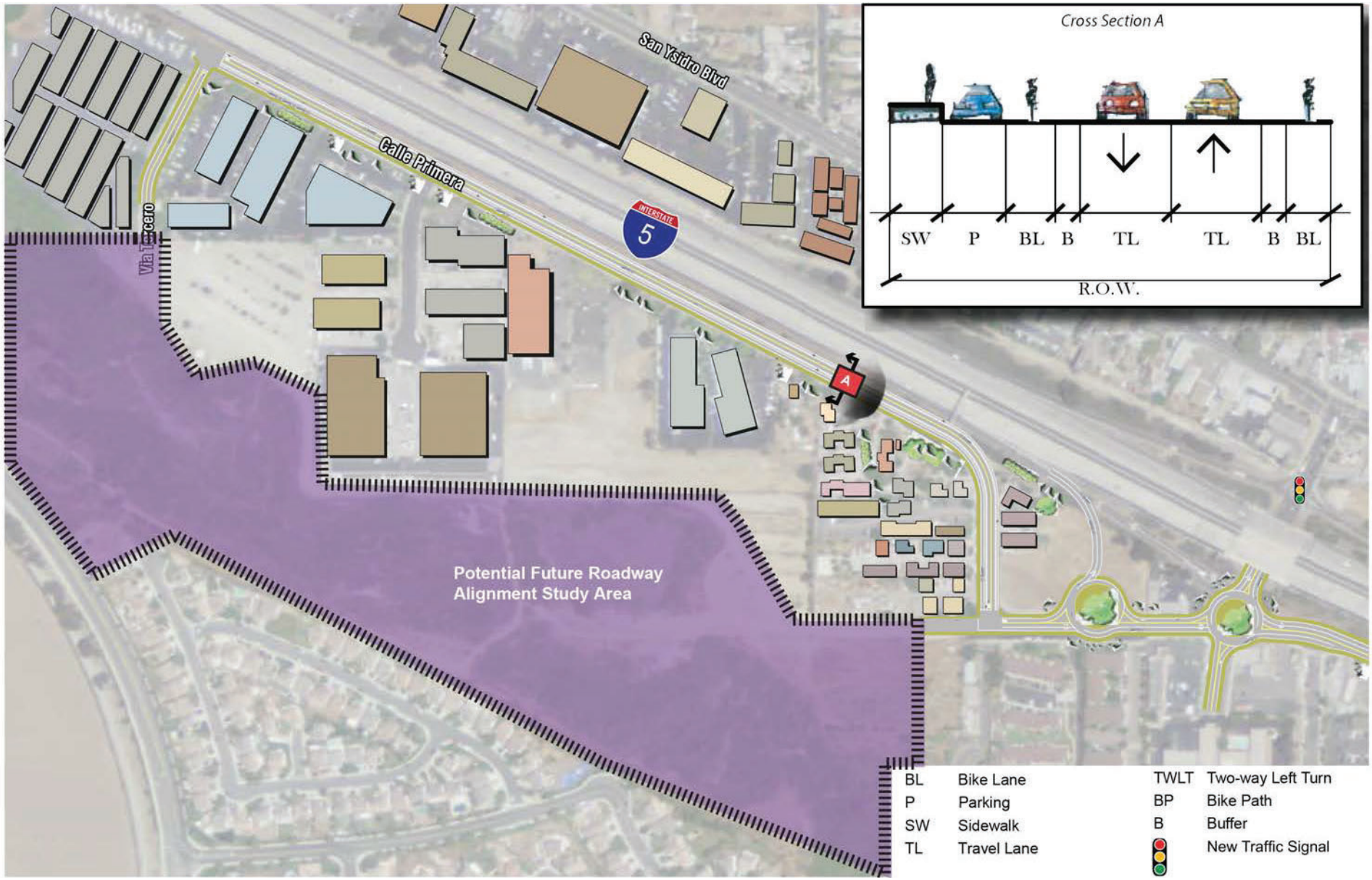


Figure 3-9: Beyer Boulevard

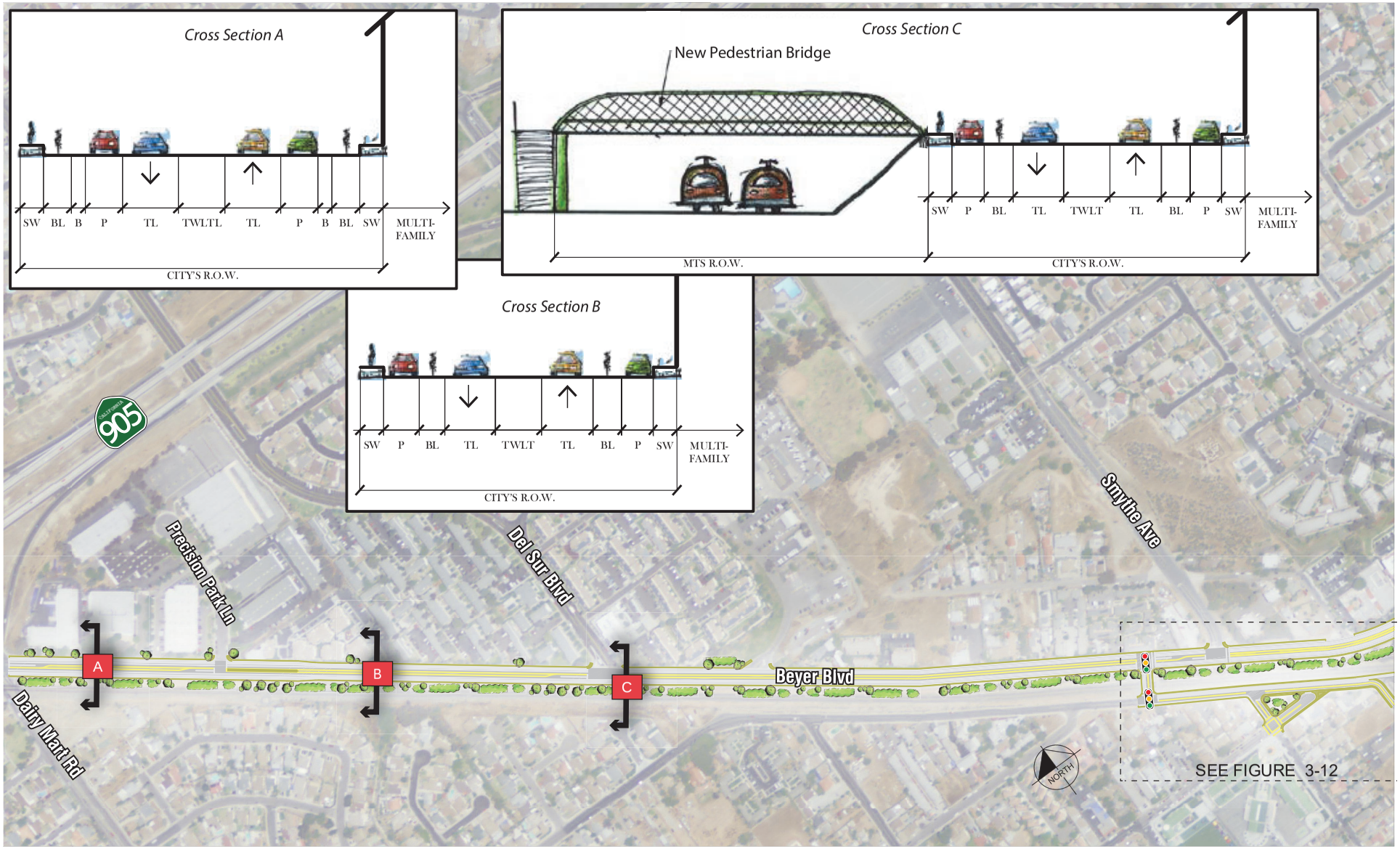
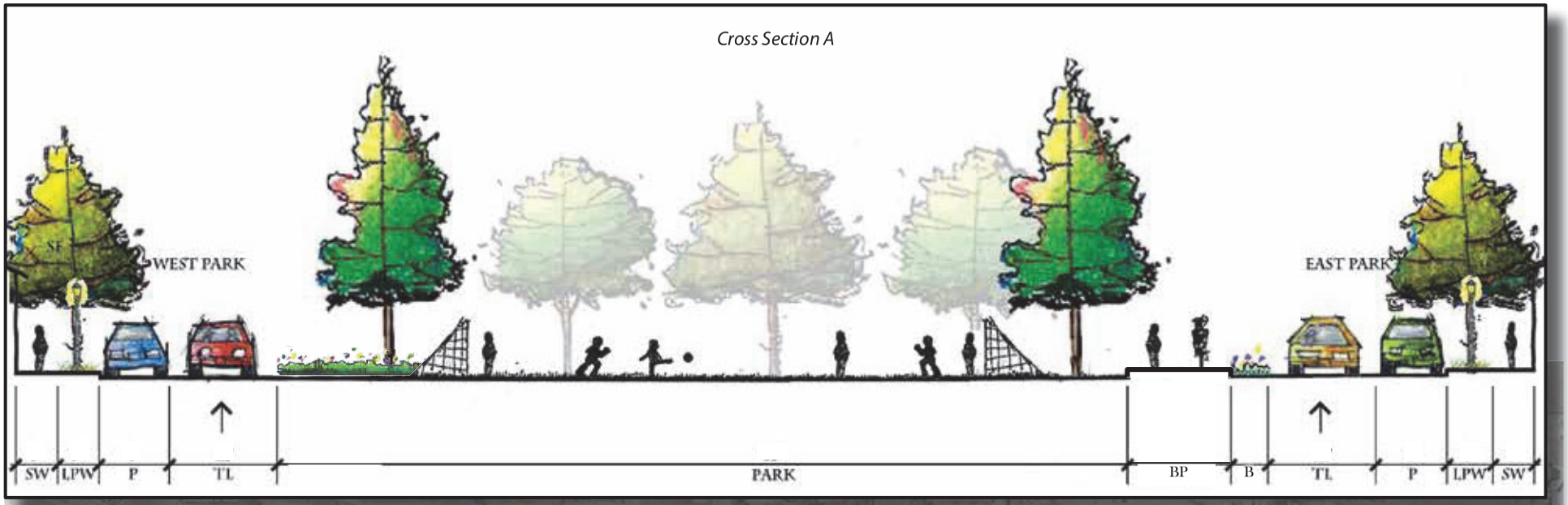
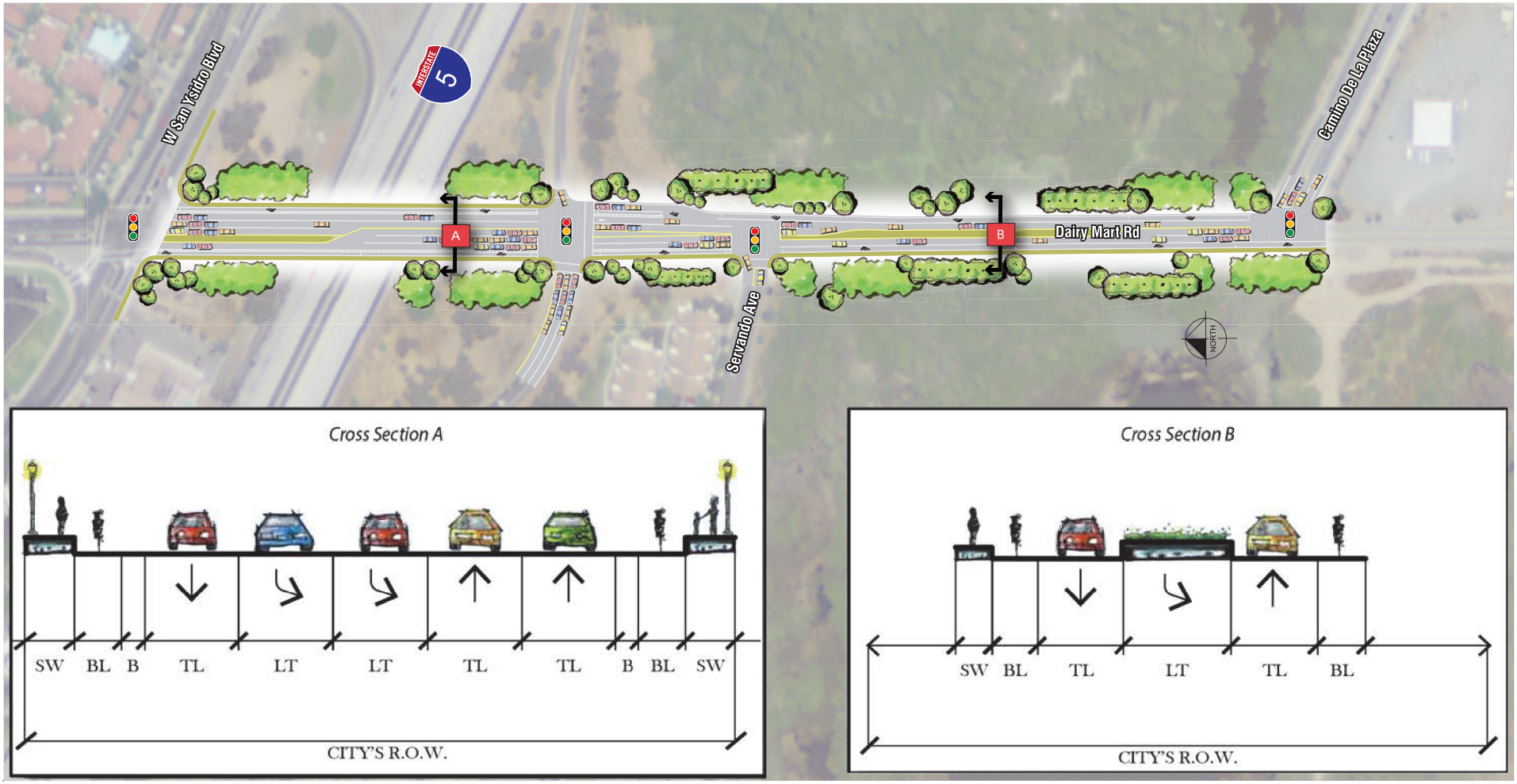


Figure 3-10: Park Avenues



BL	Bike Lane	TWLT	Two-way Left Turn
P	Parking	BP	Bike Path
SW	Sidewalk	B	Buffer
TL	Travel Lane		

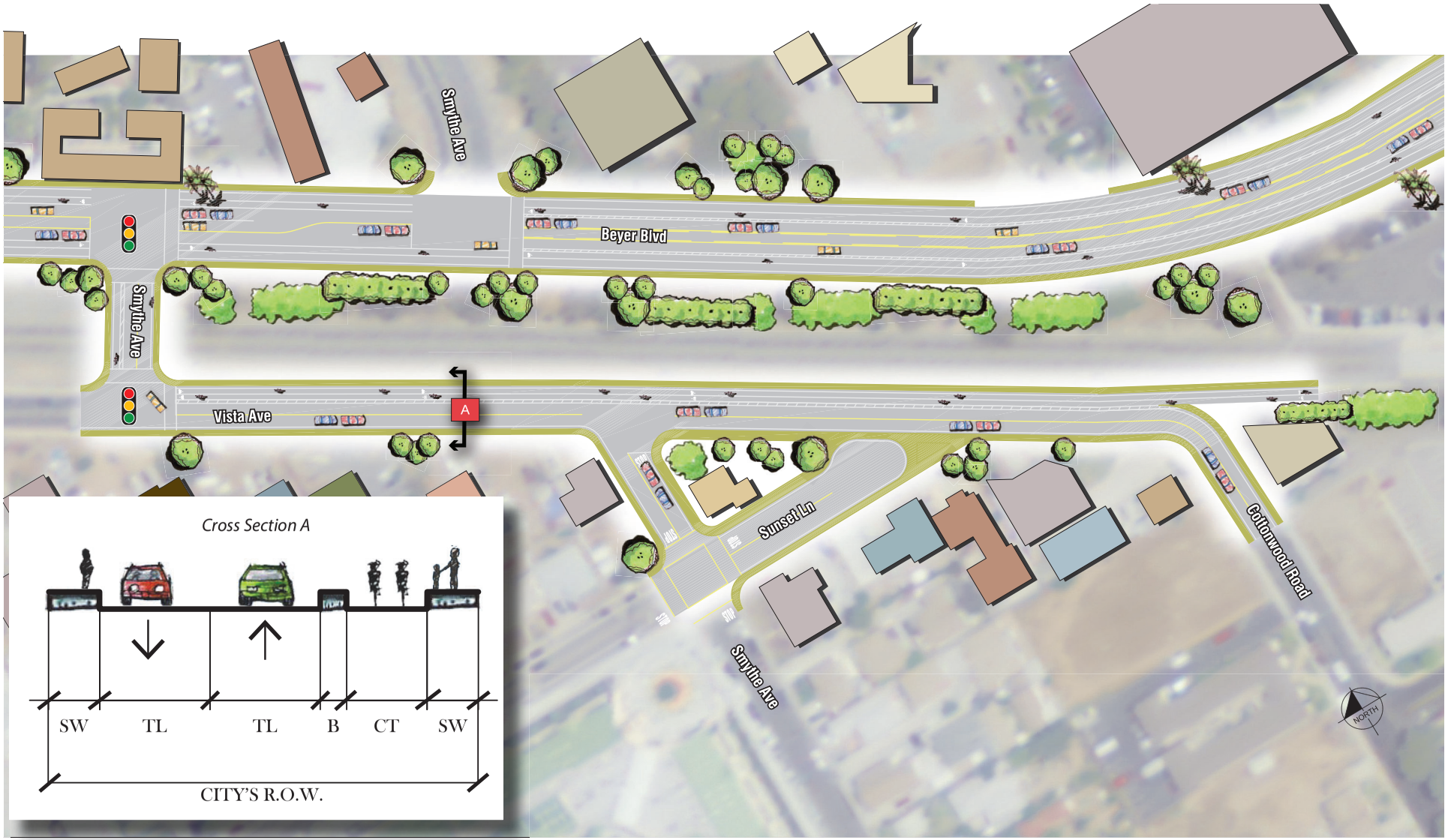
Figure 3-11: Dairy Mart Road



BL	Bike Lane	TWLT	Two-way Left Turn
P	Parking	BP	Bike Path
SW	Sidewalk	B	Buffer
TL	Travel Lane	LT	Left Turn Lane

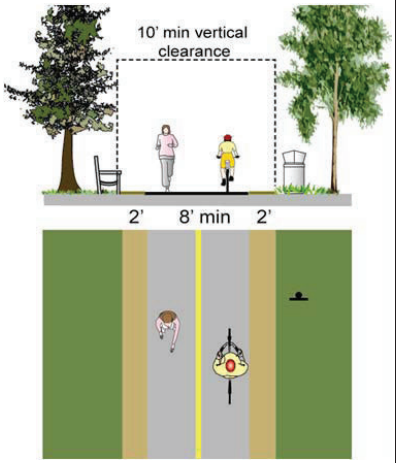
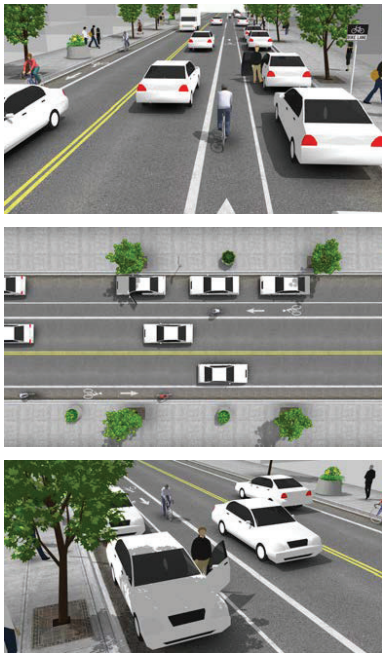
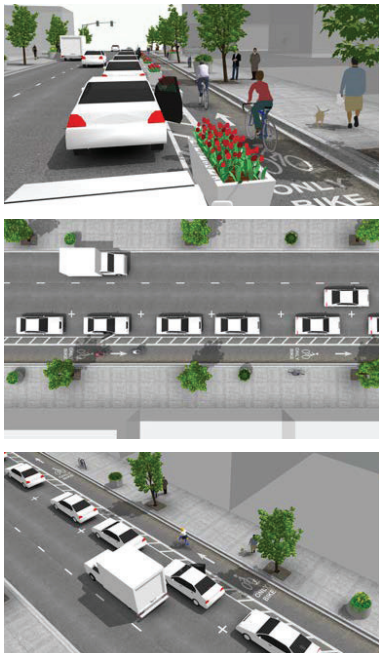
New Traffic Signal

Figure 3-12: Beyer Boulevard, Smythe Avenue, Vista Avenue, and Sunset Lane Improvements



BL	Bike Lane	TL	Travel Lane	B	Buffer
P	Parking	TWLT	Two-way Left Turn		New Traffic Signal
SW	Sidewalk	CT	Cycle Track		

Figure 3-13: Types of Bicycle Facilities

Class Description	Example Graphic	Class Description	Example Graphic
Class I – Bike Path Bike paths, also termed shared-use or multi-use paths, are paved right-of-way for exclusive use by bicyclists, pedestrians, and those using non-motorized modes of travel. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. Bike paths provide critical connections in the city where roadways are absent or are not conducive to bicycle travel.		Class III - Bike Route Bike routes provide shared use with motor vehicle traffic within the same travel lane. Designated by signs, Bike Routes provide continuity to other bike facilities or designate preferred routes through corridors with high demand. Whenever possible, Bike Routes should be enhanced with treatments that improve safety and connectivity, such as the use of "Sharrows" or shared lane markings to delineate that the road is a shared-use facility.	
Class II – Bike Lane Bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive or preferential bicycle travel. Bike lanes are one-way facilities on either side of a roadway. Whenever possible, Bike Lanes should be enhanced with treatments that improve safety and connectivity by addressing site-specific issues, such as additional warning or wayfinding signage. Enhanced buffered bike lanes add additional striping and lateral clearance between bicyclists and vehicles, leading to improved level of service (LOS) for the rider. Bike lanes enable bicyclists to ride at their preferred speed without interference from prevailing traffic conditions. Bike lanes also facilitate predictable behavior and movements between bicyclists and motorists.		Class IV – Cylcle Track A Cycle Track is a hybrid type bicycle facility that combines the experience of a separated path with the on-street infrastructure of a conventional Bike Lane. Cycle tracks are bikeways located in roadway right-of-way but separated from vehicle lanes by physical barriers or buffers. Cycle tracks provide for one-way bicycle travel in each direction adjacent to vehicular travel lanes and are exclusively for bicycle use. Cycle tracks are not recognized by Caltrans Highway Design Manual as a bikeway facility. A Cycle track is proposed as a pilot project along a 7.6-mile segment of the San Diego bikeway network. To provide bicyclists with the option of riding outside of the Cycle Track to position themselves for a left or right turn, parallel bikeways should be added adjacent to Cycle Track facilities whenever feasible. Sources: - City of San Diego Bicycle Master Plan Update 2011 - NACTO Urban Bikeway Design Guide, 2014	

3.4 PUBLIC TRANSIT

The San Ysidro community is well-served by a variety of public and private mass transit options including the Metropolitan Transit System (MTS) trolley and bus services, privately-operated jitneys, and privately-operated intercity buses. The complete streets initiatives, discussed in previous sections, address the continued improvement of connections between residential areas to transit facilities. These connections are a priority in San Diego, and specifically within the San Ysidro community to ensure safe passage along the community's roadways.

Figure 3-14 illustrates the existing transit routes and stops within the community. Approximately 51.6% of the community is located within one-quarter of a mile, which is slightly lower than the 70% goal for the transit agencies in San Diego County. According to the 2000 U.S. Census surveys, 9% of the residents of San Ysidro use public transportation to get to work. This is higher than the City of San Diego average of 7.5% and the county-wide average of 6.2%.

The southernmost point of the MTS Trolley Blue Line is located at the San Ysidro Transit Center Trolley Station near the international border. The San Ysidro Transit Center Trolley Station is one of the busiest stations on the 53-mile trolley light rail system, with more than 17,000 passenger loadings (boarding and alighting) per day in 2014. In addition to the stop at the San Ysidro Transit Center Trolley Station, the MTS Trolley Blue Line has a stop at the Beyer Trolley Station, which is also located within the San Ysidro community. An additional station is located just north of the community at the Iris Avenue Transit Center.

From San Ysidro, the MTS Trolley Blue Line travels northward to the Santa Fe Depot in downtown San Diego, and offers transfer locations to the MTS Trolley Orange Line and MTS Trolley Green Line, which serve a number of locations in the City of San Diego and adjacent cities such as Lemon Grove, La Mesa, El Cajon, and Santee. The trolley operates with three- and four-car trains approximately every 7.5 minutes during the weekday peak periods, and 15 minutes during weekday off-peak and during weekends.

Two bus routes (906 and 907) serve the community with stops along Beyer Boulevard, Cottonwood Road, San Ysidro Boulevard, Camino de la Plaza, Willow Road, Calle Primera, and Howard Avenue. An intercity bus station is located on East San Ysidro Boulevard just south of Camino de la Plaza. The privately operated intercity bus system connects San Ysidro with locations throughout the United States, Canada, and Mexico. San Ysidro Border Jitneys provide shuttle service from the border crossing to areas in San Ysidro. Jitneys may utilize existing bus stops.

Transit policies developed for San Ysidro are numbered below as Policy 3.4.1 through 3.4.11. Additional transit related policies may be found in the Land Use Element (Sections 2.5 and 2.6), Section 3.9 of this element, and the Urban Design Element (Sections 4.5 and 4.6). Additional policy information may be found in the City of San Diego's General Plan Policies ME-B.1 through ME-B.10.

Downtown San Diego transit station

Policies

3.4.1 Improve the environment surrounding bus, trolley, and jitney stops through the installation of curb extensions, shelters, additional seating, lighting, and landscaping, where appropriate (also see Policy 3.2.4).

3.4.2 Improve pedestrian/bicycle routes to and from the San Ysidro Transit Center Trolley Station and the Beyer Trolley Station through street treatments, wayfinding signage, interpretive kiosk and/or downloadable applications.

3.4.3 Improve access to transit by addressing improvements to bicycle and walking accessibility within one mile of the transit stations/centers.

3.4.4 Coordinate with the San Diego Association of Governments (SANDAG) to incorporate transit infrastructure and service enhancements for San Ysidro included in the Regional Transportation Plan, including the construction of a new Intermodal Transportation Center (ITC) located at the eastern side of the POE and the Virginia Avenue Intermodal Center at the western side of the POE, which will connect the Community to the rest of the Region, including the transit services provided south of the border, in Mexico. See Policy 3.5.4.d supporting the transit connectivity to the freeway system and enhancing overall transit services within the region.

3.4.5 Support implementation of a street car or people mover system along East San Ysidro Boulevard and Camino de la Plaza to connect the ITC at the border and the Virginia Avenue Intermodal Center, including the commercial area west of Virginia Avenue with the San Ysidro Historic Village to supplement and complement the existing 906/907 route for future development.

3.4.6 Encourage the installation of electronic arrival schedules where appropriate and implement real time transit schedule updates to provide timely and efficient loading.

3.4.7 Provide adequate areas for passenger pick-up and drop-off around the future ITC at the Border and at the Virginia Avenue Intermodal Center.

3.4.8 Coordinate with MTS and SANDAG to reduce trolley, vehicle, and pedestrian conflicts. Strategies may include elevated tracks and platforms, rail realignment, and aesthetic improvements to strengthen pedestrian access and walkability.

3.4.9 Ensure that future transportation improvements meet ADA requirements for transit stops, and account for current and future transit service.

3.4.10 Encourage the implementation of Transit Priority Measures such as queue jumpers and priority signal operations along current and future transit corridors.

3.4.11 Support the implementation of a new trolley stop to serve the Hillside development, which will be evaluated as part of the future Hillside development process. See also Section 2.7 for the Hillside land use policies.

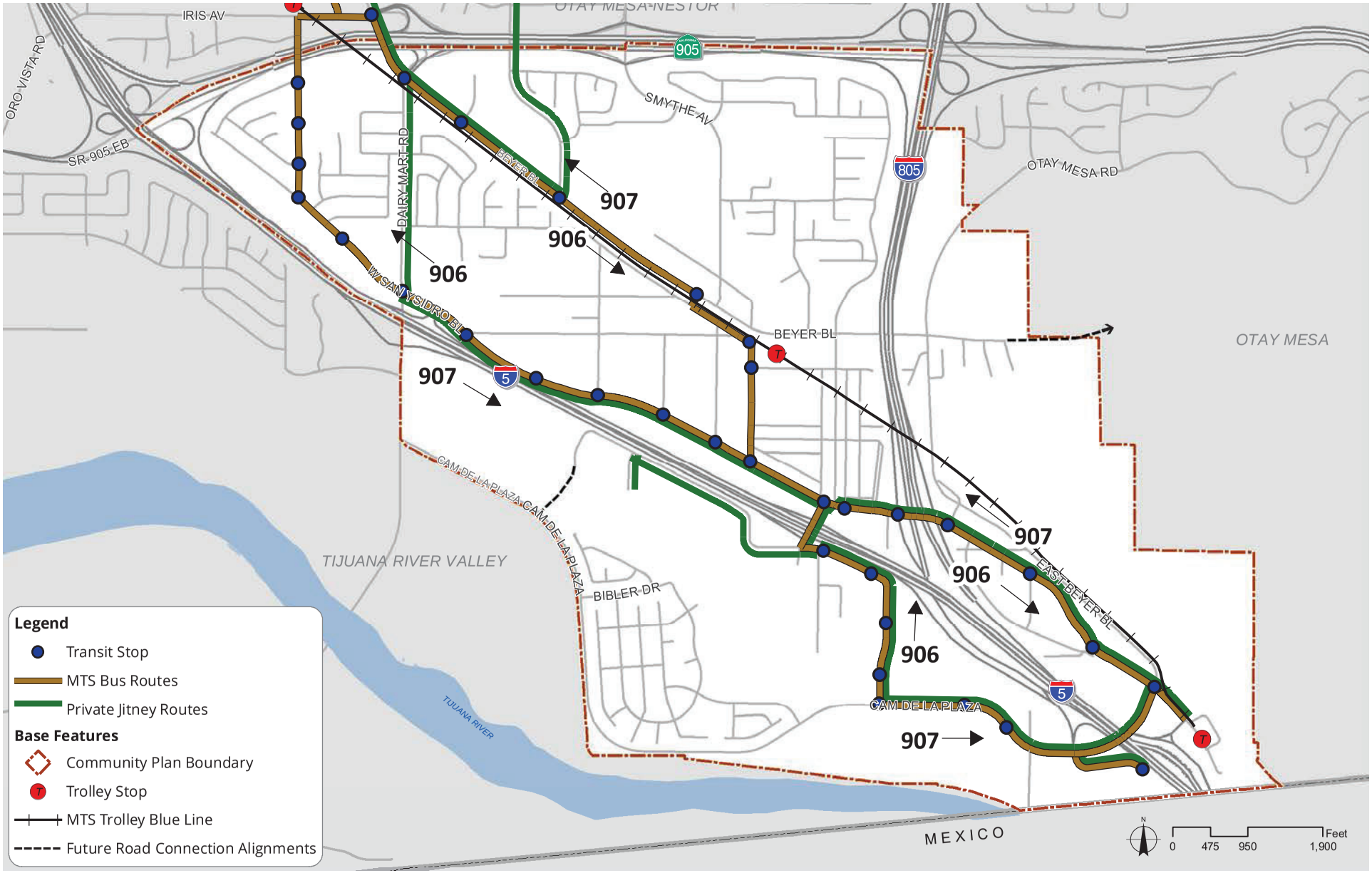
3.4.12 Support high-quality transit services which connect San Ysidro to Downtown and sub-regional employment centers, consistent with the SANDAG Regional Plan, including but not limited to the following services:

a. Trolley (Purple) Line 562

b. Rapid Bus Route 640A

c. Rapid Bus Route 688

Figure 3-14: Existing Transit Routes and Stops



3.5 STREET AND FREEWAY SYSTEMS

New residential, commercial, and industrial development in San Ysidro will generate additional travel in and through the community of San Ysidro. Existing street classifications are presented in **Figure 3-15**, and predicted vehicular volumes on these roadways is presented in **Figure 3-16** as Future Roadway Segment ADT Volumes.

This plan envisions shifting a large amount of new trips to public transit, walking, and biking, while also accommodating new vehicle traffic and minimizing conflicts between modes. Targeted street improvements, transportation systems management techniques, and traffic calming projects should be implemented and expanded to increase street capacity, reduce congestion, reduce speeding, and improve neighborhood livability. New technologies should be pursued to respond to current traffic conditions and move people and goods safely and efficiently throughout the community, while minimizing conflicts between pedestrians, bicyclist and vehicles, including transit vehicles.

Street and freeway system policies are numbered below as Policies 3.5.1 through 3.5.11, with specific locations addressed under each policy, where applicable. Additional related policies and guidance may be found in the City of San Diego's General Plan Policies ME-C.1 through ME-C.110 and Table ME-2 (Traffic Calming Toolbox). Also, policies may be found in the Urban Design Element of this document in (Section 4.8 and Section 4.9).

Policies

3.5.1 Maintain the grid network of streets and alleys.

3.5.2 Design publicly-accessible alleys to break up the scale of large developments and allow additional access to buildings (also see Section 4.10).

3.5.3 Introduce traffic calming measures, along Willow Road and other appropriate locations, to improve pedestrian and cyclist safety and comfort, and to reduce speeding and traffic diversion from arterial streets onto residential streets and alleyways.

3.5.4 Support the following improvements at freeway interchanges to improve regional access:

a. Construction of a direct freeway connection from the Camino de la Plaza bridge to the I-805 **(see Figure 3-7**).

b. Reconfiguration of the I-5 southbound off-ramp at Via de San Ysidro to connect directly to Calle Primera (**see Figure 3-8**).

c. Roadway improvements along Dairy Mart Road to improve vehicular capacity and pedestrian/bicycle connectivity (**see Figure 3-11**).

d. Reconfiguration of the I-805 northbound off-ramp at East San Ysidro Boulevard to align with Center Street to improve vehicular storage and overall operations of the corridor.

3.5.5 Support the construction of a roadway connection from Calle Primera to Camino de la Plaza. Coordinate with appropriate resources agencies to identify an alignment for

a roadway connection from Calle Primera to Camino de la Plaza that would avoid coastal wetlands and ESHA where delineated (**see 8.2.7**).

3.5.6 Support the construction of modern roundabouts at the following intersections: West San Ysidro Boulevard and Howard Avenue, West San Ysidro Boulevard and Averil Road, and Via de San Ysidro, Dairy Mart Road, Camino de la Plaza, and Calle Primera.

3.5.7 Support the implementation of "complete-streets" improvements and other roadway improvements to increase on-street parking supply, remove excess right of way and improve bicycle and pedestrian facilities, at the following locations:

a. Beyer Boulevard between Dairy Mart Road and East Beyer Boulevard (**see Figure 3-9**).

b. East and West Park Avenue between East San Ysidro Boulevard and MTS right of way at trolley tracks (**see Figure 3-10**).

c. East Hall Avenue between East and West Park Avenue (**see Figure 3-10**).

d. Olive Drive between East San Ysidro Boulevard and East Hall Avenue.

3.5.8 Support intersection improvements to increase capacity and reduce the conflicts between the trolley, bicyclist, pedestrians, and vehicular traffic, at the following locations:

a. Installation of traffic signal(s) at Smythe Crossing and Beyer Boulevard (**see Figure 3-12**).

b. Installation of traffic signal or roundabout at West San Ysidro Boulevard and Averil Road

c. Installation of traffic signal at West San Ysidro Boulevard and Alverson Street

d. Reconfiguration of the intersection at Sunset Lane and Smythe (**see Figure 3-12**).

3.5.9 Support the regular maintenance of street surfaces for roadways within the community, including street resurfacing efforts when needed.

3.5.10 Support a road connection to Otay Mesa by extending Beyer Boulevard to Caliente Avenue.

3.5.11 Support the evaluation of a one-way couplet configuration for Cottonwood Road and Smythe Avenue between Vista Avenue and West San Ysidro Boulevard.

Traffic congestion along the I-5 southbound lanes (upper left) and Camino de la Plaza (upper right) caused by the I-5 southbound inspection. Planned build-out street classifications (upper right). Year 2035 proposed land use alternative roadway segment ADT volumes (right).

Figure 3-15: Existing 2012 Functional Street Classification

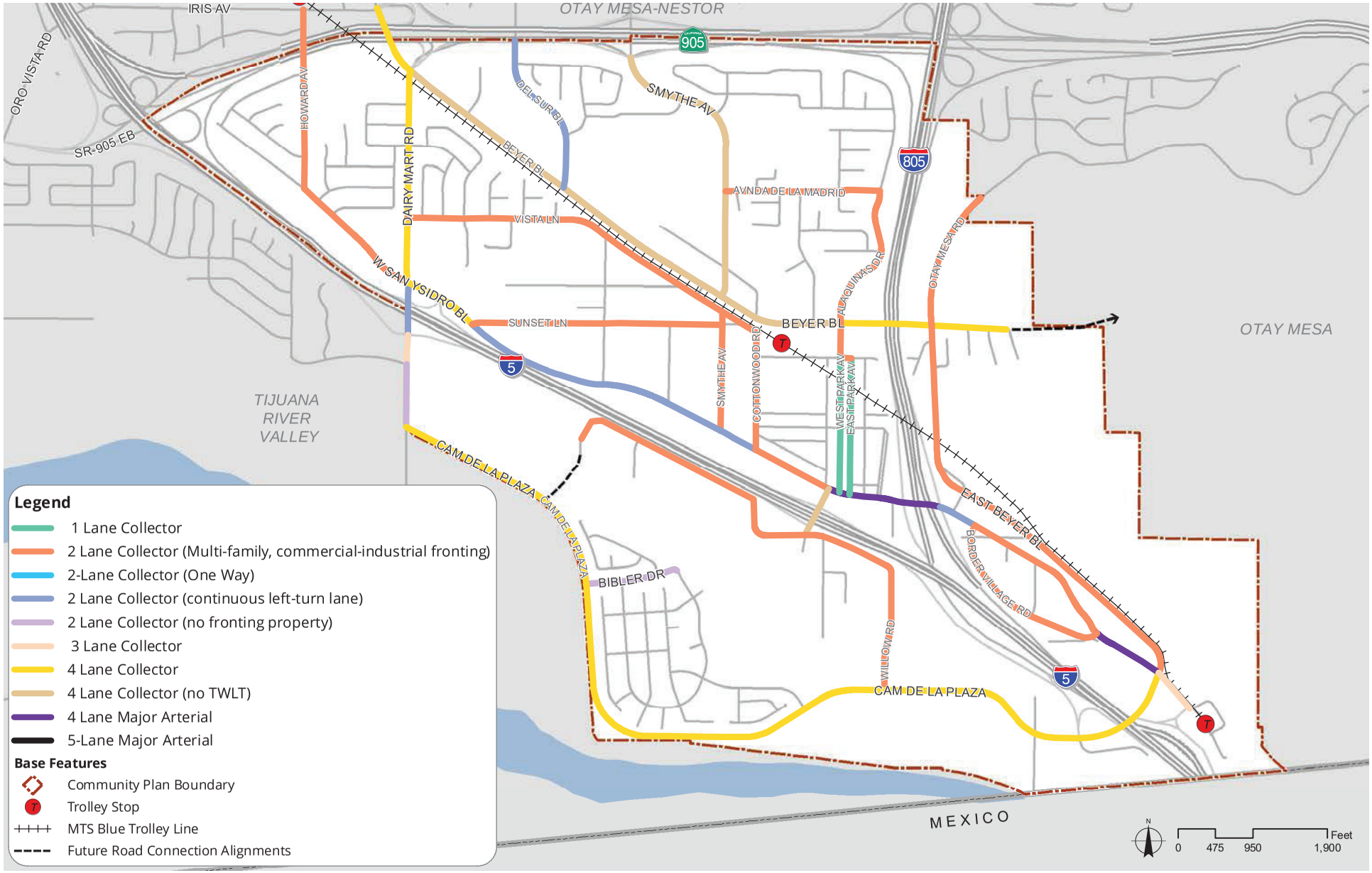


Figure 3-16: Future Planned Street Classifications and Daily Traffic

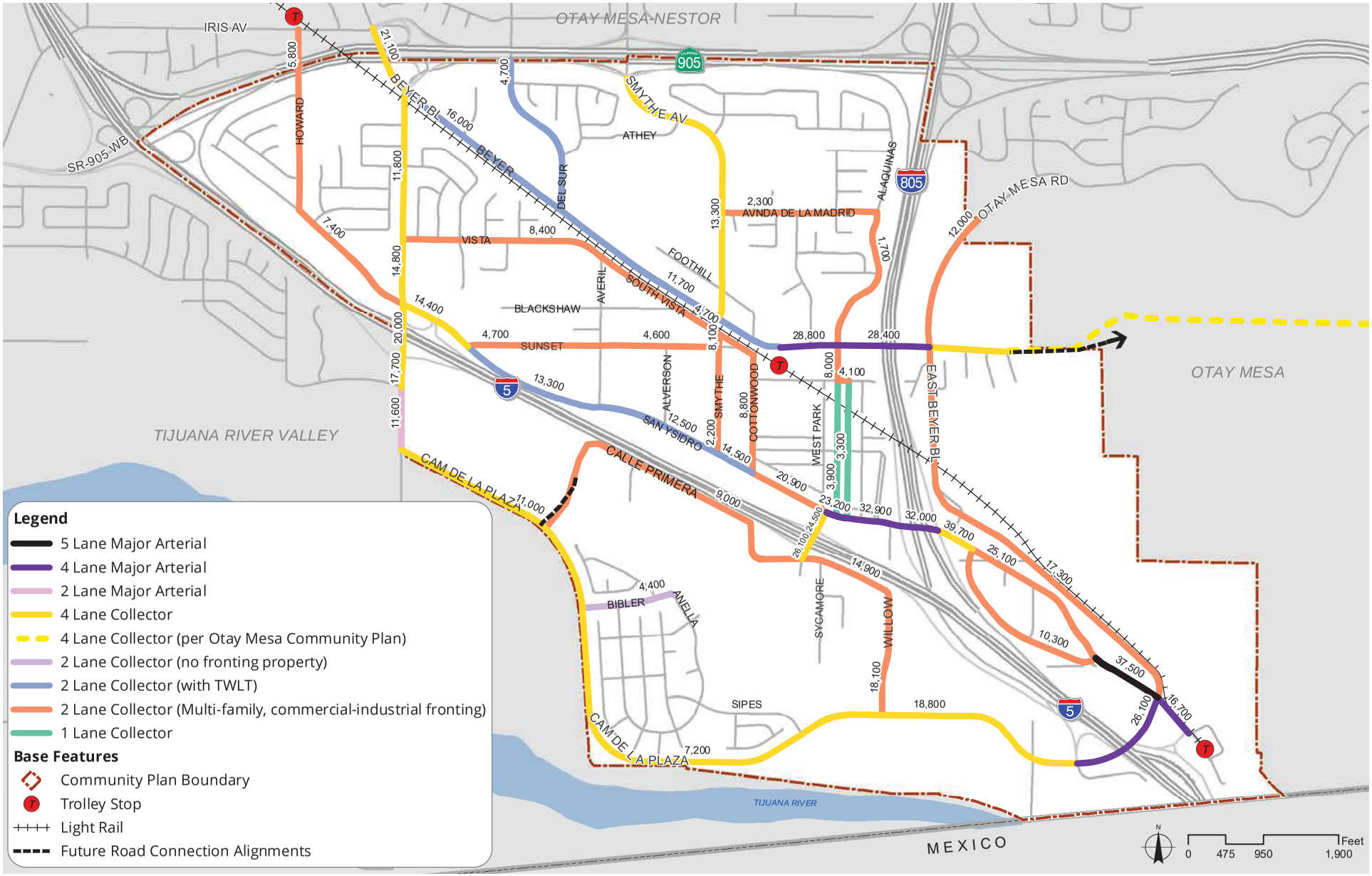
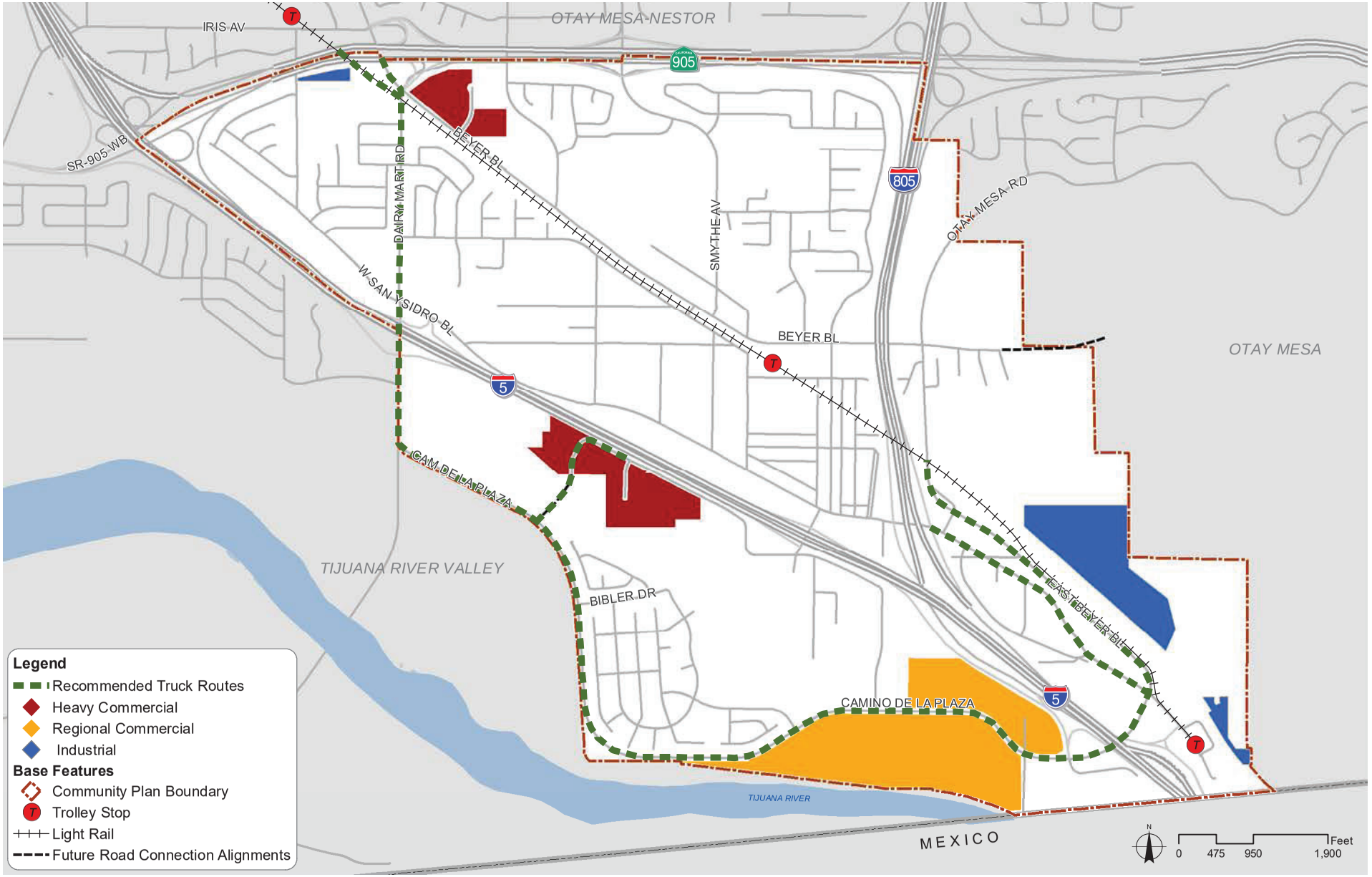


Figure 3-17: Recommended Truck Routes



3.6 GOODS MOVEMENT AND FREIGHT CIRCULATION

Within the community of San Ysidro, there are no designated truck routes facilities; freeways and surface streets provide this function. Trucks are allowed to use major circulation roadways to access the industrial and commercial sites within the community. Along the recommended truck routes (**see Figure 3-17**) the needs of the industry should be provided while still accommodating pedestrians, bicyclists, and cars.

Goods Movement and Freight Circulation policies are numbered below as Policies 3.6.1 through 3.6.3. Additional policies related to this topic may be found in the City of San Diego's General Plan Policies ME-J.1 through ME-J.9.

Policies

3.6.1 Implement a recommended truck route to facilitate access to existing and future industrial/commercial areas (**see Figure 3-17**).

3.6.2 Require adequate loading spaces, internal to new non-residential development, to minimize vehicles loading and minimize storage spillover onto adjacent streets.

3.6.3 Provide an adequate amount of short-term, on-street curbside loading spaces for existing developments where off-site loading is not accommodated.

3.7 INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Intelligent Transportation Systems (ITS) are technologies that are applied to transportation systems such as vehicles, roadways, intersections, transit, and payment systems to improve their service. The goal of ITS application is to maximize efficiency to those services, increase vehicle throughput, reduce congestion, and provide quality information to the commuting public. Information may be relayed or provided in the form of flashing messaging boards, self-adjusting traffic signals during peak traffic hours, and variable tolls depending on roadway volumes.

The application of ITS technologies can influence transportation choices across all modes of travel because users are provided real-time information to notify them of changing traffic conditions and mobility options for their travel. San Ysidro is relatively built-out and lacks the opportunity to physically expand its roadway facilities. Therefore, the challenge is how to address future traffic volumes on its improved roadways in an intelligent and coordinated manner. The use of ITS tools will be instrumental to address these future volumes and mobility needs within the community.

Intelligent Transportation Systems policies are numbered below as Policies 3.7.1 through 3.7.3. Additional policies related to this topic may be found in the City of San Diego's General Plan Policies ME-D.1 through ME-D.6.

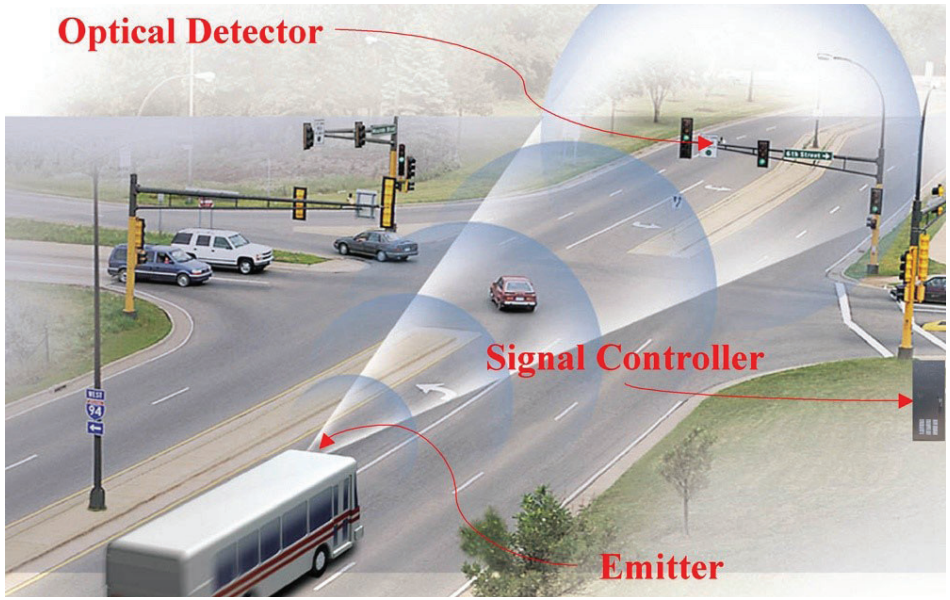
Policies

3.7.1 Support implementation of ITS to improve safety, efficiency, service, and congestion, including but not limited to: traffic signal coordination, traffic and real-time transit information, smart parking technologies, and transit priority measures.

3.7.2 Encourage use of or accommodation for emerging technologies such as car charging stations as part of future infrastructure and development projects.

3.7.3 Implement Intelligent Transportation Systems (ITS) strategies such as smart parking technology, dynamic message signs, transit signal priority techniques, and adaptive traffic coordination systems to reduce traffic congestion along West and East San Ysidro Boulevard.

Real time parking information at this parking garage provides the number of spaces available and can be linked to a smart phone for efficient access to parking.



Transit signal priority techniques detect transit vehicles as they approach an intersection and adjusts the signal timing dynamically to improve service for the transit vehicle.

3.8 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) combines marketing and incentive programs to reduce dependence on automobiles and encourage use of a range of transportation options, including public transit, bicycling, walking and ride-sharing. These management strategies are an important tool to reduce congestion and parking demand in San Ysidro.

Transportation Demand Management policies are numbered below as Policies 3.8.1 through 3.8.6. Additional policies related to this topic may be found in the City of San Diego's General Plan Policies ME-E.1 through ME-E.8.

Policies

3.8.1 Encourage new residential, office, and commercial developments, as well as any new parking garages, to provide spaces for car-sharing.

3.8.2 Encourage large employers and institutions in the San Ysidro area, such as the Port of Entry tenants and the Community College District, to provide transit passes at reduced rates to employees/students and to allow for flexible work and school schedules in order to shift trips to off-peak periods.

3.8.3 Encourage new multifamily residential development to provide discounted transit passes to residents in exchange for reduced parking rates and "sell" their parking separately from the rental cost of the apartments.

Source: SANDAG

SANDAG's TDM program has a number of resources available to promote transportation choices to employers and commuters.

3.8.4 Encourage new commercial, office, and industrial development to provide discounted transit passes to employees.

3.8.5 Encourage employers to participate in regional programs to reduce vehicular trips.

3.8.6 Implement bike share and car share programs to reduce the necessity for automobile ownership and use in the community.

3.9 LAND PORT OF ENTRY

Within the community of San Ysidro, is the San Ysidro Land Port of Entry (Port of Entry) between the U.S. and Mexico. This Port of Entry is one of the busiest international land border crossing in the world; one of every ten people entering the U.S. via sea, air, or land, enters through the San Ysidro Port of Entry (Caltrans San Ysidro Port of Entry Border Investment Strategy, June 2008). This significant level of interaction reflects the interdependence of the San Diego and Tijuana economies. Meanwhile, the magnitude of travel presents crossing with significant local challenges, in providing safe and efficient mobility within San Ysidro. It is vital to ensure sufficient mobility both to and from the border, especially for those users who rely on transit.

A number of different transportation projects have been implemented over the years in order to improve access and connectivity at this important area of the San Diego region. Currently, the U.S. General Service Administration (GSA) is constructing a multi-phased Port of Entry reconfiguration and expansion, which when completed, will provide additional vehicular inspection lanes, improved pedestrian crossing facilities, and new administration buildings.

Land Port of Entry policies are numbered below as Policies 3.9.1 through 3.9.8. Additional policies related to this topic may be found in the City of San Diego's General Plan Policies ME-E.1 through ME- E.8. Additional information on related policies may be found in this document in Sections 2.6, 3.3, 3.9, 4.4, and 5.5.

Source: The Miller Hull Partnership, LLP

Images from the San Ysidro Port of Entry redevelopment project

Policies

3.9.1 Coordinate with the General Service Administration (GSA) to reduce crossing times and incorporate mobility improvements that will enhance multi-modal mobility throughout the Port of Entry, while maintaining safety and security.

3.9.2 Improve the environment surrounding bus, trolley, and jitney stops through installation of curb extensions, shelters, additional seating, lighting, and landscaping, where appropriate.

3.9.3 Coordinate with SANDAG to implement transit infrastructure and service enhancements for San Ysidro included in the Regional Transportation Plan, including the construction of a new ITC at the Border and the Virginia Avenue Intermodal Center.

3.9.4 Support the implementation of a street car or people mover system along East San Ysidro Boulevard to accommodate redevelopment activity by connecting the ITC at the border and Virginia Avenue Intermodal Center with the San Ysidro Historic Village.

3.9.5 Implement adaptive traffic coordination systems and freeway traveler information signs to reduce traffic congestion along West and East San Ysidro Boulevard, Dairy Mart Road, and Camino de la Plaza to accommodate ever-changing border crossing traffic demand on local streets (also see Policies 3.4.6 and 3.7.3).

3.9.6 Support the reconfiguration of East San Ysidro Boulevard to improve pedestrian and bicycle connectivity between the Port of Entry and the rest of the community.

3.9.7 Provide secure, accessible, and adequate bicycle parking at the future ITC.

3.9.8 Support the creation of a Class I bicycle facility along MTS right-of-way connecting the northwestern side of the community with the future ITC at the border (also see Policy 3.3.3).

3.10 PARKING MANAGEMENT

Many of the goals and policies of the Community Plan depend on how parking is planned and managed in San Ysidro. These goals include increased residential intensity and a variety of commercial and employment uses, as well as reduced vehicle trips, increased sustainability and enhanced urban design.

Parking Management policies are numbered below as Policies 3.10.1 through 3.10.5. Additional policies and guidance related to this topic may be found in the City of San Diego's General Plan Policies ME-G.1 through ME-G.5, as well as Table ME-3 (Parking Strategy Toolbox).

Policies

3.10.1 Encourage shared commercial and residential parking strategies in Village areas.

3.10.2 Encourage public parking structures around the Port of Entry that includes shared parking arrangements to efficiently meet parking demands and avoid dedicating too much land for public parking.

3.10.3 Investigate the feasibility and practicality of a parking in-lieu fee, or other measure, for implementing a variety of parking demand reduction strategies for new development.

3.10.4 Implement on-street parking management strategies in the Village and commercial areas to more effectively use street parking space and increase turnover and parking availability.

3.10.5 Consider the use of metered parking in commercial areas to provide short-term parking for retail customers and visitors while discouraging long term residential, employee, and border-user parking.

Prepared by NDS/ATD

VOLUME

Beyer Blvd Bet. W Park Ave/Alaquinas Dr & Otay Mesa Rd/E Beyer Blvd

Day: Tuesday
Date: 3/20/2018

City: San Ysidro
Project #: CA18_4101_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,589	2,774	6,363

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			11		7		18		12:00			56		63		119	
00:15			8		4		12		12:15			85		49		134	
00:30			4		4		8		12:30			100		110		210	
00:45			3	26	4	19	7	45	12:45			77	318	71	293	148	611
01:00			2		3		5		13:00			62		66		128	
01:15			4		3		7		13:15			85		52		137	
01:30			1		1		2		13:30			72		50		122	
01:45			2	9	1	8	3	17	13:45			51	270	33	201	84	471
02:00			1		0		1		14:00			49		44		93	
02:15			2		3		5		14:15			44		44		88	
02:30			2		2		4		14:30			42		45		87	
02:45			0	5	2	7	2	12	14:45			55	190	50	183	105	373
03:00			2		1		3		15:00			88		50		138	
03:15			1		2		3		15:15			73		50		123	
03:30			0		3		3		15:30			75		48		123	
03:45			3	6	1	7	4	13	15:45			65	301	45	193	110	494
04:00			1		1		2		16:00			71		43		114	
04:15			2		2		4		16:15			74		37		111	
04:30			9		6		15		16:30			68		40		108	
04:45			6	18	8	17	14	35	16:45			76	289	47	167	123	456
05:00			8		11		19		17:00			60		48		108	
05:15			10		15		25		17:15			65		34		99	
05:30			11		10		21		17:30			57		41		98	
05:45			21	50	11	47	32	97	17:45			77	259	37	160	114	419
06:00			16		13		29		18:00			78		34		112	
06:15			17		20		37		18:15			55		35		90	
06:30			20		21		41		18:30			52		34		86	
06:45			23	76	37	91	60	167	18:45			50	235	40	143	90	378
07:00			42		44		86		19:00			54		40		94	
07:15			93		59		152		19:15			41		30		71	
07:30			165		144		309		19:30			33		16		49	
07:45			98	398	113	360	211	758	19:45			36	164	19	105	55	269
08:00			68		78		146		20:00			34		24		58	
08:15			51		48		99		20:15			42		17		59	
08:30			35		26		61		20:30			32		24		56	
08:45			41	195	24	176	65	371	20:45			37	145	20	85	57	230
09:00			27		28		55		21:00			18		20		38	
09:15			25		25		50		21:15			24		12		36	
09:30			34		28		62		21:30			24		19		43	
09:45			41	127	31	112	72	239	21:45			18	84	14	65	32	149
10:00			41		35		76		22:00			12		15		27	
10:15			44		25		69		22:15			17		10		27	
10:30			32		26		58		22:30			13		13		26	
10:45			40	157	29	115	69	272	22:45			13	55	11	49	24	104
11:00			38		31		69		23:00			8		6		14	
11:15			44		38		82		23:15			10		12		22	
11:30			46		37		83		23:30			12		6		18	
11:45			48	176	36	142	84	318	23:45			6	36	5	29	11	65
TOTALS				1243		1101		**2344**	**TOTALS**				2346		1673		**4019**
SPLIT %				53.0%		47.0%		**36.8%**	**SPLIT %**				58.4%		41.6%		**63.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,589	2,774	6,363

AM Peak Hour			07:15	07:15	**07:15**	**PM Peak Hour**			12:15	12:30	**12:30**
AM Pk Volume			424	394	**818**	**PM Pk Volume**			324	299	**623**
Pk Hr Factor			0.642	0.684	**0.662**	**Pk Hr Factor**			0.810	0.680	**0.742**
7 - 9 Volume	0	0	593	536	**1129**	**4 - 6 Volume**	0	0	548	327	**875**
7 - 9 Peak Hour			07:15	07:15	**07:15**	**4 - 6 Peak Hour**			16:00	16:15	**16:00**
7 - 9 Pk Volume	0	0	424	394	**818**	**4 - 6 Pk Volume**	0	0	289	172	**456**
Pk Hr Factor	0.000	0.000	0.642	0.684	**0.662**	**Pk Hr Factor**	0.000	0.000	0.951	0.896	**0.927**

Prepared by NDS/ATD

VOLUME

Beyer Blvd Bet. Otay Mesa Rd / E Beyer Blvd & Fantasy Ln

Day: Tuesday
Date: 3/20/2018

City: San Ysidro
Project #: CA18_4101_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	419	394	813

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					4		1		5		12:00					6		2		8	
00:15					2		1		3		12:15					12		8		20	
00:30					1		1		2		12:30					12		11		23	
00:45					0	7	0	3	0	10	12:45					9	39	3	24	12	63
01:00					1		0		1		13:00					9		8		17	
01:15					0		0		0		13:15					8		4		12	
01:30					0		0		0		13:30					4		5		9	
01:45					0	1	0		0	1	13:45					2	23	6	23	8	46
02:00					1		1		2		14:00					5		3		8	
02:15					0		0		0		14:15					5		2		7	
02:30					1		0		1		14:30					5		2		7	
02:45					0	2	1	2	1	4	14:45					3	18	6	13	9	31
03:00					0		0		0		15:00					5		2		7	
03:15					0		0		0		15:15					7		11		18	
03:30					0		0		0		15:30					16		6		22	
03:45					1	1	1	1	2	2	15:45					8	36	11	30	19	66
04:00					0		0		0		16:00					8		3		11	
04:15					0		0		0		16:15					5		6		11	
04:30					0		0		0		16:30					10		5		15	
04:45					1	1	3	3	4	4	16:45					5	28	8	22	13	50
05:00					0		3		3		17:00					10		8		18	
05:15					1		3		4		17:15					7		4		11	
05:30					0		2		2		17:30					16		11		27	
05:45					2	3	3	11	5	14	17:45					11	44	7	30	18	74
06:00					2		5		7		18:00					8		8		16	
06:15					6		6		12		18:15					4		6		10	
06:30					3		5		8		18:30					9		4		13	
06:45					4	15	14	30	18	45	18:45					7	28	6	24	13	52
07:00					4		5		9		19:00					10		8		18	
07:15					1		7		8		19:15					8		3		11	
07:30					7		7		14		19:30					6		4		10	
07:45					4	16	7	26	11	42	19:45					6	30	2	17	8	47
08:00					4		16		20		20:00					4		5		9	
08:15					6		5		11		20:15					5		4		9	
08:30					1		4		5		20:30					7		5		12	
08:45					4	15	3	28	7	43	20:45					7	23	3	17	10	40
09:00					4		2		6		21:00					0		3		3	
09:15					2		7		9		21:15					5		2		7	
09:30					4		5		9		21:30					7		2		9	
09:45					3	13	5	19	8	32	21:45					8	20	2	9	10	29
10:00					8		6		14		22:00					1		3		4	
10:15					7		5		12		22:15					2		4		6	
10:30					4		5		9		22:30					4		2		6	
10:45					4	23	3	19	7	42	22:45					1	8	1	10	2	18
11:00					5		3		8		23:00					2		3		5	
11:15					4		6		10		23:15					3		1		4	
11:30					5		7		12		23:30					2		2		4	
11:45					1	15	11	27	12	42	23:45					3	10	0	6	3	16
TOTALS						112		169		281	TOTALS						307		225		532
SPLIT %						39.9%		60.1%		34.6%	SPLIT %						57.7%		42.3%		65.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	419	394	813

AM Peak Hour			11:45	07:15	11:45	PM Peak Hour			17:00	17:30	17:00
AM Pk Volume			31	37	63	PM Pk Volume			44	32	74
Pk Hr Factor			0.646	0.578	0.685	Pk Hr Factor			0.688	0.727	0.685
7 - 9 Volume	0	0	31	54	85	4 - 6 Volume	0	0	72	52	124
7 - 9 Peak Hour			07:30	07:15	07:30	4 - 6 Peak Hour			17:00	16:45	17:00
7 - 9 Pk Volume	0	0	21	37	56	4 - 6 Pk Volume	0	0	44	31	74
Pk Hr Factor	0.000	0.000	0.750	0.578	0.700	Pk Hr Factor	0.000	0.000	0.688	0.705	0.685

Prepared by NDS/ATD

VOLUME

E Beyer Blvd Bet. Beyer Blvd & Filoi Ave

Day: Tuesday
Date: 3/20/2018

City: San Ysidro
Project #: CA18_4101_003

DAILY TOTALS	NB	SB	EB	WB	Total
	2,452	3,085	0	0	5,537

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	14		6				20		12:00	37		34				71	
00:15	6		7				13		12:15	53		46				99	
00:30	6		5				11		12:30	42		73				115	
00:45	5	31	2	20			7	51	12:45	41	173	59	212			100	385
01:00	6		4				10		13:00	50		45				95	
01:15	3		4				7		13:15	52		68				120	
01:30	3		1				4		13:30	43		51				94	
01:45	3	15	2	11			5	26	13:45	29	174	46	210			75	384
02:00	3		2				5		14:00	59		45				104	
02:15	8		1				9		14:15	30		43				73	
02:30	2		1				3		14:30	39		39				78	
02:45	2	15	4	8			6	23	14:45	35	163	46	173			81	336
03:00	1		3				4		15:00	49		80				129	
03:15	2		2				4		15:15	44		69				113	
03:30	3		2				5		15:30	46		55				101	
03:45	2	8	5	12			7	20	15:45	37	176	51	255			88	431
04:00	4		6				10		16:00	44		54				98	
04:15	3		8				11		16:15	35		49				84	
04:30	5		15				20		16:30	31		51				82	
04:45	10	22	13	42			23	64	16:45	45	155	60	214			105	369
05:00	5		18				23		17:00	35		53				88	
05:15	9		21				30		17:15	29		46				75	
05:30	8		18				26		17:30	58		55				113	
05:45	15	37	25	82			40	119	17:45	36	158	51	205			87	363
06:00	16		30				46		18:00	36		56				92	
06:15	12		32				44		18:15	33		47				80	
06:30	17		34				51		18:30	42		43				85	
06:45	22	67	38	134			60	201	18:45	38	149	41	187			79	336
07:00	36		44				80		19:00	41		36				77	
07:15	54		54				108		19:15	40		37				77	
07:30	53		63				116		19:30	34		27				61	
07:45	46	189	96	257			142	446	19:45	49	164	24	124			73	288
08:00	43		72				115		20:00	31		29				60	
08:15	31		50				81		20:15	21		29				50	
08:30	26		43				69		20:30	25		25				50	
08:45	16	116	39	204			55	320	20:45	27	104	34	117			61	221
09:00	26		31				57		21:00	22		15				37	
09:15	20		35				55		21:15	19		20				39	
09:30	18		39				57		21:30	30		28				58	
09:45	25	89	47	152			72	241	21:45	23	94	12	75			35	169
10:00	25		43				68		22:00	22		10				32	
10:15	21		31				52		22:15	18		11				29	
10:30	28		33				61		22:30	24		10				34	
10:45	22	96	37	144			59	240	22:45	13	77	11	42			24	119
11:00	31		36				67		23:00	11		8				19	
11:15	32		45				77		23:15	21		12				33	
11:30	31		40				71		23:30	6		13				19	
11:45	40	134	47	168			87	302	23:45	8	46	4	37			12	83
TOTALS		819		1234				2053	TOTALS		1633		1851				3484
SPLIT %		39.9%		60.1%				37.1%	SPLIT %		46.9%		53.1%				62.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	2,452	3,085	0	0	5,537

AM Peak Hour	07:15	07:15			07:15	PM Peak Hour	12:15	15:00			15:00
AM Pk Volume	196	285			481	PM Pk Volume	186	255			431
Pk Hr Factor	0.907	0.742			0.847	Pk Hr Factor	0.877	0.797			0.835
7 - 9 Volume	305	461	0	0	766	4 - 6 Volume	313	419	0	0	732
7 - 9 Peak Hour	07:15	07:15			07:15	4 - 6 Peak Hour	16:45	16:00			16:45
7 - 9 Pk Volume	196	285	0	0	481	4 - 6 Pk Volume	167	214	0	0	381
Pk Hr Factor	0.907	0.742	0.000	0.000	0.847	Pk Hr Factor	0.720	0.892	0.000	0.000	0.843

National Data & Surveying Services Intersection Turning Movement Count

Location: Otay Mesa Rd / E Beyer Blvd & Beyer Blvd
City: San Ysidro
Control: Signalized

Project ID: 18-04100-002
Date: 3/20/2018

Total

NS/EW Streets:	Otay Mesa Rd / E Beyer Blvd				Otay Mesa Rd / E Beyer Blvd				Beyer Blvd				Beyer Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	1	0	0	1.5	0.5	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	14	23	0	0	0	37	28	0	27	2	9	0	5	2	0	0	147
7:15 AM	20	29	1	0	0	26	43	0	73	2	19	1	4	2	2	0	222
7:30 AM	18	40	1	0	1	43	124	0	130	3	27	0	1	3	1	0	392
7:45 AM	17	24	1	0	1	46	93	0	56	2	42	0	4	4	0	0	290
8:00 AM	24	21	2	0	1	33	38	0	32	4	32	0	7	8	1	0	203
8:15 AM	13	18	1	0	0	22	30	0	18	3	33	0	2	3	0	0	143
8:30 AM	14	9	0	0	0	19	12	0	13	1	20	0	2	3	0	0	93
8:45 AM	7	7	0	0	0	10	11	0	14	3	22	0	2	1	0	0	77
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	127	171	6	0	3	236	379	0	363	20	204	1	27	26	4	0	1567
APPROACH %'s :	41.78%	56.25%	1.97%	0.00%	0.49%	38.19%	61.33%	0.00%	61.73%	3.40%	34.69%	0.17%	47.37%	45.61%	7.02%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	79	114	5	0	3	148	298	0	291	11	120	1	16	17	4	0	1107
PEAK HR FACTOR :	0.823	0.713	0.625	0.000	0.750	0.804	0.601	0.000	0.560	0.688	0.714	0.250	0.571	0.531	0.500	0.000	0.706
	0.839				0.668				0.661				0.578				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	1	0	0	1.5	0.5	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	21	16	4	0	0	17	21	0	26	5	39	0	1	2	0	0	152
4:15 PM	19	12	1	0	0	7	17	0	28	4	42	0	5	0	0	0	135
4:30 PM	17	11	4	0	0	15	18	0	26	6	34	0	2	4	0	0	137
4:45 PM	29	12	2	0	0	17	13	0	24	4	47	2	2	6	0	0	158
5:00 PM	19	10	2	0	0	20	22	0	23	6	31	0	2	5	0	0	140
5:15 PM	12	15	4	0	0	13	18	0	29	5	28	1	1	4	0	0	130
5:30 PM	24	26	6	0	1	16	14	0	19	7	33	0	7	3	1	0	157
5:45 PM	18	11	3	0	0	14	19	0	30	8	37	1	4	2	0	0	147
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	159	113	26	0	1	119	142	0	205	45	291	4	24	26	1	0	1156
APPROACH %'s :	53.36%	37.92%	8.72%	0.00%	0.38%	45.42%	54.20%	0.00%	37.61%	8.26%	53.39%	0.73%	47.06%	50.98%	1.96%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	84	63	14	0	1	66	67	0	95	22	139	3	12	18	1	0	585
PEAK HR FACTOR :	0.724	0.606	0.583	0.000	0.250	0.825	0.761	0.000	0.819	0.786	0.739	0.375	0.429	0.750	0.250	0.000	0.926
	0.719				0.798				0.841				0.705				

Prepared by National Data & Surveying Services

Otay Mesa Rd / E Beyer Blvd & Beyer Blvd

Peak Hour Turning Movement Count

ID: 18-04100-002
City: San Ysidro

Day: Tuesday
Date: 03/20/2018

Otay Mesa Rd / E Beyer Blvd

SOUTHBOUND

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

AM	298	148	3	0	409	AM
NOON	0	0	0	0	0	NOON
PM	67	66	1	0	159	PM

EASTBOUND (Beyer Blvd)

AM	NOON	PM		
395	0	172	⇦	
1	0	3	↶	0
291	0	95	↱	1.5
11	0	22	→	0.5
120	0	139	↷	1
AM	NOON	PM		

WESTBOUND (Beyer Blvd)

PM	NOON	AM		
1	0	4	↶	0
18	0	17	←	1
12	0	16	↰	0
0	0	0	↰	0
37	0	19	⇨	
PM	NOON	AM		

CONTROL

Signalized

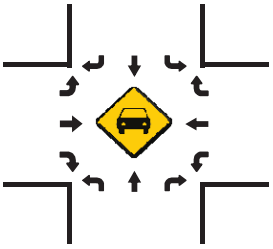
TEV	1107 AM	0 NOON	585 PM
PHF	0.71		0.93

		0	1	0	0	
PM	217	0	84	63	14	PM
NOON	0	0	0	0	0	NOON
AM	284	0	79	114	5	AM
		0	1	1	0	

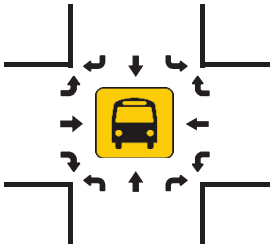
NORTHBOUND

Otay Mesa Rd / E Beyer Blvd

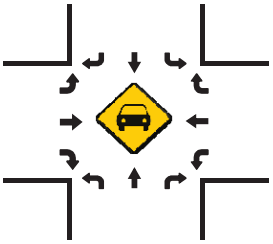
Total Vehicles (AM)



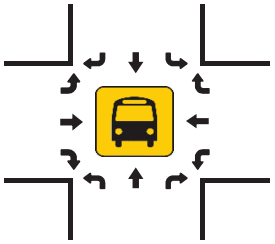
Total Vehicles (AM)



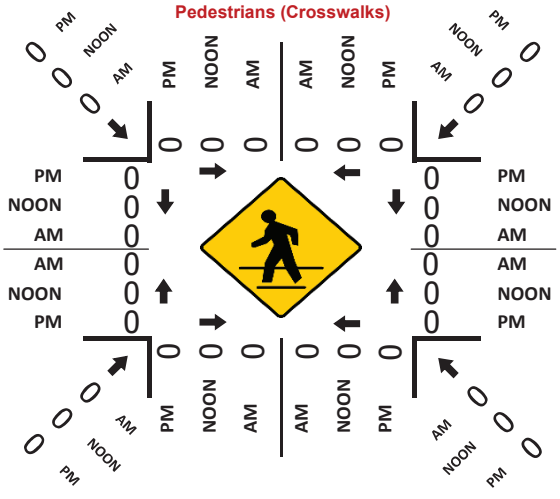
Total Vehicles (NOON)



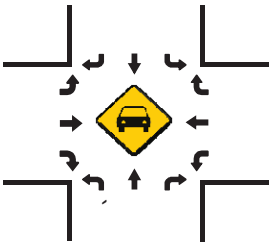
Total Vehicles (NOON)



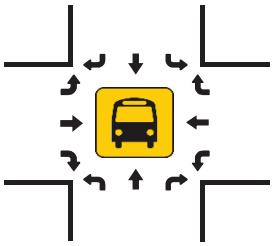
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: W Park Ave/Alaquinas Dr & Beyer Blvd
City: San Ysidro
Control: Signalized

Project ID: 18-04100-001
Date: 3/20/2018

Total

NS/EW Streets:	W Park Ave/Alaquinas Dr				W Park Ave/Alaquinas Dr				Beyer Blvd				Beyer Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	6	8	14	0	7	3	8	0	7	21	6	0	4	35	6	0	125
7:15 AM	17	7	24	0	15	8	7	0	7	55	17	0	13	37	8	0	215
7:30 AM	26	9	46	0	19	9	20	0	12	100	27	2	35	89	21	0	415
7:45 AM	25	20	14	0	17	12	7	0	12	67	37	9	23	65	23	0	331
8:00 AM	22	16	15	0	17	16	7	0	4	36	27	2	11	51	17	0	241
8:15 AM	20	7	5	0	12	20	14	0	11	33	22	1	6	33	9	0	193
8:30 AM	10	3	4	0	8	11	4	0	4	22	18	0	0	21	5	0	110
8:45 AM	9	6	3	0	7	4	5	0	4	34	19	0	1	20	2	0	114
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	135	76	125	0	102	83	72	0	61	368	173	14	93	351	91	0	1744
APPROACH %'s :	40.18%	22.62%	37.20%	0.00%	39.69%	32.30%	28.02%	0.00%	9.90%	59.74%	28.08%	2.27%	17.38%	65.61%	17.01%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	90	52	99	0	68	45	41	0	35	258	108	13	82	242	69	0	1202
PEAK HR FACTOR :	0.865	0.650	0.538	0.000	0.895	0.703	0.513	0.000	0.729	0.645	0.730	0.361	0.586	0.680	0.750	0.000	0.724
	0.744				0.802				0.734				0.678				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	11	6	4	0	6	4	6	0	12	61	23	0	2	34	6	0	175
4:15 PM	9	9	7	0	6	8	10	0	9	62	15	1	3	30	4	0	173
4:30 PM	17	5	9	0	8	11	7	0	17	57	18	0	9	24	7	0	189
4:45 PM	16	6	7	0	15	14	15	0	10	49	28	0	4	34	8	0	206
5:00 PM	15	8	4	0	11	8	12	0	7	50	21	0	6	34	7	0	183
5:15 PM	10	2	4	0	6	5	11	0	8	50	20	0	4	28	3	0	151
5:30 PM	16	13	3	0	5	10	11	0	14	51	19	0	2	29	6	0	179
5:45 PM	14	9	2	0	16	8	16	0	15	58	26	0	3	30	6	0	203
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	108	58	40	0	73	68	88	0	92	438	170	1	33	243	47	0	1459
APPROACH %'s :	52.43%	28.16%	19.42%	0.00%	31.88%	29.69%	38.43%	0.00%	13.12%	62.48%	24.25%	0.14%	10.22%	75.23%	14.55%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	57	28	27	0	40	41	44	0	43	218	82	1	22	122	26	0	751
PEAK HR FACTOR :	0.838	0.778	0.750	0.000	0.667	0.732	0.733	0.000	0.632	0.879	0.732	0.250	0.611	0.897	0.813	0.000	0.911
	0.903				0.710				0.935				0.904				

Prepared by National Data & Surveying Services

W Park Ave/Alaquinas Dr & Beyer Blvd

Peak Hour Turning Movement Count

ID: 18-04100-001
City: San Ysidro

Day: Tuesday
Date: 03/20/2018

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

SOUTHBOUND — W Park Ave/Alaquinas Dr

AM	41	45	68	0	156	AM
NOON	0	0	0	0	0	NOON
PM	44	41	40	0	97	PM

EASTBOUND — Beyer Blvd

AM	NOON	PM		
386	0	224	⇦	
13	0	1	↶	0
35	0	43	↱	1
258	0	218	→	2
108	0	82	↳	0
AM	NOON	PM		

WESTBOUND — Beyer Blvd

PM	NOON	AM		
26	0	69	↰	0
122	0	242	←	2
22	0	82	↰	1
0	0	0	↶	0
285	0	425	⇨	
PM	NOON	AM		

NORTHBOUND — W Park Ave/Alaquinas Dr

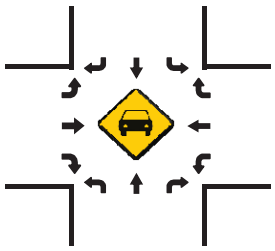
PM	145	0	57	28	27	PM
NOON	0	0	0	0	0	NOON
AM	235	0	90	52	99	AM

CONTROL

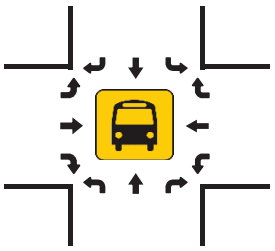
Signalized

TEV	1202 AM	0 NOON	751 PM
PHF	0.72		0.91

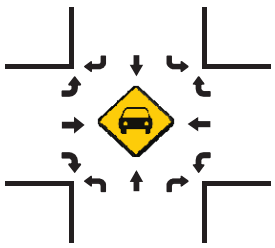
Total Vehicles (AM)



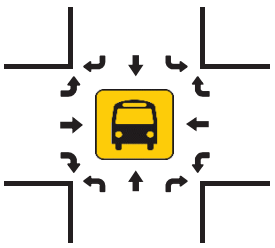
Total Vehicles (AM)



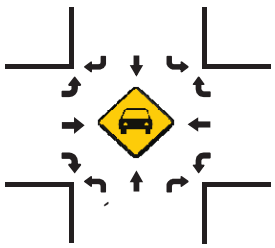
Total Vehicles (NOON)



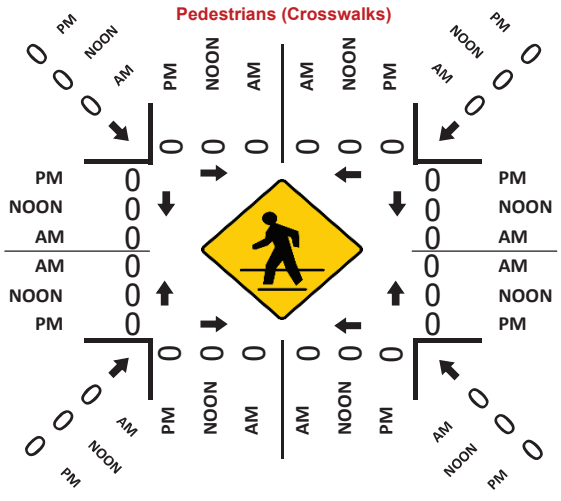
Total Vehicles (NOON)



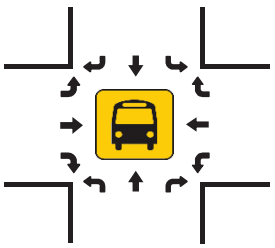
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



APPENDIX D

Existing Conditions Intersection LOS Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	292	11	120	16	17	4	79	114	5	3	148	298
Future Volume (vph)	292	11	120	16	17	4	79	114	5	3	148	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85		0.99		1.00	0.99			0.91	
Flt Protected	0.95	0.96	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1681	1691	1583		1796		1770	1851			1695	
Flt Permitted	0.95	0.96	1.00		0.98		0.33	1.00			1.00	
Satd. Flow (perm)	1681	1691	1583		1796		622	1851			1694	
Peak-hour factor, PHF	0.66	0.66	0.66	0.58	0.58	0.58	0.84	0.84	0.84	0.67	0.67	0.67
Adj. Flow (vph)	442	17	182	28	29	7	94	136	6	4	221	445
RTOR Reduction (vph)	0	0	143	0	5	0	0	1	0	0	46	0
Lane Group Flow (vph)	230	229	39	0	59	0	94	141	0	0	624	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	1			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	16.8	16.8	16.8		6.6		41.2	41.2			40.9	
Effective Green, g (s)	16.8	16.8	16.8		6.6		41.2	41.2			40.9	
Actuated g/C Ratio	0.21	0.21	0.21		0.08		0.52	0.52			0.52	
Clearance Time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Vehicle Extension (s)	2.9	2.9	2.9		2.9		4.5	4.5			4.5	
Lane Grp Cap (vph)	356	358	335		149		323	961			873	
v/s Ratio Prot	c0.14	0.14			c0.03			0.08				
v/s Ratio Perm			0.02				0.15				c0.37	
v/c Ratio	0.65	0.64	0.12		0.40		0.29	0.15			0.72	
Uniform Delay, d1	28.5	28.5	25.2		34.5		10.8	9.9			14.7	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	3.9	3.6	0.1		1.7		0.9	0.1			3.2	
Delay (s)	32.4	32.1	25.4		36.1		11.6	10.0			17.9	
Level of Service	C	C	C		D		B	B			B	
Approach Delay (s)		30.3			36.1			10.7			17.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	13	35	258	108	82	242	69	90	52	99	68	45
Future Volume (vph)	13	35	258	108	82	242	69	90	52	99	68	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.4	4.9		4.4	4.9			4.9			4.9
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	0.96		1.00	0.97			0.94			0.96
Flt Protected		0.95	1.00		0.95	1.00			0.98			0.98
Satd. Flow (prot)		1770	3382		1770	3422			1727			1757
Flt Permitted		0.95	1.00		0.95	1.00			0.81			0.73
Satd. Flow (perm)		1770	3382		1770	3422			1422			1312
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.68	0.68	0.68	0.74	0.74	0.74	0.80	0.80
Adj. Flow (vph)	18	48	353	148	121	356	101	122	70	134	85	56
RTOR Reduction (vph)	0	0	37	0	0	19	0	0	16	0	0	8
Lane Group Flow (vph)	0	66	464	0	121	438	0	0	310	0	0	184
Turn Type	Prot	Prot	NA		Prot	NA		Perm	NA		Perm	NA
Protected Phases	5	5	2		1	6			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		6.3	22.2		10.2	26.1			23.0			23.0
Effective Green, g (s)		6.3	22.2		10.2	26.1			23.0			23.0
Actuated g/C Ratio		0.09	0.32		0.15	0.38			0.33			0.33
Clearance Time (s)		4.4	4.9		4.4	4.9			4.9			4.9
Vehicle Extension (s)		2.0	5.6		2.0	5.7			2.0			2.0
Lane Grp Cap (vph)		160	1078		259	1283			469			433
v/s Ratio Prot		0.04	c0.14		c0.07	c0.13						
v/s Ratio Perm									c0.22			0.14
v/c Ratio		0.41	0.43		0.47	0.34			0.66			0.42
Uniform Delay, d1		29.9	18.7		27.2	15.6			20.0			18.1
Progression Factor		1.00	1.00		1.00	1.00			1.00			1.00
Incremental Delay, d2		0.6	0.7		0.5	0.4			2.7			0.2
Delay (s)		30.5	19.4		27.7	16.0			22.7			18.4
Level of Service		C	B		C	B			C			B
Approach Delay (s)			20.7			18.5			22.7			18.4
Approach LOS			C			B			C			B

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	14.2
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	41
Future Volume (vph)	41
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.80
Adj. Flow (vph)	51
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	22	139	12	18	1	84	63	14	1	66	67
Future Volume (vph)	98	22	139	12	18	1	84	63	14	1	66	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85		1.00		1.00	0.97			0.93	
Flt Protected	0.95	0.97	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1681	1715	1583		1822		1770	1813			1736	
Flt Permitted	0.95	0.97	1.00		0.98		0.84	1.00			1.00	
Satd. Flow (perm)	1681	1715	1583		1822		1564	1813			1733	
Peak-hour factor, PHF	0.84	0.84	0.84	0.70	0.70	0.70	0.72	0.72	0.72	0.80	0.80	0.80
Adj. Flow (vph)	117	26	165	17	26	1	117	88	19	1	82	84
RTOR Reduction (vph)	0	0	115	0	1	0	0	8	0	0	36	0
Lane Group Flow (vph)	71	72	50	0	43	0	117	99	0	0	132	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	1			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	11.2	11.2	11.2		2.2		9.0	9.0			8.7	
Effective Green, g (s)	11.2	11.2	11.2		2.2		9.0	9.0			8.7	
Actuated g/C Ratio	0.30	0.30	0.30		0.06		0.24	0.24			0.23	
Clearance Time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Vehicle Extension (s)	2.9	2.9	2.9		2.9		4.5	4.5			4.5	
Lane Grp Cap (vph)	507	517	477		108		379	439			406	
v/s Ratio Prot	c0.04	0.04			c0.02			0.05				
v/s Ratio Perm			0.03				0.07				c0.08	
v/c Ratio	0.14	0.14	0.10		0.40		0.31	0.23			0.33	
Uniform Delay, d1	9.4	9.4	9.3		16.8		11.5	11.3			11.8	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.1	0.1		2.3		0.8	0.5			0.8	
Delay (s)	9.6	9.6	9.4		19.1		12.3	11.7			12.6	
Level of Service	A	A	A		B		B	B			B	
Approach Delay (s)		9.5			19.1			12.0			12.6	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	37.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	218	82	22	122	26	57	28	27	40	41	44
Future Volume (vph)	44	218	82	22	122	26	57	28	27	40	41	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9			4.9			4.9	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.96		1.00	0.97			0.97			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3394		1770	3446			1757			1746	
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.85	
Satd. Flow (perm)	1770	3394		1770	3446			1460			1503	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.71	0.71	0.71
Adj. Flow (vph)	47	232	87	24	136	29	63	31	30	56	58	62
RTOR Reduction (vph)	0	29	0	0	14	0	0	8	0	0	14	0
Lane Group Flow (vph)	47	290	0	24	151	0	0	116	0	0	162	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.2	13.7		0.9	12.4			9.1			9.1	
Effective Green, g (s)	2.2	13.7		0.9	12.4			9.1			9.1	
Actuated g/C Ratio	0.06	0.36		0.02	0.33			0.24			0.24	
Clearance Time (s)	4.4	4.9		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	5.6		2.0	5.7			2.0			2.0	
Lane Grp Cap (vph)	102	1226		42	1127			350			360	
v/s Ratio Prot	c0.03	c0.09		0.01	0.04							
v/s Ratio Perm								0.08			c0.11	
v/c Ratio	0.46	0.24		0.57	0.13			0.33			0.45	
Uniform Delay, d1	17.3	8.4		18.3	9.0			11.9			12.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	0.3		11.1	0.1			0.2			0.3	
Delay (s)	18.5	8.7		29.4	9.1			12.1			12.6	
Level of Service	B	A		C	A			B			B	
Approach Delay (s)		10.0			11.7			12.1			12.6	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	37.9	Sum of lost time (s)	14.2
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX E

Existing Plus Project Conditions Intersection LOS Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	292	18	120	17	24	5	79	114	6	4	148	298
Future Volume (vph)	292	18	120	17	24	5	79	114	6	4	148	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85		0.98		1.00	0.99			0.91	
Flt Protected	0.95	0.96	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1681	1695	1583		1801		1770	1849			1695	
Flt Permitted	0.95	0.96	1.00		0.98		0.33	1.00			1.00	
Satd. Flow (perm)	1681	1695	1583		1801		612	1849			1693	
Peak-hour factor, PHF	0.66	0.66	0.66	0.58	0.58	0.58	0.84	0.84	0.84	0.67	0.67	0.67
Adj. Flow (vph)	442	27	182	29	41	9	94	136	7	6	221	445
RTOR Reduction (vph)	0	0	143	0	5	0	0	1	0	0	46	0
Lane Group Flow (vph)	234	235	39	0	74	0	94	142	0	0	626	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	1			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	17.3	17.3	17.3		7.3		41.3	41.3			41.0	
Effective Green, g (s)	17.3	17.3	17.3		7.3		41.3	41.3			41.0	
Actuated g/C Ratio	0.21	0.21	0.21		0.09		0.51	0.51			0.51	
Clearance Time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Vehicle Extension (s)	2.9	2.9	2.9		2.9		4.5	4.5			4.5	
Lane Grp Cap (vph)	360	363	339		163		313	947			861	
v/s Ratio Prot	c0.14	0.14			c0.04			0.08				
v/s Ratio Perm			0.02				0.15				c0.37	
v/c Ratio	0.65	0.65	0.12		0.46		0.30	0.15			0.73	
Uniform Delay, d1	28.9	28.9	25.5		34.8		11.3	10.4			15.4	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	4.1	3.9	0.1		1.9		0.9	0.1			3.5	
Delay (s)	33.0	32.7	25.6		36.7		12.3	10.5			19.0	
Level of Service	C	C	C		D		B	B			B	
Approach Delay (s)		30.8			36.7			11.2			19.0	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	80.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	13	35	260	108	85	244	71	90	52	102	70	45
Future Volume (vph)	13	35	260	108	85	244	71	90	52	102	70	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.4	4.9		4.4	4.9			4.9			4.9
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	0.96		1.00	0.97			0.94			0.96
Flt Protected		0.95	1.00		0.95	1.00			0.98			0.98
Satd. Flow (prot)		1770	3383		1770	3420			1726			1757
Flt Permitted		0.95	1.00		0.95	1.00			0.81			0.72
Satd. Flow (perm)		1770	3383		1770	3420			1422			1295
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.68	0.68	0.68	0.74	0.74	0.74	0.80	0.80
Adj. Flow (vph)	18	48	356	148	125	359	104	122	70	138	88	56
RTOR Reduction (vph)	0	0	37	0	0	20	0	0	17	0	0	8
Lane Group Flow (vph)	0	66	467	0	125	443	0	0	313	0	0	187
Turn Type	Prot	Prot	NA		Prot	NA		Perm	NA		Perm	NA
Protected Phases	5	5	2		1	6			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		6.3	22.3		10.4	26.4			23.4			23.4
Effective Green, g (s)		6.3	22.3		10.4	26.4			23.4			23.4
Actuated g/C Ratio		0.09	0.32		0.15	0.38			0.33			0.33
Clearance Time (s)		4.4	4.9		4.4	4.9			4.9			4.9
Vehicle Extension (s)		2.0	5.6		2.0	5.7			2.0			2.0
Lane Grp Cap (vph)		158	1073		261	1284			473			431
v/s Ratio Prot		0.04	c0.14		c0.07	c0.13						
v/s Ratio Perm									c0.22			0.14
v/c Ratio		0.42	0.44		0.48	0.35			0.66			0.43
Uniform Delay, d1		30.3	19.0		27.5	15.7			20.1			18.3
Progression Factor		1.00	1.00		1.00	1.00			1.00			1.00
Incremental Delay, d2		0.7	0.7		0.5	0.4			2.7			0.3
Delay (s)		30.9	19.7		28.0	16.2			22.8			18.5
Level of Service		C	B		C	B			C			B
Approach Delay (s)			21.0			18.7			22.8			18.5
Approach LOS			C			B			C			B

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.3	Sum of lost time (s)	14.2
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	41
Future Volume (vph)	41
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.80
Adj. Flow (vph)	51
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	37	139	13	32	4	84	63	15	4	66	67
Future Volume (vph)	98	37	139	13	32	4	84	63	15	4	66	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85		0.99		1.00	0.97			0.93	
Flt Protected	0.95	0.98	1.00		0.99		0.95	1.00			1.00	
Satd. Flow (prot)	1681	1730	1583		1817		1770	1809			1737	
Flt Permitted	0.95	0.98	1.00		0.99		0.79	1.00			0.99	
Satd. Flow (perm)	1681	1730	1583		1817		1479	1809			1721	
Peak-hour factor, PHF	0.84	0.84	0.84	0.70	0.70	0.70	0.72	0.72	0.72	0.80	0.80	0.80
Adj. Flow (vph)	117	44	165	19	46	6	117	88	21	5	82	84
RTOR Reduction (vph)	0	0	130	0	3	0	0	8	0	0	35	0
Lane Group Flow (vph)	80	81	35	0	68	0	117	101	0	0	137	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	1			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	8.6	8.6	8.6		7.5		9.2	9.2			8.9	
Effective Green, g (s)	8.6	8.6	8.6		7.5		9.2	9.2			8.9	
Actuated g/C Ratio	0.21	0.21	0.21		0.19		0.23	0.23			0.22	
Clearance Time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Vehicle Extension (s)	2.9	2.9	2.9		2.9		4.5	4.5			4.5	
Lane Grp Cap (vph)	361	371	340		340		340	416			382	
v/s Ratio Prot	c0.05	0.05			c0.04			0.06				
v/s Ratio Perm			0.02				0.08				c0.08	
v/c Ratio	0.22	0.22	0.10		0.20		0.34	0.24			0.36	
Uniform Delay, d1	12.9	12.9	12.6		13.7		12.9	12.6			13.1	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.3	0.3	0.1		0.3		1.1	0.5			1.0	
Delay (s)	13.2	13.2	12.7		14.0		13.9	13.1			14.1	
Level of Service	B	B	B		B		B	B			B	
Approach Delay (s)		13.0			14.0			13.5			14.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	222	82	27	126	31	57	28	32	46	41	44
Future Volume (vph)	44	222	82	27	126	31	57	28	32	46	41	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9			4.9			4.9	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.96		1.00	0.97			0.96			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3396		1770	3435			1751			1748	
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.83	
Satd. Flow (perm)	1770	3396		1770	3435			1454			1478	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.71	0.71	0.71
Adj. Flow (vph)	47	236	87	30	140	34	63	31	36	65	58	62
RTOR Reduction (vph)	0	29	0	0	17	0	0	10	0	0	13	0
Lane Group Flow (vph)	47	294	0	30	157	0	0	120	0	0	172	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.2	13.9		1.0	12.7			9.6			9.6	
Effective Green, g (s)	2.2	13.9		1.0	12.7			9.6			9.6	
Actuated g/C Ratio	0.06	0.36		0.03	0.33			0.25			0.25	
Clearance Time (s)	4.4	4.9		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	5.6		2.0	5.7			2.0			2.0	
Lane Grp Cap (vph)	100	1219		45	1127			360			366	
v/s Ratio Prot	c0.03	c0.09		0.02	0.05							
v/s Ratio Perm								0.08			c0.12	
v/c Ratio	0.47	0.24		0.67	0.14			0.33			0.47	
Uniform Delay, d1	17.7	8.7		18.7	9.2			11.9			12.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.3	0.3		25.2	0.1			0.2			0.3	
Delay (s)	19.0	9.0		43.9	9.3			12.1			12.7	
Level of Service	B	A		D	A			B			B	
Approach Delay (s)		10.2			14.4			12.1			12.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	14.2
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

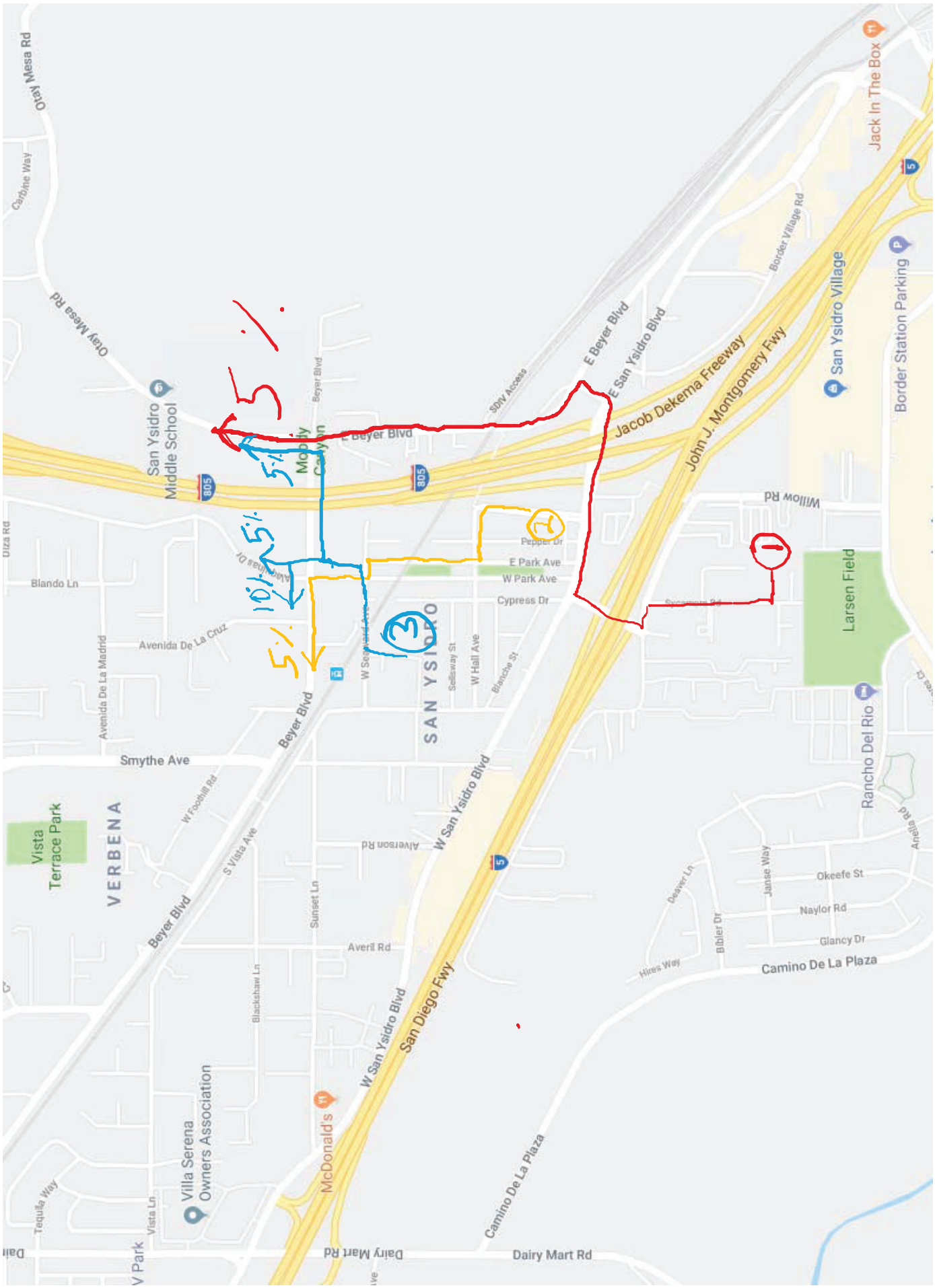
c Critical Lane Group

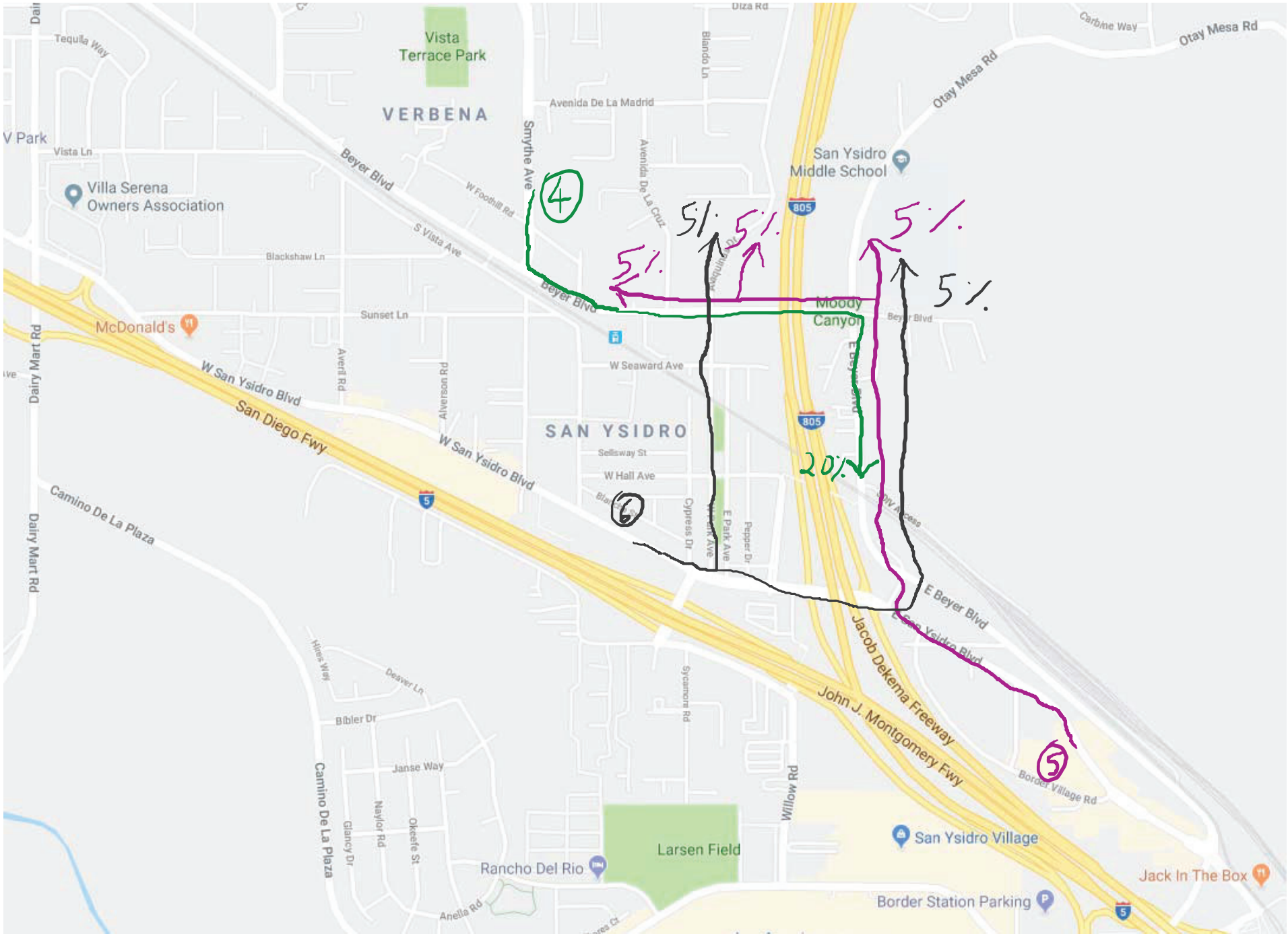
APPENDIX F

Cumulative Projects Trip Generation, Distribution and Assignment

Cumulative Projects Trip Distribution and Assignment

Roadway	Segment	Cumulative Total ADT	Raintree Terrace (392-396 Sycamore Rd)		Olive Drive Townhomes (133 West Olive Dr.)		SY Affordable Apartments (238-263 Cypress Dr and 160 W Seaward Ave)		Pacifica Ridge (1975 1/3 SMYTHE AV)		626-628 E. San Ysidro Blvd		The Boulevard at 165 (165 W. San Ysidro Blvd.)	
		2,081		144		64		828		396		320		329
		Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent	Volume
Beyer Blvd	Otay Mesa Rd/E Beyer Blvd to Enright Dr	0		0		0		0		0		0		0
Beyer Blvd	W Park Ave/Alaquinas Dr to Otay Mesa Rd/E Beyer Blvd	153		0		0	5.0%	41	20%	79	10.0%	32		0
E Beyer Blvd	Beyer Blvd to Filoi Ave	151	5.0%	7		0		0	20%	79	15.0%	48	5.0%	16


Otay Mesa Rd
Carbine Way
San Ysidro Middle School
Beyer Blvd
Mobility Canyon
E Beyer Blvd
SDIV Access
E San Ysidro Blvd
Jacob Dekema Freeway
John J. Montgomery Fwy
Jack In The Box
Border Village Rd
San Ysidro Village
Border Station Parking
Willow Rd
Pepper Dr
E Park Ave
W Park Ave
Cypress Dr
Sycamore Rd
Larsen Field
Rancho Del Rio
Blando Ln
Avenida De La Cruz
Avenida De La Madrid
Diza Rd
Alverson Rd
Selsway St
W Hall Ave
Blanche St
SAN YSIDRO
Smythe Ave
Beyer Blvd
W San Ysidro Blvd
W Foothill Rd
S Vista Ave
Vista Terrace Park
VERBENA
Sunset Ln
Averil Rd
Blackshaw Ln
Okeefe St
Naylor Rd
Glancy Dr
Camino De La Plaza
Janse Way
Bibler Dr
Hires Way
Denver Ln
Anella Rd
San Diego Fwy
McDonald's
Villa Serena Owners Association
Tequila Way
Vista Ln
Dairy Mart Rd
Camino De La Plaza


Vista Terrace Park
VERBENA
Villa Serena Owners Association
Beyer Blvd
Smythe Ave
Avenida De La Madrid
San Ysidro Middle School
Otay Mesa Rd
Carbine Way
Diza Rd
Blando Ln
Avenida De La Cruz
Vista Ln
W Foothill Rd
S Vista Ave
Blackshaw Ln
Sunset Ln
McDonald's
Dairy Mart Rd
W San Ysidro Blvd
San Diego Fwy
Averil Rd
Alverson Rd
W Seaward Ave
SAN YSIDRO
Sellsway St
W Hall Ave
Camino De La Plaza
Cypress Dr
E Park Ave
Pepper Dr
Moody Canyon
Beyer Blvd
E Beyer Blvd
E San Ysidro Blvd
Jacob Dekema Freeway
John J. Montgomery Fwy
Border Village Rd
Willow Rd
Sycamore Rd
Hines Way
Deaver Ln
Bibler Dr
Janse Way
Camino De La Plaza
Naylor Rd
Glancy Dr
Okeefe St
Anella Rd
Rancho Del Rio
Larsen Field
San Ysidro Village
Jack In The Box
Border Station Parking
805
5
4
6
5
5%
5%
5%
5%
20%
[[[

APPENDIX G

Opening Year 2020 without Project Intersection LOS Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	11	122	16	17	4	80	115	5	3	149	299
Future Volume (vph)	295	11	122	16	17	4	80	115	5	3	149	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85		0.99		1.00	0.99			0.91	
Flt Protected	0.95	0.96	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1681	1691	1583		1796		1770	1851			1695	
Flt Permitted	0.95	0.96	1.00		0.98		0.33	1.00			1.00	
Satd. Flow (perm)	1681	1691	1583		1796		618	1851			1694	
Peak-hour factor, PHF	0.66	0.66	0.66	0.58	0.58	0.58	0.84	0.84	0.84	0.67	0.67	0.67
Adj. Flow (vph)	447	17	185	28	29	7	95	137	6	4	222	446
RTOR Reduction (vph)	0	0	145	0	5	0	0	1	0	0	45	0
Lane Group Flow (vph)	232	232	40	0	59	0	95	142	0	0	627	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	1			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	17.0	17.0	17.0		6.7		41.2	41.2			40.9	
Effective Green, g (s)	17.0	17.0	17.0		6.7		41.2	41.2			40.9	
Actuated g/C Ratio	0.21	0.21	0.21		0.08		0.52	0.52			0.51	
Clearance Time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Vehicle Extension (s)	2.9	2.9	2.9		2.9		4.5	4.5			4.5	
Lane Grp Cap (vph)	359	361	338		151		319	958			870	
v/s Ratio Prot	c0.14	0.14			c0.03			0.08				
v/s Ratio Perm			0.02				0.15				c0.37	
v/c Ratio	0.65	0.64	0.12		0.39		0.30	0.15			0.72	
Uniform Delay, d1	28.6	28.5	25.2		34.5		11.0	10.0			14.9	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	3.9	3.8	0.1		1.6		0.9	0.1			3.4	
Delay (s)	32.4	32.3	25.4		36.1		11.9	10.2			18.3	
Level of Service	C	C	C		D		B	B			B	
Approach Delay (s)		30.4			36.1			10.8			18.3	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	79.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	13	35	260	109	83	243	69	96	55	102	68	46
Future Volume (vph)	13	35	260	109	83	243	69	96	55	102	68	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.4	4.9		4.4	4.9			4.9			4.9
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	0.96		1.00	0.97			0.95			0.96
Flt Protected		0.95	1.00		0.95	1.00			0.98			0.98
Satd. Flow (prot)		1770	3383		1770	3422			1728			1758
Flt Permitted		0.95	1.00		0.95	1.00			0.80			0.73
Satd. Flow (perm)		1770	3383		1770	3422			1417			1320
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.68	0.68	0.68	0.74	0.74	0.74	0.80	0.80
Adj. Flow (vph)	18	48	356	149	122	357	101	130	74	138	85	58
RTOR Reduction (vph)	0	0	37	0	0	20	0	0	15	0	0	8
Lane Group Flow (vph)	0	66	468	0	122	438	0	0	327	0	0	186
Turn Type	Prot	Prot	NA		Prot	NA		Perm	NA		Perm	NA
Protected Phases	5	5	2		1	6			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		6.3	22.4		10.4	26.5			25.9			25.9
Effective Green, g (s)		6.3	22.4		10.4	26.5			25.9			25.9
Actuated g/C Ratio		0.09	0.31		0.14	0.36			0.36			0.36
Clearance Time (s)		4.4	4.9		4.4	4.9			4.9			4.9
Vehicle Extension (s)		2.0	5.6		2.0	5.7			2.0			2.0
Lane Grp Cap (vph)		152	1039		252	1243			503			468
v/s Ratio Prot		0.04	c0.14		c0.07	c0.13						
v/s Ratio Perm									c0.23			0.14
v/c Ratio		0.43	0.45		0.48	0.35			0.65			0.40
Uniform Delay, d1		31.6	20.3		28.8	16.9			19.7			17.6
Progression Factor		1.00	1.00		1.00	1.00			1.00			1.00
Incremental Delay, d2		0.7	0.8		0.5	0.5			2.3			0.2
Delay (s)		32.3	21.1		29.3	17.4			22.0			17.8
Level of Service		C	C		C	B			C			B
Approach Delay (s)			22.4			19.9			22.0			17.8
Approach LOS			C			B			C			B

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	14.2
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	41
Future Volume (vph)	41
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.80
Adj. Flow (vph)	51
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	22	141	12	18	1	87	65	14	1	68	70
Future Volume (vph)	99	22	141	12	18	1	87	65	14	1	68	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85		1.00		1.00	0.97			0.93	
Flt Protected	0.95	0.97	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1681	1714	1583		1822		1770	1814			1735	
Flt Permitted	0.95	0.97	1.00		0.98		0.80	1.00			1.00	
Satd. Flow (perm)	1681	1714	1583		1822		1492	1814			1732	
Peak-hour factor, PHF	0.84	0.84	0.84	0.70	0.70	0.70	0.72	0.72	0.72	0.80	0.80	0.80
Adj. Flow (vph)	118	26	168	17	26	1	121	90	19	1	85	88
RTOR Reduction (vph)	0	0	132	0	1	0	0	8	0	0	37	0
Lane Group Flow (vph)	71	73	36	0	43	0	121	101	0	0	137	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	1			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	8.4	8.4	8.4		6.9		9.1	9.1			8.8	
Effective Green, g (s)	8.4	8.4	8.4		6.9		9.1	9.1			8.8	
Actuated g/C Ratio	0.21	0.21	0.21		0.18		0.23	0.23			0.23	
Clearance Time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Vehicle Extension (s)	2.9	2.9	2.9		2.9		4.5	4.5			4.5	
Lane Grp Cap (vph)	361	368	340		321		347	422			389	
v/s Ratio Prot	0.04	c0.04			c0.02			0.06				
v/s Ratio Perm			0.02				c0.08				0.08	
v/c Ratio	0.20	0.20	0.11		0.13		0.35	0.24			0.35	
Uniform Delay, d1	12.6	12.6	12.3		13.6		12.5	12.2			12.7	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.3	0.3	0.1		0.2		1.1	0.5			1.0	
Delay (s)	12.8	12.8	12.5		13.8		13.6	12.7			13.7	
Level of Service	B	B	B		B		B	B			B	
Approach Delay (s)		12.6			13.8			13.2			13.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	39.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	219	87	25	124	27	59	30	28	41	44	44
Future Volume (vph)	44	219	87	25	124	27	59	30	28	41	44	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9			4.9			4.9	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.96		1.00	0.97			0.97			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3388		1770	3444			1758			1749	
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.85	
Satd. Flow (perm)	1770	3388		1770	3444			1456			1502	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.71	0.71	0.71
Adj. Flow (vph)	47	233	93	28	138	30	66	33	31	58	62	62
RTOR Reduction (vph)	0	32	0	0	15	0	0	8	0	0	14	0
Lane Group Flow (vph)	47	294	0	28	153	0	0	122	0	0	168	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.2	14.0		0.9	12.7			9.4			9.4	
Effective Green, g (s)	2.2	14.0		0.9	12.7			9.4			9.4	
Actuated g/C Ratio	0.06	0.36		0.02	0.33			0.24			0.24	
Clearance Time (s)	4.4	4.9		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	5.6		2.0	5.7			2.0			2.0	
Lane Grp Cap (vph)	101	1232		41	1136			355			366	
v/s Ratio Prot	c0.03	c0.09		0.02	0.04							
v/s Ratio Perm								0.08			c0.11	
v/c Ratio	0.47	0.24		0.68	0.13			0.34			0.46	
Uniform Delay, d1	17.6	8.5		18.7	9.0			12.0			12.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.2	0.3		31.3	0.1			0.2			0.3	
Delay (s)	18.8	8.8		50.0	9.2			12.2			12.7	
Level of Service	B	A		D	A			B			B	
Approach Delay (s)		10.1			15.0			12.2			12.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	38.5	Sum of lost time (s)	14.2
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX H

Opening Year with Project Intersection LOS Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	18	122	17	24	5	80	115	6	4	149	299
Future Volume (vph)	295	18	122	17	24	5	80	115	6	4	149	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85		0.98		1.00	0.99			0.91	
Flt Protected	0.95	0.96	1.00		0.98		0.95	1.00			1.00	
Satd. Flow (prot)	1681	1695	1583		1801		1770	1849			1696	
Flt Permitted	0.95	0.96	1.00		0.98		0.33	1.00			1.00	
Satd. Flow (perm)	1681	1695	1583		1801		610	1849			1693	
Peak-hour factor, PHF	0.66	0.66	0.66	0.58	0.58	0.58	0.84	0.84	0.84	0.67	0.67	0.67
Adj. Flow (vph)	447	27	185	29	41	9	95	137	7	6	222	446
RTOR Reduction (vph)	0	0	145	0	5	0	0	1	0	0	46	0
Lane Group Flow (vph)	237	237	40	0	74	0	95	143	0	0	628	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	1			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	17.4	17.4	17.4		7.3		41.3	41.3			41.0	
Effective Green, g (s)	17.4	17.4	17.4		7.3		41.3	41.3			41.0	
Actuated g/C Ratio	0.22	0.22	0.22		0.09		0.51	0.51			0.51	
Clearance Time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Vehicle Extension (s)	2.9	2.9	2.9		2.9		4.5	4.5			4.5	
Lane Grp Cap (vph)	362	365	341		162		312	946			860	
v/s Ratio Prot	c0.14	0.14			c0.04			0.08				
v/s Ratio Perm			0.03				0.16				c0.37	
v/c Ratio	0.65	0.65	0.12		0.46		0.30	0.15			0.73	
Uniform Delay, d1	28.9	28.9	25.5		34.8		11.4	10.4			15.5	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	4.1	3.9	0.1		1.9		1.0	0.1			3.6	
Delay (s)	33.0	32.7	25.6		36.8		12.4	10.6			19.2	
Level of Service	C	C	C		D		B	B			B	
Approach Delay (s)		30.8			36.8			11.3			19.2	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	13	35	262	109	86	245	71	96	55	105	70	46
Future Volume (vph)	13	35	262	109	86	245	71	96	55	105	70	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.4	4.9		4.4	4.9			4.9			4.9
Lane Util. Factor		1.00	0.95		1.00	0.95			1.00			1.00
Frt		1.00	0.96		1.00	0.97			0.94			0.97
Flt Protected		0.95	1.00		0.95	1.00			0.98			0.98
Satd. Flow (prot)		1770	3384		1770	3420			1727			1758
Flt Permitted		0.95	1.00		0.95	1.00			0.80			0.72
Satd. Flow (perm)		1770	3384		1770	3420			1416			1303
Peak-hour factor, PHF	0.73	0.73	0.73	0.73	0.68	0.68	0.68	0.74	0.74	0.74	0.80	0.80
Adj. Flow (vph)	18	48	359	149	126	360	104	130	74	142	88	58
RTOR Reduction (vph)	0	0	37	0	0	20	0	0	15	0	0	8
Lane Group Flow (vph)	0	66	471	0	126	444	0	0	331	0	0	189
Turn Type	Prot	Prot	NA		Prot	NA		Perm	NA		Perm	NA
Protected Phases	5	5	2		1	6			4			4
Permitted Phases								4			4	
Actuated Green, G (s)		6.4	22.7		10.6	26.9			26.4			26.4
Effective Green, g (s)		6.4	22.7		10.6	26.9			26.4			26.4
Actuated g/C Ratio		0.09	0.31		0.14	0.36			0.36			0.36
Clearance Time (s)		4.4	4.9		4.4	4.9			4.9			4.9
Vehicle Extension (s)		2.0	5.6		2.0	5.7			2.0			2.0
Lane Grp Cap (vph)		153	1039		253	1244			505			465
v/s Ratio Prot		0.04	c0.14		c0.07	c0.13						
v/s Ratio Perm									c0.23			0.15
v/c Ratio		0.43	0.45		0.50	0.36			0.65			0.41
Uniform Delay, d1		32.0	20.6		29.2	17.2			19.9			17.9
Progression Factor		1.00	1.00		1.00	1.00			1.00			1.00
Incremental Delay, d2		0.7	0.8		0.6	0.5			2.3			0.2
Delay (s)		32.7	21.4		29.8	17.6			22.3			18.1
Level of Service		C	C		C	B			C			B
Approach Delay (s)			22.7			20.2			22.3			18.1
Approach LOS			C			C			C			B

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	14.2
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	41
Future Volume (vph)	41
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.80
Adj. Flow (vph)	51
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	37	141	13	32	4	87	65	15	4	68	70
Future Volume (vph)	99	37	141	13	32	4	87	65	15	4	68	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	1.00			1.00	
Frt	1.00	1.00	0.85		0.99		1.00	0.97			0.93	
Flt Protected	0.95	0.98	1.00		0.99		0.95	1.00			1.00	
Satd. Flow (prot)	1681	1730	1583		1817		1770	1810			1736	
Flt Permitted	0.95	0.98	1.00		0.99		0.78	1.00			0.99	
Satd. Flow (perm)	1681	1730	1583		1817		1446	1810			1720	
Peak-hour factor, PHF	0.84	0.84	0.84	0.70	0.70	0.70	0.72	0.72	0.72	0.80	0.80	0.80
Adj. Flow (vph)	118	44	168	19	46	6	121	90	21	5	85	88
RTOR Reduction (vph)	0	0	132	0	3	0	0	8	0	0	36	0
Lane Group Flow (vph)	80	82	36	0	68	0	121	103	0	0	142	0
Turn Type	Split	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases	2	2		1	1			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	8.7	8.7	8.7		7.5		9.4	9.4			9.1	
Effective Green, g (s)	8.7	8.7	8.7		7.5		9.4	9.4			9.1	
Actuated g/C Ratio	0.22	0.22	0.22		0.19		0.23	0.23			0.23	
Clearance Time (s)	4.9	4.9	4.9		4.9		4.9	4.9			5.2	
Vehicle Extension (s)	2.9	2.9	2.9		2.9		4.5	4.5			4.5	
Lane Grp Cap (vph)	362	373	341		338		337	422			388	
v/s Ratio Prot	c0.05	0.05			c0.04			0.06				
v/s Ratio Perm			0.02				c0.08				0.08	
v/c Ratio	0.22	0.22	0.11		0.20		0.36	0.24			0.37	
Uniform Delay, d1	13.0	13.0	12.7		13.9		12.9	12.6			13.2	
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.3	0.3	0.1		0.3		1.1	0.5			1.0	
Delay (s)	13.3	13.3	12.8		14.1		14.1	13.1			14.2	
Level of Service	B	B	B		B		B	B			B	
Approach Delay (s)		13.0			14.1			13.6			14.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	40.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	223	87	30	128	32	59	30	33	47	44	44
Future Volume (vph)	44	223	87	30	128	32	59	30	33	47	44	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.4	4.9		4.4	4.9			4.9			4.9	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.96		1.00	0.97			0.96			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	3390		1770	3432			1752			1750	
Flt Permitted	0.95	1.00		0.95	1.00			0.79			0.85	
Satd. Flow (perm)	1770	3390		1770	3432			1422			1506	
Peak-hour factor, PHF	0.94	0.94	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.71	0.71	0.71
Adj. Flow (vph)	47	237	93	33	142	36	66	33	37	66	62	62
RTOR Reduction (vph)	0	33	0	0	18	0	0	9	0	0	12	0
Lane Group Flow (vph)	47	297	0	33	160	0	0	127	0	0	178	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.1	13.9		1.9	13.7			12.7			12.7	
Effective Green, g (s)	2.1	13.9		1.9	13.7			12.7			12.7	
Actuated g/C Ratio	0.05	0.33		0.04	0.32			0.30			0.30	
Clearance Time (s)	4.4	4.9		4.4	4.9			4.9			4.9	
Vehicle Extension (s)	2.0	5.6		2.0	5.7			2.0			2.0	
Lane Grp Cap (vph)	87	1103		78	1101			422			447	
v/s Ratio Prot	c0.03	c0.09		0.02	0.05							
v/s Ratio Perm								0.09			c0.12	
v/c Ratio	0.54	0.27		0.42	0.15			0.30			0.40	
Uniform Delay, d1	19.8	10.6		19.9	10.3			11.6			12.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	3.6	0.3		1.3	0.2			0.1			0.2	
Delay (s)	23.5	11.0		21.2	10.5			11.7			12.2	
Level of Service	C	B		C	B			B			B	
Approach Delay (s)		12.5			12.2			11.7			12.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	14.2
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group