
Mobility Report

Midway-Pacific Highway and Old Town Communities

Draft Report

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City of San Diego

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1.0 Introduction

1.1 Study Background and Purpose

This Mobility Report summarizes the physical and operational conditions of the Midway-Pacific Highway and Old Town communities' mobility systems as part of the City of San Diego's community plan update process. The evaluation culminates with an analysis of all travel modes under the horizon year 2035 Preferred Plan conditions. The report also describes key terms and methodologies utilized for conducting the analyses presented.

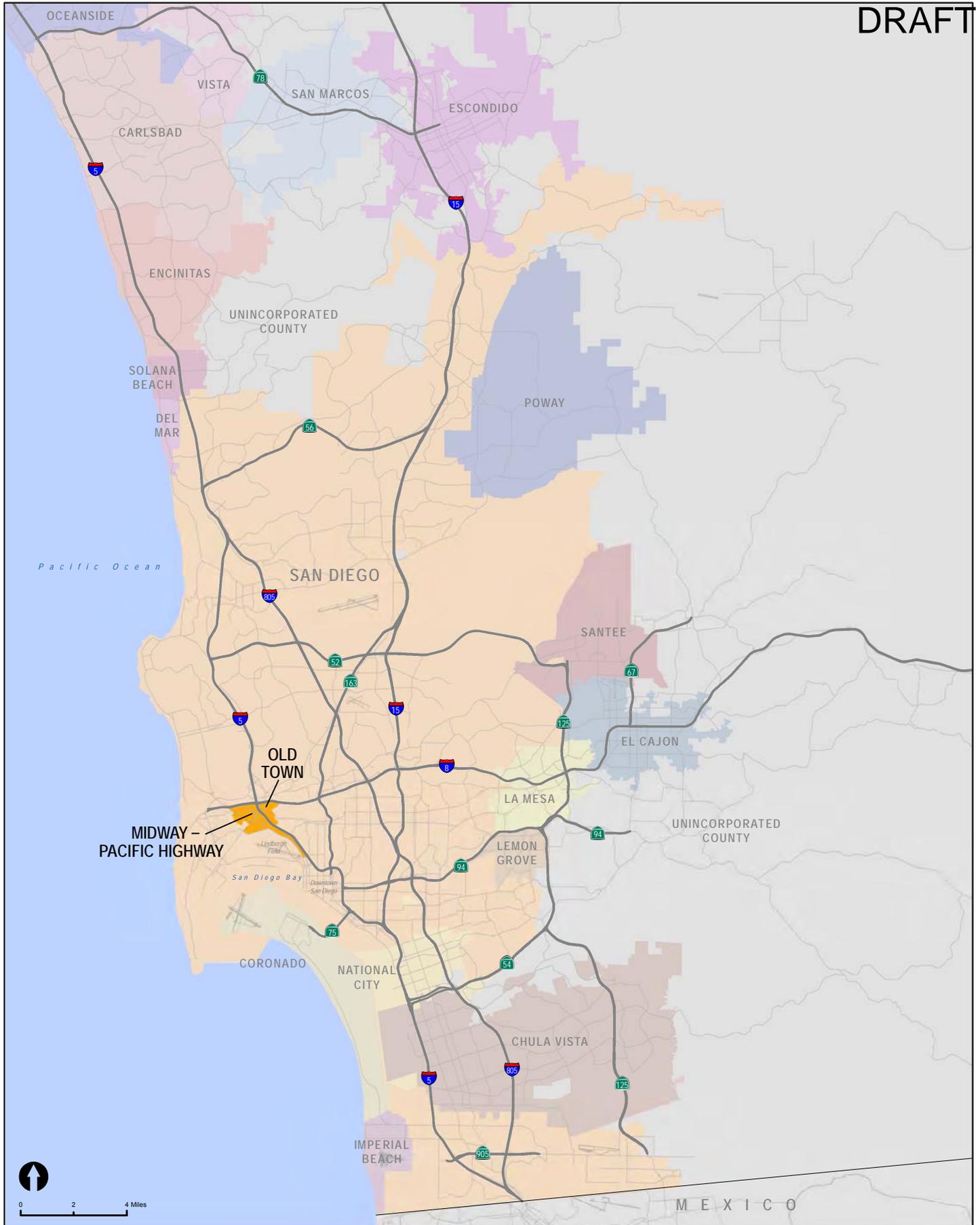
This Mobility Report is an update to the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan which was adopted by City Council in 1991, and the Old Town San Diego Community Plan, adopted in 1987.

The Preferred Plan is a strategy to address existing and forecast deficiencies related to mobility systems within the Midway-Pacific Highway and Old Town communities. The mobility networks are comprised of roadway and freeway systems, pedestrian and bicycle infrastructure, and public transit. Each of these transportation modes is discussed in the following chapters.

1.2 Study Location

The Midway-Pacific Highway and Old Town communities are located north of Downtown San Diego. The communities are both bound by Interstate 8 along the northern edge. Interstate 5 divides the communities, forming a north-south running boundary for each community. The Midway-Pacific Highway Community is bound by the Peninsula community and Barnett Avenue to west; and the Marine Corps Recruit Depot San Diego, the San Diego International Airport, and Laurel Street to the south. The Old Town Community is bound by Uptown and Mission Hills to the south and east.

Figure 1-1 displays the Midway-Pacific Highway and Old Town communities within the region.



Midway-Pacific Highway and Old Town Community Plan Update

Figure 1-1
Midway-Pacific Highway and Old Town within the Region

Midway-Pacific Highway Community

The Midway-Pacific Highway community is situated north of Downtown San Diego and between the Old Town and Peninsula communities. The community encompasses approximately 800 acres of mostly flatland and is comprised of two basic elements: the central Midway area and the narrow, linear-shaped Pacific Highway Corridor.

Central Midway has an urbanized commercial core containing numerous shopping centers and institutional facilities which cater to the commercial needs of nearby residential and visitor populations. The area is characterized by wide streets, flat topography, and a varied mixture of flat-roofed large and small commercial buildings. The Pacific Highway Corridor, between Interstate 5 and Lindbergh Field, contains some of the City's oldest industrial areas. The corridor is defined by large scale buildings and unscreened commercial parking lots in the southern portion, and a group of smaller scale, low lying industrial buildings located between Witherby Street and Washington Street in the northern portion.

There are a few multifamily residential complexes located in the western portion of the community, adjacent to the Point Loma area. The planning area is generally characterized by a variety of commercial retail activities, and wide, multi-directional traffic intersections.



Since the 1960s, the Midway area has experienced an irregular development pattern, resulting in a lack of clear visual form both in terms of orientation and community legibility. The resulting diversity in development patterns, architectural styles, setbacks, and other development criteria has contributed to a disjointed and sporadic community image, where few buildings have compatibility or any functional relationship to each other and the surrounding neighborhood. Due to the area's low land valuations, high traffic utilization and inadequate zoning and development regulation, many auto-oriented commercial uses have located throughout the industrially zoned portions of the community. Much of the commercial development, including retail oriented auto sales and services, adult entertainment, and drive-thru restaurants, now exhibit a general lack of adequate parking, landscaping, and other commercial development amenities.

Old Town

The Old Town community covers 230 acres and is bound on the north by Interstate 8 and Mission Valley, on the west by Interstate 5 and Midway, and on the south and east by the Uptown/ Mission Hills hillsides.

Old Town San Diego, considered the "birthplace" of California, is the site of the first permanent Spanish Mission and settlement in California. The first Spanish Mission and Presidio were built on a hillside overlooking what is currently known as Old Town San Diego. At the base of the hill in the 1820's, a small Mexican community of adobe buildings was formed and by 1835 had attained the status of El Pueblo de San Diego.



In 1968, the State of California Department of Parks and Recreation established Old Town State Historic Park to preserve the rich heritage that characterized San Diego during the 1821 to 1872 period. The park includes a main plaza, exhibits, museums and living history demonstrations. Due to the historical nature and attractions within the community, Old Town San Diego is currently one of the region's largest tourist attractions. Within the community's central core (San Diego Avenue & Congress Street, between Twiggs Street and Ampudia Street) there are currently more than 150 shops, several restaurants, 17 museums, and historical sites.

There is a small number of residential neighborhoods located along the eastern, western and southern boundaries of the community.

1.3 Organization of the Report

The remainder of this Mobility Report is organized into the following chapters:

- **Chapter 2** describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems.
- **Chapter 3** presents the Preferred Plan for the Midway-Pacific Highway community, including the development process, identification of existing community needs, and recommended improvements.
- **Chapter 4** presents the Preferred Plan for the Old Town community, including the development process, identification of existing community needs, and recommended improvements.
- **Chapter 5** provides an overview of the Transportation Demand Model Forecasting process utilized to project future travel patterns under implementation of the Preferred Plan.
- **Chapter 6** concludes this document with the Preferred Plan analysis results for each mode. Additionally, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM) Systems, and Parking Management are described in this chapter.

2.0 Analysis Methodology

This chapter describes the methodologies used to determine the study area and assess the pedestrian, transit, bicycle and vehicular systems within the Midway-Pacific Highway and Old Town communities.

2.1 Selection of the Study Area

This section describes the process used to identify roadway segments and intersections for analysis.

2.1.1 Roadway Segments

Roadway segments were evaluated if one or more of the following circumstances applied:

- The roadway segment is an existing or planned circulation element roadway as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The roadway segment provides freeway access to/from the Midway-Pacific Highway or Old Town communities.
- The roadway segment is located outside of either study community, however, it may influence or impact the flow of transportation within either of the communities.

Based on the criteria listed above, Table 2.1 displays the roadway segments selected for analysis.

Table 2.1 Study Area Roadway Segments

| ID | Roadway | From | To |
|-------------------------------|------------------------------|--------------------------------------|--------------|
| <i>North-South</i> | | | |
| Midway Pacific Highway | | | |
| 1 | Lytton Street / Barnett Ave | Rosecrans St | Midway Dr |
| 2 | W. Mission Bay Dr | I-8 WB Ramps | I-8 EB Ramps |
| 3 | Midway Dr | W. Point Loma Blvd/Sports Arena Blvd | Kemper St |
| 4 | | Kemper St | East Dr |
| 5 | | East Dr | Rosecrans St |
| 6 | | Rosecrans St | Barnett Ave |
| 7 | | Sports Arena Blvd | I-8 EB Ramps |
| 8 | W. Point Loma Blvd/Midway Dr | | Kemper St |
| 9 | Kemper St | | East Dr |
| 10 | East Dr | | Rosecrans St |
| 11 | Rosecrans St | | Pacific Hwy |
| 12 | Kurtz St | Hancock St | Rosecrans St |

Table 2.1 Study Area Roadway Segments

| ID | Roadway | From | To |
|-------------------------------|---------------------|---------------------|---------------------------|
| 13 | Kurtz St | Rosecrans St | Pacific Hwy |
| 14 | Hancock St | Midway Dr | Sports Arena Blvd |
| 15 | | Sports Arena Blvd | Kurtz St |
| 16 | | Kurtz St | Camino Del Rio West |
| 17 | | Camino Del Rio West | Rosecrans St |
| 18 | | Old Town Ave | Witherby St |
| 19 | | Witherby St | Washington St |
| 20 | | Kettner Blvd | Washington St |
| 21 | Vine St | | Sassafras St |
| 22 | Sassafras St | | Laurel St |
| 23 | Pacific Hwy | Sea World Dr | Taylor St |
| 24 | | Taylor St | Kurtz St |
| 25 | | Kurtz St | Sports Arena Blvd |
| 26 | | Sports Arena Blvd | Barnett Ave |
| 27 | | Barnett Ave | Washington St |
| 28 | | Washington St | Sassafras St |
| 29 | | Sassafras St | Laurel St |
| Old Town | | | |
| 30 | Congress St | Taylor St | Twiggs St |
| 31 | | Twiggs St | Harney St |
| 32 | | Harney St | San Diego Ave/ Ampudia St |
| 33 | San Diego Ave | Twiggs St | Harney St |
| 34 | | Conde St | Arista Ave |
| 35 | | Ampudia St | Old Town Ave |
| 36 | | Old Town Ave | Hortensia St |
| 37 | Juan St | Taylor St | Twiggs St |
| 38 | | Twiggs St | Harney St |
| 39 | | Harney St | San Juan Rd |
| <i>East-West</i> | | | |
| Midway Pacific Highway | | | |
| 40 | Channel Wy | W. Mission Bay Dr | Hancock St |
| 41 | Kemper St | Kenyon St | Midway Dr |
| 42 | | Midway Dr | Sports Arena Blvd |
| 43 | | Sports Arena Blvd | Hancock St |
| 44 | Frontier St | Sports Arena Blvd | Kurtz St |
| 45 | Greenwood St | Sports Arena Blvd | Kurtz St |
| 46 | Camino Del Rio West | Rosecrans St | I-5/I-8 Ramps |
| 47 | Rosecrans St | Lytton St | Midway Dr |
| 48 | | Midway Dr | Sports Arena Blvd |

Table 2.1 Study Area Roadway Segments

| ID | Roadway | From | To |
|-----------------|------------------------|---------------------------|-----------------------|
| 49 | Rosecrans St | Sports Arena Blvd | Pacific Hwy/Taylor St |
| 50 | Charles Lindbergh Pkwy | Midway Dr | Sports Arena Blvd |
| 51 | | Sports Arena Blvd | Kurtz Street |
| 52 | Dutch Flats Pkwy | Barnett Avenue | Midway Dr |
| 53 | | Midway Dr | Sports Arena Blvd |
| 54 | Barnett Ave | Midway Dr | Pacific Hwy |
| 55 | Washington St | Frontage Rd | Pacific St |
| 56 | | Pacific St | Hancock St |
| 57 | Vine St | California St | Kettner Blvd |
| 58 | Sassafras St | Pacific Hwy | Kettner Blvd |
| 59 | Laurel St | Pacific Hwy | Kettner Blvd |
| Old Town | | | |
| 60 | Taylor St | Pacific Hwy/ Rosecrans St | Congress St |
| 61 | | Congress St | Juan St |
| 62 | | Juan St | Morena Blvd |
| 63 | | Morena Blvd | I-8 EB Ramps |
| 64 | Twiggs St | Congress St | San Diego Ave |
| 65 | | San Diego Ave | Juan St |
| 66 | Harney St | Congress St | San Diego Ave |
| 67 | | San Diego Ave | Juan St |
| 68 | Old Town Ave | Hancock St | Moore St |
| 69 | | Moore St | San Diego Ave |

Source: Chen Ryan Associates (2016)

2.1.2 Intersections

Intersections were evaluated if one or more of the following circumstances applied:

- The intersection is comprised of a circulation element roadway intersecting with another circulation element roadway. This includes existing and future/planned circulation element roadways as identified in the Midway-Pacific Highway Corridor Community Plan and Local Coastal Program Land Use Plan (1991), or the Old Town San Diego Community Plan (1987).
- The intersection is at a freeway ramp interchange located within the Midway-Pacific Highway or Old Town communities or is a major gateway to either community.
- The intersection is a major intersection located outside of either community, however, it may influence or impact the flow of transportation within the communities.
- The intersection meets criteria used in previous studies, whereby both streets meet one of the following:

- 4 lanes or greater
- 3 lanes and carries over 15,000 ADT
- 2 lanes and carries over 10,000 ADT
- Intersections at freeway access ramps.
- Significant intersections where travel time analysis is performed.

A total of 59 intersections were identified based on the criteria listed above, which include 11 intersections located outside the study communities. These intersections were added to the study area because of their proximity to the communities, and the likelihood that changes within the communities could directly affect traffic in/out of the communities. The 59 intersections include the following:

Midway-Pacific Highway

1. Lytton Street and Rosecrans Street
2. W. Mission Bay Drive and I-8 WB Off-Ramp
3. Sports Arena Boulevard and Channel Way
4. Midway Drive and Sports Arena/W. Point Loma Boulevard
5. Midway Drive and Kemper Street
6. Midway Drive and East Drive
7. Midway Drive and Rosecrans Street
8. Midway Drive and Charles Lindbergh Parkway
9. Midway Drive and Enterprise Street
10. Midway Drive and Barnett Avenue
11. Sports Arena Boulevard and Hancock Street
12. Sports Arena Boulevard and Kemper Street
13. Sports Arena Boulevard and Sports Arena Driveway
14. Sports Arena Boulevard and East Drive
15. Sports Arena Boulevard and Rosecrans Street
16. Sports Arena Boulevard and Charles Lindbergh Parkway
17. Sports Arena Boulevard and Pacific Highway
18. Kurtz Street and Hancock Street
19. Kurtz Street and Camino Del Rio West
20. Kurtz Street and Rosecrans Street
21. Kurtz Street and Pacific Highway
22. Hancock Street and Channel Way
23. Hancock Street and Camino Del Rio West
24. Hancock Street and Rosecrans Street
25. Hancock Street and Old Town Avenue
26. Hancock Street and Witherby Street
27. Hancock Street and Washington Street
28. Kettner Boulevard and Vine Street

29. Kettner Boulevard and Sassafras Street
30. Kettner Boulevard and West Laurel Street
31. Pacific Highway and Barnett Avenue
32. Pacific Highway and Washington Street @ Frontage Road
33. Pacific Highway and Washington Street
34. Pacific Highway and Sassafras Street
35. Pacific Highway and West Laurel Street

Old Town

36. Pacific Highway and Taylor Street
37. Moore Street and Old Town Avenue
38. Congress Street and Taylor Street
39. Congress Street and Twiggs Street
40. Congress Street and Harney Street
41. Congress Street and San Diego Avenue/Ampudia Street
42. San Diego Avenue and Twiggs Street
43. San Diego Avenue and Harney Street
44. San Diego Avenue and Old Town Avenue
45. Juan Street and Taylor Street
46. Juan Street and Twiggs Street
47. Juan Street and Harney Street
48. Morena Boulevard and Taylor Street

Intersections Outside of Study Communities

49. Hugo Street/N Harbor Drive and Rosecrans Street
50. Lowell Street/Nimitz Boulevard and Rosecrans Street
51. Kettner Boulevard and W Hawthorn Street
52. Kettner Boulevard and W Grape Street
53. Laning Road and Rosecrans Street
54. Pacific Highway and Sea World Drive
55. Pacific Highway and W Hawthorn Street
56. Pacific Highway and W Grape Street
57. Friars Road and Sea World Drive
58. I-5 SB Ramps and Sea World Drive
59. I-5 NB Ramps and Sea World Drive

Figure 2-1 displays the location of the 59 study intersections. As shown, this includes the 11 intersections located outside of the study communities.

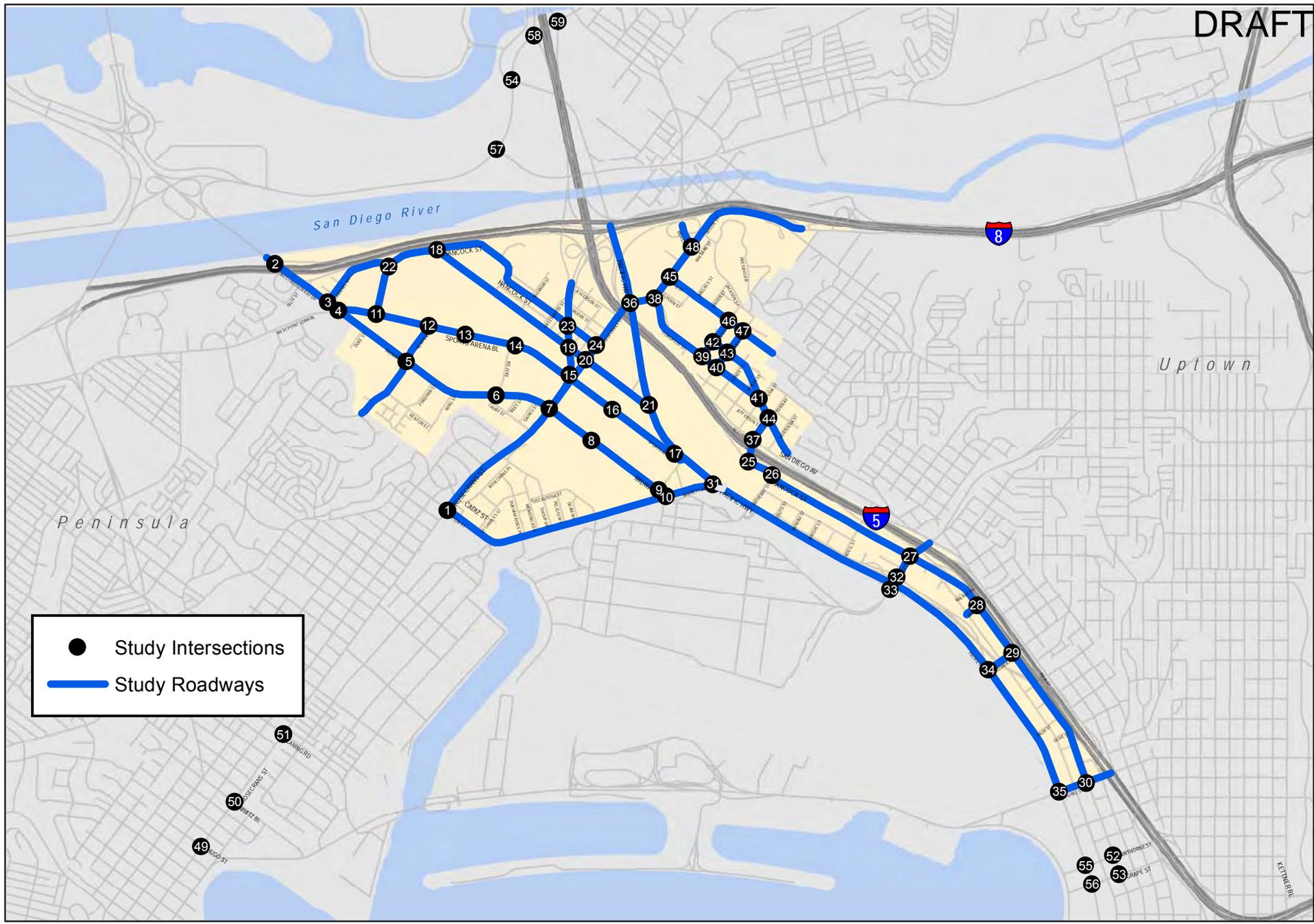


Figure 2-1
Project Study Area

2.2 Vehicular Analysis

Analysis of the vehicular systems – roadways, intersections, and freeways – were prepared for this report in accordance with the City of San Diego and SANTEC/ITE Guidelines. Vehicular level of service (LOS) is a quantitative measure that represents the quality of service – or how well a transportation facility operates – as experienced by vehicular drivers. These conditions are generally described in terms of factors such as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver’s perspective, while LOS F represents the worst. **Table 2.2** describes generalized definitions of vehicular LOS A through F as identified by the Highway Capacity Manual (2000).

Table 2.2 Vehicular Level of Service Definitions

| LOS | Definition |
|-----|--|
| A | Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed. |
| B | Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed. |
| C | Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed. |
| D | Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed. |
| E | Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed. |
| F | Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0. |

Source: Highway Capacity Manual (2000)

2.2.1 Roadway Segment

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes.

Table 2.3 presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report. These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment operating at LOS

E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2.3 City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

| Roadway Functional Classification | Level of Service | | | | |
|---|------------------|----------|----------|-----------------|----------|
| | A | B | C | D | E |
| Expressway (6-lane) | < 30,000 | < 42,000 | < 60,000 | < 70,000 | < 80,000 |
| 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 w/ center left-turn lane) | < 10,000 | < 14,000 | < 20,000 | < 25,000 | < 30,000 |
| Collector (3-lane w/ center left-turn lane) | < 7,500 | < 10,500 | < 15,000 | < 19,000 | < 22,500 |
| Collector (4-lane w/o center lane) | < 5,000 | < 7,000 | < 10,000 | < 13,000 | < 15,000 |
| Collector (2-lane w/ center left-turn lane) | | | | | |
| Collector (2-lane no fronting property) | < 4,000 | < 5,500 | < 7,500 | < 9,000 | < 10,000 |
| Collector (2-lane w/ commercial fronting) | < 2,500 | < 3,500 | < 5,000 | < 6,500 | < 8,000 |
| Collector (2-lane multi-family fronting) | | | | | |
| Sub-Collector (2-lane single-family) | - | - | < 2,200 | - | - |

Source: City of San Diego Traffic Impact Study Manual (1998)

Note: Bold numbers indicate the ADT thresholds for acceptable LOS.

2.2.2 Peak Hour Intersection

This section presents the methodologies used to perform peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- Pedestrian Calls per Hour: Based on existing pedestrian counts.
- Heavy Vehicle Factor: A 2% heavy vehicle factor was assumed for all intersections within the study area.
- Peak Hour Factor: Based on existing peak hour counts.
- Signal Timing: Based on existing signal timing plans (as of November 2012).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in 2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (sec/veh). The 2000 HCM methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy

vehicles), and shared lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in **Table 2.4**. The computerized analysis of intersection operations was performed utilizing the Synchro 8.0 (2000 HCM methodology) traffic analysis software (by Trafficware, 2011).

Table 2.4 Signalized intersection LOS – HCM Operational Analysis Method

| Average Control Delay Per Vehicle (seconds) | Level of Service (LOS) Characteristics |
|---|---|
| ≤10.0 | <i>LOS A</i> occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping. |
| 10.1 – 20.0 | <i>LOS B</i> occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with <i>LOS A</i> . |
| 20.1 – 35.0 | <i>LOS C</i> occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping. |
| 35.1 – 55.0 | <i>LOS D</i> occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable. |
| 55.1 – 80.0 | <i>LOS E</i> occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent. |
| >80.0 | <i>LOS F</i> occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue. |

Source: Highway Capacity Manual, Transportation Research Board Special Report 209 (2000)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *2000 HCM* unsignalized intersection analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. **Table 2.5** summarizes the level of service criteria for unsignalized intersections.

Table 2.5 Level of Service Criteria for Stop Controlled Unsignalized Intersections

| Average Control Delay (sec/veh) | Level of Service |
|---------------------------------|------------------|
| ≤10.0 | A |
| 10.1 – 15.0 | B |
| 15.1 – 25.0 | C |
| 25.1 – 35.0 | D |
| 35.1 – 50.0 | E |
| >50.0 | F |

Source: Highway Capacity Manual (2000)

The City of San Diego considers LOS D or better during the AM and PM peak hours to be an acceptable intersection level of service.

2.2.3 Freeway

The freeway level of service analysis followed procedures developed by Caltrans District 11. The procedure involves estimating a peak hour volume to capacity ratio (V/C). Peak hour volumes are estimated from the application of design hour (“K”), directional (“D”), and truck (“T”) factors to average daily traffic (ADT) volumes). The base capacities were assumed to be 2,350 passenger-cars per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane. A 0.95 peak hour factor (PHF) was utilized for this analysis. The resulting V/C ratio was then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in **Table 2.6**. The corresponding level of service represents an approximation of anticipated future freeway operating conditions in the peak direction of travel during the peak hour. LOS D or better was used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

Table 2.6 Caltrans District 11 Freeway Segment Level of Service Definitions

| LOS | V/C | Congestion/Delay | Traffic Description |
|---|-----------|--------------------------------------|--|
| <i>Used for freeways, expressways and conventional highways</i> | | | |
| "A" | <0.41 | None | Free flow. |
| "B" | 0.42-0.62 | None | Free to stable flow, light to moderate volumes. |
| "C" | 0.63-0.79 | None to minimal | Stable flow, moderate volumes, freedom to maneuver noticeably restricted. |
| "D" | 0.80-0.92 | Minimal to substantial | Approaches unstable flow, heavy volumes, very limited freedom to maneuver. |
| "E" | 0.93-1.00 | Significant | Extremely unstable flow, maneuverability and psychological comfort extremely poor. |
| <i>Used for conventional highways</i> | | | |
| "F" | >1.00 | Considerable | Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle. |
| <i>Used for freeways and expressways</i> | | | |
| "F0" | 1.01–1.25 | Considerable (0-1 hour delay) | Forced flow, heavy congestion, long queues form behind breakdown points, stop and go. |
| "F1" | 1.26-1.35 | Severe (1-2 hour delay) | Very heavy congestion, very long queues. |
| "F2" | 1.36-1.45 | Very severe (2-3 hour delay) | Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods. |
| "F3" | >1.46 | Extremely severe (3+ hours of delay) | Gridlock. |

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

2.2.4 Ramp Metering Analysis

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving freeway main lane traffic operations and flow. Freeway ramp meter analyses estimate peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

Meter rates, which represent the amount of vehicles permitted through the signal, onto the ramp and freeway, were obtained from Caltrans for use in the analysis. Ramp metering analyses to calculate delays at study area freeway ramps were conducted following the procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

2.3 Multimodal Analysis

Recent planning efforts and legislative actions have redefined the way community transportation planning is carried out. An important unifying theme is to achieve a more balanced, multimodal transportation system that allows people of varying physical and economic conditions to accomplish daily activities without making a single-occupant vehicle trip. A balanced system will address many complex transportation issues such as traffic congestion, greenhouse gas emissions, community health, and economic vitality of a community.

Multimodal analyses are gaining attention among local and regional jurisdictions as one method of supporting progress toward these issues. This section describes the pedestrian, bicycle, and transit analysis methodologies used in this report.

2.3.1 Pedestrian Assessment

Three analyses were utilized to assess overall pedestrian mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Pedestrian Connectivity Ratio

A pedestrian travelshed analysis was used to assess the level of connectivity provided from each Traffic Analysis Zone (TAZ) with pedestrian friendly land uses (residential, commercial, office or recreational). A 0.5 mile pedestrian network buffer was drawn around each TAZ within the community containing pedestrian friendly land uses. That area was then compared to the area of a 0.5 mile as-the-crow-flies buffer (502.7 acres) to develop a Pedestrian Connectivity Ratio for the intersection. The higher the Pedestrian Connectivity Ratio, the better the overall walking connectivity from the TAZ.

Pedestrian Environment Quality Evaluation (PEQE)

The quality of all roadway segments, intersections, and mid-block crossings within the Midway-Pacific Highway and Old Town communities were evaluated under Preferred Plan conditions using the Pedestrian Environmental Quality Evaluation (PEQE) tool. **Table 2.7** outlines the evaluation system used to develop the PEQE scoring metric.

Table 2.7 Pedestrian Environment Quality Ranking System

| Facility Type | Measure | Description/Feature | Scoring |
|---|-----------------------|--|--|
| Segment <i>(between two intersections)</i> | Horizontal Buffer | Between the edge of auto travel way and the edge of clear pedestrian zone | 0 point: < 6 feet 1 point: 6 – 14 feet 2 points: > 14 feet |
| | Lighting | -- | 0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement |
| | Clear Pedestrian Zone | 5' minimum | 0 point: has obstructions 2 points: no obstructions |
| | Posted Speed Limit | -- | 0 point: > 40 mph 1 point: 30 – 40 mph 2 points: < 30 mph |
| | Maximum Points | | |
| Intersection | Physical Feature | <ul style="list-style-type: none"> Enhanced/High Visibility Crosswalk Raised Crosswalk/Speed Table Advanced Stop Bar Bulb out/Curb Extension | 0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing |
| | Operational Feature | <ul style="list-style-type: none"> Pedestrian Countdown Signal Pedestrian Lead Interval No-Turn On Red Sign/Signal Additional Pedestrian Signage | 0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing |
| Intersection <i>(Continued)</i> | ADA Curb Ramp | -- | 0 point: below standard/requirement 2 points: meet standard/requirement |
| | Traffic Control | -- | 0 point: No control 1 point: Stop sign controlled 2 points: Signal/Roundabout/Traffic Circle |
| | Maximum Points | | |
| Mid-block Crossing | Visibility | -- | 0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk |
| | Crossing Distance | -- | 0 point: no treatment 2 points: with bulb out or pedestrian refuge |
| | ADA Curb Ramp | -- | 0 point: below standard/requirement 2 points: meet standard/requirement |
| | Traffic Control | -- | 0 point: No control 1 point: Flashing Beacon 2 points: Signal/Pedestrian Hybrid Beacon |
| | Maximum Points | | |
| Final PEQE Scoring: | | | |
| Low: < 4 points Medium: 4-6 points High: > 7 points | | | |

Combined Pedestrian Network Connectivity and Quality Assessment

This evaluation involves assessing the connectivity and quality of the walking environment within each community. Pedestrian network connectivity and quality is assessed using a combination of the pedestrian travelshed and quality assessment previously described. The following steps outline the evaluation process used:

- a. *Total Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, regardless of PEQE score.
- b. *Quality Walking Distance* – a 0.5 mile pedestrian network buffer is drawn around each study intersection, using only pedestrian facilities with a PEQE ranking of Medium or High (including roadway links and intersections, and not including mid-block crossings). PEQE scores on each side of the roadway segment are added together and assigned a quality rating using the following scale (Low: 0-7, Medium: 8-12, High: 13+), to get a single quality measure for the roadway segment. Segments with a “High” rating are considered quality segments.
- c. *Quality Walk Ratio* – The ratio of high quality connectivity to overall connectivity along all pedestrian facilities is determined using the following equation:

$$\text{Quality Walk Ratio} = \frac{\text{Quality Walking Distance}}{\text{Total Walking Distance (Existing Conditions)}}$$

2.3.2 Bicycle Assessment

Three analyses were utilized to assess overall bicycle mobility: 1) network connectivity; 2) facility quality; and 3) combined network connectivity and quality.

Bicycle Connectivity Ratio – Travelshed Analysis

A bicycle travelshed analysis was used to assess the level of connectivity provided from each study intersection. A 1.0 mile bicycle network buffer (using all bikeable roadways plus multi-use paths) is drawn around each intersection. That area is then compared to the area of a 1.0 mile as-the-crow-flies buffer (2,010.6 acres) to develop a Bicycle Connectivity Ratio for the intersection. The higher the Connectivity Ratio, the better the overall connectivity from the intersection.

Bicycle Facility Quality

The bicycle environment is assessed using the Bicycle Level of Traffic Stress (LTS) methodology, 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 lanes and unsignalized crossings. LTS scores range from 1 (lowest stress) to 4 (highest stress).

Table 2.8 displays the four LTS categories with descriptions of traffic stress experienced by the cyclist and the cycling conditions associated with each category.

Combined Bicycle Network Connectivity and Quality Assessment

This assessment quantifies the connectivity of low stress bicycle facilities (LTS score 1 or 2) between TAZs within the study communities. This measure results in each TAZ being assigned a percentage reflecting the number of total TAZ reachable via low stress bicycle facilities within the study area.

Table 2.8 Level of Traffic Stress Classifications and Descriptions

| LTS Category | LTS Description | Cycling Conditions Fitting LTS Category |
|--------------|---|---|
| LTS 1 | Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections | <ul style="list-style-type: none"> • Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction • A shared roadway where cyclists only interact with the occasional motor vehicle with a low speed differential • Ample space for cyclist when alongside a parking lane • Intersections are easy to approach and cross |
| LTS 2 | Presenting little traffic stress but demanding more attention than might be expected from children | <ul style="list-style-type: none"> • Facility that is physically separated from traffic or an exclusive cycling zone next to a well-connected traffic stream with adequate clearance from parking lanes • A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low speed differential • Unambiguous priority to the cyclist where cars must cross bike lanes (e.g. at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds • Crossings not difficult for most adults |
| LTS 3 | Presenting enough traffic stress to deter riders not comfortable with sharing the roadway with traffic | <ul style="list-style-type: none"> • An exclusive cycling zone (lane) next to moderate-speed vehicular traffic • A shared roadway that is not multilane and has moderately low automobile travel speeds • Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but area still considered acceptably safe to most adult pedestrians |
| LTS 4 | Presenting enough traffic stress to deter all but the Strong & Fearless cycling demographic (estimated at <1% of the population) | <ul style="list-style-type: none"> • An exclusive cycling zone (lane) next to high-speed and multi-lane vehicular traffic • A shared roadway with multiple lanes per direction with high traffic speeds • Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds |

Source: Mekuria, et al. (2012)

2.3.3 Transit Assessment

Two performance measures were used to analyze transit conditions, including station quality and arterial speed.

Station Quality – Presence of Amenities

Each transit station/stop was reviewed for the presence of the following amenities:

- Shelters
- Benches
- Trash Receptacles
- Station Signs
- Maps/Wayfinding
- Lighting
- ADA Compliancy

Table 2.9 displays the standard amenities that should be provided at transit stops/stations based on daily passenger boardings (across all routes).

Table 2.9 Transit Amenity Standards by Ridership Levels

| Amenity | Daily Passenger Boardings by Stop/Station | | | | |
|--------------------|---|----------|-----------|-----------|-------|
| | < 50 | 50 – 100 | 101 – 200 | 201 – 500 | > 500 |
| Sign and Pole | X | X | X | X | |
| Built-in Sign | | | | | X |
| Expanded Sidewalk | | | X | X | X |
| Bench | | X | X | X | X |
| Shelter | | | X | X | X |
| Route Designations | X | X | X | X | X |
| Time Table | | | | X | X |
| Route Map | | | X | X | X |
| System Map | | | | | X |
| Trash Receptacle | | | | X | X |
| Lighting | | | X | X | X |
| ADA Compliant | X | X | X | X | X |

Source: MTS Design for Transit (1993)

Arterial Speed

On-time bus performance can be directly impacted by vehicular traffic congestion along roadways servicing bus routes. An HCM roadway arterial speed analysis was used to identify locations in which on-time performance is currently or may be impacted under future conditions by vehicular traffic congestion.

Arterial Level of Service (LOS) is based on the average peak hour travel speeds along a roadway segment. The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay. Average speed is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, factors such as

inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS.

Table 2.10 displays the LOS thresholds used for the arterial analysis. Arterial speed analyses should be performed utilizing the methodologies in the version of the Highway Capacity Manual (HCM) that is currently accepted by the City of San Diego

Table 2.10 Arterial Analysis Level of Service Thresholds

| Arterial Class | I | II | III |
|----------------------------------|-----------------------------|-----------|------------|
| Range of Free Flow Speed (mph) | 45 to 35 | 35 to 30 | 30 to 25 |
| Typical Free Flow Speed (mph) | 40 mph | 33 mph | 27 mph |
| Level of Service Analysis | Average Travel Speed | | |
| A | 35 | 30 | 25 |
| B | 28 | 24 | 19 |
| C | 22 | 18 | 13 |
| D | 17 | 14 | 9 |
| E | 13 | 10 | 7 |
| F | < 13 | < 10 | < 7 |

Source: Highway Capacity Manual (YEAR?)

3.0 Midway-Pacific Highway Preferred Plan

This section documents the mobility related issues and needs of the Midway-Pacific Highway community and the process used to identify those issues. This section also outlines the mobility improvements recommended under buildout of Preferred Plan conditions and the process used to develop these improvements.

3.1 Development of the Preferred Plan

3.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Midway-Pacific Highway community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements incorporated into the Preferred Plan.

3.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs, identified in the Existing Conditions Report, against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- North Bay Urban Greening Plan (On-Going)
- I-8 Corridor Study (On-Going)
- San Diego Forward, The Regional Plan (October 2015)
- City of San Diego Bicycle Master Plan (December 2013)
- City of San Diego Pedestrian Master Plan – Phase 4 (December 2013)
- Rosecrans Corridor Mobility Study (February 2010)
- Destination Lindbergh Technical Report: San Diego International Airport (November 2008)
- San Diego International Airport Master Plan (November 2008)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed for the issues and needs, identified in the Existing Conditions Report, which were not addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

3.2 Street and Freeway System

3.2.1 Identified Street and Freeway Needs

There is constrained regional access to/from the Midway-Pacific Highway Community and to adjacent communities. A significant amount of regional traffic traverses the local roadway system within the community since there are limited regional access points, missing freeway-to-freeway connectors between I-8 and I-5, as well as major employment centers and trip generators within and adjacent to the community. **Figure 3-1** displays regional access issues in the Midway-Pacific Highway community.

Constrained regional access, large trip generators, and limited circulation created by large blocks within and adjacent to the community, result in highly concentrated traffic volumes along study roadways providing freeway access. This concentration of traffic volumes creates congestion, low traffic speeds and delays on both the Rosecrans Street and Camino Del Rio West. **Figure 3-2** displays the location of identified issues/needs within the Midway-Pacific Highway community.

3.2.2 Street and Freeway Improvements

A list of Preferred Plan proposed roadway improvements, new roadways, intersection improvements, new intersections, and freeway improvements are presented throughout this section. These improvements are predominantly based on the future year traffic volumes that are projected under buildout of the Preferred Plan, as displayed in Figure 5-1. Full analysis of all Preferred Plan roadways is provided in Chapter 6.

Roadways

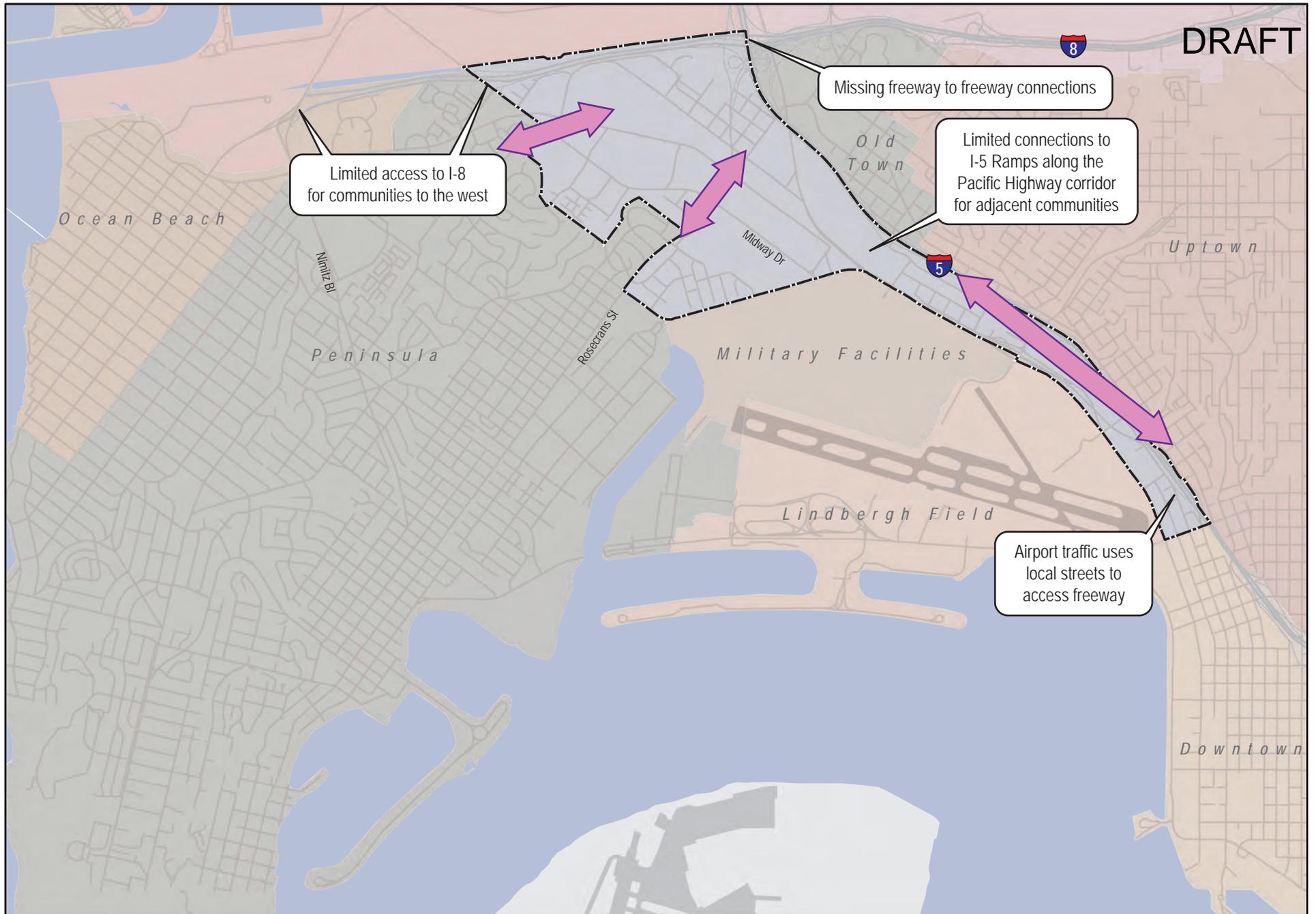
- *Lytton Street/Barnett Avenue, between Rosecrans Street and Midway Drive* – Implement a raised median along these portions of Lytton Street / Barnett Avenue. This will improve Lytton Street to a four-lane major configuration.
- *Sports Arena Boulevard, between West Point Loma Boulevard and Rosecrans Street* – Improve this section of Sports Arena Boulevard to a six-lane prime arterial.
- *Sports Arena Boulevard, between Rosecrans Street and Pacific Highway* – Reconstruct this section of Sports Arena Boulevard from a sub-collector to a two-lane collector with a continuous left-turn lane.
- *Kurtz Street, between Rosecrans Street and Pacific Highway* – Restripe this section of Kurtz Street from a two-lane collector to a four-lane collector.
- *Rosecrans Street, between Lytton Street and Sports Arena Boulevard* – Improve this section of Rosecrans Street from a six-lane major to a six-lane prime arterial.
- *Rosecrans Street, between Sports Arena Boulevard and Taylor Street* – Construct a landscaped median along this section of Rosecrans Street. This will improve this section of Rosecrans Street to a four-lane major configuration.

- *Hancock Street, between Old Town Avenue and Witherby Street* – Widen this section of Hancock Street from a two-lane collector to a four-lane collector.
- *Barnett Avenue, between Midway Drive and Pacific Highway* – Widen this section of Barnette Avenue from a six-lane major to a six-lane prime.
- *W. Mission Bay Drive, between I-8 WB Ramps and I-8 EB Ramps* – Widen this section of W. Mission Bay Drive from a five-lane prime to a six-lane prime.
- *Pacific Highway, between Taylor Street and Sassafras Street* – Downgrade this section of Pacific Highway to a six-lane major.

New Roadways

To provide better east/west connectivity throughout the Midway-Pacific Highway community and provide additional access to potential new developments within the existing “super blocks,” the Preferred Plan proposes the following new roadways segments:

1. *Hancock Street Extension* – Hancock Street will be extended between Midway Drive and Sports Arena Boulevard. The Hancock Street extension will be constructed as a two-lane collector with a continuous left-turn lane. This extension should be provided as a bicycle and pedestrian connection at a minimum, if a two-lane collector with a continuous left-turn lane is deemed infeasible.
2. *Kemper Street Extension* – Kemper Street will be extended between Sports Arena Boulevard and Kurtz Street, connecting as the southwest leg of the Kurtz Street / Hancock Street intersection. The Kemper Street extension will be constructed as a two-lane collector with a continuous left-turn lane.
3. *Frontier Street* – Frontier Street will be a new roadway connecting between Sports Arena Boulevard and Kurtz Street. Frontier Street will be located between the new Kemper Street Extension and the Greenwood Street extension. Frontier Street will be constructed as a two-lane collector with a continuous left-turn lane.
4. *Greenwood Street Extension* – Greenwood Street will be extended between Kurtz Street and Sports Arena Boulevard. Greenwood Street between Sports Arena Boulevard and Midway Drive will follow the alignment of the existing East Drive private street. Greenwood Street will be constructed as a two-lane collector.
5. *Charles Lindbergh Parkway* – Charles Lindbergh Parkway will be a new street connecting between Kurtz Street and Midway Drive. Charles Lindbergh Parkway will be located halfway between Rosecrans Street and the new Dutch Flats Parkway. Charles Lindbergh Parkway will be constructed as a two-lane collector with a continuous left-turn lane.
6. *Dutch Flats Parkway* – Dutch Flats Parkway will be a new roadway connecting between Sports Arena Boulevard and Barnett Avenue. Dutch Flats Parkway will be located between the new Charles Lindbergh Parkway and Enterprise Street. Dutch Flats Parkway will be constructed as a two-lane collector with a continuous left-turn lane.



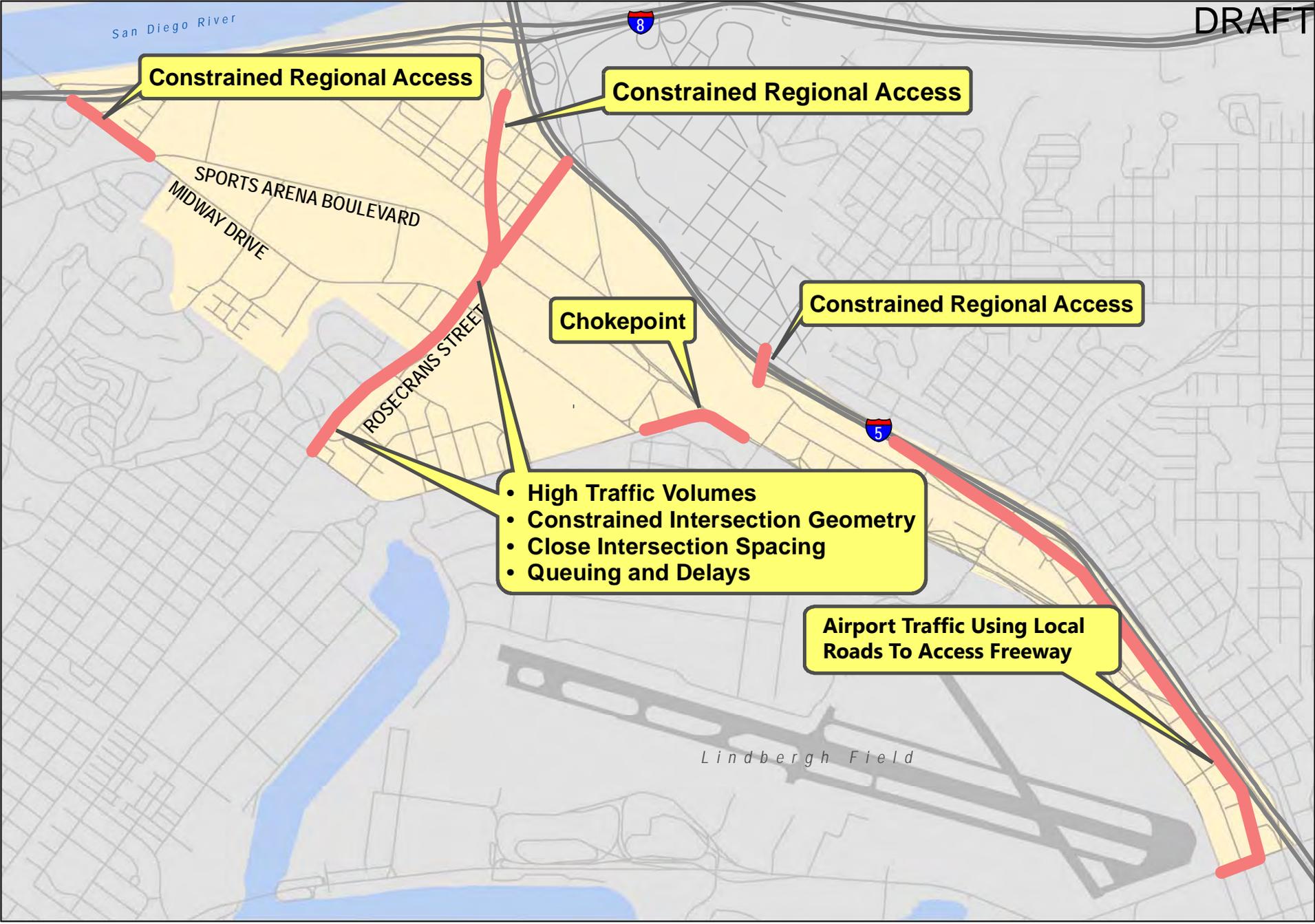


Figure 3-2
Identified Vehicular Issues and Needs -
Midway-Pacific Highway Community

It should be noted that implementation of these new roadway segments would necessitate additional right-of-way and most likely require the redevelopment of adjacent properties. All roadways will be designed in accordance with the *City of San Diego Street Design Manual* and their corresponding classification. A summary of the roadway improvements in the Midway-Pacific Highway community is presented in **Table 3.1**.

Table 3.1 Summary of Roadway Improvements

| Roadway | Segment | Existing Configuration | Recommended Classification |
|-------------------------|---------------------------------------|--------------------------|----------------------------|
| Lytton St / Barnett Ave | Rosecrans St and Midway Dr | 4-Lane Collector W/ CLTL | 4-Lane Major |
| Sports Arena Blvd | West Point Loma Blvd and Rosecrans St | 5-Lane Major | 6-Lane Major |
| Sports Arena Blvd | Rosecrans St and Pacific Hwy | Sub-Collector | 2-Lane Collector W/ CLTL |
| Kurtz St | Rosecrans St and Pacific Hwy | 2-Lane Collector | 2-Lane Collector W/ CLTL |
| Rosecrans St | Lytton St and Sports Arena Blvd | 6-Lane Major | 6-Lane Prime |
| Rosecrans St | Sports Arena Blvd and Taylor St | 4-Lane Collector W/ CLTL | 4-Lane Major |
| Hancock St | Old Town Ave and Witherby St | 2-Lane Collector | 4-Lane Collector |
| Barnett Ave | Midway Dr and Pacific Hwy | 6-Lane Major | 6-Lane Prime |
| W. Mission Bay Dr | I-8 WB Ramps and I-8 EB Ramps | 5-Lane Prime | 6-Lane Prime |
| Pacific Hwy | Taylor St and Barnett Ave | 6-Lane Prime | 6-Lane Major |
| Pacific Hwy | Barnett Ave and Washington St | Expressway | 6-Lane Major |
| Pacific Hwy | Washington St and Sassafras St | 6-Lane Prime | 6-Lane Major |
| Hancock St | Midway Dr and Sports Arena Blvd | Does Not Exist | 2-Lane Collector W/ CLTL |
| Kemper St | Sports Arena Blvd and Kurtz St | Does Not Exist | 4-Lane Collector |
| Frontier St | Sports Arena Blvd and Kurtz St | Does Not Exist | 2-Lane Collector W/ CLTL |
| Greenwood St | Kurtz St and Sports Arena Blvd | Does Not Exist | 2-Lane Collector |
| Charles Lindbergh Pkwy | Kurtz St and Midway Dr | Does Not Exist | 2-Lane Collector W/ CLTL |
| Dutch Flats Pkwy | Sports Arena Blvd and Barnett Ave | Does Not Exist | 2-Lane Collector W/ CLTL |

Source: Chen Ryan Associates (June 2016)

Intersections

Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West:

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane.
- Allow southbound movements to continue on Sports Area Boulevard through the intersection. It should be noted that you would still not be able to access the southern leg of Sports Arena Boulevard from westbound Rosecrans Street or southwest bound Camino del Rio West.

It should be noted that additional improvement concepts were also considered for the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection, but ultimately not selected. These alternative concepts include the following:

Alternative 1: This alternative would allow full access to the southern portion of Sports Area Boulevard from all approaches of the intersection and remove the eastbound (Rosecrans Street) to northbound (Sports Arena Boulevard) left-turn movements. The eastbound left-turn movement was removed to limit the number of signal phases at the intersection and provide for more efficient signal timing patterns. The removal of the eastbound left-turn

movement is consistent with the recommendations provided in the *Rosecrans Corridor Mobility Study (February 2010)*.

With the implementation of this concept the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection was projected to perform at acceptable levels (AM: LOS C / PM: LOS D) with minor queuing impacts. However, the community does not support the removal of the eastbound left-turn movement and therefore this alternative was removed.

Alternative 2: This alternative would allow full access to the southern portion of Sports Area Boulevard from all approaches, and keep the eastbound left-turn movement intact. Due to the additional intersection phases and cycle length required to allow full access to the southern leg of Sports Arena Boulevard, the intersection performed poorly under this alternative (AM: LOS D / PM: LOS E) with excessive queuing issues on both Rosecrans Street and Camino del Rio West. Due to the poor intersection performance and queuing issues this alternative was not selected.

Alternative 3: This alternative would remove traffic from the westbound approach of Rosecrans Street and reroute the traffic up Kurtz Street and then to Camino del Rio West. To accommodate this improvement Kurtz Street would be reconfigured from a one-way southbound roadway to a one-way northbound roadway, between Hancock Street and Rosecrans Street. Conversely, Hancock Street would need to be reconfigured as a one-way southbound roadway along the same section to complete the couplet. While this configuration does allow the Rosecrans Street / Sports Arena Boulevard / Camino Del Rio West intersection to operate at acceptable levels (AM: LOS C / PM: LOS D), it is projected to result in substantial queuing issues along the short segment of Kurtz Street between Camino del Rio West and Rosecrans Street (260 feet). This excessive queuing is projected to negatively impact the operations at the Kurtz Street / Camino del Rio West intersection as well as the Kurtz Street / Rosecrans Street intersection and cause significant congestion at these intersections. Due to these queuing issues this alternative was not selected.

Sports Arena Boulevard / Pacific Highway:

- Move intersection approximately 500 feet to the north.
- Re-align Sports Arena Boulevard to create a right-angle with Pacific Highway.
- Signalize the intersection.
- Provide an exclusive eastbound left-turn lane from Sports Arena Boulevard onto Pacific Highway.
- Provide an exclusive northbound left-turn lane from Pacific Highway onto Sports Arena Boulevard.

The proposed relocation of the Sports Arena Boulevard / Pacific Highway intersection meets the 500 feet minimum spacing requirements for intersections. An additional focus during the design phase needs to ensure the curved radii resulting from the intersection realignment will adhere to design standards.

Sports Arena Boulevard / West Point Loma Boulevard / Midway Drive

- Remove the 33northbound free right-turn movement from Midway Drive onto Sports Arena Boulevard. The right-of-way will be used to extend the curb and create a curb bulb-out to reduce the pedestrian crossing distance. Right-turn movements will be permitted from the outside through lane.
- Square up and control the westbound free right-turn movement from Sports Arena Boulevard onto Sports Arena Boulevard with the intersection.

West Washington Street / Pacific Highway

- Further analyze operations at this intersection to determine if additional improvements would be beneficial.

Barnett Avenue / Pacific Highway and Witherby Street / Pacific Highway

As noted in the list of roadway improvements, Pacific Highway between Taylor Street and Washington Street is proposed to be reconfigured from an expressway to a 6-lane major arterial configuration. This improvement is designed to create a community gateway along Pacific Highway, and enhance the multimodal connections between the community and Downtown San Diego. However, one of the main challenges associated with this improvement will be to bring the Barnett Avenue and Witherby Street intersections to grade, in order to meet the standards of a 6-lane major arterial roadway. The at-grade approach was not considered as part of the Mobility Element analysis, however, to understand the feasibility of these improvements, from both an engineering and constructability standpoint, an Engineering Feasibility Study would be required. The Engineering Feasibility Study should analyze and to address the following:

- The feasibility of bringing both interchanges to at-grade intersections
- Multi-modal facility alternatives that do not require at-grade intersections (pedestrian and bicycle bridges, alternative multi-use path alignments, ect.)
- Addressing the existing flooding issues at both interchanges

Since it is unknown at this time if these improvements are feasible, they were not included in the technical analysis of the Preferred Plan. It is recommended that the feasibility of these improvements be further assessed and incorporated into the Preferred Plan. The Preferred Plan identifies Witherby Street as a 2-lane collector with continuous left-turn lane, however, the additional feasibility analysis may determine a need to widen Witherby Street to a 4-lane collector. A potential concept of what these improvements could look like is displayed in **Figure 3-3**.

Based on the assumptions displayed in the Figure 3-3, the at-grade interactions are anticipated to operate as follows under Preferred Plan conditions:

- Barnett Avenue / Pacific Highway – AM: Delay 35.3 seconds, LOS D | PM: Delay 53.2 seconds, LOS D
- Witherby Street / Pacific Highway – AM: Delay 36.7 seconds, LOS D | PM: Delay 52.0 seconds, LOS D

Intersection Operations

Seven new intersections are recommended for the Midway-Pacific Highway Community. Additionally, the roadway network was evaluated to identify intersection locations, both existing and new intersections, that would benefit from signalization. A summary of recommended intersection improvements are displayed in **Table 3.2**. Traffic signal warrants were conducted at the intersections where signalization is recommended. Figure 4C-103 (CA) of the California Manual on Uniform Traffic Control Devices (MUTCD) 2012 Edition was utilized and all intersections would meet the warrants. Signal warrants worksheets are included in **Appendix C**.

Table 3.2 Summary of Intersection Improvements

| No. | Intersection | New or Existing | Control |
|-----|--|-----------------|------------|
| 8 | Midway Drive / Charles Lindbergh Parkway | Existing | Signalized |
| 16 | Sports Arena Boulevard / Charles Lindbergh Parkway | Existing | Signalized |
| 17 | Sports Arena Boulevard / Pacific Highway | Existing | Signalized |
| 18 | Kurtz Street / Hancock Street | Existing | Signalized |
| 21 | Kurtz Street / Pacific Highway | Existing | Signalized |
| 60 | Midway Drive / Duke Street & Hancock Street | Existing | Signalized |
| 61 | Kurtz Street / Frontier Street | New | SSSC |
| 62 | Kurtz Street / Greenwood Street | Existing | Signalized |
| 63 | Kurtz Street / Charles Lindbergh Parkway | New | Signalized |
| 64 | Barnett Avenue / Dutch Flats Parkway | New | Signalized |
| 65 | Midway Drive / Dutch Flats Parkway | New | Signalized |
| 66 | Sports Arena Boulevard / Dutch Flats Parkway | New | Signalized |
| N/A | Sports Arena Boulevard / Frontier Drive | New | Signalized |
| N/A | Sports Arena Boulevard / Greenwood Street | New | Signalized |
| N/A | Hancock Street / Greenwood Street | Existing | Signalized |

Source: Chen Ryan Associates (June 2016)

Freeway Improvements

There are no freeway improvements included in the Revenue Constrained alternative of SANDAG’s *San Diego Forward, The Regional Plan (Adopted October 2015)* to be completed before this plan’s horizon year (Year 2035).

I-8 / I-5 Ramp Connection – It should be noted that the missing I-8 East to I-5 North, and I-5 South to I-8 West ramps are included in the Regional Transportation Plan (RTP); however, since there is currently no funding mechanism for these ramps they are not included in the Preferred Plan assessment. These ramps are needed to enhance the regional access for the community. A policy should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

I-5 to Pacific Highway Ramps – Ramps connecting Interstate 5 to Pacific Highway are included in the RTP; however, since there is currently no funding mechanism for these ramps they are not included in the Preferred Plan assessment. These ramps are needed to enhance the regional

access for the community. A policy should be included in the Mobility Element recommending that the City of San Diego work with SANDAG and Caltrans to implement these ramps.

3.3 Pedestrian Environment

3.3.1 Identified Pedestrian Needs

The Existing Conditions Report identified the following pedestrian issues/needs in the Midway-Pacific Highway community, as displayed in **Figure 3-4**:

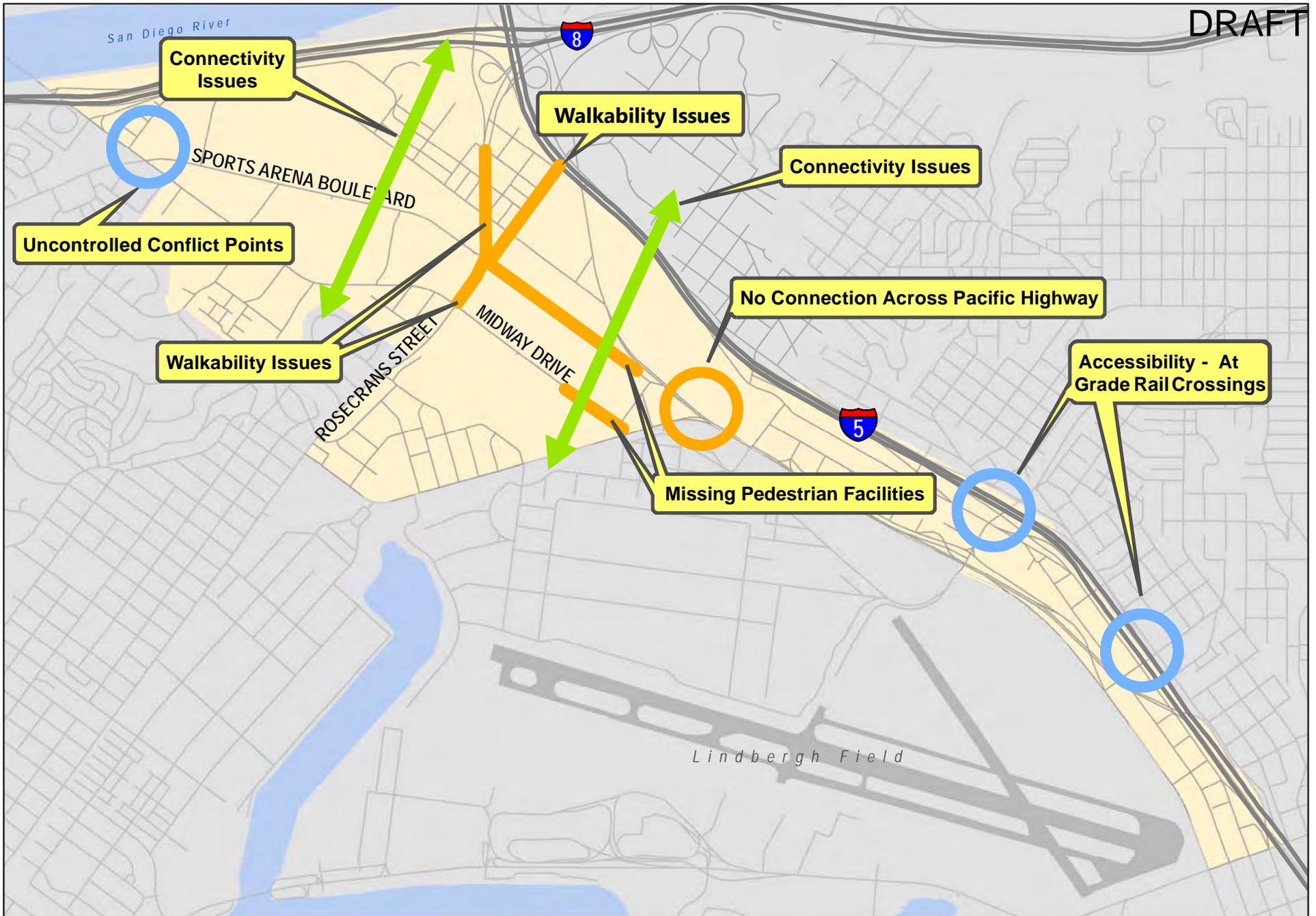
Midway Drive / Sports Arena Boulevard / West Point Loma Boulevard Intersection – This is a major vehicular junction point within the community in which two major roadways (Sports Arena Boulevard and Midway Drive) intersect with two major regional access points (West Point Loma Boulevard connecting to both the Peninsula and Ocean Beach communities to the west, and West Mission Bay Drive and I-8 ramps). To accommodate the high intersecting traffic volumes there is currently a yield control northbound right-turn movement, a stop controlled southbound right-turn movement and a free westbound right-turn movement. The high traffic volumes and uncontrolled right-turn movements create an intimidating environment for pedestrians to cross.

East/West Connectivity – Due to the large block sizes within the community, there are currently few pedestrian corridors directly connecting the east and west sides of the community. Rosecrans Street is the only east/west corridor that currently spans the entire community from east to west.

Walkability Issues along Rosecrans Street and Camino Del Rio West – As mentioned above, Rosecrans Street is the only east/west pedestrian corridor that spans the entire length of the community and is the only corridor that connects to the Old Town Transit Center, located to the east. The retail and institutional uses along both Rosecrans Street and Camino Del Rio West are also major pedestrian attractions within the corridors. Currently both corridors have 5 - 7 foot sidewalks with no parkways or on-street parking to buffer pedestrians from vehicular traffic. The narrow sidewalks with a lack of buffer create an unfriendly pedestrian environment.

Rosecrans Street / I-5 Underpass – This is the only connection point for pedestrians between the Old Town Transit Center and the Midway-Pacific Highway community. The 200-foot wide underpass is poorly lit and has narrow sidewalks, with no parkways or on-street parking to buffer pedestrians from vehicular traffic, creating an unfriendly pedestrian environment.

Missing Sidewalk Facilities – There are currently no sidewalks provided along Sports Arena Boulevard from Rosecrans Street to Pacific Highway, with the exception of a small portion on its south side near the intersection of Rosecrans Street. This area currently predominantly serves industrial uses and attracts little pedestrian traffic; however, it is one of the few major north/south corridors that span the entire community.



Barnett Avenue / Pacific Highway – There is currently no pedestrian access to Pacific Highway from Barnett Avenue for pedestrians on the north side of Barnett Avenue. Pedestrians on the north side of the roadway heading east on Barnett Avenue hit a dead end and are forced to head north along Pacific Highway.

At-Grade Rail Crossings – Pedestrians accessing both the Washington Street and Middletown Trolley stations from Pacific Highway currently have to cross the rail right-of-way to access both stations. During gate down times, pedestrians may be delayed from accessing the station by on-coming trolleys or trains.

3.3.2 Pedestrian Improvements

Multi-Use Urban Trails

The Preferred Plan includes the implementation of several multi-use urban trails along key roadways, cumulatively creating an Urban Trail system throughout the Midway-Pacific Highway community, which is consistent with recommendations in the North Bay Urban Greening Plan. The complete Multi-Use Urban Trails system is displayed in **Figure 3-5**. The individual multi-use urban trails are described below:

La Playa Trail – The La Playa Trail will run along the south side of Rosecrans Street between Lytton Street and Pacific Highway. The trail will be approximately 12 feet wide and replace the sidewalks on the southern side of the roadway. The ultimate right-of-way required along Rosecrans Street to implement this facility would be as follows:

- 127 feet between Lytton Street and Midway Drive.
- 116 feet between Midway Drive and Sports Arena Boulevard.
- 100 feet between Sports Arena Boulevard and Taylor Street.

It is recommended that pedestrian scale lighting be installed along the entire length of the trail. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. **Figures 3-6 and 3-7** provide concept drawings of the proposed La Playa Trail configuration along Rosecrans Street.

Bay-to-Bay Trail (North) – The Bay-to-Bay Trail (North) will run along the north side of Sports Arena Boulevard between West Mission Bay Drive and Dutch Flats Parkway. The trail will be 12 feet wide and replace the sidewalks on the southwestern side of the roadway. The ultimate right-of-way required along Sports Arena Boulevard to implement this facility would be 117 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the trail. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. **Figure 3-8** provides a concept drawing of the proposed Bay-to-Bay Trail configuration along Sports Arena Boulevard.

Bay-to-Bay Trail (South) – The Bay-to-Bay Trail (South) will run along the south side of Dutch Flats Parkway from Sports Arena Boulevard to Barnett Avenue, where it will continue along the south side of Barnett Avenue to Lytton. The trail will be approximately 12 feet wide and

replace the sidewalks on the southwestern side of the roadway. The ultimate right-of-way required along Barnett Avenue to implement this facility would be 94 feet. It is assumed that pedestrian scale lighting be installed along the entire length of the trail. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Midway Trail – The Midway Trail will run along the south side of Midway Drive between Sports Arena Boulevard and Barnett Avenue. The trail will continue along the south side of Barnett Avenue from Midway Drive to Pacific Highway. The trail will be approximately 12 feet and will replace the existing southwest sidewalk. The ultimate right-of-way required along Midway Drive to implement this facility would be 81 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the trail. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor. **Figure 3-9** provides a concept drawing of the proposed Midway Trail configuration along Midway Drive.

Historic Highway 101 Coastal Rail Trail – The Historic Highway 101 Coastal Rail Trail will run along the east side of Pacific Highway between Taylor Street and Laurel Street. The multi-use urban trail (intended for both pedestrian and cyclists) will be 12 feet wide and will replace the existing sidewalk on the east side of the roadway. The ultimate right-of-way required along Pacific Highway to implement this facility would be 131 feet. It is recommended that pedestrian scale lighting be installed along the entire length of the trail. The implementation of these improvements may necessitate acquiring additional right-of-way along the corridor.

Hancock Street Extension – Hancock Street will be extended between Midway Drive and Sports Arena Boulevard. The Hancock Street extension will be constructed as a two-lane collector with a continuous left-turn lane. This extension should be provided as a bicycle and pedestrian connection at a minimum, if a two-lane collector with a continuous left-turn lane is deemed infeasible.

Street Trees

The Preferred Plan includes the implementation of street trees along the following roadway corridors, which is consistent with the North Bay Urban Greening Plan:

- Barnett Avenue, between Rosecrans Street and Pacific Highway
- Midway Drive, between Sports Arena Boulevard and Barnett Avenue
- Sports Arena Boulevard, between West Mission Bay Drive and Rosecrans Street
- Pacific Highway, between Taylor Street and Laurel Street
- Rosecrans Street, between Midway Drive and Taylor Street

Intersections

All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- Advanced stop bar placement
- High visibility continental cross-walks
- Pedestrian count down signals

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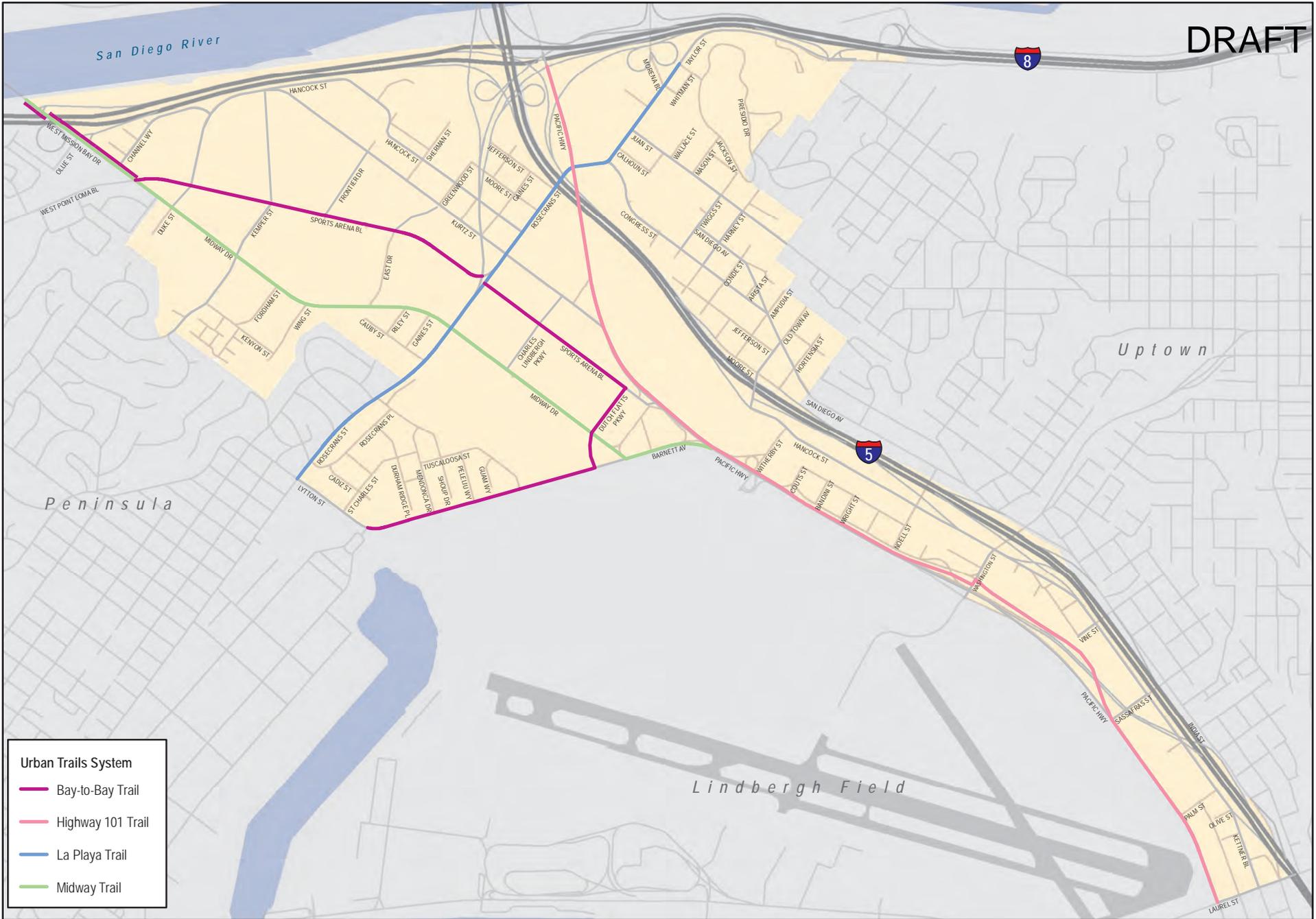
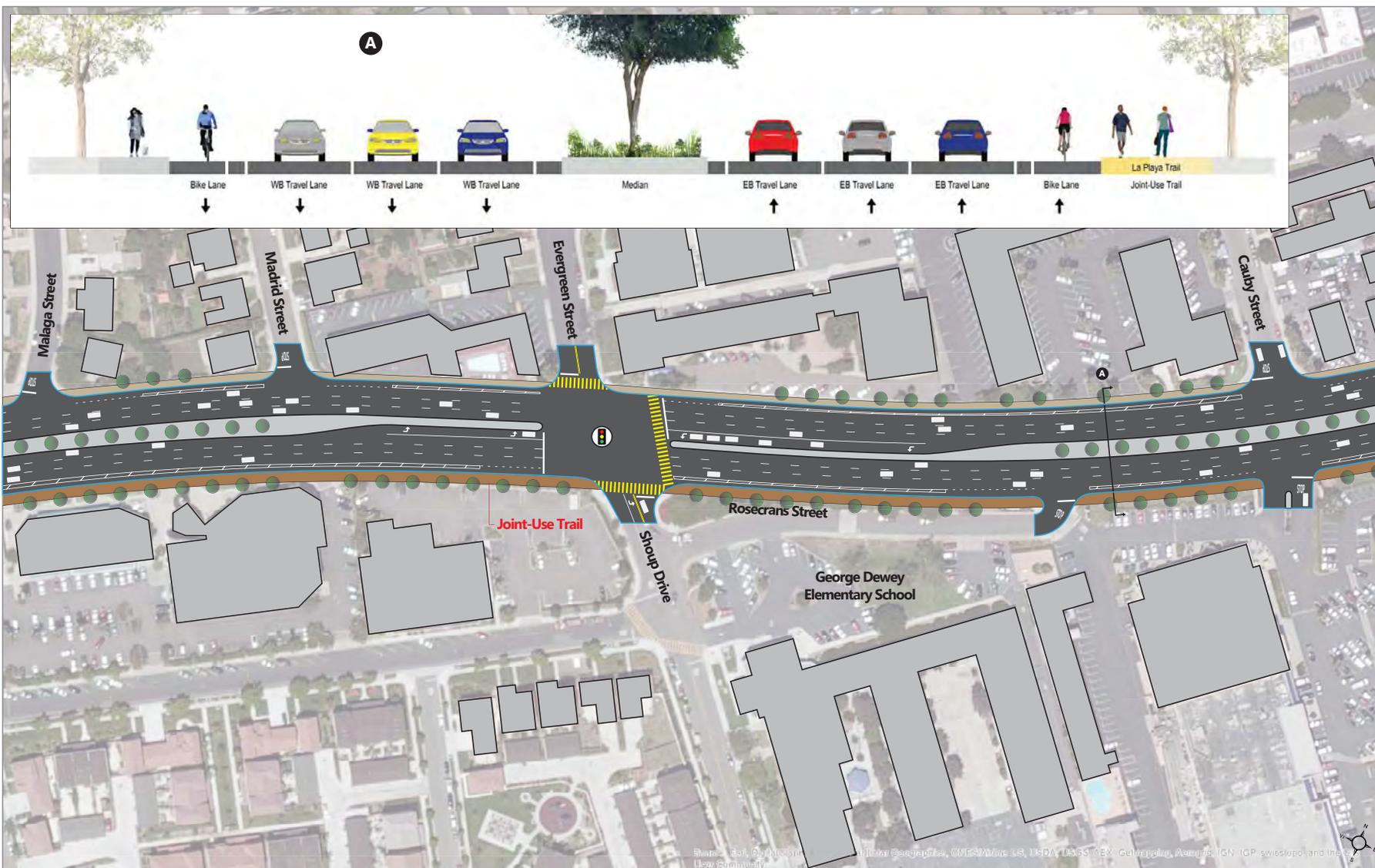
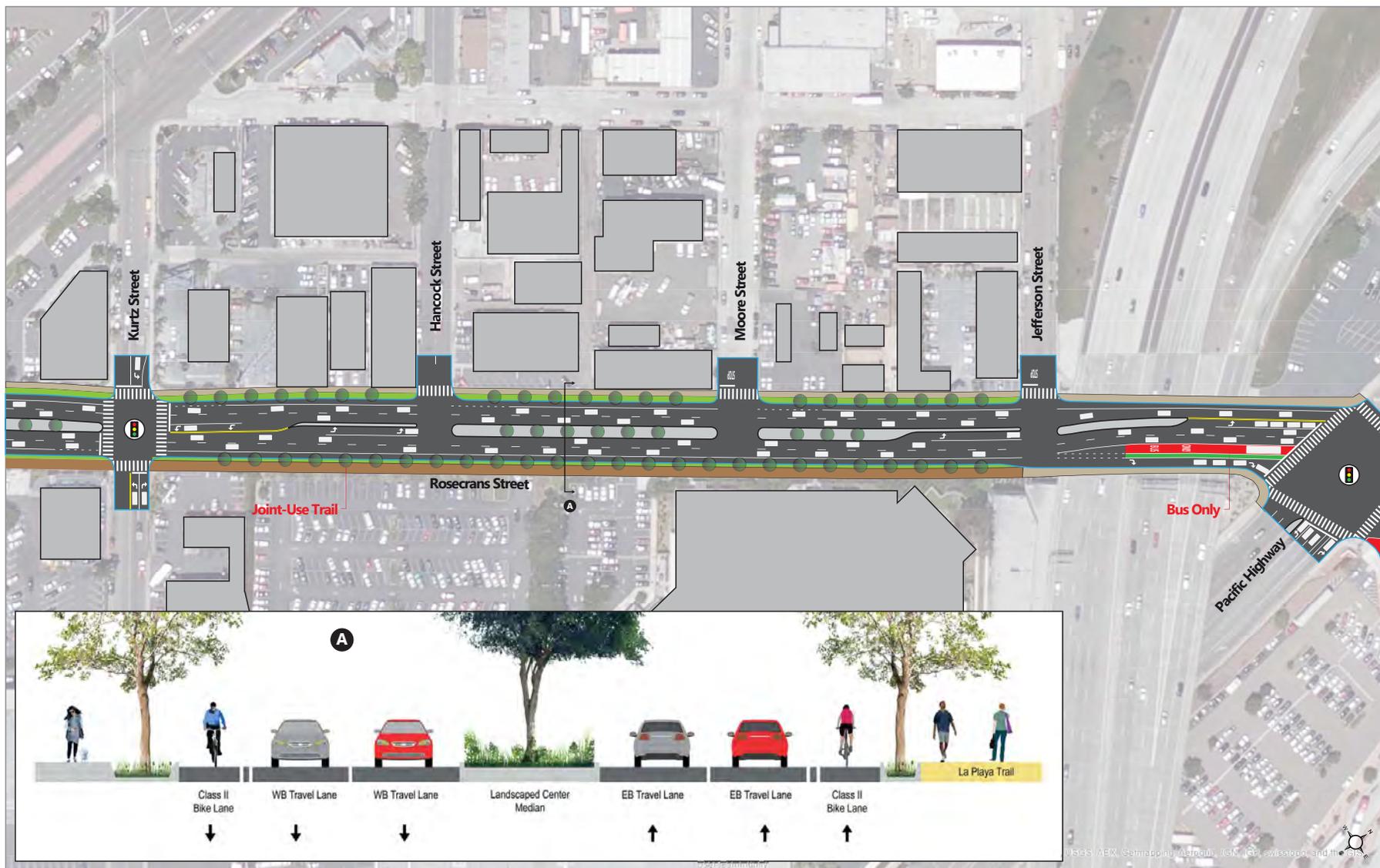


Figure 3-5
Multi-Use Urban Trails System



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-6
Rosecrans Street with La Playa Trail -
West of Midway Drive

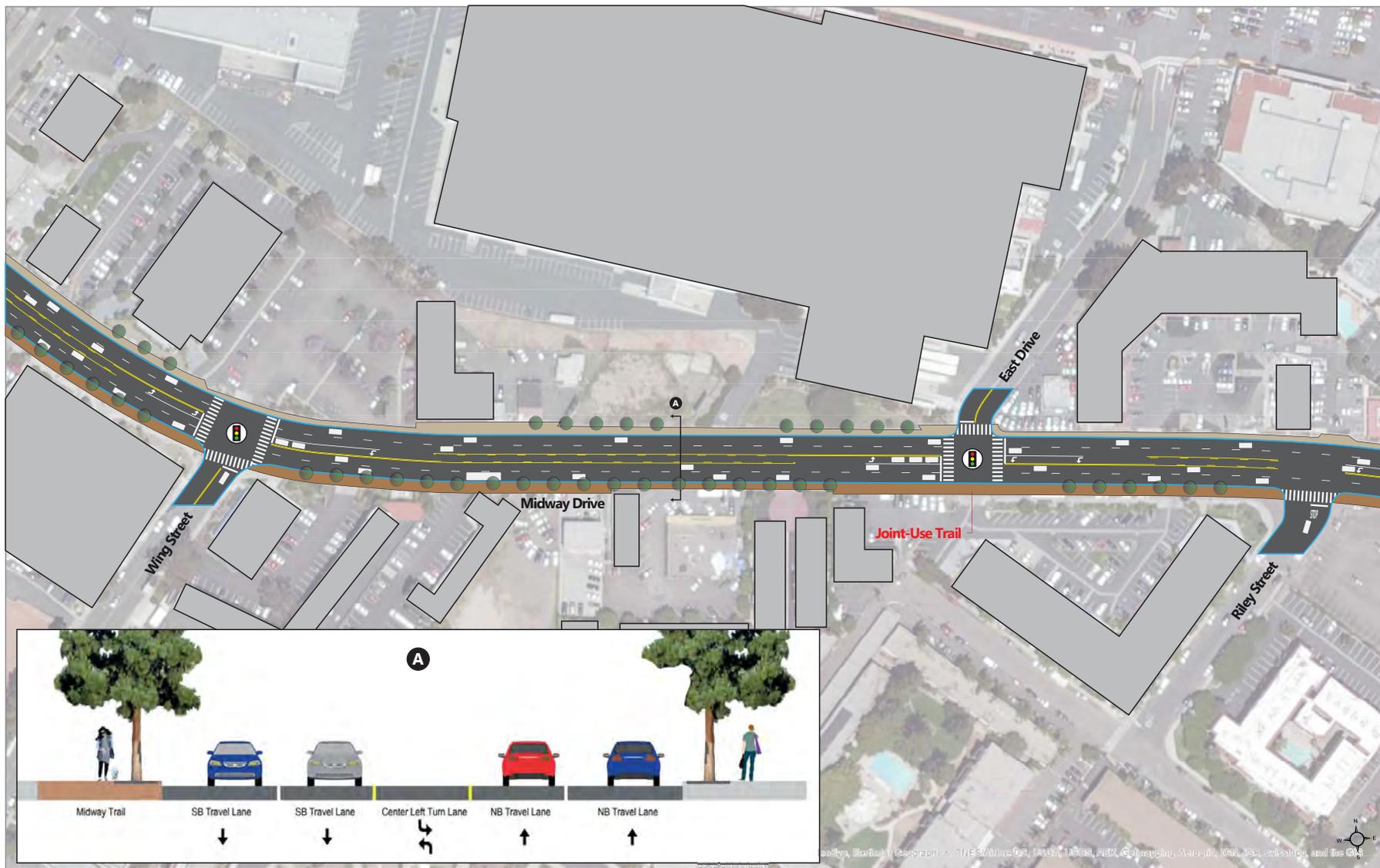


This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Figure 3-7
Rosecrans Street with La Playa Trail -
East of Sports Arena Boulevard



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

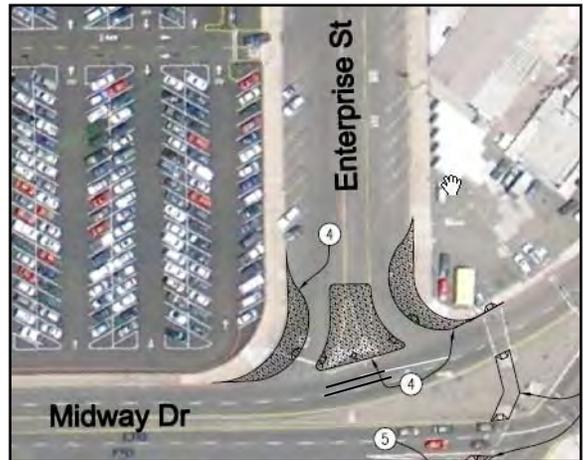
Specific Pedestrian-Related Intersection Improvements:

Midway Drive / Enterprise Street (Shown to the Right):

- Install bulb-outs and a pedestrian refuge island on the northeast leg of the intersection.

West Palm Street / Kettner Boulevard (intersection adjacent to the I-5 pedestrian bridge)

- Install bulb-outs on north leg of the intersection.
- Install continental cross-walk on the north leg of the intersection.
- Install a Pedestrian Hybrid Beacon on the north leg of the intersection (if warrants are met).



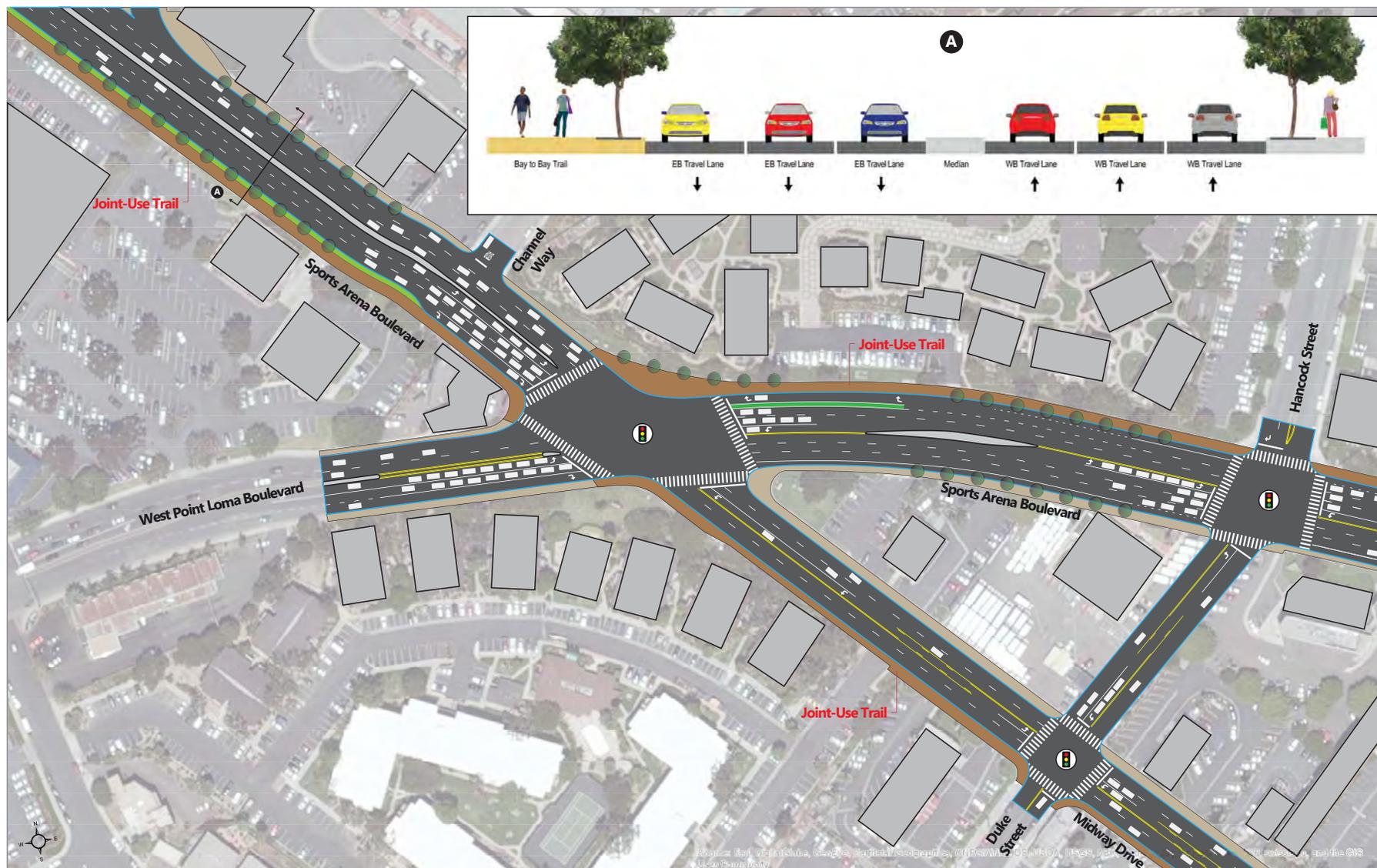
Conceptual Drawing from Phase IV of the City of San Diego Pedestrian Master Plan

Sports Area Boulevard / West Point Loma Drive / Midway Drive (shown on the following page):

- Remove all free-right turn movements, which will decrease pedestrian crossing-distances.
- Improve the right-of-way with landscaping to improve the pedestrian environment.

Sports Arena Boulevard / Rosecrans Street / Camino Del Rio West

- Remove the southbound free right-turn movement from Camino Del Rio West onto Sports Arena Boulevard and replace it with an exclusive right-turn lane, which will improve pedestrian safety while crossing the intersection. **Figure 3-10** displays a concept drawing of the proposed intersection improvements.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

3.4 Cycling Environment

3.4.1 Identified Bicycle Needs

The Midway-Pacific Highway Community is located at a junction point for several regional bicycle facilities including both the Coastal Rail Trail (along Pacific Highway) and the Ocean Beach Bike Path (along the San Diego River). Local bicycle connections to the surrounding neighborhoods are also provided, such as Class II Bike Lanes between Midway-Pacific Highway and the Peninsula communities along Rosecrans Street. A Class III Bike Route is provided along West Mission Bay Drive and terminates at its intersection with W. Point Loma Boulevard / Sports Arena Boulevard. These regional and local connections, along with strong transit service and high intensity commercial and institutional land uses, create high cycling demands within this community.

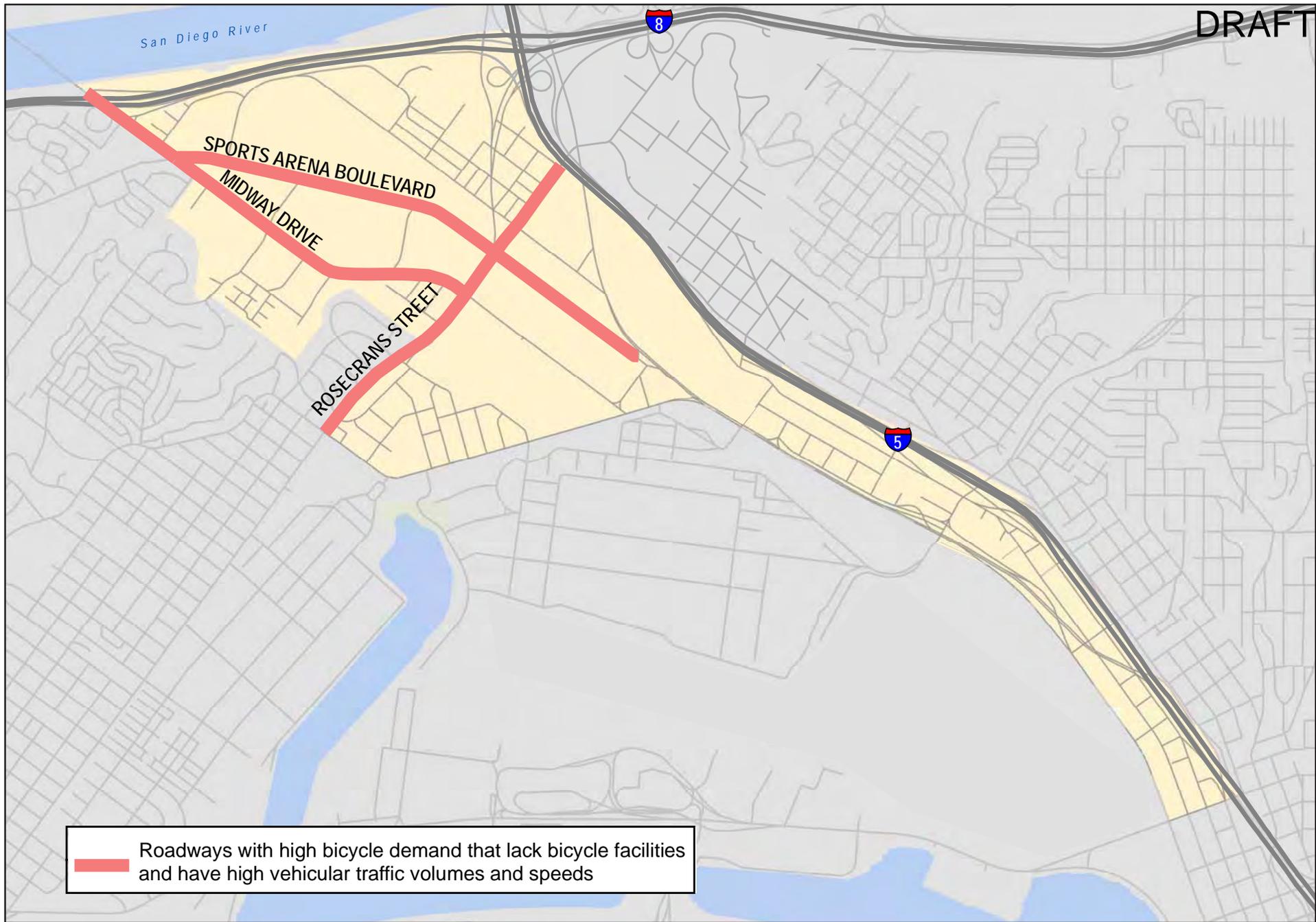
However, as shown in **Figure 3-11** there are currently no bicycle facilities along the major corridors traversing the Midway-Pacific Highway Community (Midway Drive, Sports Arena Boulevard and Rosecrans Street) to accommodate the high bicycle demand. These corridors also have high vehicular traffic volumes and speeds as well as numerous conflict points (intersections, driveways, and alleyways) between motorists and cyclists, creating an uncomfortable environment for cyclists. Figure 3-5 displays the locations of issues/need, mainly defined as high cycling demand corridors that lack bicycle facilities and have high vehicular traffic volumes and speed.

3.4.2 Bicycle Improvements

The Bicycle Network under the Preferred Plan Conditions is shown in Figure 6-10 in this report. The Preferred Plan proposes to implement the following bicycle facilities within the Midway-Pacific Highway Community:

In Road Facilities

- Class II Bike Lanes in both directions along Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class IV One-Way Cycle Tracks in both directions along Pacific Highway between Taylor Street and Laurel Street.
- Enhanced Class II Buffered Bike Lanes in both directions along Rosecrans Street between Lytton Street and Pacific Highway.
- Enhanced Class II Buffered Bike Lanes in both directions along Sports Arena Boulevard between W. Point Loma Boulevard and Pacific Highway.
- Class II Bike Lanes in both directions along Hancock Street between Old Town Avenue and Noell Street.
- Class II Bike Lanes along the south side of Hancock Street/Kettner Boulevard between Noell Street and Laurel Street.
- Class II Bike Lanes in both directions along Kemper Street between Midway Drive and Sports Arena Boulevard.



In Road Facilities (continued)

- Class II Bike Lanes in both directions along Washington Street between Pacific Highway and Interstate 5.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class III Bike Route in both directions along Noell Street between Pacific Highway and Hancock Street.

Multi-Use Urban Trails

- Class I Multi-Use Urban Trail along the south side of Rosecrans Street between Lytton Street and Pacific Highway.
- Class I Multi-Use Urban Trail along the west side of Barnett Avenue between Rosecrans Street and Pacific Highway.
- Class I Multi-Use Urban Trail along the west side of Midway Drive between Sports Area Boulevard and Barnett Avenue.
- Class I Multi-Use Urban Trail along the northeast side of Sports Arena Boulevard between West Point Loma Boulevard and Rosecrans Street.
- Class I Multi-Use Urban Trail along the east side of Pacific Highway between Taylor Street and Laurel Street.

3.5 Public Transit Service and Facilities**3.5.1 Identified Transit Needs**

Underserved Areas – As shown in **Figure 3-12**, the following areas within the Midway-Pacific Highway Community are located beyond a quarter mile of a bus stop or transit station, indicating potentially poor levels of transit access:

- Barnett Avenue, between Lytton Street and Midway Drive
- The northeast portion of the community (east of Kurtz Street and north of Sherman Street)
- Pacific Highway, between Wright Street and Noell Street
- Pacific Highway, between Vine Street and Sassafras Street

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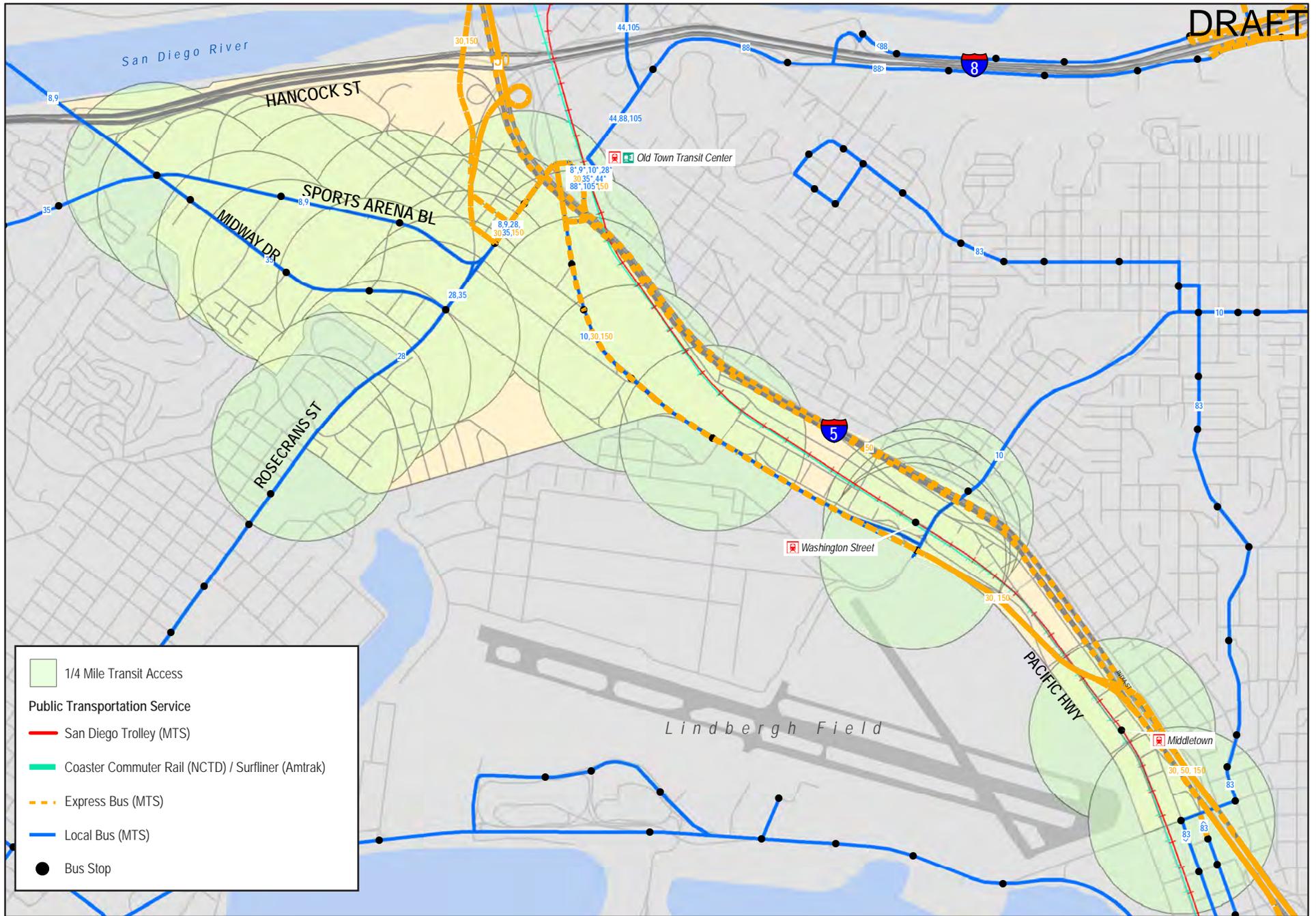


Figure 3-12
Transit Coverage -
Midway-Pacific Highway Community

3.5.2 Transit Improvements

SANDAG's San Diego Forward, The Regional Plan (Adopted October 2015) indicates that a number of transit improvements are planned for the Midway-Pacific Highway Community, prior to this plan's Year 2035 horizon year, including:

Local Bus Service – Increase local bus service in key corridors to 10 minute headways programmed and scheduled for Year 2035.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

San Diego International Airport Intermodal Transit Center (ITC) – The ITC will act as an important hub connecting all modes of transportation accessing and departing from Lindbergh Field. The ITC is planned to be located on the north end of the airport, just south of Interstate 5 between Washington Street and Sassafras Street. The ITC is being planned as a major transit hub connecting all three existing trolley lines (Blue, Green and Orange), the COASTER, Amtrak, new MTS Express Bus routes directly serving the airport, several local MTS bus routes and the planned California High Speed Rail system. In addition to the transit connections, the ITC is planned to provide the following:

- 360 new parking spaces
- 126,000 SF of new retail uses
- Direct access to I-5 / via the Pacific Highway on/off-ramps
- Grade separation of the Washington Street and Sassafras at-grade rail crossings
- New grade separated crossing at Vine Street
- Raised bicycle lanes and cycle tracks on the street surrounding the ITC
- Wider sidewalks around both the ITC and new retail uses
- Curb extensions and planting/parking strips as well as provide new opportunities to employ green street strategies on impacted/new roadways.

The ITC is anticipated to be constructed and operational by the Year 2035.

Transit Priority Improvements

Pacific Highway - Pacific Highway serves several express bus routes that link multiple communities. Converting Pacific Highway from an expressway to a six-lane major will lower travel speeds along the corridor and could potentially impact the efficiency and on-time performance of these regional routes. Therefore, it is recommended that, as Pacific Highway is redeveloped from an expressway facility to a six-lane major, transit priority measures such as queue jumper lanes and transit priority signals be implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented

on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be examined for feasibility at the Rosecrans Street / Camino Del Rio West / Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to examine opportunities for bus rerouting.

3.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Midway-Pacific Highway community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within the existing community Public Facilities Financing Plan are outlined and identified if they are consistent with the Preferred Plan.

3.6.1 Auto

Midway/Pacific Highway Corridor Public Facilities Financing Plan, 2004 – this document contains several roadway improvements that have not yet been completed. It should be noted that all of these improvements are unfunded and currently not scheduled for implementation.

Signal Modifications:

- Barnett Avenue / Midway Drive (Project T7) – *Improvement is consistent with the Preferred Plan.*
- Pacific Highway / West Washington Street (Project T29) – *Improvement is consistent the Preferred Plan.*

Extensions/New Streets:

- Extension of Barnett Avenue from Pacific Highway to Old Town Avenue (Project T8) – *Improvement is no longer recommended under the Preferred Plan.*
- Extension of Kemper Street as a four-lane collector from Sports Arena Boulevard to Hancock Street (Project T14) – *Improvement changed under the Preferred Plan..*
- New four-lane collector street connecting Sports Arena Boulevard and Midway Drive (Project T13) – *Improvement changed under the Preferred Plan.*

Street Widening:

- Improve Kurtz Street to a four-lane major between Rosecrans Street and Pacific Highway (Project T15) – *Improvement changed under the Preferred Plan.*
- Improve Sports Arena Boulevard to a four-lane collector between Rosecrans Street and Pacific Highway (Project T16) – *Improvement changed under the Preferred Plan.*

Intersection Improvements

- Midway Drive / Sports Arena Boulevard (Project T17) – *Improvement changed under the Preferred Plan.*

Several roadway facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the roadway related improvements located in the Midway-Pacific Highway Community is included in **Appendix B**. It should be noted that this list is updated on a regular basis and **Appendix B** only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.2 Pedestrian**Public Facilities Financing Plans**

The adopted Public Facilities Financing Plan for the Midway-Pacific Highway community currently contains planned pedestrian improvements that have not yet been completed, as follows:

- Install / upgrade 169 curb ramps to meet ADA standards (T25) – These improvements are currently not scheduled or funded. *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Midway-Pacific Highway Community is included in **Appendix B**. It should be noted that this list is updated on a regular basis and **Appendix B** only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

3.6.3 Bicycle

None at this time.

3.6.4 Transit

As noted in section 3.5.2 the Preferred Plan is consistent with SANDAG's *San Diego Forward, The Regional Plan (Adopted October 2015)*.

4.0 Old Town Community Preferred Plan

4.1 Development of the Preferred Plan

4.1.1 Identification of Issues and Needs

Existing mobility related issues and needs within the Old Town Community were identified in the *Community of Midway/Pacific Highway Corridor and Old Town Mobility Existing Conditions Report; September 2012 (Existing Conditions Report)*. The issues and needs identified in the Existing Conditions Report were used, in conjunction with the other planning efforts and the overall community vision, to develop the recommended mobility improvements presented in the Preferred Plan.

4.1.2 Development of Preferred Plan Improvements

Preferred Plan improvements were developed by first cross checking the mobility issues and needs identified in the Existing Conditions Report against the mobility issues and needs identified in several other on-going or recent planning efforts, including:

- I-8 Corridor Study (on-going)
- San Diego Forward, The Regional Plan (October 2015)
- City of San Diego Bicycle Master Plan (December 2013)
- Phase II Visitor Oriented Parking Facilities Study of the Old Town Community (May 2002)
- City of San Diego Pedestrian Master Plan - Phase 4 (Dec 2013)
- Mid-Coast Corridor Transit Project, Transportation Impacts and Mitigation Report (Sept 2014)

Where possible, the Preferred Plan carried forward or maintained the relevant improvements from on-going or previous planning efforts which have been adopted or vetted by the community. New improvement strategies were then developed to address the existing issues and needs, as identified in the Existing Conditions Report, which have not been addressed in other planning efforts. Additional mobility improvements were also developed to accommodate the anticipated future growth within the community. The following sections outline the mobility issues and needs identified in the Existing Conditions Report and the associated improvements recommended under the Preferred Plan to alleviate them.

4.2 Street and Freeway System

4.2.1 Identified Street and Freeway Issues and Needs

Taylor Street – Taylor Street provides connections to three major regional roadway facilities. To the east, Taylor Street provides a connection to I-8 and the regional freeway system. To the west, Taylor Street connects with both Rosecrans Street (which connects to communities to the west), and to Pacific Highway (which connects to communities to the north and the south).

Taylor Street accommodates a high volume of both regional and local traffic. There are currently two identified roadway related issues along Taylor Street, as described below:

At-Grade Rail Crossing – Currently the BNSF and MTS trolley right-of-way crosses Taylor Street at-grade between Pacific Highway and Congress Street. Gate down times at this crossing typically last between 30 seconds to 3 minutes, depending on the number of vehicles and train cars. During these gate down times, all other modes of transportation must stop, causing impacts to traffic operations at the adjacent intersections. Train crossings at this location typically cause additional intersection delay, queuing and congestion.

Taylor Street between Presidio Drive and I-8 Ramps – Taylor Street east of Presidio Drive reduces from four-lanes to two, with narrow lane widths (10 feet). Traffic volumes along this segment are high (13,140 ADT) since it leads to an I-8 interchange, and far exceeds the roadway LOS D maximum capacity of 9,000 ADT. The narrow lane widths and high traffic volumes result in congestion along this segment in the eastbound direction accessing the freeway ramps during the PM peak hour.

San Diego Avenue between Ampudia Street and Old Town Avenue – This segment of San Diego Avenue connects the commercial uses along both Congress Street and San Diego Avenue to the I-5 interchange located at Old Town Avenue. This segment of San Diego Avenue is currently a two-lane roadway with an average daily traffic volume of 10,160, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during both the AM and PM peak hours.

Old Town Avenue between Moore Street and San Diego Avenue – Old Town Avenue provides a regional connection point between the community and I-5. This segment of Old Town Avenue is currently two-lanes with an ADT of 11,750, which far exceeds the roadway LOS D maximum capacity of 6,500 ADT. This results in reduced speeds and congestion in the northbound direction during the PM peak hour.

The identified roadway issues and needs within the Old Town Community are displayed in **Figure 4-1**.

4.2.2 Street and Freeway Improvements

Roadway

Due to this historic nature of the community, the Preferred Plan does not propose any roadway widenings or other roadway capacity improvements. However, San Diego Avenue between Twiggs Street and Conde Street has a large curb-to-curb width (50 feet) for a standard two-lane collector roadway (typically 40 feet wide). Therefore, in order to better utilize the curb-to-curb right-of-way, it is recommended that the parallel parking on the east side of the roadway be converted to angled parking, as shown in the figure below. The recommended improvement will not affect the capacity of the roadway and will increase the already constrained parking capacity within the Old Town community. **Figure 4-2** displays a concept drawing of this improvement.

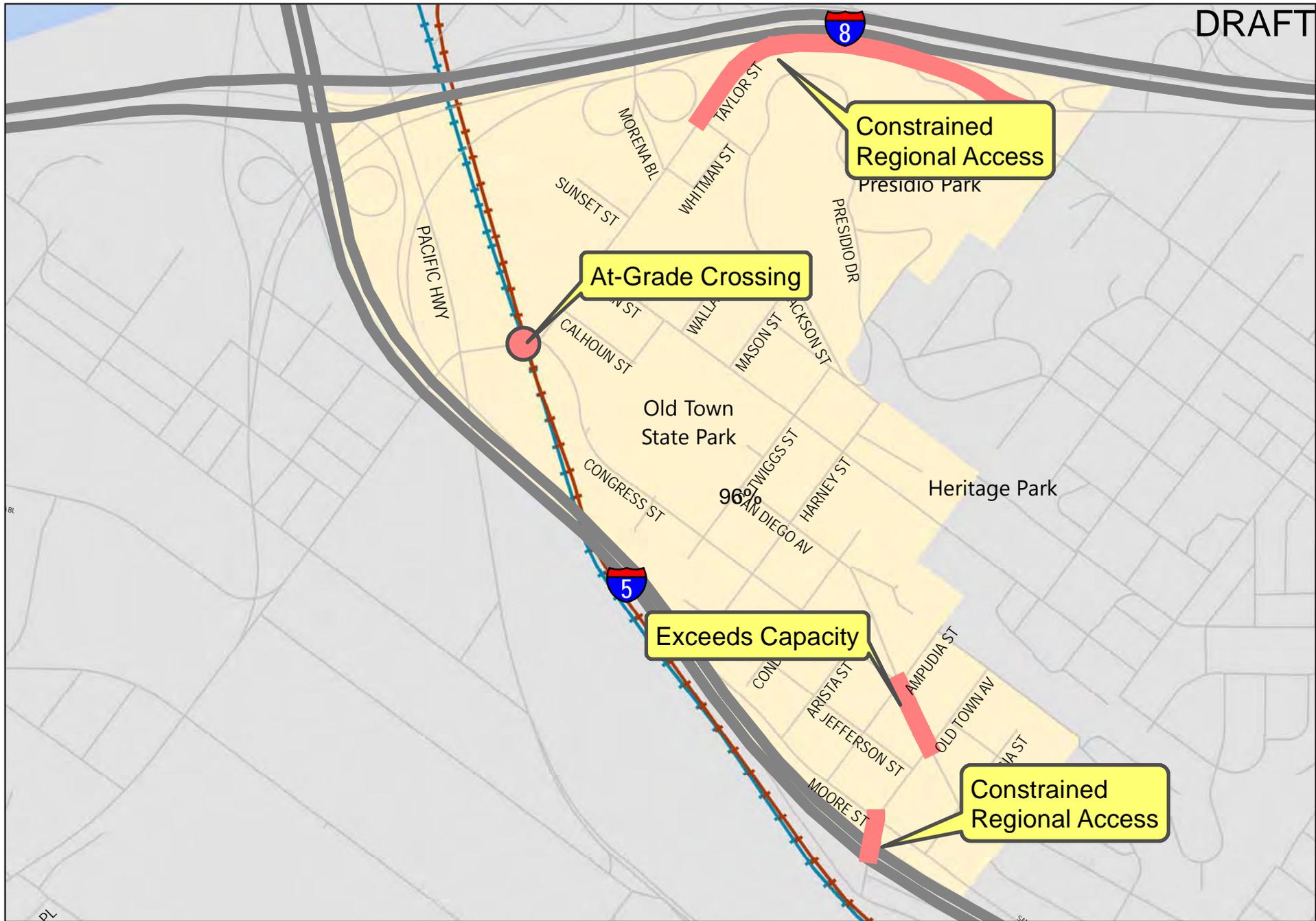
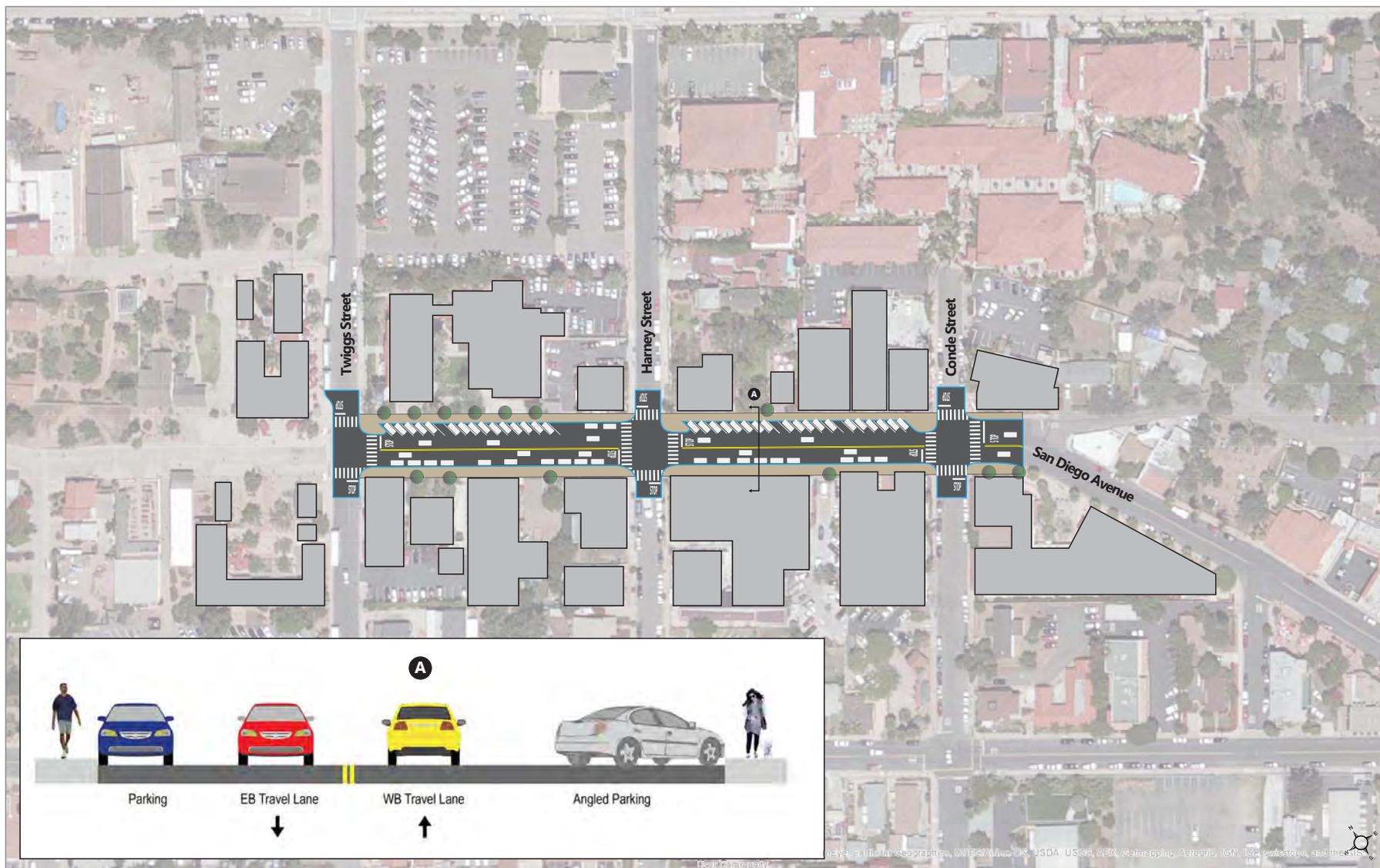


Figure 4-1
Identified Street and Freeway Related Issues and Needs -
Old Town Community



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

Freeway

There are no freeway improvements included in the Revenue Constrained alternative of SANDAG's *San Diego Forward, The Regional Plan (Adopted October 2015)* to be completed before this plan's Horizon Year (Year 2035). SANDAG prepared the Draft I-8 Corridor Study as a high level planning resource for potential improvements between Ocean Beach and Mission Valley. One of the identified improvements calls for the removal of all free movements from I-8 onto Morena Boulevard and "squaring up" each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

4.3 Pedestrian Environment

4.3.1 Identified Pedestrian Issues and Needs

The following pedestrian related issues and needs were identified in the Existing Conditions Report:

Taylor Street At-Grade Rail Crossing – Pedestrians accessing the Old Town Community or the Old Town Transit Center from Pacific Highway or Rosecrans Street currently have to cross the shared BNSF and MTS Trolley rail right-of-way. The Taylor Street at-grade rail crossing is over 100 feet wide, gate to gate, and pedestrians have to cross over four sets of rail tracks. During peak hours there are approximately 13 train crossing events lasting between 30 seconds and 3 minutes. During these times pedestrians are forced to wait until the train clears the crossing, causing excessive delays.

Old Town Transit Center Wayfinding – There is currently limited signage at the Old Town Transit Center directing pedestrians who are unfamiliar with the area, such as tourists, to the many restaurant, shops, historical monuments and structures, and parks in the community. Currently there is only a single map (identical to the map depicted in the picture below, which is located on San Diego Avenue) directing patrons to these various community features.

The Old Town San Diego Chamber of Commerce is implementing a wayfinding signage program that will install various signage types throughout the community to better inform patrons about how to access the various community features and help brand the community as a whole.



Missing Sidewalks – There are currently no sidewalks on Taylor Street, east of Presidio Drive and on the east side of San Diego Avenue, just north of Ampudia Street.

Connectivity between Community Features and Parks – There is currently no direct, convenient or identifiable path connecting the Old Town Transit Center, Old Town State Park and Presidio Park. Both parks are major community features attracting tourists and out of town guests who may not be familiar with the community or its amenities. The development of a clear, concise and well signed path connecting these three community assets would significantly improve pedestrian circulation within the community.

Sidewalk Capacity Issues – The retail and restaurant establishments along San Diego Avenue attract significant pedestrian traffic particularly during evenings and weekends. The sidewalks along San Diego Avenue are currently 7 to 8 feet wide with a limited parkway featuring street trees and planters. Retail shops and other merchants also take up part of the sidewalk with displays, racks and other attractions, as displayed in the photos to the right. During peak times, typical weekend evenings, pedestrian traffic along San Diego Avenue exceeds sidewalk capacity creating a congested pedestrian environment.



San Diego Avenue / Congress Street / Ampudia Street Intersection – This is currently a five legged intersection in which three of the approaches are stop-controlled (SB San Diego Avenue and EB & WB Ampudia Street) and the other two (NB San Diego Avenue and SB Congress Street) are free movements. There are also high vehicular traffic volumes crossing through the intersection along San Diego Avenue and Congress Street, which have no crosswalk facilities. This intersection is confusing and intimidating for pedestrians to cross due to the lack of traffic controls, high traffic volumes and missing crosswalk facilities.



The pedestrian related issues/needs within the Old Town Community, identified above, are displayed in **Figure 4-3**.

4.3.2 Pedestrian Improvements

Sidewalks

- Complete the sidewalks on the east side of San Diego Avenue, north of Ampudia Street.
- Complete sidewalks on Taylor Street, east of Presidio Drive.
- Implement sidewalks on the north side of Whitman Street.
- Complete sidewalks on Twiggs Street west of Congress Street.
- Implement sidewalks on Sunset Street between Juan Street and Mason Street.
- Implement a sidewalk on the west side of Mason Street between Juan Street and Jackson Street.
- Implement a sidewalk on the west side of Jackson Street between Presidio Drive and Mason Street

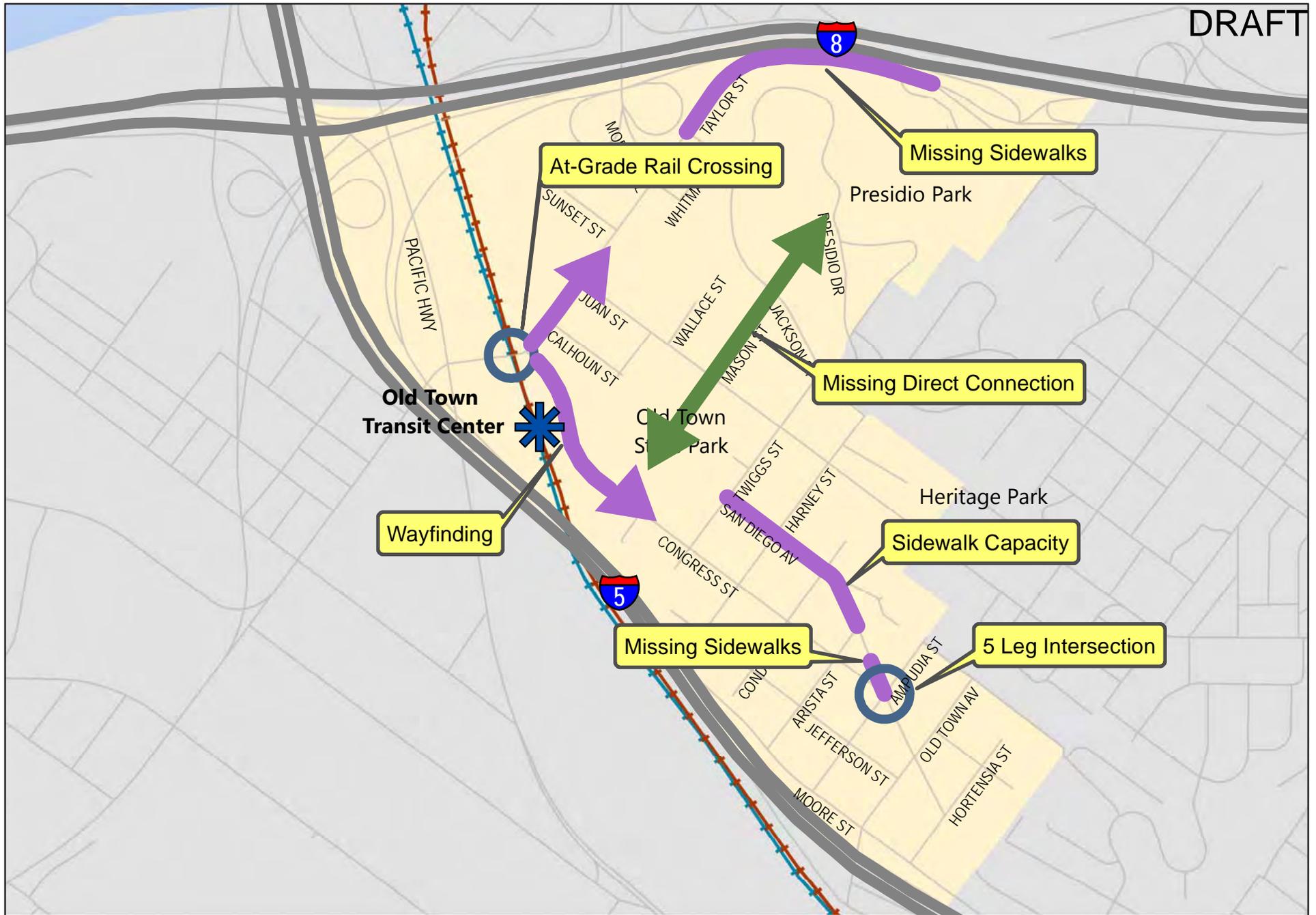


Figure 4-3
Identified Pedestrian Issues and Needs -
Old Town Community

Intersections

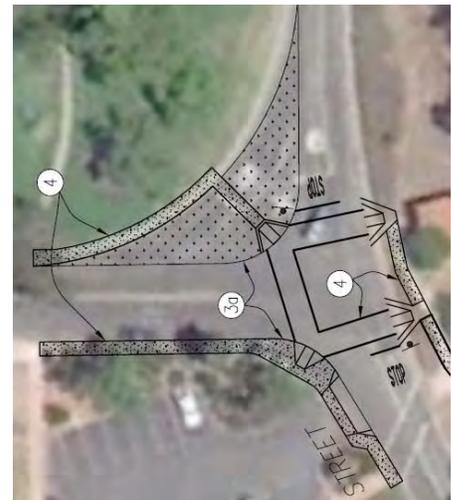
All crossing points at intersections should be upgraded to include the following:

- ADA compliant pedestrian ramps
- High visibility continental crosswalks
- Advanced stop bar placement

Specific Intersection Improvements:

Presidio Drive / Jackson Street (Shown to the right):

- Implement bulb-outs on the west leg of the intersection
- Complete sidewalks on all sides of the intersection
- Square up intersection and remove southbound yielded right-turn movements
- Provide cross-walks across all legs of the intersection



Proposed Improvements to Presidio Drive / Jackson Street intersection

Congress Street / Twigg Street:

- Implement bulb-outs across all legs of the intersection

San Diego Avenue / Twigg Street:

- Implement pavers or other high visible material in the center of the intersection to slow down and alert drivers to the heavy pedestrian presence, see example to the right.



Example of using bricks/pavers to create a highly visible intersection

Linwood Street / San Diego Avenue:

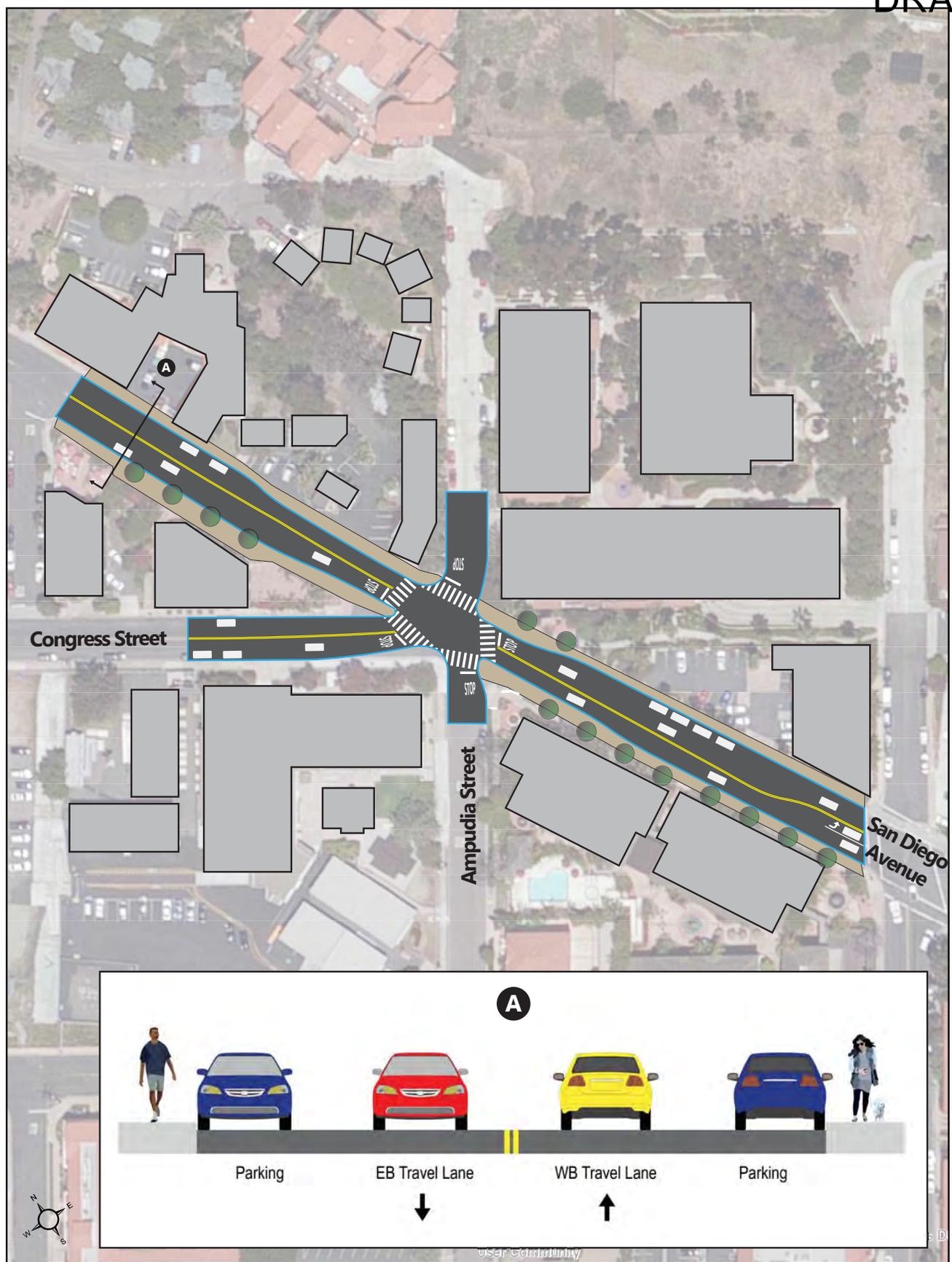
- Implement Pedestrian refuge island on the southern (Linwood Street) leg of the intersection.

Congress Street / San Diego Avenue / Ampudia Street (See figure on next page):

- Convert intersection to all-way stop control
- Implement bulb-outs on all legs of the intersection
- Widen the sidewalks along the north side of San Diego Avenue

Figure 4-4 displays a concept drawing of the proposed intersection improvements.

Note: Converting the intersection control to a roundabout is also an option for this intersection. However, due to the tight spacing of the adjacent buildings there may not be enough right-of-way to accommodate a roundabout. Additional engineering study should be conducted to see if a roundabout is feasible at this intersection. If it is determined that a roundabout is feasible then it would become the preferred improvement.



This graphic is for conceptual purposes only. Further engineering study would be required at the project level prior to implementation.

4.4 Cycling Environment

4.4.1 Identified Bicycle Issues and Needs

The following cycling related issues and needs were identified in the Existing Conditions Report:

Taylor Street – As mentioned previously, the Taylor Street corridor provides a significant regional east/west connection for vehicles as well as for cyclists. Taylor Street is currently classified as a Class III Bike Route within the Old Town Community; however, east of Presidio Drive, Taylor Street narrows to a two-lane roadway with narrow lane widths (10 feet) and no shoulders. Taylor Street is also a regional vehicular access point for the Old Town Community connecting the I-8 / Taylor Street interchange and Pacific Highway. The narrow lane widths, high vehicular traffic volumes and speeds along Taylor Street, east of Presidio Drive, create an uncomfortable environment for cyclists.

Congress Street / San Diego Avenue – Congress Street and San Diego Avenue (south of Ampudia Street) provide one of the few north/south connections for cyclists within the Old Town Community. Congress Street and San Diego Avenue (south of Ampudia Street) is currently classified as a Class III Bike Route designated by sharrow markings. Congress Street's proximity to the Old Town Transit Center and retail and restaurant uses make it a highly attractive route for cyclists. Both corridors currently have high traffic volumes, and on-street parking on both sides of the roadway which create an uncomfortable environment for cyclists.

The bicycle related issues/needs within the Old Town Community, identified above, are displayed in **Figure 4-5**.

4.4.2 Bicycle Improvements

The Preferred Plan proposes implementing the following bicycle facilities within the Old Town Community:

- Complete the Class II Bike Lanes in both directions along Taylor Street between Rosecrans Street and the community boundary.
- Class III Bike Route in both directions along Juan Street between Taylor Street and community boundary.
- Class II Bike Lanes in both directions along Old Town Avenue between Hancock Street and San Diego Avenue.
- Class II Bike Lanes in both directions along Morena Boulevard between Taylor Street and the community boundary.



A bicycle connection is currently lacking along Morena Boulevard between Taylor Street and Linda Vista Road. This is a critical connection that would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path. Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge.

Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment. The I-8 Corridor Study identifies Class II bike lanes along Morena Boulevard, between W. Morena Boulevard and Taylor Street, as a high priority project. As described in section 4.2.2, the Corridor Study also proposes removing all free movements from I-8 onto Morena Boulevard and “squaring up” each intersection. Since the plan has not yet been adopted and the improvements are not anticipated to be implemented until Year 2050, no improvements were assumed under Preferred Plan conditions.

4.5 Public Transit Service and Facilities

4.5.1 Identified Transit Issues and Needs

The Old Town Community is served by 10 bus routes, a trolley line, a commuter rail service (The COASTER) and a regional rail line (Amtrak Surfliner), which all serve the Old Town Transit Center. **Figure 4-6** displays the community’s streets served by bus routes as well as the existing Trolley Lines.

This figure also shows the area within ½ mile of the Old Town Transit Center, which is considered a reasonable walking distance to a major transit center (as compared to a ¼ mile for bus stops). As depicted in this figure, nearly all of the commercial and recreational uses are within ½ mile of transit service.

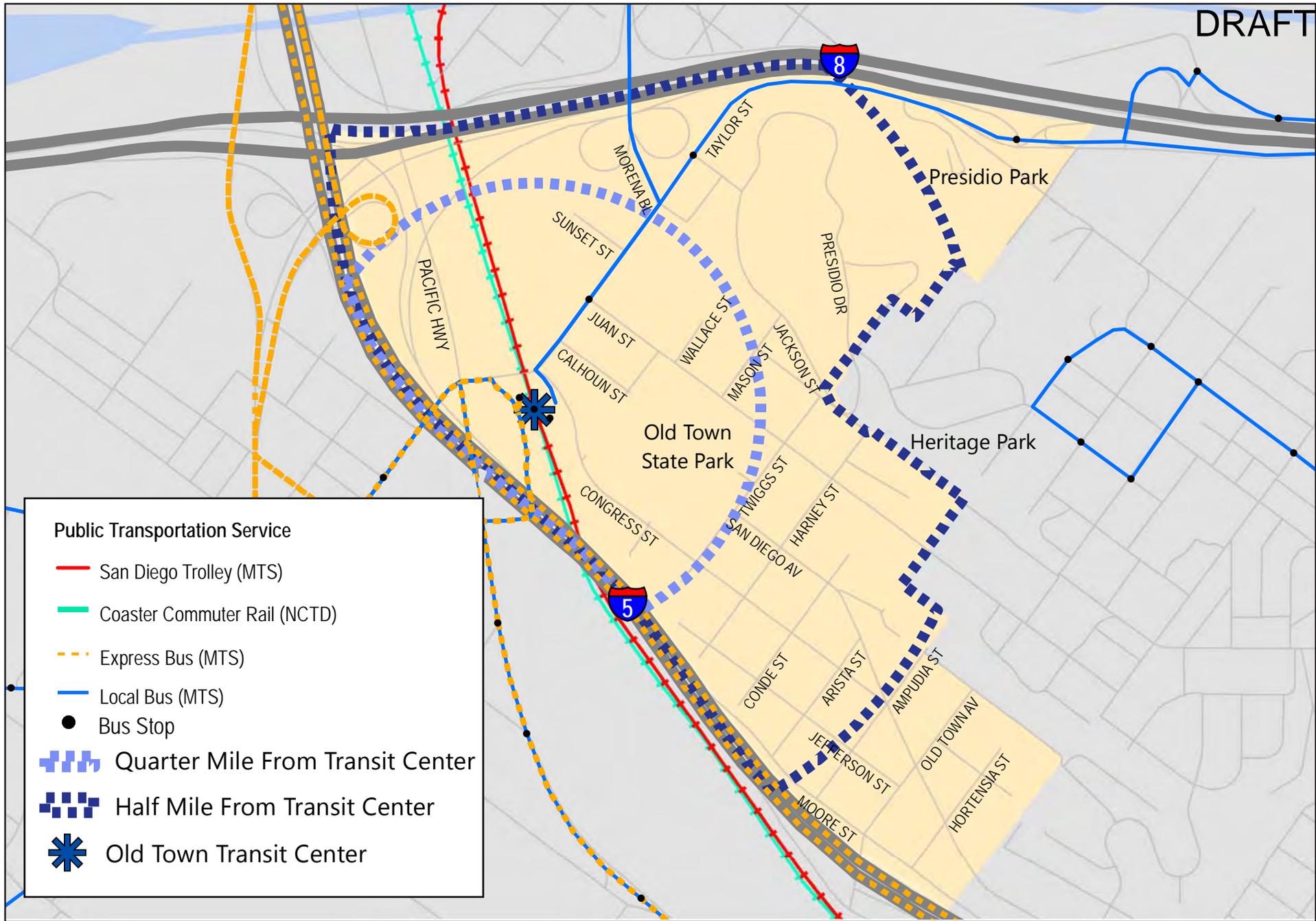


Figure 4-6
Transit Coverage -
Old Town Community

4.5.2 Transit Improvements

SANDAG's *San Diego Forward, The Regional Plan* (Adopted October 2015), indicates that a number of transit improvements are planned for the Old Town Community, prior to this plan's Year 2035 Horizon Year, as described below.

COASTER – By the Year 2020, the frequency of the COASTER will be increased to every 20 minutes during peak periods and every 120 minutes during off-peak periods. The COASTER provides a commuter rail connection between the Old Town Transit Center and North County communities including Solana Beach, Encinitas and Oceanside.

COASTER – by the Year 2020, the COASTER line will be extended to the south and include stations at both Petco Park and the Convention Center.

Mid-Coast Trolley Line – The Mid-Coast Trolley will extend service from Santa Fe Depot in Downtown San Diego to the University City community, serving major activity centers such as Old Town, the University of California, San Diego (UCSD), and Westfield UTC. Construction of the Mid-Coast Trolley line is anticipated to be completed by the Year 2021.

Rapid Bus Route 28 – By the Year 2035, a new rapid bus route will be implemented providing service between Point Loma and Kearny Mesa via the Old Town Transit Center.

Rapid Bus Route 30 – By the Year 2035, a new rapid bus route will be implemented providing service between the Old Town Transit Center and Sorrento Mesa via Pacific Beach, La Jolla and UTC.

Rapid Bus Routes 640A – By the Year 2035, a new rapid bus route will be implemented providing service along I-5 between San Ysidro and the Old Town Transit Center, via City College downtown.

Transit Priority Treatments

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

4.6 Currently Planned Improvements

The following section outlines the mobility improvements that are currently planned within the Old Town community. Some improvements were too minor to incorporate at the community plan level, while others are mitigation measures from projects within the area and are not the responsibility of the community plan. Additionally, the pending improvements contained within the existing community Public Facilities Financing Plan are also outlined and identified if they are consistent with the Preferred Plan.

4.6.1 Auto

Mid-Coast Corridor Transit Project – The Mid-Coast Corridor and Transit Project Transportation Impacts and Mitigation Report; September 2014, identifies the following project related improvements at the Taylor Street / Rosecrans Street and Pacific Highway intersection:

- Provide second northbound right-turn lane
- Provide third eastbound through lane
- Provide second southbound left-turn lane

These improvements are designed to handle excess queuing at the intersection during gate down times. These improvements do not conflict with any improvements recommended by the Preferred Plan and have been incorporated into the future year analysis. However, since these improvements are mitigation measures for the Mid-Coast Corridor Transit Project they are not considered to be part of the Preferred Plan and should not be included in the IFS.

Old Town Public Facilities Financing Plan, 2004 – This plan identifies the widening of Presidio Drive to allow for a right-turn lane on Taylor Street (Project T10). This improvement is unfunded and is not currently scheduled for implementation. – *Improvement is consistent with the Preferred Plan.*

4.6.2 Pedestrian

Old Town Public Facilities Financing Plan, 2004 – Contains the following planned pedestrian improvements that have not yet been completed.

- Install / upgrade 20 curb ramps to meet ADA standards (Project T12) – These improvements are currently not scheduled or funded. – *Improvement is consistent with the Preferred Plan.*

Several pedestrian facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the pedestrian improvements located in the Old Town Community are included in **Appendix B**. It should be noted that this list is updated on a regular basis and **Appendix B** only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

Wayfinding Signage Program

The Old Town Chamber of Commerce is currently developing a wayfinding signage program in the Old Town Community. The wayfinding signage program will standardize and brand the various wayfinding signs currently within the community and highlight paths and links for pedestrians to access the various parks and attractions within the community.

4.6.3 Bicycle

Old Town Public Facilities Financing Plan, 2004 – Identifies the widening of Presidio Drive to allow for a right-turn lane on Taylor Street (Project T10). This improvement is unfunded and is not currently scheduled for implementation. – *Improvement is consistent with the Preferred Plan.*

Several roadway facility projects have been identified by the City of San Diego and are included on their Unfunded Transportation Needs List (8/5/2014). A list of the roadway related improvements located in the Old Town Community are included in **Appendix B**. It should be noted that this list is updated on a regular basis and **Appendix B** only reflects a snapshot of the needs and planned improvements throughout the community at the time when this report was prepared.

4.6.4 Transit

As noted in section 4.5.2 the Preferred Plan is consistent with SANDAG's *San Diego Forward, The Regional Plan (Adopted October 2015)*.

5.0 Modeling and Forecasting

This chapter summarizes the future year travel demand model forecasting process utilized to project the future travel patterns within the Midway-Pacific Highway and Old Town communities, under buildout conditions. Future year traffic volumes were derived from a SANDAG Series 12 Transportation Forecast model run, which was verified per the City of San Diego's Small Study Area Traffic Modeling Process (April 2012) and calibrated for the Midway-Pacific Highway and Old Town communities.

5.1 Base Year (2012) Model Calibration

The base year model calibration process included verification and validation of base year model inputs (land uses and roadway network), as well as additional adjustments to the base year model (roadway speeds, centroid loadings, etc.) to calibrate the model to better represent existing travel patterns within the Midway-Pacific Highway and Old Town communities. Detailed descriptions of each validation step are provided in the following sections.

5.1.1 Base Year Land Use Verification/Validation

Existing land use data, as listed below, was collected for the Midway-Pacific Highway and Old Town communities and verified/adjusted in the Base Year model to correctly match actual conditions:

- Descriptions (land use type and code)
- Proper measurement unit types (square feet, units, acres)
- Quantity
- Vehicular trip generation rates

Land use types, descriptions and quantities were crosschecked with ground conditions using Google Earth imagery, as well as field verification, as necessary. Trip generation rates for individual land uses were coded based on the driveway rates provided in the *City of San Diego Land Development Code – Trip Generation Manual* (May 2003). Base year land use inputs for the project study area are provided in **Appendix D**.

5.1.2 Base Year Roadway Network Verification/Validation

The SANDAG Series 12 Base Year roadway network was compared to actual conditions to ensure an accurate model network. The following variables were compared and adjusted to match actual conditions:

- TAZ loading points
- Number of lanes for roadways
- Traffic controls
- Signalized intersection geometrics
- Street classification
- Roadway speed limits

5.1.3 Base Year Ground Count Validation & Adjustment

Historical ADT volumes over the past 11 years were compiled from the City of San Diego's Traffic Count Database and other recent studies for major roadway segments throughout the Midway-Pacific Highway and Old Town communities. The most recent historic counts along with counts from the past five (5) years were selected to establish a Base Year ground count database. This database included multiple counts from the same location on numerous segments, as well as the counts already included in the model. The final count was selected based upon nearby trip generators and traffic patterns along each roadway segment. Abnormally high or low traffic volumes were assumed to be outliers, and thus were not selected as model inputs.

5.1.4 Model Sensitivity Adjustment

Model calibration was performed by running a Base Year model estimate and comparing the results to the selected ground counts discussed above. Roadway segments that did not meet the model calibration targets established by the City of San Diego were identified for additional adjustments. These adjustments included the relocation of TAZ connectors and centroids, TAZ splitting, adjustments of roadway speed (to represent congestion), and in rare cases, ground count adjustments using historic counts older than three years.

5.2 Future Year Traffic Forecast Volume

The Future Year model was developed by inputting the future year land uses and roadway network into the calibrated Base Year model, described in the previous sections, with the following adjustments/assumptions:

- Implementation of the Preferred Plan land uses within the project study area (land use assumptions are provided in **Appendix D**).
- Existing roadway network within the study area with the following improvement projects:
 - Hancock Street extension between Midway Drive and Sports Arena Boulevard
 - Kemper Street extension between Sports Arena Boulevard and Kurtz Street
 - Implementation of Frontier Street between Sports Arena Boulevard and Kurtz Street
 - Greenwood Street extension between Kurtz Street and Sports Arena Boulevard
 - Implementation of Charles Lindbergh Parkway between Sports Arena Boulevard and Midway Drive
 - Implementation of Dutch Flats Parkway between Sports Arena Boulevard and Barnett Avenue
- Year 2035 land uses outside of the study area
- Year 2035 roadway/transit network outside of the study area
- Year 2035 transit network both inside and outside of the study area

The model inputs described above were reviewed and approved by City staff prior to running the model forecasts.

Final SANDAG Series 12 Future Year Forecast Model results are provided in **Appendix D**. **Figure 5-1** shows the final projected average daily traffic volumes that were used to develop and analyze the Preferred Plan mobility network, as described in the next chapter.

5.2.1 Vehicle Miles Traveled

The vehicle miles traveled (VMT) generated within the community was estimated using the SANDAG Series 12 Preferred Plan Future Year 2035 and Base Year models. VMT is the total number of miles driven by all vehicle trips within the Midway-Pacific Highway and Old Town communities, including trips to, from, and within the community. **Tables 5.1A and 5.1B** display the total VMT generated within each community and the average trip length under both the Preferred Plan and Base Year conditions. VMT calculations are provided in **Appendix D**.

Table 5.1A Vehicle Miles Traveled (VMT) Comparison – Midway-Pacific Highway Community

| Measure | Community Planning Area | | | | San Diego Region | | | |
|--|-------------------------|----------------|------------|--------|------------------|-------------|------------|--------|
| | Base Year | Preferred Plan | Δ in Value | Δ in % | Base Year | Year 2035 | Δ in Value | Δ in % |
| Total VMT (miles) | 1,283,839 | 1,343,669 | 59,830 | 4.7% | 85,331,631 | 108,419,301 | 23,087,670 | 27.1% |
| Total # of Auto Trips | 187,097 | 199,988 | 12,891 | 6.9% | 16,458,692 | 20,183,171 | 3,724,479 | 22.6% |
| Average Trip Length ¹ (miles) | 6.9 | 6.7 | -0.2 | -2.1% | 5.18 | 5.37 | 0.19 | 3.6% |
| Population | 3,762 | 9,210 | 5,448 | 144.8% | 3,130,717 | 4,035,834 | 905,117 | 28.9% |
| Daily VMT by Population (miles) | 341 | 146 | -195 | -57.2% | 27.30 | 26.90 | -0.40 | -1.5% |

Note:

1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the Midway-Pacific Highway community is only anticipated to experience minimal growth (based on the regional averages) in both the number of new auto trips and VMT generated. With the implementation of the Preferred Plan infrastructure and land uses, the average vehicular trip length is anticipated to decrease by 2.1%. However, with the significant population increase anticipated within the community, the daily VMT by population is anticipated to drop dramatically (-57.2%).

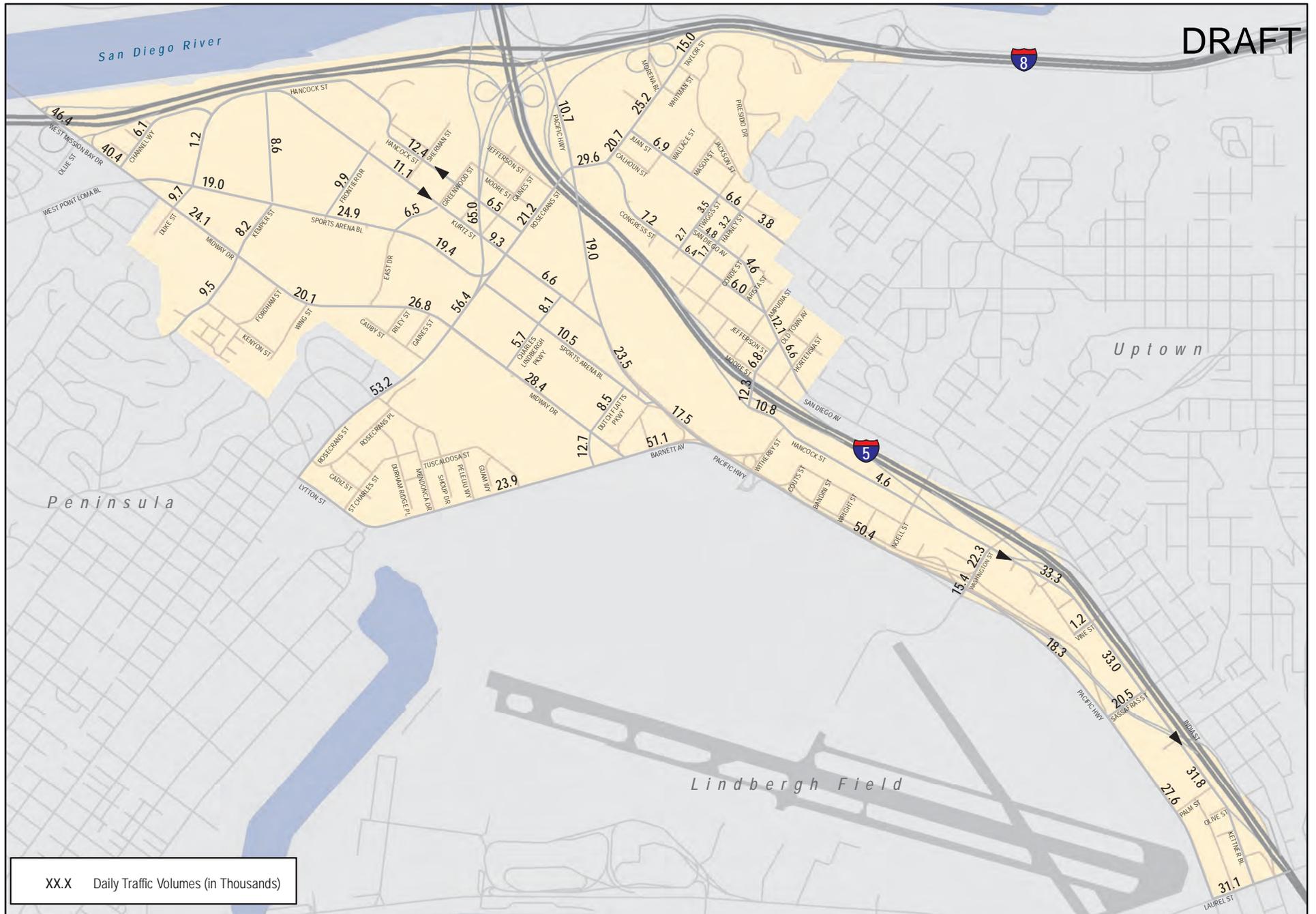


Figure 5-1
Daily Roadway Segment Traffic Volumes -
Preferred Plan Conditions

Table 5.1B Vehicle Miles Traveled (VMT) Comparison – Old Town Community

| Measure | Community Planning Area | | | | San Diego Region | | | |
|--|-------------------------|----------|------------|--------|------------------|-------------|------------|--------|
| | Base Year | Buildout | Δ in Value | Δ in % | Base Year | Year 2035 | Δ in Value | Δ in % |
| Total VMT (miles) | 285,874 | 334,073 | 48,199 | 16.9% | 85,331,631 | 108,419,301 | 23,087,670 | 27.1% |
| Total # of Auto Trips | 34,799 | 43,763 | 8,964 | 25.8% | 16,458,692 | 20,183,171 | 3,724,479 | 22.6% |
| Average Trip Length ¹ (miles) | 8.2 | 7.6 | -0.6 | -7.1% | 5.18 | 5.37 | 0.19 | 3.6% |
| Population | 677 | 944 | 267 | 39.4% | 3,130,717 | 4,035,834 | 905,117 | 28.9% |
| Daily VMT by Population (miles) | 422 | 354 | -68 | -16.2% | 27.30 | 26.90 | -0.40 | -1.5% |

Note:

1. Average trip length is estimated by dividing the total VMT by the total # of auto trips.

As shown, under implementation of the Preferred Plan the Old Town community is only anticipated to experience average growth (based on the region) in both the number of new auto trips and VMT generated. With the implementation of the Preferred Plan infrastructure and land uses the average vehicular trip length is anticipated to decrease by 7.1%. The reduction in average trip length in association with the anticipated population increase within the community results in an overall decrease in the daily VMT by population (-16.2%).

5.2.2 Community Mode Choice

The Mode Choice Model used in the SANDAG Series 12 Transportation Forecast is not sensitive to changes in bicycle and pedestrian facilities. In other words, the model does not accurately adjust travel behaviors in response to implementation of multimodal facilities such as bicycle lanes or separated multi-use paths. Due to these constraints, the SANDAG Series 12 Model was not utilized to project the demands of future year non-motorized travel.

SANDAG is currently in the process of developing Series 13, an Activity Based Model (ABM) which will more accurately account for shifts in transportation modes based on the implementation of pedestrian and bicycle facilities. However, SANDAG modeling staff has indicated that this model is currently under development and will not be ready for public release until later in 2016.

6.0 Preferred Plan Analysis

6.1 Street and Freeway System Assessment and Results

The following section provides a summary of vehicular analysis results along key study roadways, including the projected daily roadway LOS, and the peak hour intersection LOS analysis under implementation of the Preferred Plan.

6.1.1 Roadway Segment Analysis

This analysis assumes implementation of the roadway segment-related improvements outlined in Sections 3.2.2 and 4.2.2 under the Preferred Plan. The associated roadway classifications under implementation of the Preferred Plan, within both communities, is displayed in **Figure 6-1**.

Table 6.1 and **Figure 6-2** display the projected ADT volume and associated roadway LOS under implementation of the Preferred Plan. Section 5.2 describes the process used to develop projected ADT volume estimations.

As shown, all Mobility Element roadways are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

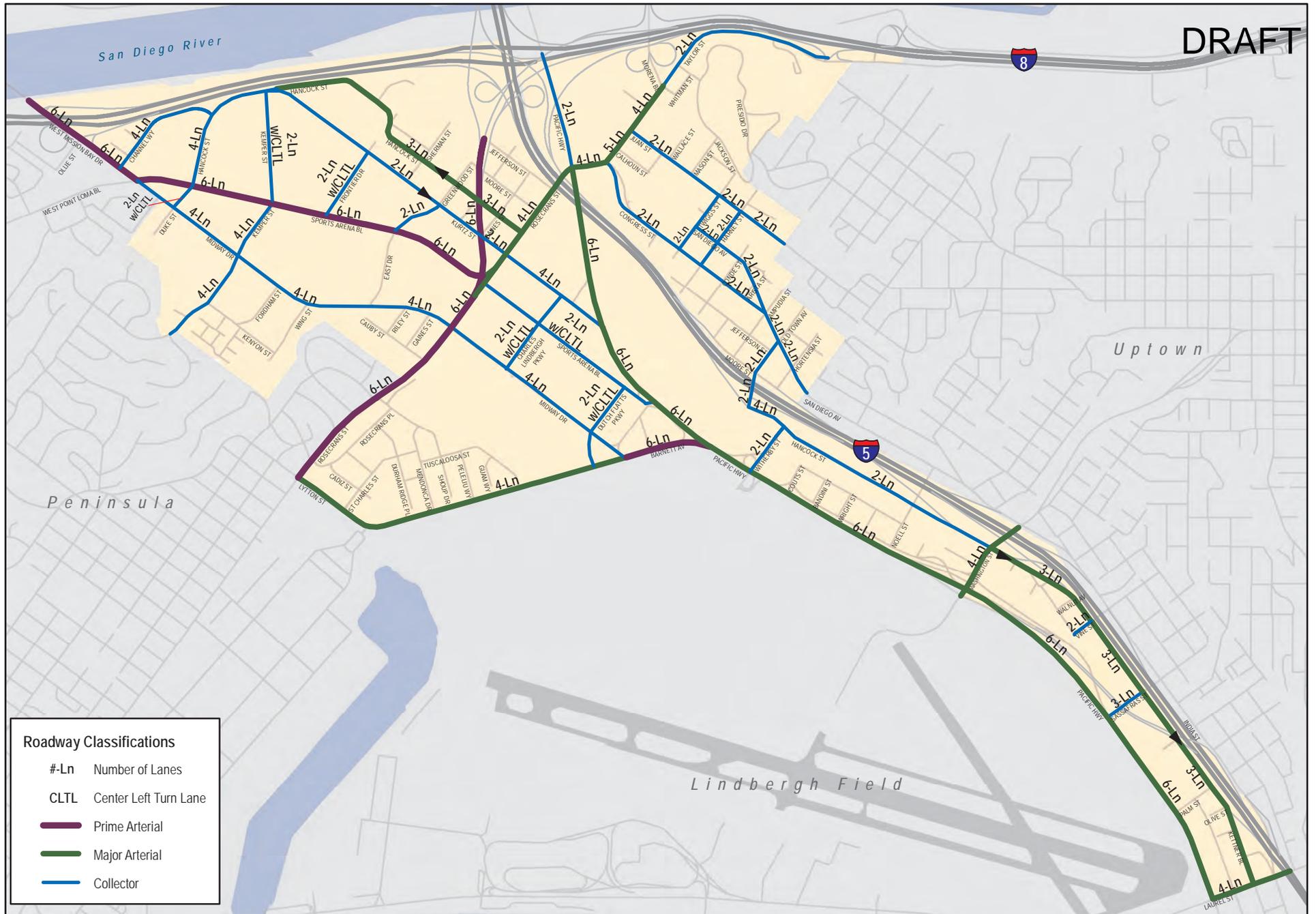
Midway-Pacific Highway Community

- Midway Drive, between East Drive and Rosecrans Street (LOS E)
- Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E)
- Kettner Boulevard, between Washington Street and Vine Street (LOS F)
- Kettner Boulevard, between Vine Street and Sassafras Street (LOS F)
- Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F)
- Pacific Highway, between Sea World Drive and Taylor Street (LOS F)
- Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F)
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard (LOS E)
- Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F)

Old Town Community

- Congress Street between Taylor Street and Twiggs Street (LOS E)
- San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F)
- San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E)
- Juan Street, between Taylor Street and Twiggs Street (LOS E)
- Juan Street, between Twiggs Street and Harney Street (LOS E)
- Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F)
- Old Town Avenue, between Hancock Street and Moore Street (LOS F)
- Old Town Avenue, between Moore Street and San Diego Avenue (LOS E)

DRAFT



Roadway Classifications

| | |
|------|-----------------------|
| #-Ln | Number of Lanes |
| CLTL | Center Left Turn Lane |
| | Prime Arterial |
| | Major Arterial |
| | Collector |

Midway-Pacific Highway and
Old Town Community Plan Update

Figure 6-1
Roadway Classifications -
Preferred Plan Conditions



Figure 6-2
Daily Roadway Segment Traffic Volumes and LOS -
Preferred Plan Conditions

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

| ID | Roadway | From | To | Classification | Maximum Capacity at LOS E | ADT | V/C | LOS |
|-------------------------------|----------------------------|--------------------------------------|---------------------|----------------------------|---------------------------|--------|------|-----|
| <i>North-South</i> | | | | | | | | |
| Midway Pacific Highway | | | | | | | | |
| 1 | Lytton Street/ Barnett Ave | Rosecrans St | Midway Dr | 4-Lane Major Arterial | 40,000 | 23,900 | 0.60 | C |
| 2 | W. Mission Bay Dr | I-8 WB Ramps | I-8 EB Ramps | 6-Lane Prime Arterial | 60,000 | 46,400 | 0.77 | C |
| 3 | Midway Dr | W. Point Loma Blvd/Sports Arena Blvd | Kemper St | 4-Lane Collector (CLTL) | 30,000 | 24,100 | 0.80 | D |
| 4 | | Kemper St | East Dr | 4-Lane Collector (CLTL) | 30,000 | 20,100 | 0.67 | D |
| 5 | | East Dr | Rosecrans St | 4-Lane Collector (CLTL) | 30,000 | 26,800 | 0.89 | E |
| 6 | | Rosecrans St | Barnett Ave | 4-Lane Collector (CLTL) | 30,000 | 28,400 | 0.95 | E |
| 7 | Sports Arena Blvd | I-8 EB Ramps | W. Point Loma Blvd | 6-Lane Prime Arterial | 60,000 | 40,400 | 0.67 | C |
| 8 | | W. Point Loma Blvd/Midway Dr | Kemper St | 6-Lane Prime Arterial | 60,000 | 19,000 | 0.32 | A |
| 9 | | Kemper St | East Dr | 6-Lane Prime Arterial | 60,000 | 24,900 | 0.42 | A |
| 10 | | East Dr | Rosecrans St | 6-Lane Prime Arterial | 60,000 | 19,400 | 0.32 | A |
| 11 | | Rosecrans St | Pacific Hwy | 2-Lane Collector (CLTL) | 15,000 | 10,500 | 0.70 | D |
| 12 | Kurtz St | Hancock St | Rosecrans St | 2-Lane Collector (One-Way) | 15,000 | 11,100 | 0.74 | D |
| 13 | | Rosecrans St | Pacific Hwy | 2-Lane Collector (One-Way) | 15,000 | 6,600 | 0.44 | B |
| 14 | Hancock St | Midway Dr | Sports Arena Blvd | 2-Lane Collector (CLTL) | 15,000 | 9,700 | 0.65 | C |
| 15 | | Sports Arena Blvd | Kurtz St | 4-Lane Collector (no CLTL) | 15,000 | 1,200 | 0.08 | A |
| 16 | | Kurtz St | Camino Del Rio West | 3-Lane Major (One-Way) | 30,000 | 12,400 | 0.41 | B |
| 17 | | Camino Del Rio West | Rosecrans St | 3-Lane Major (One-Way) | 30,000 | 6,500 | 0.22 | A |
| 18 | | Old Town Ave | Witherby St | 4-Lane Collector (no CLTL) | 15,000 | 10,800 | 0.72 | D |
| 19 | | Witherby St | Washington St | 2-Lane Collector | 8,000 | 4,600 | 0.58 | C |
| 20 | Kettner Blvd | Washington St | Vine St | 3-Lane Major (One-Way) | 30,000 | 33,300 | 1.11 | F |
| 21 | | Vine St | Sassafras St | 3-Lane Major (One-Way) | 30,000 | 33,000 | 1.10 | F |
| 22 | | Sassafras St | Laurel St | 3-Lane Major (One-Way) | 30,000 | 31,800 | 1.06 | F |
| 23 | Pacific Hwy | Sea World Dr | Taylor St | 2-Lane Collector | 8,000 | 10,700 | 1.34 | F |
| 24 | | Taylor St | Kurtz St | 6-Lane Major Arterial | 50,000 | 19,000 | 0.38 | A |

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

| ID | Roadway | From | To | Classification | Maximum Capacity at LOS E | ADT | V/C | LOS |
|-------------------------------|---------------------|-------------------|---------------------------|----------------------------|---------------------------|--------|------|-----|
| 25 | | Kurtz St | Sports Arena Blvd | 6-Lane Major Arterial | 50,000 | 23,500 | 0.47 | B |
| 26 | | Sports Arena Blvd | Barnett Ave | 6-Lane Major Arterial | 50,000 | 17,500 | 0.35 | A |
| 27 | | Barnett Ave | Washington St | 6-Lane Major Arterial | 50,000 | 50,400 | 1.01 | F |
| 28 | | Washington St | Sassafras St | 6-Lane Major Arterial | 50,000 | 18,300 | 0.37 | A |
| 29 | | Sassafras St | Laurel St | 6-Lane Major Arterial | 50,000 | 27,600 | 0.55 | B |
| Old Town | | | | | | | | |
| 30 | Congress St | Taylor St | Twiggs St | 2-Lane Collector | 8,000 | 7,200 | 0.90 | E |
| 31 | | Twiggs St | Harney St | 2-Lane Collector | 8,000 | 6,400 | 0.80 | D |
| 32 | | Harney St | San Diego Ave/ Ampudia St | 2-Lane Collector | 8,000 | 6,000 | 0.75 | D |
| 33 | San Diego Ave | Twiggs St | Harney St | 2-Lane Collector | 8,000 | 4,800 | 0.60 | C |
| 34 | | Conde St | Arista Ave | 2-Lane Collector | 8,000 | 4,600 | 0.58 | C |
| 35 | | Ampudia St | Old Town Ave | 2-Lane Collector | 8,000 | 12,100 | 1.51 | F |
| 36 | | Old Town Ave | Hortensia St | 2-Lane Collector | 8,000 | 6,600 | 0.83 | E |
| 37 | Juan St | Taylor St | Twiggs St | 2-Lane Collector | 8,000 | 6,900 | 0.86 | E |
| 38 | | Twiggs St | Harney St | 2-Lane Collector | 8,000 | 6,600 | 0.83 | E |
| 39 | | Harney St | San Juan Rd | 2-Lane Collector | 8,000 | 3,800 | 0.48 | C |
| <i>East-West</i> | | | | | | | | |
| Midway Pacific Highway | | | | | | | | |
| 40 | Channel Wy | W. Mission Bay Dr | Hancock St | 4-Lane Collector (no CLTL) | 15,000 | 6,100 | 0.41 | B |
| 41 | Kemper St | Kenyon St | Midway Dr | 4-Lane Collector (no CLTL) | 15,000 | 9,500 | 0.63 | C |
| 42 | | Midway Dr | Sports Arena Blvd | 4-Lane Collector (no CLTL) | 15,000 | 8,200 | 0.55 | C |
| 43 | | Sports Arena Blvd | Hancock St | 2-Lane Collector (CLTL) | 15,000 | 8,600 | 0.57 | C |
| 44 | Frontier St | Sports Arena Blvd | Kurtz St | 2-Lane Collector (CLTL) | 15,000 | 9,900 | 0.66 | C |
| 45 | Greenwood St | Sports Arena Blvd | Kurtz St | 2-Lane Collector | 8,000 | 6,500 | 0.81 | D |
| 46 | Camino Del Rio West | Rosecrans St | I-5/I-8 Ramps | 6-Lane Prime Arterial | 60,000 | 65,000 | 1.08 | F |
| 47 | Rosecrans St | Lytton St | Midway Dr | 6-Lane Prime Arterial | 60,000 | 53,200 | 0.89 | D |

Table 6.1 Daily Roadway Segment Analysis - Preferred Plan Conditions

| ID | Roadway | From | To | Classification | Maximum Capacity at LOS E | ADT | V/C | LOS |
|-----------------|------------------------|---------------------------|-----------------------|-------------------------|---------------------------|--------|------|----------|
| 48 | | Midway Dr | Sports Arena Blvd | 6-Lane Prime Arterial | 60,000 | 56,400 | 0.94 | E |
| 49 | | Sports Arena Blvd | Pacific Hwy/Taylor St | 4-Lane Major Arterial | 40,000 | 21,200 | 0.53 | C |
| 50 | Charles Lindbergh Pkwy | Midway Dr | Sports Arena Blvd | 2-Lane Collector (CLTL) | 15,000 | 5,700 | 0.38 | B |
| 51 | | Sports Arena Blvd | Kurtz Street | 2-Lane Collector (CLTL) | 15,000 | 8,100 | 0.54 | C |
| 52 | Dutch Flats Pkwy | Barnett Avenue | Midway Dr | 2-Lane Collector (CLTL) | 15,000 | 12,700 | 0.85 | D |
| 53 | | Midway Dr | Sports Arena Blvd | 2-Lane Collector (CLTL) | 15,000 | 8,500 | 0.57 | C |
| 54 | Barnett Ave | Midway Dr | Pacific Hwy | 6-Lane Prime Arterial | 60,000 | 51,100 | 0.85 | D |
| 55 | Washington St | Frontage Rd | Pacific St | 4-Lane Major Arterial | 40,000 | 15,400 | 0.39 | B |
| 56 | | Pacific St | Hancock St | 4-Lane Major Arterial | 40,000 | 22,300 | 0.56 | C |
| 57 | Vine St | California St | Kettner Blvd | 2-Lane Collector | 8,000 | 1,200 | 0.15 | A |
| 58 | Sassafras St | Pacific Hwy | Kettner Blvd | 3-Lane Collector | 11,500 | 20,500 | 1.78 | F |
| 59 | Laurel St | Pacific Hwy | Kettner Blvd | 4-Lane Major Arterial | 40,000 | 31,100 | 0.78 | D |
| Old Town | | | | | | | | |
| 60 | Taylor St | Pacific Hwy/ Rosecrans St | Congress St | 4-Lane Major Arterial | 40,000 | 29,600 | 0.74 | C |
| 61 | | Congress St | Juan St | 5-Lane Major Arterial | 45,000 | 20,700 | 0.46 | B |
| 62 | | Juan St | Morena Blvd | 4-Lane Major Arterial | 40,000 | 25,200 | 0.63 | C |
| 63 | | Morena Blvd | I-8 EB Ramps | 2-Lane Collector | 8,000 | 15,000 | 1.88 | F |
| 64 | Twiggs St | Congress St | San Diego Ave | 2-Lane Collector | 8,000 | 2,700 | 0.34 | B |
| 65 | | San Diego Ave | Juan St | 2-Lane Collector | 8,000 | 3,500 | 0.44 | C |
| 66 | Harney St | Congress St | San Diego Ave | 2-Lane Collector | 8,000 | 1,700 | 0.21 | A |
| 67 | | San Diego Ave | Juan St | 2-Lane Collector | 8,000 | 3,200 | 0.40 | B |
| 68 | Old Town Ave | Hancock St | Moore St | 2-Lane Collector | 8,000 | 12,300 | 1.54 | F |
| 69 | | Moore St | San Diego Ave | 2-Lane Collector | 8,000 | 6,800 | 0.85 | E |

Source: Chen Ryan Associates (June 2016)

Note:
Bold letter indicates LOS E or F

The following mitigation measures were identified for the two communities:

Midway-Pacific Highway Community

Midway Drive, between East Drive and Rosecrans Street (LOS E) – Improving the roadway way from a 4-Lane Collector with Center Left-Turn Lane to a 4-Lane Major Arterial would improve the operations to LOS C. However, due to the frequent driveways and curb-cut locations along this segment of Midway Drive, it is recommended that the center left-turn lane be maintained in favor of a raised median.

Midway Drive, between Rosecrans Street and Barnett Avenue (LOS E) – Improving the roadway way from a 4-Lane Collector with Center Left-Turn Lane to a 4-Lane Major Arterial would improve the operations to LOS C. However, due to the frequent driveways and curb-cut locations along this segment of Midway Drive, it is recommended that the center left-turn lane be maintained in favor of a raised median.

Kettner Boulevard, between Washington Street and Vine Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. There is currently not enough right-of-way on Kettner Boulevard to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Kettner Boulevard, between Vine Street and Sassafras Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. There is currently not enough right-of-way on Kettner Boulevard to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Kettner Boulevard, between Sassafras Street and Laurel Street (LOS F) – Widening the roadway from a 3-Lane Major (One-Way) Arterial to a 4-Lane - Lane Major (One-Way) Arterial would improve the operations to LOS D. There is currently not enough right-of-way on Kettner Boulevard to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Pacific Highway, between Sea World Drive and Taylor Street (LOS F) – Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. There is currently not enough right-of-way on Pacific Highway to accommodate this improvement. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Camino Del Rio West, between Rosecrans Street and the I-5/I-8 Ramps (LOS F) – Improving this roadway from a 6-Lane Prime Arterial to a 6-Lane Expressway would improve the operations to LOS D. However, this improvement would require grade separating all intersections along this

segment of the roadway. Therefore, the proposed improvement may not be feasible, and is not recommended.

Rosecrans Street, between Midway Drive and Sports Arena Boulevard (LOS E) - Improving this roadway from a 6-Lane Prime Arterial to a 6-Lane Expressway would improve the operations to LOS C. However, this improvement would require grade separating all intersections along this segment of the roadway. Therefore, the proposed improvement may not be feasible, and is not recommended.

Sassafras Street, between Pacific Highway and Kettner Boulevard (LOS F) - Widening the roadway from a 3-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. There is currently not enough right-of-way on Sassafras Street to accommodate this improvement. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Pacific Highway, between Barnett Avenue and Washington Street (LOS F) – Widening the roadway from a 6-Lane Major Arterial to a 6-Lane Prime Arterial would improve the operations to an acceptable LOS D. There is currently not enough right-of-way on Pacific Highway to accommodate this improvement and provide bicycle improvements, which help achieve the vision of this plan. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Old Town Community

Congress Street between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. There is currently not enough right-of-way on Congress Street to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

San Diego Avenue, between Ampudia St and Old Town Avenue (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. There is currently not enough right-of-way on San Diego Avenue to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

San Diego Avenue, between Old Town Avenue and Hortensia Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. There is currently not enough right-of-way on San Diego Avenue to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Juan Street, between Taylor Street and Twiggs Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to

LOS B. There is currently not enough right-of-way on Juan Street to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Juan Street, between Twiggs Street and Harney Street (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. There is currently not enough right-of-way on Juan Street to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Taylor Street, between Morena Boulevard and I-8 Ramps (LOS F) - Widening the roadway from a 2-Lane Collector to a 4-Lane Collector with Center Left-Turn Lane would improve the operations to LOS C. There is currently not enough right-of-way on Taylor Street to accommodate this improvement. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Old Town Avenue, between Hancock Street and Moore Street (LOS F) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS D. There is currently not enough right-of-way on Old Town Avenue to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

Old Town Avenue, between Moore Street and San Diego Avenue (LOS E) - Widening the roadway from a 2-Lane Collector to a 2-Lane Collector with Center Left-Turn Lane would improve the operations to LOS B. There is currently not enough right-of-way on Old Town Avenue to accommodate this improvement and maintain existing features such as on-street parking, sidewalks etc. Therefore, the proposed improvement may not be feasible, and is not recommended due to the additional right-of-way required.

6.1.2 Intersection Geometry and LOS Analysis

AM and PM peak hour intersection LOS analyses were conducted for Preferred Plan conditions. It was assumed under implementation of the Preferred Plan that the proposed intersection improvements outlined in Sections 3.2.2 and 4.2.2 would be in place. **Figure 6-3** and **Figure 6-4** display the proposed intersection geometrics and forecast AM and PM peak hour turning movements under implementation of the Preferred Plan, respectively.

Table 6.2 and **Figure 6-5** display the LOS results for the key study intersections located within both communities under Preferred Plan conditions. LOS analyses were conducted using the methodologies described in Chapter 2.0. Intersection LOS calculation worksheets are provided in **Appendix E**. Signal timing were assumed to be optimized under implementation of Preferred Plan conditions, therefore some signal operations may be projected to operate better than under existing conditions.

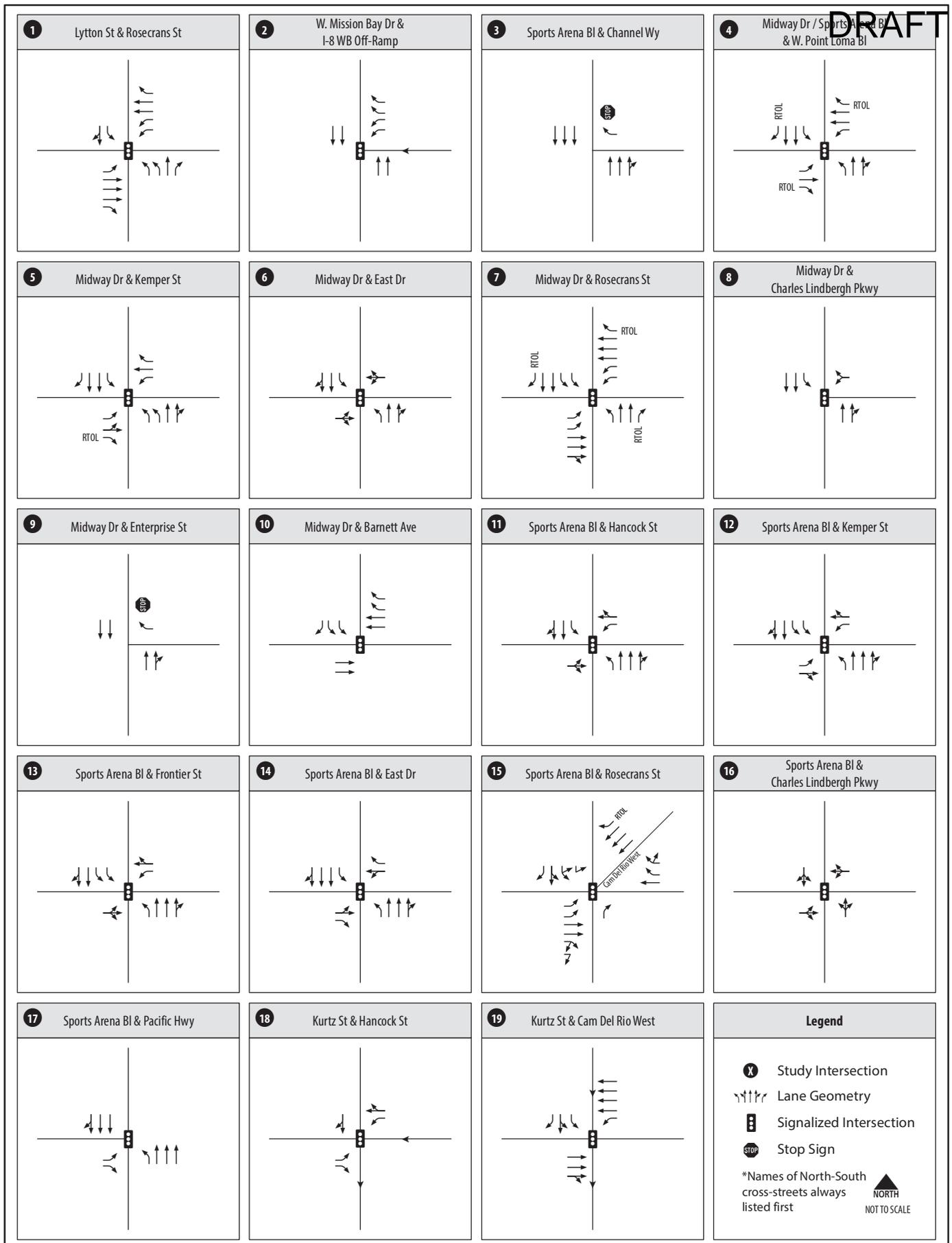


Figure 6-3
Intersection Geometrics - Preferred Plan
(Intersections 1-19)

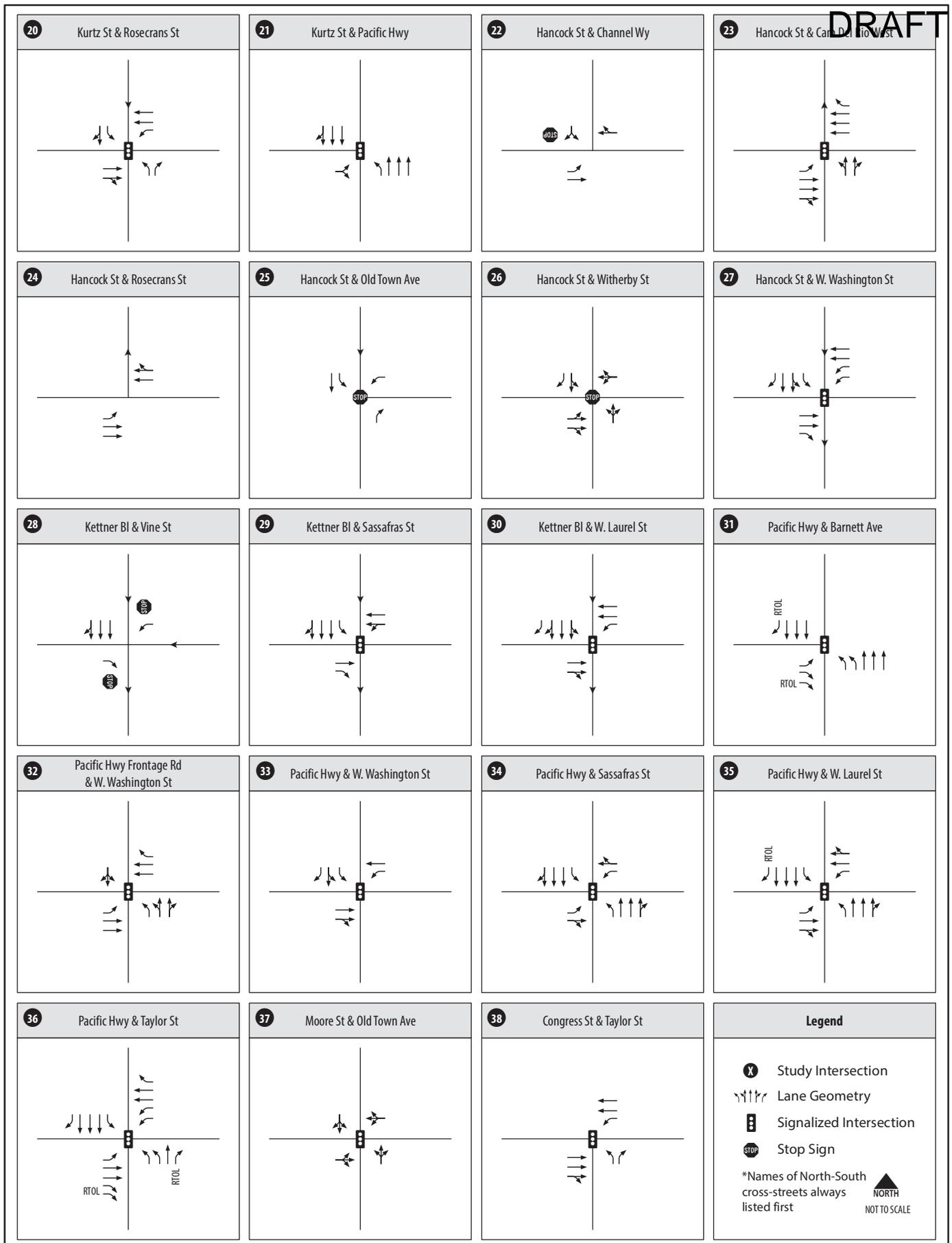


Figure 6-3
Intersection Geometrics - Preferred Plan
(Intersections 20-38)

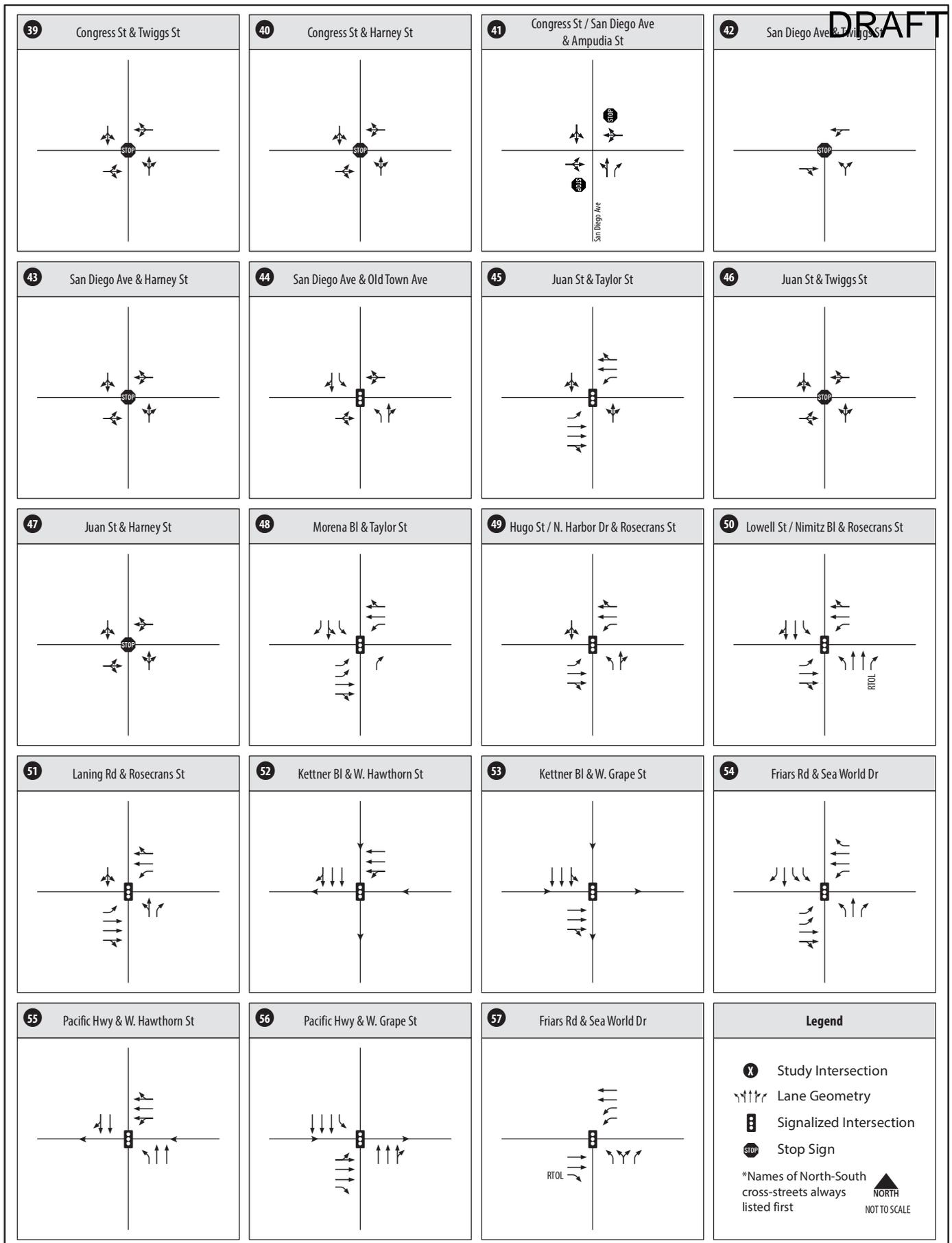


Figure 6-3
Intersection Geometrics - Preferred Plan
(Intersections 39-57)

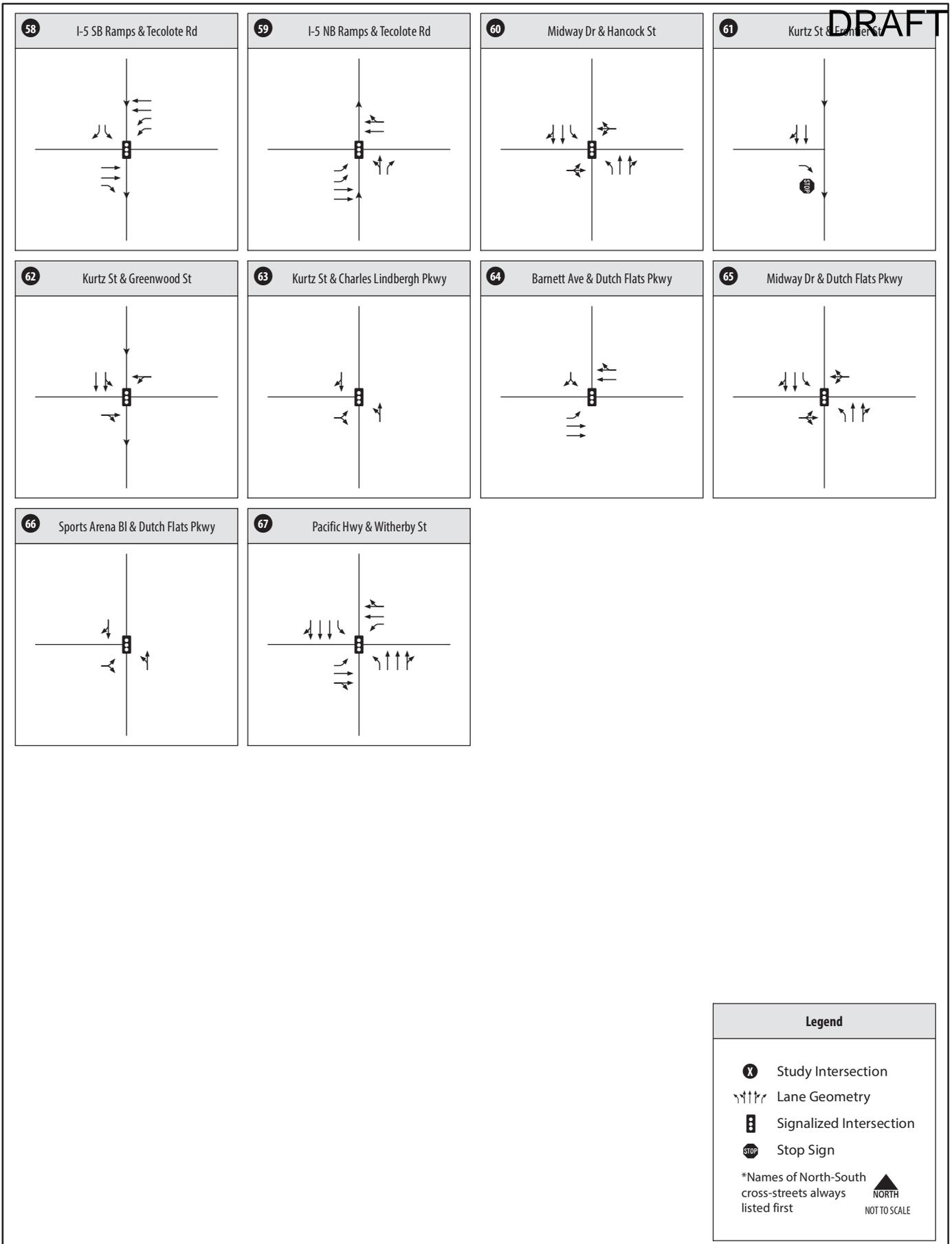


Figure 6-3
Intersection Geometrics - Preferred Plan
(Intersections 58-67)

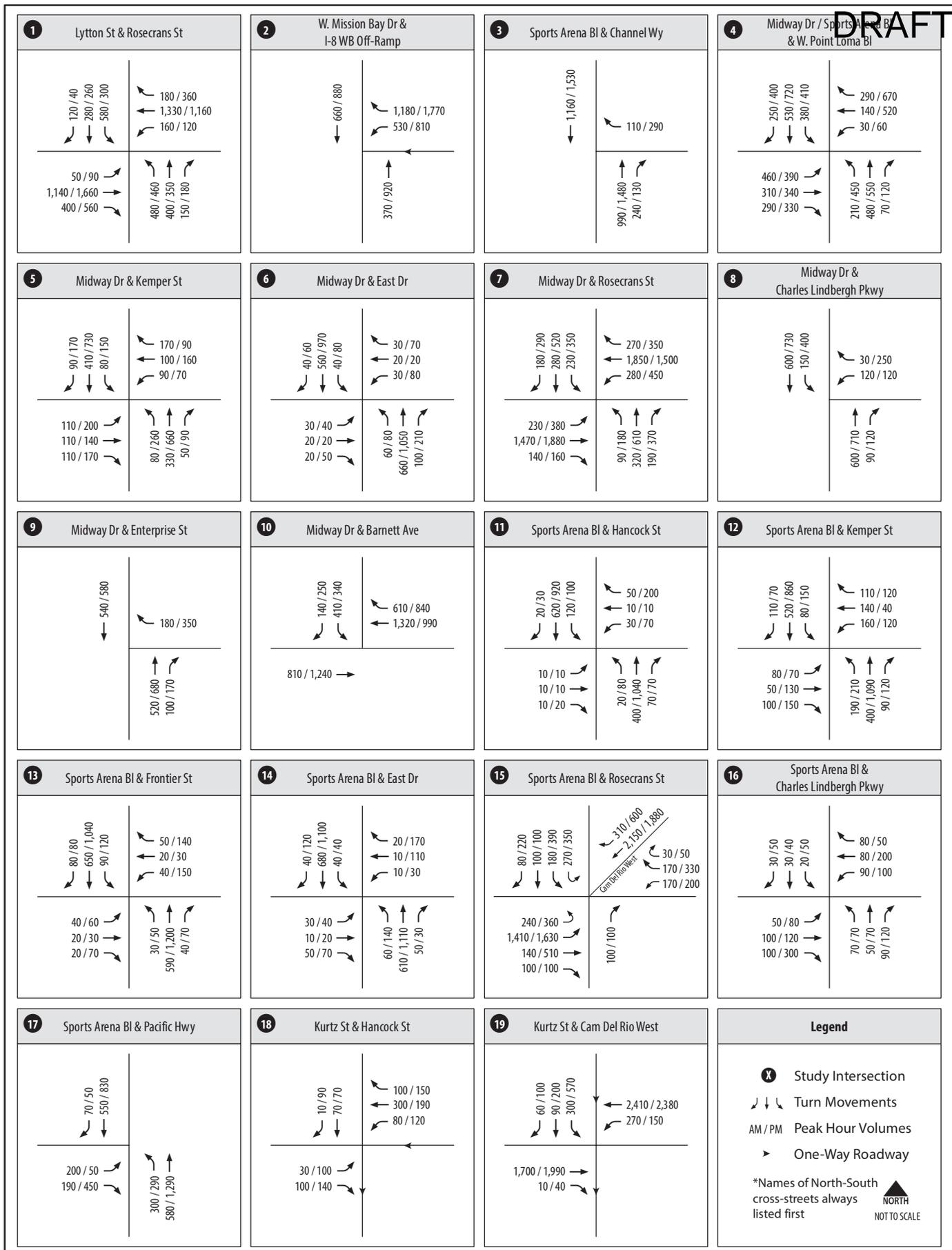
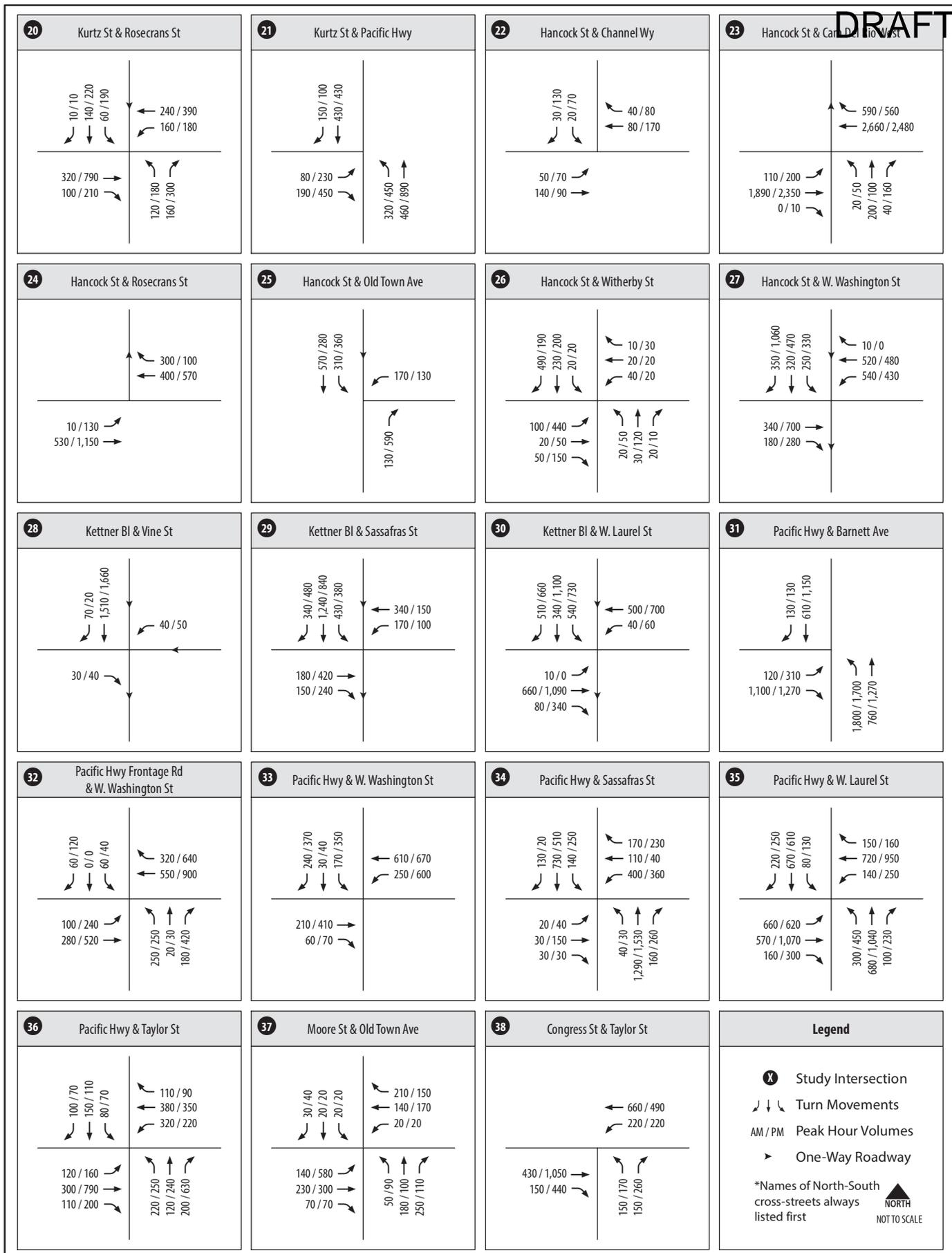


Figure 6-4 Intersection Peak Hour Volumes - Preferred Plan (Intersections 1-19)



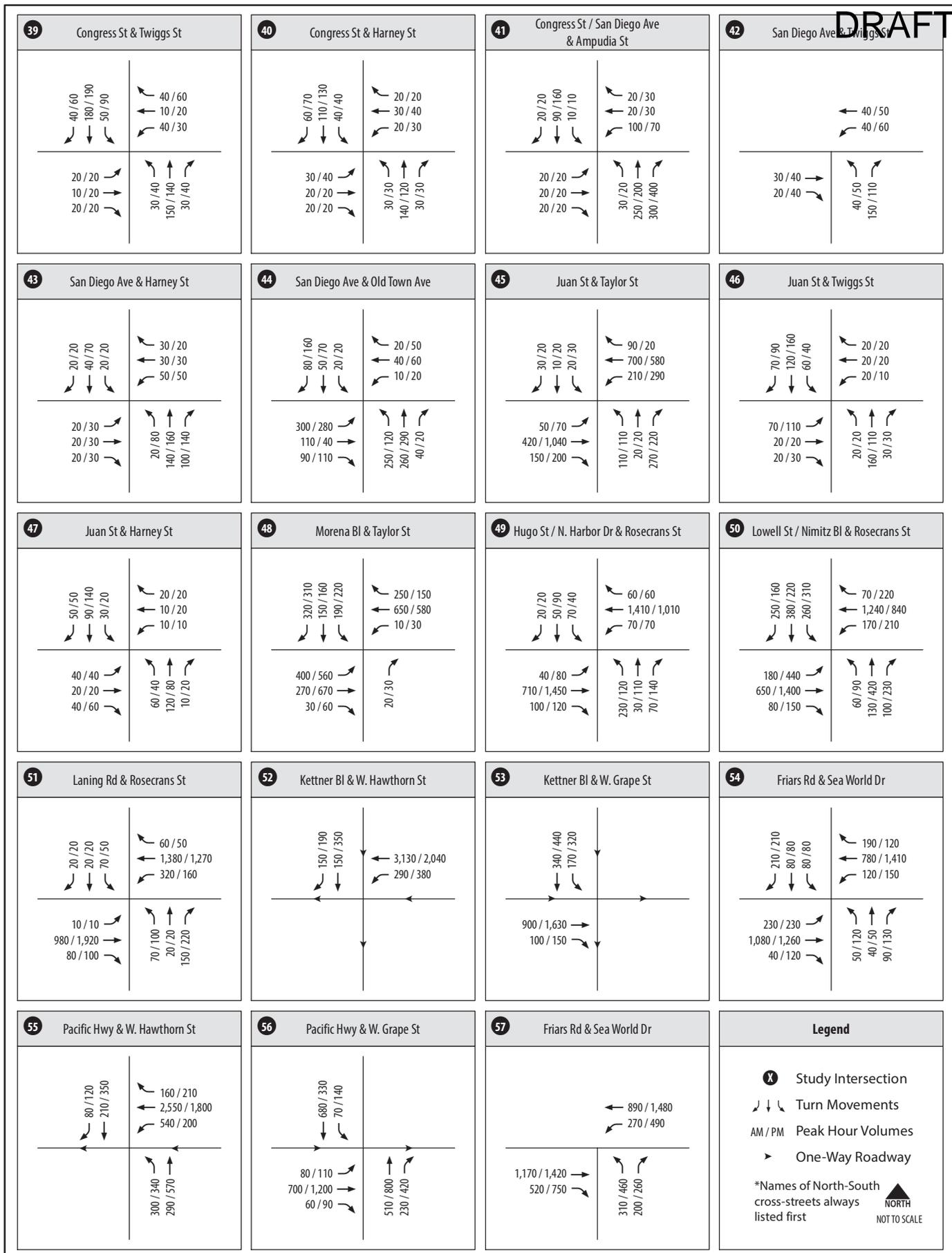


Figure 6-4
Intersection Peak Hour Volumes - Preferred Plan
(Intersections 39-57)

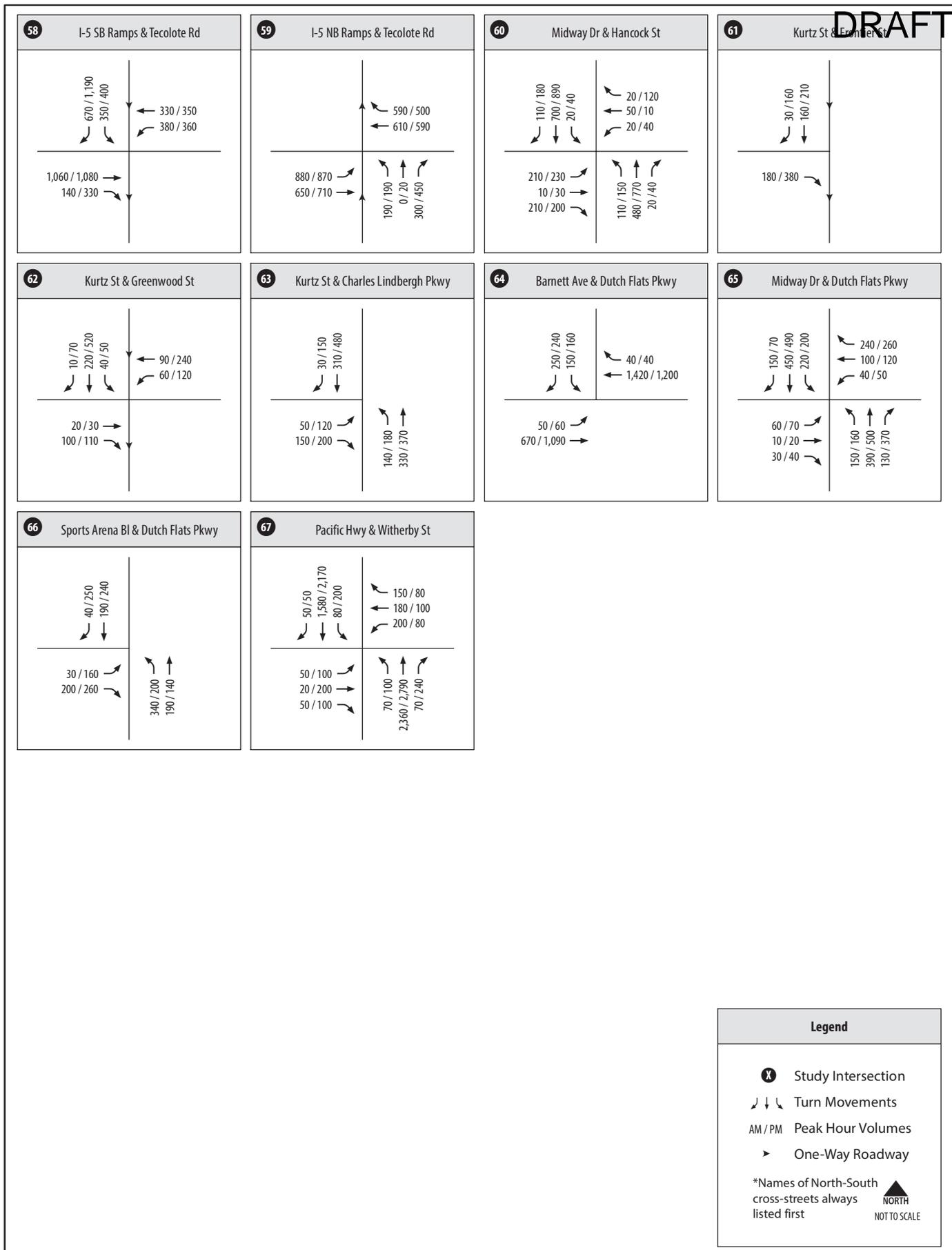


Figure 6-4
Intersection Peak Hour Volumes - Preferred Plan
(Intersections 58-67)

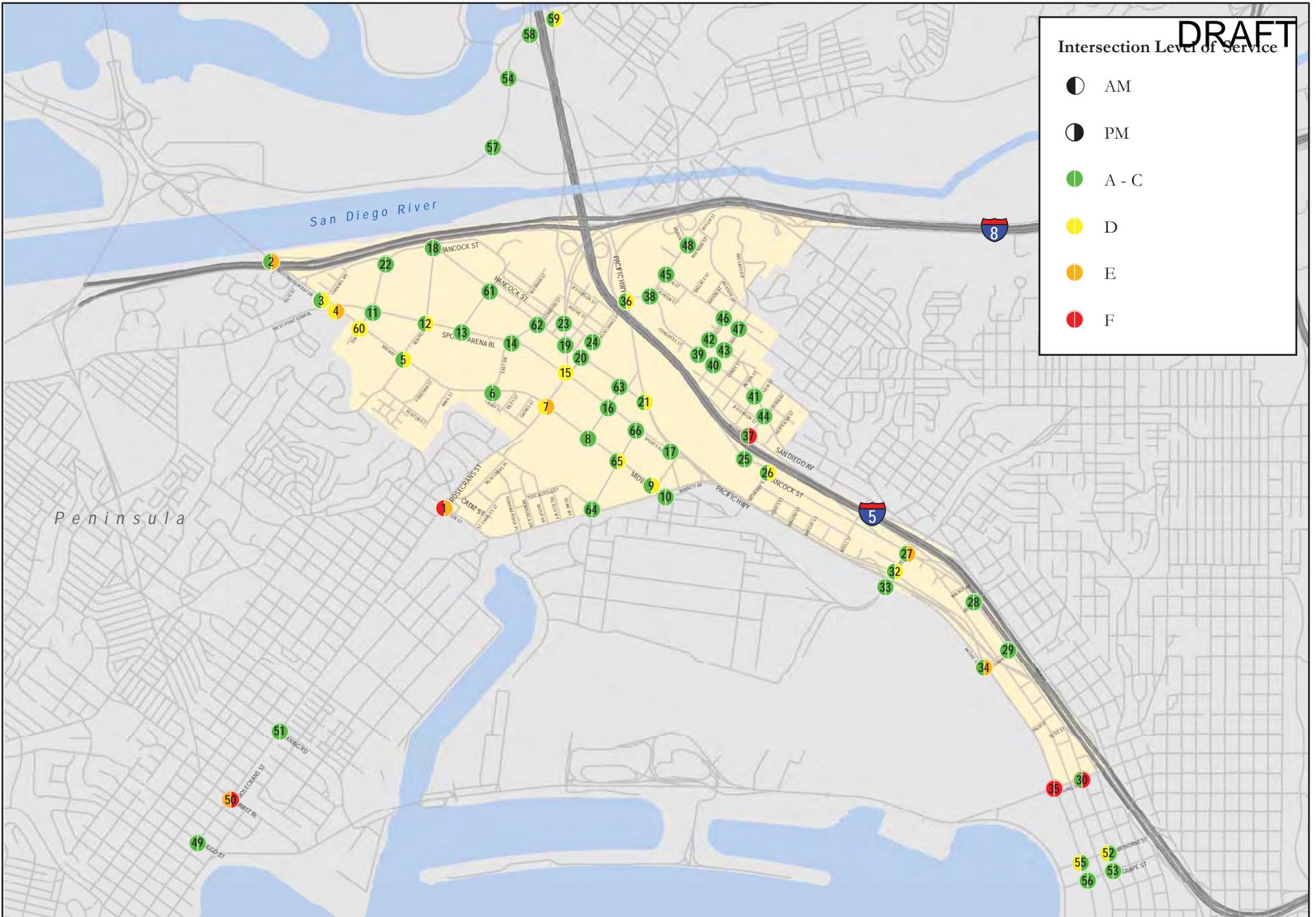


Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

| No. | Intersection | | AM | | | PM | | |
|-------------------------------|--|---------------------------------|-------------|-----|--------------|-------------|-----|--------------|
| | | | Delay (Sec) | LOS | Existing LOS | Delay (Sec) | LOS | Existing LOS |
| Midway-Pacific Highway | | | | | | | | |
| 1 | Lytton St and Rosecrans St | Signal | 96.9 | F | E | 55.1 | E | D |
| 2 | W Mission Bay Dr and I-8 WB Off-Ramp | Signal | 15.4 | B | B | 68.5 | E | E |
| 3 | Sports Arena Blvd and Channel Way | SSSC | 14.0 | B | B | 31.9 | D | B |
| 4 | Midway Dr and Sports Arena/W Point Loma Blvd | Signal | 51.1 | D | D | 74.0 | E | D |
| 5 | Midway Dr and Kemper St | Signal | 32.0 | C | C | 40.5 | D | D |
| 6 | Midway Dr and East Dr | Signal | 7.0 | A | A | 17.8 | B | B |
| 7 | Midway Dr and Rosecrans St | Signal | 36.3 | D | C | 65.4 | E | D |
| 8 | Midway Dr and Charles Lindbergh Pkwy | Signal | 11.5 | B | (1) | 25.6 | C | (1) |
| 9 | Midway Dr and Enterprise St | SSSC | 12.9 | B | B | 26.0 | D | C |
| 10 | Midway Dr and Barnett Ave | Signal | 13.6 | B | B | 12.0 | B | B |
| 11 | Sports Arena Blvd and Hancock St | Signal | 14.8 | B | A | 18.6 | B | B |
| 12 | Sports Arena Blvd and Kemper St | Signal | 34.6 | C | B | 36.3 | D | B |
| 13 | Sports Arena Blvd and Sports Arena Driveway | Signal | 17.9 | B | B | 27.9 | C | C |
| 14 | Sports Arena Blvd and East Dr | Signal | 6.8 | A | C | 23.9 | C | B |
| 15 | Sports Arena Blvd and Rosecrans St | Signal | 36.3 | D | D | 53.9 | D | D |
| 16 | Sports Arena Blvd and Charles Lindbergh Pkwy | Signal | 13.9 | B | (1) | 16.0 | B | (1) |
| 17 | Sports Arena Blvd and Pacific Hwy | Signal | 26.9 | C | B | 17.6 | B | B |
| 18 | Kurtz St and Hancock St | Signal | 13.5 | B | (2) | 12.1 | B | (2) |
| 19 | Kurtz St and Camino Del Rio West | Signal | 19.2 | B | A | 28.6 | C | C |
| 20 | Kurtz St and Rosecrans St | Signal | 24.2 | C | B | 29.2 | C | C |
| 21 | Kurtz St and Pacific Hwy | Signal | 27.9 | C | B | 47.5 | D | B |
| 22 | Hancock St and Channel Wy | SSSC | 10.0 | B | A | 12.9 | B | B |
| 23 | Hancock St and Camino Del Rio West | Signal | 30.2 | C | C | 26.1 | C | C |
| 24 | Hancock St and Rosecrans St | N/A | 9.0 | A | A | 9.6 | A | A |
| 25 | Hancock St and Old Town Ave | AWSC | 24.8 | C | C | 20.9 | C | B |
| 26 | Hancock St and Witherby St | AWSC | 13.9 | B | C | 33.6 | D | C |
| 27 | Hancock St and Washington St | Signal | 22.4 | C | C | 76.1 | E | C |
| 28 | Kettner Blvd and Vine St | SSSC | 16.0 | C | B | 18.5 | C | C |
| 29 | Kettner Blvd and Sassafras St | Signal | 14.3 | B | B | 14.9 | B | B |
| 30 | Kettner Blvd and West Laurel St | Signal | 19.0 | B | B | 89.0 | F | C |
| 31 | Pacific Hwy and Barnett Ave | <i>No Conflicting Movements</i> | | | | | | |
| 32 | Pacific Hwy and Washington St @ Frontage Rd | Signal | 20.2 | C | B | 45.4 | D | D |
| 33 | Pacific Hwy and Washington St | Signal | 19.6 | B | B | 26.6 | C | C |
| 34 | Pacific Hwy and Sassafras St | Signal | 27.9 | C | B | 58.2 | E | C |
| 35 | Pacific Hwy and West Laurel St | Signal | 88.1 | F | D | 133.0 | F | D |
| Old Town | | | | | | | | |
| 36 | Pacific Hwy and Taylor St | Signal | 30.8 | C | E | 50.5 | D | C |

Table 6.2 Peak Hour Intersection LOS and Delay Results – Preferred Plan Conditions

| No. | Intersection | | AM | | | PM | | |
|---|--|--------|-------------|----------|--------------|-------------|----------|--------------|
| | | | Delay (Sec) | LOS | Existing LOS | Delay (Sec) | LOS | Existing LOS |
| 37 | Moore St and Old Town Ave | Signal | 23.2 | C | B | 98.9 | F | B |
| 38 | Congress St and Taylor St | Signal | 13.5 | B | B | 18.2 | B | C |
| 39 | Congress St and Twiggs St | AWSC | 9.7 | A | A | 10.8 | B | A |
| 40 | Congress St and Harney St | AWSC | 9.0 | A | A | 9.3 | A | A |
| 41 | Congress St and San Diego Ave/Ampudia St | SSSC | 16.8 | C | B | 15.6 | C | B |
| 42 | San Diego Ave and Twiggs St | AWSC | 7.9 | A | A | 8.0 | A | A |
| 43 | San Diego Ave and Harney St | AWSC | 8.9 | A | A | 10.8 | B | A |
| 44 | San Diego Ave and Old Town Ave | Signal | 18.5 | B | B | 14.1 | B | B |
| 45 | Juan St and Taylor St | Signal | 14.6 | B | B | 17.4 | B | B |
| 46 | Juan St and Twiggs St | AWSC | 9.7 | A | A | 10.0 | B | A |
| 47 | Juan St and Harney St | AWSC | 8.8 | A | A | 8.8 | A | A |
| 48 | Morena Blvd and Taylor St | Signal | 21.8 | C | C | 23.5 | C | B |
| Intersections Outside of Study Communities | | | | | | | | |
| 49 | Hugo St/N. Harbor Dr and Rosecrans St | Signal | 30.0 | C | B | 32.1 | C | C |
| 50 | Lowell St/Nimitz Blvd and Rosecrans St | Signal | 59.9 | E | D | 110.6 | F | E |
| 51 | Laning Rd and Rosecrans St | Signal | 25.6 | C | B | 23.2 | C | B |
| 52 | Kettner Blvd and West Hawthorn St | Signal | 41.2 | D | B | 13.3 | B | B |
| 53 | Kettner Blvd and West Grape St | Signal | 10.3 | B | A | 10.0 | B | A |
| 54 | Pacific Hwy and Sea World Dr | Signal | 23.9 | C | B | 33.4 | C | C |
| 55 | Pacific Hwy and West Hawthorn St | Signal | 35.3 | D | D | 32.4 | C | C |
| 56 | Pacific Hwy and West Grape St | Signal | 17.9 | B | B | 31.6 | C | C |
| 57 | Friars Rd and Sea World Dr | Signal | 15.1 | B | B | 25.7 | C | B |
| 58 | I-5 SB Ramps and Sea World Dr | Signal | 18.2 | B | B | 20.5 | C | E |
| 59 | I-5 NB Ramps and Sea World Dr | Signal | 28.8 | C | C | 42.4 | D | C |
| New Intersections (Midway-Pacific Highway Community) | | | | | | | | |
| 60 | Midway Dr & Duke Street / Hancock St | Signal | 42.4 | D | (1) | 53.3 | D | (1) |
| 61 | Kurtz St & Frontier St | SSSC | 9.9 | A | (1) | 14.1 | B | (1) |
| 62 | Kurtz St & Greenwood St | Signal | 11.9 | B | (1) | 12.4 | B | (1) |
| 63 | Kurtz St & Charles Lindbergh Pkwy | Signal | 8.3 | A | (1) | 17.9 | B | (1) |
| 64 | Barnett Ave & Dutch Flats Pkwy | Signal | 24.6 | C | (1) | 14.4 | B | (1) |
| 65 | Midway Dr & Dutch Flats Pkwy | Signal | 32.2 | C | (1) | 44.6 | D | (1) |
| 66 | Dutch Flats Pkwy & Sports Arena Bl | Signal | 10.8 | B | (1) | 18.3 | B | (1) |

Source: Chen Ryan Associates (June 2016)

Notes:

(1) Intersection does not currently exist.

(2) Intersection experienced no control delay under existing conditions.

Bold letters indicate LOS E or F.

As shown, all key study intersections are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

Midway-Pacific Highway Community

1. *Lytton Street and Rosecrans Street* (LOS F: AM Peak Hour and LOS E PM Peak Hour) – The westbound through movement, as well as the southbound left-turn and through movements are projected to be over capacity, under implementation of the Preferred Plan. Implementing the following improvements would allow the intersection to operate at LOS D or better during both peak hours.
 - Add a second southbound left-turn lane
 - Add an additional westbound through movement lane on Rosecrans Street (three total)
 - Implement right-turn overlap (RTOL) phases at all legs of the intersection

There is currently not enough right-of-way on Rosecrans Street to accommodate a fourth westbound through lane at the intersection. Therefore, the proposed improvements may not be feasible.

Partial Mitigation: If the second southbound left-turn and RTOL phase are implemented (feasible improvements) the overall intersection delay would be reduced to the following:

AM: 59.3 Seconds of Delay | LOS E

PM: 44.3 Seconds of Delay | LOS D

2. *Sports Arena Boulevard / West Mission Bay and I-8 WB Off-Ramp* (LOS E: PM Peak Hour) – The westbound right-turn movement at this intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Providing a third exclusive westbound right-turn lane or converting the movement to free-right-turn movement would improve the intersection operations to LOS D. However, adding a third right-turn lane or converting the movement to a free-right would conflict with the multimodal related goals within the Preferred Plan and is therefore not recommended.

Partial Mitigation: None recommended.

4. *Midway Drive / West Point Loma Drive and Sports Arena Boulevard* (LOS E: PM Peak Hour) – All four left-turn movements at this intersection are projected to be over capacity during the PM Peak Hour. Providing dual-left turn lanes in the northbound, southbound and westbound directions would improve intersection operations to LOS D during the PM peak hour. There is currently not enough right-of-way within the intersection to accommodate any of these additional left-turn lanes. Therefore, the proposed improvements may not be feasible.

Partial Mitigation: None recommended.

7. *Midway Drive and Rosecrans Street (LOS E: PM Peak Hour)* – Rosecrans Street is projected to operate at LOS E during the PM peak hours, under implementation of the Preferred Plan. Widening the eastbound and westbound approaches of the intersection to include a fourth through lane would improve the intersection operations to LOS D. There is currently not enough right-of-way to widen Rosecrans Street to eight lanes through the Midway Drive / Rosecrans Street intersection. Therefore, the proposed improvements may not be feasible.

Partial Mitigation: None recommended, limited to no right-of-way is anticipated to be available with proposed Multi-Use Urban Trail improvements.

27. *Hancock Street and Washington Street (LOS E: PM Peak Hour)* – The southbound right-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Restriping the southbound approach to include a second southbound right-turn lane would allow the intersection to operate at LOS C during the PM Peak Hour. This improvement is feasible but may require additional engineering study.

Partial Mitigation: None recommended.

30. *Kettner Boulevard and Laurel Street (LOS F: PM Peak Hour)* – The eastbound through movement at the intersection is projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Widening the eastbound approach of the intersection to include a third through lane would improve the intersection operations to LOS D. However, there is currently not enough right-of-way to widen the eastbound Laurel Street approach to three lanes. Therefore, the proposed improvements may not be feasible.

Partial Mitigation: None recommended.

34. *Pacific Highway and Sassafras Street (LOS E: PM Peak Hour)* – The southbound left-turn movement of the intersection is projected to be over capacity during the PM peak hour, under the implementation of the Preferred Plan. Adding a second southbound left-turn lane would allow the intersection to operate at LOS D during the PM peak hour. There is currently not enough right-of-way to widen the southbound Pacific Highway approach to include a second left-turn lane. Therefore, the proposed improvements may not be feasible.

Partial Mitigation: None recommended.

35. *Pacific Highway and Laurel Street (LOS F: AM and PM Peak Hours)* – Laurel Street is projected to be over capacity during both peak hours, under implementation of the Preferred Plan. Widening the eastbound and westbound approaches of the intersection to include a third through lane and a second eastbound left-turn lane would improve the intersection operations to LOS D.

There is currently not enough right-of-way to widen Laurel Street to six-lanes. Therefore, the proposed improvements may not be feasible.

Partial Mitigation: None recommended.

Old Town Community

37. *Moore Street and Old Town Street (LOS F: PM Peak Hour)* – The eastbound and westbound movements of the intersection are projected to be over capacity during the PM peak hour, under implementation of the Preferred Plan. Implementation of the following improvements would allow the intersection to operate at LOS D during the PM peak hour.

- Implement exclusive eastbound and westbound left-turn lanes.
- Convert the eastbound/westbound signal phasing from permitted to protected phasing.

There is currently not enough right-of-way to widen Moore Street to include exclusive left-turn pockets. Therefore, the proposed improvements may not be feasible.

Partial Mitigation: None recommended.

Outside of the Community

50. *Nimitz Boulevard / Lowell Street and Rosecrans Street (LOS E: AM Peak Hour and LOS F: PM Peak Hour)* – Both the southbound through movement and eastbound left-turn movement are anticipated to be over capacity during both peak hours, under implementation of Preferred Plan. Widening the northbound and southbound approaches of the intersection to include a third through lane and a second southbound left-turn lane would improve the intersection operations to LOS D or better during both the AM and PM peak hours. Implementation of the following improvements would allow the intersection to operate at LOS D or better during both the AM and PM peak hours.

There is currently not enough right-of-way to widen Rosecrans Street to six-lanes. Therefore, the proposed improvements may not be feasible.

Partial Mitigation: None recommended.

6.1.3 Intersection Queuing Analysis

A queuing analysis was conducted under Preferred Plan conditions, at each of the study intersections to assess potential overflowing issues at exclusive turn-lanes and closely spaced intersections. Closely spaced intersections include all ramp intersections and intersections within close proximity (less than 500 feet) to one another. The limitations in turn-lane storage capacity could result in turning vehicles overflow into adjacent lanes, while excessive queuing (queue length exceeds distance to upstream intersection) at closely spaced intersection could

negatively affect the operations of the upstream intersection. When either situation occurs, traffic operations could deteriorate, resulting in additional levels of congestion.

Table 6.3 displays the average (50th percentile) and maximum (95th percentile) queue lengths at closely spaced intersections (500 feet apart), for relevant movements. Synchro intersection queuing reports are provided in **Appendix E** following the intersection LOS worksheets.

Table 6.3 Queue Lengths at Closely Spaced Intersections – Preferred Plan Conditions

| # | Impacted Intersection | Peak Hour | Upstream Intersection | Spacing (Feet) | Turning Movement | 95 th % Queue Length (Feet) | 50 th % Queue Length (Feet) |
|-----|---|-----------|--|----------------|------------------|--|--|
| 7 | Midway Dr and Rosecrans St | AM | 15. Sports Arena Blvd and Rosecrans St | 665 | EBT | 325 | 277 |
| | | PM | | | | 827 | 746 |
| 15 | Sports Arena Blvd and Rosecrans St | AM | 19. Kurtz St and Camino Del Rio West | 380 | EBT | 622 | 465 |
| | | PM | | | | 660 | 569 |
| 19 | Kurtz St and Camino Del Rio West | AM | 23. Hancock St and Camino Del Rio West | 315 | NET | 346 | 346 |
| | | PM | | | | 228 | 218 |
| 20 | Kurtz St and Rosecrans St | AM | 15. Sports Arena Blvd and Rosecrans St | 310 | WBT | 694 | 561 |
| | | PM | | | | 824 | 777 |
| N/A | I-5 SB Off-Ramp and Camino Del Rio West | AM | 23. Hancock St and Camino Del Rio West | 490 | SWT | 1,204 | 1,122 |
| | | PM | | | | 1,164 | 1,084 |

Source: Chen Ryan Associates (June 2016)

Midway-Pacific Highway Community

As shown, the maximum (95th percentile) and average (50th percentile) queue lengths at all closely spaced intersections are anticipated to exceed the spacing between intersections under implementation of Preferred Plan conditions. Queuing spillovers could degrade traffic operations at the upstream intersections.

Old Town

There are no signalized intersections within 500 feet of each other within the Old Town Community.

Table 6.4 displays the average (50th percentile) and maximum (95th percentile) queue lengths for intersection movements where the maximum peak hour queue length is projected to exceed the current storage length under Preferred Plan conditions. Synchro intersection queuing reports are provided in **Appendix E** following the intersection LOS worksheets.

Table 6.4 Intersection Queue Lengths Exceeding Storage Lengths – Preferred Plan Conditions

| No. | Intersection | Movement | Peak | 95th % Queue Length (Feet) | 50th % Queue Length (Feet) | Pocket Length (Feet) | Excess 95th % Queue (Feet) | Excess 50th % Queue (feet) |
|--|--|----------|------|-------------------------------------|-------------------------------------|----------------------------|-------------------------------------|-------------------------------------|
| Study Intersections within the Midway-Pacific Highway Community | | | | | | | | |
| 1 | Lytton St and Rosecrans St | EBL | AM | 137 | 48 | 105 | 32 | 0 |
| | | | PM | 223 | 98 | 105 | 118 | 0 |
| | | NBL | AM | 309 | 215 | 230 | 79 | 0 |
| | | | PM | 384 | 267 | 230 | 154 | 37 |
| | | SBL | AM | 976 | 741 | 185 | 791 | 556 |
| | | | PM | 551 | 350 | 185 | 366 | 165 |
| 4 | Midway Dr and Sports Arena/W Point Loma Blvd | EBL | AM | 790 | 374 | 380 | 410 | 0 |
| | | | PM | 663 | 446 | 380 | 283 | 66 |
| | | NBL | AM | 342 | 161 | 230 | 112 | 0 |
| | | | PM | 834 | 669 | 230 | 604 | 439 |
| 5 | Midway Dr and Kemper St | EBL | AM | 127 | 93 | 100 | 27 | 0 |
| | | | PM | 196 | 146 | 100 | 96 | 46 |
| 7 | Midway Dr and Rosecrans St | WBL | AM | 186 | 106 | 340 | 0 | 0 |
| | | | PM | 366 | 251 | 340 | 26 | 0 |
| | | SBL | AM | 164 | 87 | 90 | 74 | 0 |
| | | | PM | 299 | 189 | 90 | 209 | 99 |
| | | NBL | AM | 139 | 65 | 190 | 0 | 0 |
| | | | PM | 350 | 187 | 190 | 160 | 0 |
| | | NBR | AM | 80 | 34 | 190 | 0 | 0 |
| | | | PM | 346 | 234 | 190 | 156 | 44 |
| 12 | Sports Arena Blvd and Kemper Street | EBL | AM | 88 | 59 | 50 | 38 | 9 |
| | | | PM | 108 | 63 | 50 | 58 | 13 |
| | | NBL | AM | 251 | 140 | 160 | 91 | 0 |
| | | | PM | 327 | 229 | 160 | 167 | 69 |
| 14 | Sports Arena Blvd and East Drive | NBL | AM | 42 | 26 | 130 | 0 | 0 |
| | | | PM | 170 | 131 | 130 | 40 | 1 |
| 15 | Sports Arena Blvd and Rosecrans St | EBL | AM | 171 | 95 | 220 | 0 | 0 |
| | | | PM | 309 | 200 | 220 | 89 | 0 |
| | | NBL | AM | 260 | 130 | 130 | 130 | 0 |
| | | | PM | 385 | 215 | 130 | 255 | 85 |
| 19 | Kurtz St and Camino Del Rio West | SBL | AM | 298 | 240 | 210 | 88 | 30 |
| | | | PM | 746 | 482 | 210 | 536 | 272 |
| | | WBL | AM | 245 | 245 | 110 | 135 | 135 |
| | | | PM | 173 | 170 | 110 | 63 | 60 |
| 20 | Kurtz St and Rosecrans St | NBL | AM | 167 | 106 | 60 | 107 | 46 |
| | | | PM | 220 | 104 | 60 | 160 | 44 |

Table 6.4 Intersection Queue Lengths Exceeding Storage Lengths – Preferred Plan Conditions

| No. | Intersection | Movement | Peak | 95th % Queue Length (Feet) | 50th % Queue Length (Feet) | Pocket Length (Feet) | Excess 95th % Queue (Feet) | Excess 50th % Queue (feet) |
|--|--------------------------------------|----------|------|-------------------------------------|-------------------------------------|----------------------------|-------------------------------------|-------------------------------------|
| 20 | Kurtz St and Rosecrans St | WBL | AM | 106 | 58 | 85 | 21 | 0 |
| | | | PM | 198 | 63 | 85 | 113 | 0 |
| 23 | Hancock St and Camino Del Rio West | WBR | AM | 352 | 206 | 140 | 212 | 66 |
| | | | PM | 363 | 219 | 140 | 223 | 79 |
| | | EBL | AM | 135 | 104 | 110 | 25 | 0 |
| | | | PM | 259 | 215 | 110 | 149 | 105 |
| 27 | Hancock St and Washington St | WBL | AM | 229 | 140 | 140 | 89 | 0 |
| | | | PM | 312 | 205 | 140 | 172 | 65 |
| | | SBR | AM | 98 | 31 | 270 | 0 | 0 |
| | | | PM | 1291 | 1029 | 270 | 1021 | 759 |
| 29 | Kettner Blvd and Sassafras Street | SBL | AM | 190 | 115 | 80 | 110 | 35 |
| | | | PM | 187 | 112 | 80 | 107 | 32 |
| 34 | Pacific Highway and Sassafras Street | WBL | AM | 395 | 222 | 100 | 295 | 122 |
| | | | PM | 532 | 337 | 100 | 432 | 237 |
| | | SBL | AM | 184 | 85 | 250 | 0 | 0 |
| | | | PM | 411 | 239 | 250 | 161 | 0 |
| 35 | Pacific Hwy and West Laurel St | EBL | AM | 1006 | 767 | 375 | 631 | 392 |
| | | | PM | 1146 | 900 | 375 | 771 | 525 |
| | | WBL | AM | 195 | 125 | 70 | 125 | 55 |
| | | | PM | 470 | 281 | 70 | 400 | 211 |
| | | NBL | AM | 533 | 344 | 90 | 443 | 254 |
| | | | PM | 870 | 645 | 90 | 780 | 555 |
| | | SBL | AM | 150 | 73 | 250 | 0 | 0 |
| | | | PM | 324 | 178 | 250 | 74 | 0 |
| Study Intersections within the Old Town Community | | | | | | | | |
| 36 | Pacific Hwy and Taylor St | EBL | AM | 172 | 64 | 150 | 22 | 0 |
| | | | PM | 245 | 95 | 150 | 95 | 0 |
| | | WBL | AM | 212 | 90 | 160 | 52 | 0 |
| | | | PM | 130 | 65 | 160 | 0 | 0 |
| | | NBL | AM | 159 | 62 | 100 | 59 | 0 |
| | | | PM | 183 | 78 | 100 | 83 | 0 |
| | | NBR | AM | 41 | 0 | 200 | 0 | 0 |
| | | | PM | 571 | 351 | 200 | 371 | 151 |
| 38 | Congress St and Taylor St | WBL | AM | 220 | 74 | 100 | 120 | 0 |
| | | | PM | 226 | 91 | 100 | 126 | 0 |
| 44 | San Diego Avenue and Old Town Street | NBL | AM | 159 | 71 | 75 | 84 | 0 |
| | | | PM | 81 | 23 | 75 | 6 | 0 |

Table 6.4 Intersection Queue Lengths Exceeding Storage Lengths – Preferred Plan Conditions

| No. | Intersection | Movement | Peak | 95th % Queue Length (Feet) | 50th % Queue Length (Feet) | Pocket Length (Feet) | Excess 95th % Queue (Feet) | Excess 50th % Queue (feet) |
|---|-------------------------------------|----------|------|-------------------------------------|-------------------------------------|----------------------------|-------------------------------------|-------------------------------------|
| 45 | Juan Street and Taylor Street | WBL | AM | 96 | 34 | 95 | 1 | 0 |
| | | | PM | 192 | 56 | 95 | 97 | 0 |
| 48 | Morena Blvd and Taylor St | EBL | AM | 186 | 86 | 180 | 6 | 0 |
| | | | PM | 270 | 125 | 180 | 90 | 0 |
| Study Intersections Outside of the Communities | | | | | | | | |
| 49 | Hugo St and Rosecrans St | NBL | AM | 294 | 183 | 115 | 179 | 68 |
| | | | PM | 188 | 119 | 115 | 73 | 4 |
| 50 | Nimitz Blvd and Rosecrans St | EBL | AM | 343 | 173 | 300 | 43 | 0 |
| | | | PM | 788 | 548 | 300 | 488 | 248 |
| | | WBL | AM | 194 | 117 | 300 | 0 | 0 |
| | | | PM | 442 | 256 | 300 | 142 | 0 |
| | | NBL | AM | 96 | 49 | 75 | 21 | 0 |
| | | | PM | 152 | 91 | 75 | 77 | 16 |
| | | SBL | AM | 421 | 246 | 285 | 136 | 0 |
| | | | PM | 583 | 385 | 285 | 298 | 100 |
| 54 | Pacific Highway and Sea World Drive | WBL | AM | 185 | 58 | 170 | 15 | 0 |
| | | | PM | 241 | 87 | 170 | 71 | 0 |
| | | NBL | AM | 81 | 24 | 150 | 0 | 0 |
| | | | PM | 210 | 70 | 150 | 60 | 0 |
| 56 | Pacific Highway and Grape St | SBL | AM | 75 | 34 | 130 | 0 | 0 |
| | | | PM | 139 | 79 | 130 | 9 | 0 |
| 57 | Friars Road and Sea World Dr | EBR | AM | 97 | 60 | 180 | 0 | 0 |
| | | | PM | 328 | 209 | 180 | 148 | 29 |
| | | WBL | AM | 145 | 59 | 205 | 0 | 0 |
| | | | PM | 285 | 159 | 205 | 80 | 0 |
| | | NBL | AM | 101 | 66 | 150 | 0 | 0 |
| | | | PM | 185 | 135 | 150 | 35 | 0 |
| 58 | I-5 SB Ramps and Tecolote Road | WBL | AM | 144 | 82 | 120 | 24 | 0 |
| | | | PM | 138 | 88 | 120 | 18 | 0 |
| 59 | I-5 NB Ramps and Tecolote Road | EBL | AM | 343 | 232 | 170 | 173 | 62 |
| | | | PM | 297 | 222 | 170 | 127 | 52 |

Source: Chen Ryan Associates (June 2016)

Midway-Pacific Highway Community

As shown, under implementation of the Preferred Plan, 30 different movements within the Midway-Pacific Highway Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 23 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Old Town

As shown, under implementation of the Preferred Plan, 8 different movements within the Old Town Community are projected to have queue lengths exceeding their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 1 movement is anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

Other Communities

As shown, under implementation of the Preferred Plan, 13 different movements within other communities are projected to have queue lengths that exceed their storage capacity at the most congested point of the peak hour (95th Percentile). The spillovers could degrade traffic operations within the intersection or adjacent closely spaced, upstream intersections for approximately one to two cycles during the peak hour. However, only 6 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th Percentile).

6.1.4 Freeway Segments and LOS Analysis

Neither the Revenue Constrained Alternative of SANDAG's *San Diego Forward Plan* (October 2015) nor the Preferred Plan include freeway improvements, as noted in Sections 3.2.2 and 4.2.2.

Table 6.5 displays the freeway segment LOS in the vicinity of the Midway-Pacific Highway and Old Town communities. Forecast freeway volumes were obtained from the modeling process described in Section 5.0.

Table 6.5 Freeway Segment LOS Results – Preferred Plan Conditions

| Freeway | To | From | Dir | Daily Volume | HVF | Lanes | Aux | AM | | | | | PM | | | | |
|---------|------------------------|------------------------|-----|--------------|------|-------|-----|------|-----|-------------|------|----------|------|-----|-------------|------|----------|
| | | | | | | | | K | D | Peak Volume | V/C | LOS | K | D | Peak Volume | V/C | LOS |
| I-8 | Beginning of Freeway | Sports Arena Boulevard | EB | 61,200 | 1.2% | 2 | 0 | 6.3% | 60% | 2,600 | 0.55 | B | 8.5% | 72% | 3,100 | 0.66 | C |
| | | | WB | | | 2 | 0 | | 40% | 1,700 | 0.36 | A | | 28% | 2,700 | 0.57 | B |
| | Sports Arena Boulevard | I-5 | EB | 121,400 | 2.8% | 3 | 1 | 6.4% | 60% | 5,300 | 0.63 | C | 7.8% | 63% | 5,500 | 0.65 | C |
| | | | WB | | | 3 | 1 | | 40% | 3,500 | 0.41 | B | | 37% | 5,200 | 0.62 | B |
| | I-5 | Morena Boulevard | EB | 180,400 | 2.8% | 4 | 1 | 6.4% | 41% | 5,400 | 0.50 | B | 7.2% | 51% | 6,600 | 0.61 | B |
| | | | WB | | | 5 | 0 | | 59% | 7,600 | 0.65 | C | | 49% | 8,000 | 0.68 | C |
| | Morena Boulevard | Hotel Circle | EB | 214,400 | 2.8% | 4 | 1 | 6.5% | 47% | 7,300 | 0.68 | C | 8.2% | 55% | 10,900 | 1.01 | F |
| | | | WB | | | 5 | 0 | | 53% | 8,300 | 0.71 | C | | 45% | 8,900 | 0.76 | C |
| I-5 | Clairemont Drive | Sea World Drive | NB | 240,100 | 4.5% | 5 | 0 | 6.4% | 61% | 10,900 | 0.93 | E | 8.3% | 51% | 11,700 | 1.00 | E |
| | | | SB | | | 5 | 0 | | 39% | 6,900 | 0.59 | B | | 49% | 11,200 | 0.95 | E |
| | Sea World Drive | I-8 | NB | 229,400 | 4.5% | 4 | 1 | 6.4% | 62% | 10,400 | 0.96 | E | 8.4% | 52% | 11,500 | 1.06 | F |
| | | | SB | | | 4 | 2 | | 38% | 6,300 | 0.52 | B | | 48% | 10,600 | 0.87 | D |
| | I-8 | Old Town Avenue | NB | 241,500 | 4.1% | 4 | 1 | 6.9% | 49% | 9,400 | 0.87 | D | 8.2% | 39% | 8,800 | 0.81 | D |
| | | | SB | | | 5 | 0 | | 51% | 9,600 | 0.82 | D | | 61% | 13,800 | 1.17 | F |
| | Old Town Avenue | Washington Avenue | NB | 226,700 | 4.1% | 4 | 0 | 6.9% | 49% | 8,900 | 0.95 | E | 8.0% | 51% | 10,600 | 1.13 | F |
| | | | SB | | | 5 | 0 | | 51% | 9,100 | 0.77 | C | | 49% | 10,200 | 0.87 | D |
| | Washington Avenue | Pacific Highway | NB | 171,100 | 4.1% | 4 | 0 | 6.9% | 54% | 7,300 | 0.78 | C | 8.1% | 36% | 5,700 | 0.61 | B |
| | | | SB | | | 4 | 0 | | 46% | 6,300 | 0.67 | C | | 64% | 10,100 | 1.07 | F |
| | Pacific Highway | Laurel Street | NB | 217,400 | 4.1% | 4 | 1 | 6.7% | 58% | 9,800 | 0.91 | D | 7.0% | 49% | 8,200 | 0.76 | C |
| | | | SB | | | 4 | 1 | | 42% | 7,000 | 0.65 | C | | 51% | 9,300 | 0.86 | D |
| | Laurel Street | Hawthorne Avenue | NB | 221,600 | 4.1% | 4 | 1 | 6.7% | 57% | 9,800 | 0.91 | D | 7.3% | 46% | 8,000 | 0.74 | C |
| | | | SB | | | 4 | 1 | | 43% | 7,300 | 0.68 | C | | 54% | 10,500 | 0.97 | E |

Source: Chen Ryan Associates (June 2016)

Note:
Bold letter indicates LOS E or F

As shown, all mainline freeway segments are projected to operate at LOS D or better under Preferred Plan conditions, with the exception of the following:

- I-8 EB, between Morena Boulevard and Hotel Circle Drive (LOS F: PM Peak Hour)
- I-5 NB, between Clairemont Drive and Sea World Drive (LOS E: AM & PM Peak Hours)
- I-5 SB, between Clairemont Drive and Sea World Drive (LOS E: PM Peak Hour)
- I-5 NB, between Sea World Drive and I-8 (LOS E: AM Peak Hour, LOS F PM Peak Hour)
- I-5 SB, between I-8 and Old Town Avenue (LOS F: PM Peak Hour)
- I-5 NB, between Old Town Avenue and Washington Avenue (LOS E: AM Peak Hour and LOS F: PM Peak Hour)
- I-5 SB, between Washington Avenue and Pacific Highway (LOS F: PM Peak Hour)
- I-5 SB, between Laurel Street and Hawthorne Avenue (LOS E: PM Peak Hour)

6.1.5 Meter Analysis

Table 6.6 summarizes the freeway ramp metering analysis results under implementation of the Preferred Plan for all ramp meter locations within both study communities. The volumes were derived using the outputs for the modeling described in Section 5.0. Existing ramp meter flow rates were assumed under Preferred Plan conditions.

Table 6.6 Freeway Ramp Metering Analysis – Preferred Plan Conditions

| Ramp | Peak | # of lanes | | Demand ¹ (veh/hr) | Meter Rate ² (veh/hr) | Excess Demand ³ (veh/hr) | Delay ⁴ (minutes) | Queue ⁵ (feet) |
|---------------------------------|------|------------|-----|---------------------------------|-------------------------------------|--|---------------------------------|------------------------------|
| | | SOV | HOV | | | | | |
| I-8 EB / Sports Arena Boulevard | PM | 2 | 1 | 650 | 641 | 9 | 0.8 | 261 |
| I-5 SB / Sea World Drive | AM | 1 | 1 | 530 | 444 | 86 | 11.6 | 2,494 |
| | PM | 1 | 1 | 670 | 444 | 226 | 30.5 | 6,554 |
| I-5 NB / Sea World Drive | AM | 2 | 0 | 1,530 | 1,555 | 0 | 0 | 0 |
| | PM | 2 | 0 | 1,250 | 1,656 | 0 | 0 | 0 |
| I-5 SB / Old Town Avenue | PM | 1 | 0 | 410 | 461 | 0 | 0 | 0 |
| I-5 NB / Old Town Avenue | AM | 2 | 0 | 370 | 905 | 0 | 0 | 0 |
| | PM | 2 | 0 | 690 | 888 | 0 | 0 | 0 |

Source: Chen Ryan Associates (June 2016)

Notes:

SOV = Single Occupancy Vehicle; HOV = High Occupancy Vehicle.

¹ Demand is the peak hour demand expected to use the on-ramp.

² Meter Rate is the peak hour capacity expected to be processed through the ramp meter. This value was obtained from Caltrans.

³ Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.

⁴ Delay = (Excess Demand / Meter Rate) X 60 min/hr.

⁵ Queue = (Excess Demand) X 29 ft/veh.

As shown in the table, the anticipated peak hour demand is not anticipated to exceed the anticipated meter rate at any of the study ramp meter locations creating a delay of 15 minutes¹, with the exception of the following:

- I-5 SB / Sea World Drive during the PM peak hour (30.5 minutes)

6.2 Intelligent Transportation Systems (ITS)

The implementation of Intelligent Transportation Systems (ITS) can provide many benefits to the local roadway network, including improving roadway traffic operations, improving transit operations, relaying valuable traffic-related information and providing guidance to drivers (e.g. locations of available parking, traffic congestion points, and the location of accidents). Coordinated traffic signals and transit signal priority treatments are examples of ITS programs that can help improve both transit and roadway operations.

The City of San Diego should investigate the feasibility of the following ITS improvements within the Midway-Pacific Highway and Old Town communities:

- Expand signal coordination along major roadway corridors including Rosecrans Street, Taylor Street, Midway Drive, Sports Arena Boulevard, Pacific Highway, Kettner Street and San Diego Avenue.
- Regularly update the timing of traffic signals to reflect shifting travel patterns
- Use traffic responsive or adaptive traffic control in areas with variable traffic patterns
- Implement transit signal priority treatments at signalized intersections serving rapid bus routes
- Use variable message signs to direct motorists to available parking and to alert them of street closures.

6.3 Transportation Demand Management (TDM) Strategies

The goal of the City's Transportation Demand Management (TDM) program is to improve mobility, reduce congestion and air pollution, and provide options for employees and residents to commute to/ from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Walking
- Bicycling
- Carpooling
- Vanpooling
- Transit
- Shared Mobility Services (e.g., bikeshare, carshare, and on-demand ridesharing services)

¹ The City of San Diego Traffic Impact Study Manual (July 1998) defines ramp meters with more than 15 minutes of delay as having a significant impact.

- Mixed-Use Development
- Other Transportation Options

TDM measures improve the efficiency of the transportation system by helping to reduce vehicle trips during peak periods of demand. The San Diego Association of Governments (SANDAG) has an established program (iCommute) that serves as the administrator for TDM programs throughout the region. iCommute provides the following services:

Ridematching Services – the iCommute TripPlanner tool allows users to compare multiple transportation choices in addition to finding vanpool and carpool matches.

Subsidized Vanpool Program – Through the SANDAG vanpool program, each qualified vanpool receives a \$400 monthly subsidy when leased through SANDAG preferred vendors, Enterprise Rideshare and vRide. Vanpools range from 7 to 15 passenger vehicles where commuters share the ride to work and split the cost thereby saving money, wear and tear on their personal vehicles, as well as reducing Greenhouse Gas emissions.

Employer Services - The SANDAG iCommute program provides assistance and tools to help local San Diego organizations design and implement customized commuter programs that assist and support employees commute using alternative modes of transportation. The iCommute Diamond Awards recognizes employers with exemplary commute programs and mode-share.

Walk, Ride, and Roll to School – Part of the Safe Routes to School program, this service supports active transportation to and from K-12 schools including biking, walking, skating, skateboarding, or riding a scooter to help promote physical activity and healthier lifestyles for students.

Telework - Teleworking is a convenient solution that enables employees to work from home or a remote location one or more days per week. Telework has proven benefits to employees and employers such as reducing commute costs, lowering parking demand, and helping the environment.

Transit Information – Provides information about San Diego regional transit agencies in addition to Compass Card information.

Bike Parking Program– Provides secure bike parking spaces at more than sixty transit stops and some Park & Ride lots throughout San Diego County in addition to a Regional Bike Map, which has been updated to show bike paths, lanes and routes.

Guaranteed Ride Home – A free service that allows registered iCommute users getting to work by alternative modes to receive free emergency rides home in the cases of illness or unscheduled overtime. Commuters can use the service up to three times per year.

In addition to the iCommute program, Caltrans owns and/or maintains several Park & Ride lots throughout the region that are used to promote carpool and vanpool activity.

The City of San Diego's Land Development Code (LDC) requires new development to provide sufficient bicycle parking stalls, carpool parking, and motorcycle facilities to encourage the use of alternative modes of transportation. The City is early in the process of developing recommendations to amend the LDC requirements for pedestrian, bicycle, carpool, and commuter information facilities. The City's municipal code now allows for on-street carshare operations. Pricing strategies are also used to reduce demand on the transportation system.

6.4 Pedestrian Assessment and Results

This section presents an assessment of the pedestrian network under implementation of the Preferred Plan, which assumes the implementation of the pedestrian related improvements outlined in Sections 3.3.2 and 4.3.2. The City of San Diego Pedestrian Master Plan Phase I identifies the following six Pedestrian Route Typologies and the purpose they serve:

District Sidewalks – Sidewalks along roads that support heavy pedestrian levels in mixed-use concentrated urban areas.

Corridor Sidewalks – Sidewalks along roads that support moderate density business and shopping districts with moderate pedestrian level.

Connector Sidewalks – Sidewalks along roads that support institutional, industrial or business complexes with limited lateral access and low pedestrian levels.

Neighborhood Sidewalks – Sidewalks along roads that support low to moderate density housing with low to moderate pedestrian levels.

Ancillary pedestrian facilities – Facilities away or crossing over streets such as plazas, paseos, promenades, courtyards or pedestrian bridges and stairways.

Path – Walkways and paved paths that are not adjacent to roads that support recreational and transportation purposes.

The assumed Pedestrian Route Typologies within both communities is displayed in **Figure 6-6**.

The proposed pedestrian network under Preferred Plan conditions was assessed using the methodologies described in Section 2.3.1. The pedestrian network connectivity, quality and overall adequacy (combining both quality and connectivity) are discussed below.

6.4.1 Pedestrian Network Connectivity

Figure 6-7 displays the pedestrian network connectivity to/from pedestrian attracting land uses (residential, commercial, office and recreational uses) throughout both communities. This analysis calculates the percent of area accessible to pedestrians within a half mile walking distance from the respective land uses (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

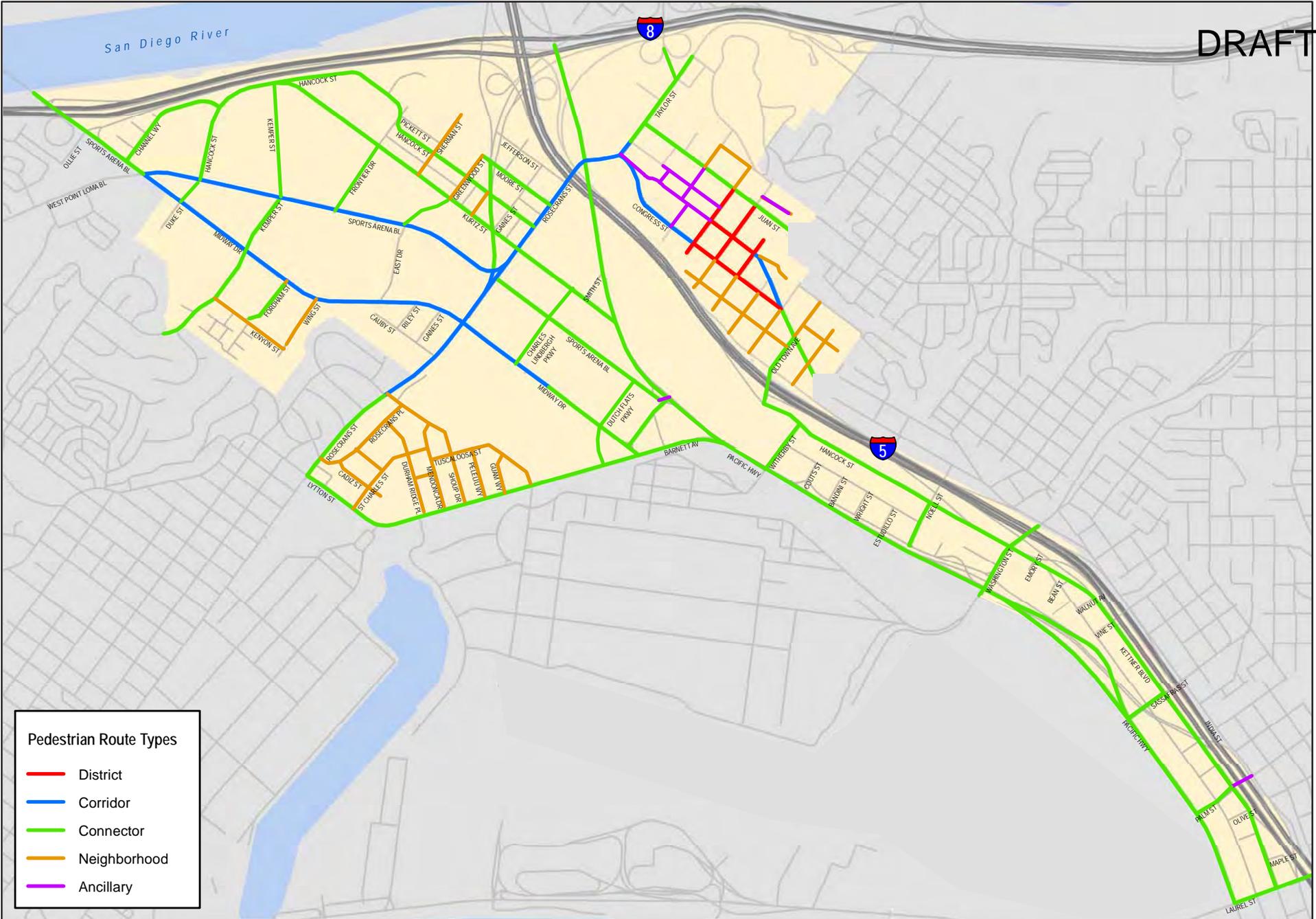


Figure 6-6
Pedestrian Route Typologies -
Preferred Plan Conditions

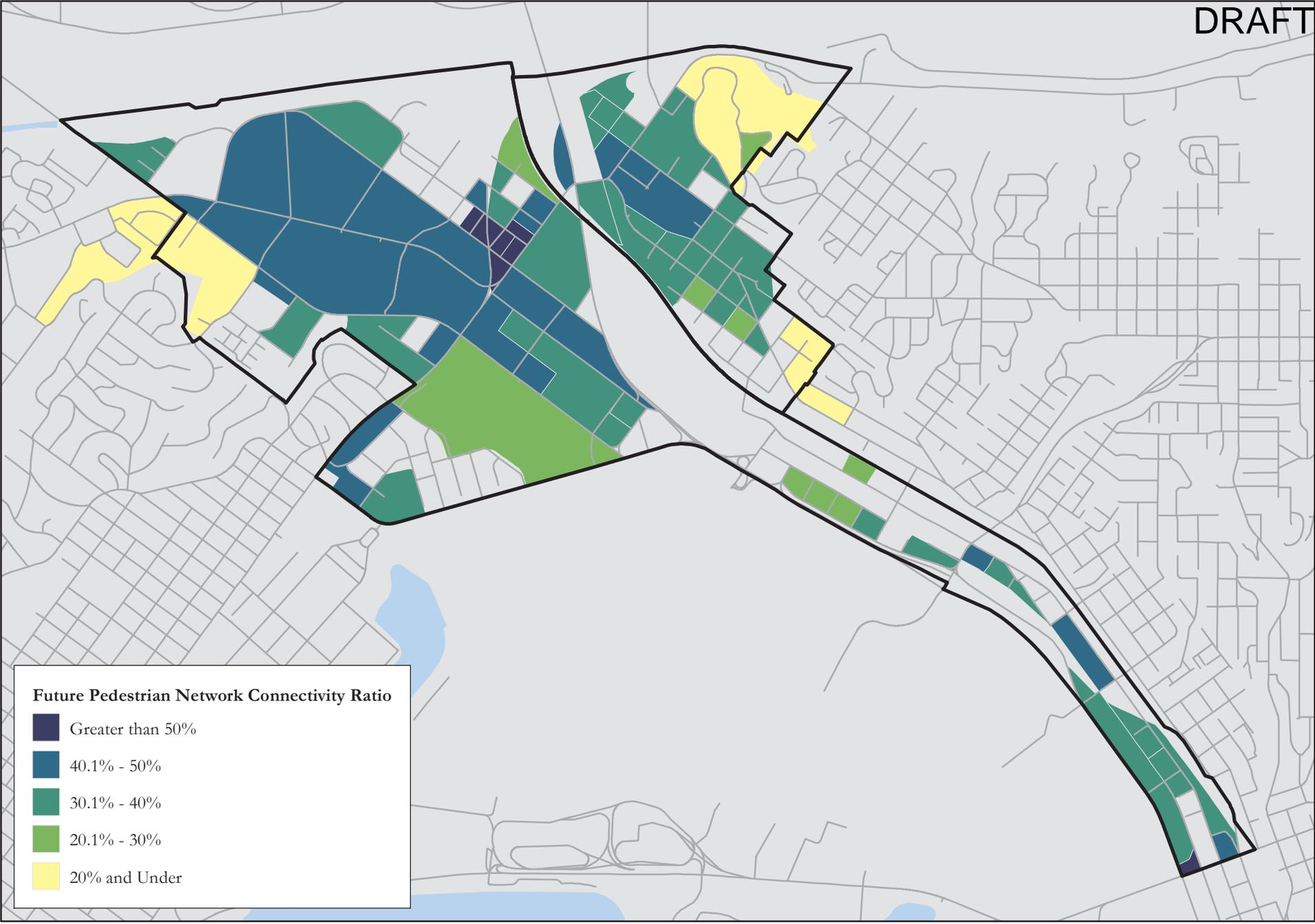


Figure 6-7
Pedestrian Network Connectivity -
Preferred Plan Conditions

Midway-Pacific Highway Community

As shown in the figure, pedestrian connectivity is at ideal levels (50%+ connectivity ratio) within the center of the community (in the area to the northeast of the intersection of Kurtz Street and Rosecrans Street, on either side of Camino Del Rio West. This is primarily due to the dense grid network present in this area. The lower connectivity ratio areas include the northwest area of the community west of Midway Drive and in the area west of Midway Drive and south of Rosecrans Street. The lower ratio is due to large, disconnected parking lots, superblocks, and private property with primary access points along Midway Drive.

Old Town Community

As shown in the figure, the Old Town Community generally has a good connectivity ratio between 40-50%, which is highest in the tourist areas around the Historic State Park and Transit Center Area, and gets lower toward the outskirts of the community. The lower connectivity ratio on the outskirts of the community is primarily due to the barriers created by the I-5 and I-8 freeways where pedestrian crossings are constrained.

6.4.2 Pedestrian Network Quality

Figure 6-8 and Tables 6.7A and 6.7B display the PEQE analysis results for roadway segments and intersections, along the major pedestrian corridors within the community. PEQE calculation worksheets are provided in Appendix F. As shown in the table, with the implementation of the proposed improvements, the pedestrian facilities along all major roadways within both communities have a Medium or High grade under implementation of the Preferred Plan with the exception of the following:

Midway-Pacific Highway Community

Kettner Boulevard between Vine Street and Sassafras Street – This segment has a score of Low due to the lack of pedestrian facilities on the west side of the roadway (where there are no fronting land uses) and high posted speed limit (40 mph). It should be noted that the east side of the roadway, where the fronting land uses are located, has a grade of Medium. Based on the results of the PEQE analysis, the pedestrian improvements proposed under the preferred plan would significantly improve the walkability and safety within Midway-Pacific Highway community from their current conditions.

Old Town Community

Taylor Street between Morena Boulevard and I-8 Ramps – This segment has a grade of Low due to the lack of pedestrian facilities. However, it should be noted that there are no fronting land uses on either side of this segment, nor does this segment connect to any activity centers to the east of the community. While the Old Town community is very walkable today, the improvements proposed under the Preferred Plan provide both access and safety upgrades throughout the community. Improvements such as ADA ramps, continental cross-walks and bulb outs (at key intersections) upgrade many of the intersections within the community from Low to Medium conditions.

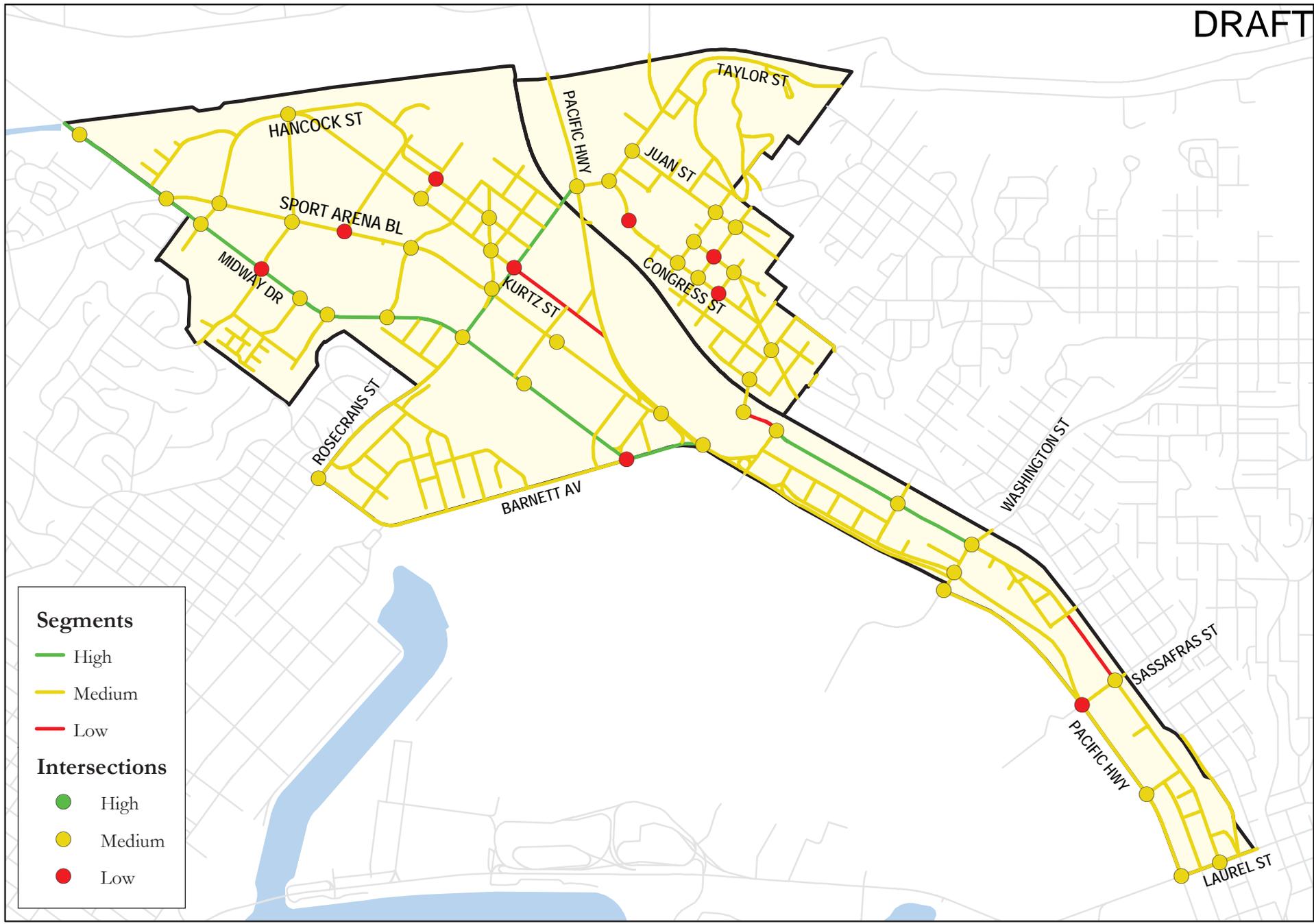


Figure 6-8
PEQE Scoring
Preferred Plan Conditions

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

| Roadway | To | From | Northside/ Eastside | | Southside/ Westside | | Total | |
|--|--------------------------------------|--------------------------------------|------------------------|------------|------------------------|--------|----------|------------|
| | | | Score | Grade | Score | Grade | Score | Grade |
| <i>North-South</i> | | | | | | | | |
| Midway/Pacific Highway Corridor | | | | | | | | |
| Lytton Street/ Barnett Avenue | Rosecrans St | Midway Dr | 4 | Medium | 4 | Medium | 8 | Medium |
| | Midway Dr | Pacific Hwy | 7 | High | 7 | High | 14 | High |
| W. Mission Bay Dr | I-8 WB Ramps | I-8 EB Ramps | 4 | Medium | 4 | Medium | 8 | Medium |
| Midway Dr | W. Point Loma Blvd/Sports Arena Blvd | Kemper St | 7 | High | 7 | High | 14 | High |
| | Kemper St | East Dr | 7 | High | 7 | High | 14 | High |
| | East Dr | Rosecrans St | 7 | High | 7 | High | 14 | High |
| | Rosecrans St | Barnett Ave | 7 | High | 7 | High | 14 | High |
| Sports Arena Blvd | I-8 EB Ramps | W. Point Loma Blvd/Sports Arena Blvd | 6 | Medium | 7 | High | 13 | High |
| | W. Point Loma Blvd/Midway Dr | Kemper St | 5 | Medium | 5 | Medium | 10 | Medium |
| | Kemper St | East Dr | 5 | Medium | 5 | Medium | 10 | Medium |
| | East Dr | Rosecrans St | 5 | Medium | 5 | Medium | 10 | Medium |
| | Rosecrans St | Pacific Hwy | 6 | Medium | 5 | Medium | 11 | Medium |
| Kurtz St | Hancock St | Rosecrans St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Rosecrans St | Pacific Hwy | 4 | Medium | 4 | Medium | 8 | Medium |
| Hancock St | Sports Arena Blvd | Kurtz St | 3 | Low | 6 | Medium | 9 | Medium |
| | Kurtz St | Camino Del Rio West | 4 | Medium | 6 | Medium | 10 | Medium |
| | Camino Del Rio West | Rosecrans St | 5 | Medium | 5 | Medium | 10 | Medium |
| | Old Town Ave | Witherby St | 4 | Medium | 4 | Medium | 8 | Medium |
| | Witherby St | Washington St | 6 | Medium | 7 | High | 13 | High |
| Kettner Blvd | Washington St | Vine St | 3 | Low | 5 | Medium | 8 | Medium |
| | Vine St | Sassafras St | 4 | Medium | 2 | Low | 6 | Low |
| | Sassafras St | Laurel St | 5 | Medium | 5 | Medium | 10 | Medium |
| Pacific Hwy | Sea World Dr | Taylor St | 5 | Medium | 5 | Medium | 10 | Medium |
| | Taylor St | Kurtz St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Kurtz St | Sports Arena Blvd | 6 | Medium | 6 | Medium | 12 | Medium |
| | Sports Arena Blvd | Barnett Ave | 6 | Medium | 6 | Medium | 12 | Medium |
| | Barnett Ave | Harney Washington St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Washington St | Sassafras St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Sassafras St | Laurel St | 6 | Medium | 6 | Medium | 12 | Medium |
| Old Town | | | | | | | | |
| Congress St | Taylor St | Twiggs St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Twiggs St | Harney St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Harney St | San Diego Ave/Ampudia St | 6 | Medium | 6 | Medium | 12 | Medium |
| San Diego Ave | Twiggs St | Harney St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Harney St | Ampudia St | 6 | Medium | 6 | Medium | 12 | Medium |

Table 6.7A PEQE Results: Roadway Segments – Preferred Plan Conditions

| Roadway | To | From | Northside/ Eastside | | Southside/ Westside | | Total | |
|--|---------------------------|-----------------------|------------------------|--------|------------------------|--------|-------|--------|
| | | | Score | Grade | Score | Grade | Score | Grade |
| | Ampudia St | Old Town Ave | 6 | Medium | 6 | Medium | 12 | Medium |
| | Old Town Ave | Hortensia St | 6 | Medium | 6 | Medium | 12 | Medium |
| Juan St | Taylor St | Twiggs St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Twiggs St | Harney St | 6 | Medium | 6 | Medium | 12 | Medium |
| | Harney St | San Juan Rd | 6 | Medium | 6 | Medium | 12 | Medium |
| East-West | | | | | | | | |
| Midway/Pacific Highway Corridor | | | | | | | | |
| Channel Wy | W. Mission Bay Dr | Hancock St | 6 | Medium | 6 | Medium | 12 | Medium |
| Kemper St | Kenyon St | Midway Dr | 6 | Medium | 5 | Medium | 11 | Medium |
| | Midway Dr | Sports Arena Blvd | 6 | Medium | 6 | Medium | 12 | Medium |
| Camino Del Rio West | Rosecrans St | I-5/I-8 Ramps | 4 | Medium | 4 | Medium | 8 | Medium |
| Rosecrans St | Lytton St | Midway Dr | 6 | Medium | 6 | Medium | 12 | Medium |
| | Midway Dr | Sports Arena Blvd | 7 | High | 7 | High | 14 | High |
| | Sports Arena Blvd | Pacific Hwy/Taylor St | 7 | High | 7 | High | 14 | High |
| Washington St | Frontage Rd | Pacific St | 5 | Medium | 5 | Medium | 10 | Medium |
| | Pacific St | Hancock St | 6 | Medium | 5 | Medium | 11 | Medium |
| Vine St | California St | Kettner Blvd | 7 | High | 5 | Medium | 12 | Medium |
| Sassafras St | Pacific Hwy | Kettner Blvd | 5 | Medium | 5 | Medium | 10 | Medium |
| Laurel St | Pacific Hwy | Kettner Blvd | 5 | Medium | 5 | Medium | 10 | Medium |
| Old Town | | | | | | | | |
| Taylor St | Pacific Hwy/ Rosecrans St | Congress St | 4 | Medium | 4 | Medium | 8 | Medium |
| | Congress St | Juan St | 4 | Medium | 4 | Medium | 8 | Medium |
| | Juan St | Morena Blvd | 4 | Medium | 4 | Medium | 8 | Medium |
| | Morena Blvd | I-8 EB Ramps | 1 | Low | 1 | Low | 2 | Low |
| Twiggs St | Congress St | San Diego Ave | 5 | Medium | 5 | Medium | 10 | Medium |
| | San Diego Ave | Juan St | 6 | Medium | 6 | Medium | 12 | Medium |
| Harney St | Congress St | San Diego Ave | 6 | Medium | 6 | Medium | 12 | Medium |
| | San Diego Ave | Juan St | 6 | Medium | 5 | Medium | 11 | Medium |
| Old Town Ave | Hancock St | Moore St | 5 | Medium | 5 | Medium | 10 | Medium |
| | Moore St | San Diego Ave | 5 | Medium | 5 | Medium | 10 | Medium |

Source: Chen Ryan Associates (June 2016)

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

| # | Intersection | Score | Grade |
|-------------------------------|--|-------|--------|
| Midway-Pacific Highway | | | |
| 1 | Lytton St and Rosecrans St | 6 | Medium |
| 2 | W Mission Bay Dr and I-8 WB Off-Ramp | 6 | Medium |
| 3 | W Mission Bay Dr and Channel Way | 5 | Medium |
| 4 | Midway Dr and Sports Arena/W Point Loma Blvd | 6 | Medium |
| 5 | Midway Dr and Kemper St | 6 | Medium |
| 6 | Midway Dr and East Dr | 6 | Medium |
| 7 | Midway Dr and Rosecrans St | 6 | Medium |
| 8 | Midway Dr and Charles Lindbergh Pkwy | 6 | Medium |
| 9 | Midway Dr and Enterprise St | 5 | Medium |
| 10 | Midway Dr and Barnett Ave | 6 | Medium |
| 11 | Sports Arena Blvd and Hancock St | 6 | Medium |
| 12 | Sports Arena Blvd and Kemper St | 6 | Medium |
| 13 | Sports Arena Blvd and Sports Arena Driveway | 6 | Medium |
| 14 | Sports Arena Blvd and East Dr | 6 | Medium |
| 15 | Sports Arena Blvd and Rosecrans St | 6 | Medium |
| 16 | Sports Arena Blvd and Charles Lindbergh Pkwy | 6 | Medium |
| 17 | Sports Arena Blvd and Pacific Hwy | 6 | Medium |
| 18 | Kurtz St and Hancock St | 5 | Medium |
| 19 | Kurtz St and Camino Del Rio West | 6 | Medium |
| 20 | Kurtz St and Rosecrans St | 6 | Medium |
| 21 | Kurtz St and Pacific Hwy | 6 | Medium |
| 22 | Hancock St and Channel Wy | 5 | Medium |
| 23 | Hancock St and Camino Del Rio West | 6 | Medium |
| 24 | Hancock St and Rosecrans St | 5 | Medium |
| 25 | Hancock St and Old Town Ave | 5 | Medium |
| 26 | Hancock St and Witherby St | 5 | Medium |
| 27 | Hancock St and Washington St | 6 | Medium |
| 28 | Kettner Blvd and Vine St | 5 | Medium |
| 29 | Kettner Blvd and Sassafras St | 6 | Medium |
| 30 | Kettner Blvd and West Laurel St | 6 | Medium |
| 31 | Pacific Hwy and Barnett Ave | 6 | Medium |
| 32 | Pacific Hwy and Washington St @ Frontage Rd | 6 | Medium |
| 33 | Pacific Hwy and Washington St @ Pacific St | 6 | Medium |
| 34 | Pacific Hwy and Sassafras St | 6 | Medium |
| 35 | Pacific Hwy and West Laurel St | 6 | Medium |
| Old Town | | | |
| 36 | Pacific Hwy and Taylor St | 6 | Medium |
| 37 | Moore St and Old Town Ave | 6 | Medium |
| 38 | Congress St and Taylor St | 6 | Medium |

Table 6.7B PEQE Results: Intersections – Preferred Plan Conditions

| # | Intersection | Score | Grade |
|--------------------------|--|-------|--------|
| 39 | Congress St and Twiggs St | 5 | Medium |
| 40 | Congress St and Harney St | 5 | Medium |
| 41 | Congress St and San Diego Ave/Ampudia St | 5 | Medium |
| 42 | San Diego Ave and Twiggs St | 5 | Medium |
| 43 | San Diego Ave and Harney St | 5 | Medium |
| 44 | San Diego Ave and Old Town Ave | 6 | Medium |
| 45 | Juan St and Taylor St | 6 | Medium |
| 46 | Juan St and Twiggs St | 5 | Medium |
| 47 | Juan St and Harney St | 5 | Medium |
| 48 | Morena Blvd and Taylor St | 6 | Medium |
| New Intersections | | | |
| 61 | Kurtz St & Frontier St | 5 | Medium |
| 63 | Kurtz St & Charles Lindbergh Pkwy | 6 | Medium |
| 64 | Barnett Ave & Dutch Flats Pkwy | 6 | Medium |
| 65 | Midway Dr & Dutch Flats Pkwy | 6 | Medium |
| 66 | Dutch Flats Pkwy & Sports Arena Bl | 6 | Medium |

Source: Chen Ryan Associates (June 2016)

As shown, all study intersections within both communities are projected to have a Medium grade under implementation of the Preferred Plan.

6.4.3 Pedestrian Quality Network Coverage

Figure 6-9 displays the Pedestrian Quality Network Coverage at all study intersections across both communities. This analysis calculates the ratio of the length of quality pedestrian network facilities (PEQE score Medium or High) within a half-mile walk from an intersection, compared to the total network available (based on existing conditions).

Midway-Pacific Highway Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the new roadway links proposed under Preferred Plan conditions, including multi-use urban trail improvements initially proposed in the North Bay Urban Greening Plan.

Old Town Community

As shown in the figure, under implementation of the Preferred Plan, the Pedestrian Quality Network Coverage increases to over 75% at all study intersections within the community. The significant increase in coverage is primarily due to the overall improvement to the intersections within the community by implementing minor improvements such as ADA ramps and Continental Crosswalks.

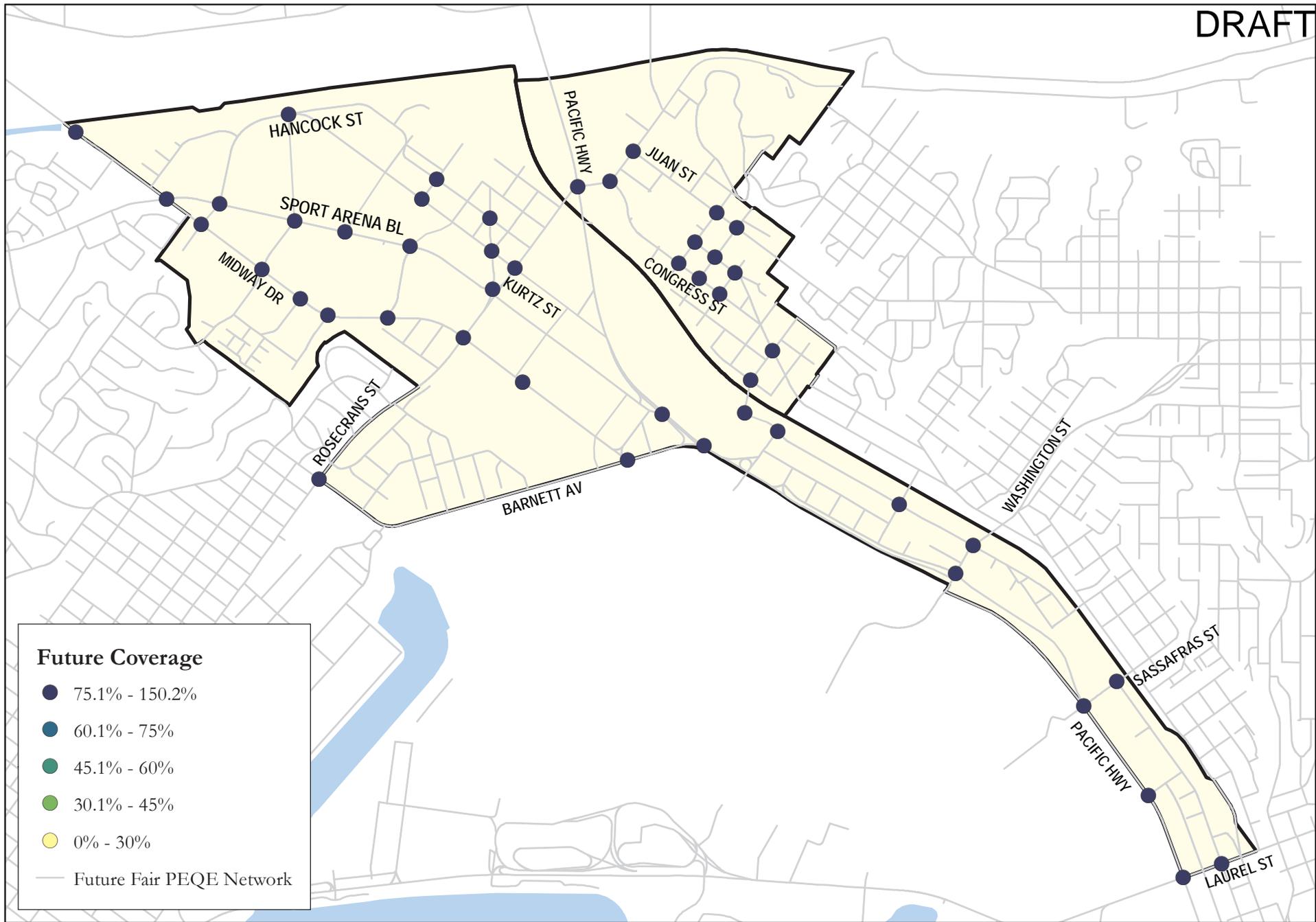


Figure 6-9
Pedestrian Quality Network Coverage -
Preferred Plan Conditions

6.5 Cycling Environment Assessment and Results

This section presents an assessment of the cycling environment under implementation of the Preferred Plan conditions, which assumes implementation of the cycling-related improvements outlined in Sections 3.4.2 and 4.4.2. **Figure 6-10** displays the proposed bicycle network in both communities under implementation of the Preferred Plan.

The cycling environment under Preferred Plan conditions was assessed using the methodologies presented in Section 2.3.2. Cycling network connectivity, quality and overall adequacy (combining both quality and connectivity) are assessed below.

6.5.1 Bicycle Network Connectivity

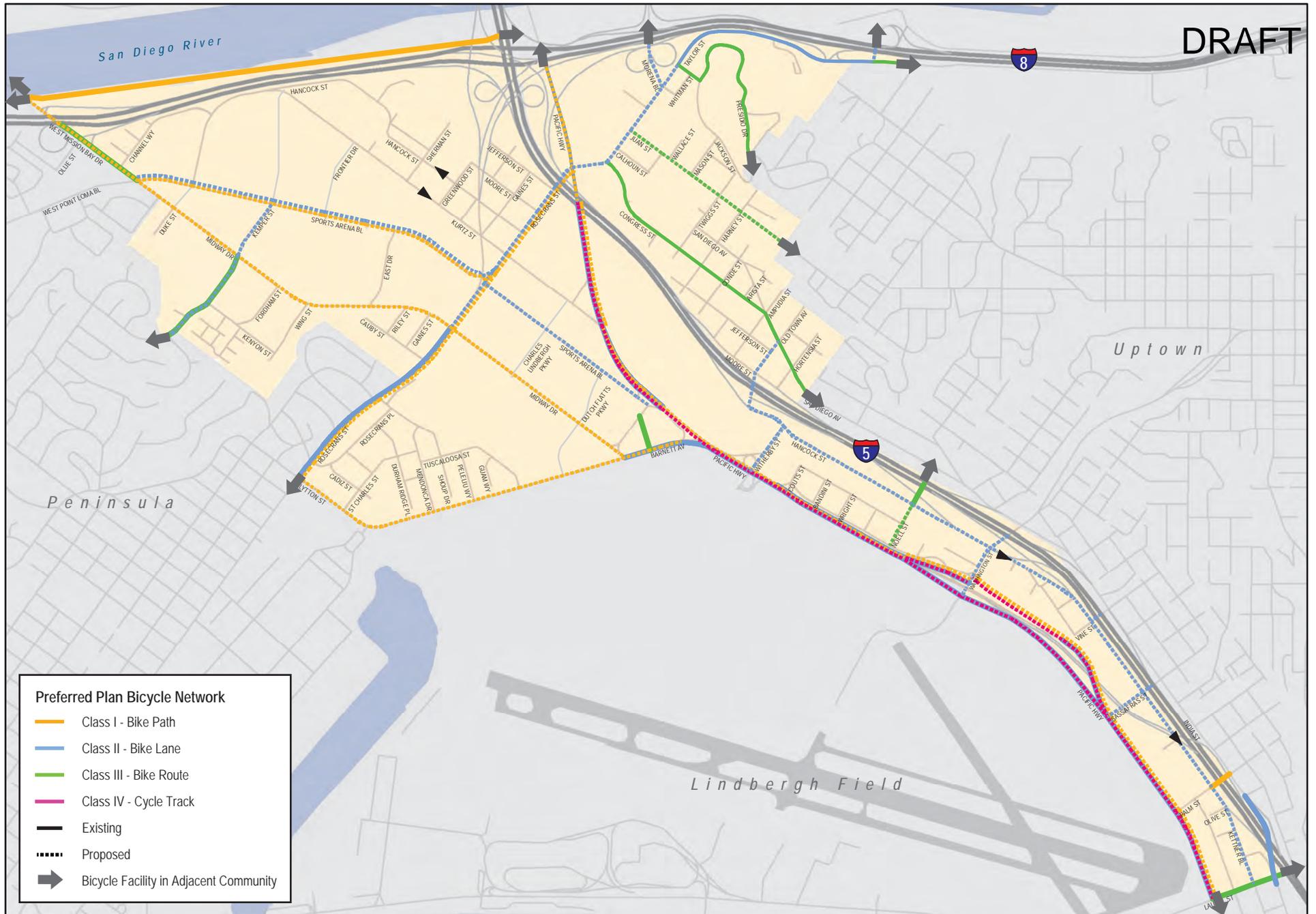
Figure 6-11 displays bicycle network connectivity to/from the study area intersections across both communities. This analysis calculates the percent of area that a cyclist can access within a one mile ride from the respective intersection (connectivity ratio). A connectivity ratio of 50% or better is considered to be ideal.

Midway-Pacific Highway Community

As shown in the figure, the bicycle connectivity is at good levels (40%+ connectivity ratio) in the center of the community around the block bound by Rosecrans Street, Midway Drive, Sports Arena Boulevard and East Drive. This improvement in connectivity is predominantly due to the new roadway connections between Midway and Sports Arena Boulevard.

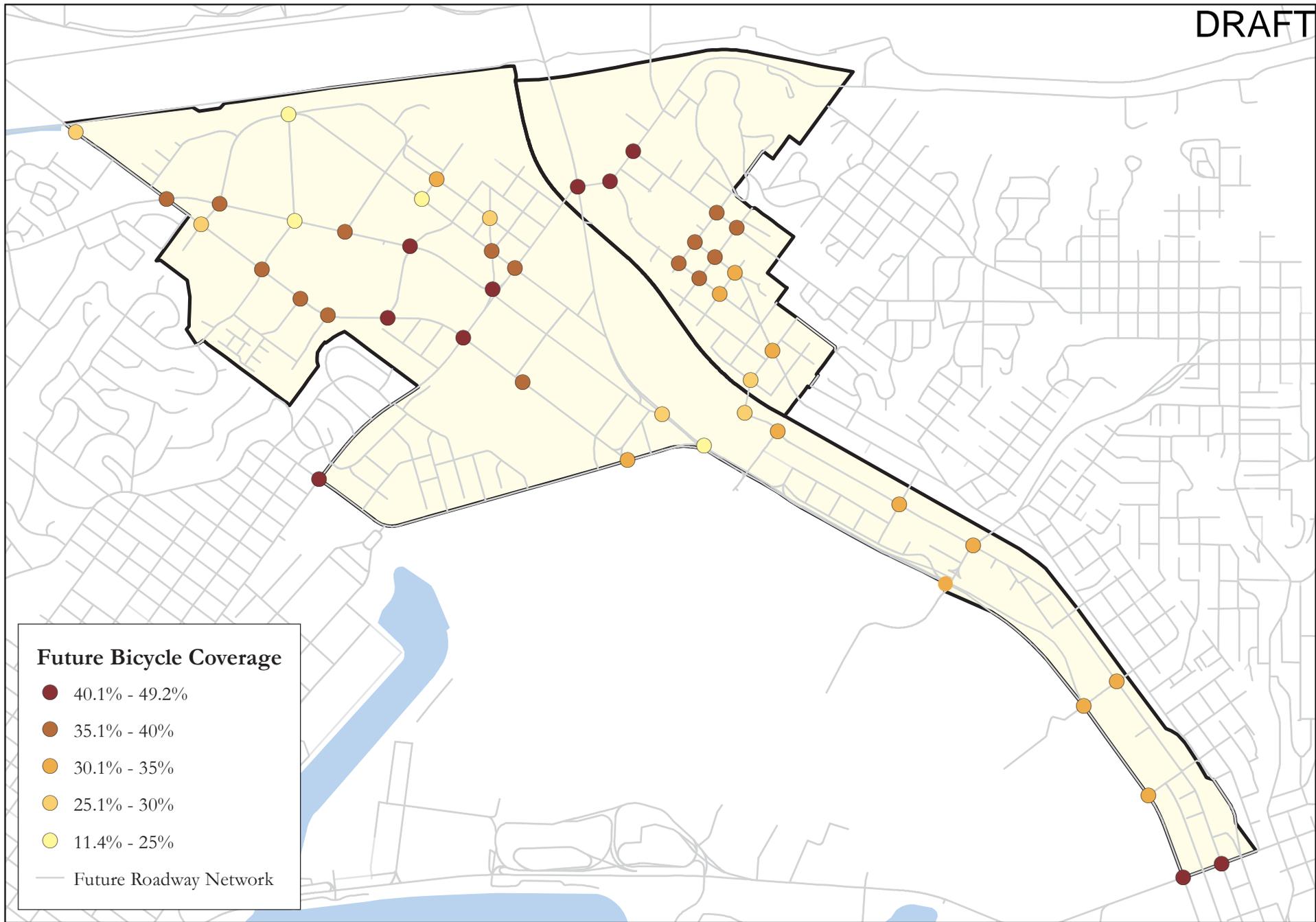
Old Town Community

As shown in the figure, the Old Town community generally has a good connectivity ratio of 35+%, with the highest connectivity along Taylor Street, where regional connections are available from Taylor Street (Coastal Rail Trail and Ocean Beach Bike Path).



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Figure 6-10
Bicycle Network -
Preferred Plan Conditions



6.5.2 Bicycle Network Quality

Figure 6-12 display the LTS analysis results for roadways segments and intersections along all Mobility Element roadways within the community.

Midway-Pacific Highway Community

As shown in the figure, the new multi-use urban trails proposed as part of the North Bay Urban Greening Plan (La Playa Trail, Bay-to-Bay Trail, the Historic Highway 101 Trail, and the Midway Trail), and the Preferred Plan, provide a slower low stress environment for cyclists (all trails have a score of LTS 1). Additionally, the proposed Class IV One-Way Cycle Tracks proposed along Pacific Highway provide a safe cycling environment for higher speed cyclists entering the community from either the north or south. These facilities have an LTS 1 score. Finally, the Enhanced Class II Buffered Bikes Lanes proposed along Sport Area Boulevard and Rosecrans Street provide more confident and higher speed cyclists a safe in-road alternative along these routes. Both facilities have a score of LTS 1.

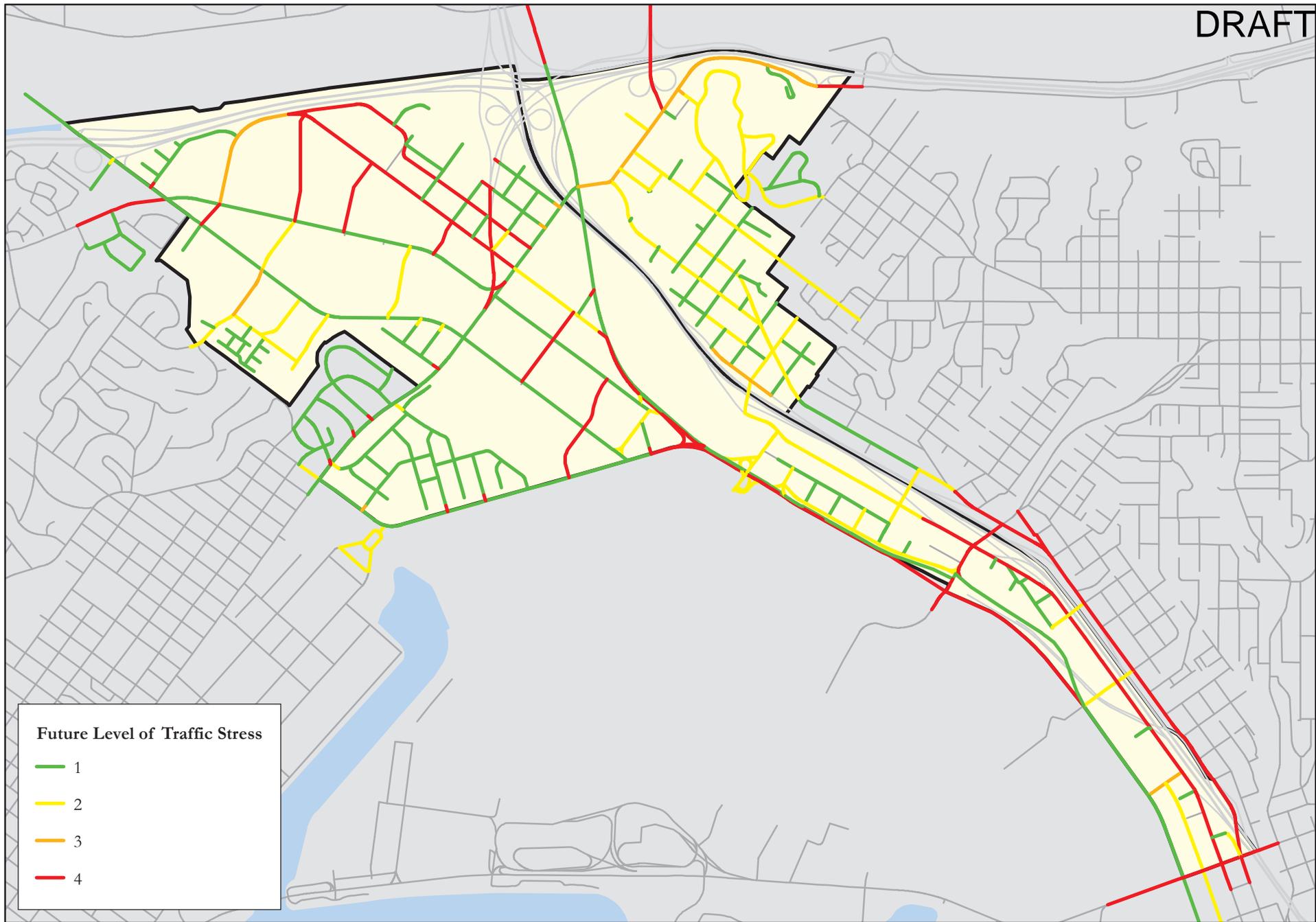
Based on the results of the LTS analysis, the bicycle facilities proposed under the Preferred Plan would significantly improve the connectivity and safety for cyclists within Midway-Pacific Highway community from their current conditions. Hancock Street between Kurtz Street and Rosecrans Street, and Hancock Street/Kettner Boulevard between Noel Street and Laurel Street were identified as providing LTS 4 environments under Preferred Plan conditions. The LTS 4 designation is largely due to the one-way directional travel. When calculating LTS scores for one-way streets the number of vehicular travel lanes is doubled, and the street is treated as though it has a median. This results in Hancock Street and Hancock Street/Kettner Boulevard as providing conditions equivalent to a 6-lane roadway, from the cyclist's perception. Hancock Street, between Kurtz Street and Rosecrans Street, does not have a bicycle facility, resulting in the LTS 4 score. Hancock Street/Kettner Boulevard, between Noel Street and Laurel Street, does have a Class II bike lane under Preferred Plan conditions, however, the posted speed limit of 40 MPH results in the LTS 4 score.

Old Town Community

As shown in the figure all roadways, with the exception of Taylor Street and Morena Boulevard, are projected to be low stress cycling environments (LTS 1 or 2). This is due to the low speed nature of the roadways within the Old Town Community. However, even with Class II Bike Lanes proposed along Taylor Street, the roadway is still projected to have an LTS score of 3. This is due to the high vehicular travel speed along Taylor Street and lack of a horizontal or vertical buffer between cyclists and motorists.

As noted in section 4.4.2, the connection along Morena Boulevard between Taylor Street and Linda Vista Road is critical. A connection here would link the Old Town and Linda Vista communities, as well as provide a connection to the Ocean Beach Bike Path. Unfortunately, the bridge along this segment of the roadway has a constrained right-of-way, and the current configuration of the I-8 Morena Boulevard ramps position four high-speed free-right turn movements on/off the bridge.

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Due to these constraints there is not feasible bicycle facility that can be implemented along this segment without both widening the bridge and reconfiguring the I-8 / Morena Boulevard Ramps. However, it is recommended that the City work with both Caltrans and SANDAG to look for opportunities to implement bicycle facilities and better pedestrian facilities along this segment should any improvements be done to this segment.

6.5.3 Combined Bicycle Network Connectivity and Quality Assessment

Figure 6-13 displays the combined Bicycle Network Connectivity and Quality Assessment for all bicycle accessible land uses (residential, commercial, office, recreational and instructional land uses) throughout both communities. This analysis calculates the percent of TAZs with bicycle accessible land uses that a cyclist can reach using only LTS 1 and 2 facilities.

Midway-Pacific Highway Community

As shown in the figure, the proposed bicycle improvements enhance the level of connectivity to/from the residential land uses located on the western side of the community. In this area, cyclists can connect to 40+% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The proposed commercial areas within the community (north of Rosecrans Street) can typically connect to 30-40% of the bicycle accessible land uses within the community using only LTS 1 or 2 facilities. The only areas that have low connectivity (0-10%) are the more industrial areas located in the north and northeast portions of the community. However, these areas have very few bicycle accessible land uses.

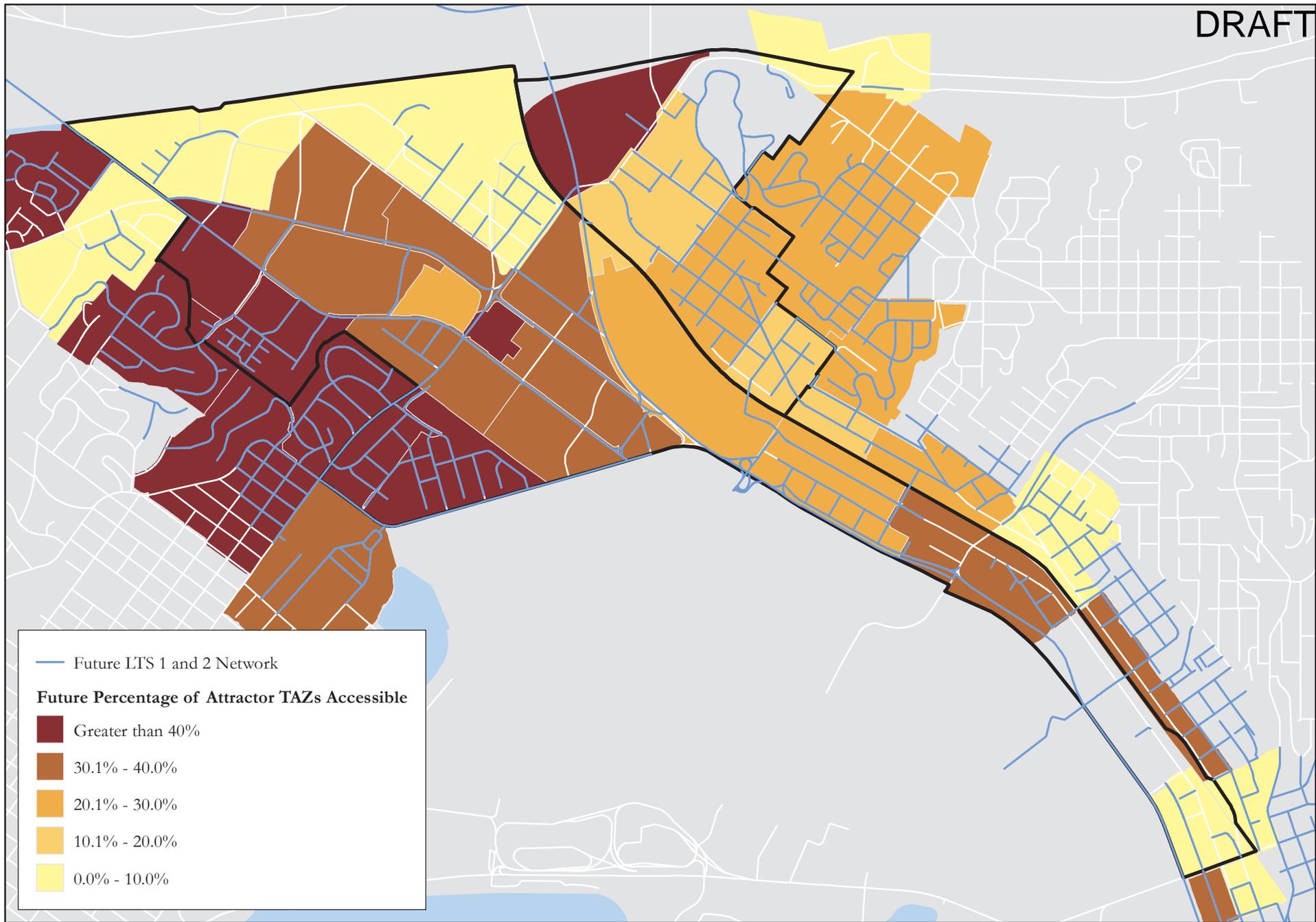
Old Town Community

As shown in the figure, the community as a whole has generally moderate connectivity levels between 20% and 40%. The main barrier limiting the overall quality connectivity within the community is Taylor Street, which has an LTS score of 3. If the LTS score along Taylor Street can be improved to an LTS 1 or 2, the overall quality connectivity within the Old Town Community will increase significantly. However, based on the roadway's current configuration, enhanced bicycle facilities such as Buffered Class II Bike Lanes or a Class IV Cycle Track is not currently feasible along Taylor Street. Therefore, a policy should be included in the Mobility Element that if Taylor Street is ever widened beyond its current right-of-way, enhanced bicycle facilities such as Class II Buffered Bike Lanes or a Class IV Cycle Track should be implemented as well.

6.6 Public Transit Services and Facilities Assessment and Results

This section assesses the proposed transit network under implementation of the Preferred Plan conditions, which assumes implementation of the transit-related improvements outlined in Sections 3.5.2 and 4.5.2.

The proposed Transit network under Preferred Plan conditions was assessed using the methodologies contained in Section 2.3.3. Transit stop/station ridership and amenities are assessed below as well as the roadway arterial speed along roadways continuing transit routes.



6.6.1 Transit Stop/Station Amenities and Average Daily Boardings and Alightings

While projecting increases in multimodal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide transit ridership growth factor was derived based on future growth estimates in SANDAG Series 12 Transportation Forecast Model, as documented in Section 5.0. Based on the SANDAG model results, a 1.75 growth factor was applied to existing transit ridership volumes, which is consistent with the projection of regional growth.

Table 6.8 displays the projected transit boarding and alightings by route and by stop within both communities under Preferred Plan conditions.

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

| Route # and Location | Boardings | Alightings | Total Trips |
|--|-----------|------------|-------------|
| Bus Route 8 Clockwise | | | |
| Sports Arena Blvd and Midway Dr | 30 | 30 | 60 |
| Sports Arena Blvd and Midway Dr | 150 | 50 | 200 |
| Sports Arena Blvd Between Hancock and Kemper | 60 | 20 | 70 |
| Sports Arena Blvd Between Kemper and Sports Arena Driveway | 70 | 50 | 160 |
| Sports Arena Blvd and East Dr | 120 | 50 | 170 |
| Rosecrans St and Pacific Highway | 40 | 40 | 70 |
| Old Town Transit Center | 20 | 1,100 | 1,120 |
| Bus Route 9 Counter Clockwise | | | |
| Old Town Transit Center | 1,120 | 20 | 1,130 |
| Rosecrans St and Moore St | 30 | 20 | 40 |
| Rosecrans St and Kurtz St | 20 | 40 | 50 |
| Sports Arena Blvd and Camino Del Rio West | 20 | 60 | 80 |
| Sports Arena Blvd and East Dr | 20 | 90 | 110 |
| Sports Arena Blvd and Sports Arena Driveway | 50 | 130 | 170 |
| Sports Arena Blvd and Hancock St | 60 | 180 | 240 |
| Bus Route 10 East | | | |
| Old Town Transit Center | 1,780 | 30 | 1,810 |
| Pacific Highway and Sports Arena Blvd | 50 | 30 | 70 |
| Pacific Highway and Witherby St | 100 | 170 | 270 |
| Washington St and Pacific Highway | 90 | 80 | 160 |
| Washington St and Hancock St | 40 | 10 | 50 |
| Washington St and India St | 90 | 30 | 120 |
| Bus Route 10 West | | | |
| Washington St and India St | 20 | 90 | 100 |
| Washington St and Hancock St | 10 | 20 | 30 |

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

| Route # and Location | Boardings | Alightings | Total Trips |
|---------------------------------------|-----------|------------|-------------|
| Washington St and The Trolley Tracks | 30 | 150 | 180 |
| Pacific Highway and Washington St | 30 | 30 | 60 |
| Pacific Highway and Witherby St | 90 | 110 | 200 |
| Pacific Highway and Enterprise St | 20 | 60 | 80 |
| Pacific Highway and Kurtz St | 10 | 10 | 10 |
| Old Town Transit Center | 30 | 1,460 | 1,480 |
| Bus Route 28 East | | | |
| Rosecrans St and Lytton St | 30 | 20 | 40 |
| Rosecrans St and North Evergreen St | 30 | 30 | 60 |
| Rosecrans St and Loma Square | 80 | 60 | 140 |
| Rosecrans St and Sports Arena Blvd | 60 | 60 | 120 |
| Rosecrans St and Pacific Highway | 30 | 10 | 30 |
| Old Town Transit Center | N/A | 1,100 | 1,100 |
| Bus Route 28 West | | | |
| Old Town Transit Center | 930 | N/A | 930 |
| Rosecrans St and Moore St | 20 | N/A | 20 |
| Rosecrans St and Kurtz St | 20 | 20 | 30 |
| Rosecrans St and Midway Drive | 50 | 50 | 90 |
| Rosecrans St and Midway Drive | 80 | 90 | 160 |
| Rosecrans St and North Evergreen St | 30 | 40 | 60 |
| Rosecrans St and Lytton St | 10 | 20 | 30 |
| Bus Route 30 North | | | |
| Pacific Highway and Witherby St | 90 | 80 | 170 |
| Pacific Highway and Enterprise St | 20 | 40 | 50 |
| Pacific Highway and Kurtz St | 10 | 10 | 10 |
| Old Town Transit Center | 1,110 | 610 | 1,720 |
| Bus Route 30 South | | | |
| Old Town Transit Center | 600 | 1,100 | 1,690 |
| Pacific Highway and Sports Arena Blvd | 20 | 600 | 60 |
| Bus Route 35 East | | | |
| Midway Drive and Duke St | 110 | 60 | 160 |
| Midway Drive and Kemper St | 70 | 40 | 110 |
| Midway Drive and Fordham St | 110 | 40 | 150 |
| Midway Drive and East Drive | 80 | 70 | 140 |
| Rosecrans St and Sports Arena Blvd | 100 | 30 | 130 |
| Rosecrans St and Pacific Highway | 20 | 20 | 30 |
| Old Town Transit Center | N/A | 1,000 | 1,000 |

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

| Route # and Location | Boardings | Alightings | Total Trips |
|-----------------------------------|-----------|------------|-------------|
| Bus Route 35 West | | | |
| Old Town Transit Center | 1,020 | N/A | 1,020 |
| Rosecrans St and Moore St | 40 | 10 | 50 |
| Rosecrans St and Kurtz St | 20 | 30 | 40 |
| Rosecrans St and Midway Drive | 50 | 70 | 120 |
| Midway Drive and East Drive | 80 | 60 | 140 |
| Midway Drive and Fordham St | 40 | 110 | 140 |
| Midway Drive and Kemper St | 50 | 110 | 150 |
| Midway Drive and Duke St | 40 | 130 | 160 |
| Bus Route 44 North | | | |
| Old Town Transit Center | 1,840 | 10 | 1,850 |
| Taylor St and Juan St | 20 | 10 | 20 |
| Bus Route 44 South | | | |
| Taylor St and Sunset St | 10 | 10 | 20 |
| Old Town Transit Center | 50 | 1,590 | 1,630 |
| Bus Route 88 East | | | |
| Old Town Transit Center | 250 | 20 | 260 |
| Taylor St and Juan St | 10 | 10 | 10 |
| Taylor St and Presidio Drive | 10 | 10 | 10 |
| Taylor St and I-8 East | 10 | 10 | 10 |
| Bus Route 88 West | | | |
| Taylor St and I-8 East | 10 | 10 | 10 |
| Taylor St and Presidio Drive | 10 | 10 | 10 |
| Taylor St and Sunset St | 10 | 10 | 10 |
| Old Town Transit Center | 10 | 140 | 150 |
| Bus Route 105 North | | | |
| Old Town Transit Center | 780 | 10 | 780 |
| Taylor St and Juan St | 10 | 10 | 10 |
| Bus Route 105 South | | | |
| Taylor St and Juan St | 10 | 10 | 10 |
| Old Town Transit Center | 10 | 570 | 580 |
| Bus Route 150 North | | | |
| Pacific Highway and Witherby St | 50 | 20 | 70 |
| Pacific Highway and Enterprise St | 10 | 20 | 20 |
| Pacific Highway and Kurtz St | 10 | 10 | 10 |
| Old Town Transit Center | 470 | 140 | 610 |
| Bus Route 150 South | | | |

Table 6.8 Average Daily Transit Boardings and Alightings by Route and Station – Preferred Plan Conditions

| Route # and Location | Boardings | Alightings | Total Trips |
|---------------------------------------|-----------|------------|-------------|
| Old Town Transit Center | 120 | 670 | 80 |
| Pacific Highway and Sports Arena Blvd | 20 | 10 | 20 |
| Green Line Trolley East | | | |
| Old Town Transit Center | 8,350 | 390 | 8,740 |
| Washington Street Station | 280 | 660 | 940 |
| Middletown Station | 10 | 11,200 | 11,200 |
| Green Line Trolley West | | | |
| Old Town Transit Center | 10,690 | 7,740 | 18,420 |
| Washington Street Station | 700 | 220 | 910 |
| Middletown Station | 330 | 190 | 510 |

Source: Chen Ryan Associates (June 2016)

Table 6.9 displays the projected transit boardings and alightings at each transit stop/station within both communities under implementation of the Preferred Plan. The table also shows the required stop/station amenities, as shown in Table 2.2, based on the future ridership projects.

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

| Station | Boardings | Alightings | Total | Amenities at the Stops | | | |
|--|-----------|------------|-------|------------------------|---------|-------|-----------|
| | | | | Signs | Shelter | Bench | Trash Can |
| Sports Arena Blvd and Midway Dr (Clockwise) | 180 | 80 | 260 | ✓ | ✓ | ✓ | ✓ |
| Sports Arena Blvd Between Hancock and Kemper (Clockwise) | 60 | 20 | 70 | ✓ | | ○ | |
| Sports Arena Blvd Between Kemper and Sports Arena Driveway (Clockwise) | 70 | 50 | 160 | ✓ | | ✓ | |
| Sports Arena Blvd and East Dr (Clockwise) | 120 | 50 | 170 | ✓ | ○ | ✓ | |
| Rosecrans St and Pacific Highway (Clockwise) | 40 | 40 | 70 | ✓ | ✓ | ✓ | ✓ |
| Old Town Transit Center (Clockwise) | 20 | 1,100 | 1,120 | ✓ | ✓ | ✓ | ✓ |
| Old Town Transit Center (Counter Clockwise) | 1,120 | 20 | 1,130 | ✓ | ✓ | ✓ | ✓ |
| Rosecrans St and Moore St (Counter Clockwise) | 30 | 20 | 40 | ✓ | | ✓ | ✓ |
| Rosecrans St and Kurtz St (Counter Clockwise) | 20 | 40 | 50 | ✓ | | ✓ | |
| Sports Arena Blvd and Camino Del Rio West (Counter Clockwise) | 20 | 60 | 80 | ✓ | | ✓ | |
| Sports Arena Blvd and East Dr (Counter Clockwise) | 20 | 90 | 110 | ✓ | | ✓ | ✓ |
| Sports Arena Blvd and Sports Arena Driveway (Counter Clockwise) | 50 | 130 | 170 | ✓ | | ✓ | |

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

| Station | Boardings | Alightings | Total | Amenities at the Stops | | | |
|--|-----------|------------|-------|------------------------|---------|-------|-----------|
| | | | | Signs | Shelter | Bench | Trash Can |
| Sports Arena Blvd and Hancock St (Counter Clockwise) | 60 | 180 | 240 | ✓ | | ✓ | |
| Old Town Transit Center (Eastbound) | 2,030 | 2,150 | 4,170 | ✓ | ✓ | ✓ | ✓ |
| Pacific Highway and Sports Arena Blvd (Eastbound) | 50 | 30 | 70 | ✓ | | | |
| Pacific Highway and Witherby St (Eastbound) | 100 | 170 | 270 | ✓ | | ✓ | ✓ |
| Washington St and Pacific Highway (Eastbound) | 90 | 80 | 160 | ✓ | | ✓ | |
| Washington St and Hancock St (Eastbound) | 40 | 10 | 50 | ✓ | | ✓ | ✓ |
| Washington St and India St (Eastbound) | 90 | 30 | 120 | ✓ | | ✓ | ✓ |
| Washington St and India St (Westbound) | 20 | 90 | 100 | ✓ | | | ✓ |
| Washington St and Hancock St (Westbound) | 10 | 20 | 30 | ✓ | | ✓ | ✓ |
| Washington St and The Trolley Tracks (Westbound) | 30 | 150 | 180 | ✓ | | | |
| Pacific Highway and Washington St (Westbound) | 30 | 30 | 60 | ✓ | | ✓ | |
| Pacific Highway and Witherby St (Westbound) | 90 | 110 | 200 | ✓ | ✓ | ✓ | ✓ |
| Pacific Highway and Enterprise St (Westbound) | 20 | 60 | 80 | ✓ | | | |
| Pacific Highway and Kurtz St (Westbound) | 10 | 10 | 10 | ✓ | | | |
| Old Town Transit Center (Westbound) | 1,990 | 1,600 | 3,580 | ✓ | ✓ | ✓ | ✓ |
| Rosecrans St and Lytton St (Eastbound) | 30 | 20 | 40 | ✓ | ✓ | ✓ | ✓ |
| Rosecrans St and North Evergreen St (Eastbound) | 30 | 30 | 60 | ✓ | | ✓ | ✓ |
| Rosecrans St and Loma Square (Eastbound) | 80 | 60 | 140 | ✓ | ✓ | ✓ | ✓ |
| Rosecrans St and Sports Arena Blvd (Eastbound) | 160 | 90 | 250 | ✓ | ✓ | ✓ | ✓ |
| Rosecrans St and Pacific Highway (Eastbound) | 50 | 30 | 60 | ✓ | ✓ | ✓ | ✓ |
| Rosecrans St and Moore St (Westbound) | 60 | 10 | 70 | ✓ | | ✓ | ✓ |
| Rosecrans St and Kurtz St (Westbound) | 40 | 50 | 70 | ✓ | | ✓ | |
| Rosecrans St and Midway Drive (Westbound) | 180 | 210 | 370 | ✓ | ○ | ✓ | ✓ |
| Rosecrans St and North Evergreen St (Westbound) | 30 | 40 | 60 | ✓ | | | |
| Rosecrans St and Lytton St (Westbound) | 10 | 20 | 30 | ✓ | | | |
| Pacific Highway and Witherby St (Northbound) | 140 | 100 | 240 | ✓ | ✓ | ✓ | ✓ |
| Pacific Highway and Enterprise St (Northbound) | 30 | 60 | 70 | ✓ | | | |

Table 6.9 Transit Station/Stop Locations, Amenities and Average Daily Boardings and Alightings – Preferred Plan Conditions

| Station | Boardings | Alightings | Total | Amenities at the Stops | | | |
|--|-----------|------------|--------|------------------------|---------|-------|-----------|
| | | | | Signs | Shelter | Bench | Trash Can |
| Pacific Highway and Kurtz St (Northbound) | 20 | 20 | 20 | ✓ | | | |
| Old Town Transit Center (Northbound) | 4,200 | 770 | 4,960 | ✓ | ✓ | ✓ | ✓ |
| Old Town Transit Center (Southbound) | 780 | 3,930 | 3,980 | ✓ | ✓ | ✓ | ✓ |
| Pacific Highway and Sports Arena Blvd (Southbound) | 40 | 610 | 80 | ✓ | | | |
| Midway Drive and Duke St (Eastbound) | 110 | 60 | 160 | ✓ | ✓ | ✓ | ✓ |
| Midway Drive and Fordham St (Eastbound) | 110 | 40 | 150 | ✓ | ✓ | ✓ | ✓ |
| Midway Drive and East Drive (Eastbound) | 80 | 70 | 140 | ✓ | ✓ | ✓ | ✓ |
| Midway Drive and East Drive (Westbound) | 80 | 60 | 140 | ✓ | | ✓ | |
| Midway Drive and Fordham St (Westbound) | 40 | 110 | 140 | ✓ | | ✓ | |
| Midway Drive and Kemper St (Westbound) | 50 | 110 | 150 | ✓ | | ✓ | |
| Midway Drive and Duke St (Westbound) | 40 | 130 | 160 | ✓ | | ✓ | |
| Taylor St and Juan St (Northbound) | 30 | 20 | 30 | ✓ | | ✓ | |
| Taylor St and Sunset St (Southbound) | 10 | 10 | 20 | ✓ | | ✓ | |
| Taylor St and Juan St (Eastbound) | 10 | 10 | 10 | ✓ | | ✓ | |
| Taylor St and Presidio Drive (Eastbound) | 10 | 10 | 10 | ✓ | | ✓ | |
| Taylor St and I-8 East (Eastbound) | 10 | 10 | 10 | ✓ | | | |
| Taylor St and I-8 East (Westbound) | 10 | 10 | 10 | ✓ | | ✓ | |
| Taylor St and Presidio Drive (Westbound) | 10 | 10 | 10 | ✓ | | ✓ | |
| Taylor St and Sunset St (Westbound) | 10 | 10 | 10 | ✓ | | ✓ | |
| Taylor St and Juan St (Southbound) | 10 | 10 | 10 | ✓ | | ✓ | |
| Old Town Transit Center | 19,040 | 8,130 | 27,160 | ✓ | ✓ | ✓ | ✓ |
| Washington Street Station | 980 | 880 | 1,850 | ✓ | ✓ | ✓ | ✓ |
| Middletown Station | 340 | 11,390 | 11,710 | ✓ | ✓ | ✓ | ✓ |

Source: Chen Ryan Associates (June 2016)

Notes:

- ✓: Existing Amenity
- : Needed Amenity

As shown, the majority of the existing stops/stations already provide adequate amenities to accommodate the projected future ridership. However, additional amenities will be needed at the following stations as ridership increased:

Midway-Pacific Highway Community

- Sports Arena Boulevard, between Hancock Street and Kemper Street (Clockwise) – Bench
- Sports Arena Boulevard and East Drive (Clockwise) – Shelter
- Rosecrans Street and Midway Drive (Westbound) – Shelter

Old Town

- None

6.6.2 Arterial Speed Analysis Along Roadways Serving Transit Routes

An HCM peak hour arterial speed analysis was conducted along all roadway corridors where transit routes are projected to operate in order to identify future roadway congestion that could potentially impact transit route travel times and on-time performance. Transit priority measures such as queue jumper lanes and transit priority signal timing should be implemented in locations where future roadway congestion is anticipated.

Table 6.10 displays peak hour arterial speed analyses for all roadway facilities where a transit route operates under implementation of the Preferred Plan. Peak hour arterial analysis worksheets are provided in Appendix G.

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

| Roadway | Segment | Posted Speed (MPH) | AM | | | | PM | | | |
|---|---|--------------------|-------|-----|-------|-----|-------|-----|-------|-----|
| | | | EB/NB | | WB/SB | | EB/NB | | WB/SB | |
| | | | Speed | LOS | Speed | LOS | Speed | LOS | Speed | LOS |
| Midway-Pacific Highway Community | | | | | | | | | | |
| Camino Del Rio West | Sports Arena Blvd to Kurtz Street | 35 | 7.4 | E | 6.9 | F | 6.1 | F | 5.1 | F |
| | Kurtz Street to Hancock Street | 35 | 11.9 | D | 25.9 | B | 14.4 | C | 23.2 | C |
| Rosecrans Street | Barnett Avenue to Midway Drive | 35 | 22.3 | C | 9.5 | F | 13.8 | E | 19.1 | D |
| | Midway Drive to Sports Arena Blvd | 35 | 31.2 | B | 8.8 | F | 31.2 | B | 8.6 | F |
| | Sports Arena Blvd to Kurtz Street | 35 | 11.7 | F | 3.4 | F | 7.9 | F | 2.8 | F |
| | Kurtz Street to Pacific Highway | 35 | 17.2 | D | 22.4 | C | 15.2 | E | 20.9 | D |
| Midway Drive | Sports Arena Blvd to Duke Street/Hancock Street | 35 | 6.0 | F | 7.2 | F | 5.0 | F | 6.3 | F |
| | Duke Street/Hancock Street to Kemper Street | 35 | 14.4 | D | 15.2 | D | 11.5 | E | 11.4 | E |
| | Kemper Street to East Drive | 35 | 19.3 | C | 24.5 | B | 15.5 | D | 23.6 | C |
| | East Drive to Rosecrans Street | 35 | 22.2 | C | 12.4 | E | 19.5 | C | 8.4 | F |
| Sports Arena Boulevard | I-8 WB Off-Ramp to W Point Loma Blvd | 35 | 21.1 | C | 7.9 | F | 9.0 | F | 7.5 | F |
| | W Point Loma Blvd to Hancock Street | 35 | 11.0 | E | 14.9 | D | 6.3 | F | 14.1 | D |
| | Hancock Street to Kemper Street | 35 | 24.8 | B | 15.8 | D | 27.3 | B | 12.6 | E |
| | Kemper Street to Frontier Street | 35 | 11.0 | E | 14.5 | D | 15.1 | D | 18.5 | C |
| | Frontier Street to Greenwood Street | 35 | 12.1 | E | 20.9 | C | 11.7 | E | 12.2 | E |
| | Greenwood Street to Rosecrans Street | 35 | 27.3 | B | 7.1 | F | 24.6 | B | 7.0 | F |
| Pacific Highway | Taylor Street to Kurtz Street | 45 | 19.3 | D | 23.5 | C | 18.4 | E | 15.9 | E |
| | Kurtz Street to Sports Arena Blvd | 45 | 25.3 | C | 15.7 | E | 16.5 | E | 22.8 | C |

Table 6.10 Arterial Speed Analysis Along Transit Corridors – Preferred Plan Conditions

| Roadway | Segment | Posted Speed (MPH) | AM | | | | PM | | | |
|---------------------------|---------------------------------------|--------------------|-------|-----|-------|-----|-------|-----|-------|-----|
| | | | EB/NB | | WB/SB | | EB/NB | | WB/SB | |
| | | | Speed | LOS | Speed | LOS | Speed | LOS | Speed | LOS |
| Pacific Highway | Sports Arena Blvd to Barnett Avenue | 45 | 31.6 | B | 11.8 | F | 28.2 | C | 5.2 | F |
| | Washington Street to Sassafras Street | 45 | 25.3 | C | 28.4 | B | 16.9 | E | 28.2 | B |
| | Sassafras Street to W Laurel Street | 45 | 24.5 | C | 16.1 | E | 16.9 | E | 15.0 | E |
| Old Town Community | | | | | | | | | | |
| Taylor Street | Pacific Highway to Congress Street | 35 | 12.6 | D | 9.0 | D | 9.9 | D | 8.7 | E |
| | Congress Street to Juan Street | 35 | 9.9 | D | 13.0 | D | 7.4 | E | 13.9 | C |
| | Juan Street to Whitman Street | 35 | 17.6 | C | 14.6 | C | 15.4 | C | 15.6 | C |

Source: Chen Ryan Associates (June 2016)

Note:

Bold letter indicates LOS E or F

As shown, several segments within both communities are projected to operate at LOS E or F during both the AM and PM Peak hours:

Midway-Pacific Highway

- Camino del Rio West, between Sports Arena Boulevard and Kurtz Street
 - LOS E: AM peak hour, eastbound direction
 - LOS F: PM peak hour, eastbound direction
 - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Barnett Avenue and Midway Drive
 - LOS F: AM peak hour, westbound direction
 - LOS E: PM peak hour, eastbound direction
- Rosecrans Street, between Midway Drive and Sports Arena Boulevard
 - LOS F: AM & PM peak hours, westbound direction
- Rosecrans Street, between Sports Arena Boulevard and Kurtz Street
 - LOS F: AM & PM peak hours, westbound & eastbound directions
- Rosecrans Street, between Kurtz Street and Pacific Highway
 - LOS E: PM peak hour, eastbound direction
- Midway Drive, between Sports Arena Boulevard and Hancock Street
 - LOS F: AM & PM peak hours, northbound & southbound directions
- Midway Driveway, between Hancock Street and Kemper Street
 - LOS E: PM peak hour, northbound & southbound directions
- Midway Drive, between East Drive and Rosecrans Street
 - LOS E: AM peak hour southbound direction
 - LOS F: PM peak hour southbound direction
- Sports Arena Boulevard, between I-8 Westbound Ramps and West Point Loma Boulevard
 - LOS F: AM peak hour, southbound direction
 - LOS F: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between West Point Loma Boulevard and Hancock Street
 - LOS E: AM peak hour, northbound direction

- LOS F: PM peak hour, northbound direction
- Sports Arena Boulevard, between Hancock Street and Kemper Street
 - LOS E: PM peak hour, southbound direction
- Sports Arena Boulevard, between Kemper Street and Frontier Street
 - LOS E: AM peak hour, southbound direction
- Sports Arena Boulevard, between Frontier Street and Greenwood Street
 - LOS E: AM peak hour, southbound direction
 - LOS E: PM peak hour, northbound & southbound directions
- Sports Arena Boulevard, between Greenwood Street and Rosecrans Street
 - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Taylor Street to Kurtz Street
 - LOS E: PM peak hour, northbound & southbound directions
- Pacific Highway, between Kurtz Street and Sports Arena Boulevard
 - LOS E: AM peak hour, southbound direction
 - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sports Arena Boulevard and Barnett Avenue
 - LOS F: AM & PM peak hours, southbound direction
- Pacific Highway, between Washington Avenue and Sassafras Street
 - LOS E: PM peak hour, northbound direction
- Pacific Highway, between Sassafras Street and Laurel Street
 - LOS E: AM peak hour, southbound direction
 - LOS E: PM peak hour, northbound & southbound directions

As noted in Section 3.5.2, the following transit priority treatments are recommended to help on-time performance for bus routes within the Midway-Pacific Highway community:

Pacific Highway - Pacific Highway serves several regional bus routes that connect multiple communities. The projected low travel speeds along several segments of Pacific Highway could impact the efficiency and on-time performance of these regional routes. Therefore, it is recommended that, as Pacific Highway gets redeveloped from an expressway facility to a six-lane major, transit priority measures such as queue jumper lanes and transit priority signals are implemented at all signalized intersections along Pacific Highway between Taylor Street and Laurel Street.

Rosecrans Street – Rosecrans Street east of Camino Del Rio West currently serves four MTS bus Routes (8, 9, 28 and 35). A queue jumper lane and transit signal have already been implemented on the eastbound approach at the Taylor Street / Rosecrans Street and Pacific Highway intersection. Similar transit priority improvements should also be looked at the Rosecrans Street Camino Del Rio West and Sports Arena Boulevard intersection to allow westbound buses (Routes 8, 9 and 35) to turn right onto Sports Arena Boulevard and avoid congestion.

New Roadway Connections – The proposed new roadway connections can serve as alternative east/west routes for busses traveling through the community. Rerouting to these new facilities, if possible, may help avoid the congestion on Rosecrans Street. It is recommended

that after the construction of any of the new roadways, the City of San Diego coordinate with MTS to look at bus rerouting opportunities.

Old Town

- Taylor Street, between Pacific Highway and Congress Street
 - LOS F: AM & PM peak hours, southbound direction
 - LOS E: PM peak hour, northbound direction
- Taylor Street, between Congress Street and Juan Street
 - LOS F: PM peak hour, northbound direction

Taylor Street serves several regional bus routes connecting multiple communities. Therefore, it is recommended that transit priority treatments be implemented along Taylor Street to help increase transit performance. It is recommended to implement queue jumper lanes and transit priority signals in either direction at both the Taylor Street / Juan Street and Taylor Street / Morena Boulevard intersections.

6.7 Parking Management

It is anticipated that any additional parking demand associated with future developments will be accommodated on-site. It is assumed that all on-street public parking spaces will be maintained under Preferred Plan implementation, with the exception of the following:

Midway-Pacific Highway

Rosecrans Street, between Sports Arena Boulevard / Camino Del Rio West and Pacific Highway – To implement the multi-use urban trail improvements proposed as part of the Preferred Plan, parking along both sides of Rosecrans Street will need to be removed. Approximately 65 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, the removal of these spaces should not negatively impact the community.

Sports Arena Boulevard, between West Point Loma Boulevard and Rosecrans Street – To implement the multi-use urban trail improvements proposed as part of the Preferred Plan, parking along the southwest side of Sports Arena Boulevard will need to be removed. Approximately 24 on-street parking spaces will be removed along this segment. Since there is abundant off-street parking within the community and these spaces are not heavily utilized, removal of these spaces should not negatively impact the community.

Old Town

There is not anticipated to be any loss of on-street parking within the Old Town Community. However, as noted in Section 4.2.2 it is proposed that the parking along the east side of San Diego Avenue, between Twiggs Street and Conde Street, be converted from parallel to diagonal parking. This improvement could potentially result in up to 20 additional on-street parking spaces along San Diego Avenue.

The community is not currently in favor of metering parking within Old Town as a means to create parking turnover, therefore, use of the existing parking supply should be maximized to help meet parking demands. The Caltrans parking lot, located north of the Congress Street and Taylor Street intersection, provides approximately 800 parking spaces that are open to the public on nights and weekends and is frequently under capacity. Increased utilization of these spaces may help alleviate some of the parking demand experienced throughout the Old Town community. Additional wayfinding signage may be beneficial to help direct community visitors and employees to the lot.



| No. | Commenter | Location | Comment | Response |
|-----|------------------------|---------------|--|--|
| 1 | Gloria Andrade | Section 6.7 | "The lack of parking spaces is a major complaint made by our visitors....in the Community Plan Update Mobility Analysis there is only two pages dedicated to this problem." | Additional language was added to section 6.7 in regards to parking. Additionally, it is now proposed that the parallel parking along San Diego Avenue be converted to angled parking, thus creating more public parking. |
| 2 | SANDAG (Susan Baldwin) | Section 3.2.2 | Due to the senior housing located in this area [Midway Drive and Sports Arena Boulevard], the intersection at West Point Loma Boulevard and West Mission Bay Drive should be given special consideration. | A new concept drawing highlighting the potential crossing improvements to the West Point Loma Boulevard / West Mission Bay Drive / Sports Arena Boulevard intersection was included in Section 3.3.2 of the Mobility Study. It is recommended that the free-right turn at this intersection be removed to enhance pedestrian safety. |
| 3 | SANDAG (Susan Baldwin) | Section 4.1.1 | It should be noted that the Old Town Transit Center is served by Amtrak Pacific Surfliner's intercity rail service, in addition to COASTER, Trolley, and bus services. | The report was revised to reflect this comment. |
| 4 | SANDAG (Susan Baldwin) | Section 6.6 | The bicycle and trail map in Section 6.6 should address the West Mission Bay Drive/Interstate 8 (I-8) interchange. The on-ramp to I-8 from southeast-bound West Mission Bay Drive is difficult to cross and should be modified to provide better biking and walking access. Improvements should also increase access to the San Diego River Trail. Additionally, improvements along San Diego Avenue would allow for improved access to residential areas, schools, and other attractors. | Section 4.2.2 of the Mobility Study has been revised to address this issue. Further, language has been included in the Mobility Study to address active transportation improvements associated with the West Mission Bridge replacement (CIP) project. |
| 5 | SANDAG (Susan Baldwin) | Section 6.2 | The traffic analysis in Section 6.2 shows most of the streets performing well, with the only exception occurring during peak traffic periods. The Report should consider balancing adequate vehicle access during peak periods with biking, walking, and access to transit needs that occur through most of the day. | Proposed recommendations address multimodal considerations in an attempt to provide an integrated and balanced transportation network. |

| No. | Commenter | Location | Comment | Response |
|-----|-------------------------------|---------------|--|--|
| 6 | SANDAG (Susan Baldwin) | Section 6.7 | "Sports Arena Boulevard, between Mission Bay Drive and West Point Loma Boulevard" should be corrected to say "Mission Bay Drive and West Point Loma Boulevard to Rosecrans" as Mission Bay Drive and Point Loma Boulevard meet Sports Arena Boulevard at the same place. | The Mobility Study was revised to reflect this comment. |
| 7 | SANDAG (Susan Baldwin) | Section 6.4 | "In order to effectively portray the full range of available Transportation Demand Management strategies an accurately describe the services offered by the SANDAG iCommute program, please refer to Attachment A..." | The Mobility Study was revised to reflect this comment. |
| 8 | SANDAG (Susan Baldwin) | Section 6.7 | In regards to the discussion of parking management in Section 6.7, please consider including strategies such as priced parking and/or priority parking for carpools and carshare vehicles as a way to manage current parking demand. Given Old Town's tourist destination qualities and the presence of a high-ridership transit station, strategies to address both on- and off-street parking management in the Old Town area should be included in the report. | Through on-going communication with the Old Town community the City recognizes concerns regarding utilizing strategies such as priced parking. However, the Mobility Study has been revised to reflect support for increased utilization of the Caltrans lot through signage and strategies such as priority parking for carpools and carshare vehicles as a way to manage current parking demand. |
| 9 | SANDAG (Susan Baldwin) | (General) | Consider the following tools: <ul style="list-style-type: none"> • SANDAG Regional Parking Management Toolbox • Integrating Transportation Demand Management into the Planning and Development Process – a reference for Cities. • Planning and Designing for Pedestrians, Model Guidelines for the San Diego Region • Riding to 2050, the San Diego Regional Bike Plan | Comment noted. SANDAG documents utilized. |
| 10 | CALTRANS (Jacob Armstrong) | Introduction | Recommend having one map that delineates the Midway-Pac Highway community from the Old Town community in the introduction | Figure 2-1 in the Mobility Study was revised to reflect this comment. |
| 11 | CALTRANS | Section 3.2.2 | Historic Hwy 101 Coastal Rail Trail: Is a Class I path consistent with SANDAG (Bike Plan) and City (Bike | Class I and Class IV facilities are both proposed along Pacific Highway. |

| No. | Commenter | Location | Comment | Response |
|-----|----------------------------|--|--|---|
| | (Jacob Armstrong) | | Master Plan) proposals of Class IV cycle track on Pacific Highway? | |
| 12 | CALTRANS (Jacob Armstrong) | Sections 3.1.2 & 4.1.2 | Was SANDAG's Bike Plan, Riding to 2050 used to develop this document as well as the others that were identified? | Yes, both the Riding to 2050 and the City's Bicycle Master Plan were used as a baseline for bicycle facilities. Additional bicycle facilities are proposed to supplement the facilities recommended in those two documents. |
| 13 | CALTRANS (Jacob Armstrong) | Section 4.5.1 | Taylor Street: Bike Lanes exist from Presidio Drive to the I-8 ramps in both directions | Correct, the recommended improvement would complete the Bike Lanes from Taylor Street to the community boundary. |
| 14 | CALTRANS (Jacob Armstrong) | Section 6.1.2 Pedestrian Network Quality: Page 60. | It should be noted that a walkable connection from the hotels in Hotel Circle to Old Town would be a welcome amenity, especially for visitors to the area who might think they are staying within walking distance to Old Town but realize Hotel Circle to Old Town is difficult to walk (it's signed for "No Pedestrians") . | Comment noted; however, this would predominantly include improvements to facilities that are outside of the study community. MV CPU is on-going, these recommendations would be appropriate for that study. |
| 15 | CALTRANS (Jacob Armstrong) | | Key Interchanges are not analyzed including Taylor Street, I-8 and I-5 on/off ramps at Camino del Rio West, Washington Street. Please reference the Central Interstate 5 Corridor Study from June 2003 that makes improvement recommendations: http://www.sandag.org/uploads/publicationid/publicationid_878_4471.pdf | These ramps were not included in the analysis for the following reasons: <ul style="list-style-type: none"> • The Taylor Street ramp is not within the Old Town community. • The I-5 ramps at Camino del Rio West are uncontrolled and were therefore not analyzed. However, Mobility Study was revised to acknowledge the recommendations in this report. • The I-5 Washington Street Ramps are outside of the study community. |
| 16 | CALTRANS (Jacob Armstrong) | | The Final draft of the I-8 Corridor study should be available from SANDAG with a robust and detailed Active transportation analysis of this area and vetted | The Mobility Study was revised to address the recommendations in the I-8 Corridor Study. |

| No. | Commenter | Location | Comment | Response |
|-----|----------------------------|---------------------------------|--|--|
| | | | traffic information for many of the segments and intersection in this report. | |
| 17 | CALTRANS (Jacob Armstrong) | | The Aesthetic Plan for Old Town seems to not be referenced. | This comment is relevant to other elements in the CPU and will be addressed therein. |
| 18 | CALTRANS (Jacob Armstrong) | | The Ocean Beach Bike Path and the San Diego River Trail are not mentioned, http://sandiegoriver.org/river_trail.html | Comment noted. The importance of connections to these facilities are described in Sections 3.4.1, 4.4.2, and 6.5.2. |
| 19 | CALTRANS (Jacob Armstrong) | | The Old Town Trolley Station and the Mid Coast trolley line are not discussed in the Transit Sections | Please see Section 4.5.2 of the Mobility Study. |
| 20 | CALTRANS (Jacob Armstrong) | | Access through Presidio Park and Linda Vista are not discussed. | These issues are addressed in sections 4.3.1, 4.3.2, and 4.4.2. |
| 21 | John Ziebarth | Urban Trails Sheet 10 | Urban Trails Sheet 10 shows a Bay to Bay Trail, but how to pedestrians get across Rosecrans at Sports Arena to continue down towards Walter Anderson. Is this just a hypothetical line on a piece of paper? | As noted in Section 3.2.2 of the Mobility Study, the preferred plan proposes pedestrian enhancements (removal of free-right-turn lanes) to the Rosecrans Street / Sports Arena Boulevard / Camino del Rio West intersection. |
| 22 | John Ziebarth | Page 11 and 12 | I applaud the goal of the new bicycle facilities on page 11 and 12, but are they realistic? For example: how is an enhanced Class II buffered bike lane to occur on Sports Arena between Point Loma Boulevard and Pacific Highway when you can't get across Rosecrans? How do you propose to create the cycle track on Pacific Highway between Sports Arena Boulevard and the Barnett Avenue connection going south bound? | In regards to access across Rosecrans Street, please see the comment above (#21). In regards to the proposed cycle-track on Pacific Highway, as noted in section 3.2.2 of the Mobility Study (Page 33), an engineering feasibility study has been recommended to look at various multimodal alternatives for this section of Pacific Highway. |
| 23 | John Ziebarth | Illustration for Barnett Lytton | Your illustration for Barnett Lytton shows a 10' center median. The question: is 10' adequate for a left turn pocket with traffic going the opposite direction. You also have 10' travel lanes next to only a 7' bike lane | The Mobility Study does not provide dimensions for any concept plans. Please note that any dimensions provided in the North Bay Urban |

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| | | | which is narrow. Normally I see 5' bike lane and 3' buffer striping since state law says that vehicles must allow 3 feet when passing a bike. Hard to do with a 10' vehicle lane. It appears that the proposed concept is assuming an increase in right-of-way. How is this being accomplished? | Greening plan are strictly planning level and require further engineering assessment. |
| 24 | John Ziebarth | Page 15 Midway Drive North of Rosecrans Street. | I question the adequacy of 10' travel lanes and center left turn pocket. I imagine driving a F-150 pickup truck or Tundra next to a bus or semi-truck. This is not traffic calming. This is increase stress and traffic congestion. The existing condition does appear to already have the reduced width. Why reduce one of the existing travel lanes to increase the sidewalk by 1' when the sidewalk is already 11'. According to Page 12 Proposed Bicycle Network Midway is a Class I bike lane but I don't see the bike lane in the cross section on Page 15. | Please see response to comment above (#23) |
| 25 | John Ziebarth | Page 17 Midway Drive South of Rosecrans Street | Is it realistic with existing development to believe that you can acquire the additional right-of-way on each side of the street? As previously stated, I don't agree with 10' wide vehicular lanes. Prefer 11' minimum. I agree with the elimination of on-street parking, but I am concerned about the elimination of turn lane at intersection like Rosecrans. It is curious that the Midway trail is widened south of Rosecrans but not north. Is there a reason for this design change? According to Page 12 Proposed Bicycle Network Midway is a Class I bike lane but I don't see the bike lane in the cross section on Page 17. | The CPU is intended to serve as a long-range planning document and assumes redevelopment of parcels over time. Additional right-of-way may be acquired through redevelopment. As noted in section 3.2.2 of the Mobility Study (Page 32), the removal of the eastbound to northbound left-turn lane at the Rosecrans Street / Sports Arena Boulevard / Camino del Rio West intersection is no longer recommended in the preferred plan. |
| 26 | John Ziebarth | Page 19 Sports Arena Boulevard North of W. Point | How does the protected bike lane work with the clover leaf at the Freeway interchange? This historically is a big problem. How does a 7' median work with a left turn pocket at West Point Loma Blvd intersection? It appears that the Bay to Bay Trail is on the opposite side of the street than what is shown on the Midway Trail shown on Midway South of | The San Diego West Mission Bay Drive Bridge Replacement project proposes to widen the existing West Mission Bay Drive Bridge. This project will include the implementation of 12 foot shared bike and pedestrian paths on both sides of the road and will provide new |

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| | | Loma Boulevard | Rosecrans. Where does the transition occur? How are you acquiring the additional 14' of right-of-way needed for this improvement? Does the entire road need to be rebuilt to accommodate these improvements? I agree with the elimination of on-street parking which has an impact on the flow of vehicles on a 6 lane prime arterial. | <p>crossing treatments at the ramp intersections.</p> <p>Please see the link below for more information on this project.</p> <p>http://documents.coastal.ca.gov/reports/2016/5/w13d-5-2016.pdf</p> <p>Please see the response to comment #23.</p> |
| 27 | John Ziebarth | Page 21 Sports Arena Boulevard North of Rosecrans Street | The proposed concept conflicts with the new raised medians that were just built by the Capital Improvement Project to create dual left turn pockets into the Sports Arena. This reduced the existing travel lanes from 3 to two going east bound. See previous comments on 10' wide lanes. The existing condition doesn't reflect the existing on-street parking which occurs along part of Sports Arena. According to Page 12 Proposed Bicycle Network, Sports Arena westbound is Class 1 bike path but it looks per page 21, that a Class II is proposed. Please clarify. The cross section eliminates all of the landscaping and street trees in the public right-of-way. What kind of ambience is created for the Bay to Bay Trail? | <p>The preferred plan recommends improving Sports Arena Boulevard to a Six Lane Major Arterial. This is consistent with and will expand upon the recent improvements cited in the comment.</p> <p>As noted in Section 6.7 of the Mobility Study (Page 133), the preferred plan proposes to remove on-street parking along this segment of Sports Arena Boulevard.</p> <p>As shown in Figure 3-8 of the Mobility Study, both Enhanced Class-II Bike Lanes and an Urban Multi-Use Path are recommended along Sports Arena Drive North of Rosecrans Street.</p> <p>Please review the streetscape element in regards to any comments/questions about street trees.</p> |
| 28 | John Ziebarth | Sports Arena Boulevard South of | The real question is whether Sports Arena continues straight across Rosecrans to the south to create the Bay to Bay trail link as well as the Class II bike lane and the and the connection to Pacific Highway as | As noted in Section 3.2.2 of the Mobility Study, the preferred plan proposes to allow Sports Arena Boulevard through movements at the |

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| | | Rosecrans Street | shown on Page 42. Those variables change this whole configuration of page 23. | Rosecrans Street / Sports Arena Boulevard / Camino del Rio West intersection. |
| 29 | John Ziebarth | Page 25 Pacific Highway | Why is the focus on Pacific Highway to create pedestrian walkways? Who is walking there? Where are they walking from and where are they walking to? One lane of travel is being eliminated in each direction. What is the impact of this on the traffic flow and volume? There is a LOS F with 67,000 ADTs today and the proposal is to narrow the lanes. This is a highway that provides the south bound connection to 1-5 from this community. It doesn't make more sense for people to walk along the frontage road on the east side of Pacific Highway? I don't support the on grade crossings at Washington or Witherby. | Pacific Highway provides a vital multimodal link between the Midway Community and Downtown San Diego. Table 6.1 of the Mobility Study provides the projected ADT along Pacific Highway under preferred plan conditions as well as the analysis results for Pacific Highway when configured as a 6-Lane Major Arterial. |
| 30 | John Ziebarth | Page 27 Rosecrans Street West of Midway Drive | Why does a bike lane need the same 10' width that a car is being provided? The La Playa trail is over 12' wide as a joint use trail plus there is 10' for the bike lane-22' total? Why is there 2 to 3' next to the center median instead of adjusting the lane widths? | Please see response to comment #23. |
| 31 | John Ziebarth | Page 29 Rosecrans Street Midway Drive to Sports Arena Boulevard | Why is the landscape and sidewalk on the west side increased from 9' to roughly 12'? Is it just to pay to replace a curb so that the lane widths can be narrowed? There is 2' of landscape that is not needed for the root zone of the "urban greening" plan. The bike lanes on page 29 disappear on this section of Rosecrans. Why? The explanation given at the last MCPG was that there is a joint use trail for pedestrians and cyclists. That puts the cyclists and pedestrians in competition for space and no bike lane going south on the west side of Rosecrans. This appears to be inconsistent with the Proposed Bicycle Network exhibit on Page 12. Again it appears that the | Please see response to comment #23. Also please see Figures 3-6 and 3-7 of the Mobility Study that provide revised concept drawings of these segments. The bike lanes and multiuse path are continuous along Rosecrans, please refer to Figure 6-10. |

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| | | | real purpose is to narrow the vehicular lanes down to 10' in some cases. | |
| 32 | John Ziebarth | Page 30 Rosecrans Street East of Sports Arena Boulevard | What this shows is that there is more right-of-way that necessary, but if there is that much room, then there is no need to reduce the travel lanes to 10' wide. Again you have a multi-use trail and a bike lane, so what are the multiple uses that are using the trail? | Please see response to comment #23. |
| 33 | John Ziebarth | Page 32 Transit Coverage | It is curious that there is no transit on Sports Arena Blvd, or Kurtz, or Midway east of Rosecrans. | Comment noted. |
| 34 | John Ziebarth | Page 37 New Roadways | Many of the roadway connections such as Kemper, Frontier and Greenwood look like placeholders until the city property is redeveloped. Flexibility in those roadway locations need to be clearly identified so that future applicants and reviewers understand that these locations are not cast in stone. I am not sure that Charles Lindbergh Parkway makes sense. Dutch Flats Parkway does make sense but the location of the connection on Barnett needs to be adjusted to the east so as to not affect the current residences. In addition, Dutch Flats Parkway should extend over to Pacific Highway and connect to Sports Arena. (See attached exhibit) This would allow an alternative route from Pt. Loma to Old Town without the congestion of Midway and Sports Arena. It allows the north/ west bound access to Midway for the east bound traffic on Barnett. I would propose that the new developer of the former Post Office site be allowed credit for the road improvements against his DIF fees because he will be improving the traffic flow. | Comment noted. |
| 35 | John Ziebarth | Page 41 Intersection | The concept of a connection of Sports Arena Boulevard across Rosecrans is desired. However, the prohibition of left turn movement from eastbound Rosecrans to Sport Arena boulevard is a nonstarter. | As noted in section 3.2.2 of the Mobility Study (Page 32), the removal of the eastbound to northbound left-turn lane at the Rosecrans Street / Sports Arena |

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| | | Improvements | <p>It will have serious negative impacts on the businesses on Sports Arena Blvd. Attached is an alternative proposal for this intersection, which I believe is feasible and practical to implement. I propose closing Rosecrans from Sports Arena Boulevard to Kurtz so that Sports Arena and Rosecrans/ Camino Del Rio West can be a four legged intersection. This allows the through traffic on Sports Arena Boulevard to continue across Rosecrans. Utilizing the potential connection improvement to Pacific Highway on Page 42, improved access can be provided to 1-5 south via Pacific Highway. The current routing past the Burger King with the congestion at Rosecrans and Kurtz is a major congestion obstacle. The proposal is to convert Kurtz between Camino Del Rio West and Rosecrans to a two-way road with left turn pockets. This allows west bound traffic from Old Town and northbound traffic on Kurtz to connect to Camino del Rio West and then to Rosecrans and Sports Arena Boulevard. According to Page 39 Roadway LOS there is 21,400 ADTs. How many of those ADTs would disappear if Sports Arena didn't need to use Kurtz to get to Pacific Highway? East bound traffic on Rosecrans going to Old Town would continue on Camino Del Rio West to Kurtz with a free right turn on Kurtz and back to a left turn at Rosecrans. The free right turn from Camino Del Rio West could be accomplished without impacting the existing center. The ultimate result could be multi-fold.</p> <ul style="list-style-type: none"> a. The vacation of a significant portion of land shown in yellow from the previous area of Rosecrans combined with existing surplus right of way could be added to the adjacent properties to encourage a redevelopment and upgrade to those centers. It could also be used to obtain additional right-of way on | <p>Boulevard / Camino del Rio West intersection is no longer recommended in the preferred plan.</p> |

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| | | | <p>Sports Arena Boulevard east of Rosecrans. One of the caveats of the land transfer would be the requirement that the development create the La Playa Trail through the development. Perhaps as part of the acquisition of the land, the developer will be required to cover a portion of the costs of the road improvements.</p> <p>b. The extension of Sports Arena boulevard facilitates a better connection to Pacific Highway and 1-5 South for vehicles but also for the bike lane connection shown on Page 12 and the extension of the Bay to Bay Trail shown on Page 10.</p> <p>c. The property necessary for the intersection configuration on the Chipotle property Grosvenor Center is all landscape and would not affect any of the existing parking.</p> <p>d. No additional right of way would be necessary from the Goodwill property.</p> <p>e. With the connection of Dutch Flats Parkway and Sports Arena Boulevard to Pacific Highway, it would allow the balance of Sports Arena Boulevard to be vacated and used by the adjacent property owners.</p> | |
| 36 | John Ziebarth | Realignme nt of Sports Arena Drive/ Pacific Highway Intersectio n | This makes a lot of sense if this is combined with the connection of Sports Arena Boulevard and Sports Arena Drive across Rosecrans. Also important is to align Dutch Flats Parkway with this connection to Pacific Highway. See attached exhibit. | Comment noted. |
| 37 | John Ziebarth | Intersectio n | Given the LOS F for Pacific Highway with 67,000 ADTs that was identified on Page 39, it makes no | As noted in Section 3.2.2 of the Mobility Study, it is now recommended |

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| | | Reconstruction at Grade | sense to create on grade crossings which will simply make more congestions. | that an engineering feasibility study be conducted to look at the feasibility of implementing the proposed improvements along Pacific Highway. Brining these intersections at-grade is no longer directly recommended by the preferred plan. The highest forecast volume along Pacific Highway is 50,400 ADT. |
| 38 | Randall LaRocco | Grosvenor Square on Rosecrans between Sports Arena Blvd and Midway Drive | Grosvenor Square on Rosecrans between Sports Arena Blvd and Midway Drive has a bus stop near the drive-entry/exit for the storefronts. This always is the result of several lanes backed up. Resorcin's turning north on Midway should have a turn lane. | This issue is identified for the Rosecrans Street / Midway Drive intersection within the Mobility Study. However, it was found that mitigation (widening of Rosecrans Street) was not feasible due to right-of-way constraints. |
| 39 | Randall LaRocco | Rosecrans St | <p>Most traffic exiting Rosecrans heading west are inbound to the sub base and liberty station for work and for residence coming home from work. The Sports Arena events cause scheduled traffic and congestion. The Rock Church is a major impact to west and east bound traffic.</p> <p>The congestion from the most west point (the sub base) should be addressed as it is a major contributor as well.</p> | <p>Traffic from the sub base was included in the baseline of the Mobility Study.</p> <p>Traffic and congestion associated with special events (such as the Sports Area and the Rock Church) are typically not analyzed at the community plan level due to their infrequent nature.</p> |
| 40 | Randall LaRocco | Rosecrans St | There are bike lanes on Rosecrans and center divides. In a perfect world these lanes could be incorporated together, however, the space on State Route 209 [Rosecrans St] does not allow for the proper space for the two lanes to operate in conjunction with each-other. | Comment noted. The future recommendation includes multiuse urban trails and center medians. |
| 41 | Randall LaRocco | (General) | If you cut down the size of the streets that are already near capacity, you'll create severe congestion. If you start with roads that are under capacity the congestion will only increase a little bit. Bike lanes do not cause traffic jams if | The Mobility Study does not propose any road diets within either community. All bike lanes will be added either through roadway widening, removal of on-street parking or using excess right- |

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| | | | you are smart about where you put them. This design from 2010 needs to be amended and revised to support the traffic in the area. | of-way (ie narrowing wide lanes or medians). |
| 42 | Randall LaRocco | Rosecrans St | The bike lanes on Rosecrans consume much of the square footage of the street. | Comment noted. |
| 43 | Randall LaRocco | Intersection of Barnett Ave & Midway Dr | Barnett Ave has been hit hard with traffic and congestion. Turn lanes from Barnett to Midway Drive should be added to the plan. | The plan proposes to make this connection via Dutch Flats Parkway, which is a new roadway that will connect between Barnett Avenue and Midway Drive. |
| 44 | Randall LaRocco | Barnett Ave (between Rosecrans St & Pacific Hwy) | The east bike lane on Barnett impacts traffic congestion by cutting 3 lanes into one lane. The result of this impacts Rosecrans. | Comment noted. The plan recommends potential configurations of the Barnett Avenue / Pacific Highway intersection be analyzed as a separate focused study, as noted in Section 3.2.2. |
| 45 | Randall LaRocco | Pacific Highway to Barnett left-turn Flyover Lane | Pacific Highway to Barnett may benefit from two lanes in lieu of one. | Comment noted. The plan recommended that potential configurations of the Barnett Avenue / Pacific Highway intersection be analyzed as a separate focused study, as noted in Section 3.2.2. |
| 46 | Randall LaRocco | Rosecrans St & Pac Hwy | Rosecrans towards Pacific Highway gets traffic congestion impacts from the Old Town Trolley Station. | Comment Noted. |
| 47 | Randall LaRocco | Truxton Rd & Barnett Ave | The inlet & outlet from Barnett Ave to Liberty Station's one lane that impacts traffic congestion. | Comment Noted. |