EL CAJON BOULEVARD

Complete Boulevard Technical Analysis

Highland Avenue to 50th Street

The City *of*
SAN DIEGO

Table of Contents

1.0 Introduction

The Complete Boulevard Planning Study ("the Plan") focused on an approximately three-quarter mile segment of El Cajon Boulevard between Highland Avenue and 50th Street, encompassing the Little Saigon Cultural and Commercial District. This portion of El Cajon Boulevard is located at the convergence of the Mid-City communities of City Heights and Talmadge. The purpose of this planning effort was to provide mobility and urban design recommendations that ultimately would catalyze meaningful and transformative investments on El Cajon Boulevard to facilitate a beautiful, vibrant and welcoming area for shopping, eating, neighborhood services, and pedestrian activity for residents and visitors.

A summary of the planning study, diagrams of the study area, project timeline, framework for developing the Plan, public input process, and multimodal recommendations for the corridor was produced in a project brochure. The front and back of the brochure is shown in Figures 1 and 2, respectively, below.

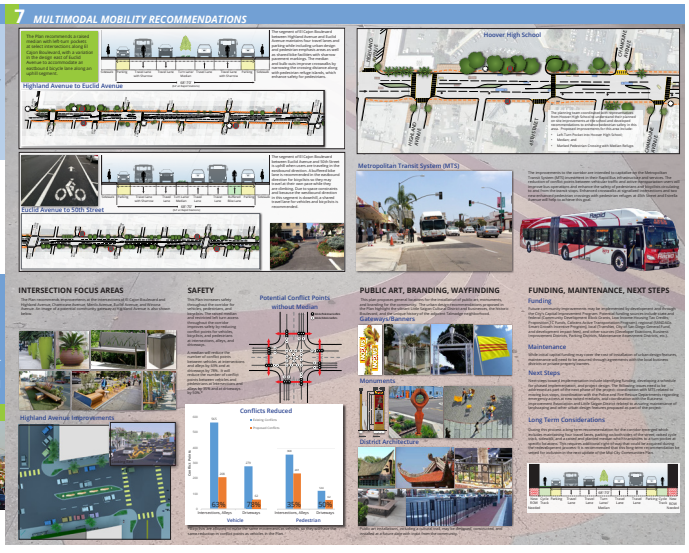
To generate the proposed recommendations, analysis was conducted in each of the following categories:

- Existing Conditions Base Mapping;
- Traffic/Vehicular Activity;
- Parking Analysis;
- Pedestrian Activity;
- Bicycle Activity; and
- Transit Ridership and Amenities.

The following chapters detail the various existing conditions, standards, requirements, and elements that play an important factor into transforming El Cajon Boulevard into a complete street.

Figure 1: Project Brochure - Page 1

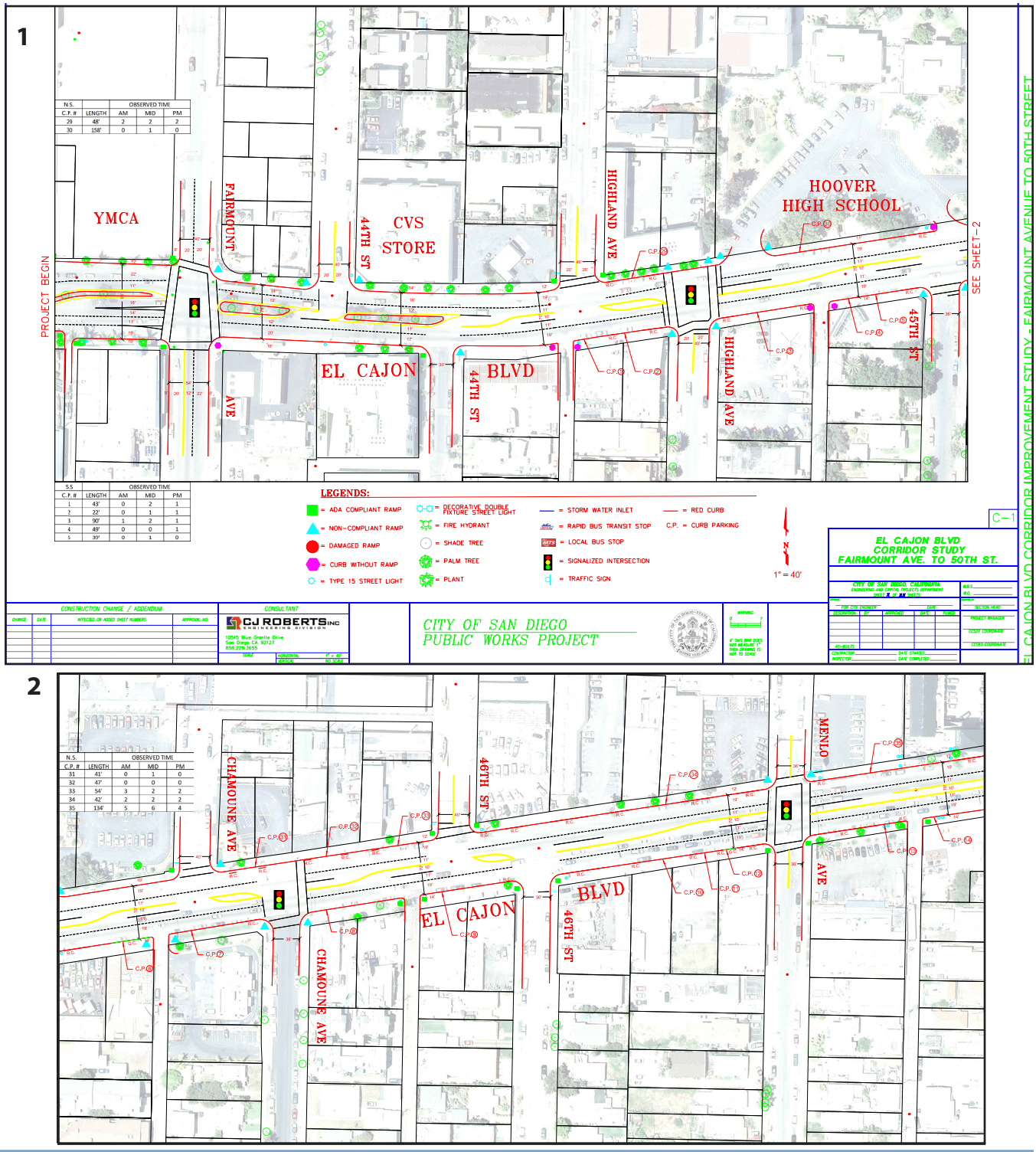
Figure 2: Project Brochure - Page 2



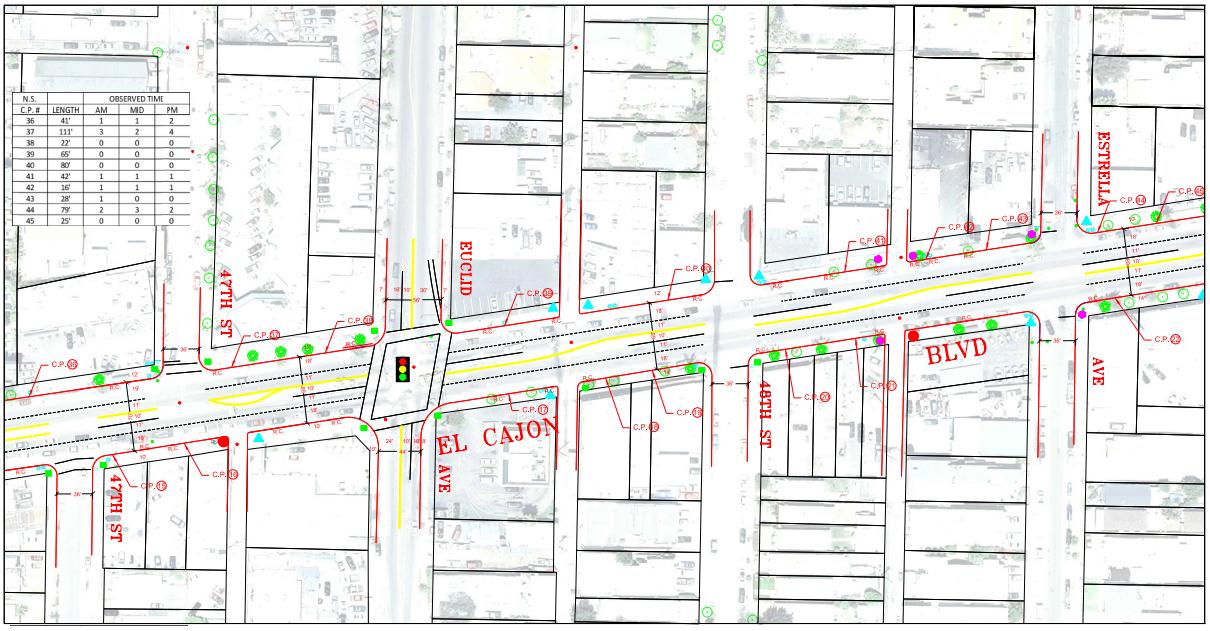
2.0 Existing Conditions Analysis

The City of San Diego provided the consultant team with various GIS files and basemaps (Figure 3), portraying the existing overall environment from Highland Avenue to 50th Street. Existing roadway dimension, corridor layout, parcel and building information, urban space encroachment areas, conflicts within 8 feet from the curb, existing trees, and space for potential parklet areas were considered during the urban design existing conditions analysis.

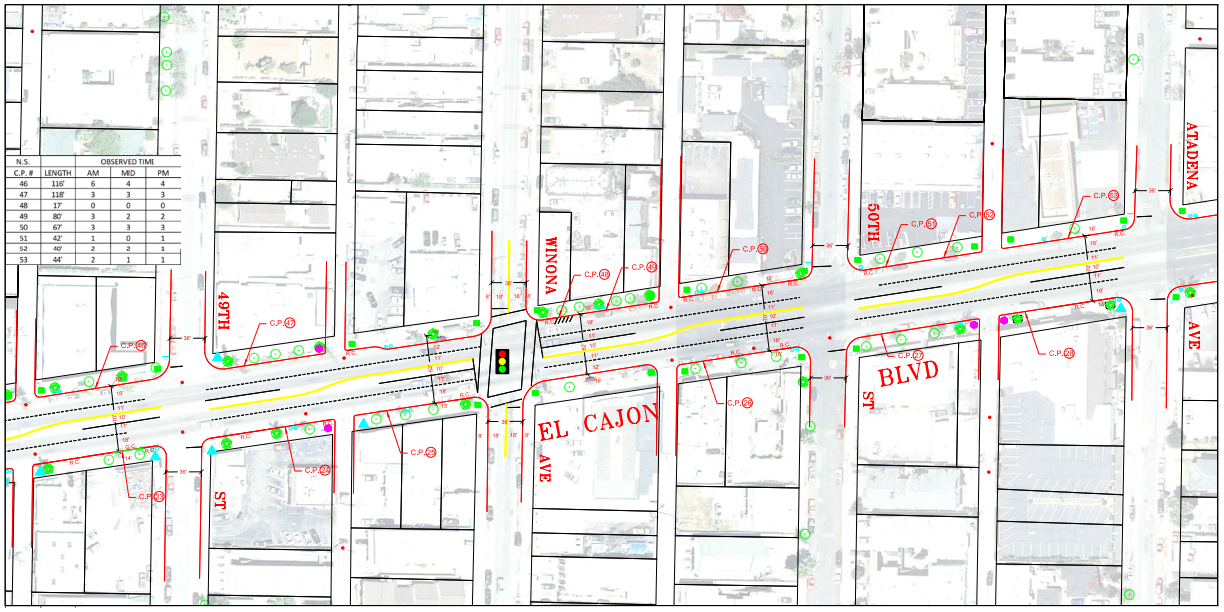
Figure 3: Basemap of El Cajon Boulevard (4 Sheets)



3

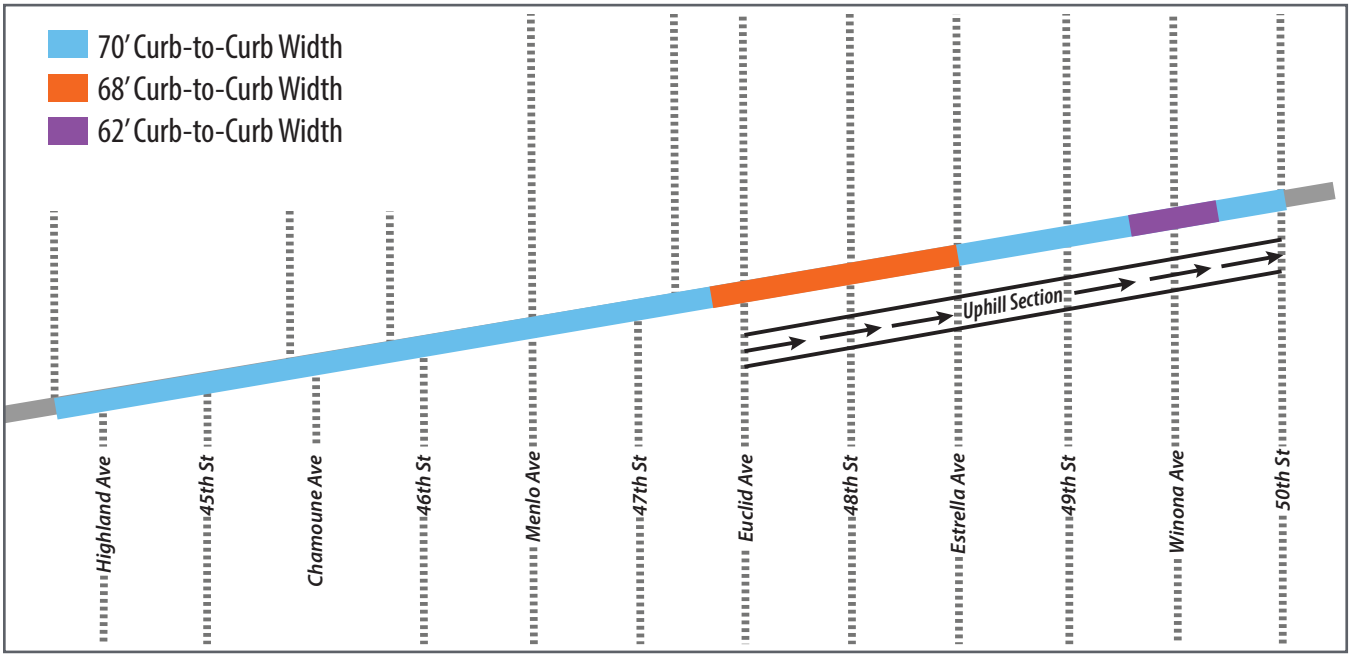

N.S.
C.P. # LENGTH OBSERVED TIME AM MID PM
36 41' 1 1 2
37 111' 3 2 4
38 22' 0 0 0
39 65' 0 0 0
40 80' 0 0 0
41 42' 1 1 1
42 16' 1 1 1
43 28' 1 0 0
44 79' 2 3 2
45 25' 0 0 0
47TH ST
EUCLID
EL CAJON
AVE
47TH ST
47TH ST
BLVD
AVE
ESTRELLA

4


N.S.
C.P. # LENGTH OBSERVED TIME AM MID PM
46 116' 6 4 4
47 118' 3 3 3
48 17' 0 0 0
49 80' 3 2 2
50 67' 3 3 3
51 42' 1 0 1
52 40' 2 2 1
53 44' 2 1 1
49TH
WINONA
EL CAJON
AVE
50TH
BLVD
ST
AVE
ATADENA

The existing roadway curb to curb widths were verified. The roadway is primarily 70 feet wide from curb-to-curb as shown in Figure 4. There are two instances where the roadway narrows, between Euclid Avenue and Estrella Avenue (orange) and at the MTS RAPID Stops at Winona Avenue (purple). In addition, El Cajon Boulevard is primarily flat from Highland Avenue to Euclid Avenue; however, as one travels eastbound, the roadway is uphill from Euclid Avenue to 50th Street.

Figure 4: Existing Roadway Width



Existing parcel and building information was also analyzed in order to determine the amount of available urban design space within the right-of-way. The existing sidewalk width dimensions are portrayed in Figures 5 through 8 by either a red (less than 10' width), orange (10'-15' width), and green (greater than 15' width) color.

Figure 5: Existing Sidewalk Analysis

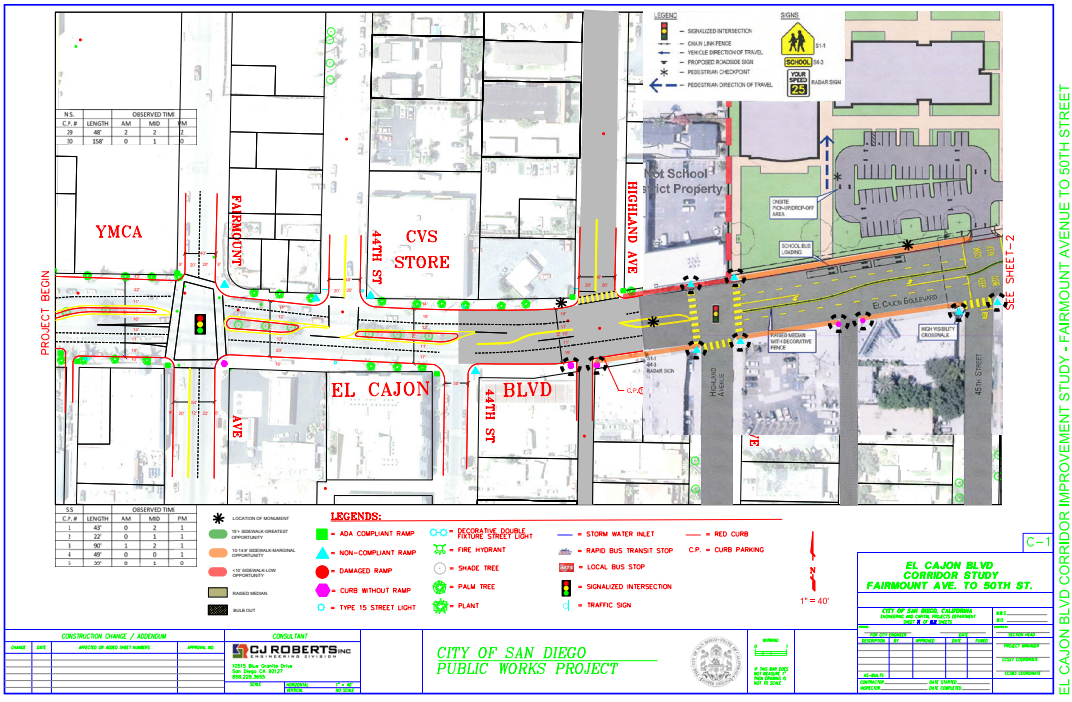


Figure 6: Existing Sidewalk Analysis

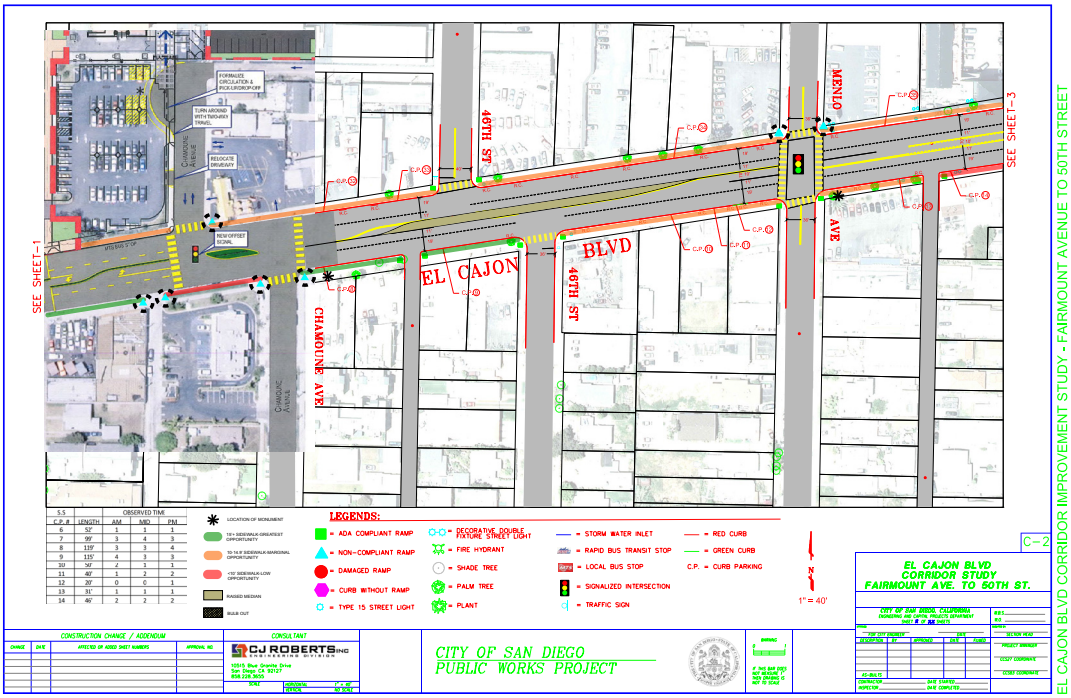


Figure 7: Existing Sidewalk Analysis

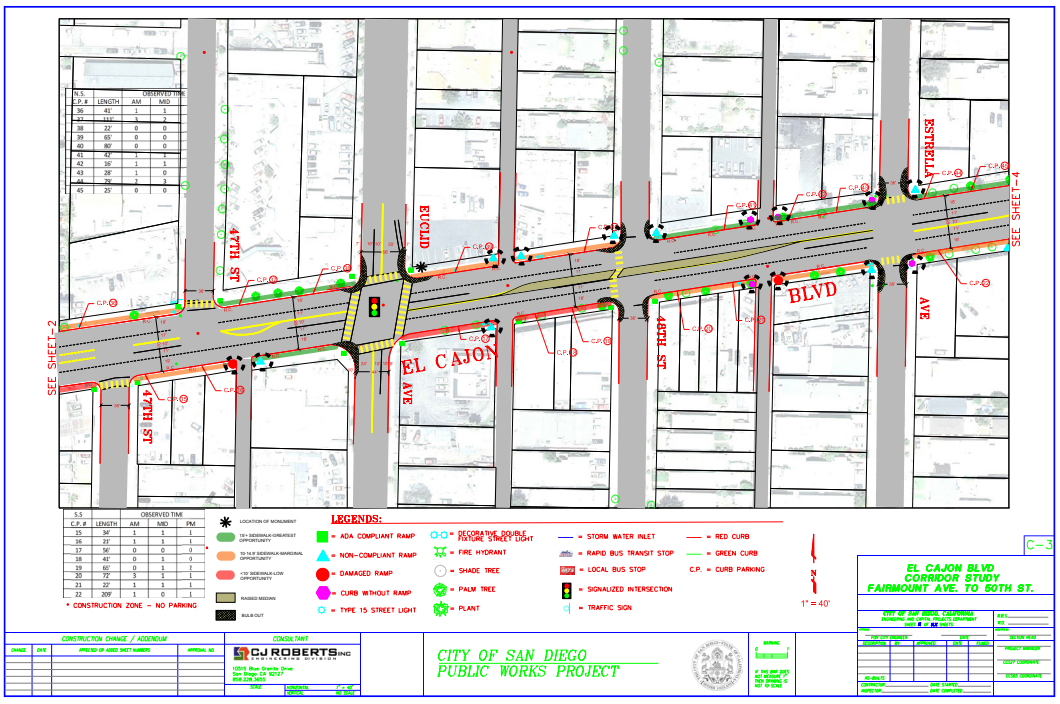
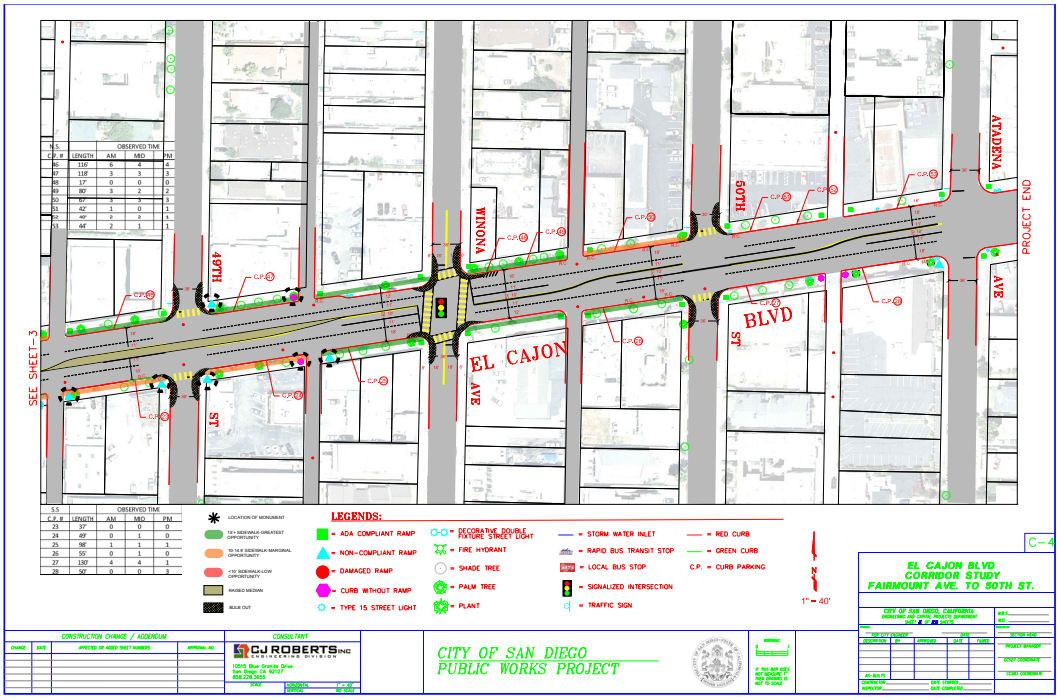


Figure 8: Existing Sidewalk Analysis

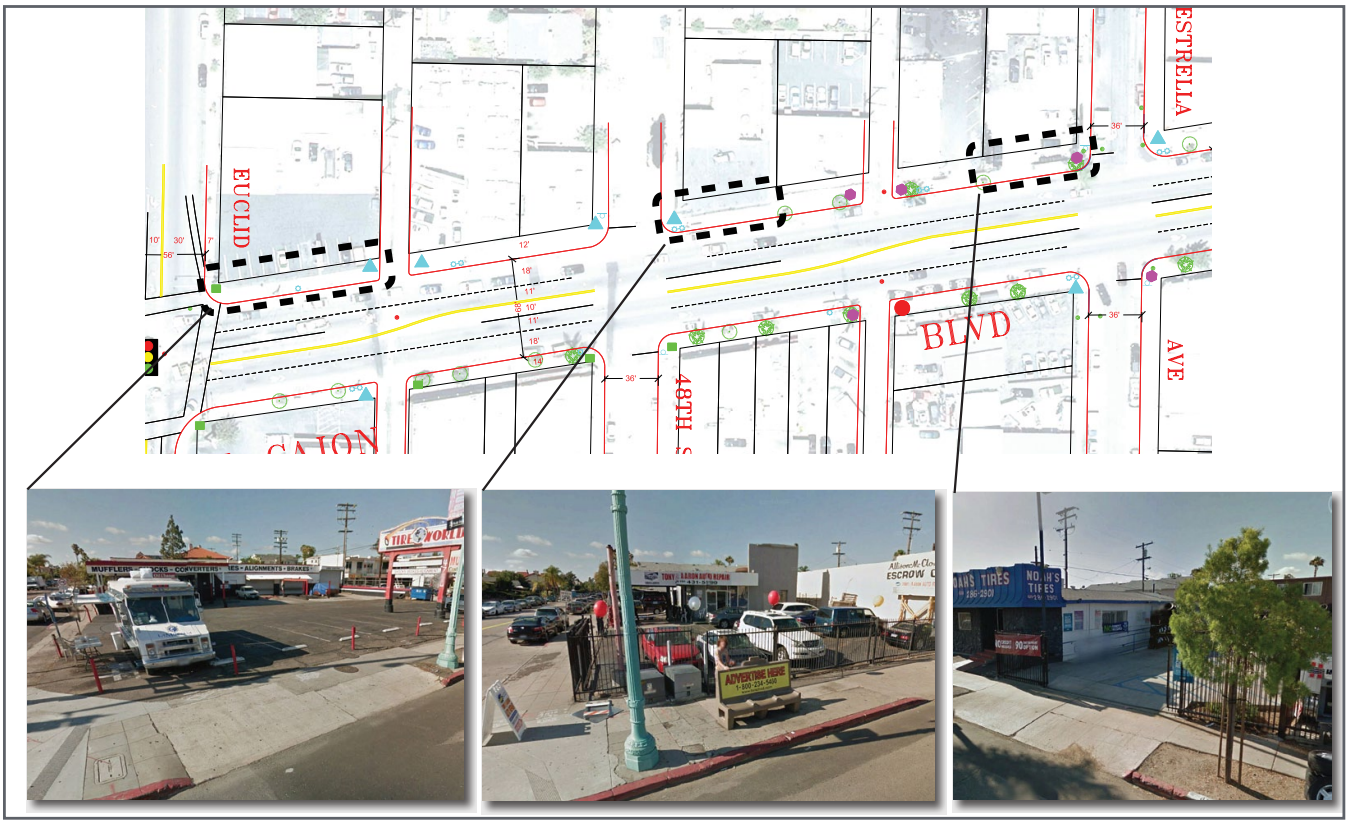


As displayed in Figure 9, some instances were identified where either a building or property fence was located within 14' of the curb. These conflicts limit the space available for urban design opportunities and limit the ability to implement alternatives that require their removal..

Figure 9: Existing ROW Parcel and Building Conflicts

Figure 10 highlights three areas of encroachment along the corridor. In these particular instances, parking lots and fences have been constructed past the property limits, limiting the available pedestrian space.

Figure 10: Areas of Encroachment



In addition to the parcel and building information, an inventory was completed to assess the number of potential conflicts with buildings,

Table 1: Inventory of Public Space Conflict Points

North Side of El Cajon Boulevard		Highland Avenue to Chamoune Avenue		Chamoune Avenue to 46th St	46th St to Menlo Avenue	Menlo Avenue to 47th St	47th St to Euclid Avenue	Euclid Avenue to 48th St	48th St to Estrella Avenue	Estrella Avenue to 49th St	49th St to Winona Avenue	Winona Avenue to 50th St	Totals
8'	# of Building Conflicts	0		0	0	0	0	0	0	0	0	0	0
	# of Trees	6		2	4	5	4	0	5	8	5	8	47
	# of Utility Boxes/Water Meters	2		0	1	1	1	2	2	2	3	3	17
	# of Traffic Signals	2		2	0	0	1	0	0	0	1	1	7
	# of Streetlights	1		0	1	5	0	2	2	2	1	2	16
South Side of El Cajon Boulevard		Highland Avenue to 45th St	45th St to Chamoune Avenue	Chamoune Avenue to 46th St	46th St to Menlo Avenue	Menlo Avenue to 47th St	47th St to Euclid Avenue	Euclid Avenue to 48th St	48th St to Estrella Avenue	Estrella Avenue to 49th St	49th St to Winona Avenue	Winona Avenue to 50th St	Totals
8'	# of Building Conflicts	0	0	0	0	0	0	0	0	0	0	0	0
	# of Trees	0	0	0	0	2	0	6	6	7	7	4	32
	# of Utility Boxes/Water Meters	0	2	0	1	0	0	0	0	0	0	0	3
	# of Traffic Signals	1	1	1	0	0	0	1	0	0	0	1	5
	# of Streetlights	0	2	2	1	3	2	2	2	2	2	2	20

trees, utility boxes, water meters, traffic signals, and streetlights within 8' of the curb along the corridor. Table 1 summarizes the inventory of conflict points in the public space.

Trees and streetlights accounted for most of the conflicts located within 8' of the curb along the corridor. Figures 11 and 12 illustrate the corridor as primarily home to Queen Palm trees. Street tree planting occurs randomly along the project corridor, in sidewalk planter areas and small cut outs. Tree types include a majority of Queen Palms, a few King Palms, and several Fern Pines (east of Euclid Avenue). The Queen Palms are fairly mature, and occur in random locations with no consistency. Despite the lack of maintenance or care, these Queen Palms are surviving. King Palms have been planted in a few locations, but are in very poor condition (dead or dying). A few Jacarandas have been planted between Menlo Aenue and 47th Street, and seem to be relatively healthy.

Figure 11: Tree Inventory

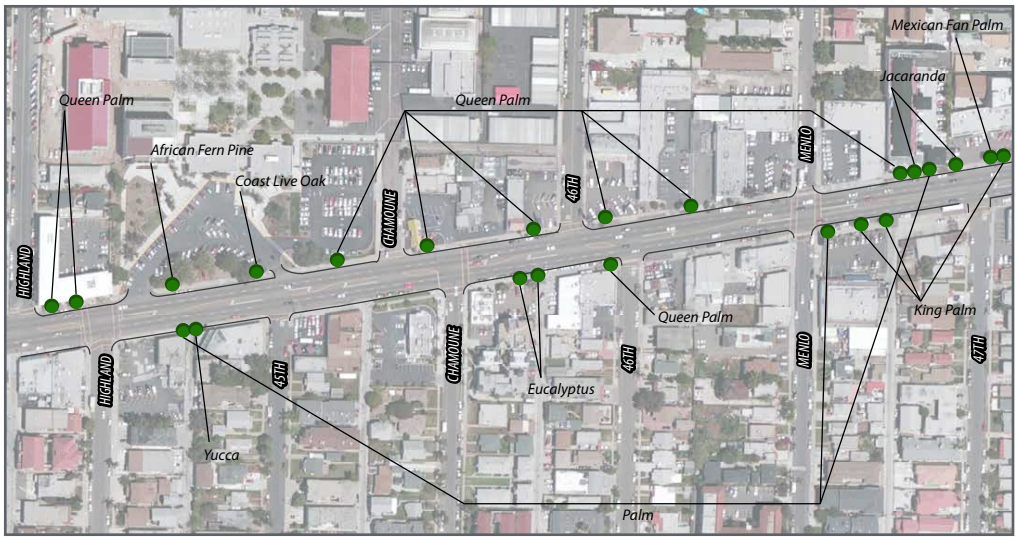
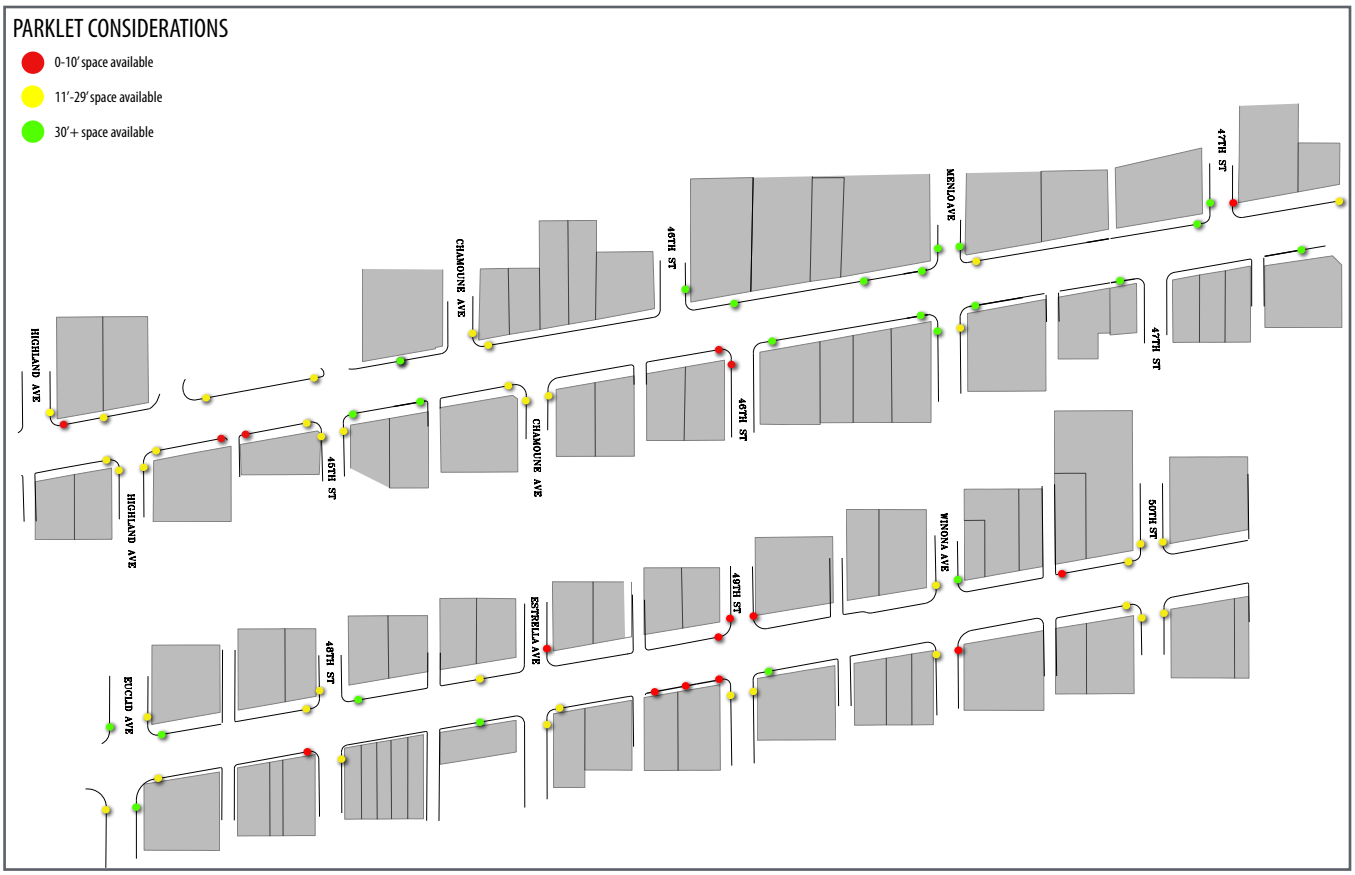


Figure 12: Tree Inventory Continued

This segment of El Cajon Boulevard does not have any planted medians. Median landscaping has been implemented along other portions of El Cajon Boulevard (mostly to the west), contributing to enhanced aesthetics and a more established 'sense of place' wherever they occur. These medians vary in size and shape but carry a consistent theme of blue-flowering Jacaranda Trees. These medians are maintained; however, this 'green' amenity ends at Highland Avenue and is not continued throughout the study area.

When analyzing the existing urban design space, parklet consideration areas were noted based on available right-of-way along with the areas of encroachment. A parklet is an expansion of the sidewalk into one or more on-street parking spaces to create people-oriented places. Parklets introduce new streetscape features such as seating, planting, bicycle parking, or elements of play. Parklets encourage pedestrian activity by offering these human-scale "eddies in the stream," which is especially beneficial in areas that lack sufficient sidewalk width or access to public space. Parklets are typically created by building a platform on the pavement to extend the sidewalk space, and retrofitting it with benches, planters, tables and chairs, umbrellas, and bike racks. In the case of active recreation parklets, exercise machines can be bolted to the platform. Figure 13 shows the parklet consideration areas and identifies which areas are the most

Figure 13: Parklet Consideration Areas



3.0 Traffic/Vehicular Activity

Traffic Volumes

Analysis was conducted to understand the location of traffic signals, determine the existing level of service along the Boulevard, estimate traffic flow/movements throughout the corridor, identify locations with numerous collisions, and calculate the number of conflict points between vehicles, buses, bicycles, and pedestrians. These metrics established an existing condition baseline, upon which several project alternatives could be evaluated. As shown in Figure 14, there are four traffic signals along the corridor and the remaining intersctions are regulated by top signs on the side streets.

Figure 14: Existing Intersection Controls along El Cajon Boulevard

Existing traffic counts were conducted in support of this project, while forecast volumes were derived from SANDAG's Series 12 regional transportation model for the year 2035. The forecast volumes are intended to reflect anticipated population and employment growth, land use changes and the improvements identified in the 2050 Regional Transportation Plan Revenue Constrained Transit Network.

The vehicular analysis examines existing and forecasted average daily traffic (ADT) volumes and AM/PM peak period counts. Figure 15 and Table 2, on the following page, depict both the existing and forecasted traffic volumes for the project study area. As shown, existing ADTs along the study corridor range from a low of 24,067 between Euclid Avenue and 48th Street, to a high of 27,760 between Fairmount Avenue and Highland Avenue. The 2035 forecast volumes mirror the existing ADT volumes, with the lowest projected volume of 28,400 found between Euclid Avenue and 48th Street, as well as between Menlo Avenue and Euclid Avenue, and the highest

Figure 15: Existing Traffic Volumes and 2035 Forecasted Traffic Volumes

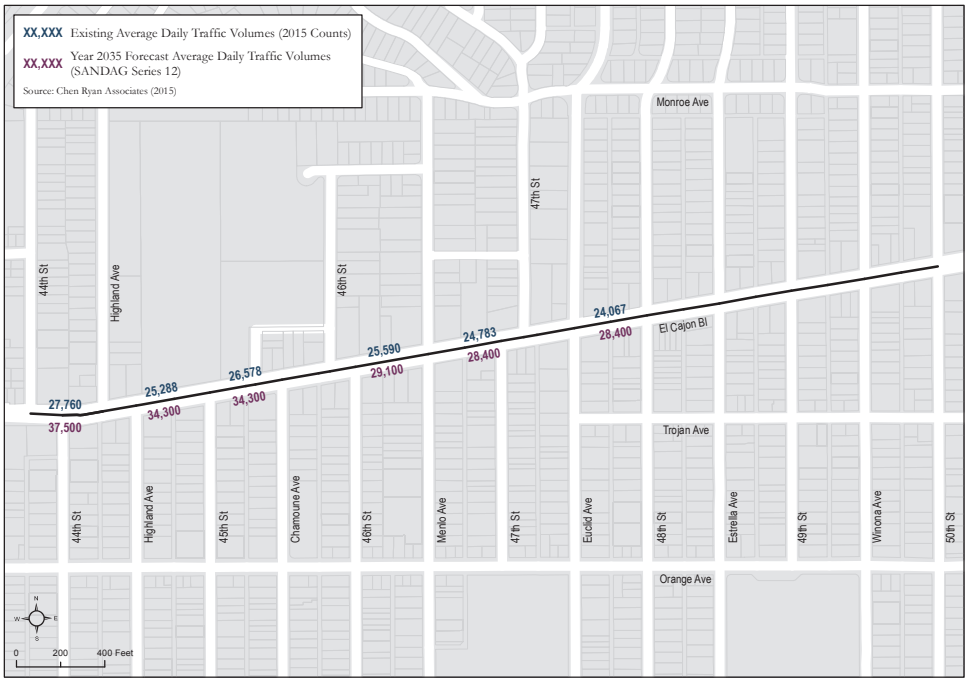


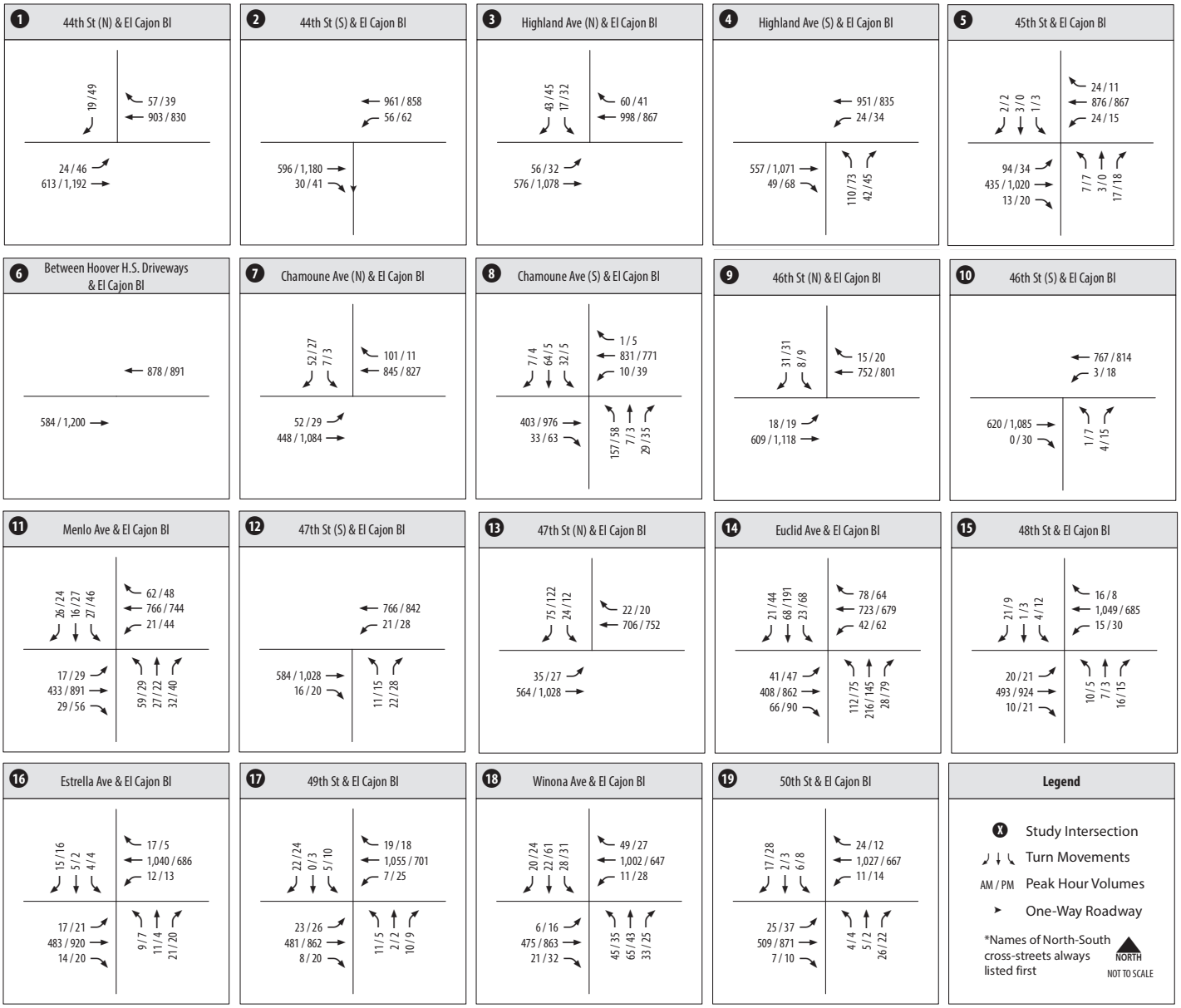
Table 2: Existing Traffic Volumes and 2035 Forecasted Traffic Volumes

El Cajon Boulevard Segment		2015 Existing ADT	2035 Forecast ADT	Percent Change
From	To			
Fairmount Avenue	Highland Avenue	27,760	37,500	35%
Highland Avenue	45th Street	25,288	34,300	36%
45th Street	Chamoune Avenue	26,578	34,300	29%
Chamoune Avenue	Menlo Avenue	25,590	29,100	14%
Menlo Avenue	Euclid Avenue	24,783	28,400	15%
Euclid Avenue	48th Street	24,067	28,400	18%

Source: SANDAG Series 12 (2015); Chen Ryan Associates (2015)

projected volume of 37,500 between Fairmount Avenue and Highland Avenue. Both the existing and forecasted volumes generally increase further west along the corridor. The greatest overall percent increase from existing to forecasted volumes is anticipated to be a 35% increase between Fairmount Avenue and Highland Avenue. Figure 16 depicts the turning movement counts throughout the study area, providing valuable information for determining where a raised median could be implemented. Figure 17 illustrates the traffic volumes along the corridor at six different locations.

Figure 16: Traffic Turning Movement Counts



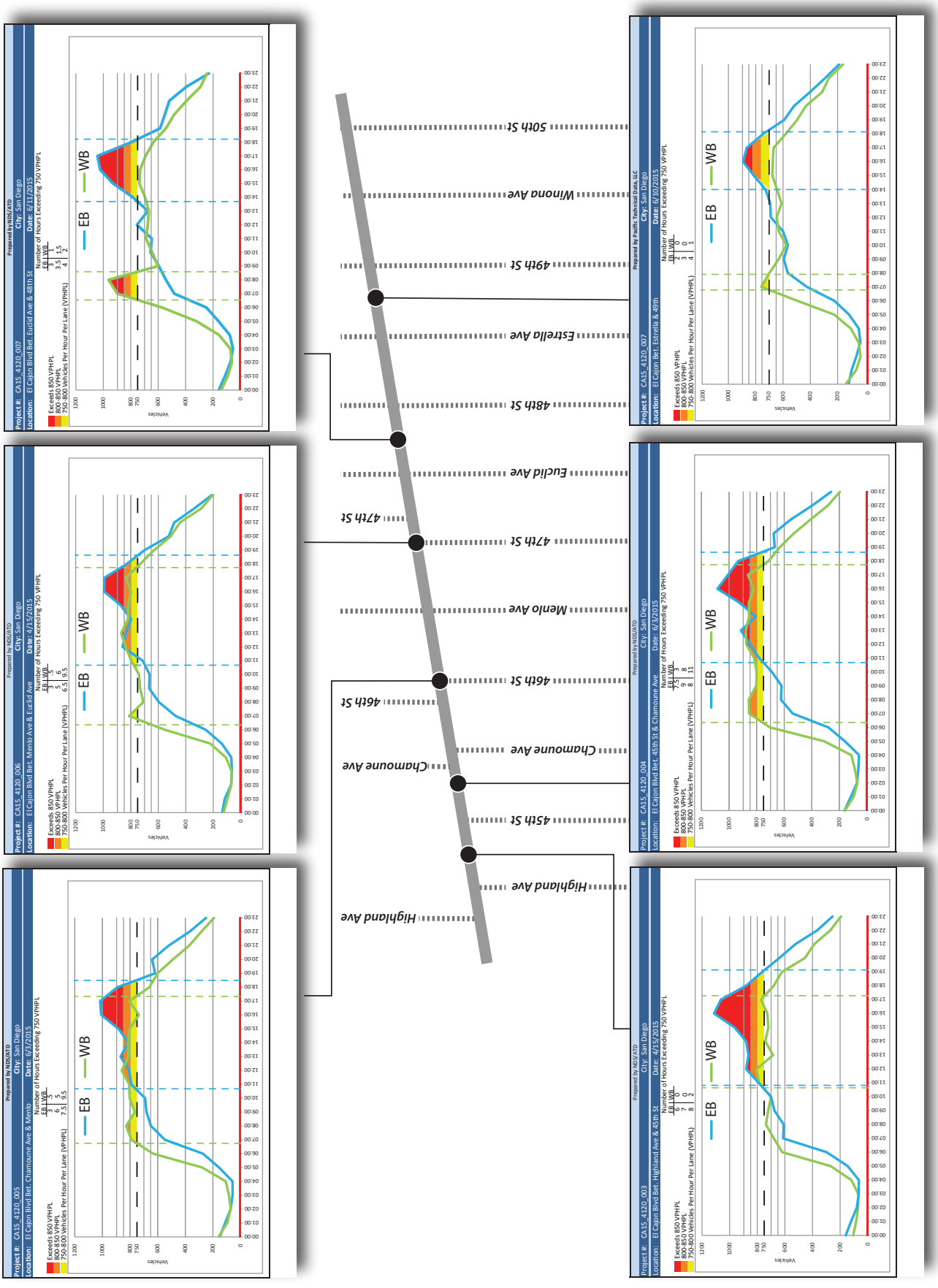


Figure 17: Traffic Volumes Along the Corridor

Driveway Analysis

In addition to the traffic count analysis, driveways along the corridor were analyzed for potential closings or conversion to one-way. Closing driveways could decrease the amount of conflict points throughout the corridor between bicyclists, pedestrians, vehicles, and buses. Of the thirty-one (31) driveways located within the study area, the analysis identified eight (8) driveways that could possibly be adjusted. However, property owners would need to agree and this would need to be pursued separately.

Factors that went into determining whether a driveway or alley location could be adjusted included:

- If multiple entrances were available;
- Areas of encroachment; and
- If the driveway was already closed off due to a constructed gate, fence, or other barrier.

Figure 18: Potential Intersection Conflict Points

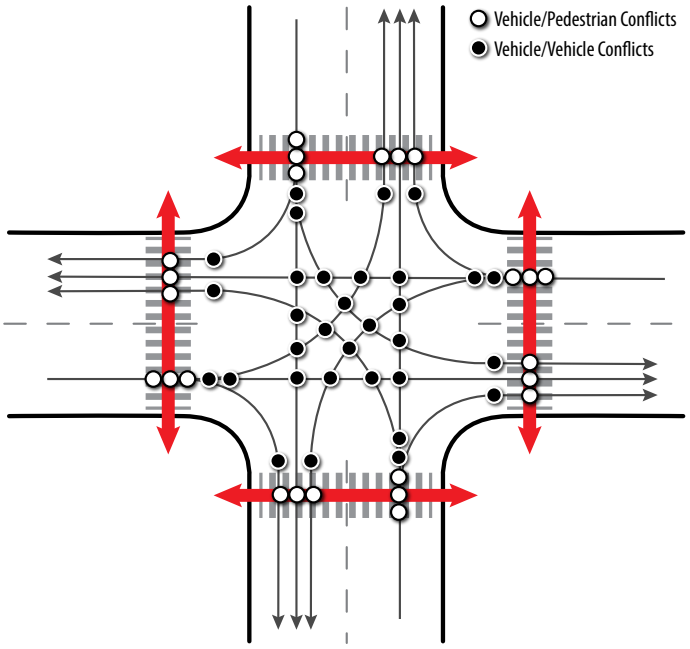
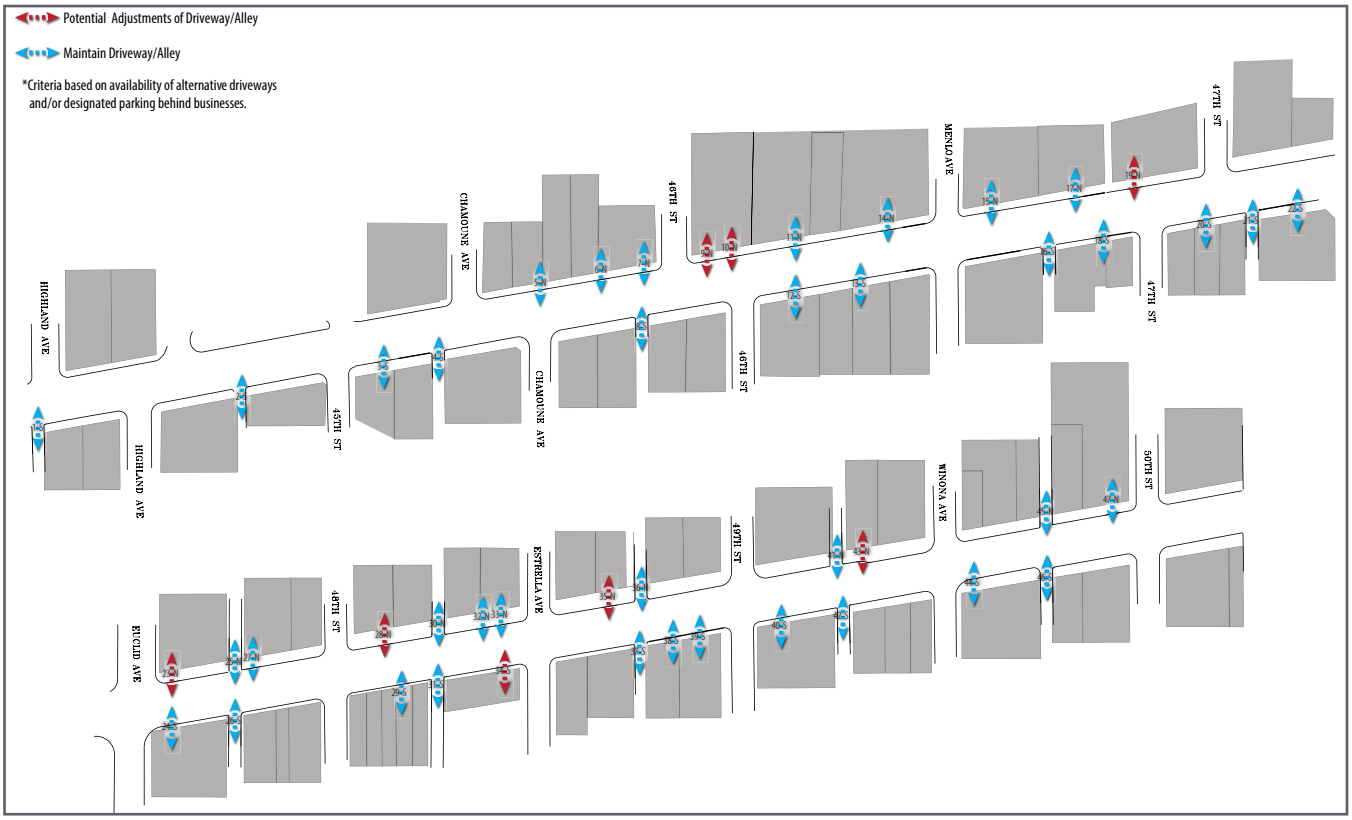


Figure 19: Alley/Driveway Potential Adjustments



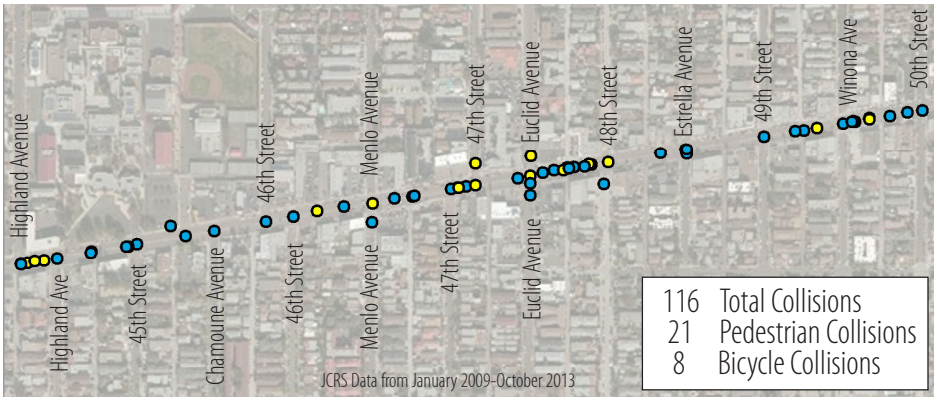
Collision Analysis

Collision records were provided by the City of San Diego for years 2009 through October 2013 between 43rd Street and 51st Street. Collisions on cross streets were included in the analysis if they were located within 100 feet of El Cajon Boulevard (Figure 20).

In 2013 there was a total of 36 collisions on this section. In the five years from 2009 through 2013 there were two traffic related fatalities, 118 injuries, and a total of 188 collisions.

The study corridor has a high density of intersections and, as such, nearly two thirds (64%) of collisions were intersection related. Figure 20 shows locations of individual collision points. Winona Avenue and Estrella Avenue are the two intersections with highest number of collisions within the study area. Though Winona Avenue is regulated by a traffic signal, Estrella Avenue is not. All collision data was reviewed to help identify the recommended improvements.

Figure 20: Collision Locations within the Study Area



Raised Median Analysis

The construction of a raised median and restricted left turn access throughout the corridor will improve safety by reducing conflict points for vehicles, pedestrians, and bicyclists at driveways, alleys, and intersections (Figure 21). A median will reduce the number of conflict points between vehicles at intersections and alleys by 63% and at driveways by 78% and will reduce the number of conflict points between vehicles and pedestrians at intersections and alleys by 35% and at driveways by 50% (Figure 22, Table 3, and Table 4).

Peak hour intersection analyses were conducted using Synchro analysis based on the alternatives that included a raised median and road diet. The analyses showed that all signalized intersections would operate acceptably based on the recommended alternative. The analysis reports are located in Appendix A.

Figure 21: Conflict Reduction with Median for Vehicle s and Pedestrians

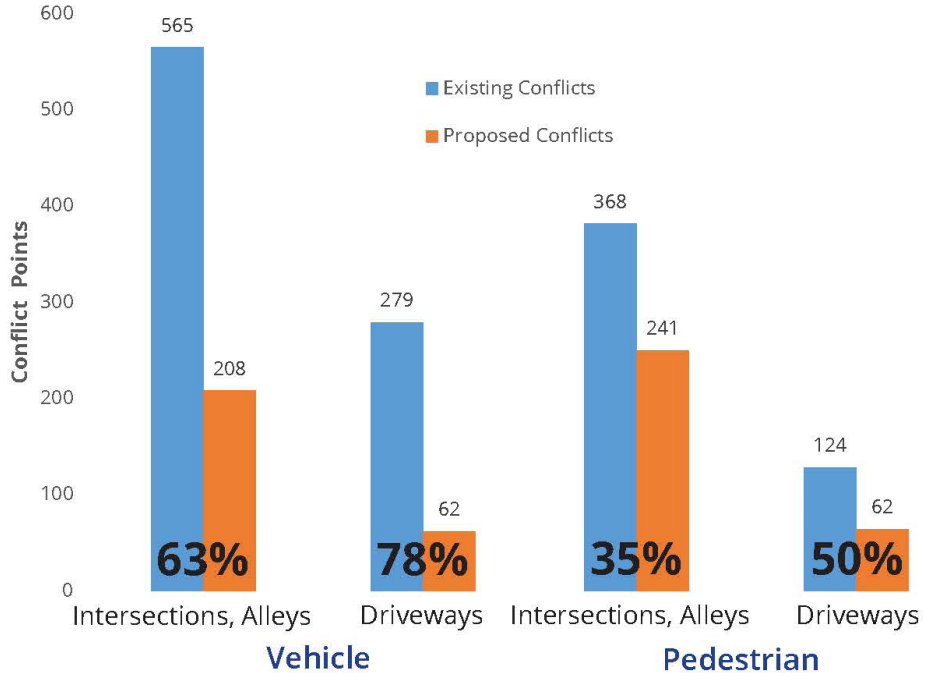


Table 3: Conflict Reduction Summary

	Vehicle / Vehicle				Vehicle / Pedestrian			
	Existing Conflicts	Proposed Conflicts	No. of Conflicts Removed	% Reduction	Existing Conflicts	Proposed Conflicts	No. of Conflicts Removed	% Reduction
Intersection, Alleys	565	208	357	63%	368	241	127	35%
Driveways	279	62	217	78%	124	62	62	50%

Table 4: Conflict Reduction Analysis

			Vehicular Conflict Reduction				Pedestrian Conflict Reduction				
Sheet No.	Driveway No.	Side of ECB	Existing Conflicts	# of Reduced Turning Conflicts	Proposed Conflicts	% Reduction	Existing Conflicts	# of Reduced Turning Conflicts	Proposed Conflicts	% Reduction	Notes[1]
2	1	South	9	7	2	78%	4	2	2	50%	
2	2	North	9	7	2	78%	4	2	2	50%	
2	3	North	9	7	2	78%	4	2	2	50%	
3	4	North	9	7	2	78%	4	2	2	50%	
3	5	North	9	7	2	78%	4	2	2	50%	
3	6	North	9	7	2	78%	4	2	2	50%	
3	7	South	9	7	2	78%	4	2	2	50%	
3	8	South	9	7	2	78%	4	2	2	50%	
3	9	North	9	7	2	78%	4	2	2	50%	
3	10	North	9	7	2	78%	4	2	2	50%	
4	11	North	9	7	2	78%	4	2	2	50%	
4	12	South	9	7	2	78%	4	2	2	50%	
4	13	North	9	7	2	78%	4	2	2	50%	
4	14	South	9	7	2	78%	4	2	2	50%	
4	15	South	9	7	2	78%	4	2	2	50%	
4	16	North	9	7	2	78%	4	2	2	50%	
4	17	South	9	7	2	78%	4	2	2	50%	
5	18	North	9	7	2	78%	4	2	2	50%	
5	19	North	9	7	2	78%	4	2	2	50%	
5	20	South	9	7	2	78%	4	2	2	50%	
5	21	North	9	7	2	78%	4	2	2	50%	
5	22	North	9	7	2	78%	4	2	2	50%	
5	23	South	9	7	2	78%	4	2	2	50%	
6	24	North	9	7	2	78%	4	2	2	50%	
6	25	North	9	7	2	78%	4	2	2	50%	
6	26	South	9	7	2	78%	4	2	2	50%	
6	27	South	9	7	2	78%	4	2	2	50%	
6	28	South	9	7	2	78%	4	2	2	50%	
6	29	North	9	7	2	78%	4	2	2	50%	
6	30	South	9	7	2	78%	4	2	2	50%	
7	31	North	9	7	2	78%	4	2	2	50%	
		SUM	**279**	**217**	**62**		**124**	**62**			

Average Reduction	78%
Total number of Driveways (North)	17
Total number of Driveways (South)	14
Total number of Driveways	31
Number of conflicts removed	217

Average Reduction	50%
Number of conflicts removed	62

Marked Crosswalk Evaluations

The City of San Diego developed Council Policy 200-07 to guide the installation of marked crosswalks at uncontrolled locations. Marked crosswalks are an important tool that can enhance pedestrian safety with proper traffic control on public streets. Crosswalks alone at uncontrolled locations do not guarantee the safety or protection of pedestrians, therefore careful consideration of their location and warning devices is essential. Council Policy 200-07 provides the requirements uncontrolled pedestrian crossings must meet in order to be considered for a marked crosswalk, how a crosswalk must be marked, and the process of removal, if necessary. The Policy consists of:

- Basic Warrants;
- Point Warrants;
- Crossing treatments to supplement marked crosswalks; and
- Requirements for the removal of marked crosswalks.

If a location meets each of the Basic Warrants and scores a minimum of 16 points in the Point Warrants, it qualifies for a marked crosswalk. The Basic Warrants include the following:

- Pedestrian Volume Warrant;
- Latent Pedestrian Demand Warrant (in lieu of Pedestrian Volume Warrant);
- General Condition Warrant (distance to nearest controlled crossing, proposed crosswalk will position pedestrians to be better seen by motorists, establish a mid-block crossing between adjacent signalized intersections or connect an existing pedestrian path, within 1/4 of a mile of pedestrian attractors/generators, and an existing bus stop is located within 100'); and
- Gap Time Warrant.

A total of 38 points are possible; however, 16 or more points are necessary to qualify for installation of a marked crosswalk. Locations along El Cajon Boulevard were considered for installation of marked crosswalks based on the desire to provide safe and convenient crossing opportunities. Each uncontrolled crossing, from Highland Avenue to 50th Street, was evaluated under the marked crosswalk policy. Based on this evaluation a marked enhanced crosswalk with pedestrian refuge and rapid flash beacons is recommended on El Cajon Boulevard at 45th Street. In addition, El Cajon Boulevard at Altadena Avenue (between 50th and 51st Streets and located outside of our study area), was also evaluated for a marked crosswalk by the City. That location met warrants and a marked crosswalk was recently installed.

Sight Distance Evaluation

A sight distance evaluation was conducted on the corridor at driveways, alleyways, and unsignalized intersections using the methods outlined in the AASHTO Green Book. For a 35 mile-per-hour roadway such as El Cajon Boulevard, the required sight distance for a right turn is 335 feet and the required sight distance for a left turn is 390 feet. Sight distance was measured 14.5 feet from the edge of travel way.

Within the plans, the existing sight distance and the new intersection sight distance is shown. Due to parking, most of the intersections do not have the 335 feet of sight distance specified by AASHTO, but many of the intersections improve the sight distance due to the addition of bulbouts. The sight distance evaluation is located in Appendix B.

AutoTURN Evaluation

In addition to the sight distance evaluation, an AutoTURN vehicle swept path analysis evaluation was conducted for the corridor to ensure buses and trucks could make necessary turns with the proposed improvement. The analysis is located in Appendix C.

4.0 Parking Analysis

Parking is a very important component to both residents and businesses. Therefore, a parking inventory was conducted to determine the amount of available on-street parking spaces and use of those current spaces. Parking along El Cajon Boulevard included metered and non-metered parallel parking spaces. The existing total capacity along El Cajon Boulevard is 155 spaces as well as four motorcycle spaces. During the observed day, only 46% of the on-street parking spaces were being used. A parking analysis was conducted based on Alternative 1, 8B, 1 & 8B combined, and the existing conditions. The analysis is shown in Figures 22 and 23.

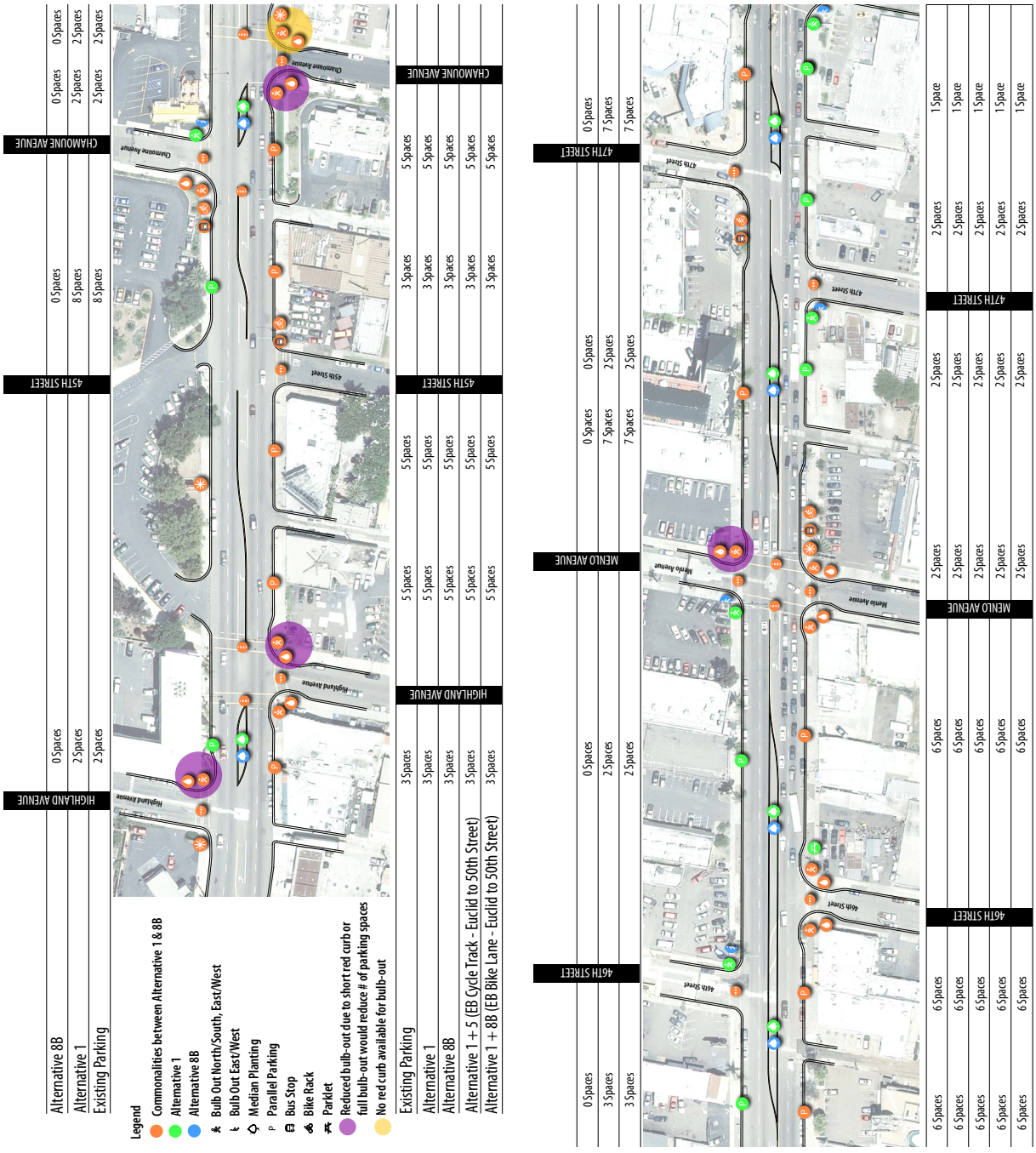
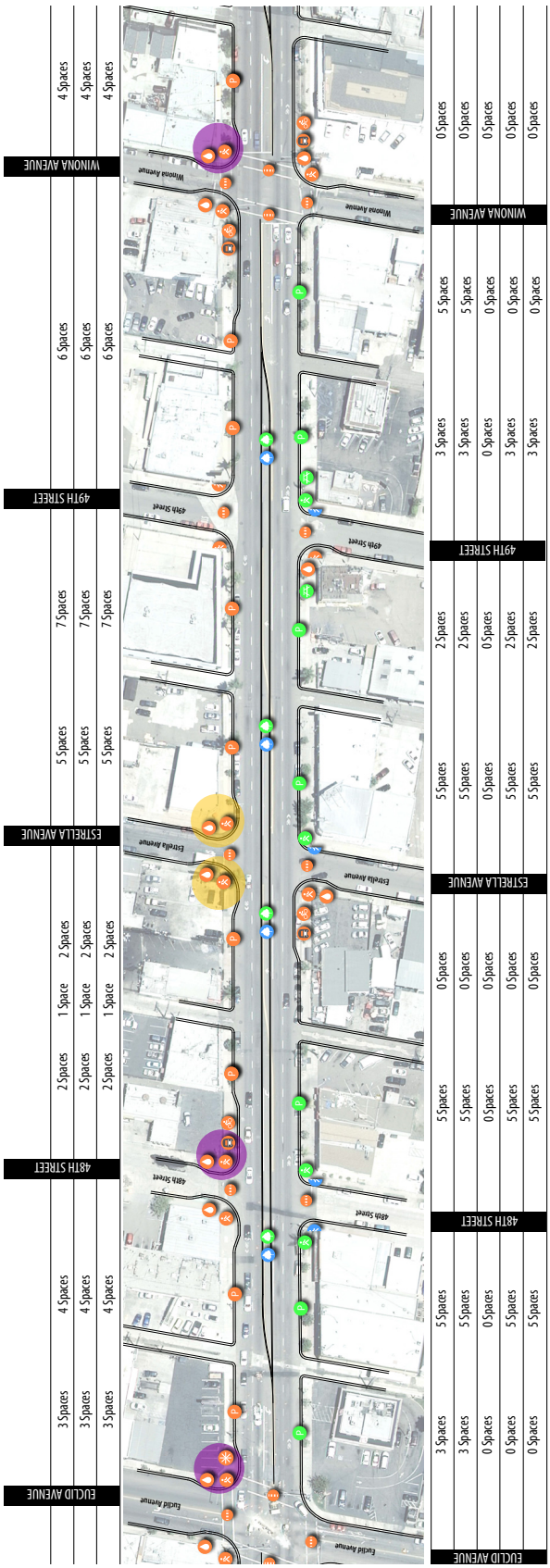
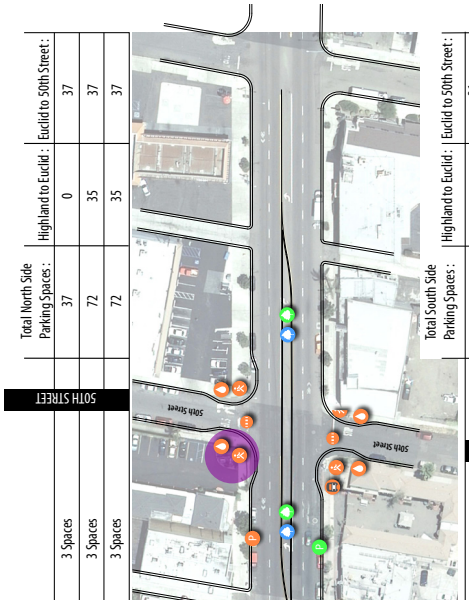


Figure 22: Parking Inventory Based on Alternatives

Figure 23: Parking Inventory Based on Alternatives Continued





Total North Side Parking Spaces :	Highland to Euclid :	Euclid to 50th Street :
37	0	37
72	35	37
72	35	37

Total South Side Parking Spaces :	Highland to Euclid :	Euclid to 50th Street :
77	46	31
77	46	31
41	46	0
68	46	0
69	46	23

In addition to the inventory along El Cajon Boulevard, additional angled parking was considered on the side streets. The streets were measured to determine the existing road width and the feasibility of incorporating angled parking. Highland Avenue to the north was identified as the only street able to accommodate additional angled parking. By adding angled parking, on the east side of the street of Highland Avenue, an additional space is gained. A conceptual diagram of the proposed angled parking configuration on Highland Avenue is shown in Figure 24.

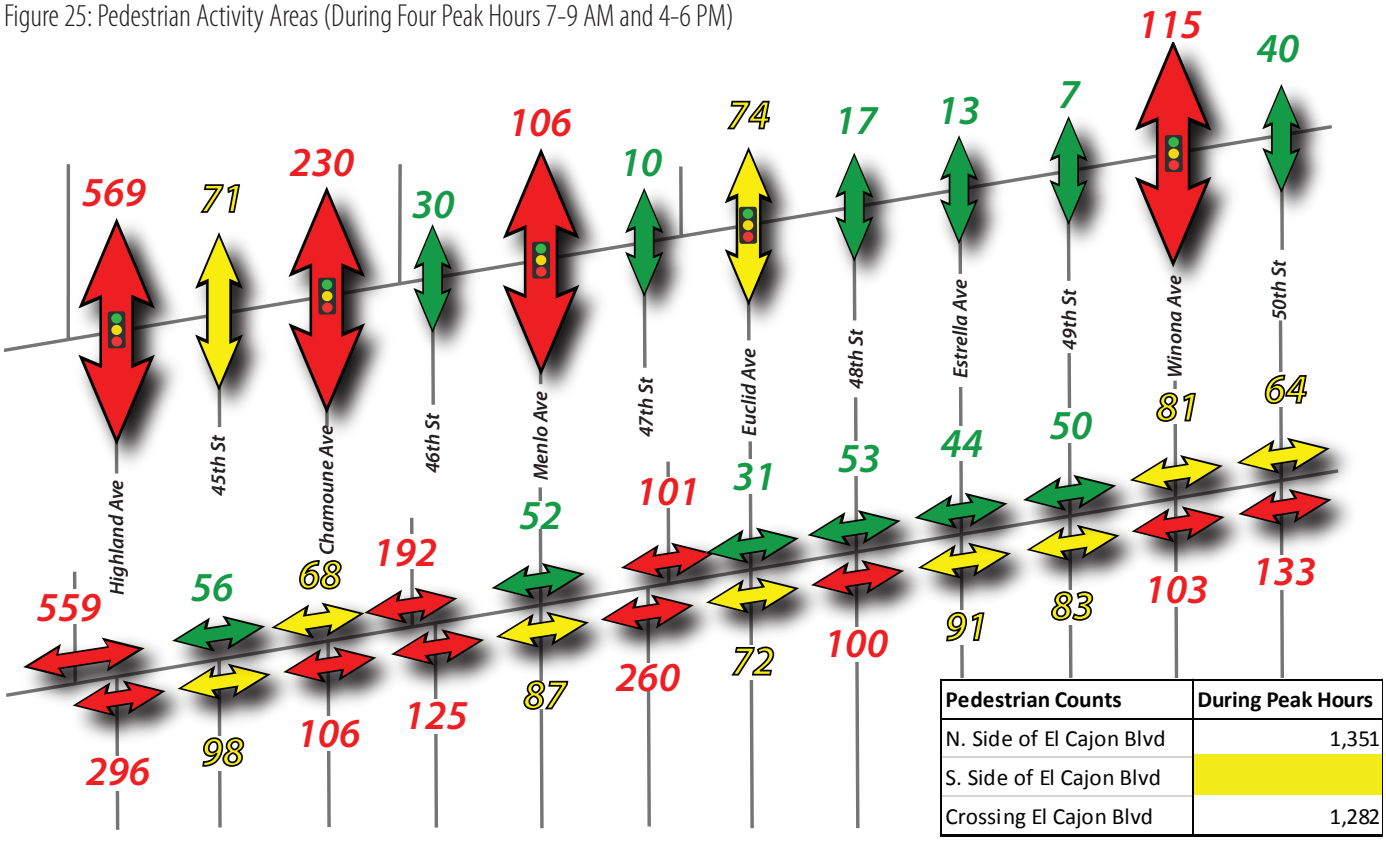
Figure 24: Highland Avenue Plan View Illustration

(Drawing is not to scale).

5.0 Pedestrian Activity

Peak period pedestrian counts were performed to better understand existing demand. The two intersections with the greatest total observed pedestrian volumes (7-9 AM and 4-6 PM combined for all legs) were Highland Avenue (south) and El Cajon Boulevard, and Chamoune Avenue (south) and El Cajon Boulevard, with volumes of 1,038 and 388, respectively. Each intersection is signalized with a marked crosswalk providing access to Hoover High School. The high school serves as a pedestrian attractor, drawing high volumes of students during the AM peak period, evidenced by the disproportionate AM volumes at these two count sites. Figure 25 below depicts the pedestrian activity during the four hours from 7-9 AM plus 4-6 PM, within the study area and is derived from the pedestrian counts which are provided in Appendix C of the Existing Conditions Report.

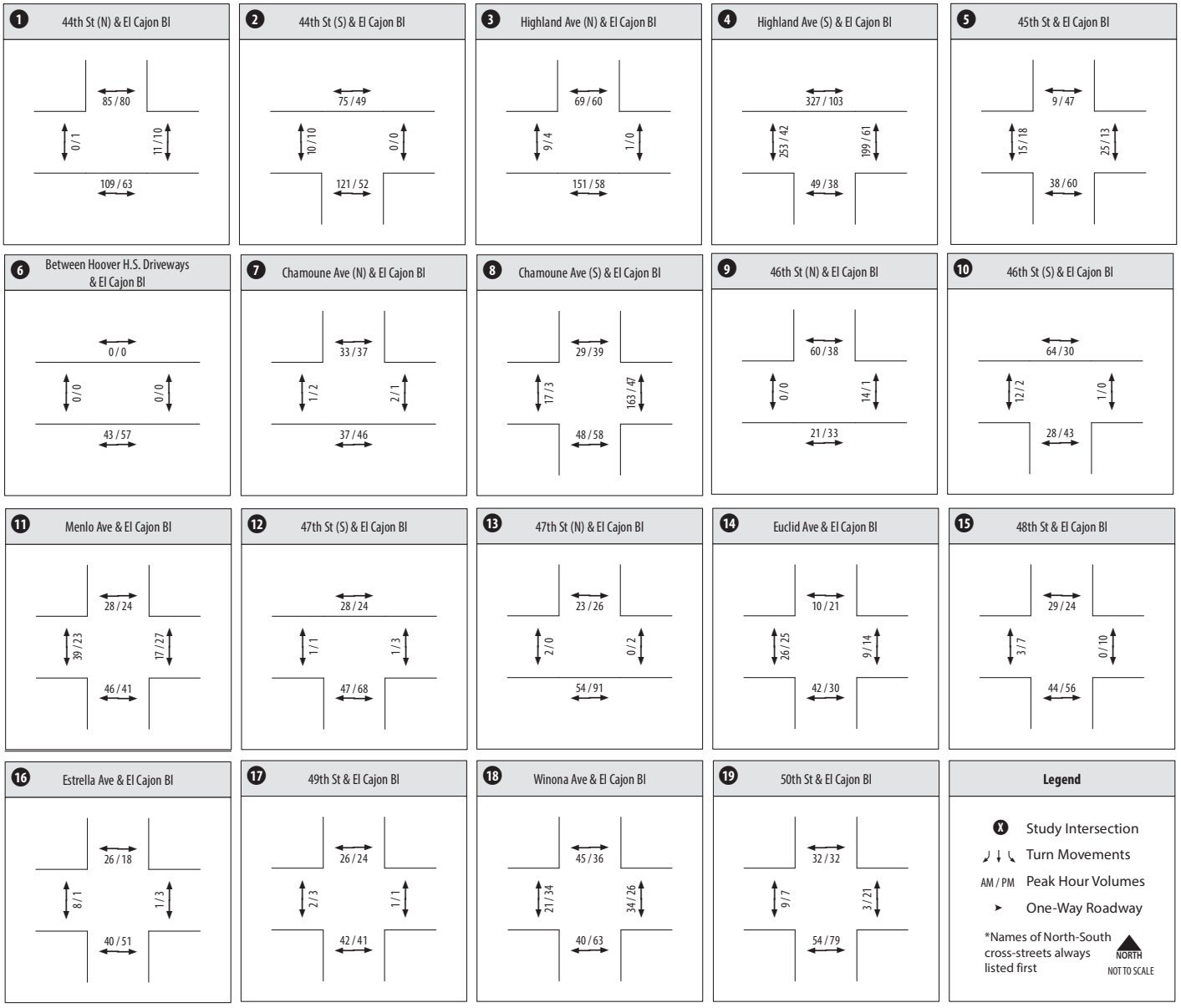
Figure 25: Pedestrian Activity Areas (During Four Peak Hours 7-9 AM and 4-6 PM)



Pedestrian Counts	During Peak Hours
N. Side of El Cajon Blvd	1,351
S. Side of El Cajon Blvd	
Crossing El Cajon Blvd	1,282

Figure 26 shows the number of pedestrians crossing each intersection leg during the morning peak hour and evening peak hour.

Figure 26: Pedestrian Counts during AM/PM Peak Hour.



Pedestrian Environmental Quality Index (PEQI) and Level of Traffic Stress (LTS) Analyses

Pedestrian conditions were evaluated using the Pedestrian Environmental Quality Index (PEQI), which generates a score

Both the PEQI and the Level of Traffic Stress (LTS) were used as quantitative tools to measure qualitative factors for pedestrians and bicyclists, respectively. The PEQI assesses pedestrian environments by gathering empirical data in six categories which informs pedestrian planning needs to identify areas potentially unsafe or distressing for pedestrians:

1. Intersection safety;
2. Traffic;
3. Street design;
4. Land use;
5. Perceived safety; and
6. Perceived walkability.

The LTS measures comfort levels of cyclists at all stages of biking confidence:

- LTS 1: the most comfortable for bicyclists of all ages;
- LTS 2: where adults feel comfortable to ride;
- LTS 3: enthused and confident riders will feel secure at this level; and
- LTS 4: where only the "strong and fearless" riders will ride.

Table 5 lists proposed alternatives for El Cajon Boulevard at Highland, Menlo, and Euclid Avenues and their PEQI and LTS scores. The analyses examine the existing corridor conditions, Alternative 1, Alternative 5, Alternative 5A, Alternative 8, Alternative 8A, and Alternative 8B. The PEQI scoring system reflects the gathered data using the six categories mentioned previously; with 0-20 deemed as an unsuitable environment for pedestrians, 21-40 as poor pedestrian conditions exist, 41-60 having only basic pedestrian conditions, 61-80 as reasonable conditions, and 81-100 as ideal conditions.

The existing conditions along El Cajon Boulevard exhibit "basic" pedestrian conditions with "poor" conditions at El Cajon Boulevard from Chamoune Avenue to 46th Street. Alternative 1 and Alternative 5A receive "reasonable" scores at El Cajon Boulevard from 48th to 50th Streets and Alternative 1 has a comparable score at El Cajon Boulevard from Winona Avenue to 50th Street. Both alternatives propose enhanced crossings, and full bulb-outs on both sides for Alternative 1 and full bulb-outs on the parking side for Alternative 5A. Moreover, Alternative 1 proposes parklets at applicable locations. Alternatives 5 and 5A are almost identical with the exception of median planting proposed for Alternative 5, which removes pedestrian refuges at crossings.

Alternatives 8, 8A and 8B have concepts with minor variances such as travel lane and median widths as well as bicycle lane placement. What is regarded is the amount of time to cross El Cajon Boulevard regarding the differences in treatment widths while sidewalks on both sides of El Cajon Boulevard is consistent among all three. Alternatives 8A and 8B receive "reasonable" scores at El Cajon Boulevard from Winona Avenue to 50th Street due to the minor variances in concept.

The results of both the LTS and PEQI for alternative concepts on El Cajon Boulevard asserts that Alternatives 1 and 5A are the best concepts for pedestrian quality. However, Alternative 5A applicability is limited to the east half of the corridor due to the closely spaced intersections on the west have of the corridor.

Table 5: PEQI Segment Results by Alternative

PEQE Segment Results by Alternative				Existing		Alt 1		Alt 5		Alt 5A		Alt 8		Alt 8A		Alt 8B	
Street Name	Cross Street 1	Cross Street 2	Side	SCORE	RATING	SCORE	RATING	SCORE	RATING	SCORE	RATING	SCORE	RATING	SCORE	RATING	SCORE	RATING
El Cajon	Fairmount	44th	S	0.47	BASIC	0.52	BASIC	0.52	BASIC	0.55	BASIC	0.52	BASIC	0.52	BASIC	0.52	BASIC
El Cajon	44th	Highland	S	0.43	BASIC	0.52	BASIC	0.52	BASIC	0.55	BASIC	0.52	BASIC	0.52	BASIC	0.52	BASIC
El Cajon	Highland	45th	S	0.49	BASIC	0.55	BASIC	0.55	BASIC	0.57	BASIC	0.55	BASIC	0.55	BASIC	0.55	BASIC
El Cajon	45th	Chamoune	S	0.49	BASIC	0.58	BASIC	0.55	BASIC	0.58	BASIC	0.55	BASIC	0.55	BASIC	0.55	BASIC
El Cajon	Chamoune	46th	S	0.47	BASIC	0.56	BASIC	0.53	BASIC	0.56	BASIC	0.53	BASIC	0.53	BASIC	0.53	BASIC
El Cajon	46th	Menlo	S	0.49	BASIC	0.58	BASIC	0.55	BASIC	0.58	BASIC	0.55	BASIC	0.55	BASIC	0.55	BASIC
El Cajon	Menlo	47th	S	0.50	BASIC	0.59	BASIC	0.56	BASIC	0.59	BASIC	0.57	BASIC	0.57	BASIC	0.57	BASIC
El Cajon	47th	Euclid	S	0.48	BASIC	0.55	BASIC	0.55	BASIC	0.57	BASIC	0.55	BASIC	0.55	BASIC	0.55	BASIC
El Cajon	Euclid	48th	S	0.50	BASIC	0.59	BASIC	0.56	BASIC	0.59	BASIC	0.56	BASIC	0.56	BASIC	0.56	BASIC
El Cajon	48th	Estrella	S	0.52	BASIC	0.61	REASONABLE	0.58	BASIC	0.61	REASONABLE	0.58	BASIC	0.58	BASIC	0.58	BASIC
El Cajon	Estrella	49th	S	0.52	BASIC	0.62	REASONABLE	0.59	BASIC	0.62	REASONABLE	0.59	BASIC	0.59	BASIC	0.59	BASIC
El Cajon	49th	Winona	S	0.52	BASIC	0.62	REASONABLE	0.59	BASIC	0.62	REASONABLE	0.59	BASIC	0.59	BASIC	0.59	BASIC
El Cajon	Winona	50th	S	0.52	BASIC	0.61	REASONABLE	0.58	BASIC	0.61	REASONABLE	0.58	BASIC	0.58	BASIC	0.58	BASIC
El Cajon	Fairmount	44th	N	0.48	BASIC	0.50	BASIC	0.50	BASIC	0.50	BASIC	0.50	BASIC	0.52	BASIC	0.52	BASIC
El Cajon	44th	Highland	N	0.51	BASIC	0.53	BASIC	0.50	BASIC	0.50	BASIC	0.50	BASIC	0.53	BASIC	0.53	BASIC
El Cajon	Highland	Chamoune	N	0.44	BASIC	0.53	BASIC	0.53	BASIC	0.53	BASIC	0.53	BASIC	0.56	BASIC	0.56	BASIC
El Cajon	Chamoune	46th	N	0.40	POOR	0.48	BASIC	0.48	BASIC	0.48	BASIC	0.48	BASIC	0.50	BASIC	0.50	BASIC
El Cajon	46th	Menlo	N	0.43	BASIC	0.51	BASIC	0.49	BASIC	0.49	BASIC	0.49	BASIC	0.51	BASIC	0.51	BASIC
El Cajon	Menlo	47th	N	0.50	BASIC	0.58	BASIC	0.55	BASIC	0.55	BASIC	0.55	BASIC	0.58	BASIC	0.58	BASIC
El Cajon	47th	Euclid	N	0.48	BASIC	0.56	BASIC	0.53	BASIC	0.53	BASIC	0.53	BASIC	0.56	BASIC	0.56	BASIC
El Cajon	Euclid	48th	N	0.48	BASIC	0.56	BASIC	0.54	BASIC	0.54	BASIC	0.54	BASIC	0.56	BASIC	0.56	BASIC
El Cajon	48th	Estrella	N	0.51	BASIC	0.59	BASIC	0.57	BASIC	0.57	BASIC	0.57	BASIC	0.59	BASIC	0.59	BASIC
El Cajon	Estrella	49th	N	0.49	BASIC	0.57	BASIC	0.55	BASIC	0.55	BASIC	0.55	BASIC	0.57	BASIC	0.57	BASIC
El Cajon	49th	Winona	N	0.51	BASIC	0.59	BASIC	0.57	BASIC	0.57	BASIC	0.57	BASIC	0.59	BASIC	0.59	BASIC
El Cajon	Winona	50th	N	0.52	BASIC	0.61	REASONABLE	0.58	BASIC	0.58	BASIC	0.58	BASIC	0.61	REASONABLE	0.61	REASONABLE

6.0 Bicycle Activity

Within the project area, El Cajon Boulevard is characterized as a Class III bicycle route, identifiable by painted, on-street "sharrows" and signage. Bicycle conditions along El Cajon Boulevard were evaluated using the Bicycle Level of Traffic Stress (LTS) methodology for characterizing cycling environments, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in Low-Stress Bicycle and Network Connectivity. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with right-turn only lanes and unsignalized crossings (Figure 27).

Figure 27: Bicycle Level of Traffic Stress (LTS)

Table 6: Bicycle LTS

Bicycle LTS by Alternatives	LTS Score
Existing	4
Alt 1	4
Alt 5	1
Alt 5A	1
Alt 8	4
Alt 8A	3
Alt 8B	3

Table 6 describes the LTS score per alternative. Alternative 5 and 5A received the highest LTS score while the existing conditions, Alternative 1, and Alternative 8 received the lowest LTS score.

Figure 28 depicts the bicycle turning movements throughout the corridor, illustrating the highly trafficked areas by bike.

Figure 28: Bicycle Turning Movements

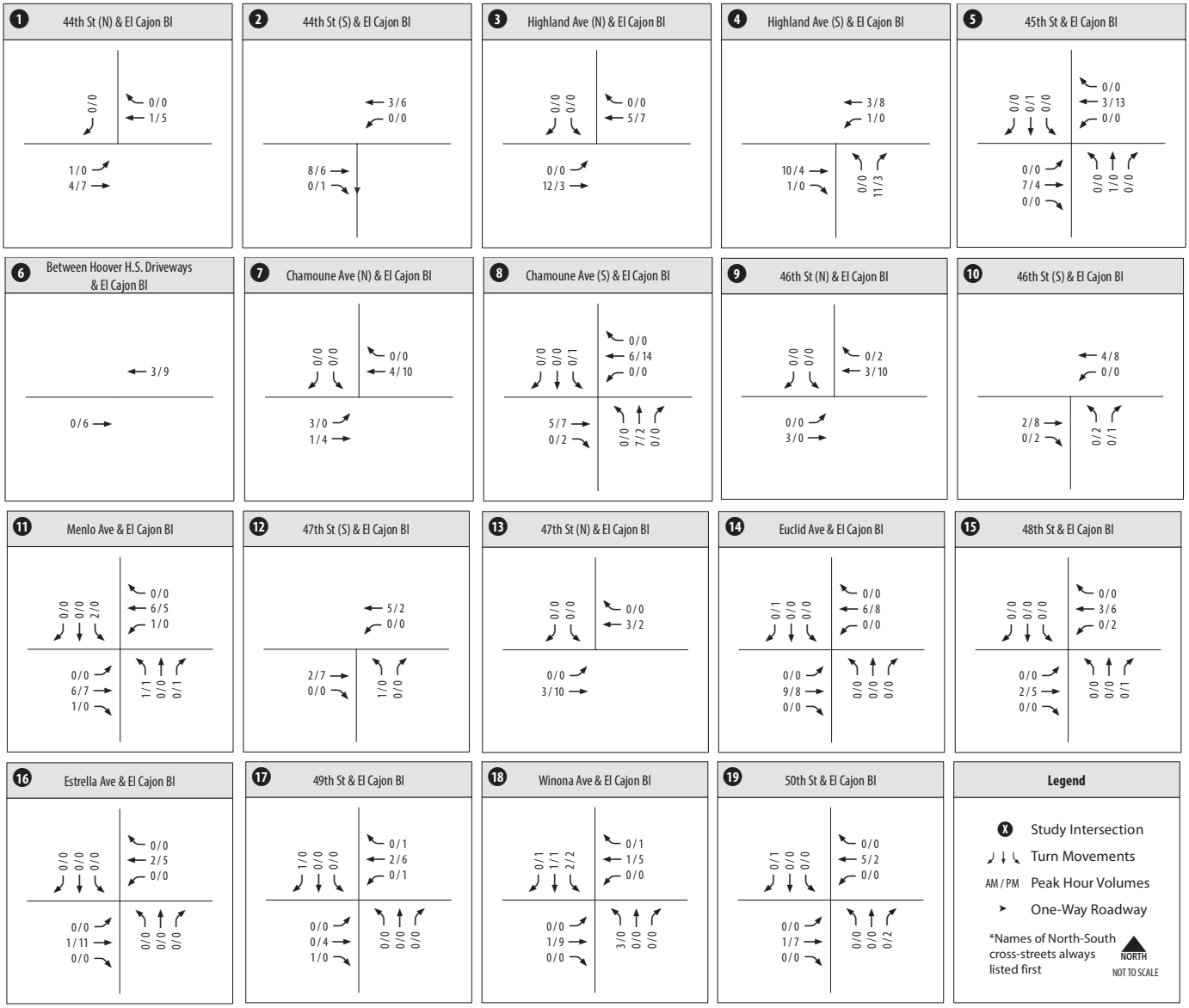


Figure 29 illustrates the locations of bicycle and pedestrian collisions within and around the study area. The study area is outlined in the figure by a dashed brown line.

Figure 29: Bicycle and Pedestrian Collisions

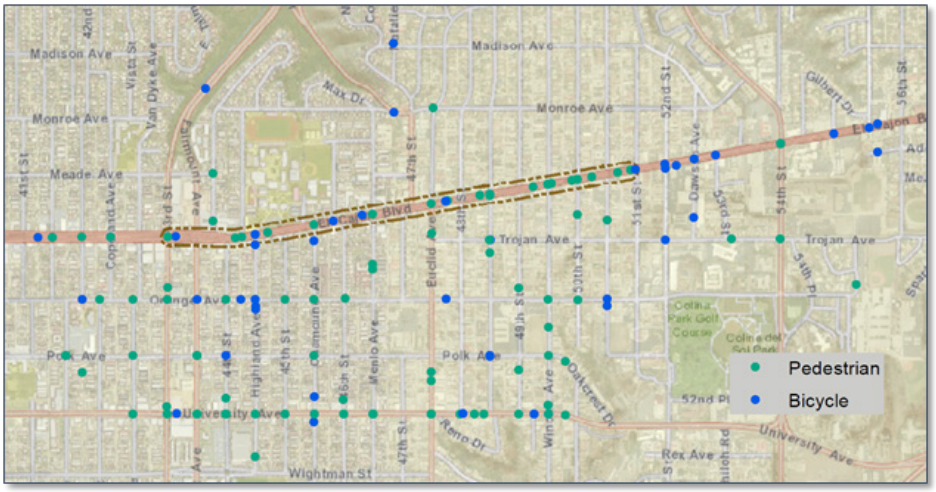


Figure 30: NACTO Design Guidance

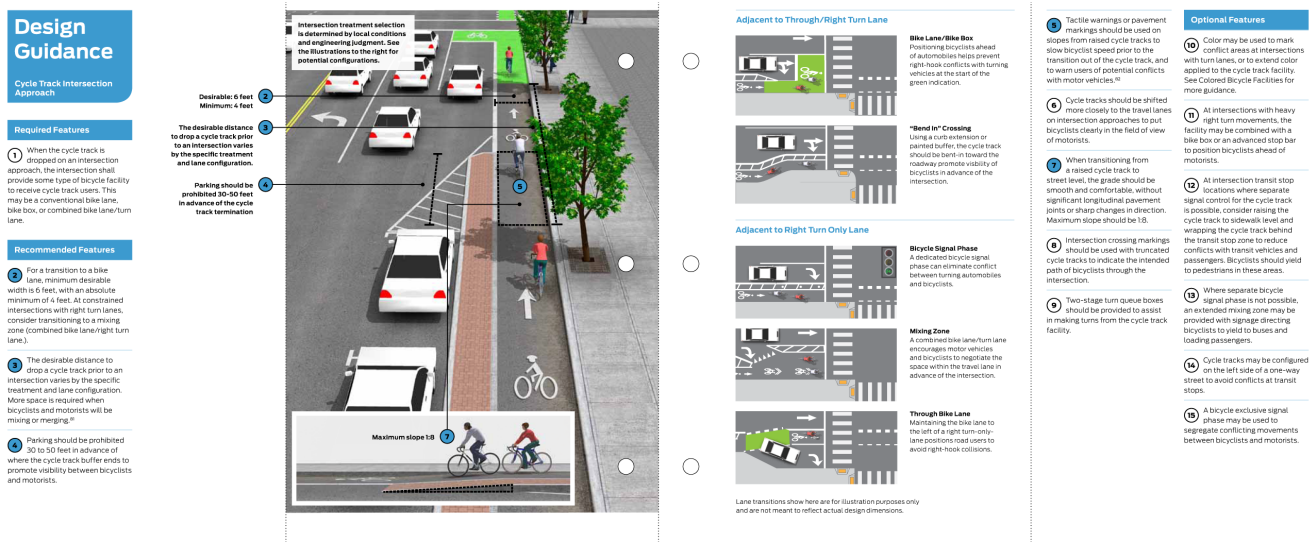


Figure 30 illustrates design guidance from the National Association of City Transportation Officials (NACTO) in relation to bike lanes and their interactions with intersections. NACTO, American Association of State Highway and Transportation Officials (AASHTO), Federal Highway Administration (FHWA), and other standards were utilized for bike design guidance. In addition, research was conducted for best practices when transitioning a bike lane to a sharrow. Recommendations included transitioning at an intersection and providing visible signage for both the bicyclist and motor vehicle.

7.0 Transit Ridership and Amenities

Transit service along El Cajon Boulevard is provided by the Metropolitan Transit Service (MTS), consisting of Rapid Bus Route 215 and Local Bus Route 1. Rapid Bus Route 215 connects the San Diego State University (SDSU) Transit Center to the Santa Fe Depot in Downtown San Diego. The route generally runs along College Avenue, El Cajon Boulevard, Park Boulevard, and Broadway. Service is provided seven days a week. Local Bus Route 1 runs from 5th Avenue and University Avenue in Hillcrest to the Grossmont Transit Center in La Mesa. The route generally runs along University Avenue, Park Boulevard, El Cajon Boulevard, La Mesa Boulevard, and Grossmont Center Drive. Service is provided seven days a week. Figure 31 displays the average boardings and alightings by stop for Fiscal Year 2014. Rapid Bus Route 215 began service following FY 2014, therefore ridership data for this route was not available at the time of this report. Instead, Local Bus Route 15 ridership data is reported. As shown, the stop just east of the Fairmount Avenue and El Cajon Boulevard intersection experienced the greatest total average daily boardings and alightings with 741, followed by 650 at the Winona Avenue and El Cajon Boulevard stop.

Figure 31: FY 2014 Boardings and Alightings

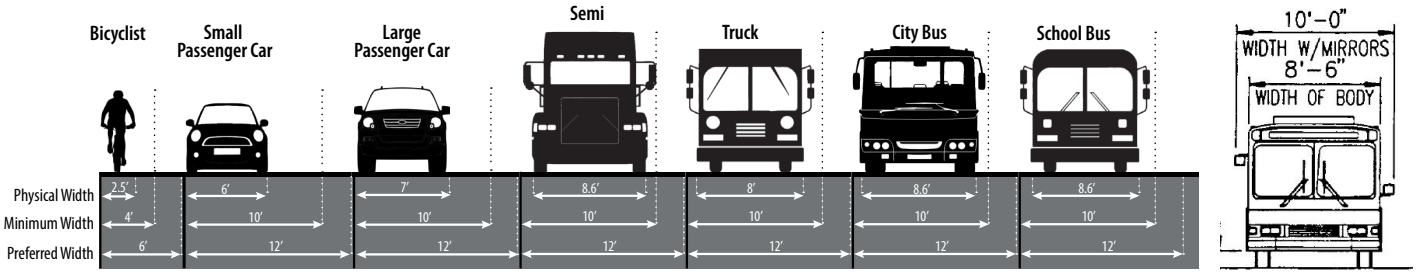
Table 7: Transit Stop Amenity Inventory

Stop ID	Location	Routes	Amenities		
			Bench	Shelter	Trash Can
10612	El Cajon Blvd & Fairmount Ave	1	✓	✓	✓
11364	El Cajon Blvd & Highland Ave	1			
10620	El Cajon Blvd & 45th St	1	✓		✓
11369	El Cajon Blvd & Chamoune Ave	1	✓		✓
10623	El Cajon Blvd & Menlo Ave	1	✓		
11372	El Cajon Blvd & 47th St	1	✓	✓	✓
11004	El Cajon Blvd & 48th St	1	✓		
10243	El Cajon Blvd & Estrella Ave	1		✓	✓
13555	El Cajon Blvd & Winona Ave East	215	✓	✓	✓
11377	El Cajon Blvd & Winona Ave West	215	✓	✓	✓
10247	El Cajon Blvd & 50th St	1			✓

Source: MTS, July 2015

Figure 32 illustrates the typical width of vehicles using El Cajon Boulevard. San Diego Metropolitan Transit System (MTS) standards illustrate a bus is 8'6" without including the mirrors and 10' when including the mirrors. Standards indicated the minimum lane width as 11', which was incorporated into the final alternative recommendation.

Figure 32: Standard Widths of Vehicles



8.0 Proposed Alternatives

The recommendations for El Cajon Boulevard identified urban design enhancement opportunities, Little Saigon identity opportunities, and opportunities to integrate/improve multimodal transportation on El Cajon Boulevard. There were 14 alternatives developed and evaluated (Figure 33 and 34).

Figure 33: Existing and Corridor Alternatives 1-5A

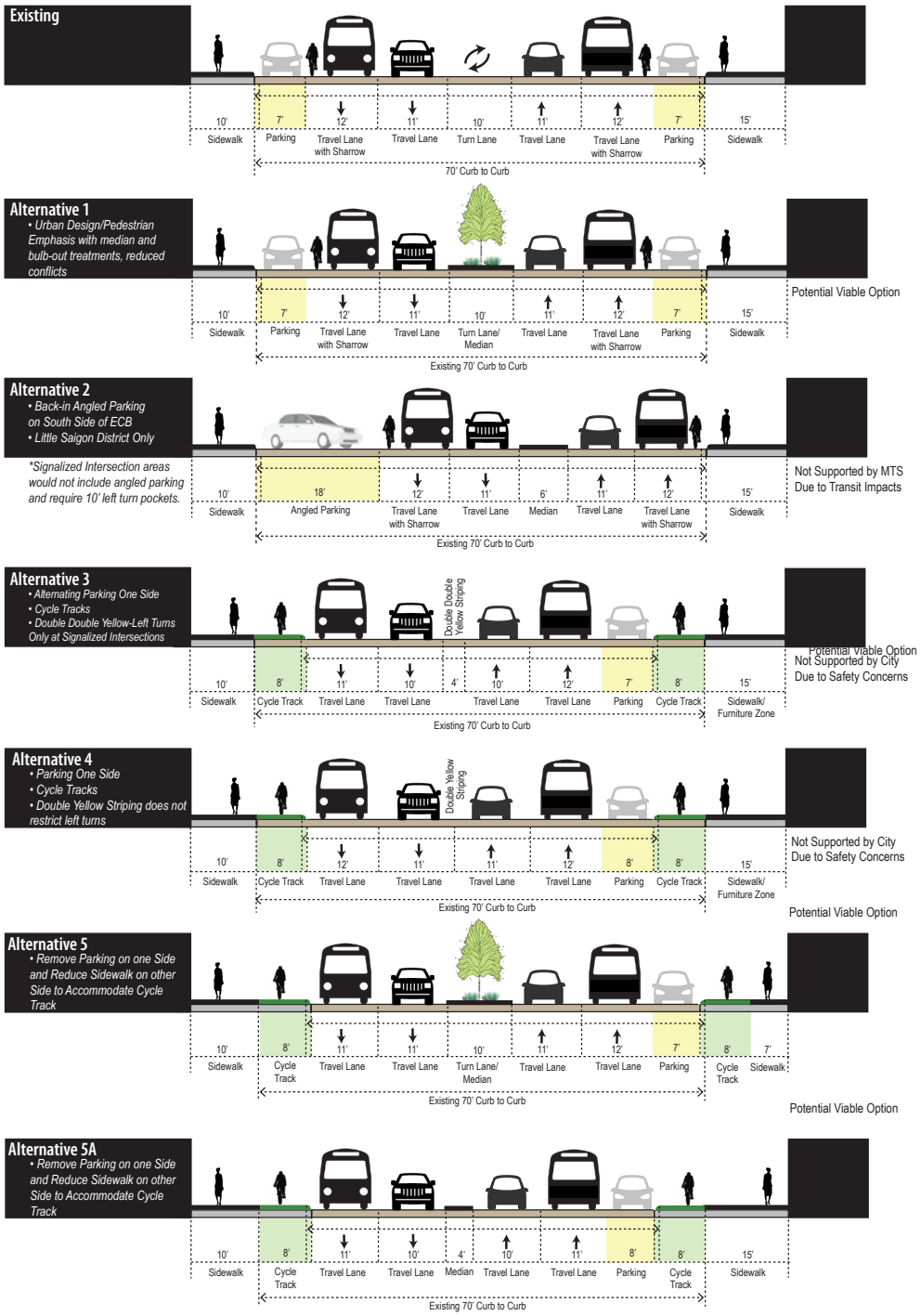
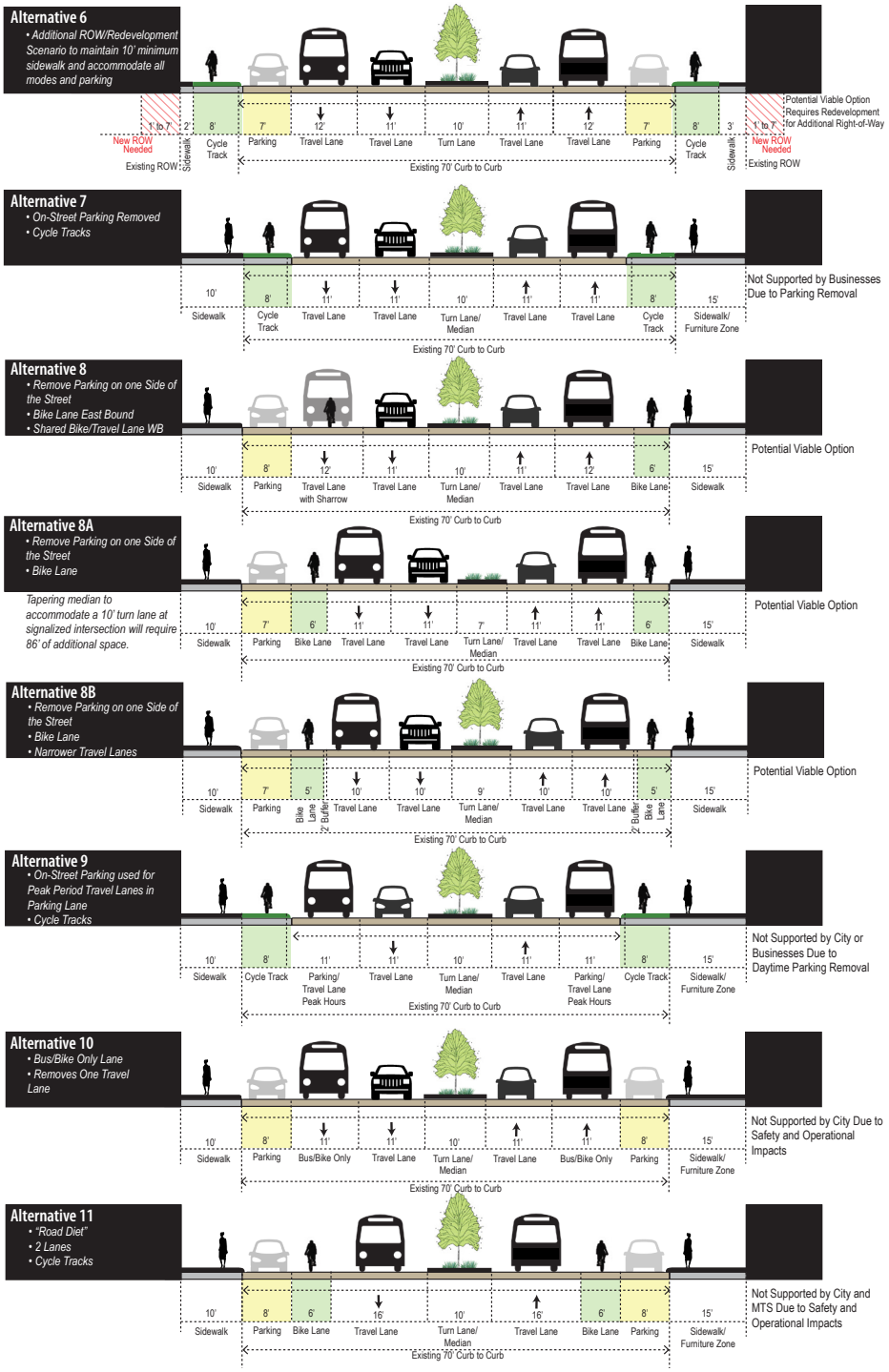


Figure 34: Corridor Alternatives 6-11



The alternatives were presented and evaluated with the various constituent groups based off of the Plan goals, feasibility, lane configuration, and level of service requirements. The conditions considered included:

- Pedestrian Crossing El Cajon Boulevard;
- Pedestrian Crossing sidestreets and alleys along El Cajon Boulevard;
- Bike Mobility;
- Transit Mobility;

- Vehicle Mobility;
- Safety;
- Urban Design Conditions;
- Constructability; and
- Parking.

Appendix D includes the evaluations of the fourteen alternatives. The evaluation summary is shown in Table 8. Based of the evaluations, two of the alternatives were retained due to their consistency with the goals of the project. Alternative 1 and Alternative 8B as shown in Figure 35.

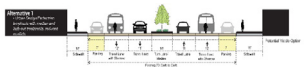
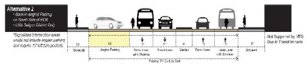
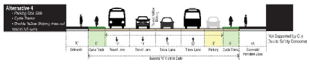
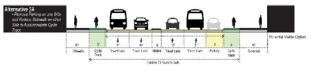
Table 8: Alternative Evaluation Summary

El Cajon Boulevard Alternatives Summary

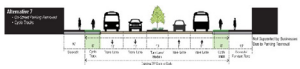
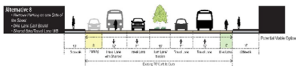
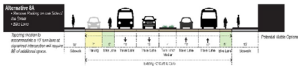
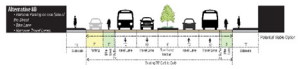
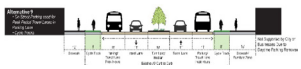
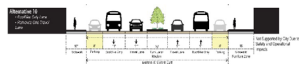
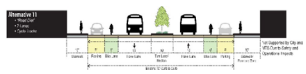
	Bicycle Accommodation	Pedestrian Accommodation	Transit Enhancements	Vehicle Enhancements	Safety Enhancements	Urban Design Opportunities	Parking Availability	Agency Support
Alternative 1	Sharrow	• Full bulb-outs. • Parklet opportunities. • Enhanced crossings.	• Reduced conflicts. • Stop curb extensions	• 4 travel lanes.	• 10' Raised median.	• Parklets. • Bulb-outs. • Median plantings. • Stormwater management.	• Both sides (parallel).	**Yes**
Alternative 2	Sharrow	• Full bulb-out on parking side. • Partial bulb-outs for side-street crossings. • Enhanced crossings.	• Reduced conflicts. • Stop curb extensions on parking side of street.	• 4 travel lanes.	• 6' Raised median.	• Opportunities primarily on parking side of street.	• Angled parking on one side.	**No**
Alternative 3	Cycle track	• Full bulb-out on parking side. • Partial bulb-outs for side-street crossings. • Enhanced crossings.	• Stop curb extensions on parking side of street.	• 4 travel lanes.	• 4' Painted median.	• Opportunities primarily on parking side of street.	• One side (parallel).	**No**
Alternative 4	Cycle track	• Full bulb-out on parking side. • Partial bulb-outs for side-street crossings. • Enhanced crossings.	• Stop curb extensions on parking side of street.	• 4 travel lanes.	• No median	• Opportunities primarily on parking side of street.	• One side (parallel).	**No**
Alternative 5	Cycle track	• Full bulb-out on parking side. • Partial bulb-outs for side-street crossings. • Enhanced crossings.	• Reduced conflicts. • Stop curb extensions on parking side of street.	• 4 travel lanes.	• 10' Raised median.	• Median plantings. • Opportunities primarily on parking side of street.	• One side (parallel).	**Yes**
Alternative 6	Cycle track	• Full bulb-outs. • Parklet opportunities. • Enhanced crossings.	• Reduced conflicts. • Stop curb extensions.	• 4 travel lanes.	• 10' Raised median.	• Bulb-outs. • Median plantings. • Stormwater management.	• Both sides (parallel).	**Yes, but requies redevelopment**
Alternative 7	Cycle track	• Partial bulb-outs for side-street crossings.	• Reduced conflicts.	• 4 travel lanes.	• 10' Raised median.	• Median plantings.	• No on-street parking.	**No**
Alternative 8	Bike Lane on EB side; Sharrow on WB side.	• Full bulb-out on parking side. • Partial bulb-outs for side-street crossings.	• Reduced conflicts. • Stop curb extensions on both sides of street.	• 4 travel lanes.	• 10' Raised median.	• Median plantings. • Opportunities primarily on parking side of street.	• One side (parallel).	**Yes**
Alternative 9	Cycle track	• Partial bulb-outs for side-street crossings. • Enhanced crossings.	• Reduced conflicts.	• 2 travel lanes. • 4 travel lanes during morning/evening peak hours. • Capacity issues for current traffic.	• 10' Raised median.	• Median plantings. • Other planters require existing sidewalk space.	• Both sides during non-peak hours (parallel).	**No**
Alternative 10	Shared Bus/Bike Lane	• Full bulb-outs. • Parklet opportunities. • Enhanced crossings.	• Reduced left-turn conflicts. • Increased weave/parking/right-turn/bicycle conflicts.	• 2 travel lanes. • 2 dedicated bus/bike lanes. • Capacity issues for current traffic.	• 10' Raised median.	• Parklets. • Bulb-outs. • Median plantings. • Stormwater management.	• Both sides (parallel).	**No**
Alternative 11	Cycle track	• Partial bulb-outs for side-street crossings.	• Reduced conflicts. • Stop curb extensions on both	• 2 travel lanes. • Capacity issues for current	• 10' Raised median.	• Bulb-outs. • Median plantings.	• Both sides (parallel).	**No**

Figure 35: Viable and Non-Viable Alternatives

El Cajon Boulevard Alternatives

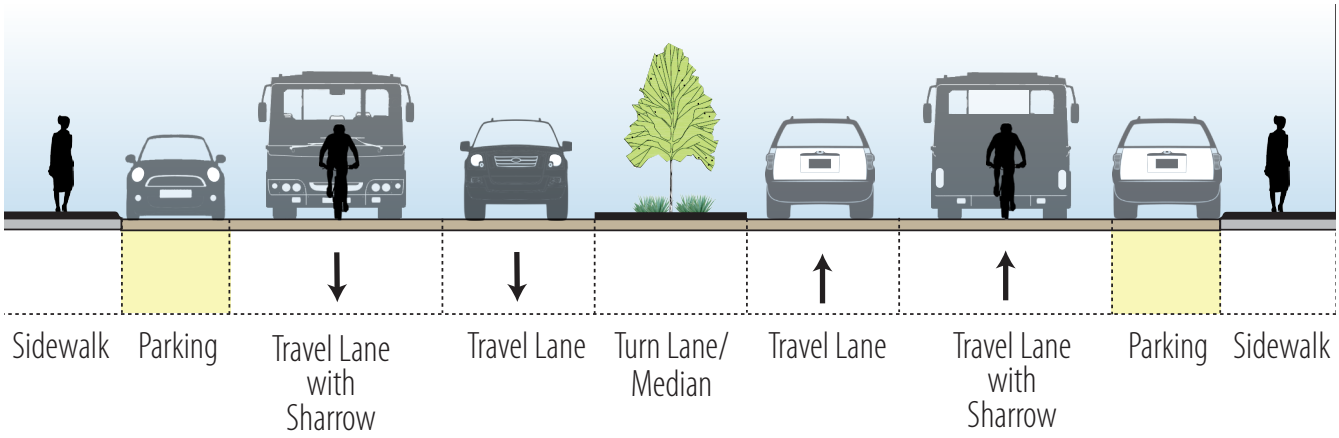
Alternative	Description	Cross-Section	Status
Alternative 1	Four travel lanes, raised median, left turn pockets at signalized intersections, sharrows for bicycles, maintains on-street parking.		RETAINED
Alternative 2	Four travel lanes, raised median, left turn pockets at signalized intersections, back in angled parking on south side of street and no parking on north side of street in Little Saigon District, sharrows for bicycles.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 3	Four travel lanes, four-foot painted median, left turns at signalized intersections, no parking on one side of street, one-way cycle track on each side of street.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 4	Four travel lanes, double yellow line, left turns at signalized intersections, no parking on one side of street, one-way cycle track on each side of street.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 5	Four travel lanes, raised median, left turn pockets at signalized intersections, no parking on one side of street and reduced sidewalk width on other side of street to provide one-way cycle tracks.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 5A	Four travel lanes, raised median, left turns at signalized intersections, no parking on one side of street.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 6	Four travel lanes, raised median, left turn pockets at signalized intersections, maintains on-street parking, additional right-of-way needed to provide cycle tracks and sidewalks outside the existing curb-to-curb area.		ALTERNATIVE DOES NOT MEET PROJECT GOALS

El Cajon Boulevard Alternatives

Alternative	Description	Cross-Section	Status
Alternative 7	Four travel lanes, raised median, left turn pockets at signalized intersections, no on-street parking on El Cajon Boulevard, one-way cycle tracks within the existing curb-to-curb area		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 8	Four travel lanes, raised median, left turn pockets at signalized intersections, no parking on one side of street, eastbound bicycle lane and westbound sharrows within the existing curb-to-curb area.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 8A	Four travel lanes, raised median, left turn pockets at signalized intersections, no parking on one side of street, bicycle lanes within the existing curb-to-curb area.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 8B	Four travel lanes, raised median, left turn pockets at signalized intersections, no parking on one side of street, bicycle lanes within the existing curb-to-curb area, narrower travel lanes.		RETAINED
Alternative 9	Four travel lanes during peak periods, two travel lanes and parking off-peaks, raised median, left turn pockets at signalized intersections, one-way cycle tracks within the existing curb-to-curb area.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 10	Two shared bus/bike lanes, two travel lanes, raised median, left turn pockets at signalized intersections, maintains on-street parking within the existing curb-to-curb area.		ALTERNATIVE DOES NOT MEET PROJECT GOALS
Alternative 11	Reduction from four to two travel lanes, raised median, left turn pockets at signalized intersections, maintains on-street parking, one-way cycle tracks within the existing curb-to-curb area.		ALTERNATIVE DOES NOT MEET PROJECT GOALS

Alternatives 1 and 8B were combined to incorporate elements from both alternatives. From Highland Avenue to Euclid Avenue, the four travel lanes and parking are maintained while including urban design and pedestrian emphasis areas. The median and bulb-outs improve crosswalks by narrowing the crossing distance along with pedestrian refuge islands, which enhance the safety for pedestrians. The proposed plan includes shared bike facilities with sharrow pavement markings Highland Avenue and Euclid Avenue (Figure 36).

Figure 36: Proposed Alternative from Highland Avenue to Euclid Avenue



The segment of El Cajon Boulevard between Euclid Avenue and 50th Street is uphill when users are traveling in the eastbound direction. A buffered bike lane is recommended in the eastbound direction for bicyclists so they may travel at their own pace while they are climbing. Due to space constraints and because the westbound direction in this segment is downhill, a shared travel lane for vehicles and bicyclists is recommended (Figure 37). The evaluation of the final alternative is presented in Table 9. The entire Corridor Plan and draft cost estimate is located in Appendix E.

Figure 37: Proposed Alternative from Euclid Avenue to 50th Street

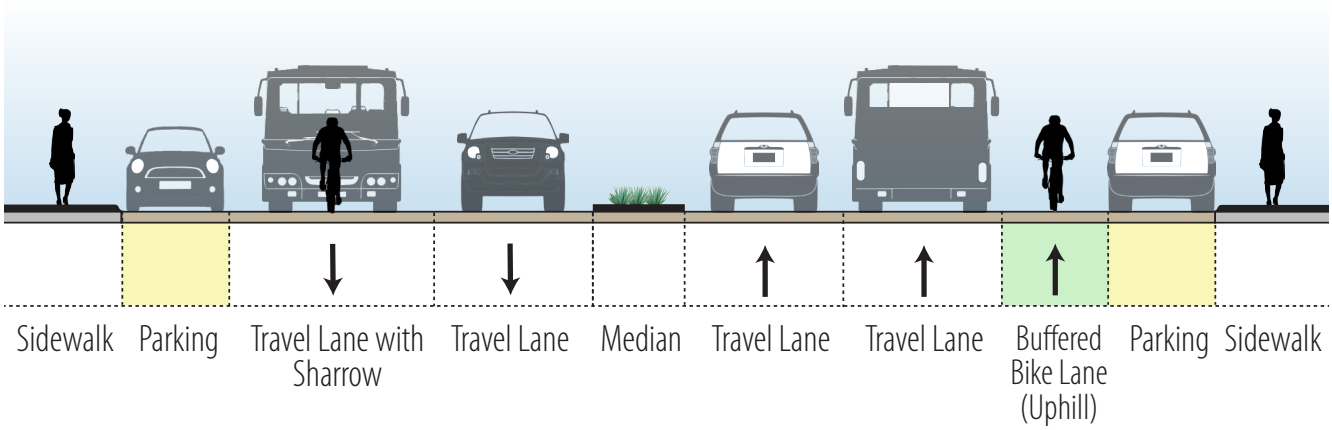


Table 9: Final Alternative Evaluation

CONDITIONS	Performance	Benefits	Drawbacks	Trade-Offs	Change From Existing
Pedestrian crossing El Cajon Boulevard (ECB)	FAIR	• Enhanced "continental" crosswalks for better visibility. •Pedestrian refuge areas reduce exposure time and improve visibility. • Bulb-outs reduce exposure time and improve visibility.	• Removes a buffer (parked cars) between pedestrians and traffic on one side of street.	• Bike lane limits bulb-outs on one side of street.	↑
Pedestrian along ECB	GOOD	• Enhanced "continental" crosswalks for better visibility. • Bulb-outs reduce exposure time and improve visibility. • Parking and bike lane provide buffer for pedestrians from traffic. • Preserves existing sidewalk / furniture area. • Median eliminates left turn conflicts at driveways alleys, and unsignalized intersections.			↑
Bike Mobility	GOOD	•5' bike lane along upill segment • 2' buffer on one side • Median eliminates left turn conflicts at driveways, alleys, and unsignalized intersections.			↑
Transit Mobility	FAIR	• Bus Rapid Transit (BRT) Route. • Active local transit route. • Parking conflicts removed from one side. • Median improves traffic operations.			↑
Vehicle Mobility	FAIR	• Parking obstructions removed from one side. • Median provides vehicle operations improvement.			↑
Safety	GOOD	• Median improves corridor safety by reducing conflict points for all modes except at signalized intersections. •Bulb-outs and refuges improve pedestrian safety. • Bike lane improves bicyclist safety in uphill direction.			↑
Urban Design Conditions	FAIR	• Curb to ROW area preserved for urban design treatments. • Center planted median. • Potential for plantings in parking areas.	• Non-parking side-of-street reduces bulb-outs and planter/parklet opportunities. • Narrower median may limit plant options..	• Curb-extension planters and bulb-outs for ECB crossings/plantings are limited on one side of street.	=
Constructability	FAIR	• Low cost restriping of roadway. • Existing utilities not impacted.	• Construct median. • Requires reworking ADA ramps and driveway aprons. • Requires signal modifications. •Signal Modifications for bicycle detection and timing.	•Requires deviation from City design standard.	N/A
Parking	POOR	• Parking is accommodated on one side of the street. • Additional angled parking to the north along Highland.	•Reduction in low use parking stalls .	• Potential for more pedestrians to need to cross ECB due to parking only on one side.	↓

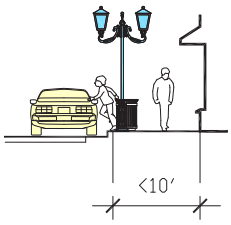
As part of the final alternative recommendations, a complete landscaping plan with urban design elements is included in Appendix F.

Recommendations include bio-retention swales, or curbside gardens, which are designed to act like a big sponge, sopping up rainwater and street runoff that floods the City's sewer systems during storms and compromises the health of local waterways. The low notched curb is designed to catch rainfall runoff, which is then filtered through layers of stones and plant roots to purify it and protect downstream ecosystems. These planted areas help mitigate the "grey" infrastructure of our urban environment. Rain gardens and bioswales cut down on the amount of pollution reaching creeks and streams. Bioswales are not vegetated on the bottom and tend to be deeper basins where soil and rock filter the water. Rain gardens on the other hand tend to be shallow and completely vegetated. Swales slope to a destination, while rain gardens do not. Curbside gardens are recommended throughout the corridor and are delineated on the complete Landscaping Plan in Appendix F.

Recommendations for plant types in curb extensions should include yellow flowering trees on side streets where possible but not in conflict with the City mandated 25' view triangle. The yellow flowering tree are to be Cassia Leptophylla or Gold Medallion Trees. Bold flowerings shrubs are to be on the side streets to display the Little Saigon colors of yellow and red. In addition, low groundcover along the Boulevard is recommended to also be a mix of yellow in red .

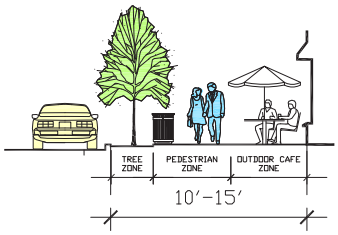
The planting in the medians, specifically at the Little Saigon monument signs should consist of low green grasses to welcome visitors to the Little Sagion District, low flowering groundcover at the ends of the median for clear visibiltiy and safety, and the maintenance strips are to be 24" wide. The planting in medians with pedestrian corsswalks should not consist of tall grass, which would obstruct visibility. In narrow width areas of the median, taller grasses and shrubs can be used if they are grouped in long clusters and the maintenance strips can be 12" wide in very narrow medians.

Urban design recommendations for areas with sidewalk less than 10' allows for the following urban elements:



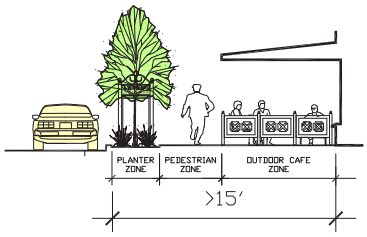
- Existing light pole painted in thematic color with banner brackets;
- Thematic bench (sitescapes 'tall grass' series bench 6' length, powdercoat finish);
- Thematic trash receptacle (sitescapes TG2-1000 -steel shell, dome lid, powdercoat finish); and
- Thematic tree planter areas with decorative grates (min. 4' x 8' size).

Urban design recommendations for areas with sidewalk between 10' and 15' allows for the following urban elements:



- Existing light pole painted in thematic color with banner brackets;
- Thematic sitescapes 'tall grass' benches & trash receptacles;
- Thematic bike racks (sitescapes 'tall grass' with powdercoat finish); and
- Thematic tree planter areas with decorative grates (min. 4' x 8' size).

Urban design recommendations for areas with sidewalk greater than 15' allows for the following urban elements:



- Existing light pole painted in thematic color with banner brackets;
- Thematic sitescapes 'tall grass' benches & trash receptacles;
- Outdoor café areas with thematic railings;
- Historic/cultural trail destination nodes with special paving & interpretive signage; and
- Vendor carts & thematic potted plants (where allowed).

Appendix A - Synchro Analysis

Appendix B - Sight Distance Evaluation

Appendix C -Auto Turn Evaluation

Appendix D - Alternative Evaluations

Appendix E - Proposed Corridor Plan & Cost Structure

Appendix F - Proposed Landscaping Plan