Encanto Community Plan Update

Mobility Element Update

Prepared for

DYETT & BHATIA

Urban and Regional Planners

755 Sansome Street, Suite 400

San Francisco, CA 94111-1706

FINAL TECHNICAL REPORT

FEBRUARY 2015

Prepared by

CHEN RYAN

CHEN RYAN ASSOCIATES

239 LAUREL STREET, SUITE 203

SAN DIEGO, CA 92101

Mobility Element Update
Technical Report

Encanto Community Plan Update

Final Report

Prepared for:

Dyett & Bhatia
755 Sansome Street, Suite 400
San Francisco, CA 94111-1706

Prepared by:

CHEN RYAN
239 Laurel Street, Suite 203
San Diego, CA 92101

February 11, 2015

Table of Contents

Appendices

List of Tables

List of Figures

List of Figures (Continued)

Executive Summary

Introduction

This Technical Report summarizes the physical and operational conditions of the Encanto mobility system as part of the City of San Diego's community plan update process. The evaluation includes an overview of Existing and Preferred Plan conditions for pedestrian and bicycle facilities, transit systems, and roadways within Encanto. The report also describes key terms and methodologies utilized for conducting these analyses, and identifies current deficiencies across the transportation system. This report will be utilized to support decisions about proposals and recommendations for updating the community plan mobility element.

The following sections briefly describe the proposed changes to the mobility network within the Encanto community and reviews the results of the technical analysis under both existing and future conditions.

Walkable Communities

Existing Deficiencies

The pedestrian count data show high pedestrian demands along the following corridors:

- 47th Street
- Euclid Avenue
- Market Street
- Imperial Avenue / Churchward Street

In general, high pedestrian demands in Encanto tend to occur in conjunction with commercial/retail land uses, as well as in conjunction with high levels of transit service.

Pedestrian deficiencies are assessed in terms of missing facilities and high levels of pedestrian-involved collisions. There are currently 478 missing curb ramps within the community, 492 non-compliant curb ramps, and 376,719 lineal feet of missing sidewalks. There is a distinct concentration of missing sidewalk in the northeastern quadrant of the community.

There are 13 intersection locations across the community where two or more pedestrian-involved collisions occurred between 2007 and 2012. These intersection locations are as follows:

- 47th Street / Hilltop Drive
- 47th Street / Market Street
- WJ Jones Avenue / Imperial Avenue
- WJ Jones Avenue / Holy Drive
- 49th Street / Logan Avenue
- Euclid Avenue / Hilltop Drive
- Euclid Avenue / Market Street
- Euclid Avenue / Naranja Street
- Euclid Avenue / Imperial Avenue
- San Jancinto Drive / Imperial Avenue
- 62nd Street / Imperial Avenue
- 63rd Street / Imperial Avenue
- 65th Street / Imperial Avenue

Proposed Improvements

Two Corridor Master Plans were recently completed that developed and recommended pedestrian improvements within specific areas of the Encanto community.

Euclid Avenue Corridor Master Plan

The Euclid Avenue Corridor Master Plan developed specific multi-modal and land use recommendations to enhance the overall mobility along Euclid Avenue between SR-94 and Guymon Street. The Master Plan had the following recommendations for pedestrian improvements within the project study area:

- Curb bulb-outs at intersections to reduce the effective crossing distance and curb-to-curb width;
- Enhanced crosswalks to improve their visibility;
- Restriction of driveway access along Euclid Avenue to reduce curb cuts and turning movements; and
- Installation of buffers between pedestrian, bicycle, and vehicular rights-of-way to distinguish between designated pedestrian, bicycle, and vehicular zones.

Euclid + Market Land Use & Mobility Plan

The Euclid + Market Land Use & Mobility Plan (EMLUMP) developed specific multi-modal and land use recommendations designed to help integrate and connect the Euclid and Market Village area to the surrounding community by creating mixed-use, multi-modal corridors along Euclid Avenue and Market Street with an emphasis for mixed use at the transit hubs. The EMLUMP had the following recommendations for pedestrian improvements within the project study area:

- Proposed design of Chollas Creek Trail that would intersect the Major Street network at two locations:
    - Market Street (approximately 450 feet west of Euclid Avenue); and
    - 47th Street (approximately 360 feet south of the entrance to the 47th Street Trolley Station).
- Proposed Sidewalk Improvements along Euclid near Trolley Crossing.
- Proposed Signalized Crosswalk on Euclid Avenue at Castana.

Pedestrian Master Plan

Additional planning studies (such as a future phase of the Pedestrian Master Plan) are recommended to evaluate Community of Encanto for additional pedestrian improvements.

Other Planned Pedestrian Improvements

Several pedestrian facility improvement projects have been identified by the City of San Diego and are included in the *Unfunded Transportation Needs List* (8/5/2014). A list of the pedestrian improvements located in the Encanto community are included in Appendix O. It should be noted this list is being updated on a regular basis and Appendix O only reflects a snap shot of the needs

and planned improvements throughout the community at the time in which this report was prepared.

Future Deficiencies with Proposed Improvements

Pedestrian LOS was evaluated along the major urban corridors throughout the community, including Market Street, Imperial Avenue, National Avenue, Logan Avenue, 47th Street and Euclid Avenue, using the CSLOS methodologies. Each of the analyzed roadways is projected to provide pedestrian service at LOS D or better.

Transit First

Existing Deficiencies

Transit needs are identified in terms of high demand and high deficiency. Areas of high demand include locations with relatively high transit boardings and alightings. Areas with high deficiencies include transit network gaps, or underserved corridors, and transit stop locations with relatively high pedestrian and bicycle-involved collisions within 500 feet.

There are three very high transit demand nodes across the community: at the Orange Line Trolley Stations at 47th Street (1,141 boardings/alightings), Euclid Avenue (5,308 boardings/alightings), and 62nd Street (2,827 boardings/alightings).

Nearly all of the community is located within ¼ mile of transit service with the exception of the single-family residential areas in the northeast corner of Encanto, indicating that a majority of the residents have reasonable walking and cycling access to transit.

To better understand the dynamics of choosing the mode of travel, comparisons were made between roundtrip transit cost and time to those using automobiles from the 62nd Street Trolley Station to nine popular destinations within the region, such as the San Diego International Airport, San Diego State University, Fashion Valley Shopping Center, Petco Park, and San Diego City Hall. It was concluded that on average, roundtrip auto travel time is estimated to be less than half that of transit travel times, while the cost of auto travel is more than double the cost of using transit.

Network Gaps

It is important to locate transit service in areas near retail, commercial, employment and other amenities, such as child care, restaurants, and drug stores. Ten (10) bus routes and the Orange Line are serving the Encanto community today and as a result, the transit network well covers this community with the exception of the northeast corner which is designated for low-density single-family residential uses.

Station Amenities Deficiencies

Transit station areas should feel safe and comfortable for waiting passengers, including adequate shelter from rain and intense sunshine. Ideally, transit schedule information is provided, along with real-time arrival and departure information. Field observation indicates very few transit

stops have shelters and only about half of the bus stops have benches and trash cans in Encanto. Given the high transit usage, better transit stop amenities would help improve the quality of experience for thousands of transit riders in this community. Secure bicycle parking should be provided at transit stations in case buses or trains do not have the capacity to allow cyclists to bring their bikes on board. Bicycle parking should be located in high traffic areas to provide natural surveillance by pedestrians and drivers.

Quality of Service Deficiencies

A multi-modal evaluation of selected corridors served by transit was conducted. This evaluation considers spacing of stops, headway between consecutive transit vehicles, and station amenities. The evaluation of existing transit service within Encanto found that bus transit routes in the community generally operate at LOS C or better.

Safety Deficiencies

It is critical to design station areas with pedestrians and bicyclists in mind, since these modes are often utilized to access transit. Pedestrian and bicycle connections between the stations/stops and nearby land uses should be clear and safe. Approximately 70% (161 out of 235) of all pedestrian and bicycle-involved collisions in the last five years within Encanto occurred within 500 feet of a transit stop. Figure 4-4 shows transit stop locations with relatively higher numbers of pedestrian and bicycle collisions (7 to 9 collisions over a five-year period), including the following:

- 4 locations near the 47th Street and Market Street intersection;
- 3 locations near the Euclid Trolley Station;
- 3 locations near the 62nd Street Trolley Station; and
- Imperial Avenue, between 49th Street and 50th Street.

Proposed Improvements

The San Diego Association of Government's *2050 Regional Transportation Plan* Revenue Constrained scenario identifies several public transit improvements that will affect the Encanto community, as follows:

- I-805 BRT, Route 680 - Otay Mesa to Sorrento Mesa via I-805 Corridor, Otay Ranch/ Millenia, National City, Southeastern San Diego, Kearny Mesa. A Bus Rapid Transit (BRT) service is planned for San Diego along the Interstate 805 corridor as part of the TransNet program. The BRT will connect the Otay Mesa Port of Entry to Kearny Mesa, Sorrento Mesa, UCSD and UTC, providing access to employment and activity centers in a rapid and reliable manner. Members of the Encanto community have expressed an interest in having the South Bay BRT service the 47th Street Trolley Station. The 2050 RTP indicates this route will be implemented by the year 2018. Members of the Southeastern San Diego community have expressed an interest in having the South Bay BRT service the 47th Street Trolley Station. This was included in the 2050 RTP unconstrained network and SANDAG is conducting a planning study to evaluate potential station design concepts.

- Rapid Bus, Route 11 – between Spring Valley and SDSU via Southeastern San Diego/Encanto, Downtown, Hillcrest, and Mid-City. The 2050 RTP indicates this route will be implemented by the year 2035.
- Light Rail Transit (LRT), Orange Line – The 2050 RTP indicates the Orange Line will have increased service frequencies by the year 2030 to 7.5-minute peak / 15-minute off-peak, and a further increase by 2040 to 7.5-minute off-peak. An extended linkage to the Airport Intermodal Transit Center is also planned by the year 2035.
- LRT, Orange Line Express - between El Cajon and downtown San Diego. The 2050 RTP indicates this route will not be implemented until the year 2040.
- LRT, New Line - between UTC and San Ysidro via Kearny Mesa, Mission Valley, Mid-City, Southeastern San Diego, National City/Chula Vista via Highland Avenue/4th Avenue. The 2050 RTP indicates this route will not be implemented until the year 2050.
- Local Buses - The 2050 RTP also identifies that local bus service frequencies will be improved to 15-minute headways along key corridors (all urban routes) by the year 2020, with further improvements to 10-minute (all day) frequency by 2030.

Future Deficiencies with Proposed Improvements

Transit LOS was evaluated along the major urban corridors throughout the community, including Market Street, Imperial Avenue, National Avenue, Logan Avenue, 47th Street and Euclid Avenue, using the CSLOS methodologies. All transit facilities are projected to operate at LOS D or better under buildout of the Preferred Plan, with the exception of the following:

- Imperial Avenue between I-805 NB ramps and 47th Street (LOS E)

The assumed transit improvements outlined in SANDAG's RTP are projected to maintain or improve the transit CSLOS along the majority of the urban corridors within the Encanto community, when compared to the current levels of operation.

Street and Freeway System

Existing Deficiencies

Capacity Deficiencies

The existing conditions evaluations found eight (8) roadway segments and five (5) freeway segments to have below acceptable LOS (E or F) results and these are:

Roadway Segments

- Mallard Street, between Federal Boulevard and 69th Street (LOS E);
- Market Street/Akins Avenue, between Euclid Avenue and 60th Street (LOS F);
- Imperial Avenue, between San Jacinto Drive and Valencia Parkway (LOS F);
- Division Street, between Harbison Avenue and 58th Street (LOS F);
- Division Street, between Valencia Parkway and 61st Street (LOS F);

- Euclid Avenue, between SR-94 EB Ramps & Market Street (LOS E);
- Bayview Heights Way, between SR-94 WB Ramps and SR-94 EB Ramps (LOS F); and
- Woodman Street, Imperial Avenue and Skyline Drive (LOS E).

Freeway Segments

- I-805, between Home Avenue and SR-94 (northbound and southbound) – LOS F;
- I-805, between SR-94 and Market Street (northbound and southbound) – LOS F;
- I-805, between Imperial Avenue and 47th Street (southbound) – LOS E;
- SR-94, between I-805 and 47th Street (westbound) – LOS E; and
- SR-94, between 47th Street and Euclid Avenue (westbound) – LOS E.

Operational Deficiencies

The existing conditions evaluations found two (2) intersections to have below acceptable LOS (E or F) results and these are:

- Euclid Avenue / SR-94 EB Ramps – LOS E during the AM peak hour and LOS F during the PM peak hour; and
- Euclid Avenue / SR-94 WB Ramps – LOS F during both the AM and PM peak hours.

In addition, queuing analysis was also conducted to assess potential overflow issues at exclusive turn lanes and closely spaced intersections. This analysis found that nineteen (19) study intersections are operating with potential queuing issues during either the AM or PM peak hour that may degrade traffic operations within the intersection or the associated closely spaced upstream intersections.

Quality of Service Deficiencies

A multi-modal evaluation of selected Urban Street corridors, including Market Street, Imperial Avenue, Logan Avenue, 47th Street, and Euclid Avenue, was conducted. This evaluation considers number of stops per mile, delay at intersection, travel speed and overall driver's experience. This evaluation showed that all of the Urban Street corridors provide LOS D or better driving experience.

Safety Deficiencies

The existing conditions analysis also reviewed vehicular-vehicular collisions data, obtained from the City of San Diego, for the past five years. Based on the roadway classifications, collision analysis, and citywide collision rates, a majority of roadways in Encanto are more prone to collisions than the average street in the City of San Diego. Roadway safety should be evaluated during the CPU process.

The following ten (10) locations have more than 10 vehicle collisions over the five-year span from 2007 to 2012:

- At or near the 47th Street and Hilltop Drive intersection;

- At or near the 47th Street and Market Street intersection;
- At or near the Euclid Avenue and Market Street intersection;
- At or near the Merlin Drive and Market Street intersection;
- At or near the Euclid Avenue and Naranja Street intersection;
- At or near the I-805 NB Ramps and Imperial Avenue intersection;
- At or near the 47th Street and Imperial Avenue intersection;
- At or near the Euclid Avenue and Imperial Avenue intersection;
- At or near the San Jacinto Drive and Imperial Avenue intersection; and
- At or near the 61st Street and Skyline Drive intersection.

Proposed Improvements

Roadway

A guiding strategy for street system planning for the Encanto community is to make recommendations limited to modifications within the current roadway curb-to-curb widths to the extent possible. This strategy facilitates implementation of the recommendations since they tend to be lower cost by avoiding property acquisition and major construction involving moving curbs and drainage.

While the majority of roadways in Encanto would remain as the current cross-sections, the Preferred Plan includes the implementation of a few roadway widening/restriping to accommodate high future traffic demands, as well as a number of proposed road diets and lane diets (reducing the number of travel lanes and lane widths) to provide a balance between vehicular, bicycle, and pedestrian travel across the community. The propose facility changes include:

Roadway Widening/Restriping

- Market Street, between I-805 and Pitta Street;
- Euclid Avenue, between SR-94 and Market Street; and
- Division Street, between Harbison Avenue and 58th Street, and between Valencia Parkway and 61st Street.

Road/Lane Diet

- Imperial Avenue, between I-805 to Community Boundary;
- Logan Avenue, between the 47th Street and Euclid Avenue;
- 47th Street, between SR-94 and Logan Avenue;
- Euclid Avenue, between Imperial Avenue and Community Boundary;
- Skyline Drive, between 61st Street and Henson Street; and
- Woodman Street, between Skyline Drive and Community Boundary.

Market Street – Market Street between I-805 and 47th Street will be restriped from an undivided Four-Lane Collector to a Four-Lane Major. One-way cycle tracks will also be provided along this segment of Market Street. To provide the additional right-of-way required for the raised median and cycle track facilities, on-street parking will be removed from both sides of the roadway (approximately 36 spaces).

Additionally, Market Street between 47th Street and Euclid Avenue will be widened from an undivided Four-Lane Collector without a Center Left-Turn Lane and with no bicycle facilities to a Four-Lane Major with a raised median and one-way cycle track facilities. The cross-section below displays the proposed conceptual configuration of Market Street between 47th Street and Euclid Avenue.

Market Street between Euclid Avenue and Pitta Street will be widened in order to accommodate one-way cycle tracks in both directions and sidewalk.

Imperial Avenue – Under the buildout of the Preferred Plan, the lane and median widths along Imperial Avenue, between I-805 and the community boundary will be narrowed to provide for buffered bike lanes.

Skyline Drive – Under the Preferred Plan the lane and median widths along Skyline Drive between 61st Street and Henson Street will be narrowed to provide for buffered bike lanes.

Logan Avenue – Under the buildout of the Preferred Plan Logan Avenue between 47th Street and Euclid Avenue will be reduced from a Four-Lane Collector to a Two-Lane Collector Street with a two-way center left-turn lane. Buffered bike lanes in each direction will be implemented.

Division Street – Under buildout of the Preferred Plan, Division Street between Harbison Avenue and 58th Street, as well as between Valencia Parkway and 61st Street will be restriped from an undivided Two-Lane Collector to a Two-Lane Collector with two-way center left-turn Lane and Class II Bike Lanes.

47th Street - Under the Preferred Plan, 47th Street, between SR-94 and Market Street as well as between Nogal Street and Logan Avenue will be reduced from a Four-Lane Major Arterial to a Two-Lane Collector Street with a two-way center left-turn lane. One-way cycle tracks will be implemented on both sides of the roadway.

Additionally, 47th Street between Market Street and Nogal Street is currently constructed as a Two-Lane Collector with a two-way center left-turn lane; therefore, it is proposed that the on-street parking along this segment of 47th Street (50 spaces) be removed to provide the right-of-way for Class II Bike Lanes.

Euclid Avenue - Under buildout of the Preferred Plan, Euclid Avenue between SR-94 and Market Street will be widened from an undivided Four-Lane Collector to a Four-Lane Major and buffered bike lane facilities in each direction.

Additionally, Euclid Avenue – Under the Preferred Plan, the lane widths along Euclid Avenue, between Imperial Avenue and the community boundary will be reduced from 12 feet to 11 feet to provide the additional right-of-way for the existing Class II bikes lanes to be upgraded to one-way cycle tracks.

Intersection

It was assumed under buildout of the Preferred Plan the intersection geometries at several locations would be improved, as follows:

- I-805 SB Ramps & Market Street – Restripe the EB approach to include an exclusive right-turn lane;
- Euclid Avenue / SR-94 WB – Signalize intersection;
- Euclid Avenue / SR-94 EB – Signalize intersection;
- Bayview Heights Way / SR-94 WB Ramps – Signalize intersection;
- Kelton Road / SR-94 EB Ramps – Signalize intersection; and
- Division Street / Plaza Boulevard – Signalize intersection.

In addition to the improvements proposed as part of this plan (as described above), there are several other roadway and intersection improvements that were identified be previous planning and engineering efforts. These improvements tend to be very specific or minor in nature and therefore were not analyzed/addressed at the community planning level. The following summarizes the additional specific and/or minor improvements within the Encanto community that were identified through other studies.

Public Facilities Financing Plan

The adopted *Public Facilities Financing Plan* (PFFP) for Encanto currently contains planned transportation improvement projects that have not yet been completed. The following list summarizes some of the top ranked transportation projects planned for Encanto, as outlined in the 2003 PFFP:

- SESD-T21 Division Street / Valencia Parkway Intersection - This project provides for the installation of a traffic signal at the intersection of Division Street and Valencia Parkway. ($140,000, unfunded)
- SESD-T21 Market Street / Pitta Street Intersection - This project provides for the installation of a traffic signal at the intersection of Market Street and Pitta Street. ($140,000, unfunded)
- SESD-T23 Traffic Signal Upgrades - This project provides for upgrading existing traffic signals as necessary to improve traffic flow and promote safety. Locations include: 47th Street and Hilltop Drive ($6,000, unfunded) and 47th Street and Logan Avenue ($13,000, DIF)
- SESD-T24 Street Connections - This project provides for the connection of existing sections of fully improved streets through locations where only partial street improvements exist. ($7.0 million, unfunded)

- SESD-T26 Street improvements and upgrades - This project provides for the improvements of existing streets at locations where there are inadequate gutters, cross gutters and curbs as a result of street resurfacing and/or deterioration. ($3.0 million, unfunded)

Note that this PFFP was adopted in 2003. Projects identified above could be no longer needed and by the same token, new projects could have been added since.

Additional transportation related improvements within the Encanto community have been identified in the City of San Diego's Transportation Unfunded Needs List (TUNL) and Transportation and Storm Water Department's FY14 Transportation Plan. However, these improvements are typically too minor to analyze at the Community Plan level and therefore were not taken into account for this study. A list of the current projects on the City of San Diego's TUNL within the Encanto community (as of 8/5/2014) are provided in Appendix O. It should be noted this list is being updated on a regular basis and Appendix O only reflects a snap shot of the needs and planned improvements throughout the community at the time in which this report was prepared.

The *Fifth Amendment to the Central Imperial Redevelopment Plan (Fifth Amendment) EIR, Adopted March 2009* also identified additional improvements within the Encanto community in the form of mitigation measures associated with proposed higher density in redevelopment sites. The EIR and subsequent traffic study performed a detailed review of the vehicular traffic related impacts associated with the specific redevelopment sites contained in the plan and identified improvements to mitigate those impacts, as listed in Appendix O. However, the vision of this community plan shifts the focus to balanced and comprehensive multi-modal facilities throughout the community that work in concert with the land use. In addition, several land use assumptions in this community plan are less intense than those evaluated in the Fifth Amendment. Therefore, not all of the identified improvements contained within the Fifth Amendment EIR are recommended at this time as part of the community plan update preferred plan.

Freeway

The Preferred Plan network includes freeway improvements that would directly serve the community as described in the SANDAG 2050 Regional Transportation Plan 2050. Planned freeway improvements include the following:

- **SR-94 Express Lane Project (Alternative 1):** includes two HOV/Express Lanes within the freeway median (one in each direction) between I-5 and I-805, with a direct freeway-to-freeway High Occupancy Vehicle (HOV) connector at I-805. The Express Lanes would accommodate carpools/vanpools, in addition to new Bus Rapid Transit (BRT) service. The SR-94 Express Lane Project (Alternative 1) also proposes the following modification to interchanges along the SR-94 corridors:
    - Removal of Eastbound SR-94/32nd Street On-ramp
    - Replace On and Off-ramps at Market Street and SR 15

- Replacement of Left-land Freeway-to-Freeway Interchange with Standard Right-hand connectors
- Replacement of Westbound SR-94/Home Avenue On-Ramp
- Removal of Northbound SR-15 to Westbound SR-93 Loop Connector
- Replacement of Westbound SR-94 to Southbound SR-15 connector
- Removal of Westbound SR-94/49th Street/A Street On-Ramp

- I-805 South Project (Phase 1): Includes two HOV/Express Lanes within the freeway median (one in each direction) between East Palomar Street in Chula Vista and the I-805/SR-15 interchange in San Diego.

Future Deficiencies with Proposed Improvements

Roadway

Assuming the proposed roadway diets and widening, the following twenty-four (24) study area roadway segments are projected to operate at LOS E or F under buildout of the Preferred Plan:

- Mallard Street, between Federal Boulevard and 69th Street (LOS F)
- Market Street, between I-805 SB Ramps and -805 SB Ramps (LOS F)
- Market Street/Atkins Avenue, between Euclid Avenue and 60th Street (LOS F)
- Imperial Avenue, between San Jacinto Drive and Valencia Parkway (LOS F)
- Lisbon Street, between Imperial Avenue and 71st Street (LOS F)
- Skyline Drive, between Valencia Parkway and 61st Street (LOS F)
- Skyline Drive, between 61st Street and Omeara Street (LOS E)
- Logan Avenue, between 45th Street and 47th Street (LOS E)
- Logan Avenue, between 47th Street and Euclid Avenue (LOS F)
- Olvera Avenue/58th Street, between Euclid Avenue and Skyline Drive (LOS E)
- Division Street, between Harbison Avenue and 58th Street (LOS E)
- Division Street, between 58th Street and Valencia Parkway (LOS E)
- Plaza Boulevard, between Division Street and Woodman Street (LOS E)
- 47th Street, between SR-94 EB On-Ramp and Market Street (LOS F)
- 47th Street, between Market Street and Imperial Avenue (LOS F)
- 47th Street, between Imperial Avenue and Logan Avenue (LOS F)
- 47th Street, between Logan Avenue and I-805 NB Ramps (LOS F)
- Bayview Heights Way, between SR-94 WB Ramps and SR-94 EB Ramps (LOS F)
- Kelton Road, between SR-94 EB Ramps and Alvin Street (LOS F)
- Alvin Street, between Kelton Road and Pitta Street (LOS F)
- Pitta Street, between Alvin Street and Market Street (LOS F)
- 60th Street, between Federal Boulevard and Imperial Avenue (LOS F)
- 61st Street, between Imperial Avenue and Division Street (LOS E)
- Woodman Street, between Imperial Avenue and Skyline Drive (LOS F)

Arterial

The majority of the roadway segments, in which a roadway diet is proposed, are projected to operate at LOS D or better during both the AM and PM peak hours. There would be some minor pinch points along the roadways in which the arterial operations are projected to drop to LOS E or F; however, roadway speeds are not anticipated to drop below 10 mph hour along any segments.

Intersection

The following six (6) study intersections are anticipated to operate at LOS E or F under buildout of the Preferred Plan:

- 47th Street / Market Street (AM: LOS E, PM: LOS F)
- 47th Street / I-805 SB Ramps (PM: LOS E)
- Euclid Avenue / Market Street (AM: LOS E, PM: LOS F)
- Euclid Avenue / Imperial Avenue (PM: LOS E)
- Euclid Avenue / Olvera Avenue (AM: LOS E, PM: LOS E)
- Woodman Street / Skyline Drive (AM: LOS E)

Freeway

Under buildout of the Preferred Plan, numerous of study area freeway segments are anticipated to operate at less than desirable LOS E or F within the mainline. In addition, all of the proposed HOV lanes along I-805 and SR-94 are anticipated to operate at LOS D or better, with the exception of the following:

- I-805 Southbound, between Market Street and Imperial Avenue (LOS E)
- I-805 Northbound, between Market Street and Imperial Avenue (LOS E)
- I-805 Southbound, Imperial Avenue & 43rd Street (LOS E)

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 Encanto community:

- Expand signal coordination along major roadway corridors including: Market Street, Imperial Avenue, Logan Avenue, 47th Street, Euclid 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; and

- Use variable message signs to direct motorists to available parking and to alert them of street closures.

Transportation Demand Management (TDM)

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 and from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Walking
- Bicycling
- Carpooling
- Vanpooling
- Transit
- Car-sharing
- 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:

- RideMatcher – resources for finding carpool partners or available vanpool seats
- SchoolPool – a program that enrolls schools to encourage parents to carpool
- Transit Information - provides a linkage to transit service provider web pages
- Bicycle Information – provides a link to SANDAG's Regional Bikeway Master Plan, which has been updated to show bicycle paths, lanes and routes in the region
- Guaranteed Ride Home – a program that allows vanpool riders affordable rides home to deal with emergency meetings or illness

In addition to the iCommute program, Caltrans owns and/or maintains several park-and-ride lots in the region that are used to promote carpool activity.

Bicycling

Existing Deficiencies

Cycling needs include areas of high demands and high deficiencies. High demand is evaluated through the bicycle count data collected for this report, as well as through the cycling propensity model developed for SANDAG's Regional Bicycle Plan; while high deficiency is evaluated through bicycle network gaps and bicycle-involved collisions.

The bicycle count data show higher cycling demands along the following corridors:

- Euclid Avenue
- Market Street
- Imperial Avenue

In addition, the cycling propensity models shows high potential bicycle demands along Logan Avenue.

In relation to areas of high deficiencies, there are a total of four (4) intersection locations where more than two bicycle collisions have occurred over the past 5 years, as follows:

- I-805 NB Ramps / Market Street
- 47th Street / Market Street
- Euclid Avenue / Market Street
- 61st Street / Imperial Avenue

In addition, the Market Street Urban Street corridor had the highest level of bicycle-involved collisions relative to the other Urban Street corridors, with a total of 9 collisions over the previous 5 years.

The bicycle network in Encanto is extremely sparse, with many bicycle network gaps noted on Figure 4-9 in both the east-west and north-south directions. As noted in Chapter 3, only 7.3% of roadways in Encanto have bicycle facilities versus 12.6% of City of San Diego roadways.

Proposed Improvements

The Preferred Plan proposes a well-connected network of bicycle facilities. The plan proposes a variety of standard and innovative bicycle facilities in Encanto, as described below:

- Market Street, between I-805 and Pita Street – One-way cycle track in both directions.
- Imperial Avenue, between I-805 Street and Madera Street – Buffered bike lanes in both directions.
- Logan Avenue, between I-805 and Euclid Avenue - Buffered bike lanes in both directions.
- 47th Street, between SR-94 and Market Street & Nogal Street and Logan Avenue - One-way cycle track in both directions.
- 47th Street, between Market Street and Nogal Street – Bike lanes in both directions (requires the removal of 50 on-street parking spaces).
- Euclid Avenue, between SR-94 and Imperial Avenue, – Buffered bike lanes in both directions.
- Euclid Avenue, between Imperial Avenue and Solola Avenue - One-way cycle track in both directions.
- Skyline Drive, between 61st Street and the community boundary – Buffered bike lanes in both directions.
- Woodman Street, between Skyline Drive and the community boundary - Buffered bike lanes in both directions.

Future Deficiencies with Proposed Improvements

Bicycle LOS was evaluated along the major urban corridors throughout the community, including Market Street, Imperial Avenue, Logan Avenue, 47th Street and Euclid Avenue, using the CSLOS methodologies. All of the urban street facilities within the Encanto community are expected to operate at LOS D or better for cyclists during the AM and PM peak hours, with two (2) exceptions:

- 47th Street, southbound between Market Street and Imperial Avenue – LOS E during the both AM and PM peak hour; and
- Euclid Avenue, southbound between Imperial Avenue and Logan Avenue – LOS E during both the AM and PM peak hour.

The bicycle improvements proposed under the Preferred Plan alternative, are projected to improve or maintain the bicycle CSLOS along the majority of the urban corridors within the Encanto community, when compared to the current levels of operation.

Parking Management

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

- An estimated 50 on-street parking spaces on the eastside of 47th Street, between Market Street and Nogal Street. These spaces are proposed to be removed in order to provide the right-of-way for new Class II Bike Lanes along 47th Street. However, the on-street parking spaces on these segments of 47th Street are not heavily utilized (58% occupancy or 29 occupied spaces during the peak period). The parking demand for the removed spaces should be able to be absorbed by the available capacity on adjacent side streets (Nogal Street – east of 47th Street and Hartley Street – west of 47th Street) which has a combine 22% occupancy rate.
- An estimated 56 on-street parking spaces on Market Street, between I-805 and 47th Street. These spaces are proposed to be removed in order to provide the right-of-way for a new regional Class I Cycle Track facility on Market Street. However, the on-street parking spaces on these segments of Market Street are not heavily utilized (60% occupancy or 34 occupied spaces during the peak period). The parking demand for the removed spaces should be able to be absorbed by the available capacity on adjacent side streets (45th Street – north of Market Street and G Street – east and west of 45th Street) which has a combined 25% occupancy rate during the peak period.
- An estimated 58 on-street parking spaces on Woodman Street, between Skyline Drive and Plaza Boulevard. These spaces are proposed to be removed in order to provide the right-of-way for a new Buffered Bike lane facility on Woodman Street. However, the on-street parking spaces on these segments of Woodman Street are not utilized (0% occupancy or 0 occupied spaces during the peak period).
- Additional on-street parking spaces will need to be removed on either side of driveways or other access points (30 feet to allow for adequate visibility) along roadways in which

the proposed cycle tracks are implemented (Market Street, 47th Street and Euclid Avenue). Based on national research, this typically results in the loss of 15-25% of on-street parking spaces along roadway corridors with cycle tracks. Within Encanto, 47th Street between Imperial Avenue and Logan Avenue currently has an occupancy rate between 70% and 84% during most hours of the day, so there is potential for this segment to be impacted by parking losses. However, all other segments in which on-street parking will be available and a cycle track is proposed typically have a parking occupancy rate under 50%.

1.0 Introduction

1.1 Study Background and Purpose

This Technical Report summarizes the physical and operational conditions of the Encanto mobility system as part of the City of San Diego's community plan update process. The evaluation includes an overview of Existing and Preferred Plan conditions for pedestrian and bicycle facilities, transit systems, and roadways within Encanto. The report also describes key terms and methodologies utilized for conducting these analyses, and identifies current deficiencies across the transportation system. This report will be utilized to support decisions about proposals and recommendations for updating the community plan mobility element.

The Encanto mobility network is comprised of diverse elements, including roadway and freeway systems, public transit, light rail, and bicycle and pedestrian infrastructure. Each of these elements is discussed in the following chapters.

Several key planning efforts and legislative actions of the past decade have redefined the way community transportation planning is carried out. An important unifying theme is to achieve a more balanced, multi-modal transportation system that allows people of varying physical and economic conditions to accomplish daily activities without making a single-occupant vehicle trip.

The most noteworthy planning effort and legislative action includes adoption of the City of San Diego's updated General Plan in 2008. This document defines a land use-transportation strategy for the City of San Diego predicated on new growth occurring in already urbanized areas of the City – or "villages" – that are served by high-capacity transit and provide high quality pedestrian and bicycle networks. The San Diego Association of Government (SANDAG) for example has adopted a Smart Growth Concept Map (2008) in their *Regional Comprehensive Plan* proposing a land use-transportation strategy whereby new growth is directed to already urbanized areas, in mixed-used high-density nodes served by high capacity transit and including high quality bicycle and pedestrian improvements. SANDAG incentivizes implementation of these types of strategies within local jurisdictions through grant funding programs like the Smart Growth Incentive Program and the Active Transportation Grant Program.

On September 30, 2008, the State of California approved Assembly Bill 1358 – The Complete Streets Act. This act requires, commencing January 1, 2011, that the legislative body of a city or county, plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public

transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan. In addition, the adoption of the 2008 Senate Bill 375 requires metropolitan planning organizations in the state to formulate a "sustainable communities strategy" as part of their regional transportation plans, specifically identifying how the region will achieve targeted reductions in greenhouse gas emissions from automobiles and light trucks. SANDAG adopted the region's first SCS in October 2011, making it the first agency in California to do so.

Taken together, these developments and associated planning initiatives reflect a growing recognition that our communities should be working to reduce reliance on automobile travel and to increase the ease of walking, bicycling and using transit to support daily life.

City of San Diego's General Plan Mobility Element Goal … "To improve mobility through development of a balanced, multi-modal transportation network."

1.2 Study Location

The community of Encanto occupies approximately 3,810 acres and is bordered by SR-94 to the north; National City and Skyline-Paradise Hills community to the south; I-805 to the west; and the City of Lemon Grove and Skyline-Paradise Hills community to the east. This community includes the neighborhoods of Chollas View, Lincoln Park, Emerald Hills, Valencia Park, Encanto, South Encanto, Broadway Heights and Alta Vista. The interstates, state routes, and light rail (the Orange Line) provide regional accessibility between Encanto and other locations across the County. Within the community, there is a fairly well-connected grid of arterial and local roadways; however, the rolling topography created by the Chollas Creek, Radio Canyon, and Encanto Creek watersheds cause some discontinuity in the roadway network.

Encanto's current community plan was adopted in 1969, and updated in 1987. **Figure 1-1** displays the Encanto community within the region.

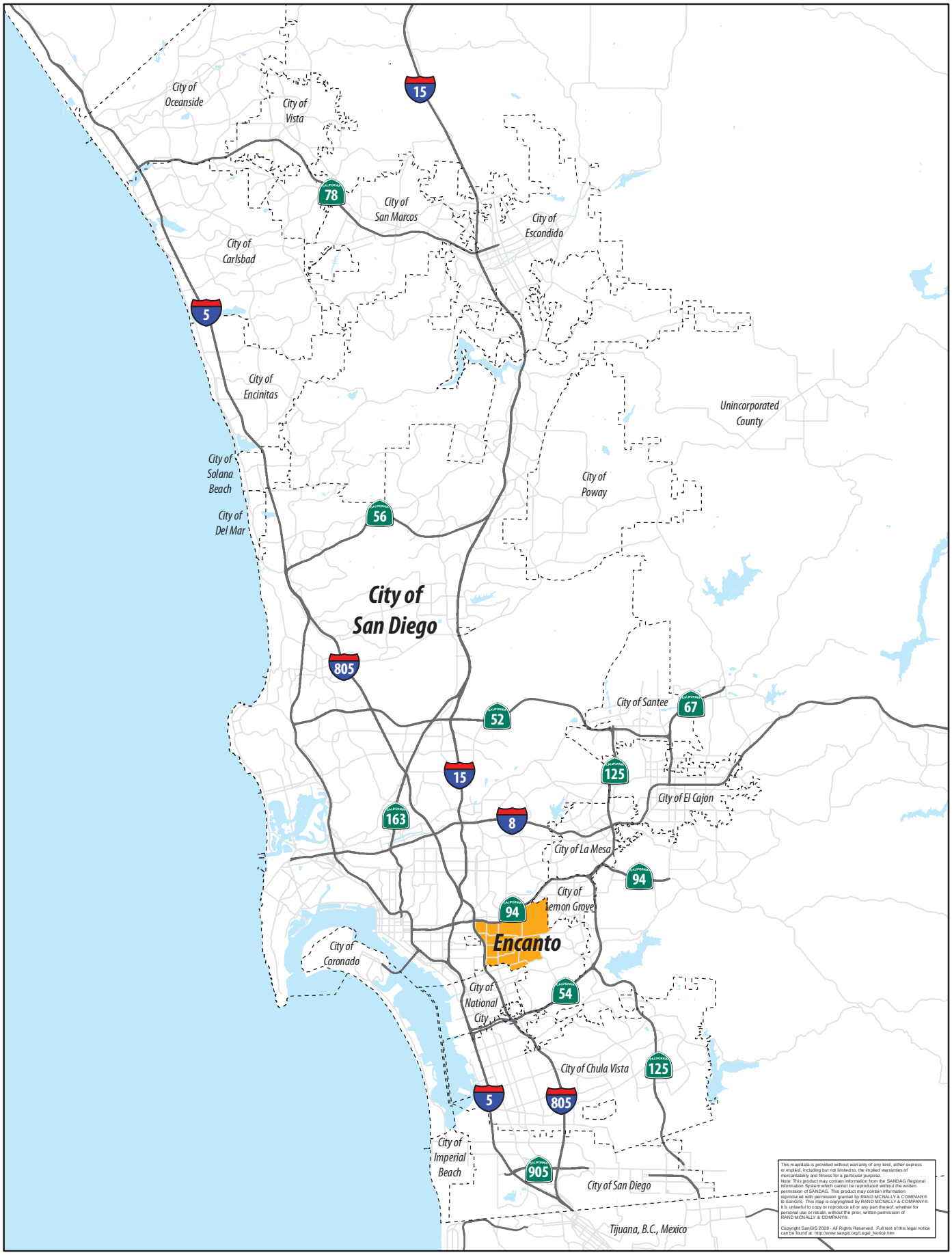


Figure 1-1: Encanto within the Region

1.3 Supporting Information

Several previous and on-going studies are relevant to understanding existing mobility conditions within Encanto. These studies were referenced as part of the preparation of this report, and include the following:

- Southeastern San Diego Community Plan, 1969 (updated in 1987)
- 2050 Regional Transportation Plan, October 2011
- City of San Diego Pedestrian Master Plan Framework Report, December 2006
- City of San Diego Pedestrian Master Plan Phases 2&3, and Phase 4
- City of San Diego Bicycle Master Plan, May 2002
- City of San Diego Bicycle Master Plan Update, June 2011 Draft
- SANDAG Regional Comprehensive Plan (RCP), January 2012
- Euclid+Market Land Use and Mobility Plan Existing Conditions Report, September 2011
- Mobility and Land Use Master Plans for Euclid Avenue and National Avenue
- Traffic Operations Study at SR-94 / Euclid Avenue Interchange, January 16, 2013
- State Route 94 Bus Rapid Transit (BRT) Project
- Interstate 805 BRT Project
- Interstate 805 / 47th Street BRT Planning Study
- 47th Street BRT Health Impact Assessment (HIA)
- SDSU Bicycle Counting Program by Active Transportation Research, 2011

1.4 Organization of the Report

After this introductory chapter, ***Chapter 2*** of this report describes the methodologies employed to assess the mobility systems; ***Chapter 3*** presents a summary of analysis results and mapping for the pedestrian, transit system, roadways, freeways, and cycling. ***Chapter 4*** provides an overview of the Transportation Demand Model Forecasting process utilized to project transportation patterns under build out of the Preferred Plan. **Chapter 5** outlines the transportation network improvements proposed in the Preferred Plan and presents a summary of analysis results for the pedestrian and cycling environments, the transit system, roadways, and freeways.

2.0 Analysis Methodology

This chapter describes the various methodologies utilized to analyze the mobility network in Encanto. Since the adoption of the 2008 California Complete Streets Act (AB 1358), multi-modal analysis procedures are employed to assess mobility needs for pedestrians, transit users, and cyclists. Analysis of the vehicular systems – roadways, intersections and freeways – were prepared for this study in accordance with City of San Diego and SANTEC/ITE Guidelines.

2.1 Selection of the Study Area

This section summarizes the approach to defining study area roadways, intersections and "Urban Streets", or those roadways where multi-modal level of service analyses were conducted.

Freeways and other natural barriers are considered as general study area boundaries. The primary study area encompasses the community planning area and up to one segment and key intersection beyond, in order to be consistent with the impact study area desired for California Environmental Quality Act (CEQA) analysis.

Figure 2-1 displays roadway, intersection and Urban Street facilities that comprise the combined study areas for both the Southeastern San Diego and Encanto community plan updates. Although this report only addresses the Encanto community, Figure 2-1 is intended to assist the reader in understanding the relationship between the two communities' study areas. Also note that the intersection identification numbers displayed in this figure will remain unchanged in the separate Mobility Element analyses conducted for each community.

Figure 2-2 displays roadways, intersections and Urban Street facilities only for Encanto as these are the specific focus of this report.

2.1.1 Roadway Segments

Study area roadway segments were defined as all currently adopted mobility element roads and one segment beyond the community planning area boundary, where not separated by freeways and natural barriers.

2.1.2 Urban Street Segments

A number of roadways within the Encanto community were identified as Urban Streets requiring multi-modal level of service analysis for pedestrians, bicyclists, transit riders and drivers. These roadways are considered significant corridors traversing the community and complementing the SANDAG Smart Growth Concept Map updated in January 2012.

ENCANTO COMMUNITY PLAN UPDATE

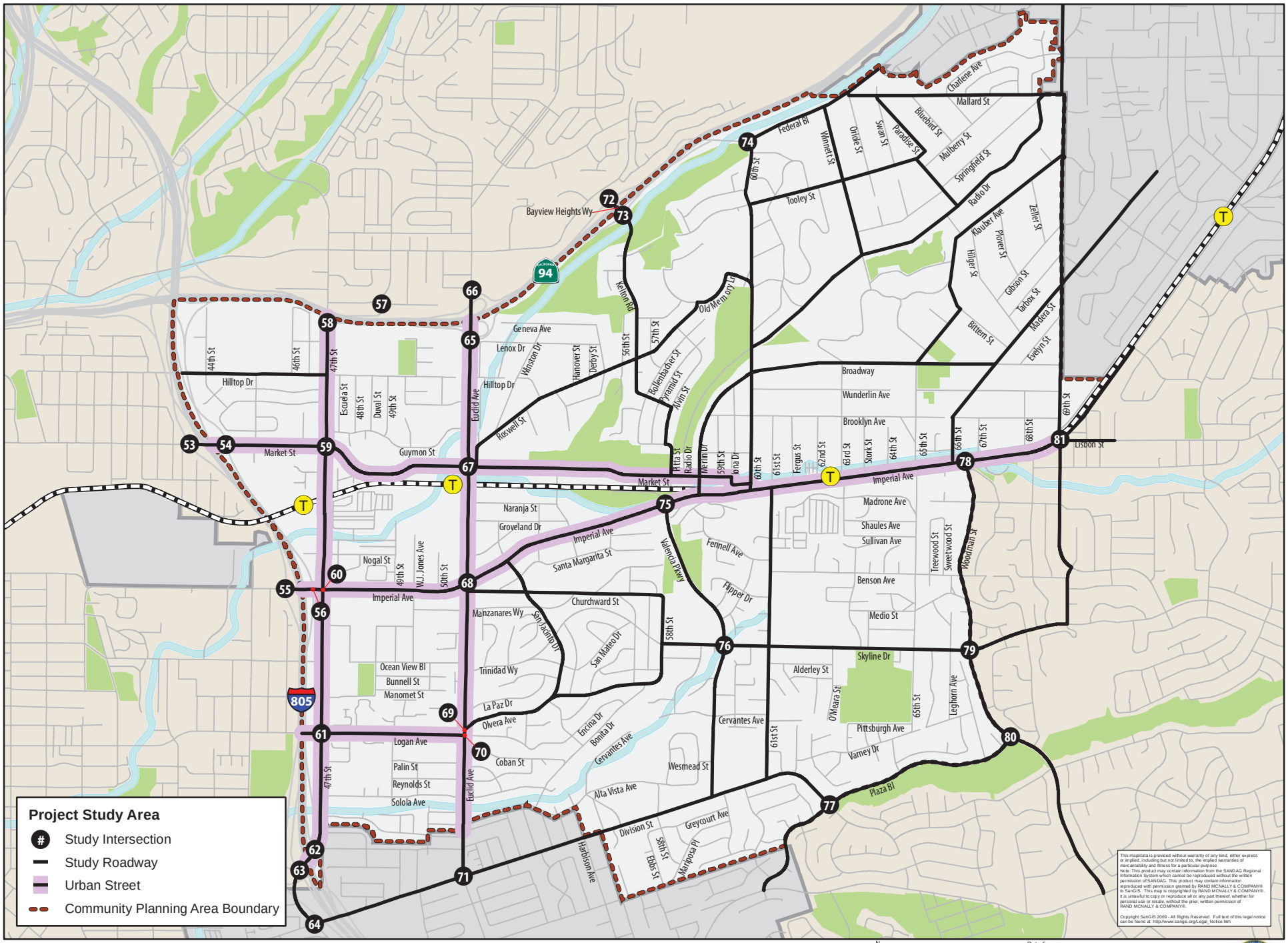


Figure 2-2: Encanto Project Study Area

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

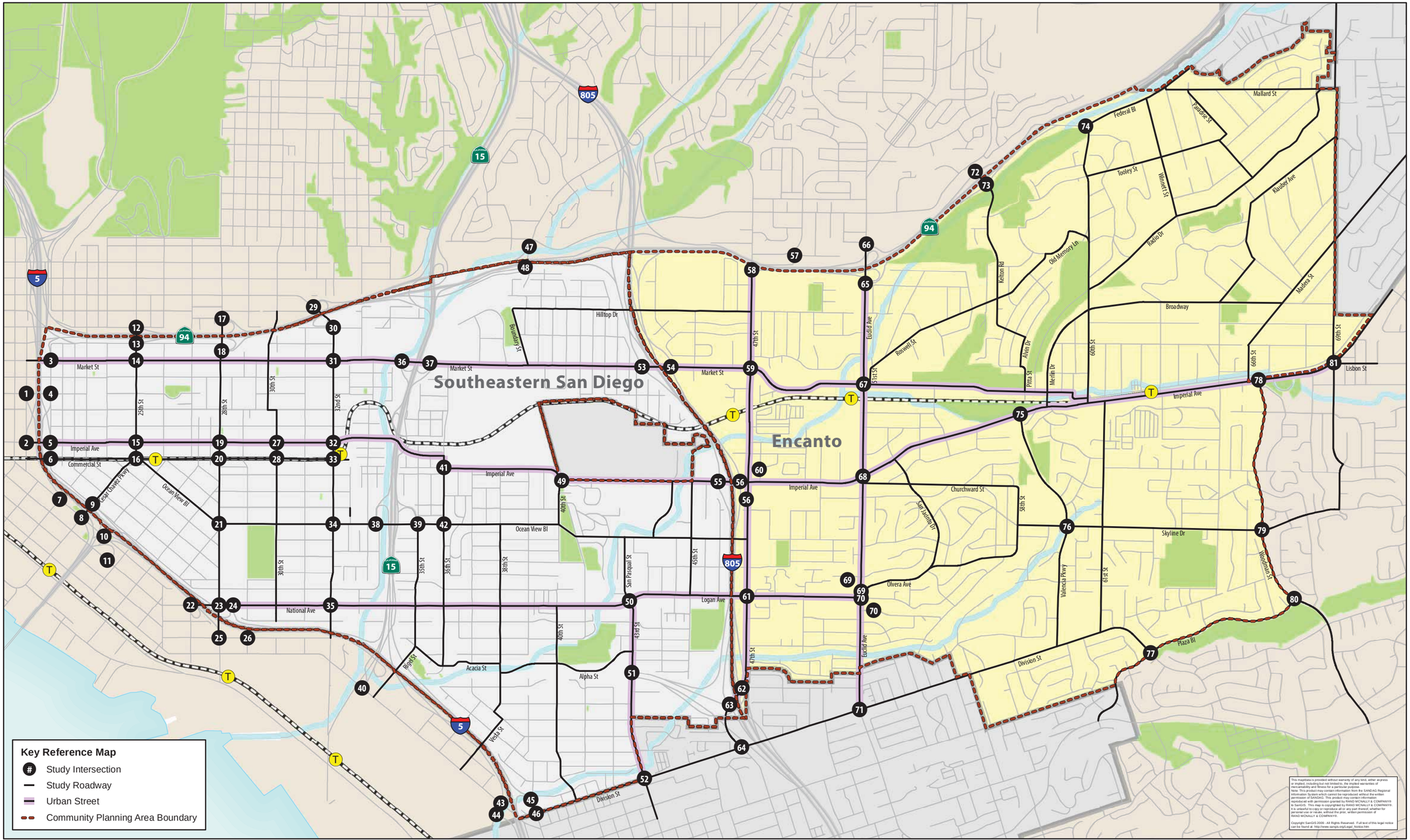


Figure 2-1: Key Reference Map - Southeastern San Diego and Encanto

CHEN RYAN

N

0 750 1,500 Feet

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

The following roadway segments were defined as Urban Streets, where multi-modal analyses were performed:

- Market Street, between I-805 and 60th Street
- Imperial Avenue, between I-805 and 69th Street
- Logan Avenue, between I-805 and Euclid Avenue
- 47th Street, between SR-94 and I-805
- Euclid Avenue, between SR-94 and southern CPA boundary

2.1.3 Intersections

Study intersections within Encanto include those where both intersecting streets meet one of the following criteria:

- 4-lanes or wider
- 3-lanes and carries over 15,000 average daily traffic
- 2-lanes and carries over 10,000 average daily traffic

Intersections providing freeway access, as well as a number of critical study intersections from other on-going City studies in the community were also included in the study area. These studies are *Euclid+Market Land Use and Mobility Plan* and *Mobility and Land Use Master Plan for Euclid Avenue*.

Based on these criteria, 29 study intersections were selected, as displayed in Figure 2-2. This includes 5 intersections located outside the boundaries of Encanto.

2.2 Multi-Modal Analysis

In general, street and freeway system Level of Service (LOS) is based on facility operations, while multi-modal LOS (MMLOS) for pedestrian, transit, auto, and bicycle facilities are evaluated based on the user's perception of the quality of the environment or systems while using these modes. The MMLOS analysis method used herein for pedestrian, transit, auto and bicycle was developed under the National Cooperative Highway Research Program (NCHRP) Project 3-70, *Multimodal Level of Service for Urban Streets*. The method evaluates, by mode, the feel, comfort, accessibility and safety of an urban street based upon the design, control and operations of the roadway.

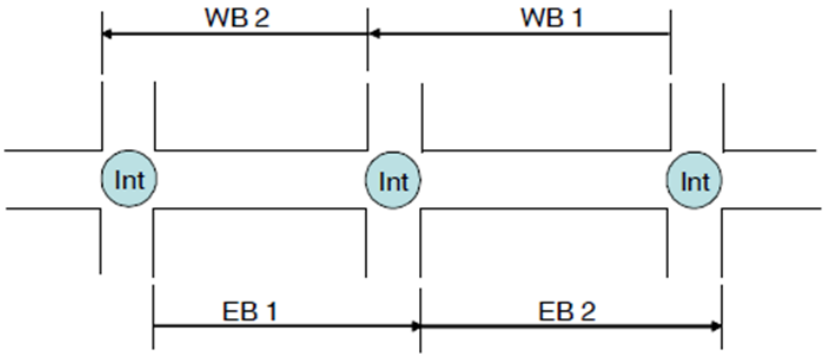
Complete Streets LOS (CSLOS), A Multimodal Level of Service Toolkit, by Kittelson & Associates (formerly Dowling Associates, Inc.) was used for MMLOS evaluation. The CSLOS software outputs numerical ratings of the various modes of travel, and these rating are then converted into A - F letter grades to represent the travelers' perception of the resulting quality of service provided by the subject facility. LOS A represents the best conditions from the traveler's perspective, while LOS F represents the worst. **Table 2.1** displays the LOS letter grade numerical equivalents for pedestrian, transit, auto and bicycle facilities.

TABLE 2.1
LOS LETTER GRADE NUMERICAL EQUIVALENTS

LOS Letter Grade	Pedestrian	Transit	Auto	Bicycle
	Score	Score	Travel Speed as a percentage of Base Free-Flow Speed (%)	Score
A	≤ 2.00	≤ 2.00	> 85%	≤ 2.00
B	2.00 < and ≤ 2.75	2.00 < and ≤ 2.75	> 67% - 85%	2.00 < and ≤ 2.75
C	2.75 < and ≤ 3.50	2.75 < and ≤ 3.50	> 50% - 67%	2.75 < and ≤ 3.50
D	3.50 < and ≤ 4.25	3.50 < and ≤ 4.25	> 40% - 50%	3.50 < and ≤ 4.25
E	4.25 < and ≤ 5.00	4.25 < and ≤ 5.00	> 30% - 40%	4.25 < and ≤ 5.00
F	> 5.00	> 5.00	≤ 30%	> 5.00

Source: Transportation Research Board NCHRP Project 3-70, Highway Capacity Manual 2010.

Study roadways were divided into analysis segments, with each **segment** consisting of a portion of street (link) plus the downstream intersection at the end of the link. An **intersection** is any point on the street where through-traffic is subject to signalized control, stop-sign control, or yield-sign control. In the case of transit analysis, a segment includes one or two transit stops.



2.2.1 Pedestrian LOS

Pedestrian LOS is a measure of the pedestrian's experience at intersections and on street links between the intersections. Pedestrian LOS is a function of the following number of variables:

- Lateral separation between pedestrians and vehicular traffic
- Width of sidewalk
- Speed and makeup of the vehicular traffic
- Difficulty of crossing arterial
- Directional vehicular traffic volumes
- Permitted right-turn on red
- Left-turn during "Walk" phase
- Delay waiting to cross at signal

- Intersection crossing distance
- Cross-street vehicular traffic volume and speed
- Pedestrian density

2.2.2 Transit LOS

Transit LOS is based on a combination of the user's experience while accessing the transit system, while waiting for transit service, and while riding on transit. The access experience is represented by the pedestrian LOS score (discussed Section 2.2.1) while the pedestrian is accessing bus stops. This score is specific to the direction of travel along a street. The waiting and riding experiences are combined into a transit wait/ride score. The transit wait/ride score is a function of the average headway between transit vehicles and the perceived travel time.

The following six variables are used to determine the transit LOS:

- Frequency of service
- Mean speed
- Reliability of service
- Load factors
- Quality of pedestrian access to transit stops
- Transit stop amenities

2.2.3 Auto LOS

Auto LOS is a function of the average travel speed over the length of the street and the average number of stops per mile. The following variables are used to calculate the auto LOS:

- Number of stops per mile
- Speed and makeup of the vehicular traffic
- Delay at intersection for through traffic
- Length of the segment
- Cross traffic per segment

2.2.4 Bicycle LOS

Bicycle LOS is a weighted combination of the bicyclist's experience at intersections and on street links between the intersections. Bicycle LOS is a function of the following five variables:

- Lateral separation between bicycles and vehicular traffic
- Speed and makeup of the vehicular traffic
- Pavement conditions
- Directional vehicular traffic volumes
- Intersection crossing distance

2.3 Vehicular Analysis

Vehicular LOS is a quantitative measure that represents quality of service for the driver. Quality of service describes how well a transportation facility of service operates from a driver's perspective. These conditions are generally described in terms of such factors 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 auto LOS A through F.

TABLE 2.2
VEHICULAR LEVEL OF SERVICE DEFINITIONS

LOS	Characteristics
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: 2000 Highway Capacity Manual.

2.3.1 Roadway Segment Level of Service Standards and Thresholds

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.

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
Secondary Arterial* / 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)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

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

Notes:
Bold numbers indicate the ADT thresholds for acceptable LOS.
*Secondary Arterial is a classification only applies to roadways in the City of National City. It utilizes identical LOS thresholds as a 4-Ln Collector w/center left-turn lane in the City of San Diego.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility 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 that is analyzed to be 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.

2.3.2 Peak Hour Intersection Level of Service Standards and Thresholds

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 LEVEL OF SERVICE
HIGHWAY CAPACITY MANUAL OPERATIONAL ANALYSIS METHOD

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* 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	*LOS B* 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 LOS A.
20.1 – 35.0	*LOS C* 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	*LOS D* 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	*LOS E* 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	*LOS F* 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: 2000 Highway Capacity Manual, Transportation Research Board Special Report 209.

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 (LOS)
≤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: 2000 Highway Capacity Manual.

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

2.3.3 Freeway/State Highway Level of Service Standards and Thresholds

Freeway level of service analysis is based upon procedures developed by Caltrans District 11. The procedure for calculating freeway level of service involves estimating a peak hour volume to capacity (V/C) ratio. 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-car per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane, respectively. A 0.95 peak-hour factor (PHF) is utilized for this analysis.

The resulting V/C ratio is 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 existing or anticipated future freeway operating conditions in the peak direction of travel during the peak hour.

LOS D or better is 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
Used for freeways, expressways and conventional highways			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	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.
Used for conventional highways			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
Used for freeways and expressways			
"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.

2.3.4 Ramp Metering Analysis

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

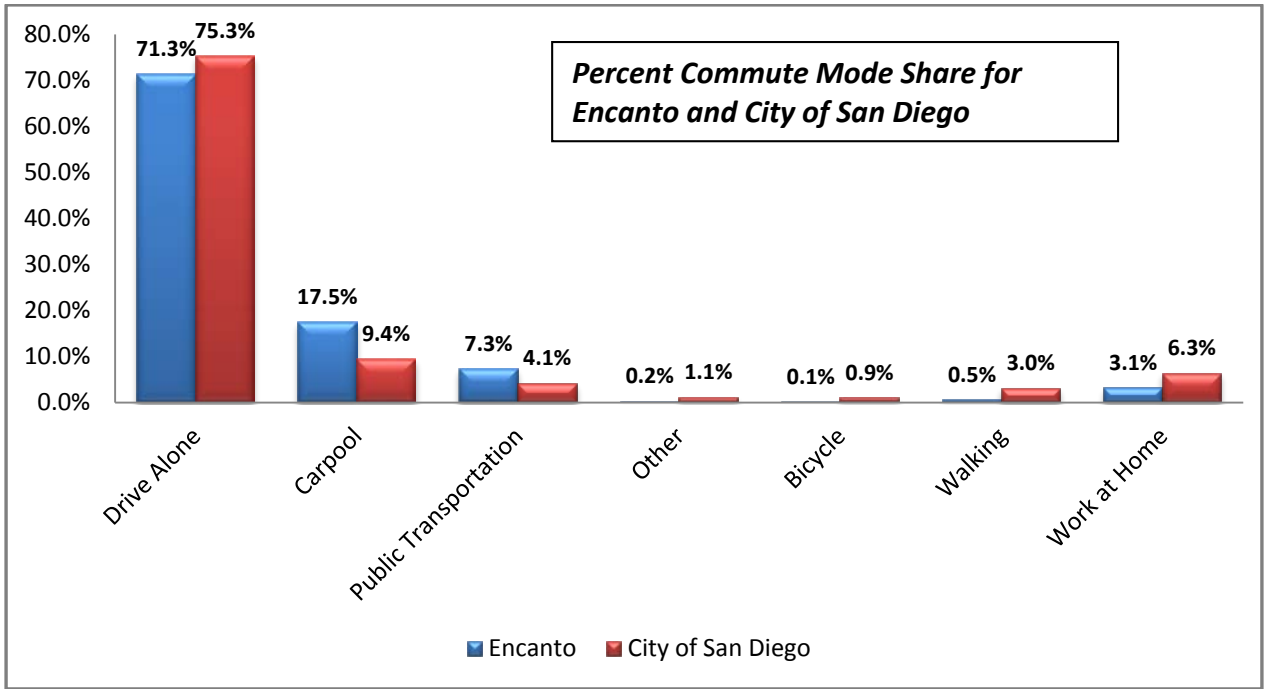
Meter rates uses in the analysis were obtained from Caltrans in November 2012. Ramp metering analyses to calculate delays at the study area freeway on-ramps were conducted based upon procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

3.0 Existing Conditions

This chapter describes activity patterns and level of service for all modes of travel in Encanto including walking, riding transit, driving, and cycling. The chapter also summarizes services associated with passenger rail, airports, goods movement, intelligent transportation systems (ITS), and travel demand management (TDM).

3.1 Existing Setting

The chart below summarizes overall mode share for the journey to work for Encanto community members, providing an overall indication of travel modes percentages.



Source: Census Bureau; 2011 American Community Survey

As shown, Encanto has a lower rate of Drive Alone commuting compared to City of San Diego as whole (71% versus 75%). In addition, Encanto has a higher rate of Public Transportation usage for the work trip compared with the City as a whole (7% versus 4%), as well as high Carpool rates (17% versus 9%). Walk and bicycle rates for Encanto are lower than the citywide rates.

Notably, these data depict commuters traveling to work and do not reflect children and youth walking to school. A Safe Routes to School Program for elementary and middle schools in Encanto was funded in 2006 and then expanded in 2009. This program is supporting evaluation of mode shares for the school trip, bicycle and pedestrian infrastructure deficiencies near schools, and implementing child-oriented encouragement and educational programs for walking and cycling to school.

Table 3.1 summarizes the existing physical characteristics of study roadways within Encanto, in relation to pedestrian, bicycle, transit and automobile travel. The majority of this information was collected via field reviews and available, current GIS layers. The Planned Classification column reflects the planned roadway classification as reported in the currently adopted Encanto Community Plan (1987).

3.2 Walkable Communities

Walkability is an important mobility and quality of life consideration for communities. The degree to which people walk for transportation and recreation is influenced by the comfort, safety and convenience of their walking experience. Comfort is influenced by separation from through traffic, topography, the presence of sidewalks and improved paths, and climate. Safety is influenced by the speed and volume of conflicting vehicle traffic, street widths, traffic control, number of conflict points, and infrastructure design. Convenience is influenced by distance and directness of travel. As connectivity increases, travel distances and route options increase for the pedestrian.

Pedestrian travel is an important mode of travel within Encanto. The Orange Line Trolley, Imperial Avenue, the Euclid Avenue & Market Street activity center, and the many small commercial destinations within the community, all contribute to a vibrant pedestrian realm. There are challenges however that need to be addressed, such as high speed automobile travel, barriers imposed by freeway ramp intersections, difficult pedestrian crossings, and lack of buffer, lighting and shading. The following subsections describe existing pedestrian facilities, activity levels, pedestrian level of service analysis results, and pedestrian safety analyses within Encanto.

The walkability goals as expressed in the City's 2008 General Plan Mobility Element include the following:

- *A city where walking is a viable travel choice, particularly for trips of less than one-half mile.*
- *A safe and comfortable pedestrian environment.*
- *A complete, functional, and interconnected pedestrian network, that is accessible to pedestrians of all abilities.*
- *Greater walkability achieved through pedestrian friendly streets, sites and building design.*

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
Mallard Street	Federal Boulevard & 69th Street	2-Ln	2-Ln Collector	28'-40' / 30'-60'	30	Parallel (Both)	No Sidewalk – section of south side	None	No	Encanto
Federal Boulevard	60th Street & Mallard Street	4-Ln w/CLTL	4-Ln Major Arterial	68'-72' / 80'	40	Parallel (north side)	Yes	Class II	No	Encanto
Federal Boulevard	Mallard Street & MacArthur Drive	3-Ln w/CLTL	4-Ln Major Arterial	60' / 90'	45	Parallel (north side)	No Sidewalk – section of north side	Class II	No	Encanto
Tooley Street	60th Street & Paradise Street	2-Ln	2-Ln Collector	35'-38' / 62'	25	Parallel (Both)	No Sidewalk – section of north and south side	None	No	Encanto
Hilltop Drive	I-805 & 47th Street	2-Ln	2-Ln Collector	38' / 60'	25	Parallel (Both)	Yes	None	No	Encanto
Roswell Street	51st Street & Old Memory Lane	2-Ln	2-Ln Collector	32' / 60'	30	Parallel (Both)	Yes	None	Yes (Rt. 916, 917)	Encanto
Old Memory Lane	Roswell Street & 60th Street	2-Ln	2-Ln Collector	34' / 56'-58'	25	Parallel (Both)	Yes	None	No	Encanto
Radio Drive	60th Street & Mallard Street	2-Ln	2-Ln Collector	20'-26' / 40'-64'	25	None	No Sidewalk – section of north and south side	None	No	Encanto

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
Klauber Avenue	Broadway & 69th Street	2-Ln	2-Ln Collector	40' / 60'-70'	25	Parallel (Both)	No Sidewalk – section of east and west side	None	No	Encanto
Broadway	60th Street & Madera Street	2-Ln	2-Ln Collector	40' / 60'	25	Parallel (Both)	No Sidewalk – section of north side	None	Yes (Rt. 916, 917)	Encanto
Market Street	I-805 SB Ramps & I-805 NB Ramps	4-Ln w/RM	4-Ln Major Arterial	82' / 100'	35	None	Yes	Class II	Yes (Rt. 5, 960)	Southeastern/ Encanto
Market Street	I-805 NB Ramps & 47th Street	4-Ln & 4-Ln w/CLTL	4-Ln Major Arterial	60' / 100'	35	Parallel (Both)	Yes	Class III	Yes (Rt. 5, 960)	Encanto
Market Street	47th Street & Euclid Avenue	4-Ln & 4-Ln w/CLTL	4-Ln Major Arterial	60' / 100'	35	Parallel (Both)	Yes	Class III	Yes (Rt. 3, 4, 5, 13, 916, 917, 955, 960)	Encanto
Market Street/Akins Avenue	Euclid Avenue & 60th Street	2-Ln	4-Ln Major Arterial	30'-78' / 45'-100'	25	Parallel (Both) & no parking on a section of north side & off pavement parking on a section of south side	No Sidewalk – section of north and south side	None	Yes (Rt. 916, 917)	Encanto
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	4-Ln w/CLTL	4-Ln Major Arterial	86' / 100'	40	Parallel (Both)	Yes	None	Yes (Rt. 4)	Southeastern/ Encanto

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
Imperial Avenue	I-805 NB Ramps & 47th Street	4-Ln w/RM	4-Ln Major Arterial	86' / 100'	40	None	Yes	Class III Sharrows	Yes (Rt. 4)	Encanto
Imperial Avenue	47th Street & Euclid Avenue	4-Ln w/RM/CLTL	4-Ln Major Arterial	86' / 100'	40	Parallel (Both) & no parking on a section of south side	Yes	Class II (south side) & Class III Sharrows (north side)	Yes (Rt.4, 955)	Encanto
Imperial Avenue	Euclid Avenue & San Jacinto Drive	4-Ln w/RM/CLTL	4-Ln Major Arterial	62'-86' / 100'	30	Parallel (Both) & no parking on a section of north and south side	Yes	Class III Sharrows (between Euclid Ave. and San Jacinto Dr.)	Yes (Rt. 4)	Encanto
Imperial Avenue	San Jacinto Drive & Valencia Parkway	2-Ln w/CLTL	4-Ln Major Arterial	62'-86' / 100'	30	Parallel (Both)	Yes	Class II	Yes (Rt. 4)	Encanto
Imperial Avenue	Valencia Parkway & Woodman Street	4-Ln w/SM/RM	4-Ln Major Arterial	62'-78' / 85'-97'	40	Parallel (south side) & Limited (north side)	No Sidewalk – section of north side	Class II & Class III	Yes (Rt. 4, 961)	Encanto
Imperial Avenue	Woodman Street & 69th Street	4-Ln w/RM	4-Ln Major Arterial	78' / 87'-98'	40	None	No Sidewalk – section of north side	Class II & Class III	Yes (Rt. 4)	Encanto
Imperial Avenue	69th Street & Viewcrest Drive	4-Ln w/RM	4-Ln Major Arterial	76' / 100'	50	None	No Sidewalk – section of north side	Class II	No	Encanto (Skyline/ Paradise Hills)

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
Lisbon Street	Imperial Avenue & 71st Street	2-Ln w/CLTL	4-Ln Collector	34' / 47'-58'	35	None	Yes	None	Yes (Rt. 4)	Encanto (Skyline/ Paradise Hills)
Churchward Street/58th Street	Euclid Avenue & Skyline Drive	2-Ln	2-Ln Collector	40' / 50'-58'	25	Parallel (Both)	Yes	Class II	No	Encanto
Skyline Drive	58th Street & Valencia Parkway	2-Ln w/CLTL	4-Ln Major Arterial	50'-62' / 80'	35	Parallel (Both)	Yes	None	Yes (Rt. 11)	Encanto
Skyline Drive	Valencia Parkway & 61st Street	2-Ln w/CLTL	4-Ln Major Arterial	64'-72' / 87'	35	Parallel (Both)	Yes	Class II	Yes (Rt. 11)	Encanto
Skyline Drive	61st Street & Omeara Street	4-Ln w/CLTL	4-Ln Major Arterial	78' / 102'	35	Parallel (Both)	Yes	Class II	Yes (Rt. 11)	Encanto
Skyline Drive	Omeara Street & Woodman Street	2-Ln w/CLTL	4-Ln Major Arterial	60'-68' / 73'-92'	35	Parallel (Both) & no parking on a section of north and south side	Yes	Class II	Yes (Rt. 11)	Encanto
Skyline Drive	Woodman Street & 69th Street	4-Ln w/CLTL	4-Ln Major Arterial	66'-74' / 74'-98'	35	None	Yes	Class II	Yes (Rt. 11)	Skyline/ Paradise Hills
Logan Avenue	45th Street & 47th Street	4-Ln	4-Ln Major Arterial	60' / 63'-78'	35	Parallel (Both)	Yes	None	Yes (Rt. 11, 955)	Southeastern/ Encanto
Logan Avenue	47th Street & Euclid Avenue	4-Ln w/CLTL	4-Ln Major Arterial	60' / 68'-95'	35	Parallel (Both)	Yes	None	Yes (Rt. 3, 11)	Encanto

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
Olvera Avenue/58th Street	Euclid Avenue & Skyline Drive	2-Ln	2-Ln Collector	36' / 60'-63'	30	Parallel (Both)	No Sidewalk – section of south side	None	Yes (Rt. 11)	Encanto
Division Street	Palm Avenue & Euclid Avenue	4-Ln	4-Ln Major Arterial	62'-65' / 72'-80'	30	Parallel (Both)	Yes	None	No	National City
Division Street	Euclid Avenue & Harbison Avenue	4-Ln	4-Ln Secondary Arterial	58' / 68'-70'	35	Parallel (Both)	Yes	None	No	National City
Division Street	Harbison Avenue & 58th Street	2-Ln	4-Ln Collector	26'-48' / 70'	35	Parallel (Both) & no parking on a section of north side	No Sidewalk – section of north and south side	None	Yes (Rt. 967)	Encanto
Division Street	58th Street & Valencia Parkway	2-Ln w/CLTL	4-Ln Collector	26'-62' / 84'	30	Parallel (Both)	Yes	None	Yes (Rt. 967)	Encanto
Division Street	Valencia Parkway & 61st Street	2-Ln	4-Ln Collector	28'-38' / 70'-98'	30	Parallel (Both) & no parking on a section of north side	No Sidewalk – section of north side	None	No	Encanto
Division Street	61st Street & Plaza Boulevard	2-Ln w/SM/CLTL	4-Ln Collector	62' / 84'-88'	30	Parallel (Both)	Yes	None	No	Encanto
Plaza Boulevard	Paradise Valley Road & Division Street	4-Ln	4-Ln Collector	60' / 83'	30	Parallel (Both)	Yes	None	No	Encanto
Plaza Boulevard	Division Street & Woodman Street	2-Ln	4-Ln Collector	62' / 85'	40	Parallel (Both)	Yes	None	No	Encanto

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
47th Street	SR-94 EB On-Ramp & Market Street	4-Ln	4-Ln Major Arterial	62'-82' / 10'-106'	35	Parallel (Both)	Yes	None	No	Encanto
47th Street	Market Street & Imperial Avenue	2-Ln w/CLTL	4-Ln Major Arterial	50'-62' / 80'-95'	40	Parallel (Both)	Yes	None	No	Encanto
47th Street	Imperial Avenue & Logan Avenue	4-Ln w/CLTL & 4-Ln	4-Ln Major Arterial	56' / 75'-98'	40	Parallel (Both)	Yes	None	Yes (Rt. 955)	Encanto
47th Street	Logan Avenue & I-805 NB Ramps	3-Ln W/CLTL	4-Ln Collector	62' / 66'-89'	40	Parallel (Both)	No Sidewalk – section of west side	None	No	Encanto
47th Street	I-805 NB Ramps & I-805 SB Ramps	4-Ln w/RM	4-Ln Major Arterial	84' / 92'	30	Parallel (Both)	No Sidewalk – section of north side	None	No	Encanto/ National City
47th Street/Palm Avenue	I-805 SB Ramps & Division Street	4-Ln w/RM	4-Ln Major Arterial	82' / 92'	40	Parallel (Both)	No Sidewalk – section of north side	None	No	National City
Euclid Avenue	SR-94 WB Ramps & SR-94 EB Ramps	4-Ln w/RM	4-Ln Major Arterial	66' / 95'	35	None	Yes	None	Yes (Rt. 955, 916, 917)	Encanto
Euclid Avenue	SR-94 EB Ramps & Market Street	4-Ln w/CLTL/RM	4-Ln Major Arterial	66' / 95'-107'	35	Parallel (Both)	Yes	None	Yes (Rt. 955, 916, 917)	Encanto
Euclid Avenue	Market Street & Imperial Avenue	4-Ln w/CLTL/RM	4-Ln Major Arterial	65'-84' / 95'-113'	35	None	Yes	None	Yes (Rt. 3, 4, 13, 955)	Encanto

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
Euclid Avenue	Imperial Avenue & Logan Avenue	4-Ln w/CLTL/RM	4-Ln Major Arterial	66'-78' / 78'-106'	35	None	No Sidewalk – section of east side	Class II	Yes (Rt. 3, 13)	Encanto
Euclid Avenue	Logan Avenue & Division Street	4-Ln	4-Ln Major Arterial	65' / 76'-155'	35	None	None	Class II – Logan Ave to Cervantes Ave	Yes (Rt. 13)	Encanto/ National City
51st Street	Market Street & Roswell Street	2-Ln	2-Ln Collector	38' / 60'	25	Parallel (Both)	Yes	None	No	Encanto
San Jacinto Drive	Imperial Avenue & Olvera Avenue	2-Ln	2-Ln Collector	40' / 80'	25	Parallel (Both)	Yes	None	No	Encanto
Bayview Heights Way	SR-94 WB Ramps & SR-94 EB Ramps	2-Ln	2-Ln Collector	26' / 35'	30	None	No Sidewalk – section of east side	None	No	Encanto
Kelton Road	SR-94 EB Ramps & Alvin Street	2-Ln	2-Ln Collector	30'-38' / 55'	30	Parallel (Both)	No Sidewalk – section of east side	None	No	Encanto
Alvin Street	Kelton Road & Pitta Street	2-Ln	2-Ln Collector	32' / 65'	30	Parallel (Both)	Yes	None	No	Encanto
Pitta Street	Alvin Street & Market Street	2-Ln	2-Ln Collector	26' / 40'	25	Parallel (East Side)	No Sidewalk – section of east side	None	No	Encanto

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
Merlin Drive	Broadway & Imperial Avenue	2-Ln	2-Ln Collector	23'-30' / 44'	25	Parallel (Both)	No Sidewalk – section of east and west side	None	No	Encanto
Valencia Parkway	Imperial Avenue & Skyline Drive	4-Ln w/RM	4-Ln Major Arterial	64' / 88'-118'	40	Parallel (Both)	Yes	Class II & Class III	No	Encanto
Valencia Parkway	Skyline Drive & Cervantes Avenue	4-Ln	4-Ln Major Arterial	66' / 82'	35	Parallel (Both)	Yes	None	No	Encanto
Valencia Parkway	Cervantes Avenue & Wesmead Street	3-Ln	4-Ln Major Arterial	62' / 95'	30	Parallel (Both)	Yes	None	No	Encanto
Valencia Parkway	Wesmead Street & Division Street	2-Ln	4-Ln Major Arterial	32'-62' / 75'	25	Parallel (Both)	No Sidewalk – section of east side	None	No	Encanto
60th Street	Federal Boulevard & Imperial Avenue	2-Ln	2-Ln Collector	32'-34' / 45'-50'	35	Parallel (Both)	No Sidewalk – section of east and west side	None	No	Encanto
61st Street	Imperial Avenue & Division Street	2-Ln	2-Ln Collector	36' / 60'-68'	30	Parallel (Both)	No Sidewalk – section of east side	None	No	Encanto
Winnett Street	Federal Boulevard & Radio Drive	2-Ln	2-Ln Collector	38' / 60'	25	Parallel (Both)	No Sidewalk – section of east and west side	None	No	Encanto

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
Paradise Street	Mallard Street & Radio Drive	2-Ln	2-Ln Collector	28' / 60'	25	Parallel (Both)	No Sidewalk – section of east and west side	None	No	Encanto
Madera Street	Massachusetts Avenue & 69th Street	2-Ln	2-Ln Collector	62' / 90'	25	Parallel (Both)	No Sidewalk – section of west side	None	Yes (Rt. 916, 917)	Lemon Grove
Madera Street/66th Street	69th Street & Akins Avenue	2-Ln	2-Ln Collector	40' / 60'-75'	25	Parallel (Both)	No Sidewalk – section of east side	None	Yes (Rt. 916, 917)	Encanto
Woodman Street	Imperial Avenue & Skyline Drive	2-Ln	4-Ln Major Arterial	38' / 60'-70'	35	Parallel (Both)	No Sidewalk – section of west side	None	No	Encanto
Woodman Street	Skyline Drive & Plaza Boulevard	4-Ln w/RM	4-Ln Major Arterial	78' / 100'	40	Parallel (Both)	Yes	Class II	No	Encanto
Woodman Street	Plaza Boulevard & Paradise Valley Road	4-Ln w/RM	4-Ln Major Arterial	78' / 100'	40	Parallel (Both)	Yes	None	No	Encanto (Skyline/ Paradise Hills)
69th Street	San Miguel Avenue & Mallard Street	2-Ln	2-Ln Collector	22' / 50'-94'	25	Parallel (Both)	No	None	No	Lemon Grove
69th Street	Mallard Street & Imperial Avenue	2-Ln	2-Ln Collector	28' / 40'-104'	25	Parallel (Both)	No	None	No	Encanto

TABLE 3.1
EXISTING ROADWAY CHARACTERISTICS

Roadway	Segment	Cross-Section	Adopted Ultimate Classification	Pavement / ROW Width (ft)	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Services	Community / Jurisdiction
69th Street	Imperial Avenue & Skyline Drive	2-Ln	2-Ln Collector	34' / 60'-65'	25	Parallel (Both)	Yes	None	No	Encanto (Skyline/ Paradise Hills)

Source: Chen Ryan Associates; February 2015

Notes:
RM = Raised Median
SM = Striped Median
CLTL = Center Left-Turn Lane

3.2.1 Pedestrian Facilities

Pedestrian facilities include sidewalks, curb ramps, and other amenities such as street trees for shading. The City of San Diego's 1997 ADA Transition Plan seeks to help create better accessibility and connectivity throughout San Diego by making all sidewalks and pedestrian ramps ADA compliant.

Figure 3-1 illustrates study roadway segments with missing sidewalks, missing pedestrian ramps and non-ADA compliant pedestrian ramps within the community. Current inventories indicate that there are approximately 478 missing curb ramps in Encanto, 492 non-ADA compliant curb ramps, and an estimated 376,719 lineal feet of missing sidewalk, reflecting an inventory of both sides of the roadway right-of-way.

Two freeways, I-805 and SR-94, form barriers to pedestrian travel between Encanto and the surrounding communities of City Heights and Southeastern San Diego.

3.2.2 Pedestrian Activity Levels

This section presents several sources of pedestrian activity data, including from the City's pedestrian priority model, the Census Bureau, and current peak period pedestrian counts.

Figure 3-2 displays the summation of pedestrian attractors and generators per the City's pedestrian priority model as updated during Phases 2 & 3 of the City's Pedestrian Master Plan effort. The model inputs and interpretation of outputs is well documented in the City's *2006 Pedestrian Master Plan City-wide Implementation Framework Report*. In general, higher levels of pedestrian attractors and generators signify high levels of existing and/or latent demand for walking.

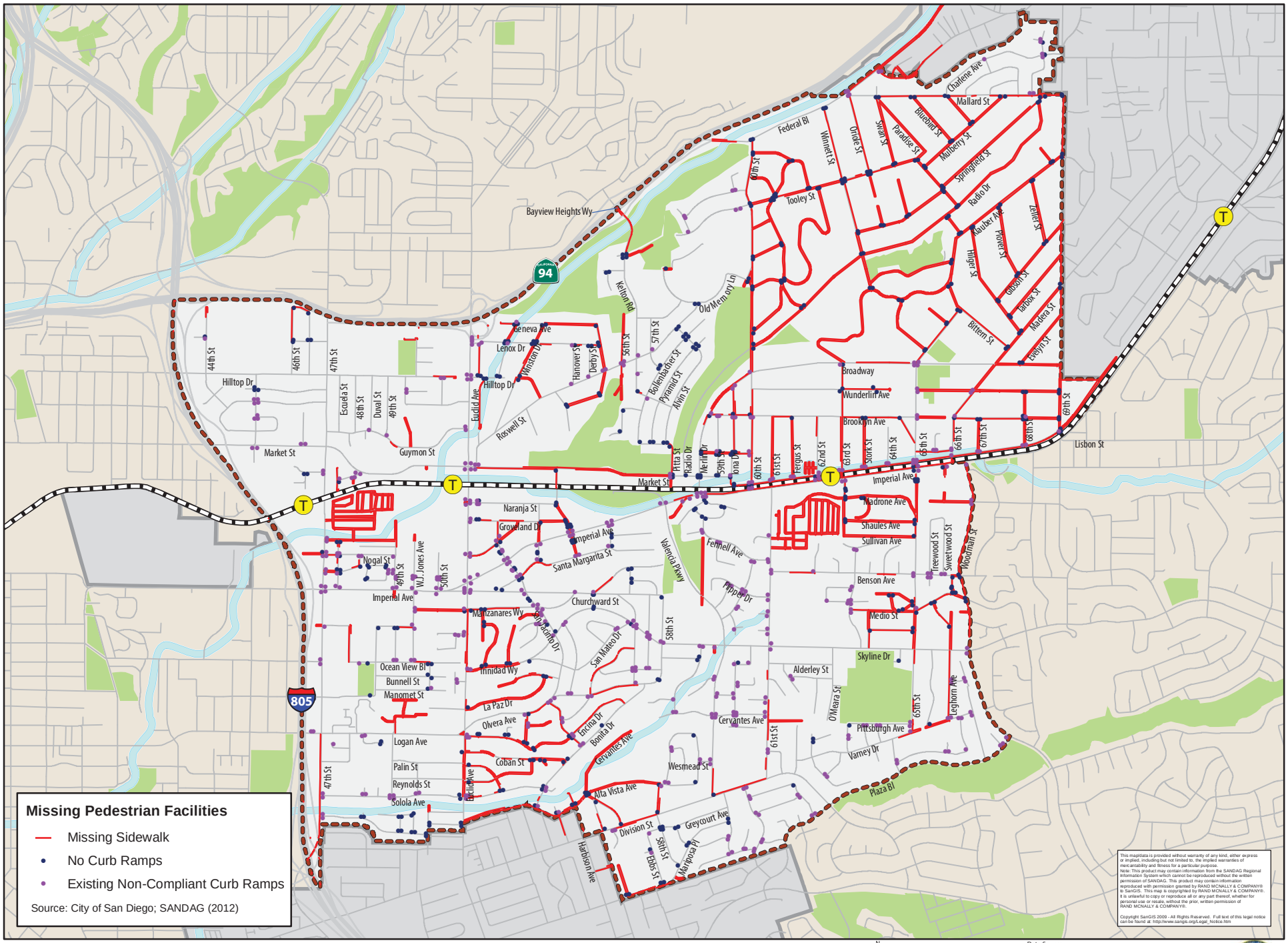


Figure 3-1: Missing Pedestrian Facilities

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

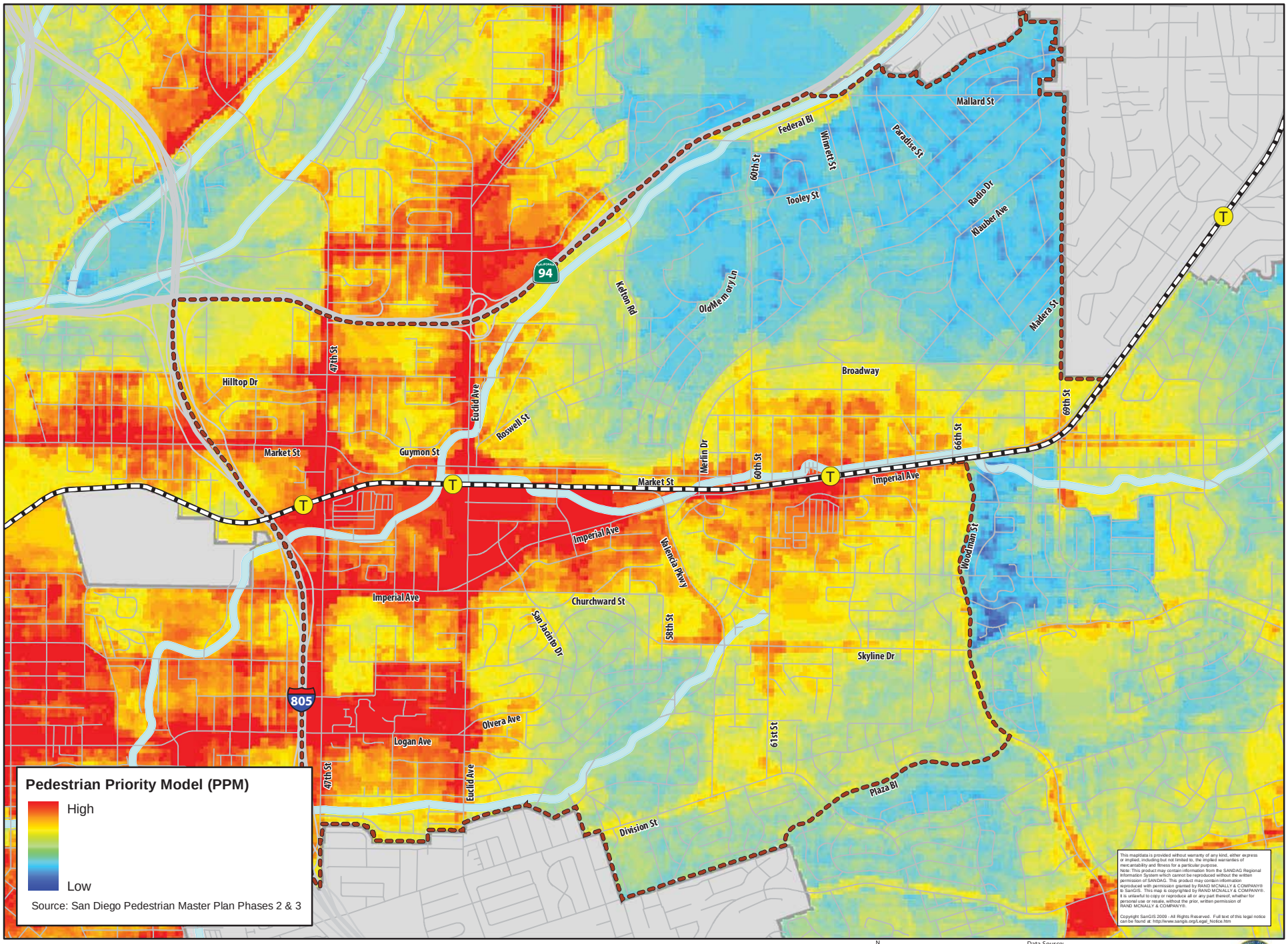


Figure 3-2: Pedestrian Priority Model (PPM)

As shown in Figure 3-2, the entire portion of Encanto, west of Euclid Avenue, falls within high pedestrian demand locations, relative to the City of San Diego as a whole. In addition, the Imperial Avenue corridor also falls within a high pedestrian demand area. The northeastern and southeastern portions of Encanto generally fall within medium to low pedestrian demand zones. These areas generally have lower population densities and transit service which are significant drivers of pedestrian demand.

Several sources of actual walking rates and pedestrian counts are publically available or were collected as part of this planning effort. **Table 3.2** displays January 2007 - December 2011 estimated walk to work rates, as reported by the American Community Survey (ACS), for Encanto and the City of San Diego as a whole.

TABLE 3.2
PERCENT OF WALKING COMMUTERS IN ENCANTO

	Encanto	City of San Diego	County of San Diego
Number of Workers Walking to Work	83	19,030	39,860
Percent of Total Workers	0.5%	3.0%	2.8%

Source: US Census, American Community Survey, 2011 Estimates; Chen Ryan Associates; February 2015

As shown, approximately 83 residents are currently walking to work, which is about 0.5% percent of all workers in Encanto. Across the City as a whole, about 3.0 percent of all workers are walking to work. The rate of walking to work in Encanto is lower than for the City as a whole, as well as for the County as a whole (2.8%). A possible explanation for this finding is that land use patterns within Encanto are relatively low density and homogenous. In addition, Encanto is characterized by relatively rolling topography, which can discourage non-motorized travel. Missing sidewalks could be another contributor to the lower pedestrian activity levels.

Figure 3-3 displays walking rates for the journey to work by census tract for Encanto. The highest commute walking rate occurs in the census tract just east of Euclid Avenue and south of Churchward Street (1.5%).

Figure 3-4 displays the existing AM and PM peak hour pedestrian volumes at all key study area intersections. Pedestrian counts were conducted on October 9th or 10th (2012), with the exception of eight (8) counts conducted on May 24, 2011 and obtained from the *Euclid + Market Land Use and Mobility Plan*.

The highest AM and PM peak hour pedestrian count occurs at the 47th / Logan Avenue intersection (142 and 138, respectively), which is near schools and parks, and is served by three different bus routes.

Appendix A displays the AM and PM peak hour pedestrian counts for Encanto study intersections.

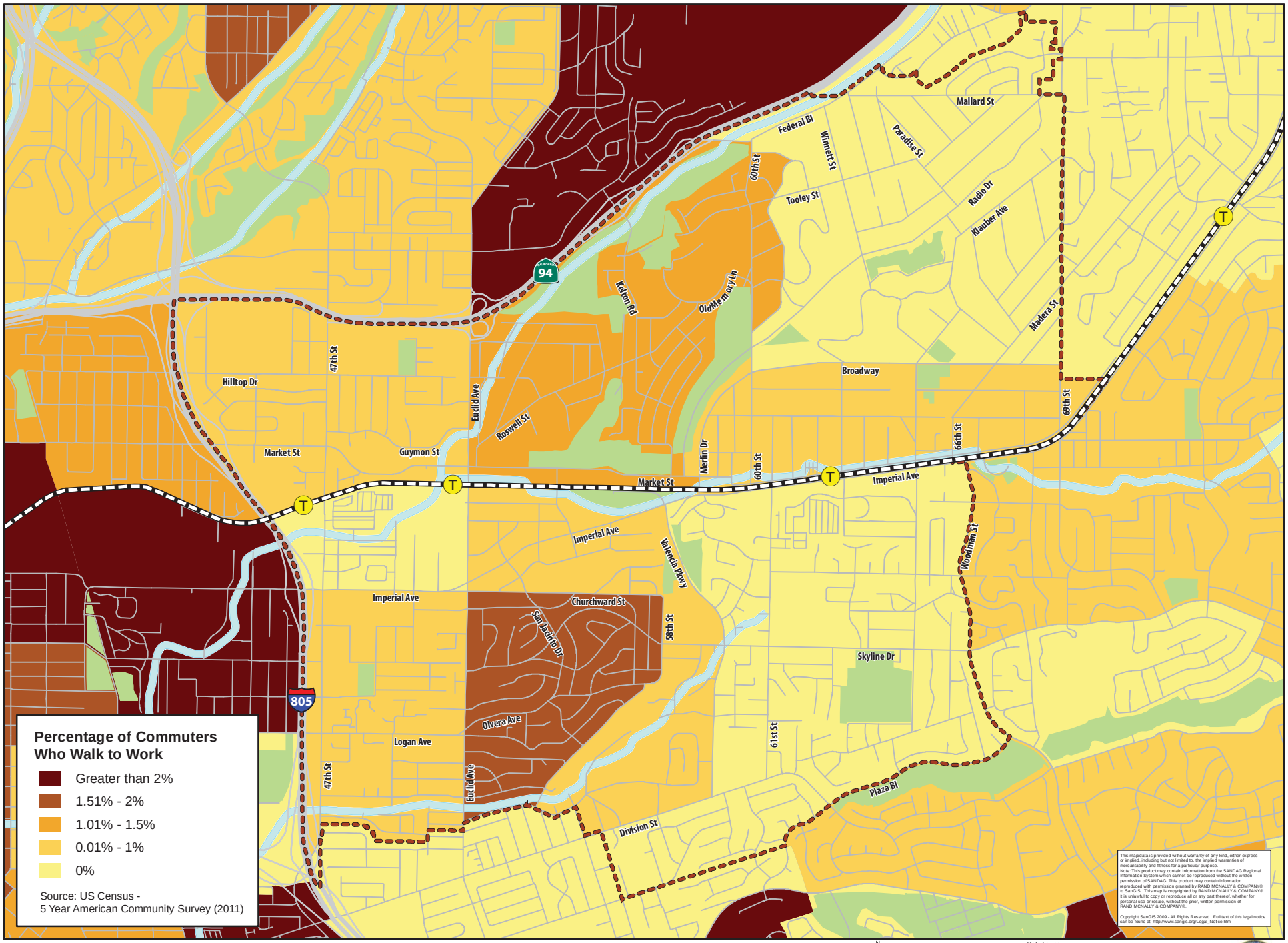


Figure 3-3: Percent of Walking Commuters by Census Tract

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

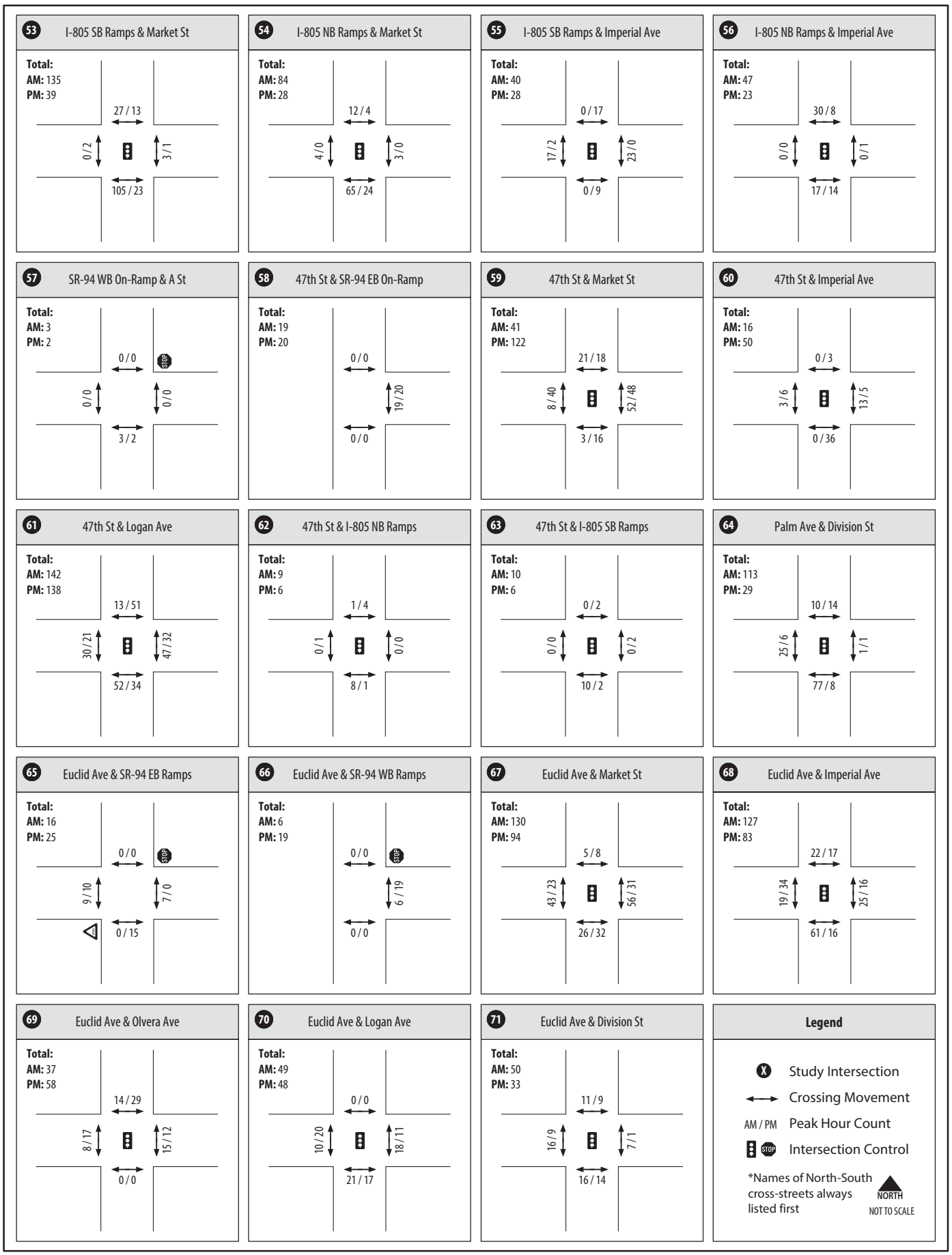


Figure 3-4: Existing AM / PM Peak Hour Pedestrian Counts

Intersections 53-71 (Page 1 of 2)

CHEN RYAN

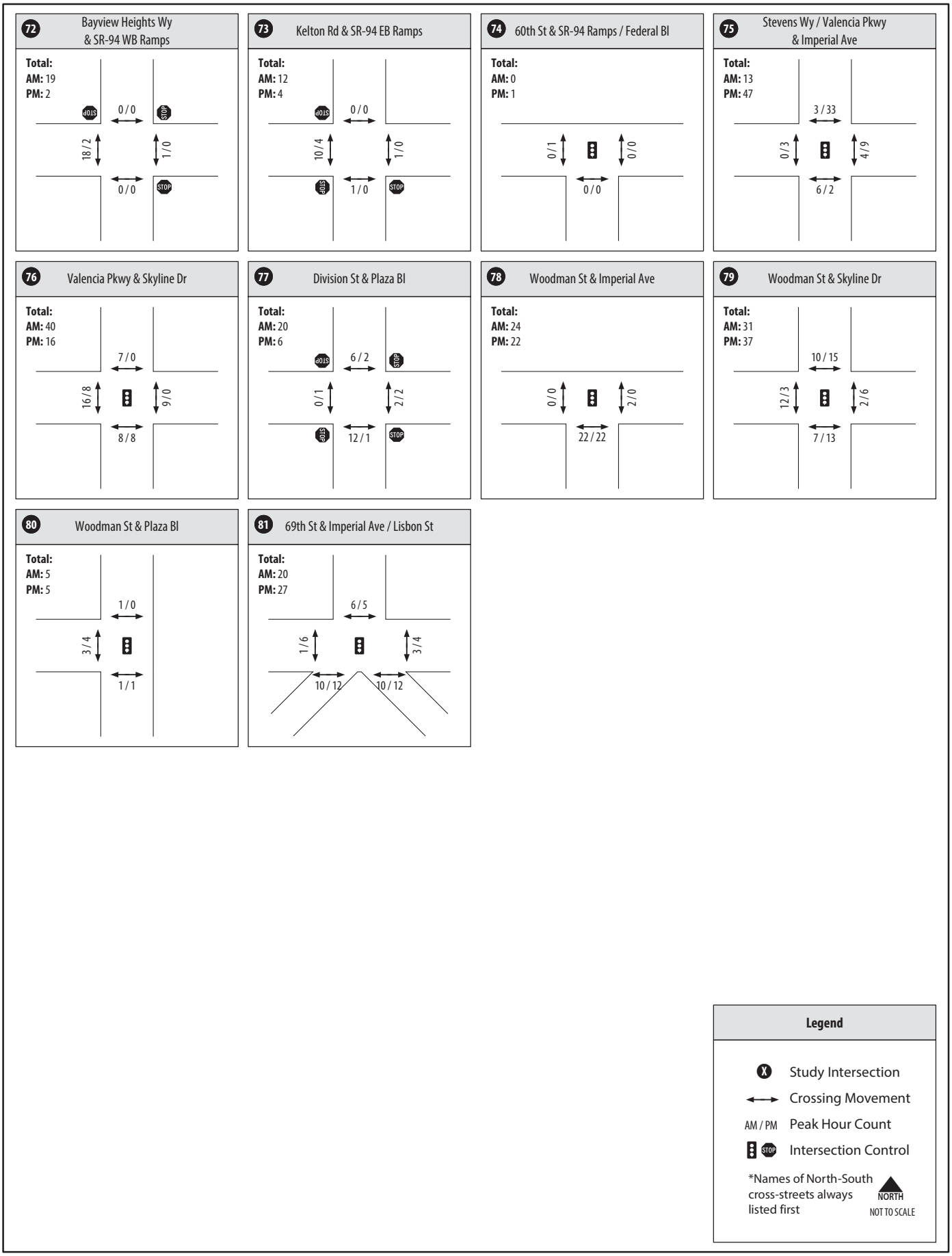


Figure 3-4: Existing AM / PM Peak Hour Pedestrian Counts
Intersections 72-81 (Page 2 of 2)

CHEN RYAN

Figures 3.5a and **3.5b** display the distribution of peak hour pedestrian volumes for the AM and PM peak hour, respectively, across the community of Encanto. As shown in the figures, high pedestrian count locations are currently found at the 47th Street / Logan Avenue intersection, as well as along Market Street, Imperial Avenue and Euclid Avenue.

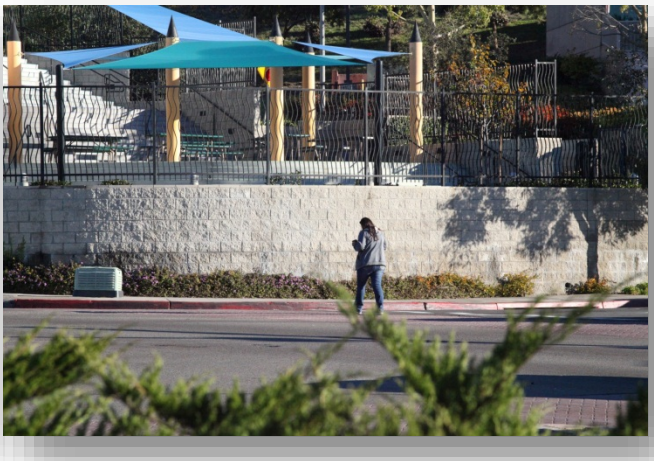
3.2.3 Pedestrian Level of Service Analysis and Results

Pedestrian level of service was evaluated along the Urban Streets using the multi-modal level of service methodology, as described in Chapter 2.

Tables 3.3A and **3.3B** display existing pedestrian level of service along study roadways during the AM and PM peak hours, respectively. Peak hour pedestrian CSLOS analysis output is provided in **Appendix B**.

As shown in Tables 3.3A and 3.3B, pedestrian level of service along the Urban Streets within Encanto, is at LOS C or better during both the AM and PM peak hours, with the exception of Market Street between Euclid Avenue which is operating at LOS D both eastbound and westbound during the PM Peak Hour. The LOS reported here is an indication of the pedestrian's experience while traveling along these study corridors. Major variables affecting the walking environment include sidewalk width, lateral separation from traffic, speed and makeup of the vehicular traffic, intersection crossing distance, and the delay waiting to cross at signals.

Figures 3-6a and **3-6b** show pedestrian levels of service for the AM and PM peak hours, respectively.



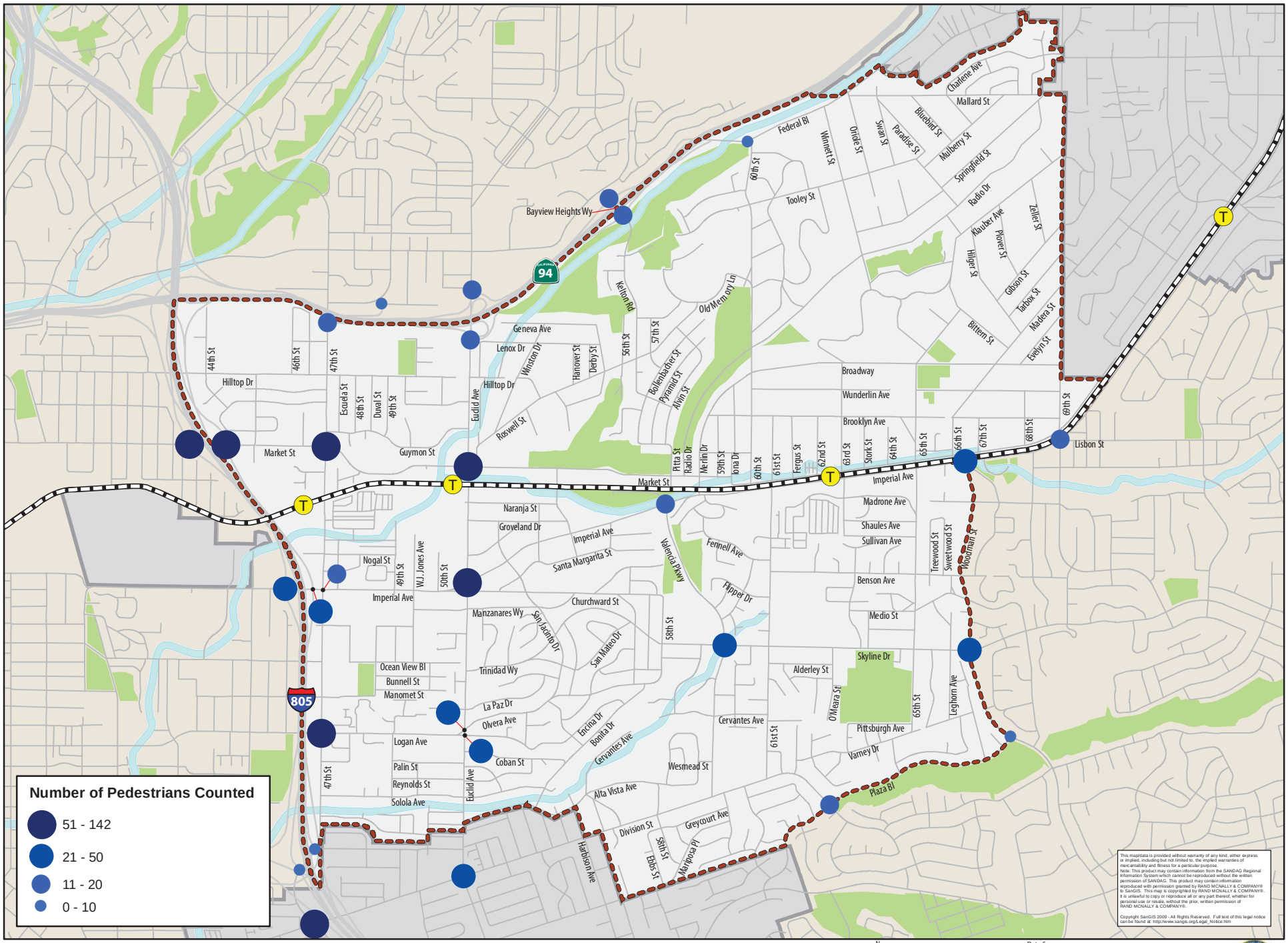


Figure 3-5a: Pedestrians Crossing at Study Intersections (AM Peak Hour)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

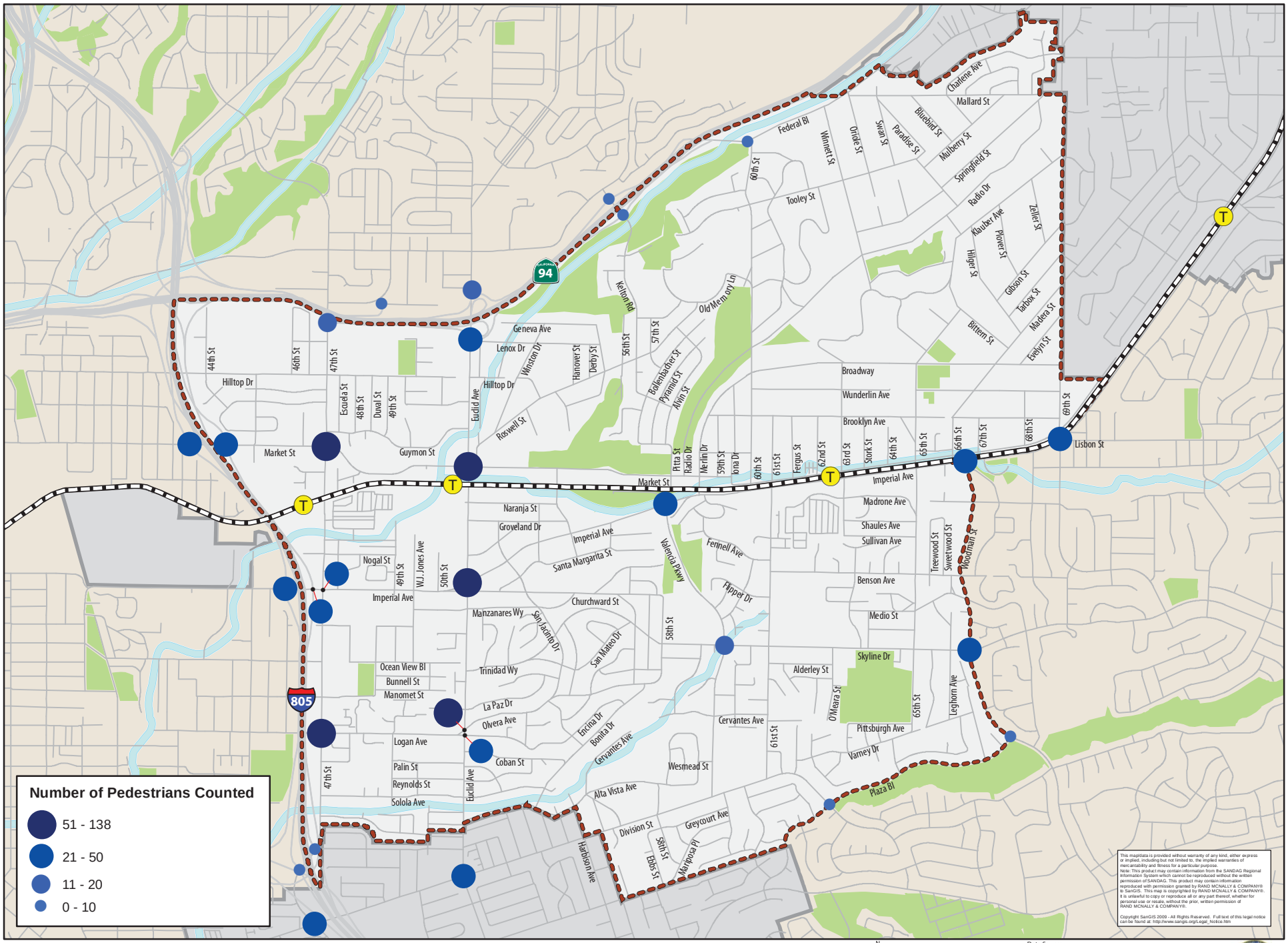


Figure 3-5b: Pedestrians Crossing at Study Intersections (PM Peak Hour)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

TABLE 3.3A
EXISTING MULTI-MODAL ANALYSIS – PEDESTRIAN LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.89	C	3.21	C
	I-805 NB Ramps & 47th Street		3.06	C		
	47th Street & Euclid Avenue		2.90	C		
	Euclid Avenue & 60th Street		3.46	C		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.75	B	3.15	C
	I-805 NB Ramps & 47th Street		2.84	C		
	47th Street & Euclid Avenue		2.84	C		
	Euclid Avenue & 60th Street		3.47	C		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.80	C	3.13	C
	I-805 NB Ramps & 47th Street		3.22	C		
	47th Street & Euclid Avenue		3.22	C		
	Euclid Avenue & Valencia Parkway		3.49	C		
	Valencia Parkway & Woodman Street		2.92	C		
	Woodman Street & 69th Street		2.95	C		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.90	C	3.03	C
	I-805 NB Ramps & 47th Street		2.65	B		
	47th Street & Euclid Avenue		2.94	C		
	Euclid Avenue & Valencia Parkway		3.29	C		
	Valencia Parkway & Woodman Street		2.90	C		
	Woodman Street & 69th Street		3.10	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	2.78	C	2.78	C
	47th Street & Euclid Avenue	Westbound	2.87	C	2.87	C
47th Street	SR-94 & Market Street	Northbound	2.76	C	2.86	C
	Market Street & Imperial Avenue		2.99	C		
	Imperial Avenue & Logan Avenue		2.91	C		
	Logan Avenue & I-805 NB Ramps		2.83	C		
	I-805 NB Ramps & I-805 SB Ramps		2.76	C		
	I-805 SB Ramps & Division Street		2.80	C		
	SR-94 & Market Street	Southbound	2.99	C	3.02	C
	Market Street & Imperial Avenue		3.22	C		
	Imperial Avenue & Logan Avenue		2.90	C		

TABLE 3.3A
EXISTING MULTI-MODAL ANALYSIS – PEDESTRIAN LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	Logan Avenue & I-805 NB Ramps	Southbound	3.01	C	3.02	C
	I-805 NB Ramps & I-805 SB Ramps		2.85	C		
	I-805 SB Ramps & Division Street		3.05	C		
Euclid Avenue	SR-94 & Market Street	Northbound	2.98	C	2.98	C
	Market Street & Imperial Avenue		3.06	C		
	Imperial Avenue & Logan Avenue		3.06	C		
	Logan Avenue & Division Street		2.84	C		
	SR-94 & Market Street	Southbound	3.02	C	2.93	C
	Market Street & Imperial Avenue		3.00	C		
	Imperial Avenue & Logan Avenue		2.92	C		
	Logan Avenue & Division Street		2.80	C		

Source: Chen Ryan Associates; February 2015

Notes:
The pedestrian LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

TABLE 3.3B
EXISTING MULTI-MODAL ANALYSIS – PEDESTRIAN LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.82	C	3.23	C
	I-805 NB Ramps & 47th Street		2.99	C		
	47th Street & Euclid Avenue		2.94	C		
	Euclid Avenue & 60th Street		3.51	D		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.79	C	3.18	C
	I-805 NB Ramps & 47th Street		2.82	C		
	47th Street & Euclid Avenue		2.83	C		
	Euclid Avenue & 60th Street		3.54	D		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.31	C	3.16	C
	I-805 NB Ramps & 47th Street		3.17	C		
	47th Street & Euclid Avenue		3.20	C		
	Euclid Avenue & Valencia Parkway		3.44	C		
	Valencia Parkway & Woodman Street		2.96	C		
	Woodman Street & 69th Street		3.06	C		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.49	C	3.08	C
	I-805 NB Ramps & 47th Street		2.97	C		
	47th Street & Euclid Avenue		2.99	C		
	Euclid Avenue & Valencia Parkway		3.32	C		
	Valencia Parkway & Woodman Street		2.91	C		
	Woodman Street & 69th Street		3.10	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	2.81	C	2.81	C
	47th Street & Euclid Avenue	Westbound	2.91	C	2.91	C
47th Street	SR-94 & Market Street	Northbound	2.75	B	2.88	C
	Market Street & Imperial Avenue		3.02	C		
	Imperial Avenue & Logan Avenue		2.92	C		
	Logan Avenue & I-805 NB Ramps		2.86	C		
	I-805 NB Ramps & I-805 SB Ramps		2.80	C		
	I-805 SB Ramps & Division Street		2.84	C		
	SR-94 & Market Street	Southbound	2.95	C	3.06	C
	Market Street & Imperial Avenue		3.24	C		
	Imperial Avenue & Logan Avenue		2.96	C		

TABLE 3.3B
EXISTING MULTI-MODAL ANALYSIS – PEDESTRIAN LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	Logan Avenue & I-805 NB Ramps	Southbound	3.10	C	3.06	C
	I-805 NB Ramps & I-805 SB Ramps		3.09	C		
	I-805 SB Ramps & Division Street		2.98	C		
Euclid Avenue	SR-94 & Market Street	Northbound	3.04	C	3.01	C
	Market Street & Imperial Avenue		3.12	C		
	Imperial Avenue & Logan Avenue		3.05	C		
	Logan Avenue & Division Street		2.86	C		
	SR-94 & Market Street	Southbound	3.07	C	2.95	C
	Market Street & Imperial Avenue		3.05	C		
	Imperial Avenue & Logan Avenue		2.92	C		
	Logan Avenue & Division Street		2.79	C		

Source: Chen Ryan Associates; February 2015

Notes:
The pedestrian LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

ENCANTO COMMUNITY PLAN UPDATE

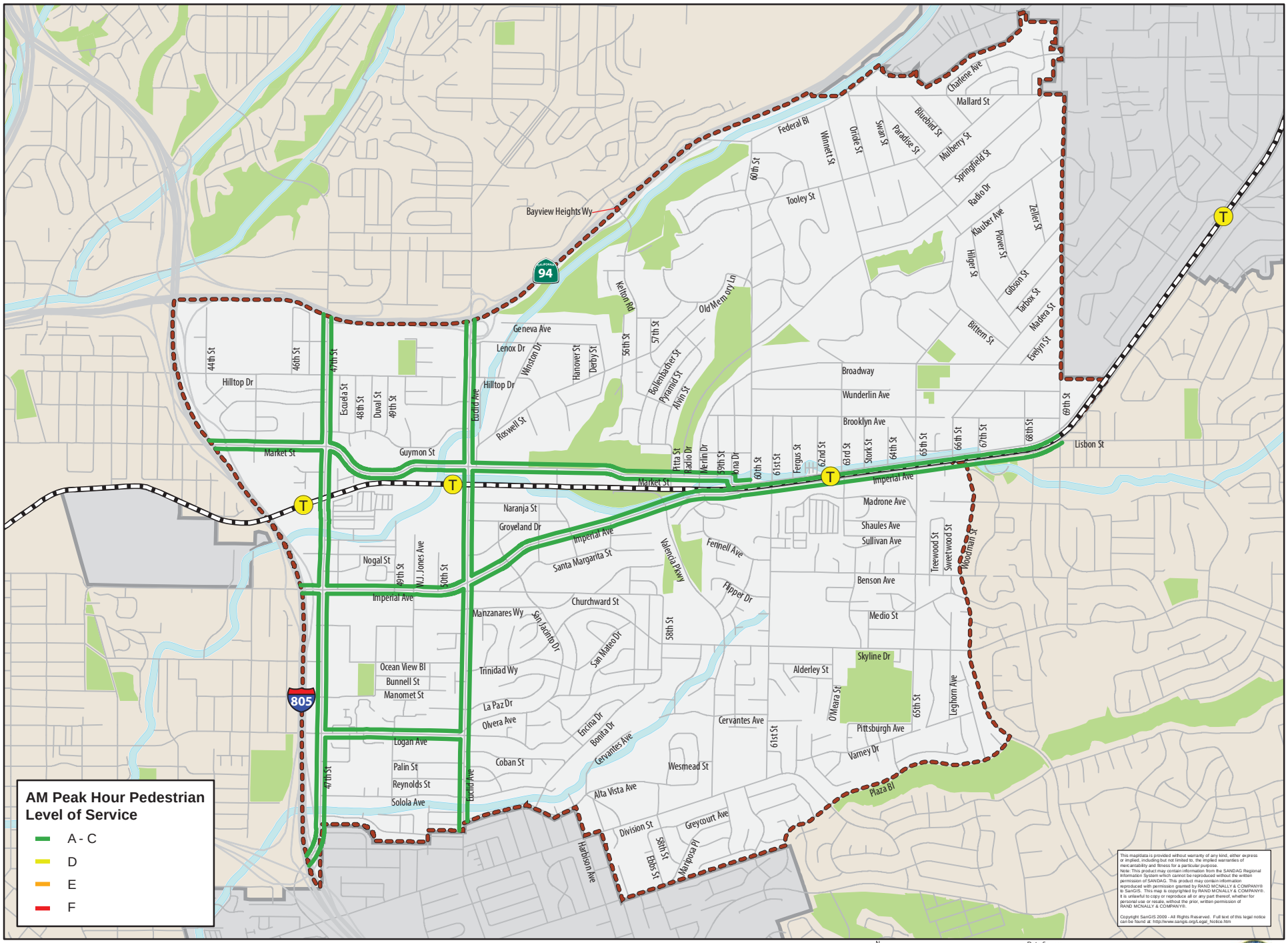


Figure 3-6a: Existing AM Peak Hour Pedestrian Level of Service

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

ENCANTO COMMUNITY PLAN UPDATE

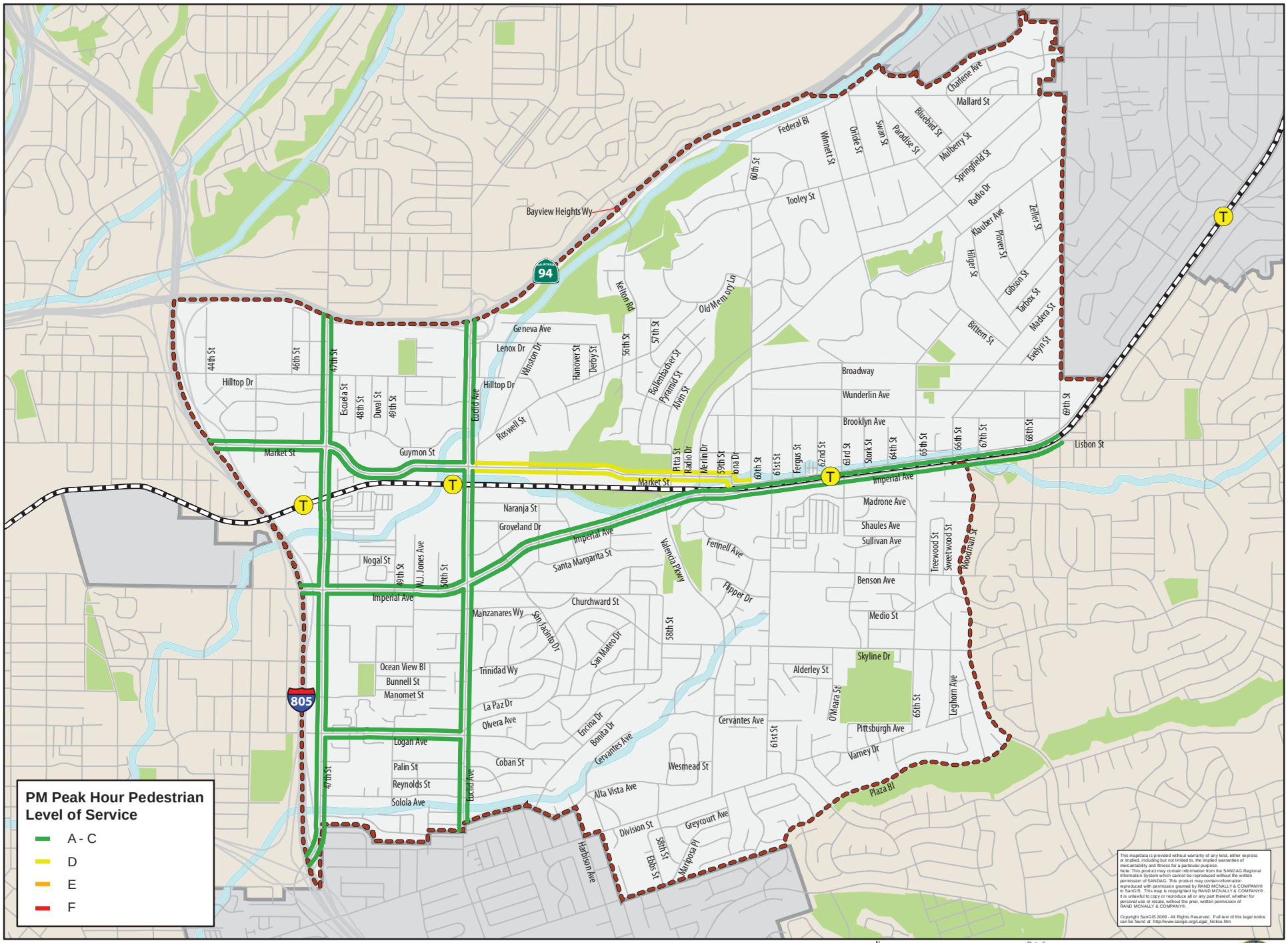


Figure 3-6b: Existing PM Peak Hour Pedestrian Level of Service

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

3.2.4 Pedestrian Collisions

Pedestrian collision data was obtained from the City of San Diego for the period from 2007 to 2012. During this period there were a reported 110 pedestrian-involved collisions in the community of Encanto.

Table 3.4 summarizes the reported pedestrian-involved collisions by location, while **Figure 3-7** displays the distribution of the 110 collisions across the community of Encanto.

As shown in Table 3.4, 74 of 110 (or just about 67%) community-wide pedestrian-involved collisions occur along the Urban Streets. About 41% of the pedestrian-involved collisions are a result of pedestrian inattention, while the remainder is a result of unsafe movements by drivers. There have been four (4) pedestrian fatalities in Encanto over the past 5 years, averaging less than one fatality per year.

3.3 Transit First

Transit opportunities in Encanto are provided by the Metropolitan Transit System (MTS) with both bus and Light Rail Trolley services. The currently adopted citywide General Plan Mobility Element identifies the following goals for transit service and travel:

- *An attractive and convenient transit system that is the first choice of travel for many of the trips made in the City.*
- *Increased transit ridership.*

The following sections describe the various transit facilities, modes, and services within Encanto.

TABLE 3.4
PEDESTRIAN COLLISION SUMMARY

Multi-Modal Corridor	Total	Location Type		Lighting		Severity			Primary Cause						
		Midblock	Intersection	Daylight	Dark/Dusk/Dawn	Fatality	Injured	None	Pedestrian at Fault	Ran Red Light or Stop Sign	Speeding	Unsafe Movement	Left Turn Failed to Yield	Violated Pedestrian R/W	Visibility
Market Street, between I-805 and 60th Street	11	2	9	7	4	1	9	1	5	2	0	3	0	1	0
Imperial Avenue, between I-805 and 69th Street	23	6	17	12	11	0	28	0	8	3	1	6	3	2	0
Logan Avenue, between I-805 and Euclid Avenue	8	4	4	2	6	1	8	0	3	0	1	4	0	0	0
47th Street, between SR-94 and I-805	14	5	9	9	5	1	13	0	6	0	0	3	3	2	0
Euclid Avenue, between SR-94 and southern CPA boundary	18	2	16	13	5	0	18	1	3	1	1	6	4	3	0
Multi-Modal Corridor Total	74	19	55	43	31	3	76	2	25	6	3	22	10	8	0
Community-wide Total	110	51	59	74	36	4	112	3	45	6	5	33	10	10	1

Source: City of San Diego, Chen Ryan Associates; February 2015

Notes:
The above information was provided by the City of San Diego for July 2007 through September 2012.
[1] "Unsafe Movement" includes improper lane changes/starts/passing/turns, failure to yield, unsafe backing, and other general unsafe maneuvers.

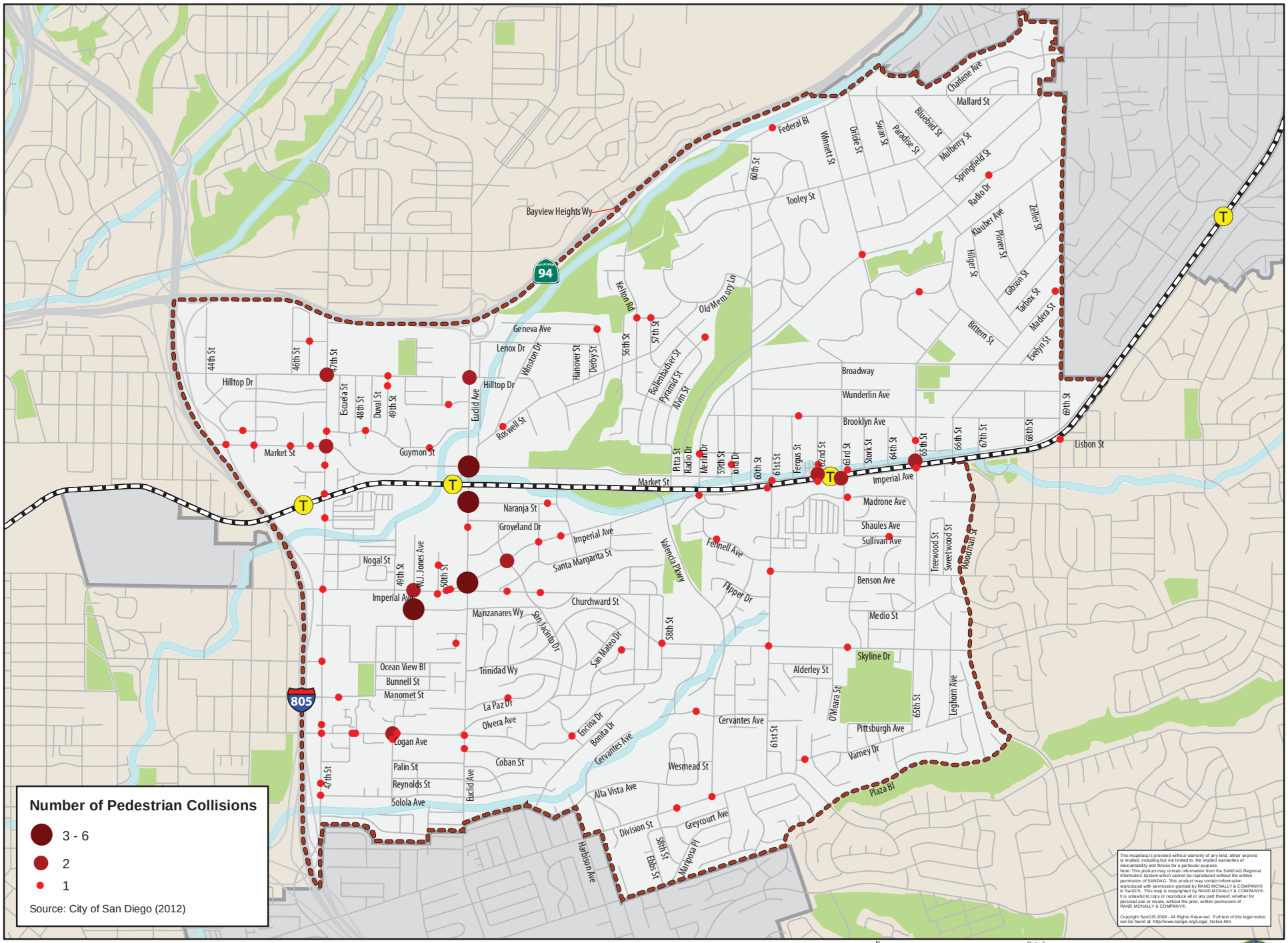


Figure 3-7: Pedestrian Collisions (2007 - 2012)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

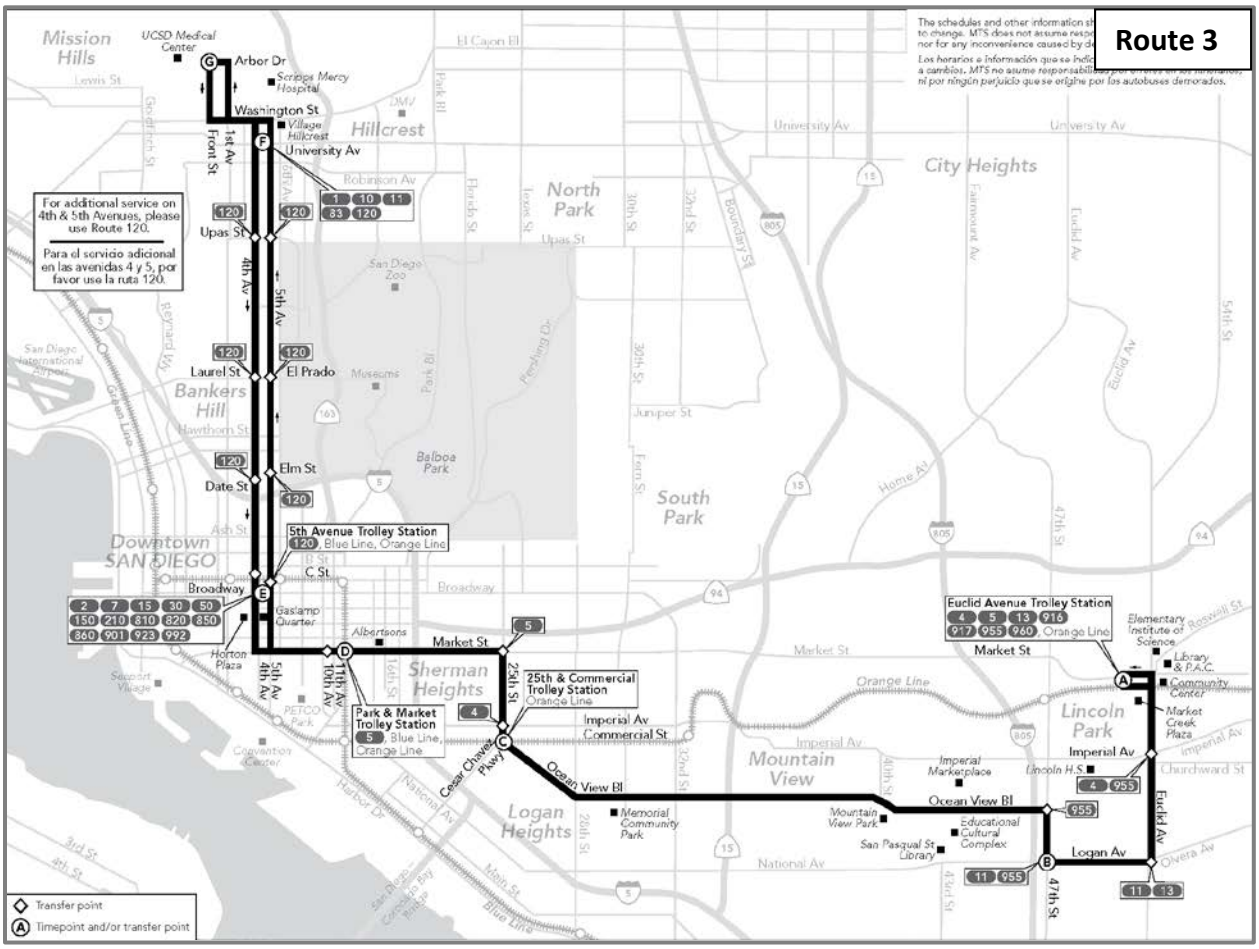
3.3.1 Existing Transit Service and Facilities

Figure 3-8 displays existing transit service and facilities within Encanto, including bus transit stops and routes, as well as the light rail trolley line and stations. Nearly all of Southeastern San Diego is within ¼ mile of a transit stop except for the single family residential areas in the northeast and southeast corners of the community, although more coverage may be available by transit stops that are just outside of the community planning area. Each of these is described as follows.

Bus Transit

There are currently 11 bus routes with a total of 158 bus transit stops serving the community of Encanto.

Route 3 – Runs from the UCSD Medical Center in Hillcrest, southerly to Downtown San Diego, then easterly Sherman Heights, Logan Heights, Mountain View, then terminates at the Euclid Avenue Trolley Station in the community of Encanto. Route 3 currently runs between 4:49 AM and 12:10 AM on weekdays; 5:26 AM and 12:10 AM on Saturdays; and 5:36 AM and 8:06 PM on Sundays. Route 3 runs at 15-minute headways during its peak period and 30-minute or 1 hour headways during off-peak periods, including all day on Sundays and holidays.



Source: MTS, February 2015

ENCANTO COMMUNITY PLAN UPDATE

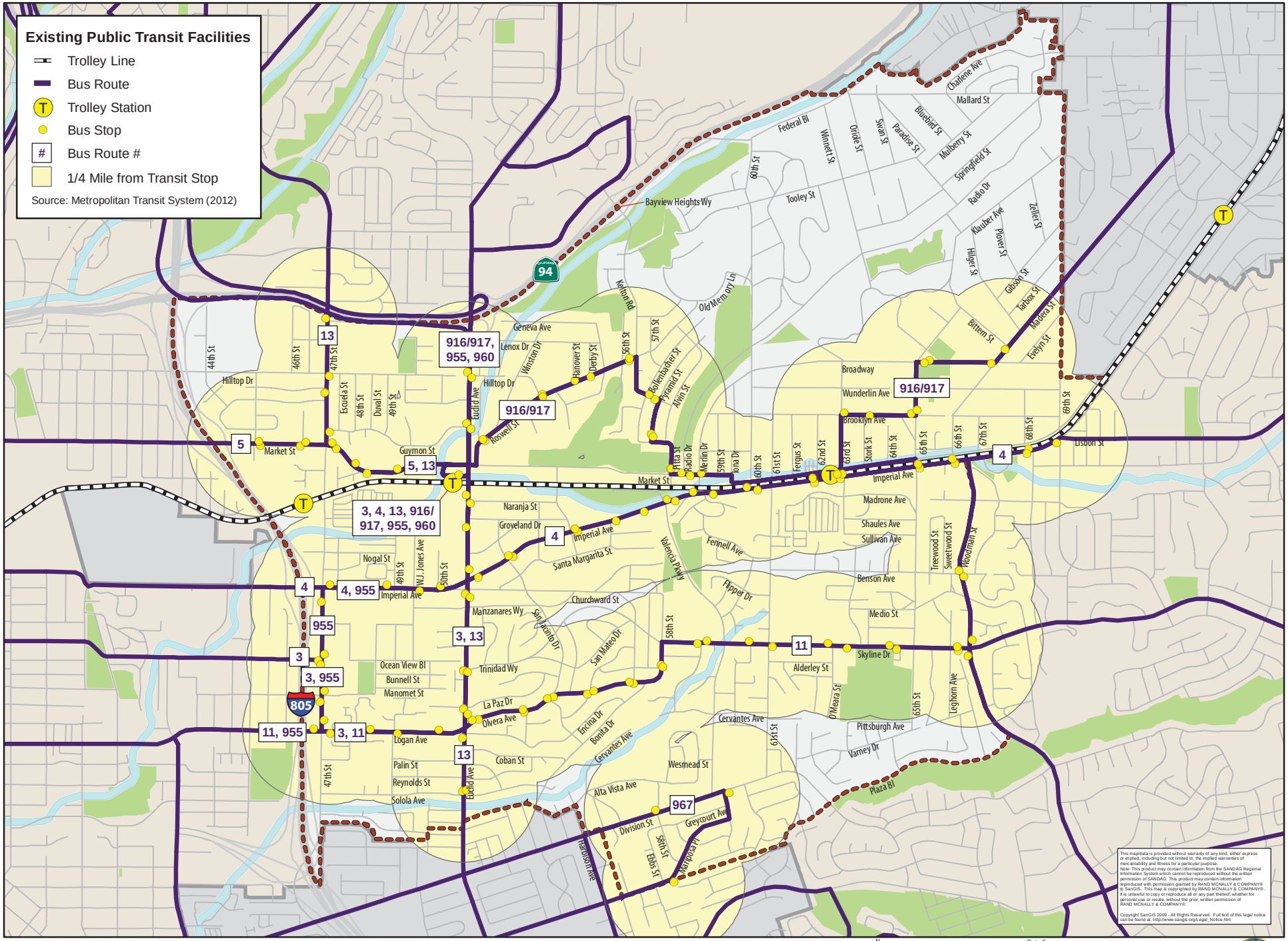


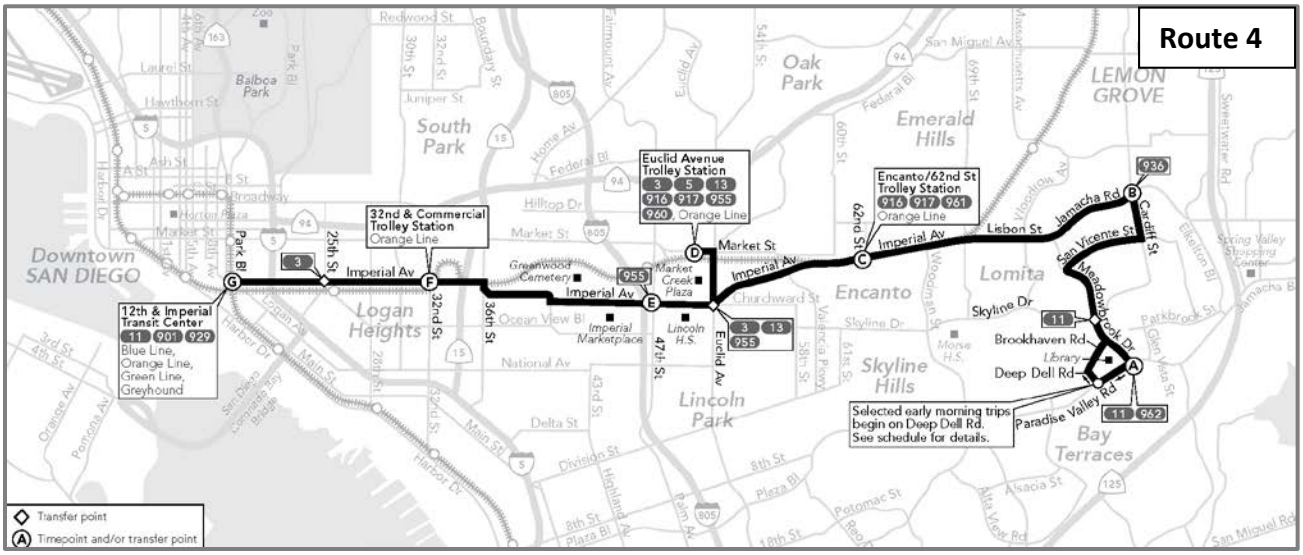
Figure 3-8: Existing Public Transit Facilities

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

Route 4 – Runs from the 12th and Imperial Transit Center in downtown San Diego to Paradise Valley Road in the community of Paradise Hills. This route runs along Imperial Avenue over the entire length of Southeastern San Diego and Encanto, serving the 32nd & Commercial Trolley Station, the Euclid Avenue Trolley Station and the Encanto/62nd Trolley Station. Route 4 currently runs between 4:46 AM and 11:47 PM on weekdays; 5:46 AM and 11:15 PM on Saturdays; and 5:46 AM and 8:50 PM on Sundays. Route 4 runs at 30-minute headways during the weekdays and on Saturdays, and at 30 minute to 1-hour headways on Sundays.

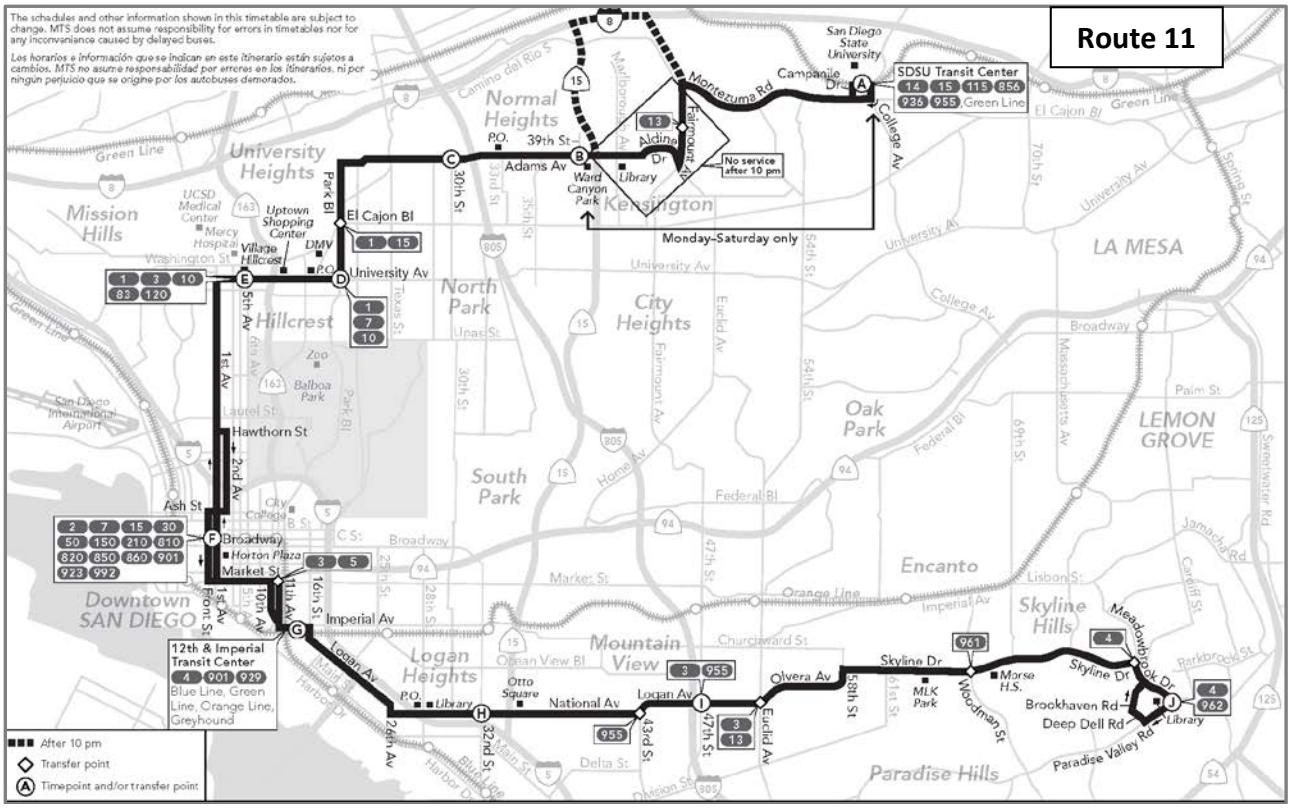


Source: MTS, February 2015

Route 5 – Runs from the 10th and Broadway in downtown San Diego to the Euclid Avenue Trolley Station in Encanto. The Route 5 runs along Market Street between downtown San Diego and Encanto through the Southeastern San Diego neighborhoods of Sherman Heights, Stockton, Mount Hope and Chollas View, and terminating at the Euclid Avenue Trolley Station in Encanto. Route 5 currently runs between 4:49 AM and 11:24 PM on weekdays; 5:20 AM and 9:39 PM on Saturdays; and 5:50 AM and 8:40 PM on Sundays. Route 5 runs at 15-minute headways during its weekday peak period, and 30-minute headways during the remaining hours of service.

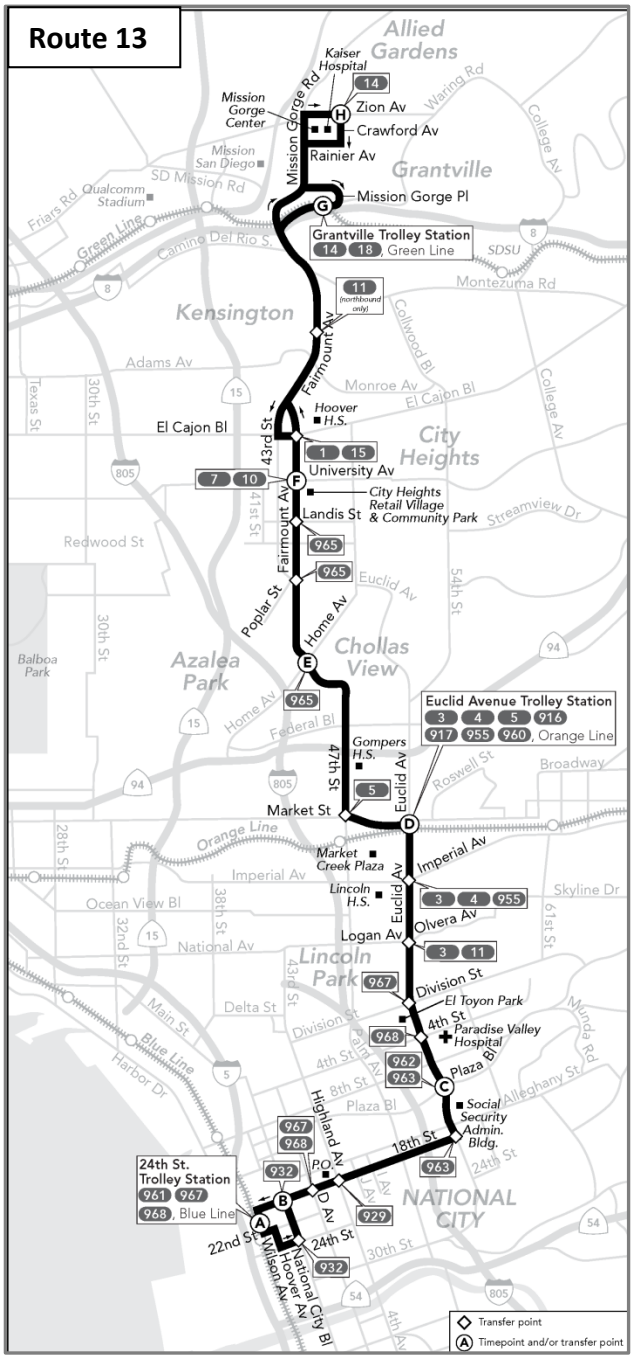
Source: MTS, February 2015

Route 11 – Runs from San Diego State University in the College Community to downtown San Diego, then to Paradise Valley Road in the community of Paradise Hills. Within the community of Encanto, Route 11 runs along Logan Avenue and Skyline Drive. Route 11 currently runs between 4:29 AM and 11:38 PM on weekdays; 4:40 AM and 11:38 PM on Saturdays; and 5:21 AM and 9:42 PM on Sundays. Route 11 runs at 15-minute headways during its weekday peak period, and 30-minute headways during the remaining hours of service.



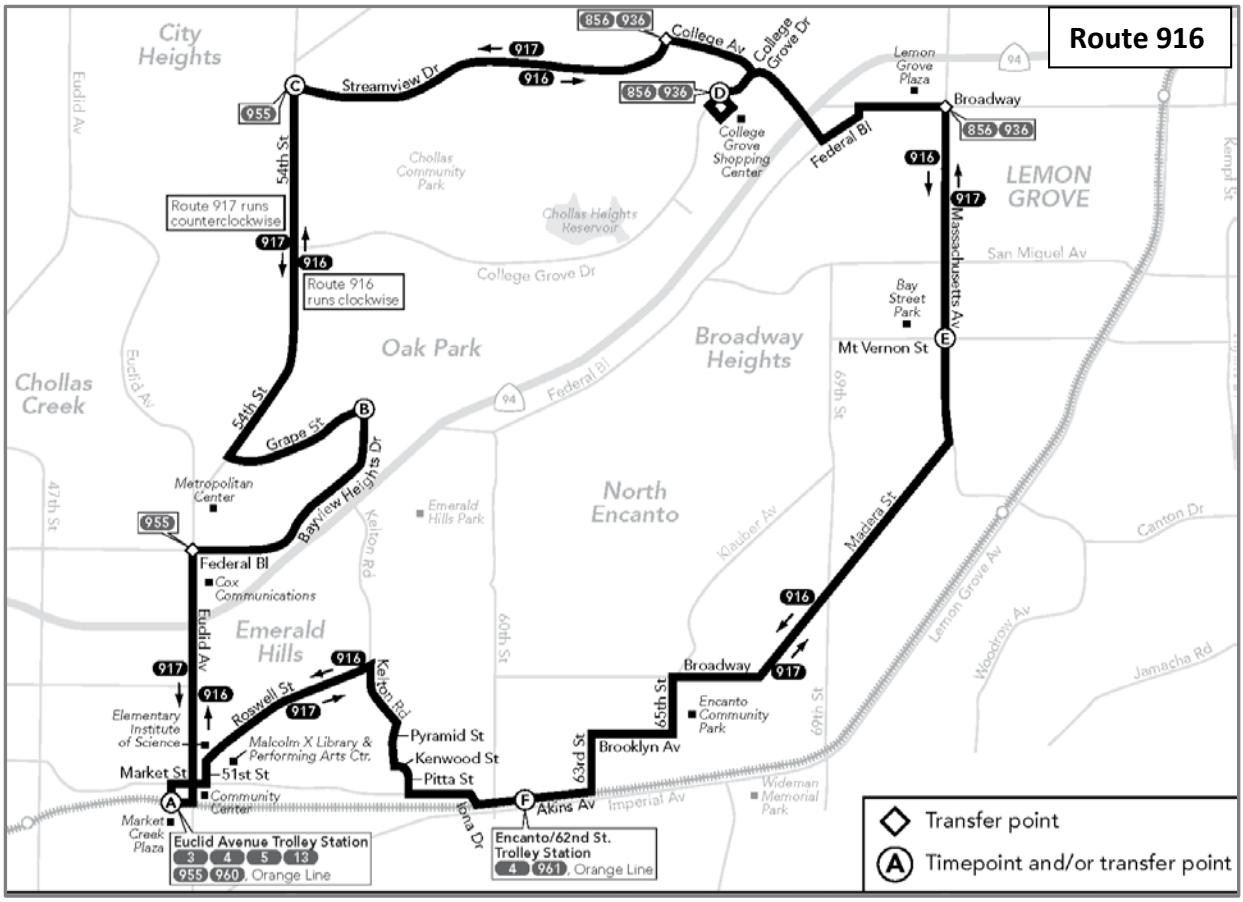
Source: MTS, February 2015

Route 13 – Runs from Kaiser Hospital in the community of Grantville, southerly to City Heights and the Euclid Avenue Trolley Station in Encanto, then terminates at the 24th Street Trolley Station in National City. Within the community of Encanto, Route 13 runs along 47th Street, Market Street, and Euclid Avenue through the neighborhoods of Chollas View and Lincoln Park. Route 13 currently runs between 4:46 AM and 12:07 AM on weekdays; 5:09 AM and 11:37 PM on Saturdays; and 5:49 AM and 9:11 PM on Sundays. Route 13 runs at 15-minute headways during its weekday peak period, and 30-minute headways during the remaining hours of service.



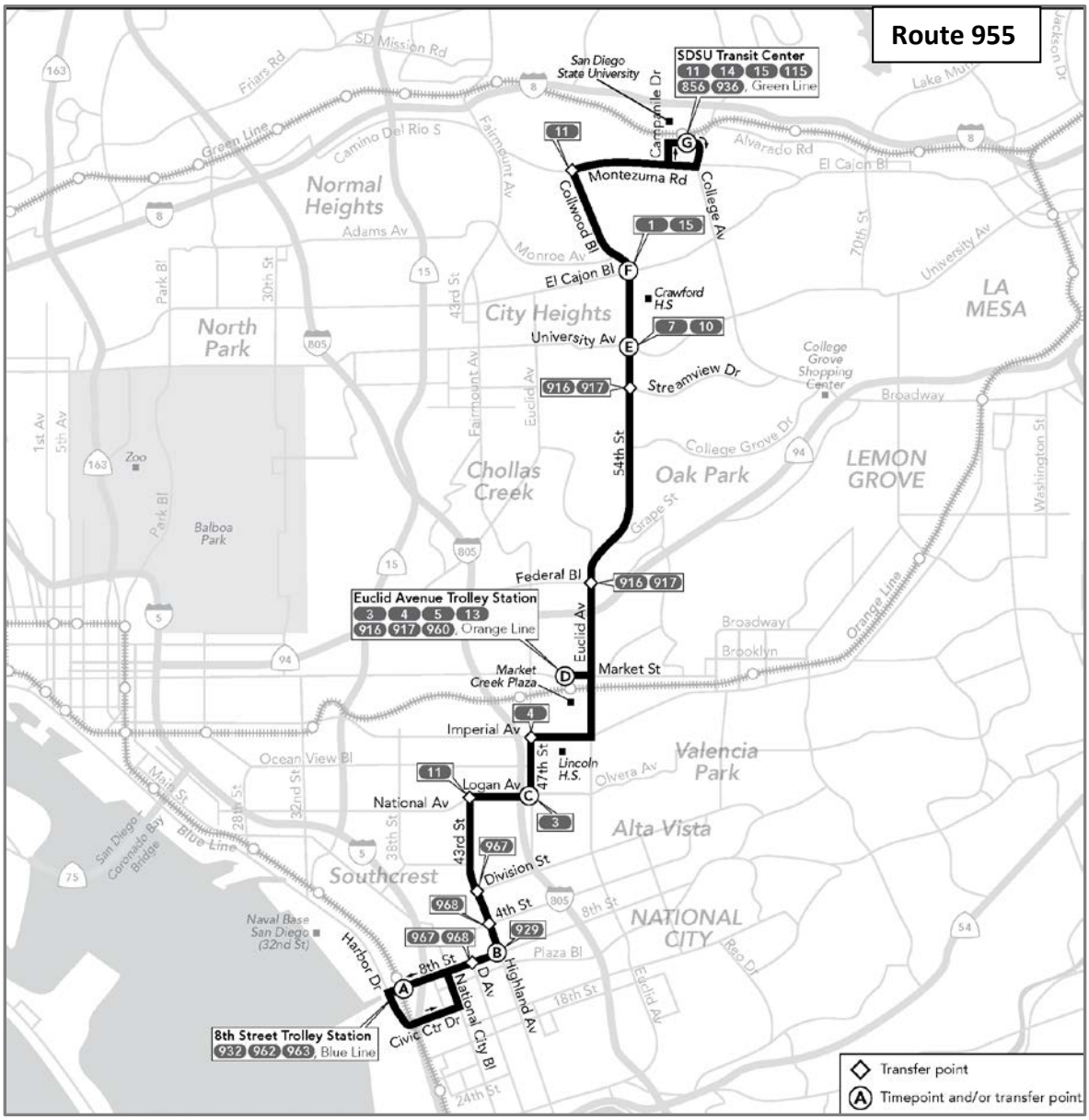
Source: MTS, February 2015

Route 916/917 – Runs in a two-way loop from the Euclid Avenue Trolley Station, to the College Grove Shopping Center, then Lemon Grove, along Massachusetts Avenue, back to the Euclid Avenue Trolley Station. The route serves the communities of Encanto, City Heights, Eastern, College and the City of Lemon Grove. Route 916/917 currently runs between 5:20 AM and 10:35 PM on weekdays; 6:20 AM and 9:35 PM on Saturdays; and does not operate on Sundays. Route 916/917 runs at 30-minute headways along the western half of the loop (Euclid Avenue Trolley Station via 54th Street to the College Grove Shopping Center) during its weekday morning and afternoon peak periods, and 1-hour headways during the remaining hours of service. Along the eastern half of the loop (Euclid Avenue Trolley Station via Massachusetts Avenue to the College Grove Shopping Center), Route 916/917 runs at 1-hour headways.



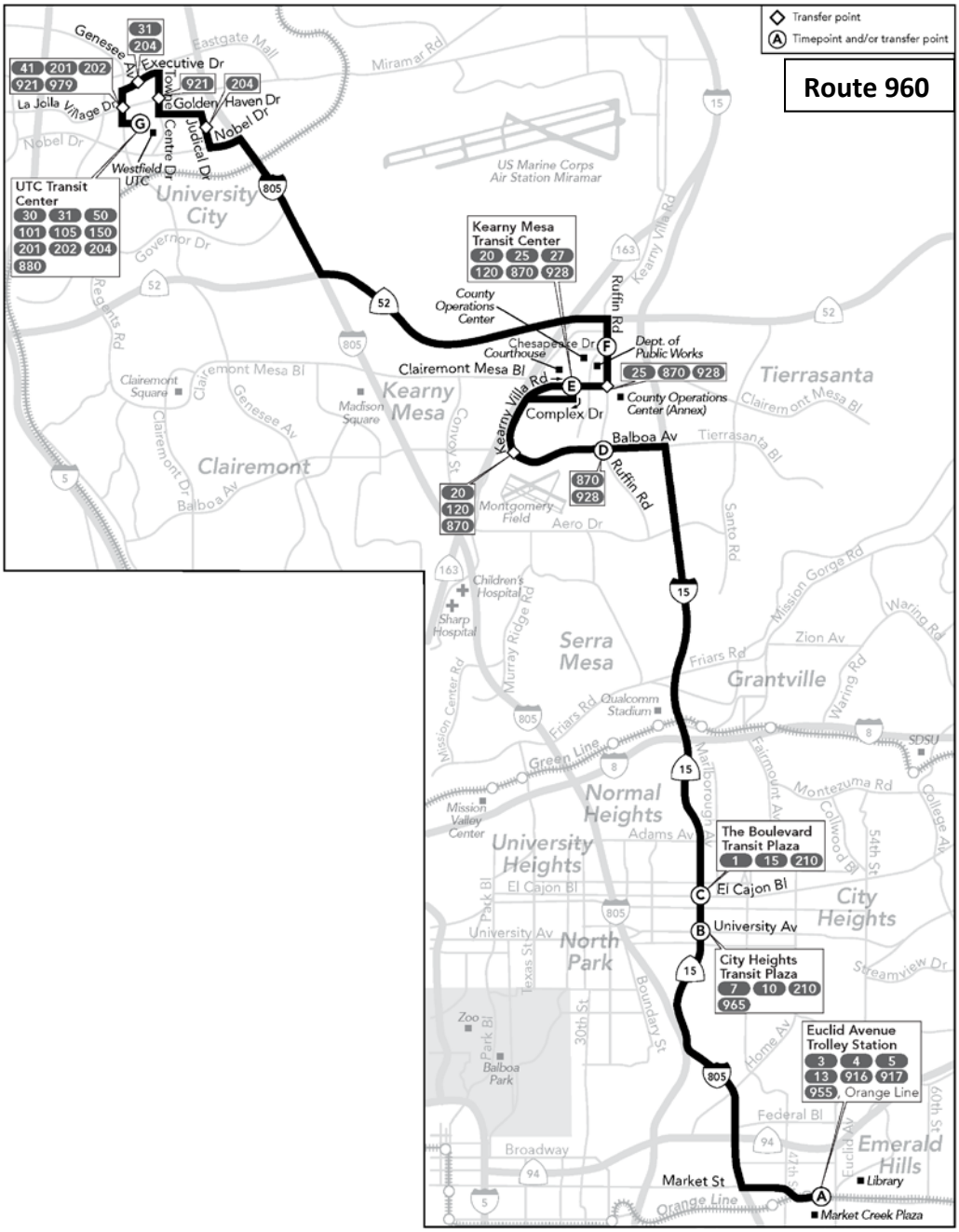
Source: MTS, February 2015

Route 955 – Runs from San Diego State University in the College Community to the 8th Street Trolley Station in National City. Within the community of Southeastern, Route 955 runs along Logan Avenue and 43rd Avenue, providing service to the Euclid Avenue Trolley Station. Route 955 currently runs between 4:55 AM and 11:40 PM on weekdays; 5:34 AM and 11:40 PM on Saturdays; and 5:58 AM and 9:41 PM on Sundays. Route 955 runs at 15-minute headways during its weekday peak period, and 30-minute headways during the remaining hours of service, and 20-minute headways on Saturdays.



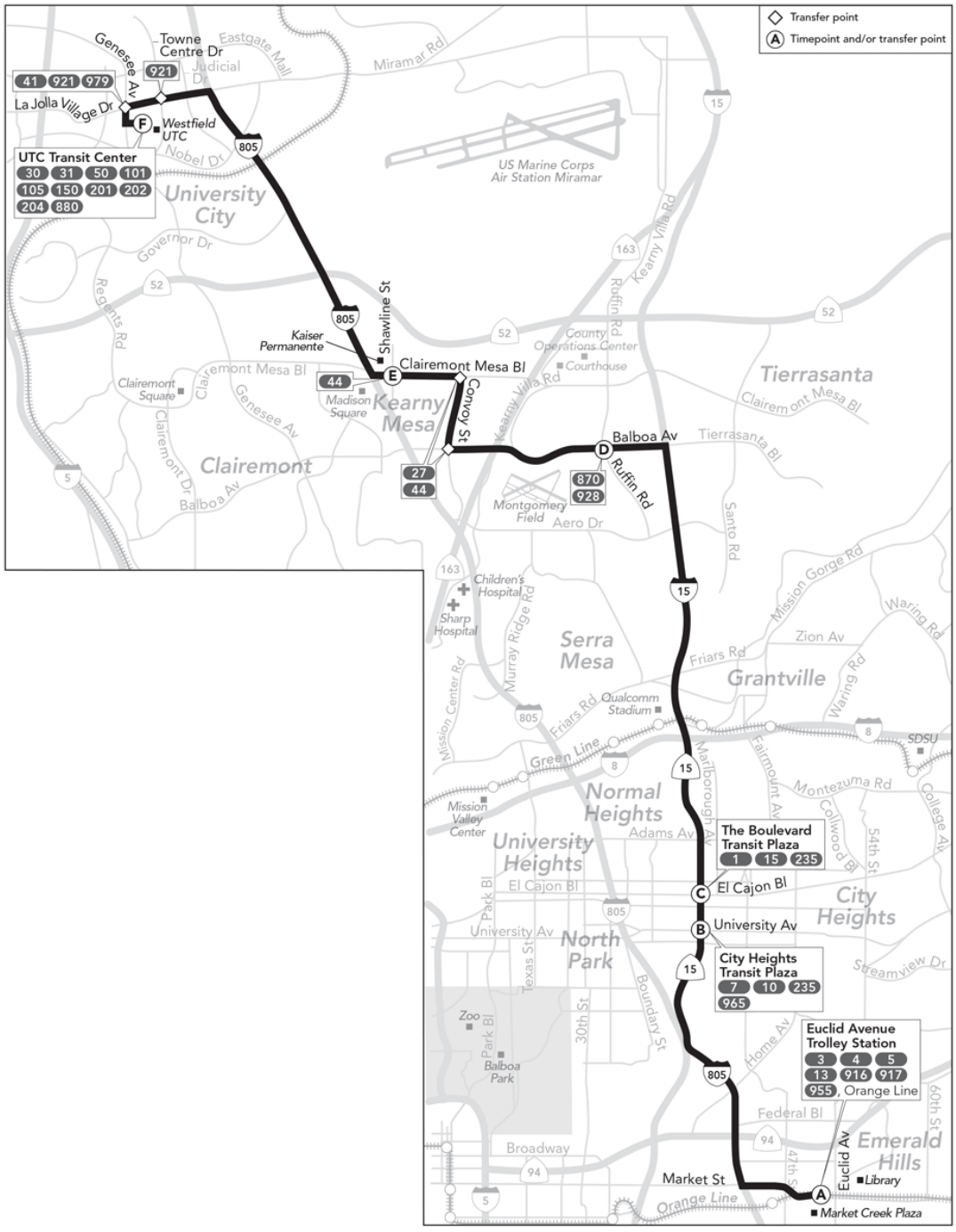
Source: MTS, February 2015

Route 960 (switched to **Route 60** in June of 2014)- Runs from the University Town Center shopping center in University City, through the communities of Kearny Mesa and City Heights, to the Euclid Avenue Trolley Station in Encanto. Route 960 runs along Interstates 15 and 805 between Nobel Drive and Market Street. Route 960 currently provides weekday morning (northbound only) and afternoon (southbound only) peak period service, between 5:09 AM and 7:45 AM, and between 3:20 PM and 6:52 PM. There is no Route 960 weekend service. Route 960 runs at 15-20 minute headways during the morning peak period service and at 30-minute headways during the afternoon peak period service. ***Route 960 was terminated by MTS in June 2014 and has been replaced by Route 60, described below.***



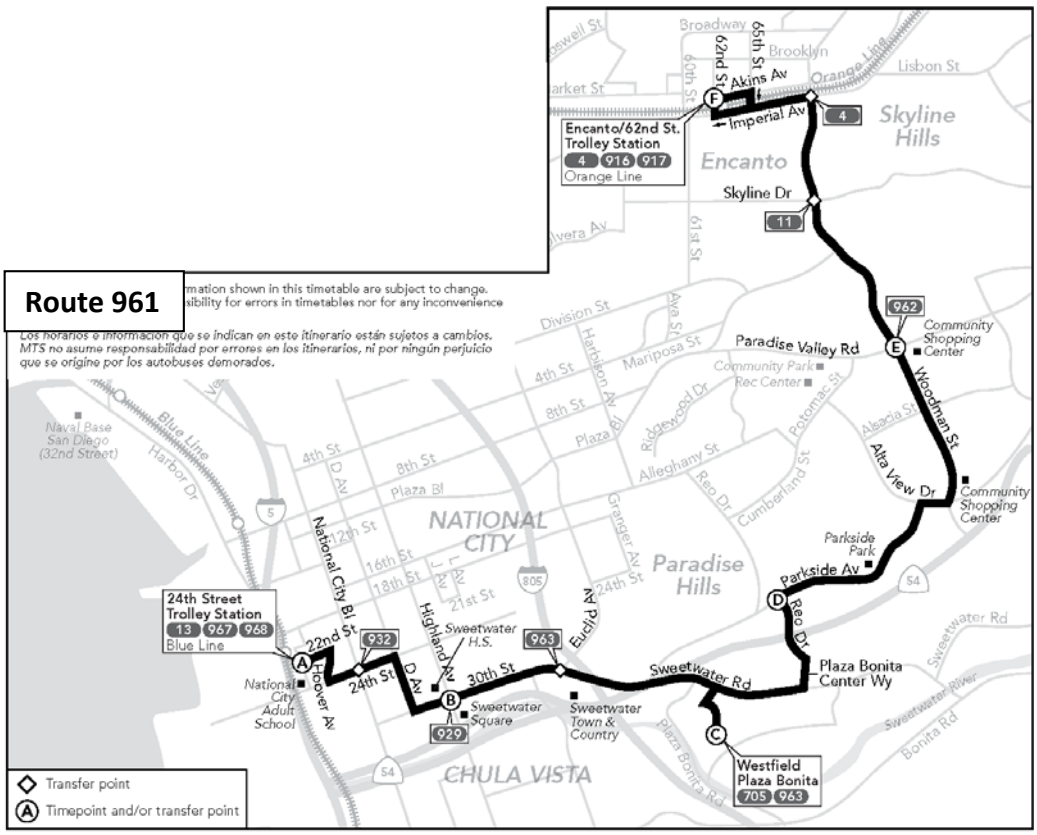
Source: MTS, February 2015

Route 60 – Is an express route that runs from the Euclid Avenue Trolley Station to the Transit Center at University Town Center via I-15, Kearny Mesa and I-805. Route 60 currently runs northbound only in the AM from 5:08AM to 7:08AM at 15-minute headways and southbound only in the PM from 3:26PM to 5:58PM at 30-minute headways. Route 60 does not operate on weekends or holidays. This route was implemented by MTS in June 2014; therefore, no annual ridership information is currently available.



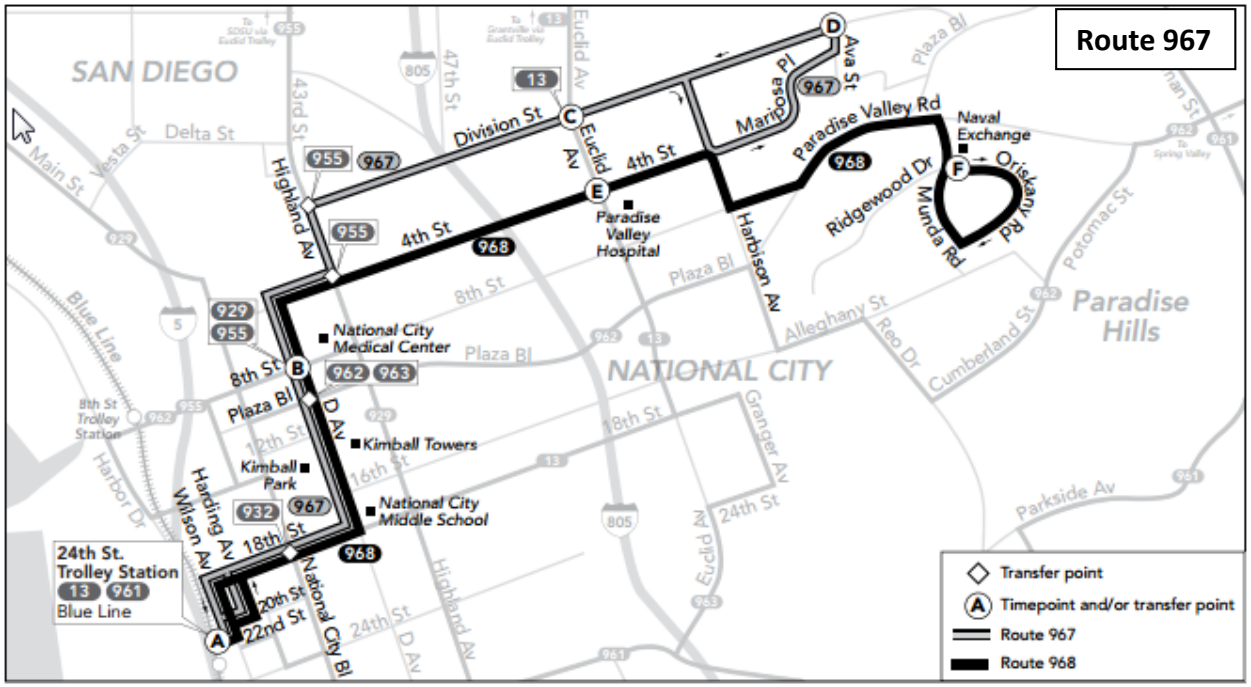
Source: MTS, February 2015

Route 961 - Runs from the Encanto/62nd Street Trolley Station to the 24th Street Trolley Station (serviced by the Blue Line) in National City. Route 961 runs along Woodman Drive, to the Plaza Bonita shopping center to the 24th Street Trolley Station. Route 961 currently provides weekday service between 5:02 AM and 9:31 PM at 15 to 30-minute headways. Saturday service runs from 7:00 AM to 8:13 PM, while Sunday service runs from 7:00 AM to 7:45 PM, it does not provide service to the Encanto/62nd Street Station. Route 961 runs at 1-hour headways on the weekends.



Source: MTS, February 2015

Route 967 - Runs from the 24th Street Trolley Station (services by the Blue Line) in National City along Division Street into Encanto and back in National City. Route 967 currently provides weekday service between 5:21 AM and 9:34 PM at 1-hour headways. Saturday service runs from 7:26 AM to 7:19 PM at 2-hour headways. Route 967 does not operate on Sundays.



Source: MTS, February 2015

Light Rail Trolley

Encanto is served by the San Diego Trolley (LRT) Orange Line, with three stations located at 47th Street, Euclid Avenue, and 62nd Street.

Orange Line – The Orange Line is the second trolley line to be built in the San Diego Trolley system with service beginning in 1986. It initially operated between downtown San Diego and Euclid Avenue, and underwent two major extensions, to Spring Street in La Mesa, then to the Santee Town Center. The Orange Line covers 20.7 miles with 15-minute service Mondays to Saturdays and most of the day on Sundays, and 30-minute service during the late-evenings, and weekend mornings. It serves a total of 23 stations.

Transit Stops

Table 3.5 lists the Encanto transit stops and amenities found at each location. As shown in the table, very few transit stops in Encanto have shelters, and roughly half of the bus stops have benches and trash cans. Given the high transit ridership in Encanto, more complete coverage in terms of transit stop amenities would help improve the quality of experience for transit riders in this community.

TABLE 3.5
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND 2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY STOP

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Amenities			Route	Boardings	Alightings	Total
				Shelter	Bench	Trash Cans				
10235	Logan Avenue / 47th Street	EB	F			✓	3 & 11	62	120	182
10255	Olvera Avenue / Gwen Street	EB	N				11	2	6	8
10259	Olvera Avenue / San Onofre Terrace	EB	N				11	3	14	17
10263	Olvera Avenue / Las Flores Terrace	EB	N				11	-	13	13
10264	Roswell Street / Kelton Road	WB	N		✓		917	10	27	37
10267	Market Street / Merlin Drive	WB	N				917	-	7	7
10268	Skyline Drive / Radio Drive	EB	N		✓		11	16	37	53
10273	Imperial Avenue / 62nd Street	EB	F	✓	✓	✓	4	72	33	105
10276	Imperial Avenue / 63rd Street	EB	N		✓		4	53	13	66
10280	Skyline Drive / Detroit Place	EB	N				11	5	22	27
10286	Imperial Avenue / Woodman Street	EB	N		✓		4 & 961	8	18	26
10287	Skyline Drive / Woodman Street	EB	N				11	17	30	47
10291	Imperial Avenue / 68th Street	EB	N		✓		4	2	28	30
10292	Imperial Avenue / 69th Street	EB	N		✓	✓	4	6	41	47
10293	Skyline Drive / 69th Street	EB	N		✓		11	49	74	123
10624	Imperial Avenue / 47th Street	EB	F		✓		4 & 955	49	41	90
10625	Market Street / 47th Street	WB	F		✓		5 & 13	51	75	126
10629	Logan Avenue / 49th Street	EB	F		✓	✓	3 & 11	39	81	120
10635	Olvera Avenue / Euclid Avenue	EB	F		✓		11	128	68	196
10636	Imperial Avenue / Euclid Avenue	EB	F				4	32	13	45
10637	Federal Boulevard / Euclid Avenue	EB	F	✓	✓	✓	916	7	26	33

TABLE 3.5
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND 2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY STOP

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Amenities			Route	Boardings	Alightings	Total
				Shelter	Bench	Trash Cans				
10638	Roswell Street / 51st Street	WB	N				917	2	2	4
10641	Imperial Avenue / San Jacinto Drive	EB	F				4	6	13	19
10642	Federal Boulevard / Pentecost Way	EB	F		✓		916	4	7	11
10647	Olvera Avenue / Santa Isabel Drive	EB	F				11	5	17	22
10650	Imperial Avenue / 54th Street	EB	F		✓		4	18	77	95
10651	Roswell Street / Derby Street	WB	F				917	3	13	16
10653	Imperial Avenue / 55th Street	EB	F				4	-	-	-
10658	Imperial Avenue / Valencia Parkway	EB	F		✓		4	4	10	14
10664	Imperial Avenue / Linnet Street	EB	F		✓		4	5	15	20
10669	Imperial Avenue / 60th Street	EB	F		✓		4	2	14	16
10672	Skyline Drive / 61st Street	EB	F				11	26	66	92
10678	Skyline Drive / Omeara Street	EB	F		✓		11	9	35	44
10686	Imperial Avenue / 65th Street	EB	F		✓		4 & 961	13	22	35
10690	Skyline Drive / Rio Lindo Drive	EB	F				11	3	16	19
10997	Imperial Avenue / 47th Street	WB	N		✓		4	14	9	23
10998	Market Street / 47th Street	EB	N				5	30	13	43
11000	Logan Avenue / Jarrett Court	WB	N		✓		3 & 11	69	25	94
11007	Imperial Avenue / 50th Street	WB	N	✓	✓	✓	4 & 955	68	79	147
11011	Olvera Avenue / Euclid Avenue	WB	N		✓		11	36	122	158
11012	Roswell Street / 51st Street	EB	N				916	-	2	2
11015	Imperial Avenue / San Jacinto Drive	WB	N				4	5	5	10

TABLE 3.5
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND 2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY STOP

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Amenities			Route	Boardings	Alightings	Total
				Shelter	Bench	Trash Cans				
11019	Roswell Street / Hilltop Drive	EB	N				916	6	1	7
11022	Imperial Avenue / 54th Street	WB	N		✓		4	62	14	76
11023	Roswell Street / Hanover Street	EB	N				916	3	1	4
11024	Olvera Avenue / San Onofre Terrace	WB	N		✓	✓	11	11	3	14
11027	Roswell Street / 56th Street	EB	N		✓		916	14	4	18
11029	Market Street / Radio Drive	EB	N				916	1	1	2
11032	Market Street / Merlin Drive	EB	N				916	7	8	15
11042	Imperial Avenue / 63rd Street	WB	F		✓		4 & 961	23	308	331
11047	Imperial Avenue / 65th Street	WB	N		✓		4 & 961	13	18	31
11051	Skyline Drive / Leghorn Avenue	WB	N				11	21	15	36
11054	Imperial Avenue / 68th Street	WB	N		✓		4	30	2	32
11056	Lisbon Street / Imperial Avenue	WB	N				4	45	7	52
11058	Madera Street / Primera Street	EB	F				916	3	-	3
11371	Logan Avenue /47th Street	WB	F		✓		11 & 955	121	135	256
11375	Imperial Avenue / 49th Street	WB	F			✓	4 & 955	41	78	119
11382	Logan Avenue / Euclid Avenue	WB	F			✓	3 & 11	64	37	101
11386	Olvera Avenue / Gwen Street	WB	F			✓	11	7	1	8
11391	Olvera Avenue / Santa Isabel Drive	WB	F			✓	11	17	4	21
11397	Olvera Avenue / Las Flores Terrace	WB	F				11	8	1	9
11407	Imperial Avenue / Merlin Drive	WB	F		✓		4	10	4	14
11408	Skyline Drive / Radio Drive	WB	N		✓		11	35	9	44

TABLE 3.5
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND 2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY STOP

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Amenities			Route	Boardings	Alightings	Total
				Shelter	Bench	Trash Cans				
11410	Imperial Avenue / 60th Street	WB	F		✓		4	6	2	8
11411	Skyline Drive / Ozzie Way	WB	F		✓		11	46	22	68
11416	Imperial Avenue / 62nd Street	WB	F		✓		4	17	9	26
11417	Skyline Drive / Omeara Street	WB	F		✓	✓	11	39	15	54
11423	Skyline Drive / Detroit Place	WB	F				11	25	9	34
11429	Imperial Avenue / 66th Street	WB	F		✓		4 & 961	19	13	32
11432	Skyline Drive / Rio Lindo Drive	WB	F	✓	✓	✓	11	12	2	14
11434	Skyline Drive / 69th Street	WB	F	✓	✓	✓	11	80	70	150
11737	47th Street / T Street	EB	F				3 & 955	22	54	76
11749	Euclid Avenue / La Paz Drive	WB	F				3 & 13	34	114	148
11750	Euclid Avenue / Guymon Street	WB	N		✓		917 & 955	15	12	27
11765	Pyramid Street / Kenwood Street	WB	N				917	2	3	5
11766	Kelton Road / Pyramid Street	WB	N				917	4	9	13
11767	58th Street / Mira Flores Drive	WB	N		✓		11	25	6	31
11768	Pitta Street / Market Street	WB	N				917	9	7	16
11793	Madera Street / Ramon Street	EB	N				916	2	1	3
12149	47th Street / Ocean View Boulevard	SB	F				955	24	29	53
12150	47th Street / Imperial Avenue	SB	F				955	45	19	64
12151	47th Street / Craigie Street	SB	F				13	35	34	69
12152	47th Street / Hwy 94 (Overpass)	SB	F				13	4	6	10
12164	Euclid Avenue / Trinidad Way	WB	N		✓		3 & 13	18	22	40

TABLE 3.5
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND 2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY STOP

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Amenities			Route	Boardings	Alightings	Total
				Shelter	Bench	Trash Cans				
12165	Euclid Avenue / Brooks Hoffman Place	WB	F		✓		3 & 13	99	76	175
12166	Euclid Avenue / Unity Place	WB	N		✓	✓	3, 4, 13 & 955	317	27	344
12167	Euclid Avenue / Hilltop Drive	WB	N				917 & 955	36	29	65
12527	47th Street / Guymon Street	NB	N		✓	✓	13	56	25	81
12528	47th Street / Hilltop Drive	NB	N				13	19	65	84
12541	Euclid Avenue / La Paz Drive	EB	N		✓		3 & 13	179	117	296
12542	Euclid Avenue / Trinidad Way	EB	N				3 & 13	26	15	41
12543	Euclid Avenue / Guymon Street	EB	N		✓		916 & 955	19	23	42
12544	Euclid Avenue / Hilltop Drive	EB	N				916 & 955	35	46	81
12556	Kelton Road / Bollenbacher Street	EB	N				916	10	4	14
12878	47th Street / Logan Avenue	WB	F		✓		3 & 955	117	90	207
12879	47th Street / T Street	WB	F				3 & 955	53	23	76
12880	47th Street / Ocean View Boulevard	NB	F	✓	✓	✓	955	20	45	65
12892	Euclid Avenue / Manzanares Way	EB	F		✓		3 & 13	26	78	104
12893	Euclid Avenue / Naranja Street	EB	N		✓		3, 4, 13 & 955	20	237	257
12922	Pyramid Street / Kenwood Street	EB	F				916	1	2	3
12923	58th Street / Mira Flores Drive	EB	F				11	3	34	37
12965	Madera Street / Primera Street	WB	F		✓	✓	917	5	5	10
12967	Madera Street / Ramon Street	WB	F		✓		917	1	3	4
13109	Bayview Heights Drive / Bayview Heights Place	EB	F		✓		916	2	14	16

TABLE 3.5
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND 2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY STOP

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Amenities			Route	Boardings	Alightings	Total
				Shelter	Bench	Trash Cans				
13116	Lisbon Street / 71st Street	WB	N				4	8	2	10
13306	Imperial Avenue / Valencia Parkway	WB	N	✓	✓		4	18	5	23
13308	Imperial Avenue / Valencia Parkway	EB	N				4	5	16	21
13467	Lisbon Street / Woodrow Avenue	WB	F		✓		4	44	8	52
41049	Roswell Street / Hilltop Drive	WB	F				917	5	7	12
50099	Euclid Avenue / Solola Avenue	SB	N				13	7	18	25
50121	Euclid Avenue /Division Street	SB	N		✓		13	41	66	107
50122	Euclid Avenue / Alpha Street	SB	F				13	8	27	35
50123	Euclid Avenue / Logan Avenue	SB	N		✓		13	60	36	96
50172	Euclid Avenue / Division Street	NB	F				13	92	58	150
50173	Euclid Avenue / Solola Avenue	NB	F				13	19	11	30
59009	Ava Street / Division Street	EB	N				967	10	10	20
60715	Woodman Street / Alscacia Street	EB	F				961	25	12	37
60716	Woodman Street / Alcona Street	EB	F				961	12	6	18
60724	Woodman Street / Paradise Valley	WB	F		✓		961	27	45	72
60725	Woodman Street / Doriana Street	WB	F		✓		961	12	7	19
60726	Woodman Street / Alscacia Street	WB	F				961	21	19	40
70024	Euclid Avenue Trolley Station	WB	-	✓	✓	✓	3	358	448	806
91031	Euclid Avenue Trolley Station	NB	-				955	667	382	1,049
91032	Euclid Avenue Trolley Station	SB	-			✓	13	327	625	952
91033	Euclid Avenue Trolley Station	EB	-		✓	✓	916	171	-	171

TABLE 3.5
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND 2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY STOP

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Amenities			Route	Boardings	Alightings	Total
				Shelter	Bench	Trash Cans				
91035	Euclid Avenue Trolley Station	WB	-	✓	✓	✓	960	82	59	141
91037	Euclid Avenue Trolley Station	EB	-	✓	✓	✓	4	275	145	420
91038	Euclid Avenue Trolley Station	WB	-	✓	✓		4	143	202	345
91040	Euclid Avenue Trolley Station	SB	-	✓	✓	✓	955	401	587	988
91041	Euclid Avenue Trolley Station	WB	-	✓	✓	✓	5	566	457	1,023
91043	Euclid Avenue / Groveland Drive	WB	F	✓	✓	✓	3, 4, 13 & 955	125	105	230
94017	Euclid Avenue Trolley Station	NB	-	✓	✓	✓	13 & 917	834	345	1,179
99087	62nd Street Trolley Station	EB	N				916	17	19	36
99106	Woodman Street / Skyline Drive	EB	F				961	16	26	42
99107	Woodman Street / Skyline Drive	WB	F				961	29	20	49
99108	62ndStreet Trolley Station	WB	F				917 & 961	238	154	392
99110	Woodman Street / Paradise Valley	EB	N				961	41	33	74
99113	Mariposa Place / 58th Street	EB	N			✓	967	1	5	6
99114	Division Street / 58th Street	EB	N		✓		967	10	6	16
99117	Woodman Street / Jamie Avenue	WB	F		✓		961	7	4	11
99233	Brooklyn Avenue / 63rd Street	EB	N				916	1	4	5
99234	Brooklyn Avenue / Stork Street	WB	F				917	2	4	6
99235	Brooklyn Avenue / 65th Street	EB	F				916	1	1	2
99236	65th Street / Brooklyn Avenue	WB	F				917	1	-	1
99237	Broadway / Klauber Avenue	EB	N				916	1	1	2
99238	Broadway / 65th Street	WB	F				917	1	7	8

TABLE 3.5
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND 2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY STOP

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Amenities			Route	Boardings	Alightings	Total
				Shelter	Bench	Trash Cans				
99239	Broadway / Madera Street	WB	N				917	2	7	9
99240	Madera Street / Bittern Street	EB	F				916	2	1	3
99322	Woodman Street / Benson Avenue	WB	N				961	5	12	17
99323	Woodman Street / Benson Avenue	EB	N				961	14	5	19
99324	Woodman Street / Plaza Boulevard	WB	F				961	16	2	18
99325	Woodman Street / Plaza Boulevard	EB	N				961	9	5	14
99326	Woodman Street / Bullock Drive	WB	N				961	20	7	27
99327	Woodman Street / Bullock Drive	EB	F				961	17	32	49
99371	Imperial Avenue / Willie James Jones Avenue	EB	F				4 & 955	103	121	224
75066	62nd Street Trolley Station	WB	-	✓	✓	✓	Orange Line	923	483	1,406
75067	62nd Street Trolley Station	EB	-	✓	✓	✓	Orange Line	515	906	1,421
75068	Euclid Avenue Trolley Station	WB	-	✓	✓	✓	Orange Line	1,525	1,136	2,661
75069	Euclid Avenue Trolley Station	EB	-	✓	✓	✓	Orange Line	1,051	1,596	2,647
75070	47th Street Trolley Station	EB	-	✓	✓	✓	Orange Line	190	393	583
75071	47th Street Trolley Station	WB	-	✓	✓	✓	Orange Line	379	179	558
							Total	12,502	12,293	24,795

Source: 2010 SANDAG Passenger Counting Program, Chen Ryan Associates; February 2015

3.3.2 Transit Ridership

Table 3.5 also displays the average daily boardings and alightings for the year 2010 at each of the 158 transit stops within Encanto. There are approximately 12,502 boardings and 12,293 alightings on a daily basis – for a total 24,795 daily transit trip ends within the community.

Table 3.6 illustrates the average daily (year 2010) boardings and alightings by route at each of the transit stops.

TABLE 3.6
2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY ROUTE

Route and Location	Stop ID	Boardings	Alightings	Total
Route 3 - Euclid Trolley Station to UCSD Medical Center in Hillcrest via Ocean View Boulevard and Downtown				
47th Street / T Street	12879	17	3	20
47th Street / Logan Avenue	12878	41	31	72
Logan Avenue / Jarrett Ct	11000	17	15	32
Logan Avenue / Euclid Avenue	11382	20	26	46
Euclid Avenue / La Paz Drive	11749	23	38	61
Euclid Avenue / Trinidad Way	12164	9	7	16
Euclid Avenue / Brooks Hoffman Place	12165	48	14	62
Euclid Avenue / Euclid Health Center	91043	19	7	26
Euclid Avenue / Unity Place	12166	62	2	64
Euclid Avenue Trolley Station	70024	358	0	358
Route 3 - UCSD Medical Center in Hillcrest to Euclid Trolley Station Via Ocean View Boulevard and Downtown				
Euclid Avenue Trolley Station	70024	0	448	448
Euclid Avenue / Naranja Street	12893	4	46	50
Euclid Avenue / Manzanares Way	12892	11	38	49
Euclid Avenue / Trinidad Way	12542	15	7	22
Euclid Avenue / La Paz Drive	12541	61	49	110
Logan Avenue / 49th Street	10629	18	26	44
Logan Avenue / 47th Street	10235	19	64	83
47th Street / T Street	11737	4	20	24
Route 4 - 12th Street/Imperial Avenue to Lomita Village via Imperial Avenue				
Imperial Avenue / 47th Street	10624	11	15	26
Imperial Avenue / Willie James Jones Avenue	99371	27	45	72
Euclid Avenue / Naranja Street	12893	1	19	20
Euclid Avenue Trolley Station	91037	275	145	420

TABLE 3.6
2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY ROUTE

Route and Location	Stop ID	Boardings	Alightings	Total
Euclid Avenue / Unity Place	12166	52	5	57
Euclid Avenue / Euclid Health Center	91043	20	12	32
Imperial Avenue / Euclid Avenue	10636	32	13	45
Imperial Avenue / San Jacinto Drive	10641	6	13	19
Imperial Avenue / 54th Street	10650	18	77	95
Imperial Avenue / 55th Street	10653	0	0	0
Imperial Avenue / Valencia Parkway	13308	5	16	21
Imperial Avenue / Valencia Parkway	10658	4	10	14
Imperial Avenue / Linnet Street	10664	5	15	20
Imperial Avenue / 60th Street	10669	2	14	16
Imperial Avenue / 62nd Street	10273	72	33	105
Imperial Avenue / 63rd Street	10276	53	13	66
Imperial Avenue / 65th Street	10686	8	19	27
Imperial Avenue / Woodman Street	10286	5	17	22
Imperial Avenue / 68th Street	10291	2	28	30
Imperial Avenue / 69th Street	10292	6	41	47
Route 4 - Lomita Village to 12th Street / Imperial Avenue via Imperial Avenue				
Lisbon Street / Woodrow Avenue	13467	44	8	52
Lisbon Street / 71st Street	13116	8	2	10
Lisbon Street / Imperial Avenue	11056	45	7	52
Imperial Avenue / 68th Street	11054	30	2	32
Imperial Avenue / 66th Street	11429	12	3	15
Imperial Avenue / 65th Street	11047	11	8	19
Imperial Avenue / 63rd Street	11042	20	181	201
Imperial Avenue / 62nd Street	11416	17	9	26
Imperial Avenue / 60th Street	11410	6	2	8
Imperial Avenue / Merlin Drive	11407	10	4	14
Imperial Avenue / Valencia Parkway	13306	18	5	23
Imperial Avenue / 54th Street	11022	62	14	76
Imperial Avenue / San Jacinto Drive	11015	5	5	10
Euclid Avenue / Naranja Street	12893	1	32	33
Euclid Avenue Trolley Station	91038	143	202	345

TABLE 3.6
2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY ROUTE

Route and Location	Stop ID	Boardings	Alightings	Total
Euclid Avenue / Unity Place	12166	23	5	28
Euclid Avenue / Euclid Health Center	91043	16	2	18
Imperial Avenue / 50th Street	11007	43	17	60
Imperial Avenue / 49th Street	11375	13	16	29
Imperial Avenue / 47th Street	10997	14	9	23
Route 5 - Euclid Trolley Station to Downtown via Market Street				
Market Street / 47th Street	10625	25	30	55
Euclid Avenue Trolley Station	91041	14	450	464
Route 5 - Downtown to Euclid Trolley Station via Market Street				
Euclid Avenue Trolley Station	91041	552	7	559
Market Street / 47th Street	10998	30	13	43
Route 11 - Skyline Hills to SDSU via Adams Avenue, Downtown, and National Avenue				
Skyline Drive / 69th Street	11434	80	70	150
Skyline Drive / Rio Lindo Drive	11432	12	2	14
Skyline Drive / Leghorn Avenue	11051	21	15	36
Skyline Drive / Detroit Place	11423	25	9	34
Skyline Drive / Omeara Street	11417	39	15	54
Skyline Drive / Ozzie Way	11411	46	22	68
Skyline Drive / Radio Drive	11408	35	9	44
58th Street / Mira Flores Drive	11767	25	6	31
Olvera Avenue / Las Flores Terrace	11397	8	1	9
Olvera Avenue / San Onofre Terrace	11024	11	3	14
Olvera Avenue / Santa Isabel Drive	11391	17	4	21
Olvera Avenue / Gwen Street	11386	7	1	8
Olvera Avenue / Euclid Avenue	11011	36	122	158
Logan Avenue / Euclid Avenue	11382	44	11	55
Logan Avenue / Jarrett Court	11000	52	10	62
Logan Avenue / 47th Street	11371	54	41	95
Route 11 - SDSU to Skyline Hills via Adams Avenue, Downtown, and National Avenue				
Logan Avenue / 47th Street	10235	43	56	99
Logan Avenue / 49th Street	10629	21	55	76
Olvera Avenue / Euclid Avenue	10635	128	68	196

TABLE 3.6
2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY ROUTE

Route and Location	Stop ID	Boardings	Alightings	Total
Olvera Avenue / Gwen Street	10255	2	6	8
Olvera Avenue / Santa Isabel Drive	10647	5	17	22
Olvera Avenue / San Onofre Terrace	10259	3	14	17
Olvera Avenue / Las Flores Terrace	10263	0	13	13
58th Street / Mira Flores Drive	12923	3	34	37
Skyline Drive / Radio Drive	10268	16	37	53
Skyline Drive / 61st Street	10672	26	66	92
Skyline Drive / Omeara Street	10678	9	35	44
Skyline Drive / Detroit Place	10280	5	22	27
Skyline Drive / Woodman Street	10287	17	30	47
Skyline Drive / Rio Lindo Drive	10690	3	16	19
Skyline Drive / 69th Street	10293	49	74	123
Route 13 - 24th Street Trolley Station to Kaiser Hospital via Euclid Trolley Station and Grantville Trolley Station				
Euclid Avenue / Division Street	50172	92	58	150
Euclid Avenue / Solola Avenue	50173	19	11	30
Euclid Avenue / La Paz Drive	12541	118	68	186
Euclid Avenue / Trinidad Way	12542	11	8	19
Euclid Avenue / Manzanares Way	12892	15	40	55
Euclid Avenue / Naranja Street	12893	6	72	78
Euclid Avenue Trolley Station	94017	721	345	1,066
47th Street / Guymon Street	12527	56	25	81
47th Street / Hilltop Drive	12528	19	65	84
Route 13 - Kaiser Hospital to 24th Street Trolley Station via Euclid Trolley Station and Grantville Trolley Station				
47th Street / Hwy 94 (Overpass)	12152	4	6	10
47th Street / Craigie Street	12151	35	34	69
Market Street / 47th Street	10625	26	45	71
Euclid Avenue Trolley Station	91032	327	625	952
Euclid Avenue / Unity Place	12166	90	9	99
Euclid Avenue / Euclid Health Center	91043	39	38	77
Euclid Avenue / Brooks Hoffman Plaza	12165	51	62	113
Euclid Avenue / Trinidad Way	12164	9	15	24
Euclid Avenue / La Paz Drive	11749	11	76	87

TABLE 3.6
2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY ROUTE

Route and Location	Stop ID	Boardings	Alightings	Total
Euclid Avenue / Logan Avenue	50123	60	36	96
Euclid Avenue / Solola Avenue	50099	7	18	25
Euclid Avenue / Alpha Street	50122	8	27	35
Euclid Avenue / Division Street	50121	41	66	107
Route 916 - Euclid Trolley Station - College Grove via Streamview Drive and Massachusetts Avenue				
Euclid Avenue Trolley Station	91033	171	0	171
Euclid Avenue / Guymon Street	12543	1	2	3
Euclid Avenue / Hilltop Drive	12544	3	6	9
Federal Boulevard / Euclid Avenue	10637	7	26	33
Federal Boulevard / Pentecost Way	10642	4	7	11
Bayview Heights Drive / Bayview Height Place	13109	2	14	16
Madera Street / Ramon Street	11793	2	1	3
Madera Street / Primera Street	11058	3	0	3
Madera Street / Bittern Street	99240	2	1	3
Broadway / 65th Street	99237	1	1	2
Brooklyn Avenue / 65th Street	99235	1	1	2
Brooklyn Avenue / 63rd Street	99233	1	4	5
62nd Street Trolley Station	99087	17	19	36
Market Street / Merlin Drive	11032	7	8	15
Market Street / Radio Drive	11029	1	1	2
Pyramid Street / Kenwood Street	12922	1	2	3
Kelton Road / Bollenbacher Street	12556	10	4	14
Roswell Street / 56th Street	11027	14	4	18
Roswell Street / Hanover Street	11023	3	1	4
Roswell Street / Hilltop Drive	11019	6	1	7
Roswell Street / 51st Street	11012	0	2	2
Route 917 - College Grove to Euclid Trolley Station via Streamview Drive and Massachusetts Avenue				
Euclid Avenue Trolley Station	94017	113	0	113
Roswell Street / 51st Street	10638	2	2	4
Roswell Street / Hilltop Drive	41049	5	7	12
Roswell Street / Derby Street	10651	3	13	16
Roswell Street / Kelton Road	10264	10	27	37

TABLE 3.6
2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY ROUTE

Route and Location	Stop ID	Boardings	Alightings	Total
Kelton Road / Pyramid Street	11766	4	9	13
Pyramid Street / Kenwood Street	11765	2	3	5
Pitta Street / Market Street	11768	9	7	16
Market Street / Merlin Drive	10267	0	7	7
62nd Street Trolley Station	99108	29	28	57
Brooklyn Avenue / Stork Street	99234	2	4	6
65th Street / Brooklyn Avenue	99236	1	0	1
Broadway / 65th Street	99238	1	7	8
Broadway / Madera Street	99239	2	7	9
Madera Street / Primera Street	12965	5	5	10
Madera Street / Ramon Street	12967	1	3	4
Euclid Avenue / Hilltop Drive	12167	9	2	11
Euclid Avenue / Guymon Street	11750	5	5	10
Route 955 - 8th Street Trolley Station to SDSU via 43rd Street, Euclid Trolley Station, and 54th Street				
47th Street / Logan Avenue	12878	76	59	135
47th Street / T Street	12879	36	20	56
47th Street / Ocean View Boulevard	12880	20	45	65
Imperial Avenue / 47th Street	10624	38	26	64
Imperial Avenue / Willie James Jone	99371	76	76	152
Euclid Avenue / Naranja Street	12893	8	68	76
Euclid Avenue Trolley Station	91031	667	382	1,049
Euclid Avenue / Guymon Street	12543	18	21	39
Euclid Avenue / Hilltop Drive	12544	32	40	72
Route 955 - SDSU to 8th Street Trolley Station via 43rd Street, Euclid Trolley Station, and 54th Street				
Euclid Avenue / Hilltop Drive	12167	27	27	54
Euclid Avenue / Guymon Street	11750	10	7	17
Euclid Avenue Trolley Station	91040	401	587	988
Euclid Avenue / Unity Place	12166	90	6	96
Euclid Avenue / Euclid Health Center	91043	31	46	77
Imperial Avenue / 50th Street	11007	25	62	87
Imperial Avenue / 49th Street	11375	28	62	90
47th Street / Imperial Avenue	12150	45	19	64

TABLE 3.6
2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY ROUTE

Route and Location	Stop ID	Boardings	Alightings	Total
47th Street / Ocean View Boulevard	12149	24	29	53
47th Street / T Street	11737	18	34	52
Logan Avenue / 47th Street	11371	67	94	161
Euclid Avenue / Hilltop Drive	12167	27	27	54
Route 960 - Euclid Trolley Station to UTC via I-15, Mid City, and Kearny Mesa[1]				
Euclid Avenue Trolley Station	91035	82	0	82
Route 960 - UTC to Euclid Trolley Station via I-15, Mid City, and Kearny Mesa[1]				
Euclid Avenue Trolley Station	91035	0	59	59
Route 961 - 24th Street Trolley Station to 62nd Street Trolley Station via 30th Street, Plaza Bonita, and Woodman Street				
Woodman Street / Alscacia Street	60715	25	12	37
Woodman Street / Alcona Street	60716	12	6	18
Woodman Street / Paradise Valley	99110	41	33	74
Woodman Street / Bullock Drive	99327	17	32	49
Woodman Street / Plaza Bl	99325	9	5	14
Woodman Street / Skyline Drive	99106	16	26	42
Woodman Street / Benson Avenue	99323	14	5	19
Imperial Avenue / 66th Street	11429	7	10	17
Imperial Avenue / 65th Street	11047	2	10	12
Imperial Avenue / 63rd Street	11042	3	127	130
62nd Street Trolley Station	99108	0	126	126
Route 961 - 62nd Street Trolley Station to 24th Street Trolley Station via 30th Street, Plaza Bonita and Woodman Street				
62nd Street Trolley Station	99108	209	0	209
Imperial Avenue / 65th Street	10686	5	3	8
Imperial Avenue / Woodman Street	10286	3	1	4
Woodman Street / Benson Avenue	99322	5	12	17
Woodman Street / Skyline Drive	99107	29	20	49
Woodman Street / Plaza Boulevard	99324	16	2	18
Woodman Street / Bullock Drive	99326	20	7	27
Woodman Street / Paradise Valley	60724	27	45	72
Woodman Street / Doriana Street	60725	12	7	19
Woodman Street / Jamie Avenue	99117	7	4	11

TABLE 3.6
2010 AVERAGE DAILY BOARDINGS AND ALIGHTINGS BY ROUTE

Route and Location	Stop ID	Boardings	Alightings	Total
Woodman Street / Alscacia Street	60726	21	19	40
Route 967 - National City to Alta Vista to National City				
Mariposa Place / 58th Street	99113	1	5	6
Ava Street / Division Street	59009	10	10	20
Division Street / 58th Street	99114	10	6	16
Orange Line - Santa Fe Depot to El Cajon Transit Center				
47th Street Trolley Station	75070	190	393	583
Euclid Avenue Trolley Station	75069	1,051	1,596	2,647
62nd Street Trolley Station	75067	515	906	1,421
Orange Line - El Cajon Transit Center to Santa Fe Depot				
62nd Street Trolley Station	75066	923	483	1,406
Euclid Avenue Trolley Station	75068	1,525	1,136	2,661
47th Street Trolley Station	75071	379	179	558

Source: 2010 SANDAG Passenger Counting Program, Chen Ryan Associates; February 2015

Note:
[1]Route 960 was terminated by MTS in June 2014 and has been replaced by Route 60, described below.

Figure 3-9 shows the average daily boardings and alightings across the Encanto community. The Euclid Avenue Trolley Station has the highest level of boardings and alightings within the Encanto community.

Table 3.7 summarizes Encanto residents who are currently using transit for the work trip. As shown, the rate of transit usage for the work trip among Encanto workers is just under double the citywide rate (7.3% versus 4.1%).

TABLE 3.7
PERCENT OF TRANSIT COMMUTERS IN ENCANTO

	Encanto	City of San Diego	County of San Diego
Number of Workers Taking Transit to Work	1,249	25,699	46,166
Percent of Total Workers	7.3%	4.1%	3.2%

Source: US Census, American Community Survey, 2011 Estimates; Chen Ryan Associates; February 2015

ENCANTO COMMUNITY PLAN UPDATE

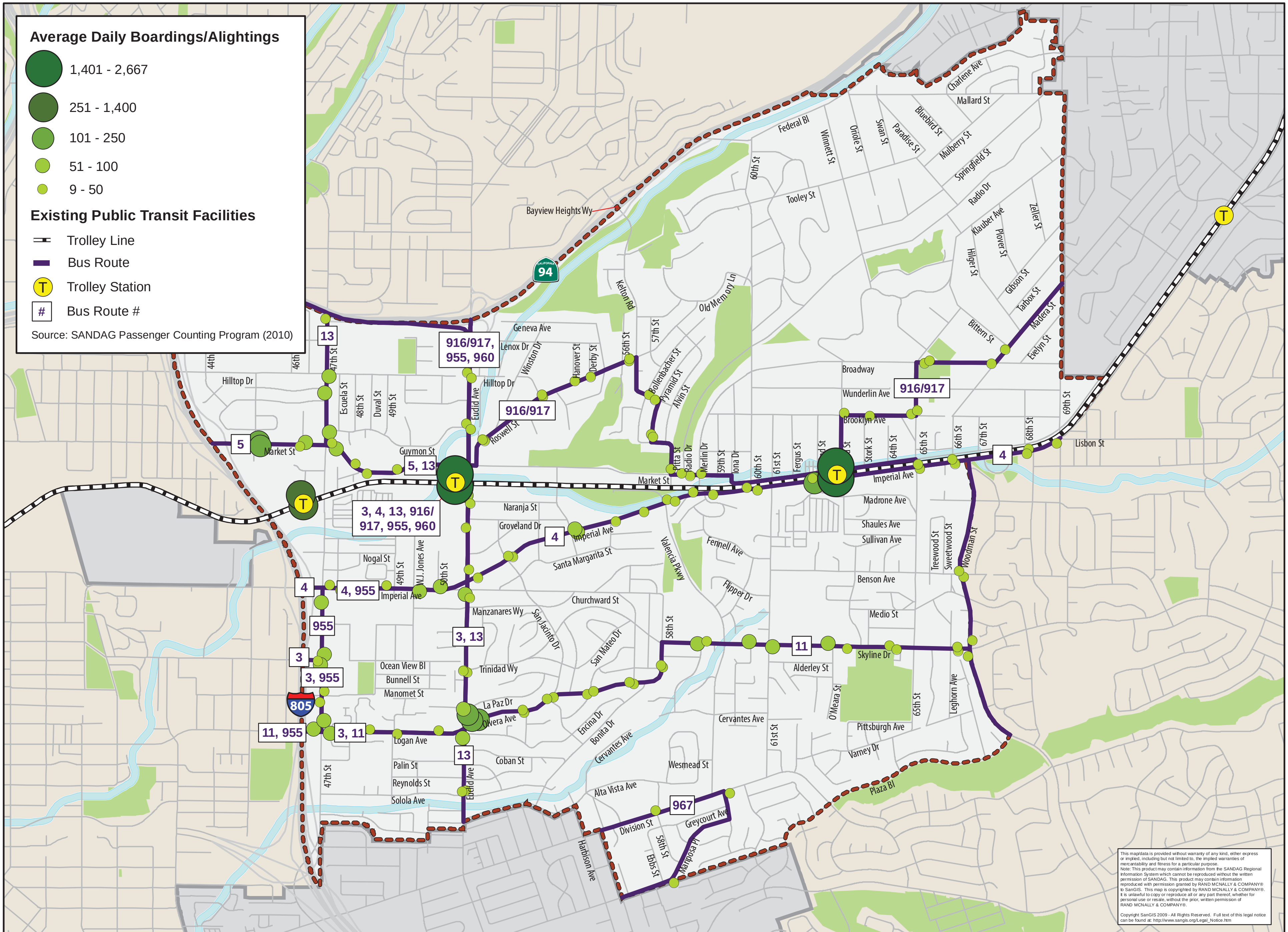


Figure 3-9: Transit Stop Average Daily Boardings and Alightings

CHEN + RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

Figure 3-10 shows the percent of Encanto workers who regularly use transit to commute to work. The highest rate of transit commuting occurs in the western portion of the community in the census tract to the east of I-805 and south of SR-94 (16.3%). This census tract has about four times the citywide transit commuting rate.

To better understand the dynamics of choosing the mode of travel, a comparison was made between transit cost and time to those using automobiles. **Table 3-8** compares automobile and transit travel from Encanto to nine popular destinations within the region. Travel time was obtained from using Google Maps directions. Transit costs are based on standard fare of a one-way ticket and at $5.00 maximum per day (transit daily pass). Auto costs are based on standard business travel reimbursement rates for year 2012, which reflect cost of gas, insurance, and vehicle wear and tear, and are calculated for a round trip to and from the destination. Travel estimates were calculated from the 62nd Street Trolley Station.

As shown in the table, on average, roundtrip auto travel time is estimated to be less than half that of transit travel times, while the cost of auto travel is more than double the cost of using transit.

3.3.3 Transit Level of Service Analysis and Results

Tables 3.9A and **3.9B** show the transit LOS for roadway segments, for the AM and PM peak hour respectively, where transit service is currently provided within Encanto. **Figures 3-11a** and **3-11b** display the transit LOS results for the AM and PM peak hours, respectively. Peak hour transit CSLOS analysis output is provided in **Appendix C**.

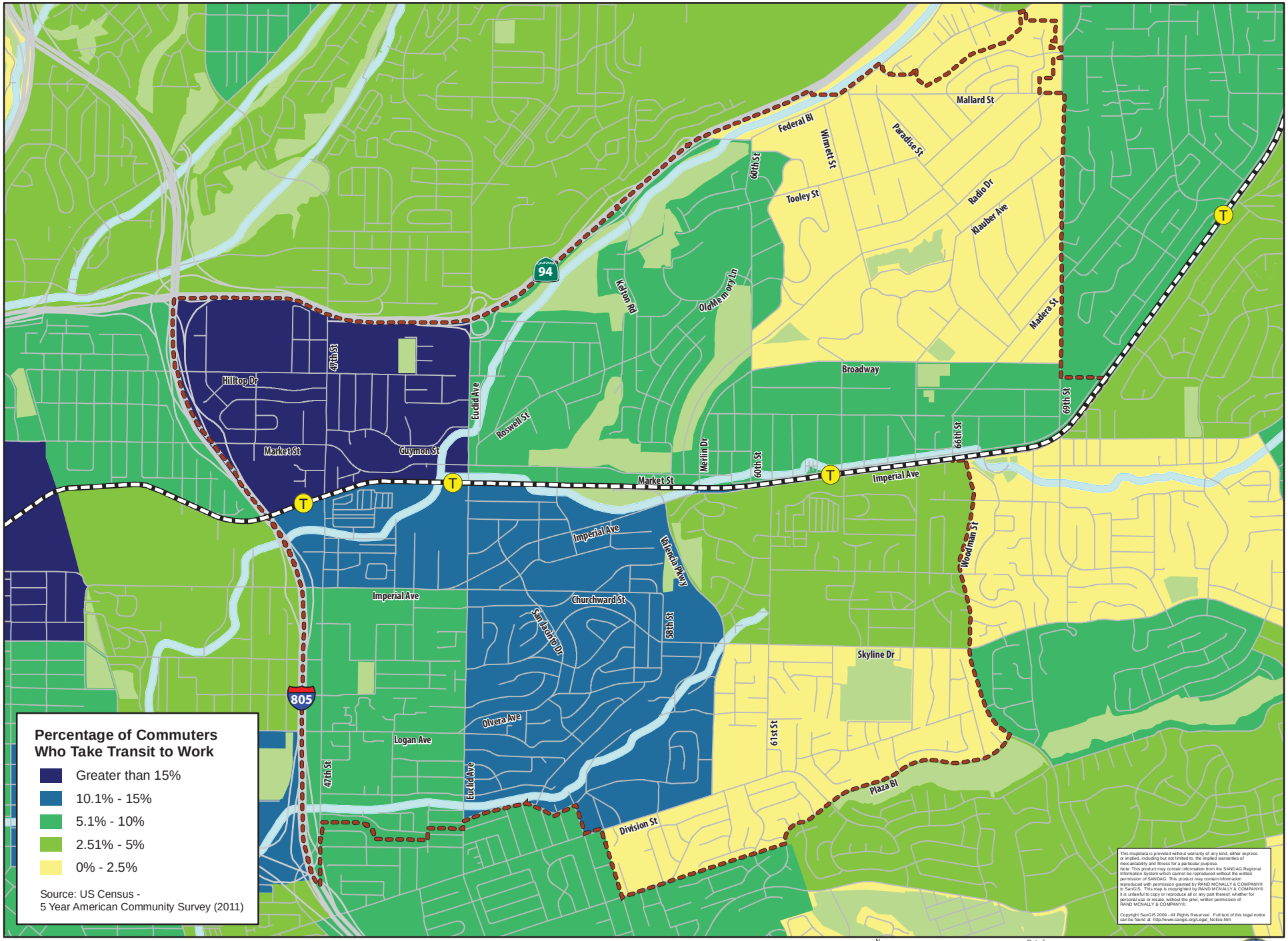


Figure 3-10: Percent of Transit Commuters by Census Tract

TABLE 3.8
TRANSIT-AUTO COST COMPARISON

Destination	Actual Location	Distance (Miles)	By Auto			By Transit		
			Time (min)	One-Way Cost ($)	Roundtrip Cost ($)	Time (min)	One-Way Cost ($)	Roundtrip Cost ($)
San Diego International Airport	San Diego International Airport	9.8	18.0	5.4	10.88	46.0	5.00	5.00
San Diego State University	San Diego State University	5.7	17.0	3.2	6.33	38.0	4.50	5.00
University of California San Diego	Price Center at UCSD	20.9	26.0	11.6	23.20	71.0	5.00	5.00
San Diego City Hall	San Diego City Hall	7.5	15.0	4.2	8.33	26.0	2.50	5.00
San Diego Spectrum Center (Kearny Mesa)	National University at Spectrum Center	11.5	17.0	6.4	12.77	53.0	5.00	5.00
General Dynamics NASSCO	General Dynamics NASSCO	7.0	13.0	3.9	7.77	24.0	2.50	5.00
Fashion Valley Shopping Center	Fashion Valley Transit Center	10.2	17.0	5.7	11.32	39.0	5.00	5.00
Petco Park	Petco Park	7.3	14.0	4.1	8.10	17.0	2.50	5.00
Old Town	Old Town Transit Station	11.2	17.0	6.2	12.43	43.0	2.50	5.00
	Average	10.1	17.1	5.62	11.24	39.7	3.83	5.00

Source: Chen Ryan Associates; February 2015

Notes:
All travel estimates were originated at the 62nd Street Trolley Station.
"Distance" represents one-way travel distance between the start and end location.
"Time" for the auto trip is estimated based on the free flow speed and delay due to congestion was not included in the estimate.
The auto trip cost was estimated based on the distance between the start and end locations, multiplied by the standard cost per mile that tax regulations allow business to deduct ($0.555/mile in 2012). This cost does not account for tolls, parking fees or variation in gas mileage for different vehicle types.
The transit trip cost is based on actual per trip cost.
Travel time was evaluated using Google Maps direction finding website. For the transit information, departure time was 7:00 a.m.

TABLE 3.9A
EXISTING MULTI-MODAL ANALYSIS – TRANSIT LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.17	B	2.47	B
	I-805 NB Ramps & 47th Street		2.14	B		
	47th Street & Euclid Avenue		0.28	A		
	Euclid Avenue & 60th Street		3.78	D		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.17	B	2.24	B
	I-805 NB Ramps & 47th Street		1.63	A		
	47th Street & Euclid Avenue		0.04	A		
	Euclid Avenue & 60th Street		3.62	D		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.38	C	2.56	B
	I-805 NB Ramps & 47th Street		3.38	C		
	47th Street & Euclid Avenue		2.08	B		
	Euclid Avenue & Valencia Parkway		3.47	C		
	Valencia Parkway & Woodman Street		1.67	A		
	Woodman Street & 69th Street		3.82	D		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.40	C	2.25	B
	I-805 NB Ramps & 47th Street		1.13	A		
	47th Street & Euclid Avenue		1.13	A		
	Euclid Avenue & Valencia Parkway		3.40	C		
	Valencia Parkway & Woodman Street		1.66	A		
	Woodman Street & 69th Street		3.12	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	3.04	C	3.04	C
	47th Street & Euclid Avenue	Westbound	3.45	C	3.45	C
47th Street	SR-94 & Market Street	Northbound	3.70	D	2.78	C
	Market Street & Imperial Avenue		2.44	B		
	Imperial Avenue & Logan Avenue		2.31	B		
	Logan Avenue & I-805 NB Ramps		N/A	N/A		
	I-805 NB Ramps & I-805 SB Ramps		N/A	N/A		
	I-805 SB Ramps & Division Street		N/A	N/A		
	SR-94 & Market Street	Southbound	2.49	B	1.73	A
	Market Street & Imperial Avenue		2.29	B		
	Imperial Avenue & Logan Avenue		0.51	A		

TABLE 3.9A
EXISTING MULTI-MODAL ANALYSIS – TRANSIT LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	Logan Avenue & I-805 NB Ramps	Southbound	N/A	N/A	1.73	A
	I-805 NB Ramps & I-805 SB Ramps		N/A	N/A		
	I-805 SB Ramps & Division Street		N/A	N/A		
Euclid Avenue	SR-94 & Market Street	Northbound	2.39	B	2.72	B
	Market Street & Imperial Avenue		1.95	A		
	Imperial Avenue & Logan Avenue		2.63	B		
	Logan Avenue & Division Street		3.75	D		
	SR-94 & Market Street	Southbound	1.81	A	2.41	B
	Market Street & Imperial Avenue		2.02	B		
	Imperial Avenue & Logan Avenue		2.92	C		
	Logan Avenue & Division Street		2.80	C		

Source: Chen Ryan Associates; February 2015

Notes:
N/A represents segments with no transit service.
The transit LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

TABLE 3.9B
EXISTING MULTI-MODAL ANALYSIS – TRANSIT LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.37	B	2.53	B
	I-805 NB Ramps & 47th Street		2.19	B		
	47th Street & Euclid Avenue		0.62	A		
	Euclid Avenue & 60th Street		3.67	D		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.14	C	2.66	B
	I-805 NB Ramps & 47th Street		2.94	C		
	47th Street & Euclid Avenue		0.54	A		
	Euclid Avenue & 60th Street		3.63	D		

TABLE 3.9B
EXISTING MULTI-MODAL ANALYSIS – TRANSIT LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	4.07	D	3.46	C
	I-805 NB Ramps & 47th Street		4.07	D		
	47th Street & Euclid Avenue		2.09	B		
	Euclid Avenue & Valencia Parkway		4.15	D		
	Valencia Parkway & Woodman Street		3.44	C		
	Woodman Street & 69th Street		3.87	D		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.59	D	2.26	B
	I-805 NB Ramps & 47th Street		1.13	A		
	47th Street & Euclid Avenue		1.13	A		
	Euclid Avenue & Valencia Parkway		3.40	C		
	Valencia Parkway & Woodman Street		1.66	A		
	Woodman Street & 69th Street		3.12	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	2.10	B	2.10	B
	47th Street & Euclid Avenue	Westbound	1.55	A	1.55	A
47th Street	SR-94 & Market Street	Northbound	3.70	D	2.82	C
	Market Street & Imperial Avenue		2.48	B		
	Imperial Avenue & Logan Avenue		2.37	B		
	Logan Avenue & I-805 NB Ramps		N/A	N/A		
	I-805 NB Ramps & I-805 SB Ramps		N/A	N/A		
	I-805 SB Ramps & Division Street		N/A	N/A		
	SR-94 & Market Street	Southbound	2.50	B	1.76	A
	Market Street & Imperial Avenue		2.28	B		
	Imperial Avenue & Logan Avenue		0.60	A		
	Logan Avenue & I-805 NB Ramps		N/A	N/A		
	I-805 NB Ramps & I-805 SB Ramps		N/A	N/A		
	I-805 SB Ramps & Division Street		N/A	N/A		
Euclid Avenue	SR-94 & Market Street	Northbound	2.41	B	2.73	B
	Market Street & Imperial Avenue		2.01	B		
	Imperial Avenue & Logan Avenue		2.65	B		
	Logan Avenue & Division Street		3.70	D		

TABLE 3.9B
EXISTING MULTI-MODAL ANALYSIS – TRANSIT LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Euclid Avenue	SR-94 & Market Street	Southbound	1.81	A	2.22	B
	Market Street & Imperial Avenue		2.02	B		
	Imperial Avenue & Logan Avenue		2.67	B		
	Logan Avenue & Division Street		2.31	B		

Source: Chen Ryan Associates; February 2015

Notes:
N/A represents segments with no transit service.
The transit LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

As shown in the tables above, a majority of the Urban Street segments during the AM and PM peak hours within the Encanto community are currently LOS C or better, with the exception of the following segments which are currently operating at LOS D:

- AM Peak Hour
  - Eastbound and westbound Market Street, between Euclid Avenue and 60th Street;
  - Eastbound Imperial Avenue, between Woodman Street and 69th Street;
  - Northbound 47th Street, between SR-94 and Market Street; and
  - Northbound Euclid Avenue, between Logan Avenue and Division Street.

- PM Peak Hour
  - Eastbound and westbound Market Street, between Euclid Avenue and 60th Street;
  - Eastbound and westbound Imperial Avenue, between I-805 SB and I-805 NB;
  - Eastbound Imperial Avenue, between I-805 NB and 47th Street;
  - Eastbound Imperial Avenue, between Euclid Avenue and Valencia Parkway;
  - Eastbound Imperial Avenue, between Woodman Street and 69th Street;
  - Northbound 47th Street, between SR-94 and Market Street; and
  - Northbound Euclid Avenue, between Logan Avenue and Division Street.

The LOS reported here is an indication of the transit rider's experience while using transit facilities along these study corridors. Major variables affecting the transit environment include frequency of service, reliability of service, mean speed, load factors, quality of pedestrian access to transit stops, and transit stop amenities.

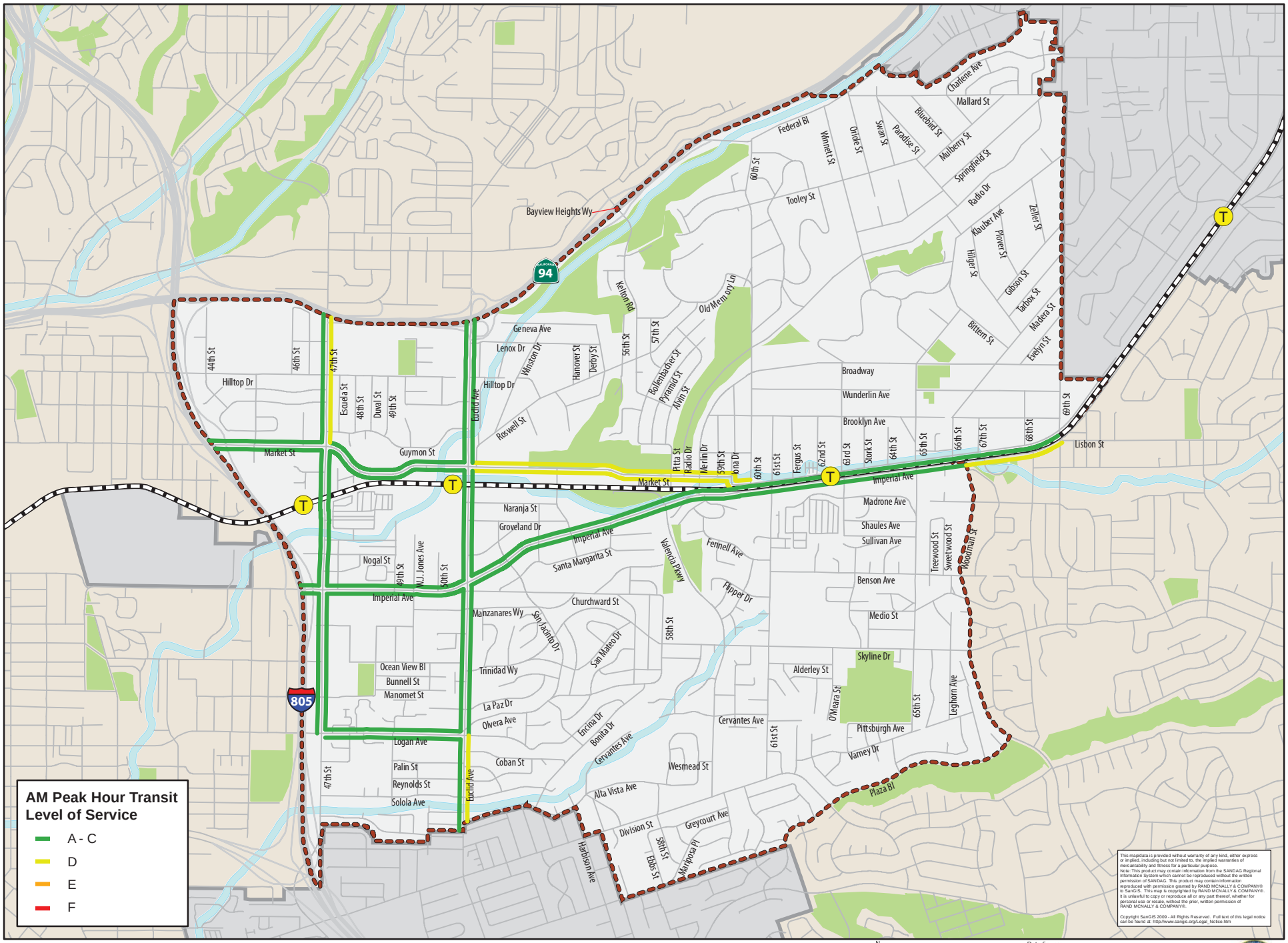


Figure 3-11a: Existing AM Peak Hour Transit Level of Service

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

ENCANTO COMMUNITY PLAN UPDATE

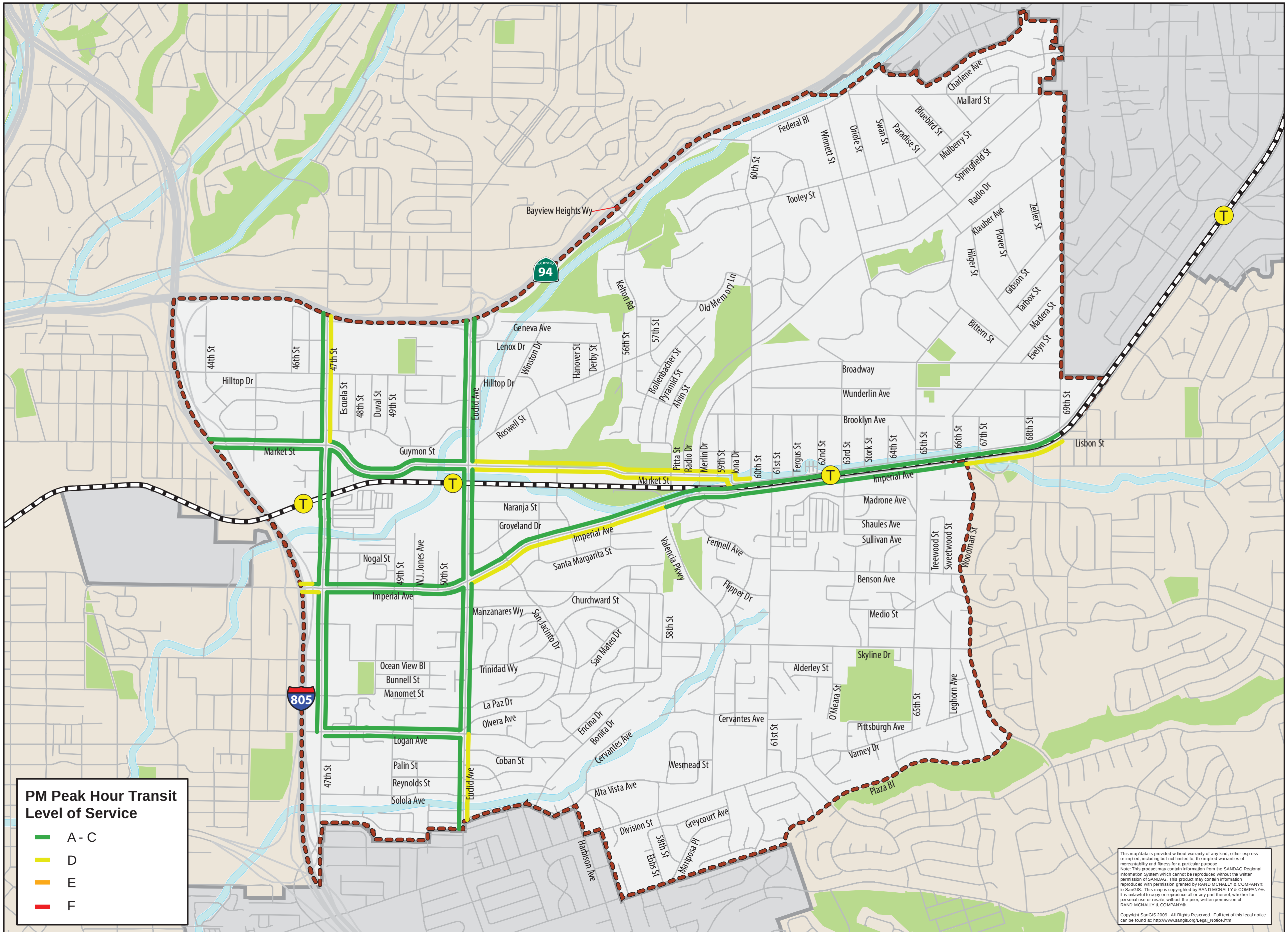


Figure 3-11b: Existing PM Peak Hour Transit Level of Service

CHEN + RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012; Dyett & Bhatia, 2012

SanGIS

3.3.4 Bicycle and Pedestrian Collisions Near Transit

The General Plan's City of Villages Growth Strategy relies upon a land-use transportation strategy whereby land use densification and transit system improvements occur in a manner that will enable residents to function without owning a vehicle. The need to own a vehicle is greatly diminished if residents can walk or bicycle to nearby high quality transit. This section documents the density of pedestrian and cyclist involved collisions near transit, as safety in these locations will be particularly important for bringing about travel changes that support the City of Villages concept.

Figure 3-12 displays pedestrian and bicycle-involved collisions within 500 feet of transit stops. Approximately 106 out of a total 161 pedestrian and bicycle-involved collisions – or about 65% of all pedestrian and bicycle-involved collisions within Encanto – occurred within 500 feet of a transit stop.

Transit stop located near the following intersections show relatively high numbers of pedestrian and bicycle-involved collisions (7 – 9 collision over a five year period):

- 4 locations near the 47th Street and Market Street intersection;
- 3 locations near the Euclid Trolley Station;
- 3 locations near the 62nd Street Trolley Station; and
- Imperial Avenue, between 49th Street and 50th Street.

These locations should be investigated further for safe-routes-to-transit improvement recommendations.

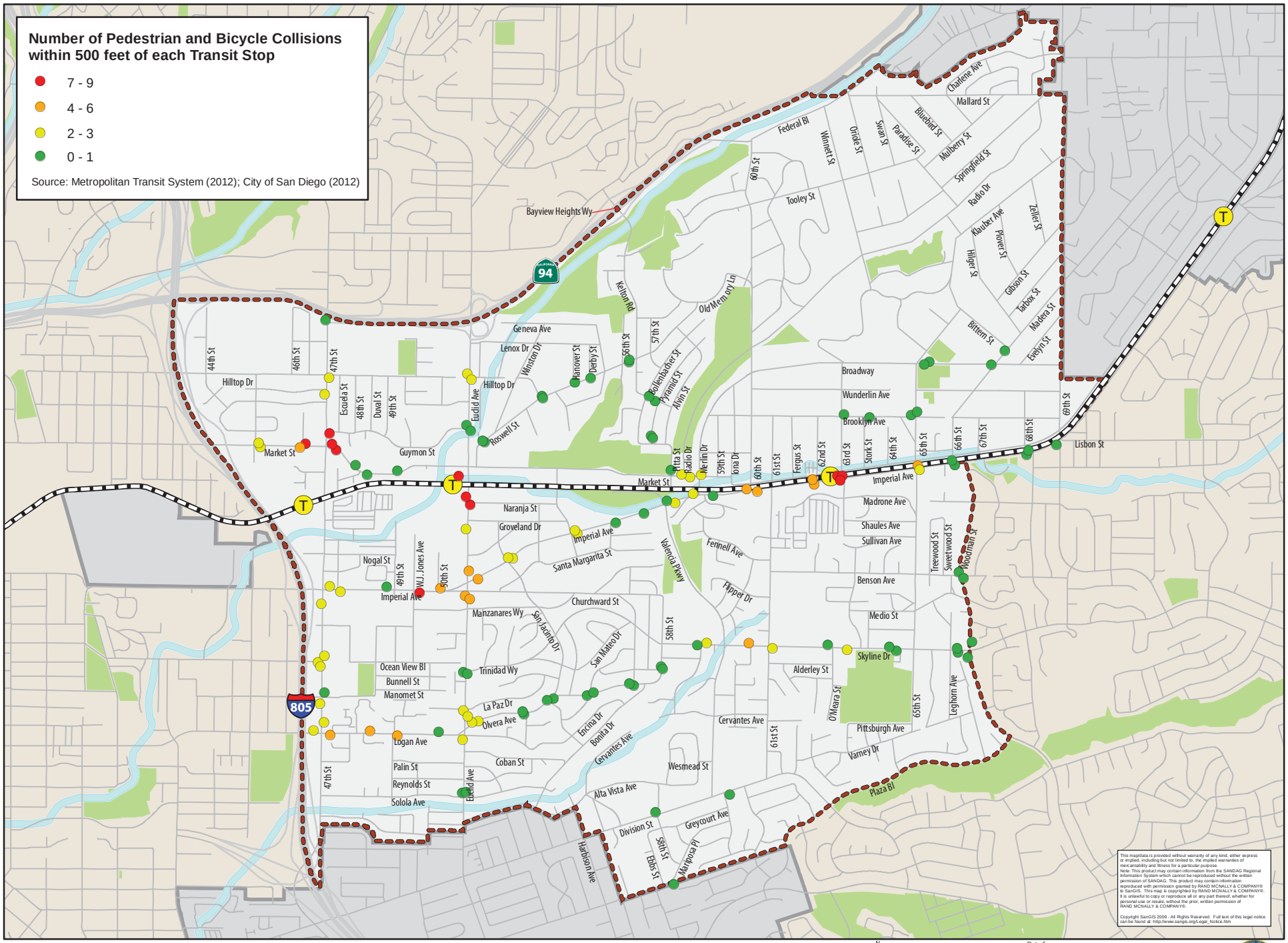


Figure 3-12: Pedestrian/Bicycle Collisions near Transit Stops

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

3.4 Street and Freeway System

This section identifies key study roadways, intersections, and freeways in Encanto, and presents existing level of service conditions associated with these facilities. The currently adopted citywide General Plan Mobility Element identifies the following goals for street and freeway system:

- *A street and freeway system that balances the needs of multiple users of the public right-of-way.*
- *An interconnected street system that provides multiple linkages within and between communities.*
- *Vehicle congestion relief.*
- *Safe and efficient street design that minimizes environmental and neighborhood impacts.*
- *Well maintained streets.*

3.4.1 Roadway Segments and Level of Service Analysis

Chapter 2 documents the selection of study area roadway segments and study intersections. The roadway network is comprised of regional facilities such as I-805 and SR-94, as well as numerous arterials and local streets. Several roadways outside the boundary of Encanto were included in this assessment since they fall within the sphere of influence and will be required for the environmental studies.

Figure 3-13 displays the existing functional classifications for study area roadways. Each of these study area roadways is also described below. For detailed physical roadway characteristics, please refer back to Table 3-1.

North-South Roadways

47th Street runs between SR-94 and Division Street within the study area. This roadway is a 4-lane roadway from SR-94 to Market Street, 2-lane from Market Street to Imperial Avenue, 4-lane from Imperial Avenue to Logan Avenue, 3-lane from Logan Avenue to the I-805 NB Ramps, and 4-lane from I-805 NB Ramps to Division Street. Posted speed limits range from 30 mph to 40 mph. Parallel parking is allowed on both side of this roadway within the study area. There are sidewalks along the majority of this roadway with missing sidewalks along the north/west side between Logan Avenue and Division Street. There is no bicycle facility currently located along this roadway. Transit services are provided by Route 13 between SR-94 and Market Street and Routes 3 and 955 between Imperial Avenue and Logan Avenue. The 47th Street Trolley Station serving the Orange Line is located just west of 47th Street.

ENCANTO COMMUNITY PLAN UPDATE

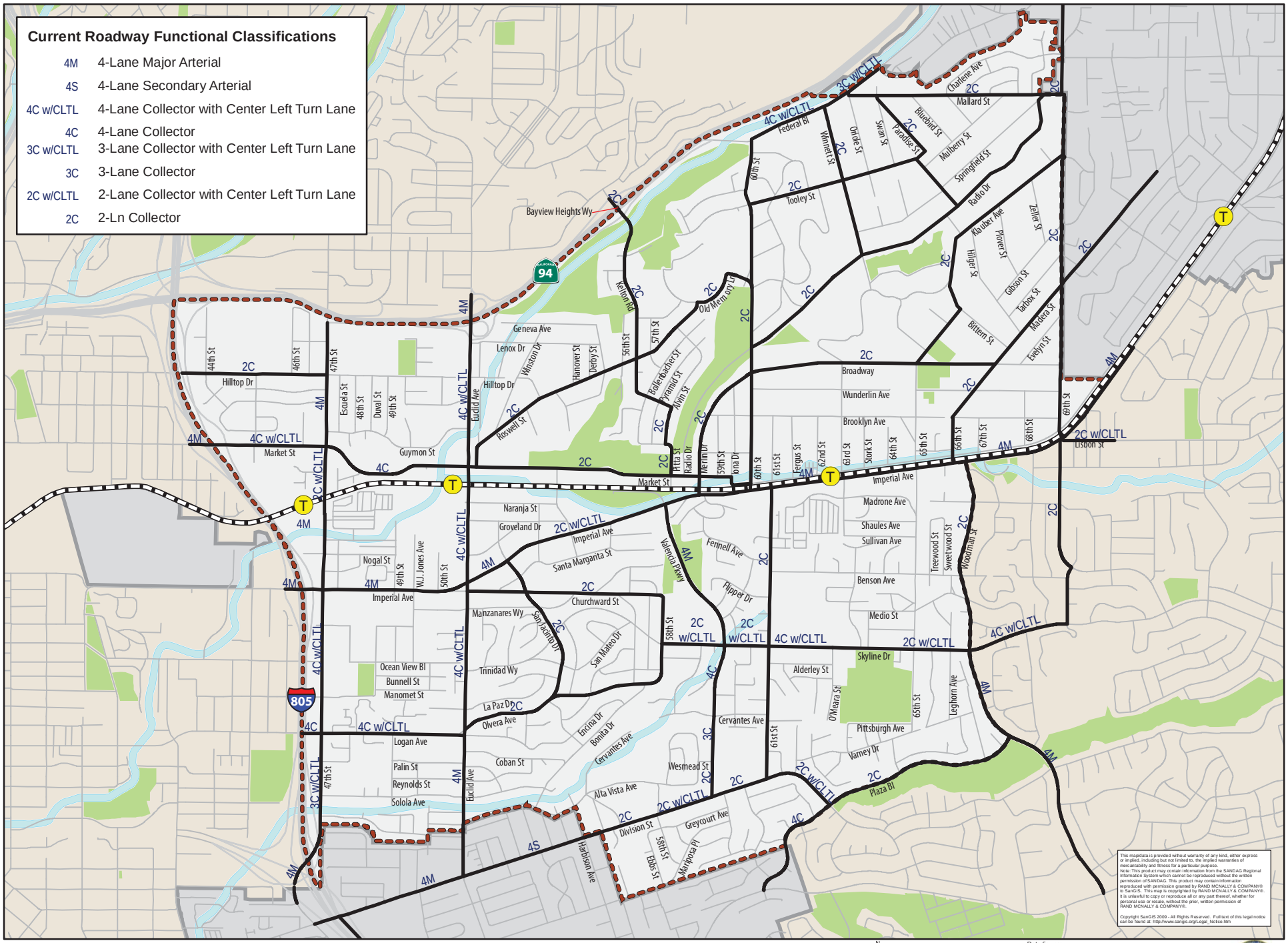


Figure 3-13: Existing Roadway Network

Euclid Avenue runs between SR-94 and Division Street within the study area. This roadway is a 4-lane roadway with a posted speed limit of 35 mph. There are sidewalks along the majority of this facility, as well as Class II bike lanes from Imperial Avenue to Cervantes Avenue. Transit services are available along Euclid Avenue via a combination of Routes 3, 13, 916/917, 955 and 960. The Euclid Avenue Trolley Station serving the Orange Line is located just west of Euclid Avenue.

51th Street runs from Roswell Street to Market Street as a 2-lane roadway with on-street parking and sidewalk. There are bicycle facilities along this roadway. The posted speed limit is 25 mph. Transit services are available via Route 916/917.

San Jacinto Drive runs from Imperial Avenue to Olvera Avenue as a 2-lane roadway with on-street parking and sidewalk. There are no transit service or bicycle facilities along this roadway. The posted speed limit is 25 mph.

Bayview Heights Drive runs from SR-94 WB Ramps to SR-94 EB Ramps as a continuation of Kelton Road. This roadway is a 2-lane roadway with missing sidewalk on the eastern side of the road. There are no transit services, on-street parking, or bicycle facilities along this roadway. The posted speed limit is 30 mph.

Kelton Road runs from Bayview Heights Way/SR-94 EB Ramps to Alvin Street as a 2-lane roadway with on-street parking and sidewalk along the majority of the roadway. There are no transit service or bicycle facilities along this roadway. The posted speed limit is 30 mph.

Alvin Street runs from Kelton Road to Pitta Street as a 2-lane roadway with on-street parking and sidewalk. There are no transit service or bicycle facilities along this roadway. The posted speed limit is 25 mph.

Pitta Street runs from Alvin Street to Market Street as a 2-lane roadway with parallel on-street parking along the eastern side of the roadway and missing sidewalk along a section of this roadway. There are bicycle facilities along this roadway. The posted speed limit is 25 mph. Transit services are available via Route 916/917.

Merlin Drive runs from Broadway to Imperial Avenue as a 2-lane roadway with on-street parking and a posted speed limit of 25 mph. Sidewalks are missing on both sides along a portion of this roadway. There are no transit service or bicycle facilities along this roadway.

Valencia Parkway runs from Imperial Avenue in the north to Division Street in the south. This roadway is a 4-lane roadway from Imperial Avenue to Cervantes Avenue, 3-lane from Cervantes Avenue to Wesmead Street, and 2-lane from Wesmead Street to Division Street. Posted speed limits range from 25 mph to 40 mph. On-street parking as well as sidewalks are available on the majority of this roadway, although sidewalks are missing along a relatively short section of this roadway. No transit services are available along this facility, however Class II bike lanes and Class III bike routes exist along Valencia Parkway, between Imperial Avenue and Skyline Drive.

60th Street runs from Federal Boulevard to Imperial Avenue as a 2-lane roadway with on-street parking and a posted speed limit of 35 mph. Sidewalks are missing on both sides along a portion of this roadway. There are no transit service or bicycle facilities along this roadway.

61st Street runs from Imperial Avenue to Division Street as a 2-lane roadway with on-street parking and a posted speed limit of 30 mph. Sidewalks are missing on both sides along a portion of this roadway. There are no transit service or bicycle facilities along this roadway.

Winnett Street runs from Federal Boulevard to Radio Drive as a 2-lane roadway with on-street parking and a posted speed limit of 25 mph. Sidewalks are missing on both sides along a portion of this roadway. There are no transit service or bicycle facilities along this roadway.

Paradise Street runs from Mallard Street to Radio Drive as a 2-lane roadway with on-street parking and a posted speed limit of 25 mph. Sidewalks are missing on both sides along a portion of this roadway. There are no transit service or bicycle facilities along this roadway.

Madera Street runs from Massachusetts Avenue in Lemon Grove to Akins Avenue as a 2-lane roadway with on-street parking and a posted speed limit of 25 mph. Sidewalks are missing on the west side of this roadway between Massachusetts Avenue and 69th Street, as well as along the east side between 69th Street and Akins Avenue. There are no bicycle facilities along this roadway. Transit services are available via Route 916/917.

Woodman Street runs from Imperial Avenue in the north to Paradise Valley Road in the south. This roadway is a 2-lane roadway from Imperial Avenue to Skyline Drive and a 4-lane roadway from Skyline Drive to Paradise Valley Road. Posted speed limits range from 35 mph to 40 mph. On-street parking as well as sidewalks are available on the majority of this roadway, although sidewalks are missing along a relatively short section of this roadway. Class II bike lanes are available on a short portion between Skyline Drive and Plaza Boulevard. Transit services are provided via Route 961.

69th Street runs from San Miguel Avenue to Skyline Drive as a 2-lane roadway with on-street parking and a posted speed limit of 25 mph. A short segment of the 69th Street, between Evelyn Street and Broadway Avenue, is a unpaved and not accessible to vehicles. Sidewalks are missing along the majority of this roadway with the exception of the segment between Imperial Avenue and Skyline Drive. There are no bicycle facilities or transit services along this roadway.

East-West Roadways

Mallard Street is a 2-lane roadway with a 30 mph posted speed limit between Federal Boulevard and 69th Street. Parallel parking, as well as sidewalks are available along the majority of the roadway. There are no bicycle facilities or transit services on Mallard Street.

Federal Boulevard runs from SR-94 Ramps in the west to MacArthur Drive in the east within the study area. This roadway varies from a 4-lane roadway with a center left-turn lane to a 3-lanes roadway with a center left-turn lane. Posted speed limits range from 40 to 45 mph. On-street

parking and sidewalks are available along a majority of this study roadway. There are no transit services along Federal Boulevard, however Class II bike lanes are available between 60th Street and MacArthur Drive.

Tooley Street is a 2-lane roadway with a 25 mph posted speed limit between 60th Street and Paradise Street. Parallel parking, as well as sidewalks are available along the majority of the roadway. There are no bicycle facilities or transit services on Tooley Street.

Hilltop Drive is a 2-lane roadway with a 25 mph posted speed limit between I-805 and 47th Street. Parallel parking, as well as sidewalks are available along this facility. There are no bicycle facilities or transit services on Hilltop Drive.

Roswell Street runs from 51st Street to Old Memory Lane as a 2-lane roadway with on-street parking and a posted speed limit of 30 mph. Sidewalks are available on both sides of this roadway as well as transit services via Route 916/917. There is no bicycle facility along Roswell Street.

Old Memory Lane runs from Roswell Street to 60th Street as a 2-lane roadway with a posted speed limit of 25 mph. Parallel parking, as well as sidewalks are available along this facility. There are no transit service or bicycle facilities along this roadway.

Radio Drive runs from 60th Street to Mallard Street as a 2-lane roadway with no on-street parking and a posted speed limit of 25 mph. Sidewalks are missing on both sides along a portion of this roadway. There are no transit service or bicycle facilities along this roadway.

Klauber Avenue runs from Broadway to 69th Street as a 2-lane roadway with on-street parking and a posted speed limit of 25 mph. Sidewalks are missing on both sides along a portion of this roadway. There are no transit service or bicycle facilities along this roadway.

Broadway runs from 60th Street to Madera Street as a 2-lane roadway with on-street parking and a posted speed limit of 30 mph. Sidewalks are available along the majority of this roadway, as well as transit services via Route 916/917. There are no bicycle facilities along Broadway.

Market Street runs from I-805 to 60th Street in Encanto. This roadway is a 4-lane roadway from I-805 to Euclid Avenue and a 2-lane roadway from Euclid Avenue to 60th Street. East of Iona Drive, Market Street change to Akins Avenue. Parallel on-street parking are available along the majority of the roadway. Sidewalks are available along the majority of this roadway with the exception of a relatively small segment between Euclid Avenue and 60th Street. Transit services are available along sections Market Street via Routes 5, 13, and 916/917. The Orange Line Trolley runs parallel to Market Street and provides convenient access via the nearby 47th Street Trolley Station, Euclid Avenue Trolley Station, and the 62nd Street/Encanto Trolley Station. Class II bike lanes on the I-805 overpass and Class III bike routes from I-805 NB Ramps to Euclid Avenue are located on Market Street. The posted speed limits vary between 25 mph and 35 mph.

Imperial Avenue runs the entire length of Encanto, from I-805 to Viewcrest Drive as a 4-lane roadway with posted speed limits range 40 to 50 mph, with the exception of the segment

between San Jacinto Drive and 55th Street, where Imperial Avenue is a 2-lane roadway with a center left-turn lane and a posted speed limit of 30 mph. There is on-street parking and sidewalks along a majority of this study roadway. Bus transit service is provided via Routes 4 and 955. Class II bike lanes and Class III (sharrows) bike routes exist along the majority of Imperial Avenue within the study area.

Lisbon Street runs from Imperial Avenue to 71st Street as a 2-lane roadway with no on-street parking and a posted speed limit of 35 mph. Sidewalks are available along this roadway, as well as transit services via Route 4. There is no bicycle facility along Lisbon Street within the study area.

Churchward Street/58th Street runs from Euclid Avenue to Skyline Drive as a 2-lane roadway with on-street parking, sidewalks on both side, and a posted speed limit of 25 mph. There are no bicycle facilities or transit services along Churchward Street/58th Street.

Skyline Drive runs from 58th Street in the west to 69th Street in the east. Skyline Drive varies between a 4-lane road with center left-turn lane and a 2-lane road with center left-turn lane. The posted speed limit is 35 mph along Skyline Drive within the study area. There are Class II bike lanes located from Valencia Parkway to 69th Street. Transit services are provided via Route 11.

Logan Avenue runs from 45th Street to Euclid Avenue Street as a 4-lane roadway with a posted speed limit of 35 mph. There is on-street parking along the entire length of this study roadway, as well as sidewalks. Transit services are available via Route 3, 11, and 955. There is no bicycle facility along this roadway.

Olvera Avenue/58th Street runs from Euclid Avenue to Skyline Drive as a 2-lane roadway with on-street parking and a posted speed limit of 30 mph. There are sidewalks along the majority of Olvera Avenue with the exception of a small portion along the south side. Transit services are available via Route 11. There is no bicycle facility along Olevera Avenue/58th Street.

Division Street runs from Palm Avenue in the west to 61st Street in the east. Division Street varies from a 4-lane roadway to a 2-lane roadway with a center left-turn lane. The posted speed limits range from 30 to 35 mph. There is on-street parking as well as sidewalk along the majority of Division Street. Transit services are available via Route 967. There is no bicycle facility along Division Street.

Plaza Boulevard runs from Paradise Valley Road to Woodman Street. The roadway varies from 2-lanes to 4-lanes with posted speed limits between 30 and 40 mph. On-street parking and sidewalks are available on both sides of the road. There are no bicycle facilities or transit services along Plaza Boulevard.

It is common practice to consider existing and projected average weekday traffic volumes when planning for a community's mobility element. **Figure 3-14** displays existing average daily traffic volumes for study roadway segments, along with the current level of service.

ENCANTO COMMUNITY PLAN UPDATE

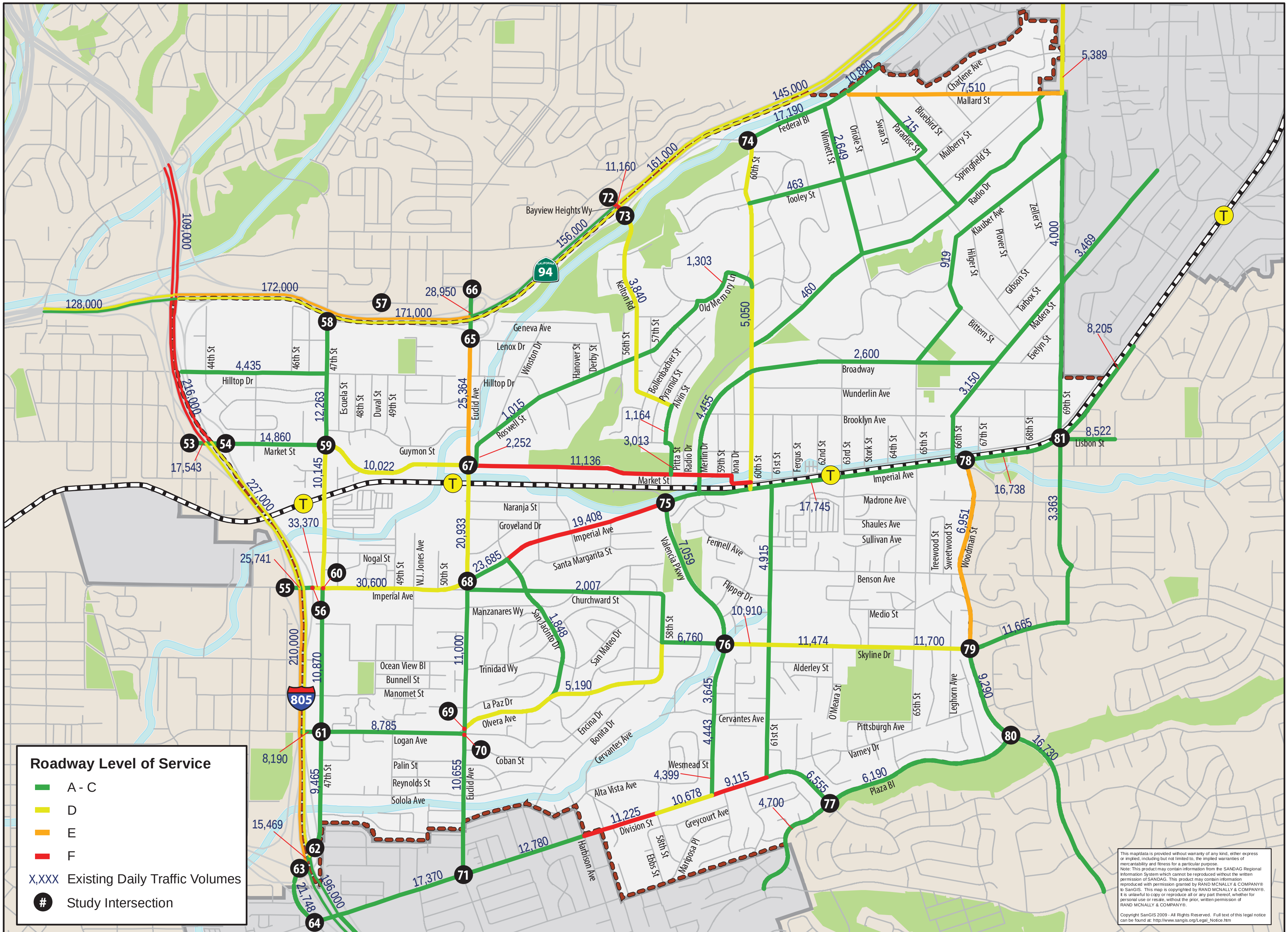


Figure 3-14: Existing Roadway Traffic Volumes and Level of Service

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

Table 3.10 displays existing roadway segment level of service for Encanto. The source and date for each count used to calculate existing level of service is also provided in this table. **Appendix D** contains the average daily traffic counts utilized in this report.

As shown in the tables, there are currently eight (8) roadway segments within Encanto that are operating at Level of Service E or F, as follows:

- Mallard Street, between Federal Boulevard and 69th Street (LOS E);
- Market Street/Akins Avenue, between Euclid Avenue and 60th Street (LOS F);
- Imperial Avenue, between San Jacinto Drive and Valencia Parkway (LOS F);
- Division Street, between Harbison Avenue and 58th Street (LOS F);
- Division Street, between Valencia Parkway and 61st Street (LOS F);
- Euclid Avenue, between SR-94 EB Ramps & Market Street (LOS E);
- Bayview Heights Way, between SR-94 WB Ramps and SR-94 EB Ramps (LOS F); and
- Woodman Street, Imperial Avenue and Skyline Drive (LOS E).

In addition to the roadway segment daily LOS analysis presented above, arterial speed analysis was conducted along the Urban Streets using the HCM 2000 arterial analysis techniques. **Appendix E** displays the peak hour automobile arterial analysis outputs. **Table 3.11** displays the analysis results during the AM and PM peak hours, respectively, under Existing conditions.

Figures 3-15a and **3-15b** display AM and PM peak hour automobile arterial analysis, respectively.

TABLE 3.10
EXISTING ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

No.	Roadway	Segment	Count Date	Data Source	Existing Functional Classification	Capacity (LOS E)	Average Daily Traffic (ADT)	Volume to Capacity Ratio (V/C)	Level of Service (LOS)	Community / Jurisdiction
1	Mallard Street	Federal Boulevard & 69th Street	3/22/2011	City of SD (MC0224-1)	2-Ln Collector	8,000	7,510	0.94	E	Encanto
2	Federal Boulevard	60th Street & Mallard Street	6/23/2011	City of SD (MC0514-1)	4-Ln Collector w/CLTL	30,000	17,190	0.57	C	Encanto
3	Federal Boulevard	Mallard Street & MacArthur Drive	1/31/2012	City of SD (MC0022-1)	3-Ln Collector w/CLTL	22,500	10,880	0.48	C	Encanto
4	Tooley Street	60th Street & Paradise Street	10/10 & 10/11/2012	NDS	2-Ln Collector	8,000	463	0.06	A	Encanto
5	Hilltop Drive	I-805 & 47th Street	3/10/2011	City of SD (MC0208-1)	2-Ln Collector	8,000	4,435	0.55	C	Encanto
6	Roswell Street	51st Street & Old Memory Lane	3/17/2011	City of SD (MC0168-1)	2-Ln Collector	8,000	1,015	0.13	A	Encanto
7	Old Memory Lane	Roswell Street & 60th Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	1,303	0.16	A	Encanto
8	Radio Drive	60th Street & Mallard Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	460	0.06	A	Encanto
9	Klauber Avenue	Broadway & 69th Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	919	0.11	A	Encanto
10	Broadway	60th Street & Madera Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	2,600	0.32	B	Encanto
11	Market Street	I-805 SB Ramps & I-805 NB Ramps	10/9 & 10/10/2012	NDS	4-Ln Major Arterial	40,000	17,543	0.44	B	Southeastern/ Encanto
12	Market Street	I-805 NB Ramps & 47th Street	5/24/2011	Euclid+ Market	4-Ln Collector w/CLTL	30,000	14,860	0.50	C	Encanto

TABLE 3.10
EXISTING ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

No.	Roadway	Segment	Count Date	Data Source	Existing Functional Classification	Capacity (LOS E)	Average Daily Traffic (ADT)	Volume to Capacity Ratio (V/C)	Level of Service (LOS)	Community / Jurisdiction
13	Market Street	47th Street & Euclid Avenue	5/24/2011	Euclid+ Market	4-Ln Collector	15,000	10,022	0.67	D	Encanto
14	Market Street/Akins Avenue	Euclid Avenue & 60th Street	5/24/2011	Euclid+ Market	2-Ln Collector	10,000	11,136	1.11	F	Encanto
15	Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	10/9 & 10/10/2012	NDS	4-Ln Major Arterial	40,000	25,741	0.64	C	Southeastern/ Encanto
16	Imperial Avenue	I-805 NB Ramps & 47th Street	10/9 & 10/10/2012	NDS	4-Ln Major Arterial	40,000	33,370	0.83	D	Encanto
17	Imperial Avenue	47th Street & Euclid Avenue	3/10/2011	City of SD (MC0221-1)	4-Ln Major Arterial	40,000	30,600	0.77	D	Encanto
18	Imperial Avenue	Euclid Avenue & San Jacinto Drive	1/25/2012	City of SD (MC0026-1)	4-Ln Major Arterial	40,000	23,685	0.59	C	Encanto
19	Imperial Avenue	San Jacinto Drive & Valencia Parkway	1/09/2013	City of SD (MC0039-13)	2-Ln Collector w/CLTL	15,000	19,408	1.29	F	Encanto
20	Imperial Avenue	Valencia Parkway & Woodman Street	1/24/2012	City of SD (MC0027-1)	4-Ln Major Arterial	40,000	17,745	0.44	B	Encanto
21	Imperial Avenue	Woodman Street & 69th Street	10/9 & 10/10/2012	NDS	4-Ln Major Arterial	40,000	16,738	0.42	B	Encanto
22	Imperial Avenue	69th Street & Viewcrest Drive	1/24/2012	City of SD (MC0025-1)	4-Ln Major Arterial	40,000	8,205	0.21	A	Encanto (Skyline/ Paradise Hills)

TABLE 3.10
EXISTING ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

No.	Roadway	Segment	Count Date	Data Source	Existing Functional Classification	Capacity (LOS E)	Average Daily Traffic (ADT)	Volume to Capacity Ratio (V/C)	Level of Service (LOS)	Community / Jurisdiction
23	Lisbon Street	Imperial Avenue & 71st Street	10/9 & 10/10/2012	NDS	2-Ln Collector w/CLTL	15,000	8,522	0.57	C	Encanto (Skyline/ Paradise Hills)
24	Churchward Street/58th Street	Euclid Avenue & Skyline Drive	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	2,007	0.25	A	Encanto
25	Skyline Drive	58th Street & Valencia Parkway	10/9 & 10/10/2012	NDS	2-Ln Collector w/CLTL	15,000	6,760	0.45	B	Encanto
26	Skyline Drive	Valencia Parkway & 61st Street	10/9 & 10/10/2012	NDS	2-Ln Collector w/CLTL	15,000	10,910	0.73	D	Encanto
27	Skyline Drive	61st Street & Omeara Street	10/9 & 10/10/2012	NDS	2-Ln Collector w/CLTL	15,000	11,474	0.76	D	Encanto
28	Skyline Drive	Omeara Street & Woodman Street	3/22/2011	City of SD (MC0215-1)	2-Ln Collector w/CLTL	15,000	11,700	0.78	D	Encanto
29	Skyline Drive	Woodman Street & 69th Street	10/9 & 10/10/2012	NDS	4-Ln Collector w/CLTL	30,000	11,665	0.39	B	Skyline/ Paradise Hills
30	Logan Avenue	45th Street & 47th Street	7/28/2011	City of SD (MC0604-1)	4-Ln Collector	15,000	8,190	0.55	C	Southeastern/ Encanto
31	Logan Avenue	47th Street & Euclid Avenue	1/31/2012	City of SD (MC0032-1)	4-Ln Collector w/CLTL	30,000	8,785	0.29	A	Encanto
32	Olvera Avenue/58th Street	Euclid Avenue & Skyline Drive	3/22/2011	City of SD (MC0198-1)	2-Ln Collector	8,000	5,190	0.65	D	Encanto

TABLE 3.10
EXISTING ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

No.	Roadway	Segment	Count Date	Data Source	Existing Functional Classification	Capacity (LOS E)	Average Daily Traffic (ADT)	Volume to Capacity Ratio (V/C)	Level of Service (LOS)	Community / Jurisdiction
33	Division Street	Palm Avenue & Euclid Avenue	3/15 & 3/16/2011	National City	4-Ln Major Arterial	40,000	17,370	0.43	B	National City
34	Division Street	Euclid Avenue & Harbison Avenue	3/15 & 3/16/2011	National City	4-Ln Secondary Arterial	30,000	12,780	0.43	B	National City
35	Division Street	Harbison Avenue & 58th Street	3/22/2011	City of SD (MC0191-1)	2-Ln Collector	8,000	11,225	1.40	F	Encanto
36	Division Street	58th Street & Valencia Parkway	10/9 & 10/10/2012	NDS	2-Ln Collector w/CLTL	15,000	10,678	0.71	D	Encanto
37	Division Street	Valencia Parkway & 61st Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	9,115	1.14	F	Encanto
38	Division Street	61st Street & Plaza Boulevard	3/22/2011	City of SD (MC0205-1)	2-Ln Collector w/CLTL	15,000	6,555	0.44	B	Encanto
39	Plaza Boulevard	Paradise Valley Road & Division Street	3/24/2011	City of SD (MC0225-1)	4-Ln Collector	15,000	4,700	0.31	A	Encanto
40	Plaza Boulevard	Division Street & Woodman Street	3/24/2011	City of SD (MC0214-1)	2-Ln Collector	10,000	6,190	0.62	B	Encanto
41	47th Street	SR-94 EB On-Ramp & Market Street	5/24/2011	Euclid+ Market	4-Ln Collector w/CLTL	30,000	12,263	0.41	B	Encanto
42	47th Street	Market Street & Imperial Avenue	5/24/2011	Euclid+ Market	2-Ln Collector w/CLTL	15,000	10,145	0.68	D	Encanto
43	47th Street	Imperial Avenue & Logan Avenue	2/9/2012	City of SD (MC0096-1)	4-Ln Collector w/CLTL	30,000	10,870	0.36	B	Encanto
44	47th Street	Logan Avenue & I-805 NB Ramps	1/31/2012	City of SD (MC0003-1)	3-Ln Collector w/CLTL	22,500	9,465	0.42	B	Encanto

TABLE 3.10
EXISTING ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

No.	Roadway	Segment	Count Date	Data Source	Existing Functional Classification	Capacity (LOS E)	Average Daily Traffic (ADT)	Volume to Capacity Ratio (V/C)	Level of Service (LOS)	Community / Jurisdiction
45	47th Street	I-805 NB Ramps & I-805 SB Ramps	10/9 & 10/10/2012	NDS	4-Ln Major Arterial	40,000	15,469	0.39	B	Encanto/ National City
46	47th Street/Palm Avenue	I-805 SB Ramps & Division Street	10/9 & 10/10/2012	NDS	4-Ln Major Arterial	40,000	21,748	0.54	C	National City
47	Euclid Avenue	SR-94 WB Ramps & SR-94 EB Ramps	5/8/2012	SR 94/Euclid Traffic Operations Study	4-Ln Major Arterial	40,000	28,950	0.72	C	Encanto
48	Euclid Avenue	SR-94 EB Ramps & Market Street	5/24/2011	Euclid+ Market	4-Ln Collector w/CLTL	30,000	25,364	0.85	E	Encanto
49	Euclid Avenue	Market Street & Imperial Avenue	5/24/2011	Euclid+ Market	4-Ln Collector w/CLTL	30,000	20,933	0.70	D	Encanto
50	Euclid Avenue	Imperial Avenue & Logan Avenue	1/25/2012	City of SD (MC0021-1)	4-Ln Collector w/CLTL	30,000	11,000	0.37	B	Encanto
51	Euclid Avenue	Logan Avenue & Division Street	4/6 & 4/7/2011	National City	4-Ln Major Arterial	40,000	10,655	0.27	A	Encanto/ National City
52	51st Street	Market Street & Roswell Street	10/9 & 10/10/2012	NDS	2-Ln Collector	10,000	2,252	0.23	A	Encanto
53	San Jacinto Drive	Imperial Avenue & Olvera Avenue	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	1,848	0.23	A	Encanto
54	Bayview Heights Way	SR-94 WB Ramps & SR-94 EB Ramps	6/23/2011	City of SD (MC0469-1)	2-Ln Collector	10,000	11,160	1.12	F	Encanto
55	Kelton Road	SR-94 EB Ramps & Alvin Street	3/22/2011	City of SD (MC0222-1)	2-Ln Collector	8,000	3,840	0.48	D	Encanto

TABLE 3.10
EXISTING ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

No.	Roadway	Segment	Count Date	Data Source	Existing Functional Classification	Capacity (LOS E)	Average Daily Traffic (ADT)	Volume to Capacity Ratio (V/C)	Level of Service (LOS)	Community / Jurisdiction
56	Alvin Street	Kelton Road & Pitta Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	1,164	0.15	A	Encanto
57	Pitta Street	Alvin Street & Market Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	3,013	0.38	B	Encanto
58	Merlin Drive	Broadway & Imperial Avenue	7/28/2011	City of SD (MC0615-1)	2-Ln Collector	8,000	4,455	0.56	C	Encanto
59	Valencia Parkway	Imperial Avenue & Skyline Drive	10/9 & 10/10/2012	NDS	4-Ln Major Arterial	40,000	7,059	0.18	A	Encanto
60	Valencia Parkway	Skyline Drive & Cervantes Avenue	3/22/2011	City of SD (MC0217-1)	4-Ln Collector	15,000	3,645	0.24	A	Encanto
61	Valencia Parkway	Cervantes Avenue & Wesmead Street	10/9 & 10/10/2012	NDS	3-Ln Collector	15,000	4,443	0.30	A	Encanto
62	Valencia Parkway	Wesmead Street & Division Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	4,399	0.55	C	Encanto
63	60th Street	Federal Boulevard & Imperial Avenue	10/10 & 10/11/2012	NDS	2-Ln Collector	8,000	5,050	0.63	D	Encanto
64	61st Street	Imperial Avenue & Division Street	3/22/2011	City of SD (MC0204-1)	2-Ln Collector	8,000	4,915	0.61	C	Encanto
65	Winnett Street	Federal Boulevard & Radio Drive	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	2,649	0.33	B	Encanto
66	Paradise Street	Mallard Street & Radio Drive	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	715	0.09	A	Encanto
67	Madera Street	Massachusetts Avenue & 69th Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	3,469	0.43	B	Lemon Grove

TABLE 3.10
EXISTING ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

No.	Roadway	Segment	Count Date	Data Source	Existing Functional Classification	Capacity (LOS E)	Average Daily Traffic (ADT)	Volume to Capacity Ratio (V/C)	Level of Service (LOS)	Community / Jurisdiction
68	Madera Street/66th Street	69th Street & Akins Avenue	3/22/2011	City of SD (MC0223-1)	2-Ln Collector	8,000	3,150	0.39	B	Encanto
69	Woodman Street	Imperial Avenue & Skyline Drive	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	6,951	0.87	E	Encanto
70	Woodman Street	Skyline Drive & Plaza Boulevard	6/21/2011	City of SD (M0564-11)	4-Ln Major Arterial	40,000	9,290	0.23	A	Encanto
71	Woodman Street	Plaza Boulevard & Paradise Valley Road	5/26/2011	City of SD (MC0297-1)	4-Ln Major Arterial	40,000	16,730	0.42	B	Encanto (Skyline/ Paradise Hills)
72	69th Street	San Miguel Avenue & Mallard Street	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	5,389	0.67	D	Lemon Grove
73	69th Street	Mallard Street & Imperial Avenue	3/22/2011	City of SD (MC0219-1)	2-Ln Collector	8,000	4,000	0.50	C	Encanto
74	69th Street	Imperial Avenue & Skyline Drive	10/9 & 10/10/2012	NDS	2-Ln Collector	8,000	3,363	0.42	B	Encanto (Skyline/ Paradise Hills)

Source: NDS, City of San Diego, City of National City, Chen Ryan Associates; February 2015

Notes:
Bold letter indicates unacceptable LOS E or F.
CLTL = Center Left-Turn Lane.

TABLE 3.11
EXISTING ARTERIAL ANALYSIS ALONG KEY CORRIDORS

Roadway Segment	Segment	AM Peak Hour				PM Peak Hour			
		EB/NB		WB/SB		EB/NB		WB/SB	
		Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	17.8	D	17.8	D	17.1	D	13.4	E
	I-805 NB Ramps & 47th Street	22.3	C	20.8	C	20.5	C	21.4	C
	47th Street & Euclid Avenue	27.9	B	23.0	C	25.5	B	25.4	B
Skyline Drive	58th Street & Valencia Parkway	17.7	D	27.1	B	17.9	D	20.4	C
	Valencia Parkway & 61st Street	23.1	C	27.0	B	28.5	B	28.5	B
	61st Street & Omeara Street	23.1	C	27.0	B	28.5	B	28.5	B
	Omeara Street & Woodman Street	23.1	C	27.0	B	28.5	B	28.5	B
	Woodman Street & 69th Street	29.9	B	18.7	C	24.4	B	21.4	C
Logan Avenue	45th Street & 47th Street	23.9	C	19.9	C	23.2	C	21.3	C
	47th Street & Euclid Avenue	13.7	E	23.0	C	13.7	E	22.5	C
47th Street	SR-94 EB On-Ramp & Market Street	30.2	B	25.0	C	30.2	B	24.6	C
	Market Street & Imperial Avenue	24.0	C	22.5	C	25.3	C	19.7	C
	Imperial Avenue & Logan Avenue	21.4	D	27.8	C	23.9	C	29.2	B
	Logan Avenue & I-805 NB Ramps	24.7	C	27.1	C	27.7	C	35.4	A
	I-805 NB Ramps & I-805 SB Ramps	25.2	C	23.0	C	24.8	C	15.5	E
Euclid Avenue	SR-94 WB Ramps & SR-94 EB Ramps	26.2	B	26.2	B	24.1	B	24.1	B
	SR-94 EB Ramps & Market Street	35.0	A	28.2	B	34.9	A	26.6	B
	Market Street & Imperial Avenue	20.3	C	19.9	C	20.0	C	17.3	D
	Imperial Avenue & Logan Avenue	17.8	D	15.2	D	18.0	C	15.2	D
	Logan Avenue & Division Street	19.8	C	24.0	C	18.8	C	22.5	C

Source: Chen Ryan Associates; February 2015

Note:
Bold letter indicates unacceptable LOS E or F.

As shown in the table, a majority of the segments analyzed are operating at LOS D or better, with the exception of the following segments:

- Market Street, westbound between I-805 SB Ramps and I-805 NB Ramps - PM Peak Hour (LOS E);
- Logan Avenue, eastbound between 47th Street and Euclid Avenue - AM and PM Peak Hour (LOS E); and
- 47th Street, southbound between I-805 NB Ramps and I-805 SB Ramps - PM Peak Hour (LOS E).

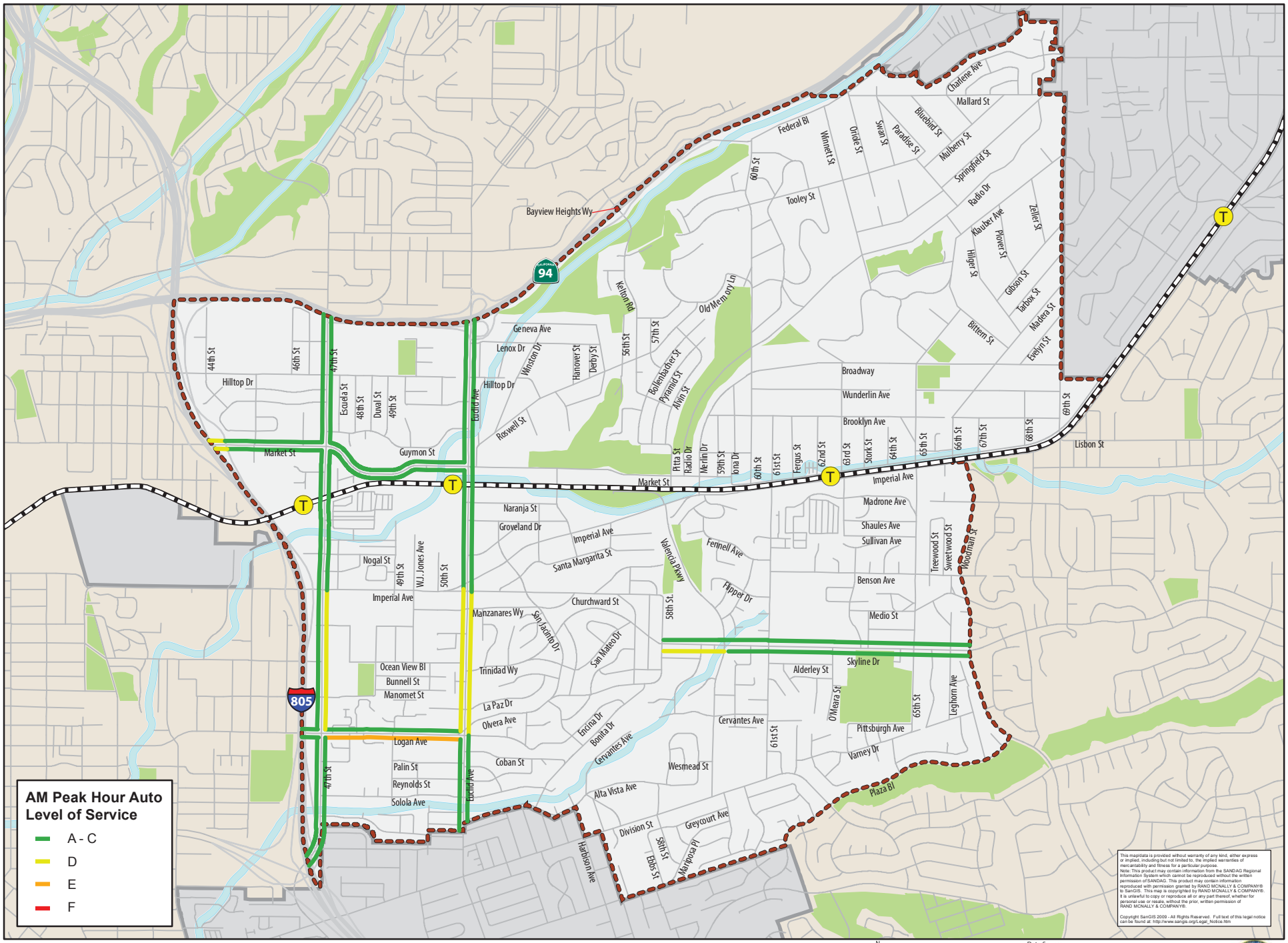


Figure 3-15a: Existing AM Peak Hour Auto Arterial Analysis Level of Service

Chen Ryan

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

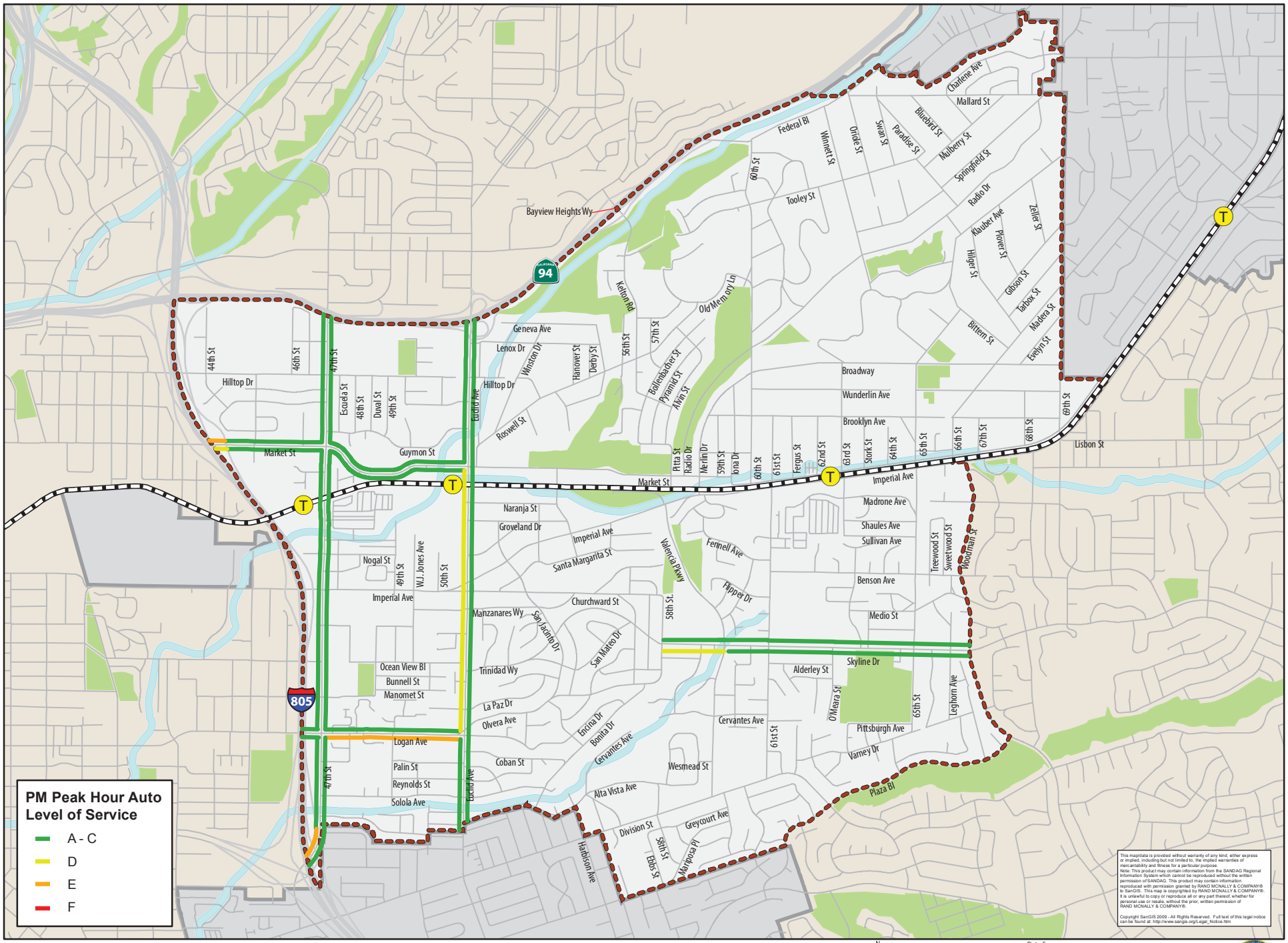


Figure 3-15b: Existing PM Peak Hour Auto Arterial Analysis Level of Service

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

3.4.2 Intersection Geometry and Level of Service Analysis

As described in Chapter 2, a total of twenty-nine (29) study intersections are analyzed as part of this existing conditions assessment. Five (5) of these intersections are located outside Encanto in adjacent communities.

Figure 3-16 displays current intersection geometry, while **Figure 3-17** shows existing peak period turning movements for both the AM and PM peak periods. The study area intersection traffic counts are provided in **Appendix F**.

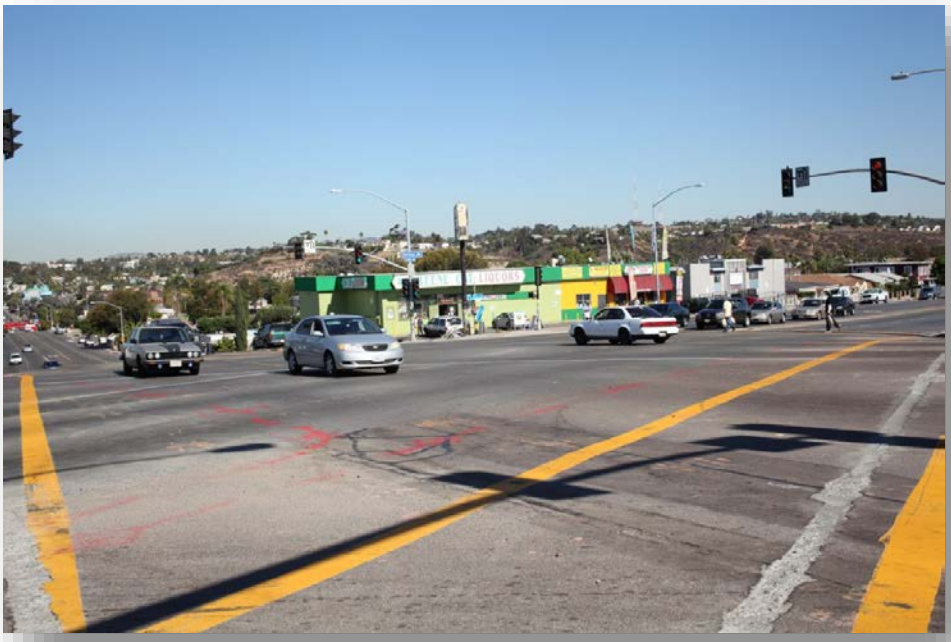
Table 3.12 displays the level of service analysis results for the key study area intersections located within Encanto under existing conditions. Level of service analyses were conducted using the methodologies described in Chapter 2.0. The traffic control type, and date and source for all existing intersection counts are provided in Table 3.12.

Intersection level of service calculation worksheets for existing conditions are provided in **Appendix G**.

As shown in Table 3.12, two (2) study area intersections are currently operating at LOS E or F during the AM and/PM peak hour, as follows:

- Euclid Avenue / SR-94 EB Ramps – LOS E during the AM peak hour and LOS F during the PM peak hour; and
- Euclid Avenue / SR-94 WB Ramps – LOS F during both the AM and PM peak hours.

Figure 3-18 shows the existing intersection LOS analysis results.



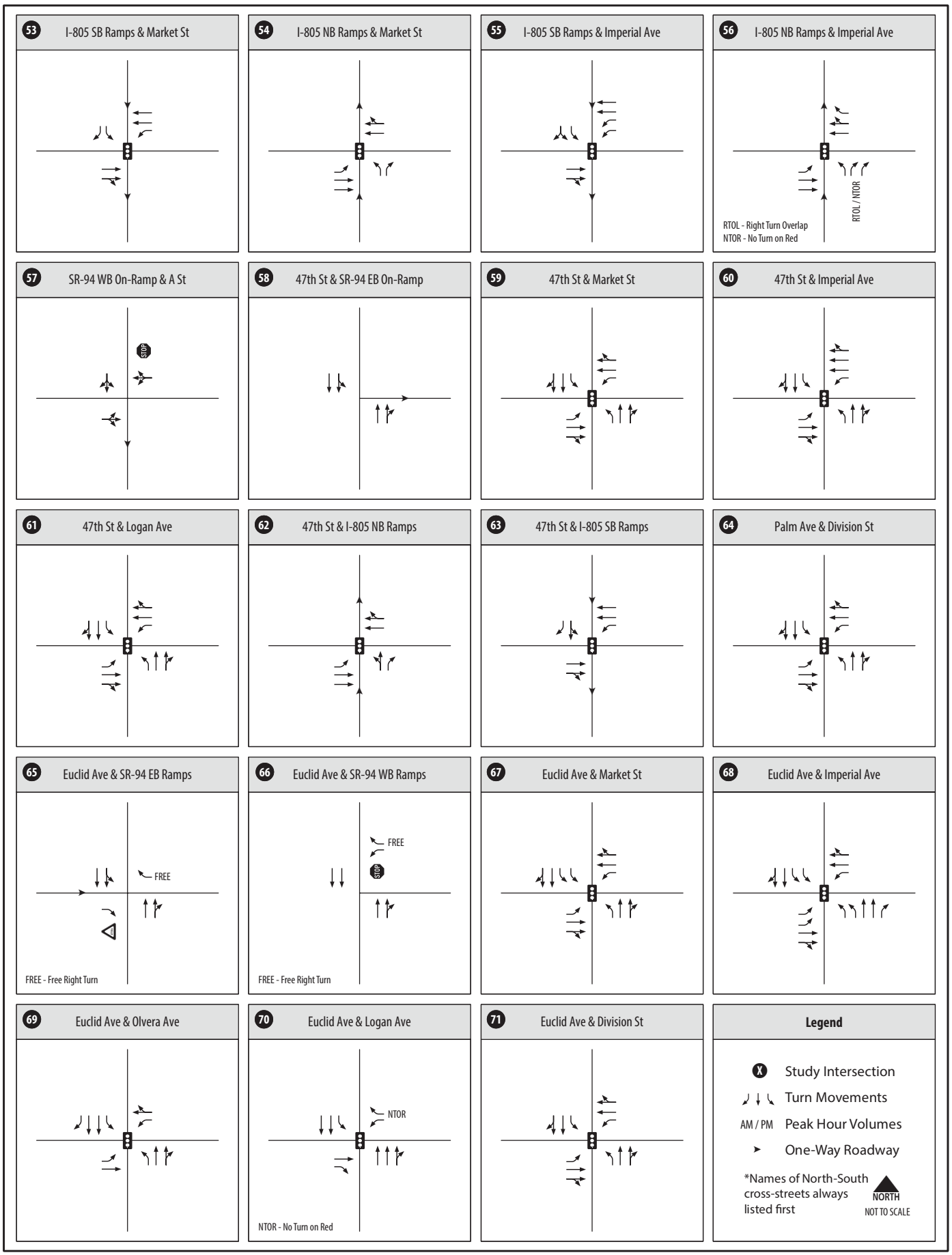


Figure 3-16: Existing Intersection Geometrics
Intersections 53-71 (Page 1 of 2)

CHEN RYAN

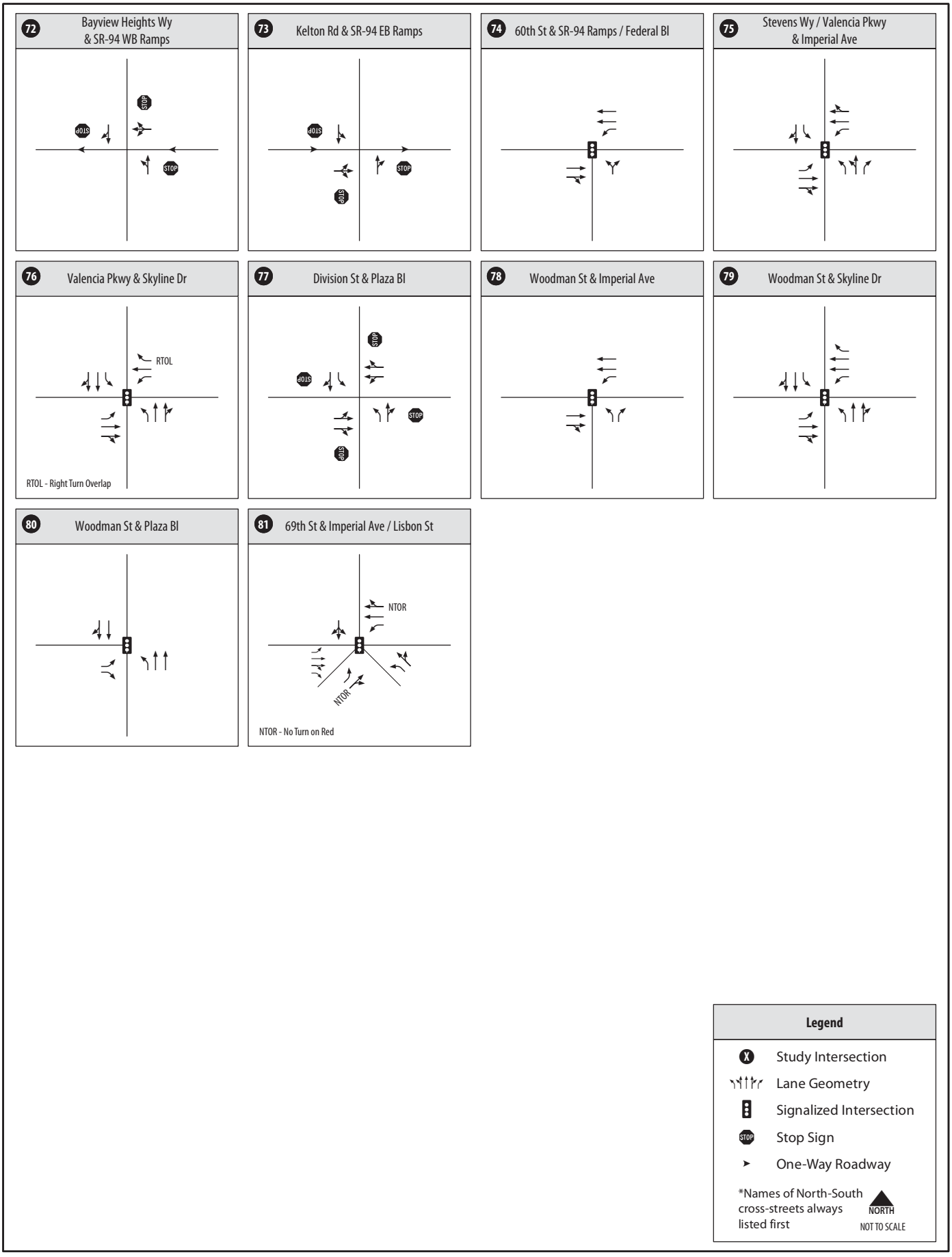


Figure 3-16: Existing Intersection Geometrics

Intersections 72-81 (Page 2 of 2)

CHEN RYAN

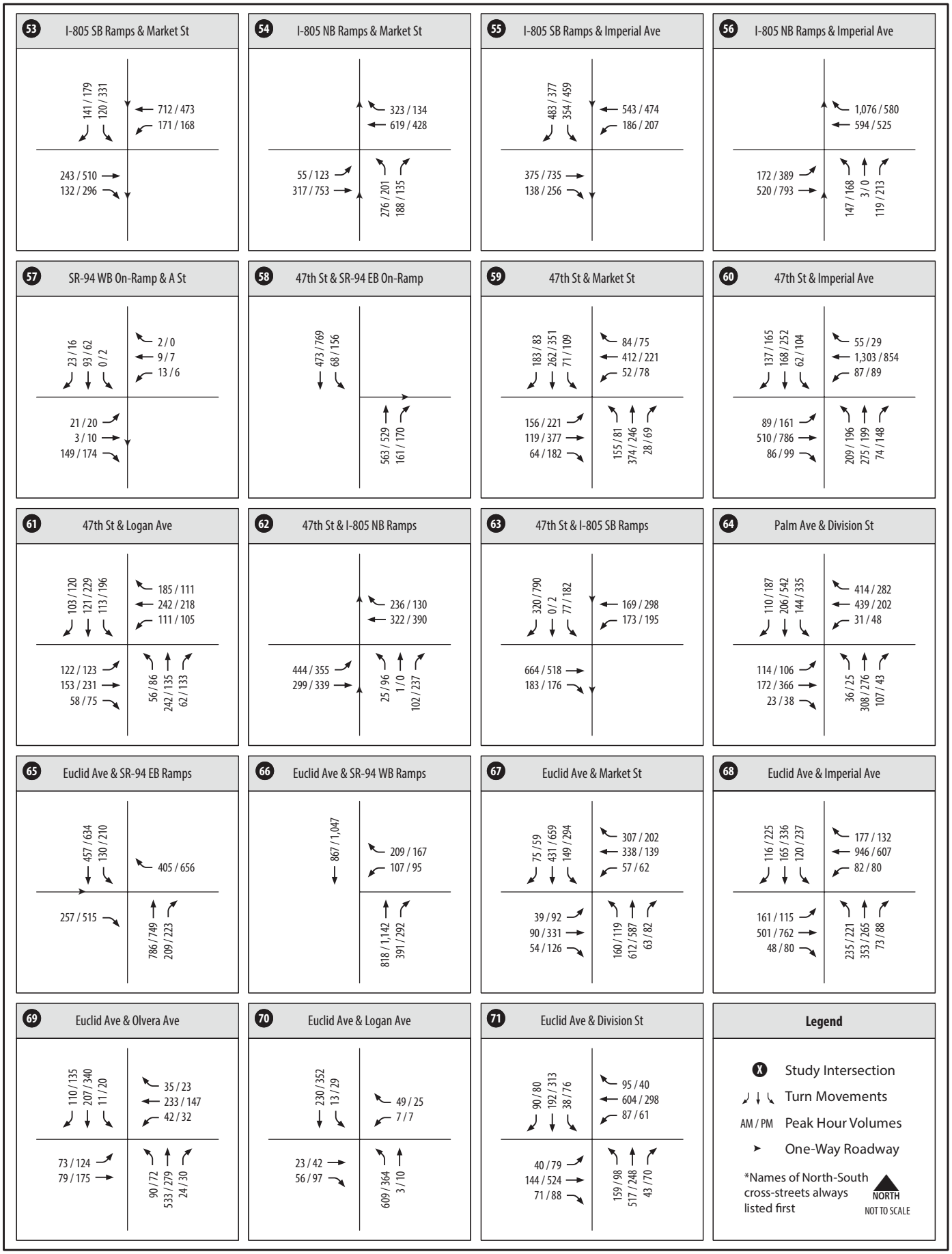


Figure 3-17: Existing AM / PM Peak Hour Intersection Turning Movements
Intersections 53-71 (Page 1 of 2)

CHEN RYAN

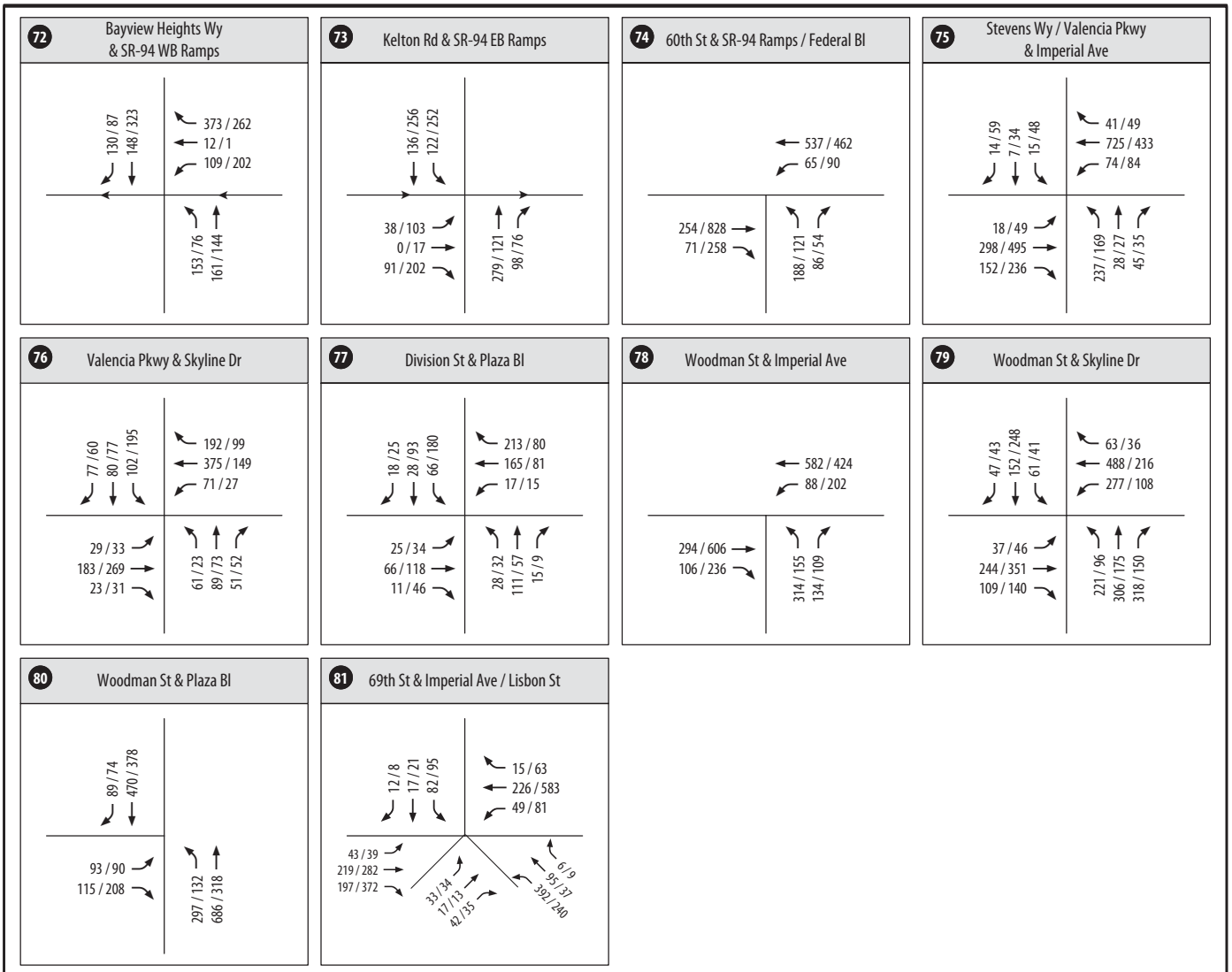


Figure 3-17: Existing AM / PM Peak Hour Intersection Turning Movements
Intersections 72-81 (Page 2 of 2)

CHEN RYAN

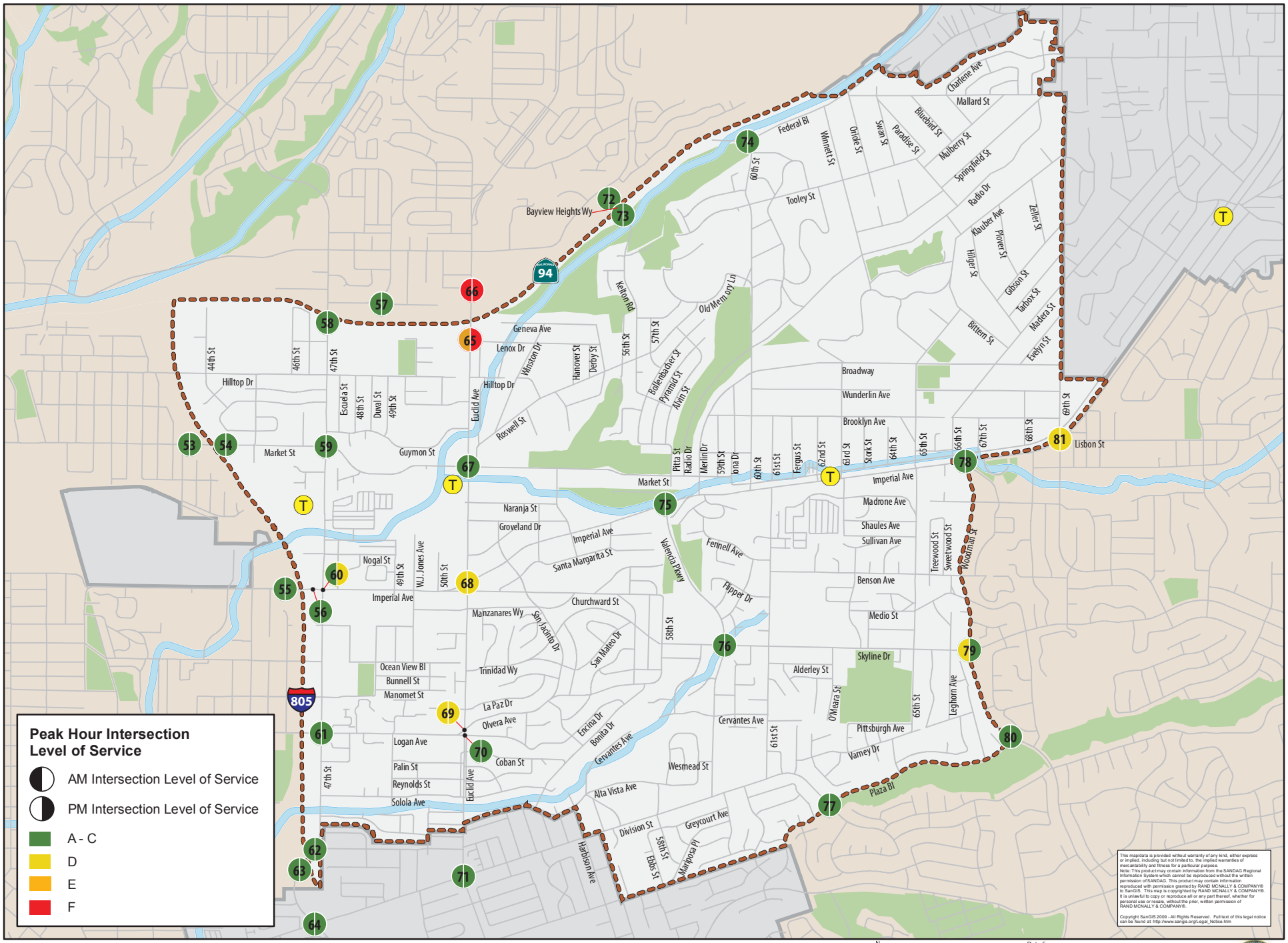


Figure 3-18: Existing AM/PM Peak Hour Intersection Levels of Service

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

TABLE 3.12
EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS

ID	Intersection	Traffic Control	Count Date	Data Source	AM Peak Hour		PM Peak Hour	
					Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
53	Market Street / I-805 SB Ramps	Signalized	5/24/11	Euclid+ Market	17.2	B	26.1	C
54	Market Street / I-805 NB Ramps	Signalized	5/24/11	Euclid+ Market	14.4	B	10.4	B
55	Imperial Avenue / I-805 SB Ramps	Signalized	10/9/12	NDS	20.4	C	24.0	C
56	Imperial Avenue / I-805 NB Ramps	Signalized	10/9/12	NDS	12.8	B	16.8	B
57	SR-94 WB On-Ramp / A Street	OWSC	10/9/12	NDS	10.5	B	10.3	B
58	47th Street / SR-94 EB On-Ramp	OWSC	10/9/12	NDS	3.8	A	5.3	A
59	47th Street / Market Street	Signalized	5/24/11	Euclid+ Market	29.1	C	26.5	C
60	47th Street / Imperial Avenue	Signalized	5/24/11	Euclid+ Market	34.2	C	38.9	D
61	47th Street / Logan Avenue	Signalized	10/9/12	NDS	25.1	C	26.1	C
62	47th Street / I-805 NB Ramps	Signalized	10/9/12	NDS	12.8	B	8.1	A
63	47th Street / I-805 SB Ramps	Signalized	10/9/12	NDS	14.3	B	26.0	C
64	Palm Avenue / Division Street	Signalized	10/9/12	NDS	33.3	C	28.3	C
65	Euclid Avenue / SR-94 EB Ramps	OWSC	5/24/11	Euclid+ Market	46.8	E	177.4	F
66	Euclid Avenue / SR-94 WB Ramps	OWYC	5/24/11	Euclid+ Market	88.7	F	295.4	F
67	Euclid Avenue / Market Street	Signalized	5/24/11	Euclid+ Market	27.5	C	30.5	C
68	Euclid Avenue / Imperial Avenue	Signalized	5/24/11	Euclid+ Market	36.7	D	36.9	D
69	Euclid Avenue / Olvera Avenue	Signalized	10/9/12	NDS	43.8	D	47.7	D
70	Euclid Avenue / Logan Avenue	Signalized	10/9/12	NDS	14.6	B	20.5	C
71	Euclid Avenue / Division Street	Signalized	10/9/12	NDS	27.7	C	23.1	C
72	Bayview Heights Way / SR-94 WB Ramps	AWSC	10/9/12	NDS	22.3	C	24.2	C
73	Kelton Road / SR-94 EB Ramps	AWSC	10/9/12	NDS	13.9	B	24.8	C
74	60th Street / SR-94 Ramps/Federal Boulevard	Signalized	10/9/12	NDS	10.7	B	11.3	B
75	Valencia Parkway / Imperial Avenue	Signalized	10/10/12	NDS	26.0	C	29.9	C

TABLE 3.12
EXISTING PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS

ID	Intersection	Traffic Control	Count Date	Data Source	AM Peak Hour		PM Peak Hour	
					Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
76	Valencia Parkway / Skyline Drive	Signalized	10/10/12	NDS	23.2	C	25.1	C
77	Division Street / Plaza Boulevard	AWSC	10/10/12	NDS	12.2	B	9.6	A
78	Woodman Street / Imperial Avenue	Signalized	10/10/12	NDS	14.0	B	16.9	B
79	Woodman Street / Skyline Drive	Signalized	10/10/12	NDS	44.6	D	23.1	C
80	Woodman Street / Plaza Boulevard	Signalized	10/10/12	NDS	18.3	B	12.4	B
81	69th Street / Imperial Avenue/Lisbon Street	Signalized	10/10/12	NDS	44.5	D	39.7	D

Source: NDS, City of San Diego, Chen Ryan Associates; February 2015

Notes:
Bold letter indicates unacceptable LOS E or F.
OWSC = One-way stop controlled.
TWSC = Two-way stop controlled.
AWSC = All-way stop controlled.
For one or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

3.4.3 Intersection Queuing Analysis

A queuing analysis was conducted 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 3.13 displays potential intersection queuing issues during the AM and/or PM peak hour.

TABLE 3.13
EXISTING PEAK HOUR INTERSECTION QUEUING ANALYSIS

ID	Intersection	Traffic Control	Turning Movement	Peak Hour	Pocket Length (ft)	95% Queue Length (ft)	Excess Queue (ft)
53	Market Street / I-805 SB Ramps	Signalized	SBL	AM / PM	330	122 / 326	0 / 0
			SBR	AM / PM	330	52 / 54	0 / 0
			WBL	AM / PM	290	287 / 273	0 / 0
			WBT	AM / PM	530	243 / 186	0 / 0
54	Market Street / I-805 NB Ramps	Signalized	NBL	AM / PM	550	184 / 100	0 / 0
			NBR	AM / PM	550	40 / 31	0 / 0
			EBL	AM / PM	100	86 / 168	0 / 68
			EBT	AM / PM	530	77 / 191	0 / 0
55	Imperial Avenue / I-805 SB Ramps	Signalized	SBL	AM / PM	540	161 / 310	0 / 0
			SBT	AM / PM	540	261 / 186	0 / 0
			WBL	AM / PM	190	80 / 113	0 / 0
			WBT	AM / PM	410	134 / 110	0 / 0
56	Imperial Avenue / I-805 NB Ramps	Signalized	NBT	AM / PM	260	104 / 125	0 / 0
			NBR	AM / PM	260	13 / 39	0 / 0
			EBL	AM / PM	140	155 / 310	15 / 170
57	SR-94 WB On-Ramp / A Street	OWSC	WBLTR	AM / PM	430	5 / 4	0 / 0
58	47th Street / SR-94 EB On-Ramp	OWSC	SBTL	AM / PM	290	8 / 18	0 / 0
59	47th Street / Market Street	Signalized	NBL	AM / PM	90	211 / 138	121 / 48
			SBL	AM / PM	80	100 / 168	20 / 88
			EBL	AM / PM	120	213 / 287	93 / 167
			WBL	AM / PM	120	79 / 93	0 / 0
60	47th Street / Imperial Avenue	Signalized	NBL	AM / PM	120	234 / 310	114 / 190
			SBL	AM / PM	130	94 / 145	0 / 15
			EBL	AM / PM	70	128 / 204	58 / 134
			EBT	AM / PM	100	352 / 376	252 / 276
			WBL	AM / PM	210	116 / 172	0 / 0
61	47th Street / Logan Avenue	Signalized	NBL	AM / PM	200	66 / 104	0 / 0
			SBL	AM / PM	110	137 / 240	27 / 130
			EBL	AM / PM	100	159 / 170	59 / 70
			WBL	AM / PM	130	140 / 147	10 / 17

TABLE 3.13
EXISTING PEAK HOUR INTERSECTION QUEUING ANALYSIS

ID	Intersection	Traffic Control	Turning Movement	Peak Hour	Pocket Length (ft)	95% Queue Length (ft)	Excess Queue (ft)
62	47th Street / I-805 NB Ramps	Signalized	NBT	AM / PM	120	27 / 91	0 / 0
			NBR	AM / PM	95	34 / 62	0 / 0
			EBL	AM / PM	80	258 / 174	178 / 94
			EBT	AM / PM	490	22 / 32	0 / 0
			WBT	AM / PM	220	88 / 41	0 / 0
63	47th Street / I-805 SB Ramps	Signalized	SBT	AM / PM	820	48 / 116	0 / 0
			SBR	AM / PM	820	49 / 442	0 / 0
			EBT	AM / PM	430	146 / 207	0 / 0
			WBL	AM / PM	140	158 / 211	18 / 71
			WBT	AM / PM	490	18 / 61	0 / 0
64	Palm Avenue / Division Street	Signalized	NBL	AM / PM	200	56 / 48	0 / 0
			SBL	AM / PM	200	181 / 391	0 / 191
			EBL	AM / PM	65	167 / 188	102 / 123
			WBL	AM / PM	160	50 / 73	0 / 0
65	Euclid Avenue / SR-94 EB Ramps	OWSC	EBR	AM / PM	630	42 / 216	0 / 0
66	Euclid Avenue / SR-94 WB Ramps	OWYC	WBL	AM / PM	75	123 / 191	48 / 116
67	Euclid Avenue / Market Street	Signalized	NBL	AM / PM	140	248 / 174	108 / 34
			SBL	AM / PM	170	101 / 192	0 / 22
			EBL	AM / PM	110	57 / 143	0 / 33
			WBL	AM / PM	60	109 / 113	49 / 53
68	Euclid Avenue / Imperial Avenue	Signalized	NBL	AM / PM	135	146 / 132	11 / 0
			NBR	AM / PM	85	27 / 13	0 / 0
			SBL	AM / PM	200	82 / 137	0 / 0
			EBL	AM / PM	160	114 / 76	0 / 0
			WBL	AM / PM	195	124 / 113	0 / 0
69	Euclid Avenue / Olvera Avenue	Signalized	NBL	AM / PM	32	120 / 107	88 / 75
			SBL	AM / PM	160	27 / 41	0 / 0
			SBR	AM / PM	290	54 / 59	0 / 0
			EBL	AM / PM	100	113 / 161	13 / 61
			WBL	AM / PM	110	59 / 50	0 / 0

TABLE 3.13
EXISTING PEAK HOUR INTERSECTION QUEUING ANALYSIS

ID	Intersection	Traffic Control	Turning Movement	Peak Hour	Pocket Length (ft)	95% Queue Length (ft)	Excess Queue (ft)
70	Euclid Avenue / Logan Avenue	Signalized	SBL	AM / PM	32	31 / 49	0 / 17
			EBR	AM / PM	175	42 / 40	0 / 0
			WBR	AM / PM	190	84 / 50	0 / 0
71	Euclid Avenue / Division Street	Signalized	NBL	AM / PM	100	165 / 98	65 / 0
			SBL	AM / PM	85	44 / 70	0 / 0
			EBL	AM / PM	150	46 / 91	0 / 0
			WBL	AM / PM	140	108 / 81	0 / 0
72	Bayview Heights Way / SR-94 WB Ramps	AWSC	NBTL	AM / PM	290	113 / 63	0 / 0
			SBTR	AM / PM	170	75 / 160	0 / 0
			WBLTR	AM / PM	720	205 / 193	0 / 0
73	Kelton Road / SR-94 EB Ramps	AWSC	NBTR	AM / PM	750	118 / 43	0 / 0
			SBTL	AM / PM	290	50 / 250	0 / 0
			EBLTR	AM / PM	1,000	30 / 103	0 / 0
74	60th Street / SR-94 Ramps/Federal Boulevard	Signalized	WBL	AM / PM	150	51 / 83	0 / 0
75	Valencia Parkway / Imperial Avenue	Signalized	NBL	AM / PM	260	118 / 100	0 / 0
			SBL	AM / PM	290	28 / 65	0 / 0
			EBL	AM / PM	250	33 / 70	0 / 0
			WBL	AM / PM	100	121 / 143	21 / 43
76	Valencia Parkway / Skyline Drive	Signalized	NBL	AM / PM	125	76 / 36	0 / 0
			SBL	AM / PM	250	124 / 230	0 / 0
			EBL	AM / PM	170	45 / 54	0 / 0
			WBL	AM / PM	160	111 / 42	0 / 0
			WBR	AM / PM	120	24 / 22	0 / 0
77	Division Street / Plaza Boulevard	AWSC	NBLTR	AM / PM	420	35 / 10	0 / 0
			SBL	AM / PM	90	18 / 43	0 / 0
			SBLTR	AM / PM	790	10 / 20	0 / 0
			EBLTR	AM / PM	300	15 / 18	0 / 0
			WBLTR	AM / PM	1,340	113 / 10	0 / 0
78	Woodman Street / Imperial Avenue	Signalized	NBL	AM / PM	65	191 / 100	126 / 35
			WBL	AM / PM	100	90 / 202	0 / 102

TABLE 3.13
EXISTING PEAK HOUR INTERSECTION QUEUING ANALYSIS

ID	Intersection	Traffic Control	Turning Movement	Peak Hour	Pocket Length (ft)	95% Queue Length (ft)	Excess Queue (ft)
79	Woodman Street / Skyline Drive	Signalized	NBL	AM / PM	300	261 / 147	0 / 0
			SBL	AM / PM	80	100 / 70	20 / 0
			EBL	AM / PM	140	66 / 58	0 / 0
			WBL	AM / PM	80	344 / 160	264 / 80
			WBR	AM / PM	75	0 / 0	0 / 0
80	Woodman Street / Plaza Boulevard	Signalized	NBL	AM / PM	190	263 / 117	73 / 0
81	69th Street / Imperial Avenue/Lisbon Street	Signalized	NBL	AM / PM	70	62 / 70	0 / 0
			NWL	AM / PM	225	687 / 350	462 / 125
			EBL	AM / PM	135	128 / 119	0 / 0
			WBL	AM / PM	195	149 / 195	0 / 0

Source: Chen Ryan Associates; February 2015

Notes:
OWSC = One-way stop controlled.
TWSC = Two-way stop controlled.
AWSC = All-way stop controlled.

As shown, there are currently nineteen (19) study intersections including thirty-one (31) different movements within the Encanto study area that are operating with potential queuing issues during either the AM or PM peak hour. The spill overs could degrade traffic operations within the intersection or the associated closely spaced upstream intersections.

3.4.4 Vehicular Collision Analysis

Automobile collision data was obtained from the City of San Diego for the period from 2007 to 2012. The data indicate that a total of 1,193 vehicle collisions occurred over this period within Encanto. About 50% of those collisions occurred on the Urban Streets (or 696 collisions).

Table 3-14 shows the vehicle collisions that occurred in Encanto during the period from 2007 to 2012. As shown, these collisions resulted in 787 injuries and 4 fatalities. The table reports collisions for the Urban Streets, as well as community wide collisions. The most prominent collision causes are “unsafe movements” on the part of the driver, and “unsafe speeds”.

Figure 3-19 shows the distribution of automobile collisions across the Encanto.

TABLE 3.14
VEHICULAR COLLISION SUMMARY

Multi-Modal Corridor	Total	Location Type		Lighting		Severity			Primary Cause							
		Midblock	Intersection	Daylight	Dusk/Night/Dawn	Fatality	Injured	None	Unsafe Movement[1]	Unsafe Speed	Failed to Yield	Being Chased / Avoiding Another Vehicle or Animal	DUI	Medical or Mechanical Condition / Not Paying Attention	Ped at Fault / Hit Object/ Other	Not at Fault
Market Street, between I-805 and 60th Street	98	42	56	60	38	0	82	45	50	30	8	2	1	1	0	6
Imperial Avenue, between I-805 and 69th Street	249	87	162	148	101	1	208	109	145	88	7	3	1	1	0	4
Logan Avenue, between I-805 and Euclid Avenue	38	21	17	29	9	0	30	15	23	12	3	0	0	0	0	0
47th Street, between SR-94 and I-805	131	39	92	80	51	0	91	70	85	28	11	1	0	2	0	4
Euclid Avenue, between SR-94 and southern CPA boundary	180	68	112	112	68	0	165	73	105	60	7	5	0	2	0	1
Multi-Modal Corridor Total	696	257	439	429	267	1	576	312	408	218	36	11	2	6	0	15
Community-wide Total	1,193	636	557	662	531	4	787	670	791	282	59	20	3	20	0	18

Source: City of San Diego, Chen Ryan Associates; February 2015

Notes:
The above information was provided by the City of San Diego for July 2007 through September 2012.
[1] "Unsafe Movement" includes improper lane changes/starts/passing/turns, unsafe backing, and other general unsafe maneuvers.
[2] "Other" includes auto theft, driverless moving vehicle, enter/exiting moving vehicle.

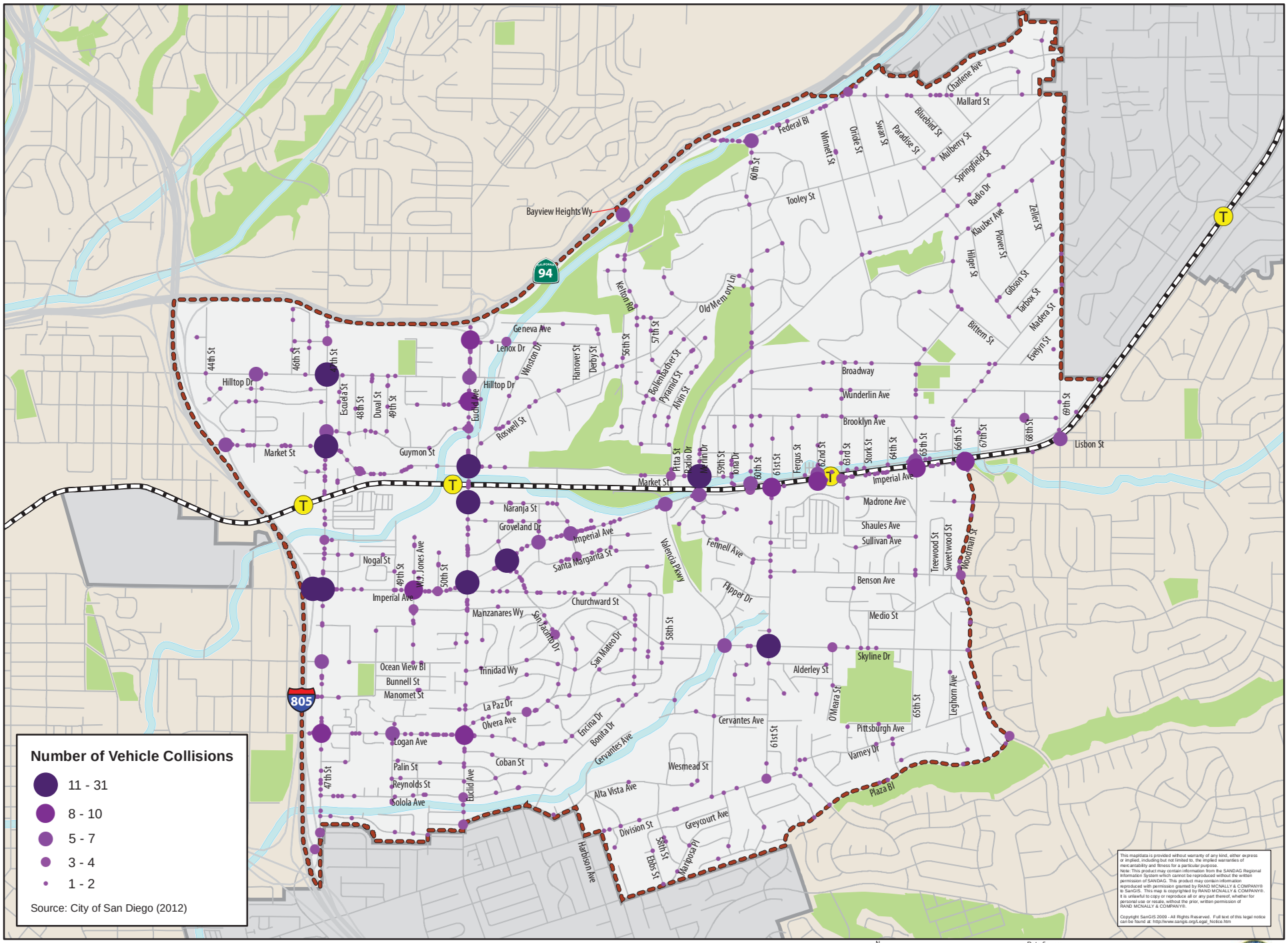


Figure 3-19: Vehicle Collisions (July 2007 - September 2012)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

3.4.5 Freeway Segments and Level of Service Analysis

Two regional corridors run adjacent to or traverse the community of Encanto, carrying significant levels of traffic while providing regional access to and from the community.

Interstate 805

Interstate 805 (I-805) is a major north-south regional facility and provides access between the International Border with Mexico and Sorrento Valley. I-805 has eight lanes mixed-flow/general purpose lanes, and one or two auxiliary lanes. Local access is provided via interchanges at Market Street, Imperial Avenue and 43rd Street. The California Department of Transportation (Caltrans) maintains and operates I-805. In 2011, I-805 accommodated between 196,000 and 225,000 average daily trips (ADT) along the segments adjacent to Encanto. Trucks comprise about five 5 to 6 percent of the total traffic on I-805.

State Route 94

State Route 94 (SR-94) is a major east-west regional facility and provides access between the downtown San Diego and the unincorporated community of Boulevard. SR-94 has between eight lanes mixed-flow/general purpose lanes, and one or two auxiliary lanes. Local access is provided via interchanges at 47th Street, Euclid Avenue, Bayview Heights Drive, and Federal Boulevard. The California Department of Transportation (Caltrans) maintains and operates SR-94. In 2011, SR-94 accommodated between 128,000 and 172,000 average daily trips (ADT) along the segments adjacent to Encanto. Trucks comprise about three to four percent of the total traffic on SR-94.

Table 3.15 displays freeway segment Level of Service analysis results for the key freeway segments in the vicinity of Encanto. Year 2011 freeway traffic volumes were obtained from Caltrans and are included in **Appendix H**. As shown, all freeway segments within the study communities are currently operating at LOS D or better with the exception of the following seven (7) segments:

- I-805, between Home Avenue and SR-94 (LOS F, northbound);
- I-805, between Home Avenue and SR-94 (LOS F, southbound);
- I-805, between SR-94 and Market Street (LOS F, northbound);
- I-805, between SR-94 and Market Street (LOS F, southbound);
- I-805, between Imperial Avenue and 47th Street (LOS E, southbound);
- SR-94, between I-805 and 47th Street (LOS E, westbound); and
- SR-94, between 47th Street and Euclid Avenue (LOS E, westbound).

TABLE 3.15
EXISTING FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Freeway	Segment	ADT[1]	Direction	# of Lanes	Capacity[2]	D[3]	K[4]	HV[5]	Peak Hour Volume	V/C	LOS
I-805	Home Avenue & SR-94	109,000	NB	4M	9,400	64.9%	7.0%	6.5%	10,400	1.11	F0
			SB	4M	9,400	58.6%	7.8%	6.5%	10,400	1.11	F0
I-805	SR-94 & Market Street	216,000	NB	4M	9,400	64.7%	7.0%	6.5%	10,200	1.09	F0
			SB	4M	9,400	58.6%	7.8%	6.5%	10,400	1.11	F0
I-805	Market Street & Imperial Avenue	227,000	NB	4M+2A	12,220	64.7%	7.0%	6.5%	10,800	0.88	D
			SB	4M+2A	12,220	58.6%	7.8%	6.5%	10,900	0.89	D
I-805	Imperial Avenue & 47th Street	210,000	NB	5M	11,750	64.7%	7.0%	6.5%	9,900	0.84	D
			SB	4M+1A	10,810	60.7%	7.5%	6.5%	10,100	0.93	E
I-805	47th Street & Plaza Boulevard	196,000	NB	4M+2A	12,220	72.0%	6.0%	6.5%	8,900	0.73	C
			SB	5M	11,750	59.5%	7.5%	6.5%	9,300	0.79	C
SR-94	Home Avenue & I-805	128,000	EB	4M+1A	10,810	67.7%	8.6%	4.2%	7,900	0.73	C
			WB	4M	9,400	74.4%	7.6%	4.2%	7,600	0.81	D
SR-94	I-805 & 47th Street	172,000	EB	5M	11,750	67.7%	8.6%	3.9%	10,600	0.90	D
			WB	4M+1A	10,810	74.4%	7.6%	3.9%	10,200	0.94	E
SR-94	47th Street & Euclid Avenue	171,000	EB	5M+1A	13,160	67.7%	8.6%	3.9%	10,500	0.80	D
			WB	4M+1A	10,810	74.4%	7.6%	3.9%	10,200	0.94	E
SR-94	Euclid Avenue & Kelton Road	156,000	EB	5M	11,750	67.7%	8.6%	3.9%	9,600	0.82	D
			WB	4M+1A	10,810	70.0%	7.3%	3.9%	8,400	0.78	C
SR-94	Kelton Road & Federal Boulevard	161,000	EB	4M+1A	10,810	64.1%	8.6%	3.9%	9,300	0.86	D
			WB	4M+1A	10,810	70.0%	7.3%	3.9%	8,700	0.80	D

TABLE 3.15
EXISTING FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Freeway	Segment	ADT[1]	Direction	# of Lanes	Capacity[2]	D[3]	K[4]	HV[5]	Peak Hour Volume	V/C	LOS
SR-94	Federal Boulevard & College Grove Way	145,000	EB	4M	9,400	64.1%	8.6%	3.9%	8,400	0.89	D
			WB	4M	9,400	70.0%	7.3%	3.9%	7,800	0.83	D
SR-94	College Grove Way & College Avenue	145,000	EB	4M	9,400	64.1%	8.6%	3.9%	8,400	0.89	D
			WB	4M	9,400	70.4%	7.8%	3.9%	8,400	0.89	D

Source: Caltrans, Chen Ryan Associates; February 2015

Notes:
Bold letter indicates unacceptable LOS E or F.
M = Mainline. Aux = Auxiliary Lane.
[1] Traffic volumes provided by Caltrans (2011).
[2] The capacity is calculated as 2,350 ADT per main lane and 1,410 ADT (60% of the main lane capacity) per auxiliary lane.
[3] D = Directional split.
[4] K = Peak hour %.
[5] HV = Heavy vehicle %.

3.4.6 Freeway Ramp Metering Analysis

Table 3.16 displays the ramp metering analysis conducted at the SR-94 WB On-Ramps at Euclid Avenue, Kelton Road, and Federal Boulevard / Home Avenue; and at the I-805 NB On-Ramps at 47th Street and Imperial Avenue under existing conditions. Ramp meter rates were obtained from Caltrans District 11 and included in **Appendix I**.

TABLE 3.16
EXISTING RAMP METERING ANALYSIS

On-Ramp	# of Lanes		Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay[4] (min)	Queue[5] (ft)
	SOV	HOV						
SR-94 WB On-Ramp @ Euclid Avenue	2	0	AM	454	1,522	0	0	0
SR-94 WB On-Ramp @ Kelton Road	1	1	AM	295	888	0	0	0
SR-94 WB On-Ramp @ Federal Boulevard / Home Avenue	1	0	AM	614	805	0	0	0
I-805 NB On-Ramp @ 47th Street	2	0	AM	401	880	0	0	0
I-805 NB On-Ramp @ Imperial Avenue	2	0	AM	1,251	1,589	0	0	0

Source: Caltrans, Chen Ryan Associates; February 2015

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 peak hour capacity expected to be processed through the ramp meters is greater than the peak hour demand at both the SR-94 WB On-Ramps and the I-805 NB On-Ramps within the study area. Therefore, freeway on-ramp queuing issues do not currently exists during the AM or PM peak periods at any of the five metered ramps under current conditions.

3.5 Intelligent Transportation Systems (ITS)

The currently adopted citywide Mobility Element identifies the following goals for intelligent transportation system:

- *A transportation system which operates efficiently saves energy and reduces negative environmental impacts.*
- *A safe transportation system.*
- *A transportation system that effectively uses appropriate technologies.*

Implementation of Intelligent Transportation Systems (ITS) can provide many benefits to the local roadway network, including improving roadway traffic operations, improving transit operations and 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.

3.5.1 Signal Coordination

Signal coordination can improve the operations of a roadway corridor by allowing motorists to travel through the corridor with reduced delays and fewer stops at red lights. This is done by linking the signals, usually via underground copper or fiber optic wire, and coordinating signal timing to account for the time it takes for a motorist, traveling at the speed limit, to drive from one signal to the next. These benefits should be balanced with the need for pedestrian and bicycle safety. Imperial Avenue is the only corridor within Encanto that has coordinated traffic signal timing plans in place.

3.5.2 Transit Priority

Transit Priority treatments are designed to improve transit operations and overall schedule adherence. Trolley pre-emption system is installed at all at-grade crossings, no additional transit priority treatment for trolley or bus operations is located in Encanto.

3.5.3 Potential ITS Improvements

Additional ITS improvement concepts for future consideration include:

- Expand signal coordination;
- Regularly update the timing of traffic signals to reflect shifting travel patterns;
- Consider the use of traffic responsive or adaptive traffic control in areas with variable traffic patterns;
- Implement transit signal priority treatments at signalized intersections serving rapid bus routes; and
- Use of variable message signs to direct motorists to available parking and to alert them of street closures.

3.6 Transportation Demand Management (TDM)

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 and from work.

Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Walking
- Bicycling
- Carpooling
- Vanpooling
- Transit
- Car-sharing
- Mixed-Use Development
- Other Transportation Options

TDM measures improve the efficiency of our transportation system by helping to reduce vehicle trips during peak periods of demand.

According to the January 2007 - December 2011 American Community Survey (ACS), 17% of Encanto residents carpool to work, which is well above the citywide average of 9.4%.

The San Diego Association of Governments (SANDAG) has an established program (iCommute) that serves as the administrator of regional TDM programs. iCommute provides the following services:

- RideMatcher – resources for finding carpool partners or available vanpool seats;
- SchoolPool – a program that enrolls schools to encourage parents to carpool;
- Transit Information - provides a linkage to transit service provider web pages;
- Bicycle Information – provides a link to SANDAG's Regional Bikeway Master Plan, which has been updated to show bicycle paths, lanes and routes in the region; and
- Guaranteed Ride Home – a program that allows vanpool riders affordable rides home to deal with emergency meetings or illness.

In addition to the iCommute program, Caltrans owns and/or maintains several park-and-ride lots in the region that are used to promote carpool activity. However, there are no park-and-ride facilities within Encanto.

The City of San Diego's Municipal Code 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

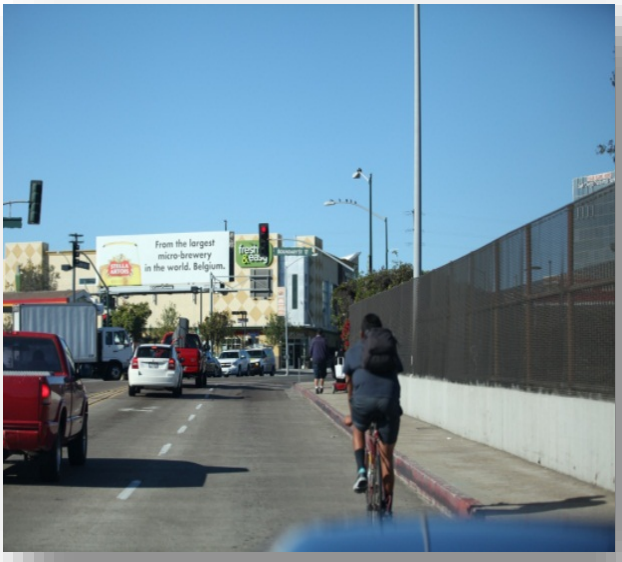
land development requirements for pedestrian, bicycle, carpool, and commuter information facilities. The City is also coordinating with SANDAG on the implementation of a car-sharing demonstration program. Pricing strategies are also used to reduce demand on the transportation system. Managed lanes, such as the managed or express lanes on Interstate 15, are included in the 2050 RTP.
www.sandiego.gov/planning/programs/transportation/mobility/tdm.shtml

3.7 Bicycling

Bicycle facilities are an integral component of the Encanto transportation system. Adequate bicycle facilities encourage active transportation, enhance recreational opportunities, and help attract visitors. Bikeways not only provide local opportunities for cyclists, but also offer regional connections. This section of the report discusses existing bicycle facilities, activity levels, level of service analysis results, and safety analyses within Encanto.

The bicycling goals as expressed in the City's 2008 General Plan Mobility Element include the following:

- *A city where bicycling is a viable travel choice, particularly for trips of less than five miles.*
- *A safe and comprehensive local and regional bikeway network.*
- *Environmental quality, public health, recreation and mobility benefits through increased bicycling.*



3.7.1 Existing Bicycle Facilities

Bicycle facilities are classified based on a standard typology as follows:

- Class I Bikeway (Bike Path) provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

Recently Built Class I Bike Path in nearby Chula Vista along the Bayshore Bikeway.

- Class II Bikeway (Bike Lane) provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five feet wide. Vehicle parking and vehicle/pedestrian cross-flow are permitted.

Class II Bike Lane along Skyline Drive, between 61st Street and Omeara Street.

- Class III Bike Route provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.

Class III Bike Route along Market Street

Figure 3-20 displays the location of existing bicycle facilities within the Encanto community, while **Table 3.17** summarizes the mileage of existing bicycle facilities.

TABLE 3.17
MILEAGE OF EXISTING BICYCLE FACILITY WITHIN ENCANTO

Facility Type	Mileage	Percent of Total Bicycle Facility	Percent of Total Roadway
Class I Multi-Use Path	0.4 miles	5.6%	0.4%
Class II Bicycle Lane	4.4 miles	61.1%	4.4%
Class III Bicycle Route	2.4 miles	33.3%	2.4%
TOTAL	7.2 miles	100%	7.2%

Source: SANDAG; Chen Ryan Associates; February 2015

As shown, there are currently about 7.2 miles of bicycle facilities within Encanto, with about 33% being comprised of Class III Bike Route, which provides cyclists with the lowest level of separation from vehicular travel.

Only 7.2% of Encanto roadways have bicycle facilities, indicating low levels of "complete streets" and the lack of a strong, inter-connected bicycle network in this community. Across the City of San Diego, 12.6% of roadways have bicycle facilities.

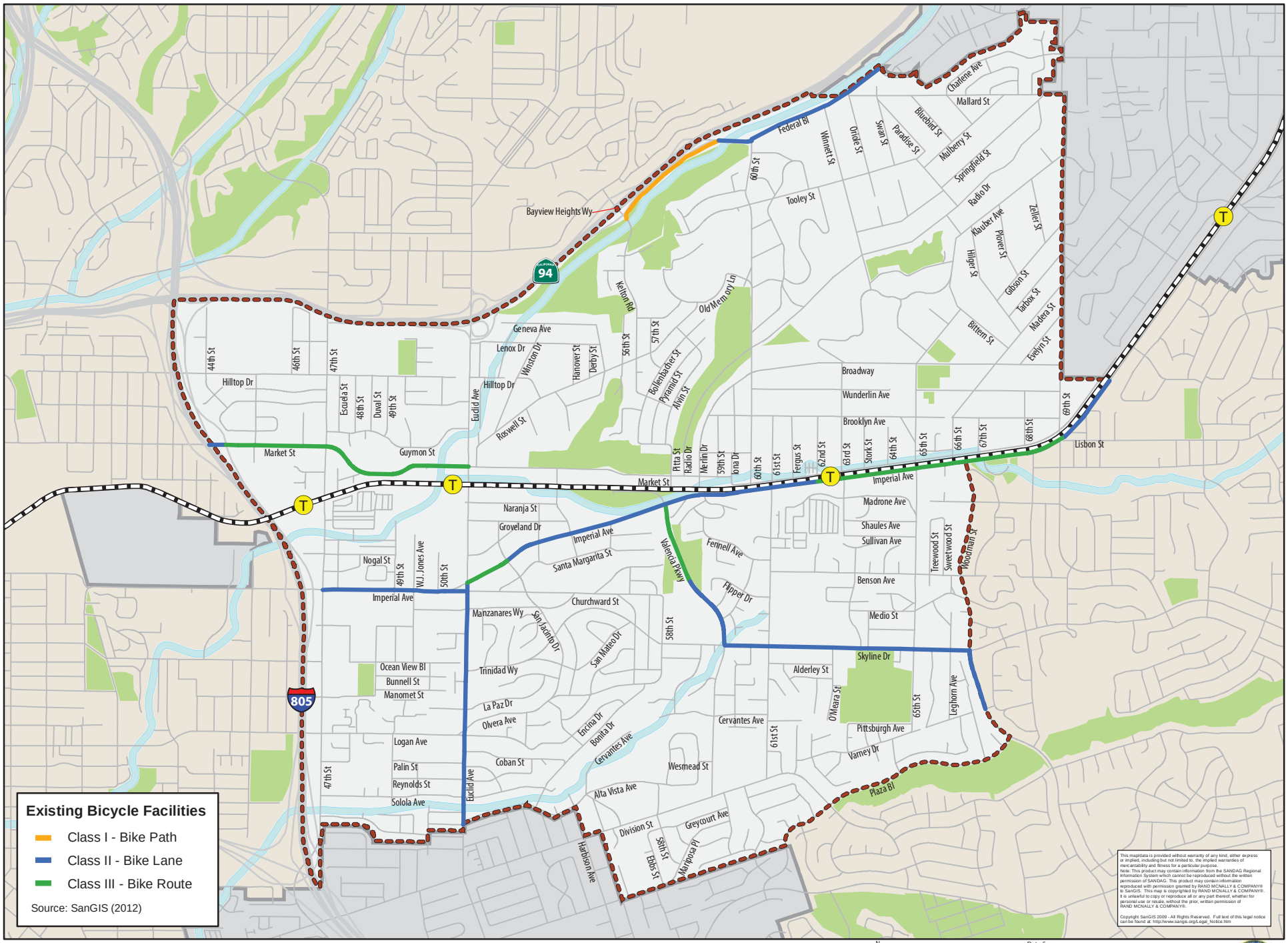


Figure 3-20: Existing Bicycle Facilities

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

3.7.2 Bicycling Activity Levels

Table 3.18 displays 2007-2011 estimated commuter cycling rates as reported by the American Community Survey (ACS) for Encanto, the City and the County, as a whole. As shown, approximately 21 residents are currently cycling to work, which is 0.1% of all workers in Encanto. Across the City as a whole, about 0.9% of all workers are cycling to work. The rate of cycling to work is lower in Encanto compared to the City and also compared to the County as a whole.

TABLE 3.18
PERCENT OF CYCLING COMMUTERS IN ENCANTO

	Encanto	City of San Diego	County of San Diego
Number of Workers Cycling to Work	21	5,752	9,393
Percent of Total Workers	0.1%	0.9%	0.7%

Source: US Census, American Community Survey, 2011 Estimates; Chen Ryan Associates; February 2015

Figure 3-21 displays cycling rates for the journey to work by census tracts for Encanto. The census tract located northeaster most corner of the community, east of 60th Street and north of Broadway, has the highest rate of bicycle commuting (0.6%), which is close to the citywide rate of bicycle commuting.

Figure 3-22 displays SANDAG's cycling propensity model (bicycle trip attractors + bicycle trip generators) developed as part of their *2010 Riding to the Future* regional bicycle plan. As shown, the portion of Encanto west of Euclid Avenue shows high cycling propensity, while the area of Encanto east of Euclid falls into the low cycling propensity category.

Figures 3-23 displays existing bicycle volumes at study area intersections. The highest AM and PM peak hour bicycle count (10 AM peak hour cyclists and 12 PM peak hour cyclists) occurs at the Euclid Avenue and Market Street, suggesting potential interactions between cyclists and the light rail transit system via the Euclid Avenue Trolley Station.

Figures 24a and **24b** show the distribution of bicycle counts across the Encanto community, for the AM and PM peak hour, respectively. Market Street and Euclid Avenue have relatively higher rates of cycling than other Urban Streets within the community. Cycling along Market Street however can be dangerous and uncomfortable due to the provision of only a Class III Bike Route, which does not provide a high level of protection from vehicular traffic.

Appendix J displays the AM and PM peak hour bicycle counts for Encanto study intersections.

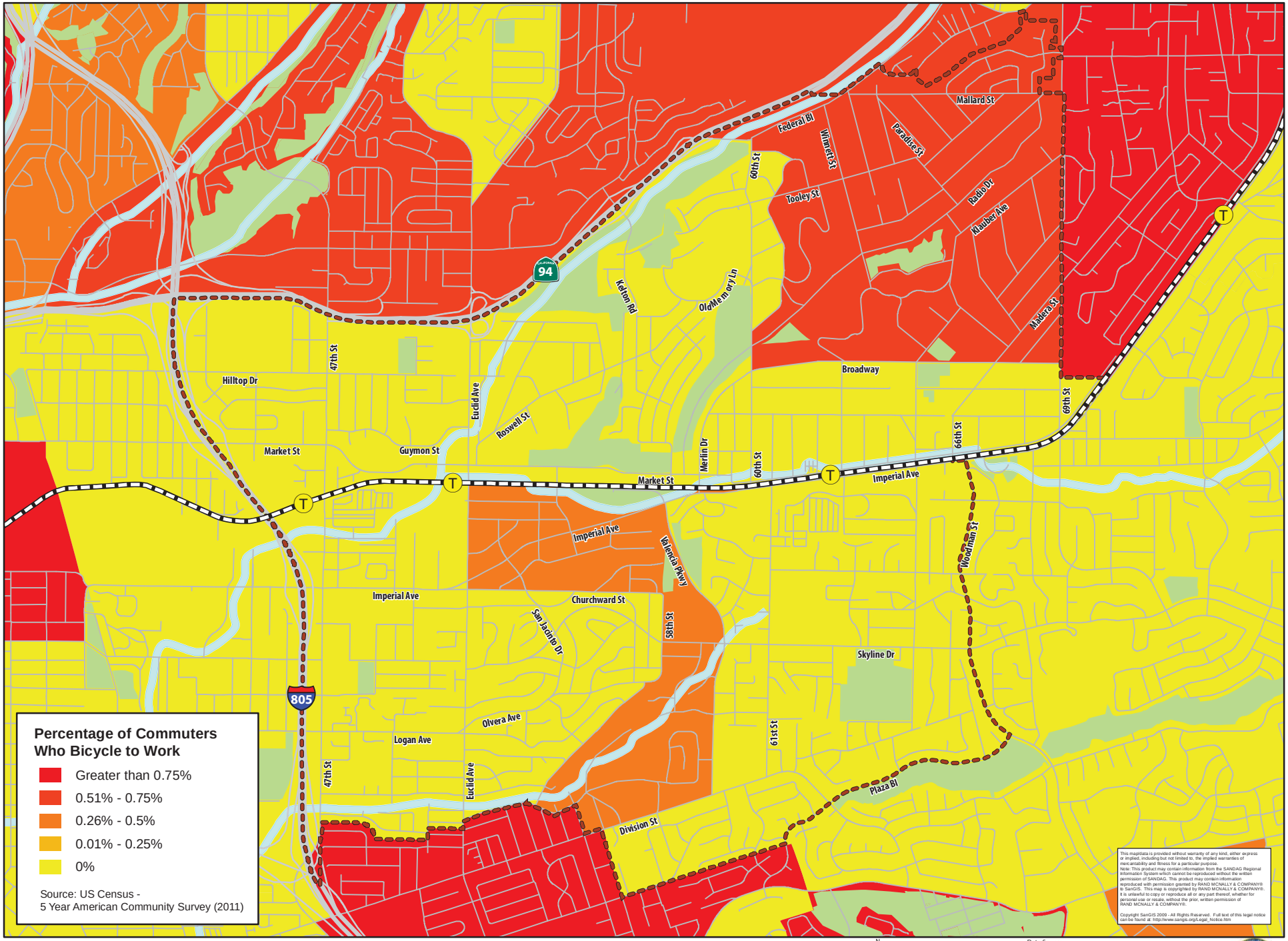


Figure 3-21: Percent of Bicycle Commuters by Census Tract

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

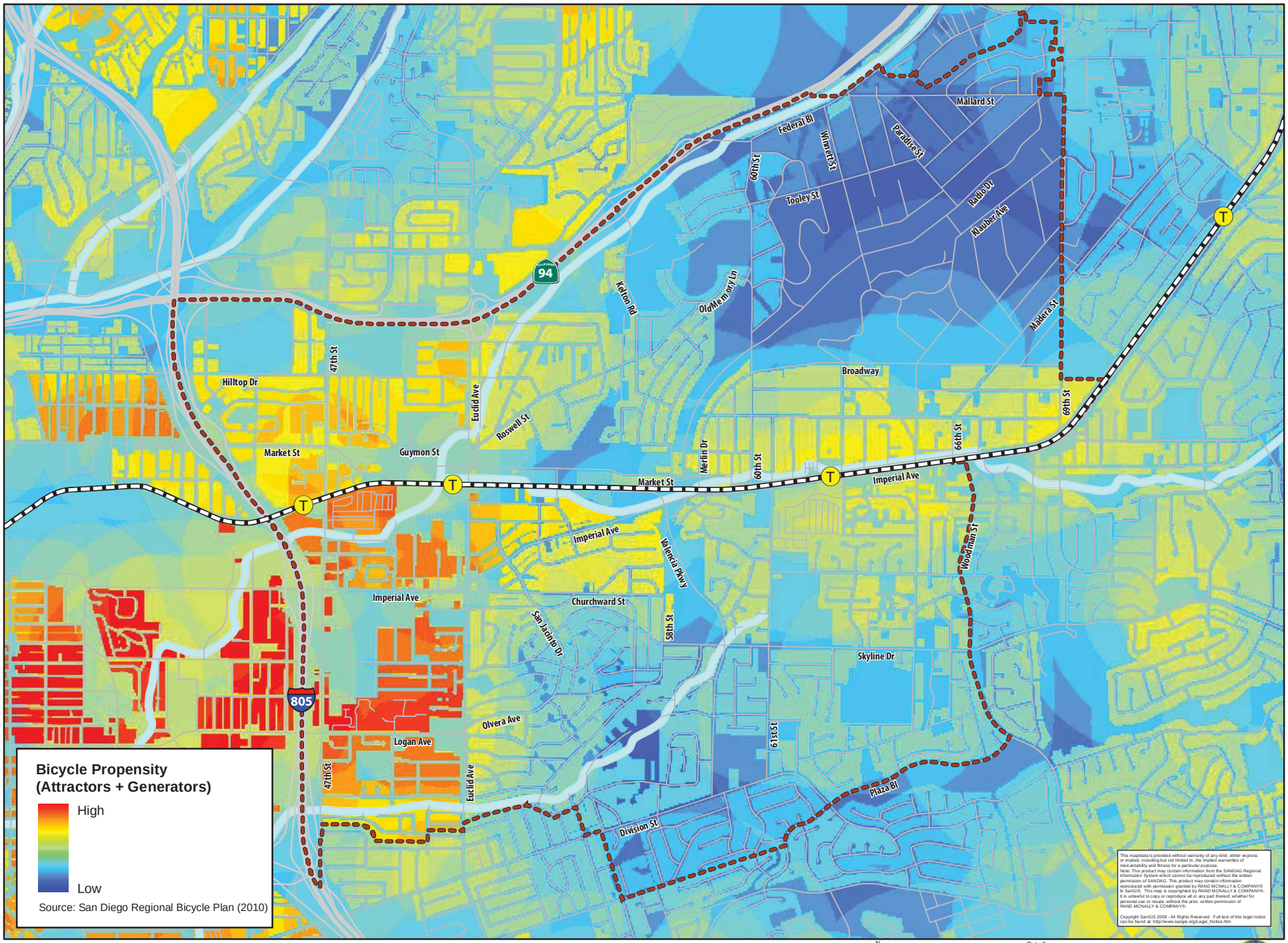


Figure 3-22: SANDAG Regional Bicycle Demand Model

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

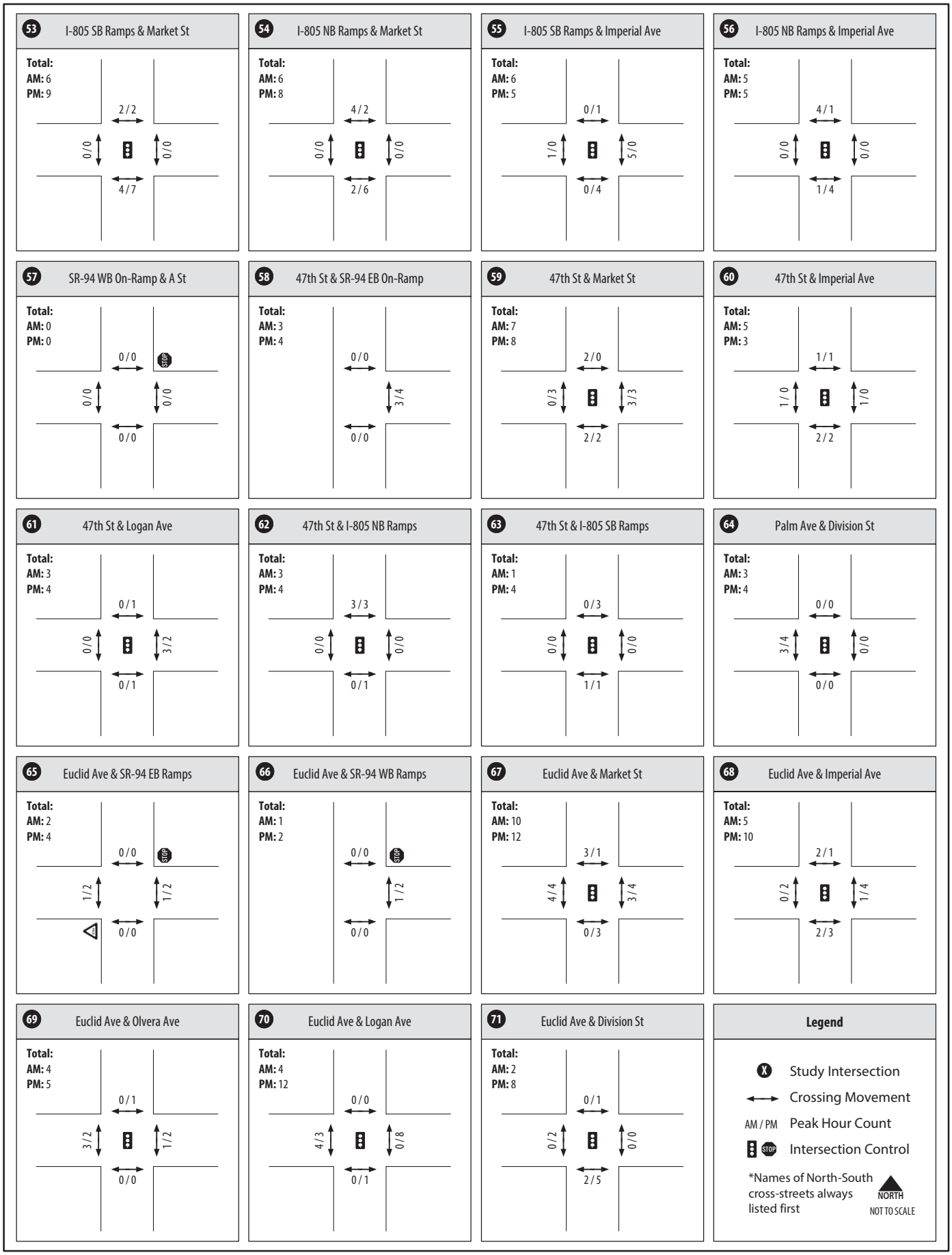


Figure 3-23: Existing AM / PM Peak Period Bicycle Counts

Intersections 53-71 (Page 1 of 2)

CHEN RYAN

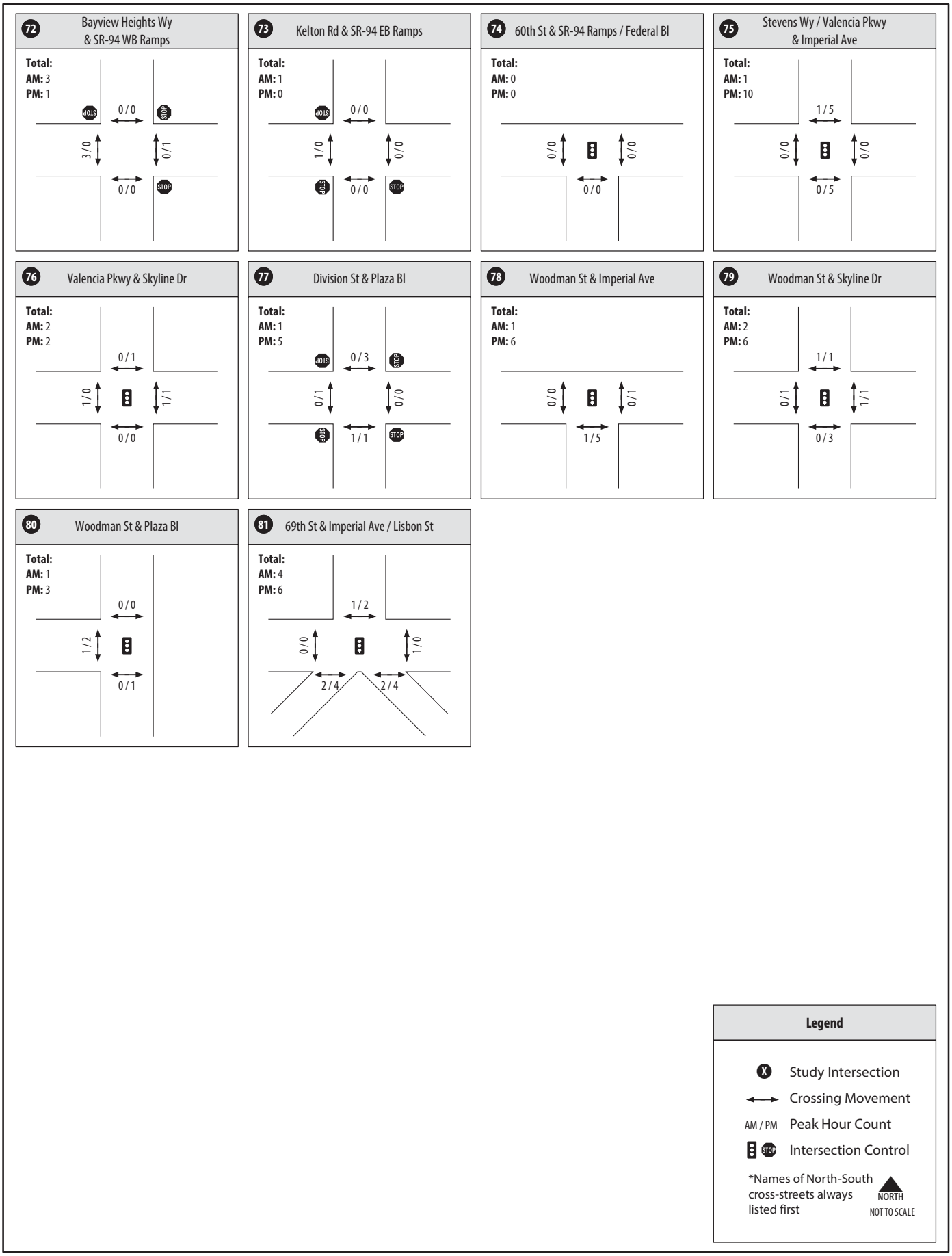


Figure 3-23: Existing AM / PM Peak Period Bicycle Counts
Intersections 72-81 (Page 2 of 2)

CHEN RYAN

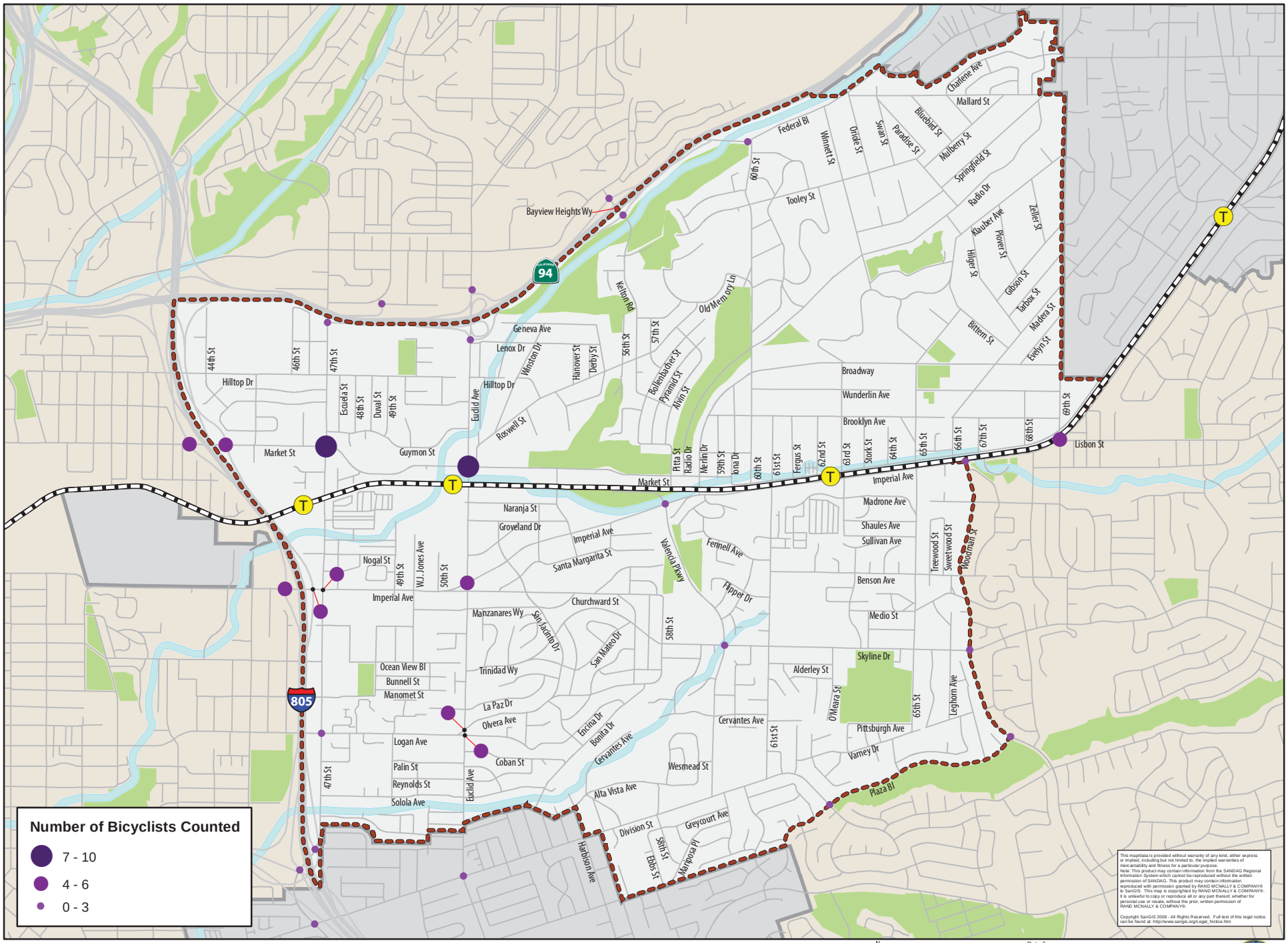


Figure 3-24a: Bicyclists Counted at Study Intersections (AM Peak Hour)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

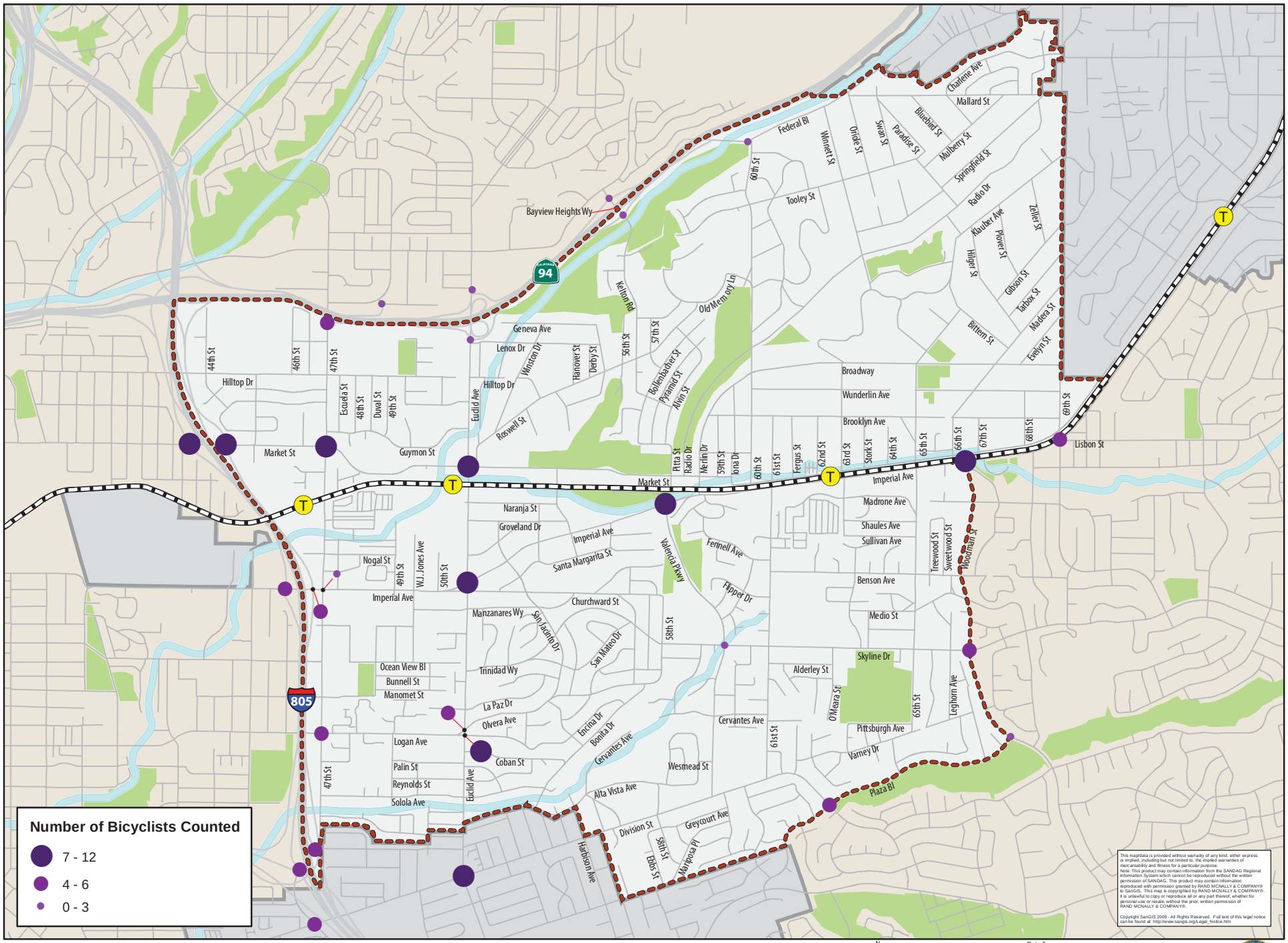


Figure 3-24b: Bicyclists Counted at Study Intersections (PM Peak Hour)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

3.7.3 Bicycle Level of Service Analysis and Results

Cyclist level of service was evaluated along major corridors within Encanto using multi-modal level of service methodology, as described in Chapter 2.

Tables 3.19A and **3.19B** display the existing level of service for cyclists on study roadways during the AM and PM peak hours, respectively. Peak hour bicycle CSLOS analysis output is provided in **Appendix K**.

TABLE 3.19A
EXISTING MULTI-MODAL ANALYSIS – BICYCLE LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.23	C	3.57	D
	I-805 NB Ramps & 47th Street		3.37	C		
	47th Street & Euclid Avenue		3.43	C		
	Euclid Avenue & 60th Street		3.75	D		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.21	C	3.49	C
	I-805 NB Ramps & 47th Street		3.17	C		
	47th Street & Euclid Avenue		3.32	C		
	Euclid Avenue & 60th Street		3.72	D		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.29	C	3.14	C
	I-805 NB Ramps & 47th Street		3.37	C		
	47th Street & Euclid Avenue		3.30	C		
	Euclid Avenue & Valencia Parkway		3.09	C		
	Valencia Parkway & Woodman Street		3.38	C		
	Woodman Street & 69th Street		2.16	B		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.43	C	3.10	C
	I-805 NB Ramps & 47th Street		3.76	D		
	47th Street & Euclid Avenue		3.03	C		
	Euclid Avenue & Valencia Parkway		2.81	C		
	Valencia Parkway & Woodman Street		3.21	C		
	Woodman Street & 69th Street		3.37	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	3.48	C	3.48	C
	47th Street & Euclid Avenue	Westbound	3.34	C	3.34	C
47th Street	SR-94 & Market Street	Northbound	3.30	C	3.22	C
	Market Street & Imperial Avenue		3.26	C		

TABLE 3.19A
EXISTING MULTI-MODAL ANALYSIS – BICYCLE LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	Imperial Avenue & Logan Avenue	Northbound	3.15	C	3.22	C
	Logan Avenue & I-805 NB Ramps		3.16	C		
	I-805 NB Ramps & I-805 SB Ramps		3.14	C		
	I-805 SB Ramps & Division Street		3.30	C		
	SR-94 & Market Street	Southbound	3.84	D	3.54	D
	Market Street & Imperial Avenue		3.58	D		
	Imperial Avenue & Logan Avenue		3.41	C		
	Logan Avenue & I-805 NB Ramps		3.33	C		
	I-805 NB Ramps & I-805 SB Ramps		3.16	C		
	I-805 SB Ramps & Division Street		3.71	D		
Euclid Avenue	SR-94 & Market Street	Northbound	3.65	D	3.56	D
	Market Street & Imperial Avenue		3.40	C		
	Imperial Avenue & Logan Avenue		3.53	D		
	Logan Avenue & Division Street		3.62	D		
	SR-94 & Market Street	Southbound	3.77	D	3.71	D
	Market Street & Imperial Avenue		3.54	D		
	Imperial Avenue & Logan Avenue		3.79	D		
	Logan Avenue & Division Street		3.70	D		

Source: Chen Ryan Associates; February 2015

Notes:
The bicycle LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

TABLE 3.19B
EXISTING MULTI-MODAL ANALYSIS – BICYCLE LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.21	C	3.58	D
	I-805 NB Ramps & 47th Street		3.34	C		
	47th Street & Euclid Avenue		3.44	C		
	Euclid Avenue & 60th Street		3.78	D		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.21	C	3.49	C
	I-805 NB Ramps & 47th Street		3.17	C		
	47th Street & Euclid Avenue		3.32	C		
	Euclid Avenue & 60th Street		3.72	D		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.31	C	3.11	C
	I-805 NB Ramps & 47th Street		3.35	C		
	47th Street & Euclid Avenue		3.29	C		
	Euclid Avenue & Valencia Parkway		2.97	C		
	Valencia Parkway & Woodman Street		3.39	C		
	Woodman Street & 69th Street		2.19	B		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.49	C	3.12	C
	I-805 NB Ramps & 47th Street		3.70	D		
	47th Street & Euclid Avenue		3.03	C		
	Euclid Avenue & Valencia Parkway		2.82	C		
	Valencia Parkway & Woodman Street		3.22	C		
	Woodman Street & 69th Street		3.41	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	3.25	C	3.25	C
	47th Street & Euclid Avenue	Westbound	3.36	C	3.36	C
47th Street	SR-94 & Market Street	Northbound	3.30	C	3.23	C
	Market Street & Imperial Avenue		3.26	C		
	Imperial Avenue & Logan Avenue		3.15	C		
	Logan Avenue & I-805 NB Ramps		3.17	C		
	I-805 NB Ramps & I-805 SB Ramps		3.15	C		
	I-805 SB Ramps & Division Street		3.32	C		
	SR-94 & Market Street	Southbound	3.82	D	3.53	D
	Market Street & Imperial Avenue		3.59	D		
	Imperial Avenue & Logan Avenue		3.43	C		

TABLE 3.19B
EXISTING MULTI-MODAL ANALYSIS – BICYCLE LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	Logan Avenue & I-805 NB Ramps	Southbound	3.29	C	3.53	D
	I-805 NB Ramps & I-805 SB Ramps		3.22	C		
	I-805 SB Ramps & Division Street		3.67	D		
Euclid Avenue	SR-94 & Market Street	Northbound	3.67	D	3.57	D
	Market Street & Imperial Avenue		3.43	C		
	Imperial Avenue & Logan Avenue		3.52	D		
	Logan Avenue & Division Street		3.62	D		
	SR-94 & Market Street	Southbound	3.80	D	3.72	D
	Market Street & Imperial Avenue		3.57	D		
	Imperial Avenue & Logan Avenue		3.78	D	3.72	D
	Logan Avenue & Division Street		3.69	D		

Source: Chen Ryan Associates; February 2015

Notes:
The bicycle LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

As shown in the table, all of the Urban Street corridors are currently providing LOS D or better for cyclists during both the AM and PM peak hours. The LOS reported here is an indication of the cyclist's experience while cycling along these study corridors. Major variables affecting the cycling environment include lateral separation from vehicular traffic, speed and makeup of the vehicular traffic, pavement conditions, directional vehicular traffic volumes, and intersection crossing distance.

Figures 3-25a and **3-25b** display bicycle level of service for the AM and PM peak periods, respectively, within Encanto.

ENCANTO COMMUNITY PLAN UPDATE

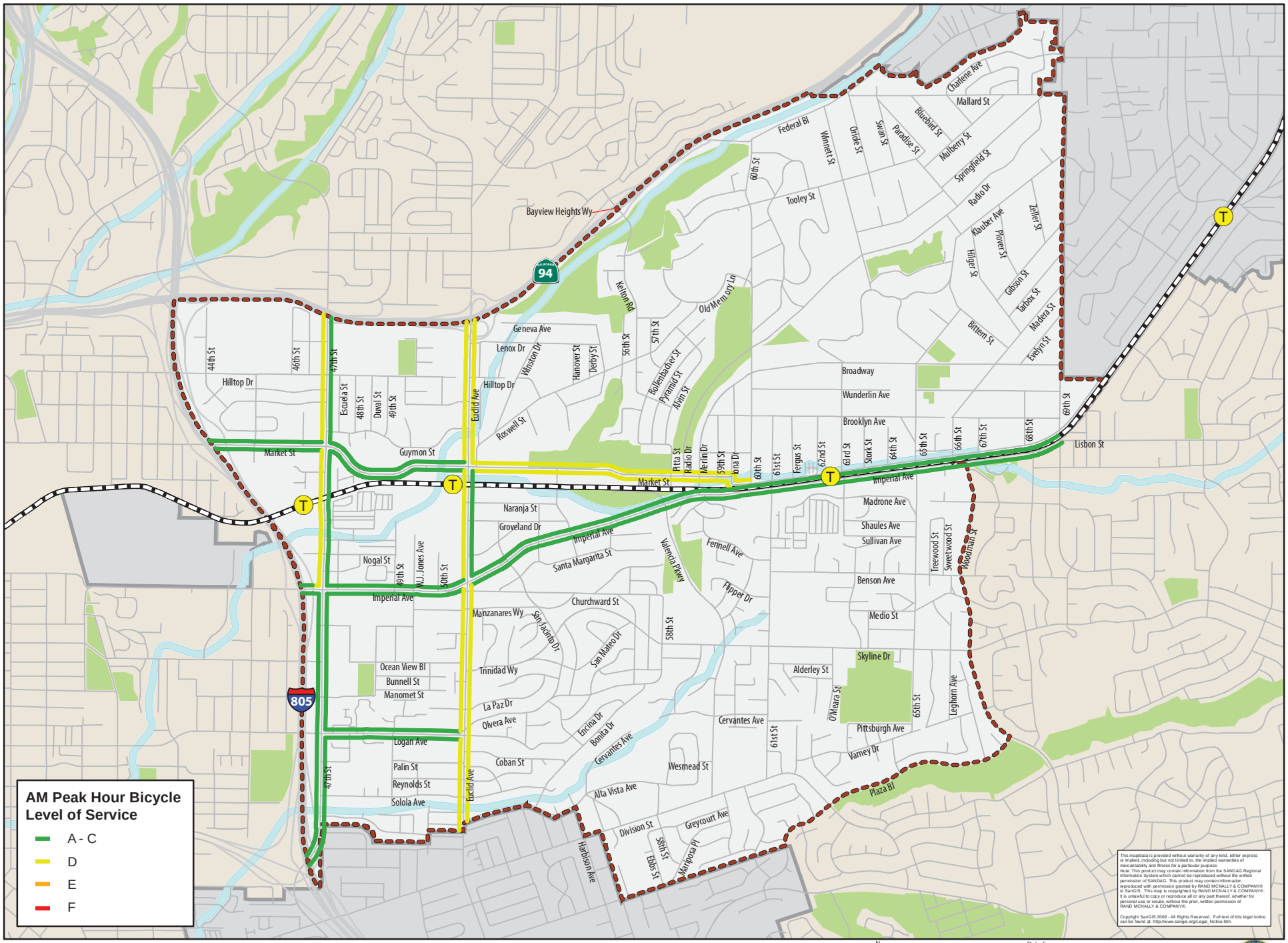


Figure 3-25a: Existing AM Peak Hour Bicycle Level of Service

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

ENCANTO COMMUNITY PLAN UPDATE

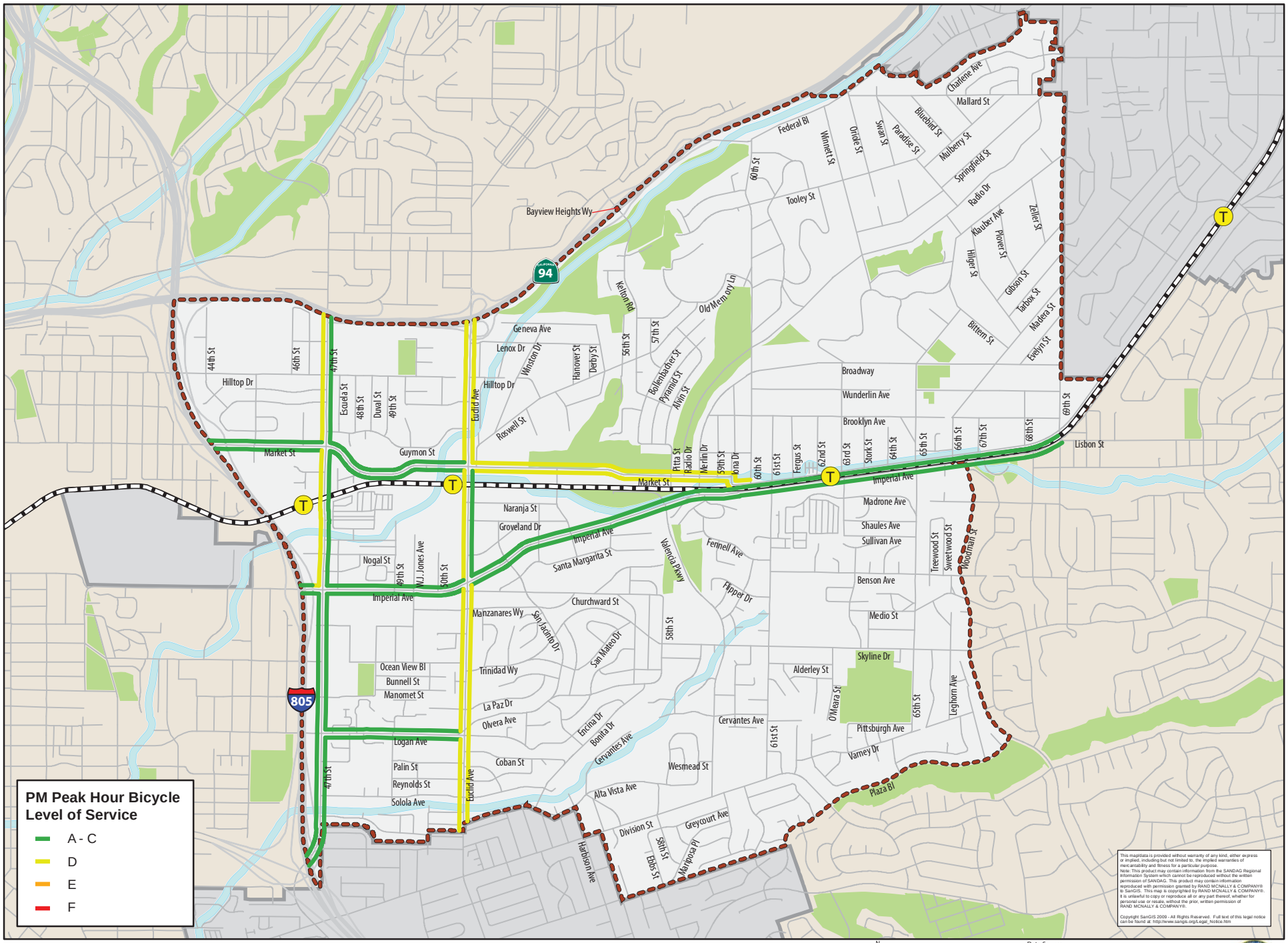


Figure 3-25b: Existing PM Peak Hour Bicycle Level of Service

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

3.7.4 Bicycle Collisions

Bicycle collision data was obtained from the City of San Diego for the period from 2007 to 2012. **Table 3.20** summarizes the reported bicycle-involved collisions, while **Figure 3-26** displays the distribution and location of these collisions across Encanto.

TABLE 3.20
BICYCLE COLLISION SUMMARY

Multi-Modal Corridor	Total	Severity			Age	
		Fatality	Injury	Uninjured	Adult	Child
Market Street, between I-805 and 60th Street	9	0	9	0	8	1
Imperial Avenue, between I-805 and 69th Street	8	1	6	1	7	1
Logan Avenue, between I-805 and Euclid Avenue	1	0	1	0	1	0
47th Street, between SR-94 and I-805	7	1	6	0	4	3
Euclid Avenue, between SR-94 and southern CPA boundary	8	0	8	0	7	1
Multi-Modal Corridor Total	33	2	30	1	27	6
Community-wide Total	51	2	46	3	35	16

Source: City of San Diego, Chen Ryan Associates; February 2015

Note:
The above information was provided by the City of San Diego for July 2007 through September 2012.

During this period there were a reported 51 bicycle-involved collisions within Encanto, 33 of which were along the Urban Streets. There were two (2) bicycle fatalities during this period, and 46 out of 51 collisions resulted in injury. A majority of the collisions involved adult cyclists (35 adult cyclists), rather than children (16 child cyclists).

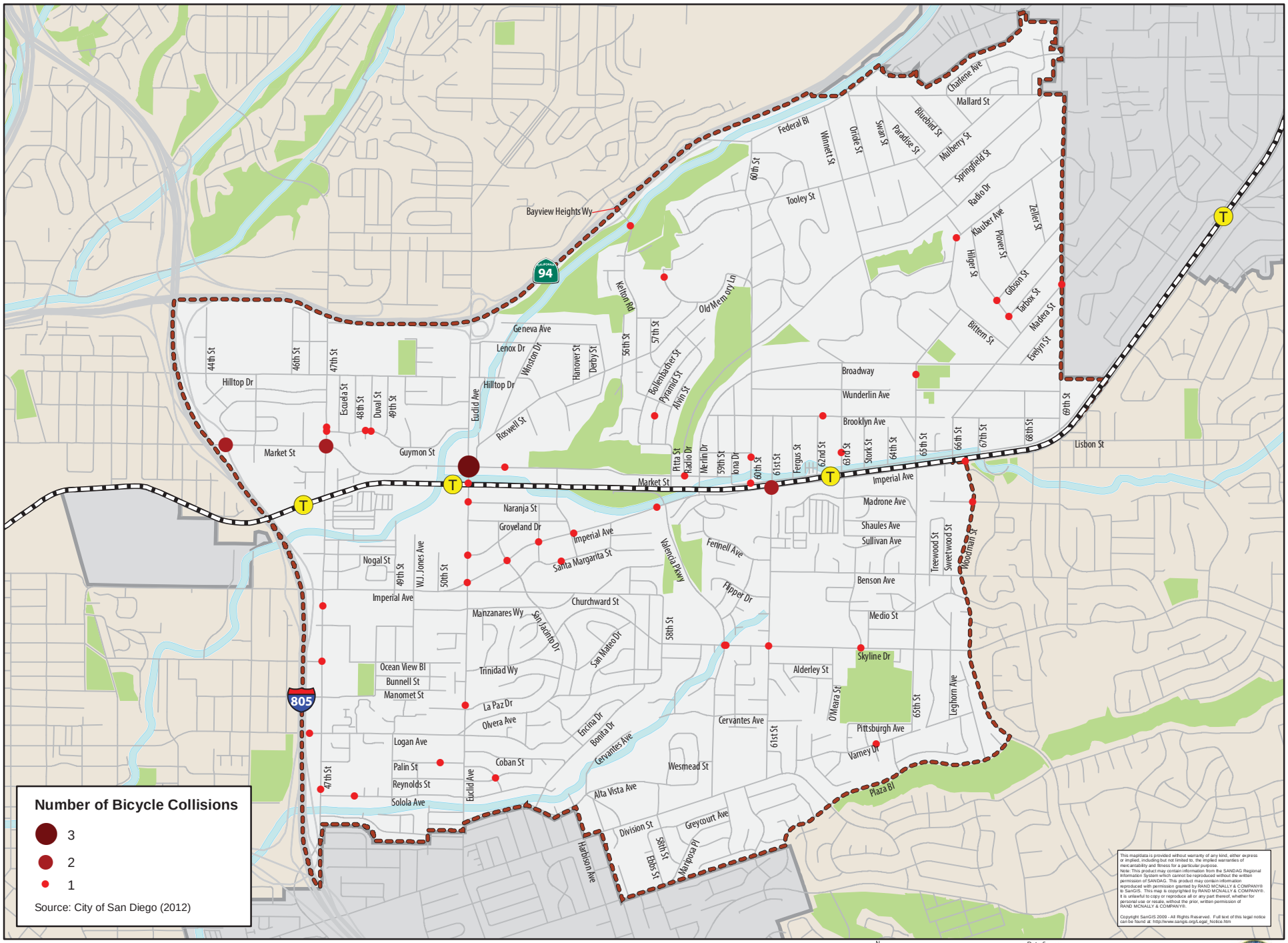


Figure 3-26: Bicycle Collisions (2007 - 2012)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

3.8 Parking Management

The parking management goals as expressed in the City's 2008 General Plan Mobility Element include the following:

- *Parking that is reasonably available when and where it is needed through management.*
- *Solutions to community-specific parking issues through implementation of a broad range of parking management tools and strategies.*
- *New development with adequate parking through the application of innovative citywide parking regulations.*
- *Increased land use efficiencies in the provision of parking*

Encanto currently has a variety of parking options, including public on-street parking (with and without time restriction), as well as private off-street parking for local businesses and residents. Public off-street parking lots are generally not available in the Encanto community with the exception of the three (3) trolley station parking lots located at 47th Street, Euclid Avenue, and 62nd Street.

On-street "drive-by" parking occupancy data was collected on Wednesday, December 5, 2012. Parking occupancy data was collected during periods in the morning (7AM - 9AM), Noon (11AM - 1PM), and evening (6:30PM - 8:30PM), in order to determine the variations in parking demand resulting from the mix of land uses in Encanto. The observed overall peak weekday on-street parking demand period is between 6:30PM and 8:30PM (evening peak).

Figures 3-27a, b & c show the observed percent parking occupancy during all three peak periods. As shown, there is currently a high demand for on-street parking at the following locations:

<u>During the morning peak period</u>

- Market Street, between I-805 and 47th Street; and
- Logan Avenue, between 47th Street and Euclid Avenue.

<u>During the noon peak period</u>

- Market Street, between I-805 and 47th Street; and
- Logan Avenue, between 47th Street and Euclid Avenue.

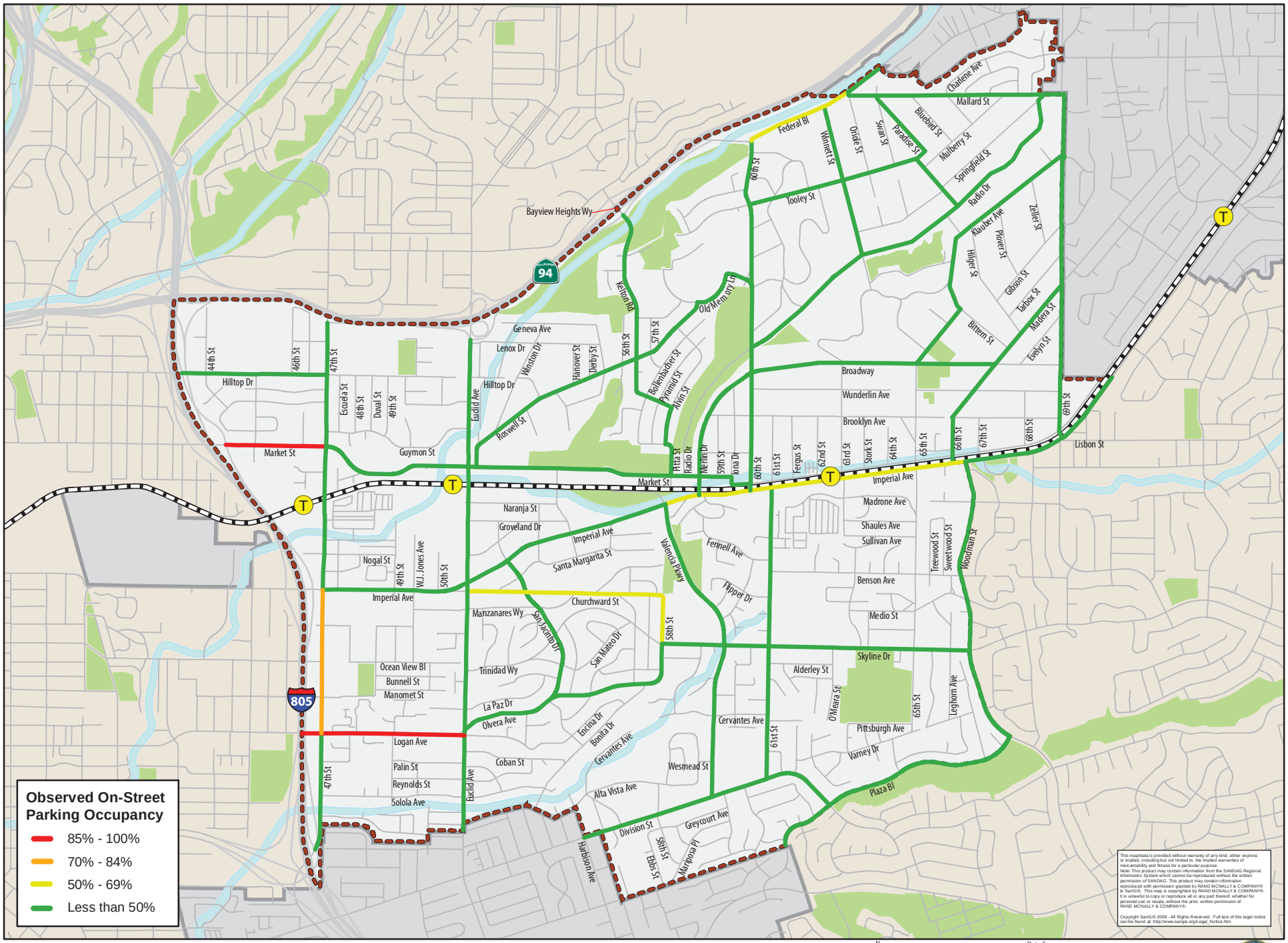


Figure 3-27a: Observed Peak On-Street Parking Occupancy (Morning Peak)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

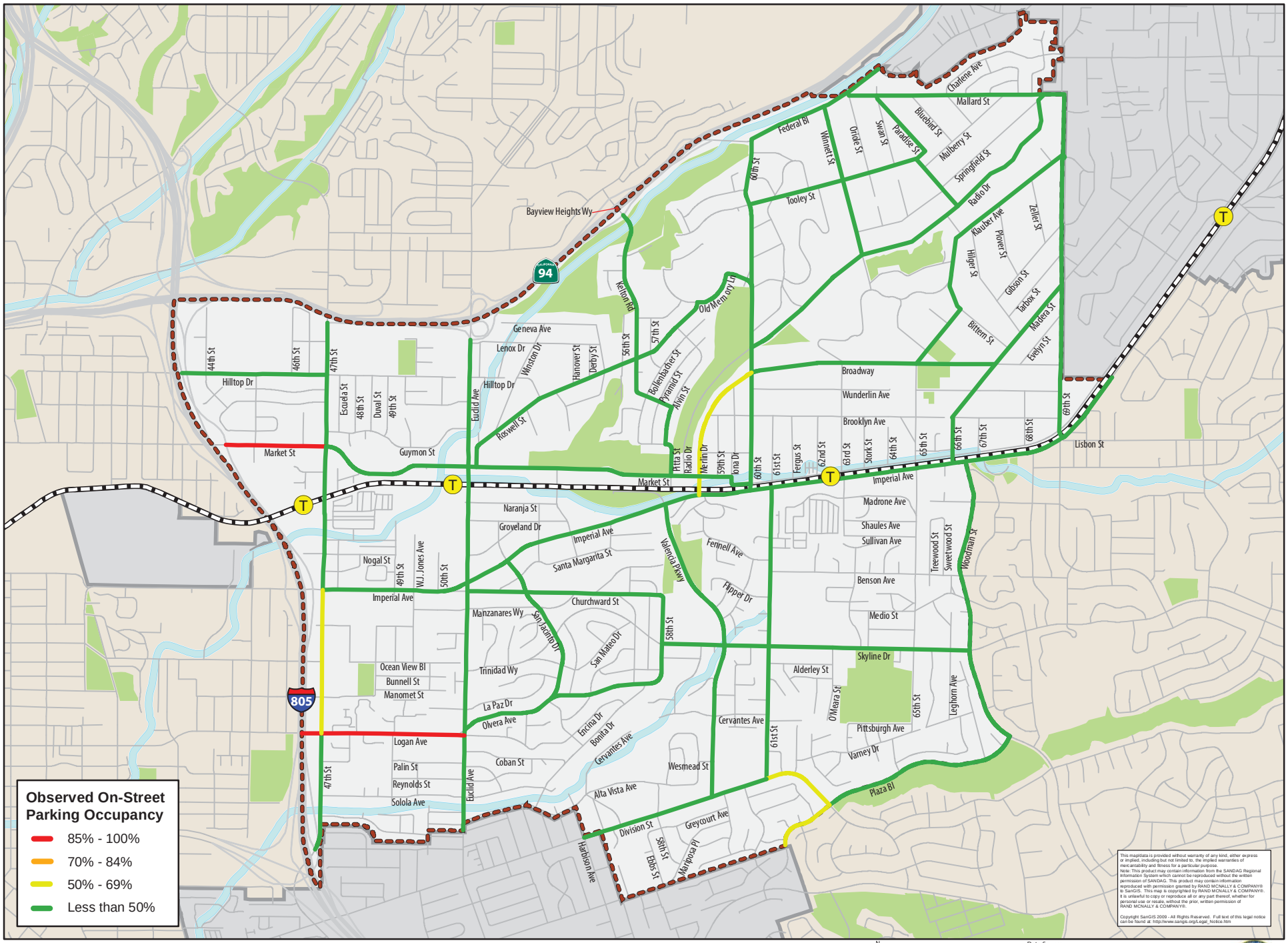


Figure 3-27b: Observed Peak On-Street Parking Occupancy (Noon Peak)

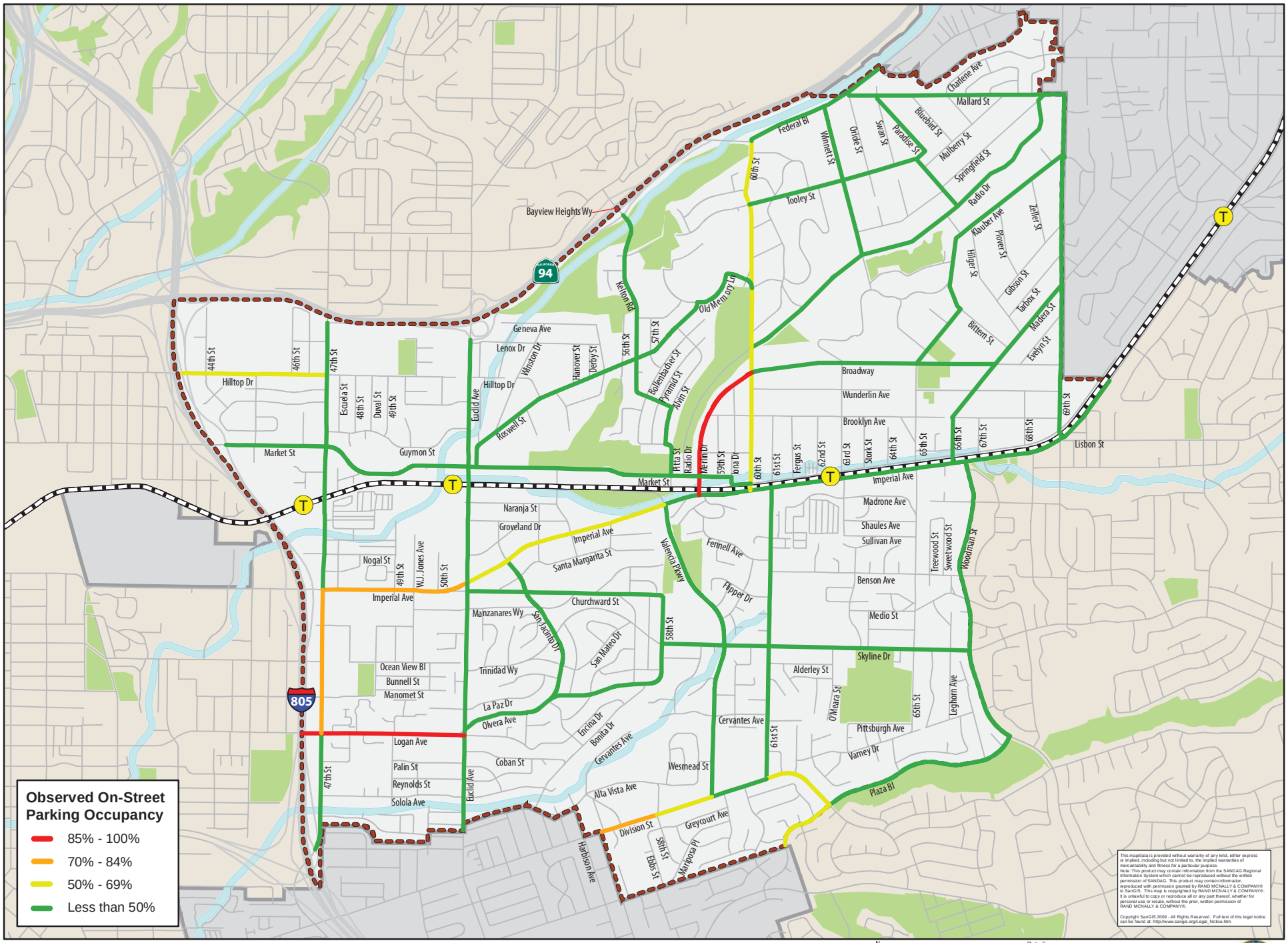


Figure 3-27c: Observed Peak On-Street Parking Occupancy (Evening Peak)

CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

During the evening peak period

- Logan Avenue, between I-805 and Euclid Avenue; and
- Merlin Drive, between Imperial Avenue and 60th Street.

Appendix L displays the parking occupancy tabular data.

A "drive-by" parking occupancy survey was conducted for the three (3) trolley station parking lots (47th Street, Euclid Avenue, and 62nd Street) during the morning, mid-day, and evening peak periods. Overall, all three parking lots were well utilized during the morning and mid-day peak with the Euclid Trolley Station parking lot reaching 80% occupancy during the mid-day peak. **Table 3.21** displays the public off-street parking occupancy rate for all of the parking lots stated above.

TABLE 3.21
PUBLIC OFF-STREET PARKING LOT OCCUPANCY SURVEY

Trolley Parking Lot	Morning	Mid-Day	Evening
47th Street Trolley Station	70.0%	70.0%	10.0%
Euclid Trolley Station	60.0%	80.0%	30.0%
62nd Street Trolley Station	60.0%	70.0%	20.0%
Average Occupancy	63.3%	73.3%	20.0%

Source: Chen Ryan Associates; February 2015

3.9 Airports, Passenger Rail, and Goods Movement

3.9.1 Airports

The closest airport serving Encanto is the San Diego International Airport (Lindbergh Field). This section outlines several recent plans related to the airport.

The Destination Lindbergh Plan proposes an expanded configuration of the San Diego International Airport that attempts to minimize airport-related traffic impacts to adjacent communities, and improve intermodal access to the airport. The plan recommends improvements to the local and regional roadway network providing access to the airport, as well as a new transit route to serve the airport. The Intermodal Transit Center (ITC) is proposed as an intermodal hub to facilitate air passengers accessing the airport without driving a single-occupant vehicle.

The ITC is planned to be located at the north end of the airport, just south of I-5 between Washington Street and Sassafras Street. Plans indicate that existing trolley lines, the COASTER, Amtrak, new express bus routes, several local bus routes and the planned California High Speed Rail system, will all be served by the ITC. In addition, the ITC will provide the following connections and amenities:

- 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; and
- Curb extensions and planting/parking strips as well as provide new opportunities to employ green street strategies on impacted/new roadways.

San Diego International Airport Consolidated Rental Car Facility (CONRAC) – The CONRAC project proposes consolidating rental car facilities currently serve the airport into a single location, located west of Pacific Highway and north of Sassafras Street. The project proposes extending Sassafras Street west of Pacific Highway and along the east end of the airport to serve as a point of access for rental vehicles.

High-Speed Rail Station – A station for the California High-Speed Rail System is proposed at the ITC. The High-Speed Rail station is also proposed to include a parking garage with 6,000 parking spaces.

San Diego International Airport (SDIA) Master Plan – The SDIA Master Plan outlines several local roadway improvement measures near the airport to expand vehicular capacity and enhance access.

3.9.2 Passenger Rail

Heavy rail commuter train service, provided by the North County Transit District (called the Coaster) and Amtrak connect downtown San Diego to locations outside the county. Although there is no heavy passenger rail service directly within Encanto, the Coaster and Amtrak services are accessible to Encanto residents via the Orange Line Trolley.

More than 20 Coaster trains run on weekdays, with additional service on the weekends. The Coaster provides connections to numerous other transit routes, including bus routes, the Sprinter, San Diego Trolley, Amtrak and Metro Transit (to Orange and LA Counties via the Oceanside Transit Center).

The main Amtrak route serving San Diego is the Pacific Surfliner which provides service between the major coastal cities in California. The Pacific Surfliner stops at Union Station in Los Angeles, which functions as a transfer point to rail services across the country. The main Amtrak station within the City of San Diego is Santa Fe Depot (located downtown); however, on weekends and holidays the Pacific Surfliner service also stops at the Old Town Transit Center.

3.9.3 Goods Movement

The efficient movement of goods is essential for meeting basic consumer demands and requires interaction among various modes of travel. The San Diego region is supported by intermodal goods movement infrastructure consisting of roadways, railways, maritime facilities, and airport facilities. Encanto is located in close proximity to several regionally significant goods movement facilities, including Lindbergh Field, maritime facilities, coastal and inland freight railways, and several regional freeways.

The goods movement goal as expressed in the *City's 2008 General Plan Mobility Element* includes the following:

- *Safe and efficient movement of goods with minimum negative impacts.*

The following sections describe the various goods movement facilities within the study communities by facility type.

Trucking

Most goods in the San Diego region are transported via trucks along highways and roadways. While the City of San Diego does not have a system of designated truck routes, truck access to Encanto is provided by major freeways, including specifically I-805 and SR-94. Within Encanto, industrial and commercial destinations are generally concentrated along Market Street.

Local streets provide access to delivery destinations as well as the transition of freight to rail and ocean transport.

Air Freight

In addition to the transport of freight on roadways, cargo may also move through Encanto via air freight transport companies such as FedEx, DHL Express and UPS. San Diego International Airport serves as the primary regional airport for freight transported via air. Major cargo airlines serving Lindbergh field include FedEx, DHL Express, and UPS. These and other movers of freight may receive and distribute cargo via maritime operations, rail, or trucks.

Rail

Two companies operate freight rail service within San Diego County. The Burlington Northern Santa Fe Railway Company (BNSF) operates freight rail service along the same right-of-way as Amtrak and the Coaster passenger services. BNSF transports freight to points north and east of San Diego County, such as Los Angeles and Arizona. According to the *LOSSAN Corridor Strategic Assessment, January 2010* freight rail frequencies within this corridor are expected to double (from 4 trains a day to 8) over the next 20 years.

The San Diego and Imperial Valley Railroad (SDIY) also operates short-haul freight service in San Diego County along the Orange Line trolley corridor through Southeastern San Diego during the early morning hours. This service provides an important connection between the Class I BNSF and freight rail service in Mexico. The railroad's main commodities are petroleum products,

agricultural products, and wood pulp. The SDIY hauled around 6,500 carloads in 2008. The SDIY carried almost 6,000 cars in 2010.

Maritime

There are currently no port cargo facilities located within Encanto, although cargo is transported near the study community, via the modes summarized above, to and from the port cargo facilities located at the nearby 10th Avenue Marine Terminal and at the National City Marine Terminal.

4.0 Model Forecasting

This chapter summarizes the future year travel demand model forecasting process utilized to project the future travel patterns within the Encanto community, 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 Southeastern San Diego and Encanto communities. Section 4.1 describes the base year model calibration process and Section 4.2 describes the process used to develop future year volumes.

4.1 Base Year 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 Encanto community. Detailed descriptions of each validation step are provided in the following sections.

4.1.1 Base Year Land Use Verification/Validation

To ensure that the existing land uses were correctly represented in the SANDAG Series 12 Base Year model, the following existing land use data was collected throughout the entire Encanto community and verified/adjusted in the Base Year model to correctly match field conditions:

- Descriptions (land use type and code)
- Proper 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 aerial images, 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 M.**

4.1.2 Base Year Roadway Network Verification/Validation

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

- TAZ loading points
- Number of lanes for roadways
- Traffic controls
- Signalized intersection geometrics
- Street classification (including median type)

- Roadway speed limits

4.1.3 Base Year Ground Count Validation & Adjustment

Historical ADT volumes over the past 11 years were compiled from the City of San Diego Traffic Count Database and other recent studies for major roadway links throughout the Encanto community. Out of the historic counts, the most recent counts collected for this effort, followed by counts within the past three (3) years were selected to establish a base year ground count database. This database included multiple counts representing the same location on numerous segments, as well as the counts inputted into the model and were 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 to be a model input.

4.1.4 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 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).

4.1.5 Final Base Year Calibration Results

A total of 5 model runs were conducted to establish a base year model that met all calibration targets. Model calibration results as well as the final base year model roadway network are provided in Appendix M.

4.2 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 adjustment/assumptions:

- Buildout of the Preferred Plan land uses within the project study area (land use assumptions are provided in Appendix M).
- Existing roadway network within the study area with improvements from reasonable for-seeable projects including the following projects:
    - SR-94 Express Lane Project
    - I-805 South Project (Phase 1)
    - SR-94 / Euclid Avenue Interchange Project
- 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 by the project team and approved by City staff prior to running the model forecasts.

Table 4.1 provides a comparison of the preferred land uses for both the Base Year and Preferred Plan scenarios. As shown, under buildout of the Preferred Plan, significant growth in both commercial (804.1 ksf) and multi-family residential (8,438 units) land uses are anticipated throughout the Encanto community.

TABLE 4.1
LAND USE COMPARISON EXISTING CONDITION VS. PREFERRED PLAN

Land Use	Base Year	Preferred Plan	Δ
Alternative Correctional Facility	300 Cells	0 Cells	-300 Cells
Arterial Commercial	236.5 ksf	826.1 ksf	589.6 ksf
Automobile Dealership	0.1 Acres	0.1 Acres	0.0 Acres
Automobile Repair Shop	8.8 ksf	8.8 ksf	0.0 ksf
Carwash (Self service)	4 stall	0 stall	-4 stall
Cemetery	44.7 Acres	40.5 Acres	-4.3 Acres
Clinic (Medical Office)	0.0 ksf	27.6 ksf	27.6 ksf
Commercial Recreation	9.0 ksf	0.0 ksf	-9.0 ksf
Communications and Utilities	40.4 Acres	37.3 Acres	-3.1 Acres
Community Shopping Center (100,000 SF or more)	81.0 ksf	291.3 ksf	210.2 ksf
Congregate Care Facility	18 Beds	0 Beds	-18 Beds
Convenience Market Chain (Open Up to 16 Hours Per Day)	3.2 ksf	0.0 ksf	-3.2 ksf
Day Care Center	145 child	145 child	0 child
Elementary School	5,114 Students	5,114 Students	0 Students
Fast Food (with or without Drivethrough)	8.7 ksf	0.0 ksf	-8.7 ksf
Fire/Police Station	14.5 ksf	14.5 ksf	0.0 ksf
Government Office (less or equal to 100,000 SF)	22.1 ksf	22.1 ksf	0.0 ksf
Government Office/Civic Center	18.5 ksf	0.0 ksf	-18.5 ksf
Industrial Park	26.0 ksf	152.0 ksf	126.0 ksf
Junior High School or Middle School	1,547 Students	1,547 Students	0 Students
Landscape Open Space (Undeveloped Park)	0.1 Acres	0.1 Acres	0.0 Acres
Library	27.6 ksf	27.6 ksf	0.0 ksf
Light Industry - General	418.8 ksf	345.0 ksf	-73.8 ksf
MF Residential less or equal 20 DU/acre	1,466 DU	918 DU	-548 DU
MF Residential over 20 DU/acre	1,916 DU	10,902 DU	8,986 DU
Mobile Home Park	610 DU	250 DU	-360 DU
Neighborhood Shopping Center (30,000 SF or more)	62.0 ksf	70.7 ksf	8.7 ksf
Office (Low-Rise - less or equal to 100,000 SF)	150.2 ksf	134.9 ksf	-15.3 ksf
Open Space Park or Preserve	201.3 Acres	207.6 Acres	6.3 Acres
Other Health Care	22.6 ksf	0.0 ksf	-22.6 ksf
Other Recreation - High (Developed Park)	2.8 Acres	0.0 Acres	-2.8 Acres

TABLE 4.1
LAND USE COMPARISON EXISTING CONDITION VS. PREFERRED PLAN

Land Use	Base Year	Preferred Plan	Δ
Other Retail Trade and Strip Commercial	12.6 ksf	11.4 ksf	-1.2 ksf
Other School	24.3 ksf	14.5 ksf	-9.8 ksf
Other Transportation	0.9 Acres	0.0 Acres	-0.9 Acres
Park - Active	60.9 Acres	62.5 Acres	1.5 Acres
Parking Lot - Surface	6.6 Acres	0.3 Acres	-6.3 Acres
Public Storage	0.0 ksf	124.9 ksf	124.9 ksf
Public/Community Meeting Room Facility (Other Public Services)	37.8 ksf	21.4 ksf	-16.4 ksf
Rail Station/Transit Center	5.3 Acres	2.8 Acres	-2.5 Acres
Religious Facility (without day care)	307.6 ksf	292.0 ksf	-15.7 ksf
Restaurant (High Turnover sit-down)	4.2 ksf	14.4 ksf	10.2 ksf
Senior High School	3,283 Students	3,283 Students	0 Students
Service Station	8 Station	8 Station	0 Station
Service Station (with food mart and automated carwash)	12 station	12 station	0 station
Service Station (with food mart)	26 station	26 station	0 station
Single Family Detached	8,054 DU	7,893 DU	-161 DU
Single Family Multiple-Units	1,174 DU	1,132 DU	-42 DU
Spaced Rural Residential	2 DU	2 DU	0 DU
Supermarket (Stand alone)	4.4 ksf	4.4 ksf	0.0 ksf
Vacant and Undeveloped Land	190.3 Acres	1.5 Acres	-188.8 Acres
Warehousing	1.7 ksf	0.0 ksf	-1.7 ksf

Source: City of San Diego, Chen Ryan Associates; February 2015

Note:
ksf = Thousand Square Feet.

For comparison purposes, as well as to verify land use growth assumptions within the Encanto community, manual trip generation calculations by traffic analysis zone (TAZ) were conducted for both the Base Year land uses and the Preferred Plan buildout land uses. The vehicular trip generation growth within the Encanto community is displayed in **Figure 4-1.** Additionally, a by TAZ comparison of the vehicular trip generation for Base Year vs Preferred Plan conditions is provided in Appendix M**.**

As shown in Figure 4-1 and Appendix M, the majority of the TAZs within the Encanto community are not anticipated to experience much (if any) growth in vehicular trip generation, especially along the northeastern and southeastern area of the community, under buildout of the Preferred Plan. The majority of growth within the community is anticipated to occur near the 47th Street and Euclid Avenue trolley stations within the proposed village district, as well as along the freeway corridors, particularly around Imperial Avenue between I-805 and 61st Street, 47th Street between SR-94 and Imperial Avenue, Euclid Avenue between SR-94 and Imperial Avenue, and Logan Avenue between I-805 and Euclid Avenue.

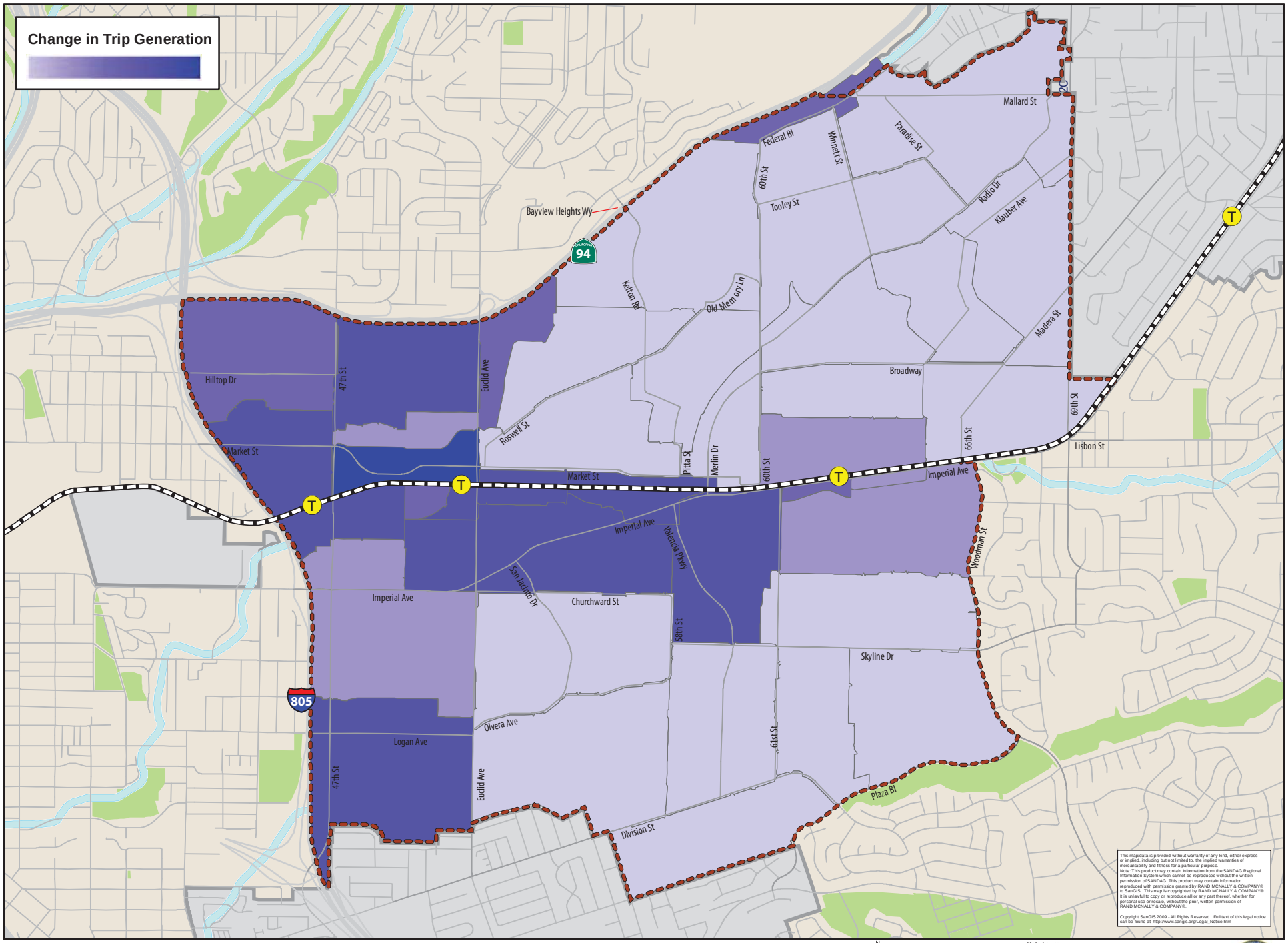


Figure 4-1: Projected Trip Generation Growth by TAZ

N

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

Future year forecast volumes were reviewed and adjusted by the project team and City staff based on existing travel patterns, the anticipated growth within the study area, projected driveway loading points and overall regional growth. Final SANDAG Series 12 Future Year Forecast Model Results are provided in Appendix M. **Figure 4-2** shows the final projected average daily traffic volumes that were used to develop and analyze the Preferred Plan circulation network, as described in the next chapter.

4.2.1 Vehicle Miles Traveled

The Vehicle Mile Travel (VMT) generated within the community was estimated using the SANDAG Series 12 Preferred Plan Future Year 2035 and the Base Year 2008 models. VMT is the total number of miles driven by all vehicle trips generated within the Encanto community, including trips to/from and within the community. **Table 4.2** displays the total VMT generated within the community and the average trip length under both Preferred Plan and Base Year conditions. VMT calculations are included in Appendix M.

TABLE 4.2
VEHICLE MILE TRAVELED (VMT) COMPARISON
EXISTING VS. PREFERRED PLAN

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)	206,790	293,099	86,309	41.7%	85,331,631	108,419,301	23,087,670	27.1%
Total # of Auto Trips	102,915	149,348	46,433	45.1%	16,458,692	20,183,171	3,724,479	22.6%
Average Trip Length* (miles)	2.01	1.96	-0.05	-2.3%	5.18	5.37	0.19	3.6%
Population	48,648	76,732	28,084	57.7%	3,130,717	4,035,834	905,117	28.9%
Daily VMT by Population (miles)	4.30	3.80	-0.50	-11.6%	27.30	26.90	-0.40	-1.5%

Source: SANDAG, Chen Ryan Associates; February 2015

Note:

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

As shown, Encanto community has shorter trip length and daily VMT by population under both the base year (Average Trip Length of 2.01 miles vs. 5.18 miles & VMT of 4.30 miles vs. 27.30 miles) and future scenarios (Average Trip Length of 1.96 miles vs. 5.37 miles & VMT of 3.80 miles vs. 26.90 miles) when comparing to the region. VMT by population in the Encanto community would decrease by 0.50 mile (-11.6%) while the region would decrease slightly less by 0.40 miles (-1.5%).

ENCANTO COMMUNITY PLAN UPDATE

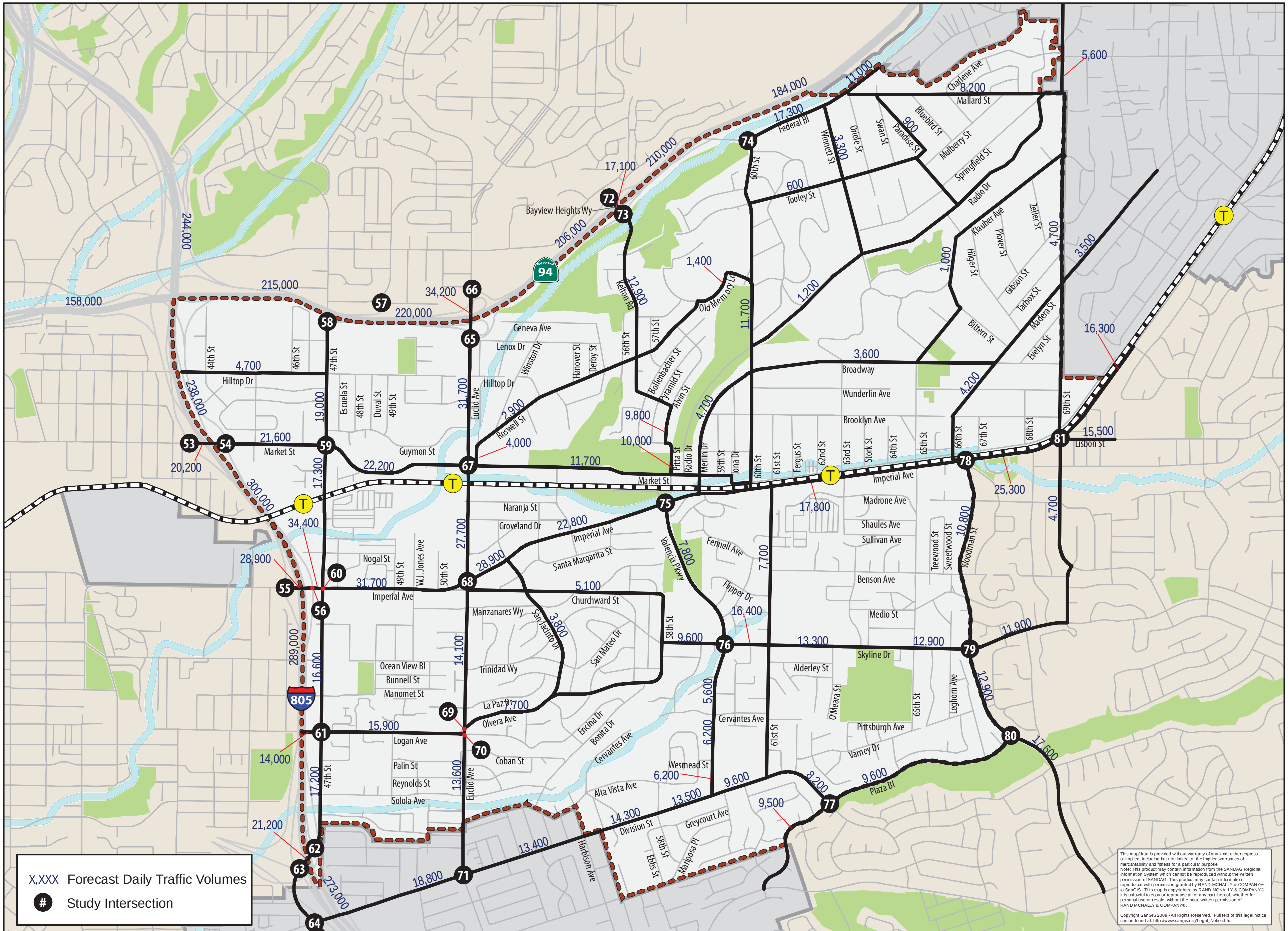


Figure 4-2: Preferred Plan Modeling Results

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

4.2.2 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 multi-modal facilities such as bicycle lanes or separated multi-modal 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 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 2015.

Non-motorized (pedestrian and bicycle) volumes within the community, under preferred plan conditions, were developed by applying a growth factor to existing pedestrian and bicycle volumes at key study intersections. The growth factor was developed utilizing SANDAG's Trip Generation for Smart Growth Tool (MXD) to determine the projected internal capture rate within key redevelopment areas within the community under both existing and preferred plan conditions. The internal capture rate estimates were then compared to develop pedestrian and bicycle growth factors within the community.

SANDAG published the Trip Generation for Smart Growth: Planning Tools for the San Diego Region in 2009 to identify trip generation rates associated with smart growth urban developments. The guidelines provide a more accurate method to account for vehicle trip reductions associated with mixed-use and transit-oriented developments (TOD) in smart growth and urban environments, especially relative to current standard local and national methods of calculating trip generation.

The MXD tool is a spreadsheet-based tool that uses empirical data to quantify shifts in travel modes (auto, non-motorized, and transit) for a specific study area based on land use combinations and densities, network connectivity, available transit service, population and employment, and household travel data. The MXD tool calculates the number of person trips generated for each transportation mode type.

The development of non-motorized volumes at key study intersections within the community is discussed by specific mode type in Chapter 5.0.

5.0 Preferred Plan Analysis

This chapter describes future activity patterns and LOS for all modes of travel (pedestrian, transit, vehicular, and bicycle) in the Encanto community planning area under buildout of the Preferred Plan. The chapter also summarizes services associated with parking, intelligent transportation systems (ITS), and travel demand management (TDM).

5.1 Pedestrian Environment

Walkability is an important factor in providing mobility and quality of life within a community. The degree to which people walk for transportation and recreation is influenced by the comfort, safety and convenience of their walking experience. Comfort is influenced by climate, separation from through traffic, topography and the presence of sidewalks and improved paths. Safety is influenced by the speed and volume of conflicting vehicle traffic, street widths, traffic control, number of conflict points, and infrastructure design. Convenience is influenced by distance and directness of travel. As connectivity increases, travel distances decrease and route options increase for the pedestrian.

5.1.1 Pedestrian Activity Levels

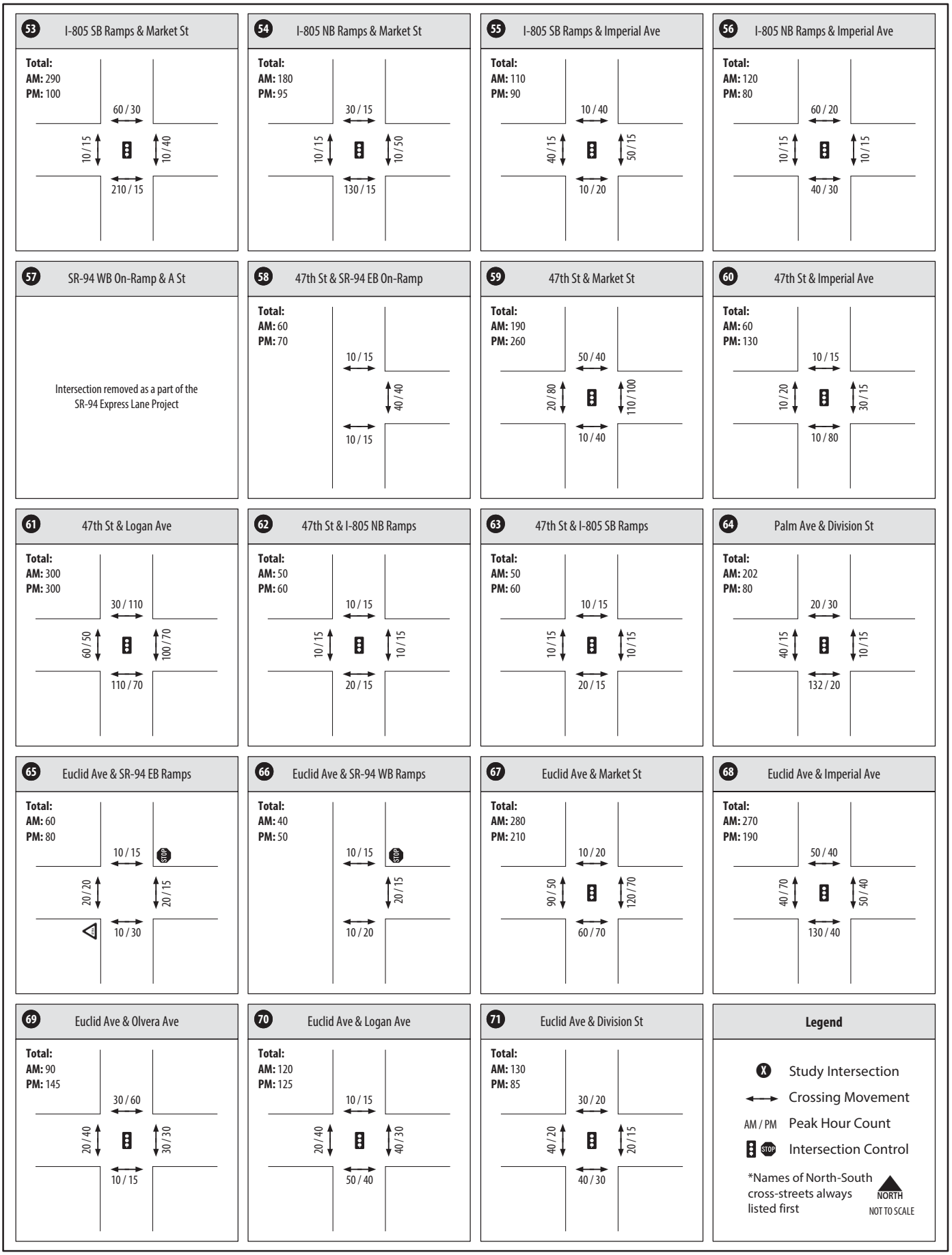
While projecting increases in multi-modal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide pedestrian activity growth factor was derived based on future growth estimates from the *Euclid Avenue Corridor Master Plan – Future Multi-Modal Conditions Report; Fehr & Peers*, *April 2014* conducted within the Encanto community. These master plan studies utilized SANDAG's Trip Generation for Smart Growth Tool (MXD) to estimate the specific growth in pedestrian activities along the major corridors throughout the community (Imperial Avenue, Commercial Street and National Avenue). Relevant pages from the previous master plan technical reports are provided in **Appendix N**.

Based on the MXD results in the previous master plans, a 2.0 growth factor was applied to existing pedestrian volumes throughout the community, which accounts for external pedestrian trips and internal pedestrian activities. To be conservative, in addition to applying the 2.0 growth factor at all pedestrian crossings, a minimum of 10 additional pedestrians in the AM peak hour and 15 pedestrians in the PM peak hour were assumed at those pedestrian crossings with minimal or no pedestrian activity under existing conditions.

Figure 5.1 displays the projected pedestrian activity levels derived using the methodology described above.

5.1.2 Planned Pedestrian Improvements

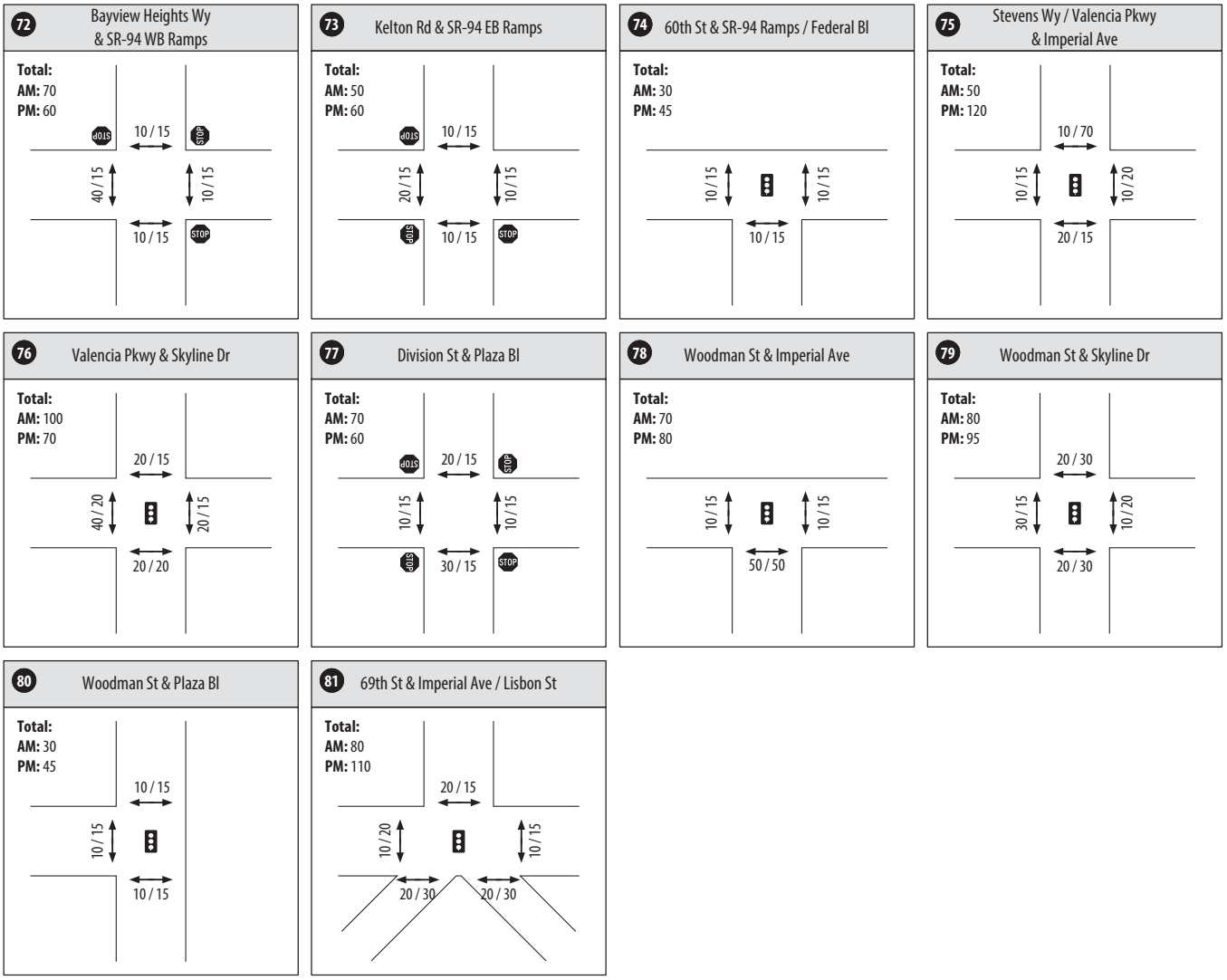
The 2006 *City of San Diego Pedestrian Master Plan City-wide Implementation Framework* established a pedestrian route typology to differentiate roadways across the City by function and environment. Specifically, the pedestrian route typology is based upon the functional classification of the roadway, the planned village propensity, and adjacent land uses.



Encanto Community Plan Update
Preferred Plan
CHEN RYAN

Figure 5-1

Projected Pedestrian Activity
Intersections 53-71 (Page 1 of 2)



Encanto Community Plan Update
Preferred Plan
CHEN RYAN

Figure 5-1

Projected Pedestrian Activity
Intersections 72-81 (Page 2 of 2)

Table 26: Route Types

ROUTE TYPE:	1. District Sidewalks	2. Corridor Sidewalks	3. Connector Sidewalks	4. Neighborhood Sidewalks	5. Ancillary Pedestrian Facilities	6. Path	7. Trail (Included for Reference Only, not a Focus of this Plan)
Purpose	Sidewalks Along Roads that Support Heavy Pedestrian Levels in Mixed-use Concentrated Urban Areas	Sidewalks Along Roads that Support Moderate Density Business & Shopping Districts with Moderate Pedestrian Levels	Sidewalks Along Roads that Support Institutional, Industrial or Business Complexes with Limited Lateral Access & Low Pedestrian Levels	Sidewalks Along Roads that Support Low to Moderate Density Housing with Low to Moderate Pedestrian Levels	Facilities Away or Crossing Over Streets such as Plazas, Paseos, Promenades, Courtyards or Pedestrian Bridges & Stairways	Walkways and Paved Paths that are not Adjacent to Roads that Support Recreational and Transportation Purposes	Unpaved Walk Not Adjacent to Roads Used for Recreational Purposes
Typical Adjacent "Street Design Manual" Classifications	All types of adjacent streets are possible	Commercial, Urban Collector, Urban Major & Arterial	Commercial, Industrial, Urban Major, Rural Collector & Arterial	Rural, Low Volume Residential, Residential Local & Sub-collector	Not associated with a street	Not associated with a street	Not associated with a street
Cross Reference to Related "Strategic Framework Plan" Definitions	Existing: Regional Centers, Urban Villages & Neighborhood Villages	Existing: Sub-regional Districts and Transit Corridors	Existing: Sub-regional Districts, Transit Corridors, & Suburban Residential along Major Arterials	All other Residential Areas not Classified under the Strategic Framework Plan	Most common in Regional Centers, Urban or Neighborhood Villages but can be in any area	Can occur in any area, but most often found in Recreation, Tourist or Open Space Areas	Can occur in any area, but most often found in Recreation or Open Space Areas
Typical Adjacent Land Uses	Mixed-use Housing, Commercial, Office & Entertainment with Urban Densities	Multiple Land Uses but may be Separated. Often Strip Commercial or Office Complex.	Open Space, Industrial Uses, Institutional Uses or other Pedestrian Restricted Uses	Single-family and Moderate Density Multi-Family with Limited Supporting Neighborhood Commercial	Adjacent Land Uses Vary	Adjacent Uses Vary, Often Recreational or Open Space or Housing	Open Space, Parks and Natural Areas

Figure 5-2 displays proposed pedestrian route types for Encanto using the methodologies developed during the San Diego's Pedestrian Master Plan – Phases 2 & 3 (PMP - Phases 2 & 3) planning process. Pedestrian routes are proposed for all high pedestrian demand segments identified in Figure 5-1.

As part of a more detailed effort, specific pedestrian improvements should be developed throughout the Encanto community based on the methodologies outlined in the 2006 *City of San Diego Pedestrian Master Plan City-wide Implementation Framework.* Two Corridor Master Plans were recently completed that developed and recommended pedestrian improvements within specific areas of the Encanto community.

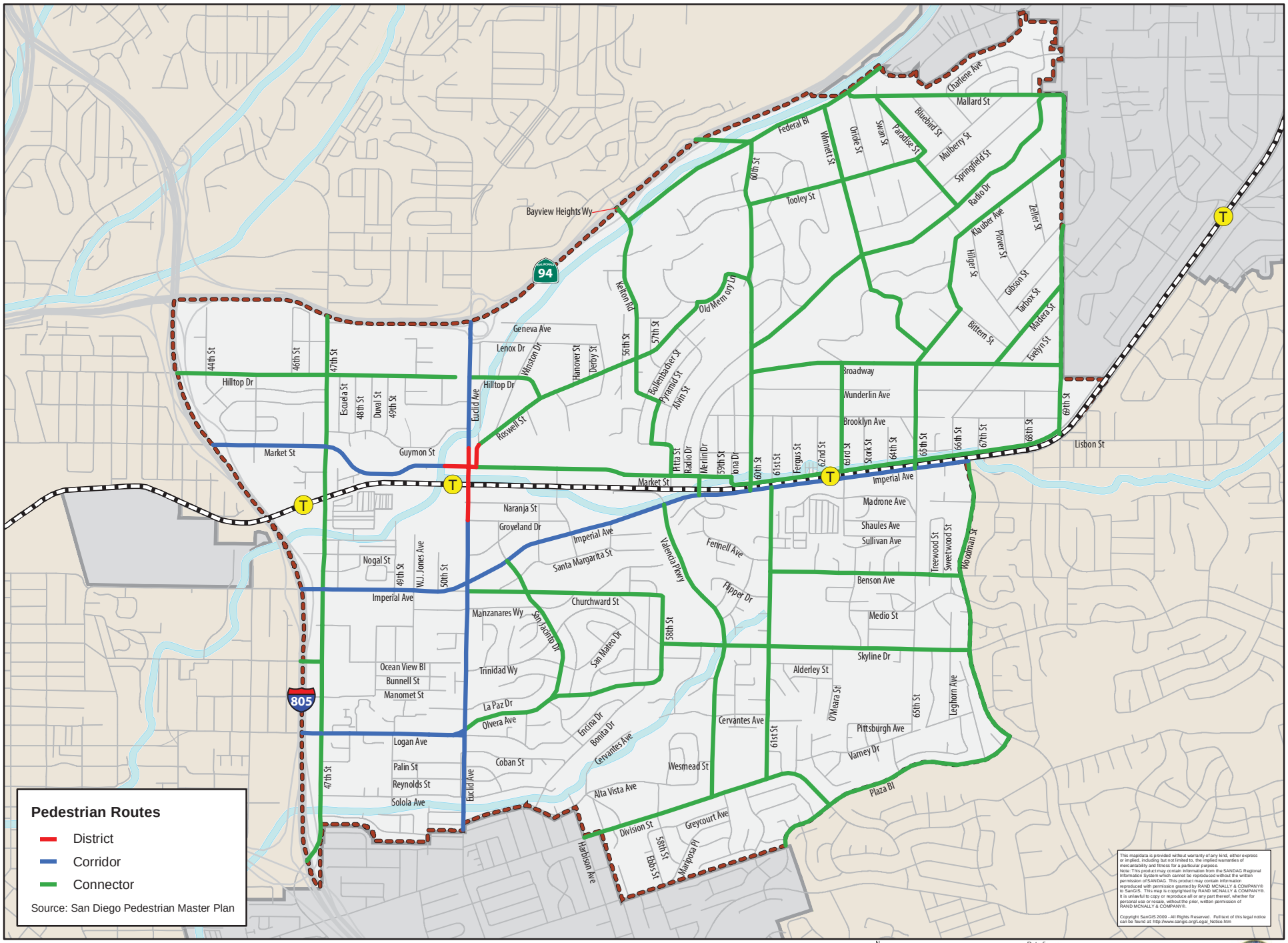


Figure 5-2: Planned Pedestrian Network

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

Euclid Avenue Corridor Master Plan

The Euclid Avenue Corridor Master Plan developed specific multi-modal and land use recommendations to enhance the overall mobility along Euclid Avenue between SR-94 and Guymon Street. The Master Plan had the following recommendations for pedestrian improvements within the project study area:

- Curb bulb-outs at intersections to reduce the effective crossing distance and curb-to-curb width;
- Enhanced crosswalks to improve their visibility;
- Restriction of driveway access along Euclid Avenue to reduce curb cuts and turning movements; and
- Installation of buffers between pedestrian, bicycle, and vehicular rights-of-way to distinguish between designated pedestrian, bicycle, and vehicular zones.

Euclid + Market Land Use & Mobility Plan

The Euclid + Market Land Use & Mobility Plan (EMLUMP) developed specific multi-modal and land use recommendations designed to help integrate and connect the Euclid and Market Village area to the surrounding community by creating mixed-use, multi-modal corridors along Euclid Avenue and Market Street with an emphasis for mixed use at the transit hubs. The EMLUMP had the following recommendations for pedestrian improvements within the project study area:

- Proposed design of Chollas Creek Trail that would intersect the Major Street network at two locations:
  - Market Street (approximately 450 feet west of Euclid Avenue)
  - 47th Street (approximately 360 feet south of the entrance to the 47th Street Trolley Station).
- Proposed Sidewalk Improvements along Euclid near Trolley Crossing.
- Proposed Signalized Crosswalk on Euclid Avenue at Castana.

Pedestrian Master Plan

Additional planning studies (such as a future phase of the Pedestrian Master Plan) are recommended to evaluate Community of Encanto for additional pedestrian improvements.

5.1.3 Other Planned Pedestrian Improvements

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 Encanto community are included in **Appendix O**. It should be noted this list is being updated on a regular basis and Appendix O only reflects a snap shot of the needs and planned improvements throughout the community at the time in which this report was prepared.

5.1.5 Pedestrian LOS Analysis and Results

Pedestrian LOS was evaluated along the major urban corridors throughout the community, including Market Street, Imperial Avenue, National Avenue, Logan Avenue, 47th Street and Euclid Avenue, using the CSLOS methodology described in Chapter 2.

Tables 5.1A and **5.1B** display the Preferred Plan LOS for pedestrians along study roadways during the AM and PM peak periods (respectively). Peak hour pedestrian CSLOS analysis outputs are provided in **Appendix P**.

TABLE 5.1A
PREFERRED PLAN MULTI-MODAL ANALYSIS – PEDESTRIAN LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.21	C	3.15	C
	I-805 NB Ramps & 47th Street		3.40	C		
	47th Street & Euclid Avenue		3.23	C		
	Euclid Avenue & 60th Street		3.01	C		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.97	C	3.07	C
	I-805 NB Ramps & 47th Street		3.03	C		
	47th Street & Euclid Avenue		3.21	C		
	Euclid Avenue & 60th Street		3.02	C		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.09	C	3.24	C
	I-805 NB Ramps & 47th Street		3.26	C		
	47th Street & Euclid Avenue		3.22	C		
	Euclid Avenue & Valencia Parkway		3.72	D		
	Valencia Parkway & Woodman Street		2.92	C		
	Woodman Street & 69th Street		3.23	C		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.91	C	3.11	C
	I-805 NB Ramps & 47th Street		2.77	C		
	47th Street & Euclid Avenue		2.98	C		
	Euclid Avenue & Valencia Parkway		3.46	C		
	Valencia Parkway & Woodman Street		2.93	C		
	Woodman Street & 69th Street		3.17	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	2.97	C	2.97	C
	47th Street & Euclid Avenue	Westbound	3.25	C	3.25	C

TABLE 5.1A
PREFERRED PLAN MULTI-MODAL ANALYSIS – PEDESTRIAN LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	SR-94 & Market Street	Northbound	2.68	B	2.96	C
	Market Street & Imperial Avenue		3.11	C		
	Imperial Avenue & Logan Avenue		3.08	C		
	Logan Avenue & I-805 NB Ramps		3.01	C		
	I-805 NB Ramps & I-805 SB Ramps		2.48	B		
	I-805 SB Ramps & Division Street		3.02	C		
	SR-94 & Market Street	Southbound	3.47	C	3.35	C
	Market Street & Imperial Avenue		3.59	D		
	Imperial Avenue & Logan Avenue		3.33	C		
	Logan Avenue & I-805 NB Ramps		3.05	C		
	I-805 NB Ramps & I-805 SB Ramps		2.74	B		
	I-805 SB Ramps & Division Street		3.52	D		
Euclid Avenue	SR-94 & Market Street	Northbound	3.02	C	3.20	C
	Market Street & Imperial Avenue		3.14	C		
	Imperial Avenue & Logan Avenue		3.41	C		
	Logan Avenue & Division Street		3.21	C		
	SR-94 & Market Street	Southbound	3.12	C	3.14	C
	Market Street & Imperial Avenue		3.05	C		
	Imperial Avenue & Logan Avenue		3.28	C		
	Logan Avenue & Division Street		3.11	C		

Source: Chen Ryan Associates; February 2015

Notes:
The pedestrian LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

TABLE 5.1B
PREFERRED PLAN MULTI-MODAL ANALYSIS – PEDESTRIAN LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.36	C	3.24	C
	I-805 NB Ramps & 47th Street		3.07	C		
	47th Street & Euclid Avenue		2.98	C		
	Euclid Avenue & 60th Street		3.42	C		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.06	C	3.14	C
	I-805 NB Ramps & 47th Street		2.81	C		
	47th Street & Euclid Avenue		2.87	C		
	Euclid Avenue & 60th Street		3.41	C		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.01	C	3.24	C
	I-805 NB Ramps & 47th Street		3.21	C		
	47th Street & Euclid Avenue		3.20	C		
	Euclid Avenue & Valencia Parkway		3.69	D		
	Valencia Parkway & Woodman Street		2.94	C		
	Woodman Street & 69th Street		3.33	C		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.92	C	3.09	C
	I-805 NB Ramps & 47th Street		2.72	B		
	47th Street & Euclid Avenue		2.95	C		
	Euclid Avenue & Valencia Parkway		3.45	C		
	Valencia Parkway & Woodman Street		2.90	C		
	Woodman Street & 69th Street		3.20	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	3.01	C	3.01	C
	47th Street & Euclid Avenue	Westbound	3.28	C	3.28	C
47th Street	SR-94 & Market Street	Northbound	2.68	B	3.01	C
	Market Street & Imperial Avenue		3.16	C		
	Imperial Avenue & Logan Avenue		3.07	C		
	Logan Avenue & I-805 NB Ramps		3.04	C		
	I-805 NB Ramps & I-805 SB Ramps		2.92	C		
	I-805 SB Ramps & Division Street		3.13	C		
	SR-94 & Market Street	Southbound	3.58	D	3.45	C
	Market Street & Imperial Avenue		3.66	D		
	Imperial Avenue & Logan Avenue		3.38	C		

TABLE 5.1B
PREFERRED PLAN MULTI-MODAL ANALYSIS – PEDESTRIAN LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	Logan Avenue & I-805 NB Ramps	Southbound	3.11	C		
	I-805 NB Ramps & I-805 SB Ramps		3.13	C		
	I-805 SB Ramps & Division Street		3.68	D		
Euclid Avenue	SR-94 & Market Street	Northbound	3.02	C	3.19	C
	Market Street & Imperial Avenue		3.23	C		
	Imperial Avenue & Logan Avenue		3.41	C		
	Logan Avenue & Division Street		3.09	C		
	SR-94 & Market Street	Southbound	3.15	C	3.15	C
	Market Street & Imperial Avenue		3.12	C		
	Imperial Avenue & Logan Avenue		3.27	C		
	Logan Avenue & Division Street		3.03	C		

Source: Chen Ryan Associates; February 2015

Notes:
The pedestrian LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

As shown in the tables, each of the analyzed roadways is projected to provide pedestrian service at LOS D or better. **Figures 5-3a** and **5-3b** show pedestrian Levels of Service for the AM and PM peak periods, respectively, by segment by direction.

ENCANTO COMMUNITY PLAN UPDATE

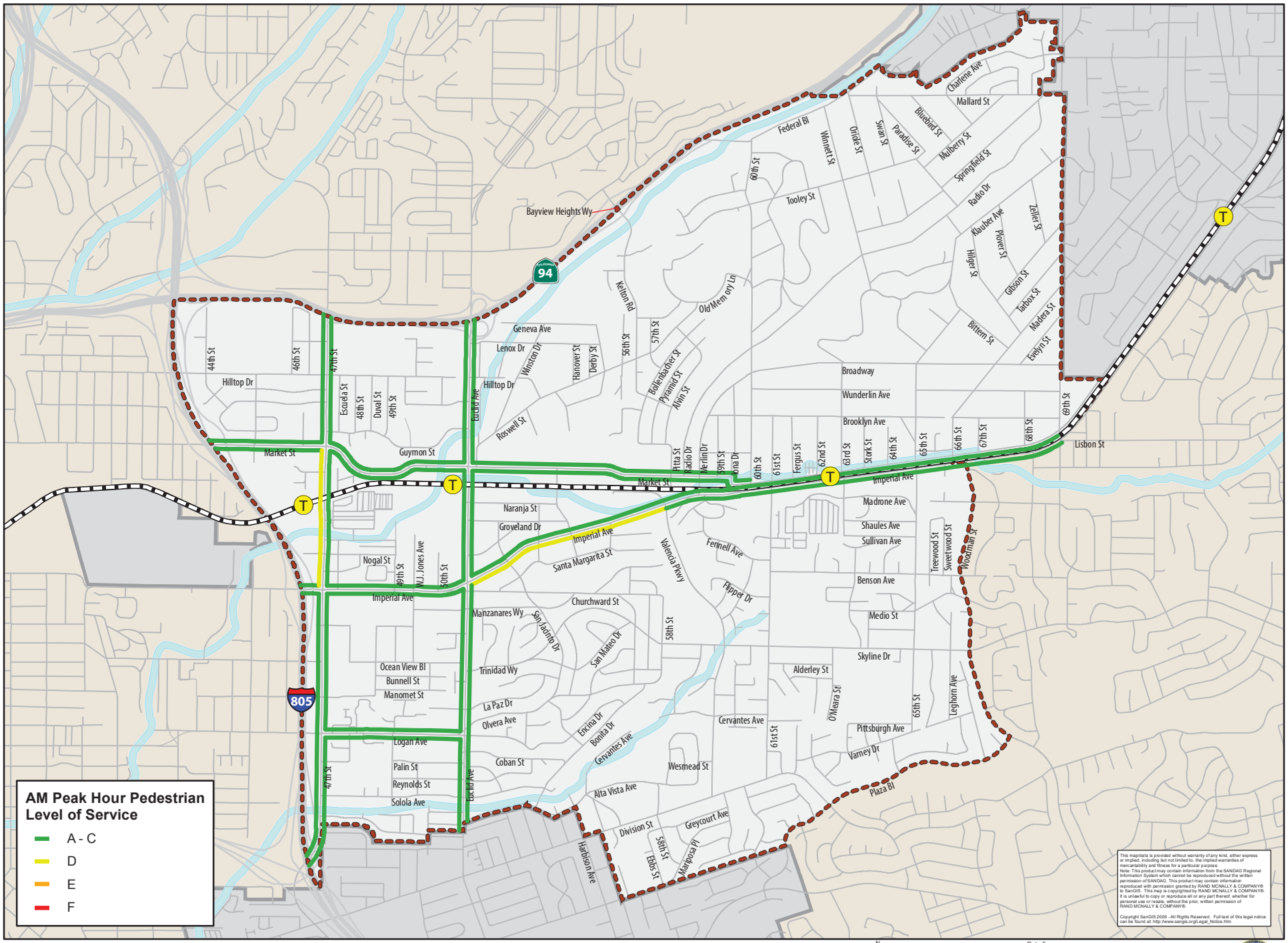


Figure 5-3a: Preferred Plan AM Peak Period Pedestrian Level of Service

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

ENCANTO COMMUNITY PLAN UPDATE

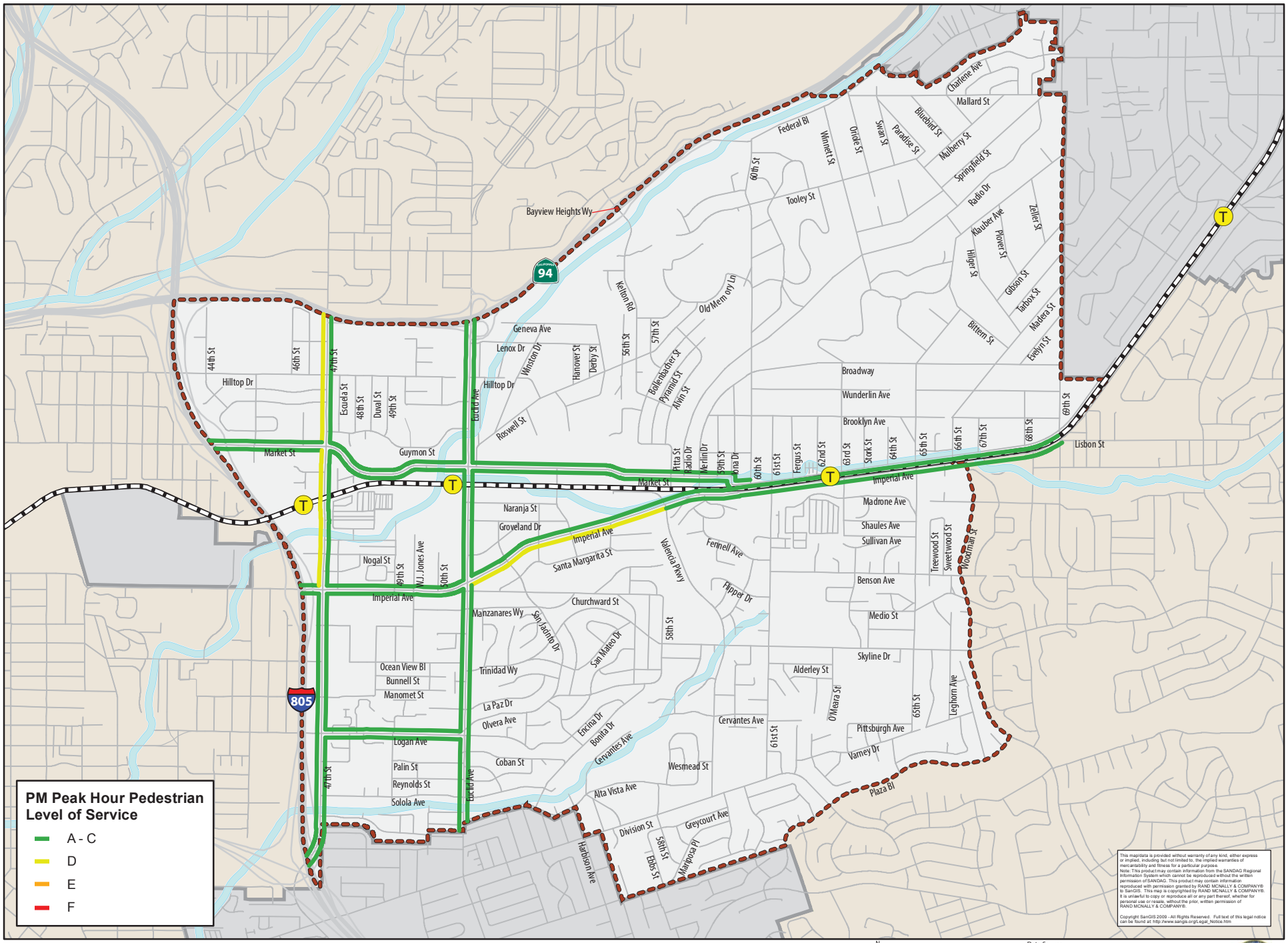


Figure 5-3b: Preferred Plan PM Peak Period Pedestrian Level of Service

5.2 Public Transit Services and Facilities

Transit opportunities in Encanto are provided by the Metropolitan Transit System (MTS) with both bus and Light Rail Trolley services. The following sections describe the projected operations of the planned transit services within Encanto under buildout of the preferred plan.

5.2.1 Preferred Plan Transit Routes

The San Diego Association of Government's *2050 Regional Transportation Plan* Revenue Constrained scenario identifies several public transit improvements that will affect the Encanto community, as follows:

- I-805 BRT, Route 680 - Otay Mesa to Sorrento Mesa via I-805 Corridor, Otay Ranch/ Millenia, National City, Southeastern San Diego, Kearny Mesa. A Bus Rapid Transit (BRT) service is planned for San Diego along the Interstate 805 corridor as part of the TransNet program. The BRT will connect the Otay Mesa Port of Entry to Kearny Mesa, Sorrento Mesa, UCSD and UTC, providing access to employment and activity centers in a rapid and reliable manner. Additionally, the 2050 RTP indicates this route will be implemented by the year 2018. Members of the Encanto community have expressed an interest in having the South Bay BRT service connect to the 47th Street Trolley Station. This was included in the 2050 RTP unconstrained network and SANDAG is conducting a planning study to evaluate potential station design concepts; therefore, it was not included in the Preferred Plan transit analysis.
- Rapid Bus, Route 11 – between Spring Valley and SDSU via Southeastern San Diego/Encanto, Downtown, Hillcrest, and Mid-City. The 2050 RTP indicates this route will be implemented by the year 2035.
- Light Rail Transit (LRT), Orange Line – The 2050 RTP indicates the Orange Line will have increased service frequencies by the year 2030 to 7.5-minute peak / 15-minute off-peak, and a further increase by 2040 to 7.5-minute off-peak. (The latter was not included since it is not scheduled by 2035.) An extended linkage to the Airport Intermodal Transit Center is also planned by the year 2035.
- LRT, Orange Line Express - between El Cajon and downtown San Diego. The 2050 RTP indicates this route will not be implemented until the year 2040; therefore, it was not included in the Preferred Plan transit analysis.
- LRT, New Line - between UTC and San Ysidro via Kearny Mesa, Mission Valley, Mid-City, Southeastern San Diego, National City/Chula Vista via Highland Avenue/4th Avenue. The 2050 RTP indicates this route will not be implemented until the year 2050; therefore, it was not included in the Preferred Plan transit analysis.
- Local Buses - The 2050 RTP also identifies that local bus service frequencies will be improved to 15-minute headways along key corridors (all urban routes) by the year 2020, with further improvements to 10-minute (all day) frequency by 2030.

In addition to the regional transit improvement outlined in SANDAG's RTP, the Preferred Plan also anticipates the placement of benches and trash cans at all transit stops within the community planning area.

5.2.2 Transit Activity

While projecting increases in multi-modal 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 the *Euclid Avenue Corridor Master Plan – Future Multi-Modal Conditions Report; Fehr & Peers, April 2014* conducted within the Encanto community. These master plan studies utilized SANDAG's Trip Generation for Smart Growth Tool (MXD) to estimate the specific growth in transit ridership along the major corridors throughout the community. Relevant pages from the previous master plan technical reports are provided in Appendix N. Based on the MXD results in the previous master plans a 2.3 growth factor was applied to existing transit ridership volumes.

Figure 5-4 displays the anticipated transit demand within the Encanto community under buildout of the Preferred Plan.

Table 5.2 displays the assumed amenities, although it does show benches and trash cans added at all locations, this may not be feasible due to sidewalk space and ADA requirements. This table also shows the projected boardings and alightings at each transit stop/station within the Encanto community under buildout of the Preferred Plan.

TABLE 5.2
PREFERRED PLAN
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND
AVERAGE DAILY BOARDINGS AND ALIGHTINGS

Stop ID	Location		Amenities			Route	Boardings	Alightings	Total
	Intersection	Far Side / Near Side	Shelter	Bench	Trash Cans				
10235	Logan Avenue / 47th Street	F		✓	✓	3 & 11	150	280	430
10255	Olvera Avenue / Gwen Street	N		✓	✓	11	10	20	30
10259	Olvera Avenue / San Onofre Terrace	N		✓	✓	11	10	40	50
10263	Olvera Avenue / Las Flores Terrace	N		✓	✓	11	10	30	40
10264	Roswell Street / Kelton Road	N		✓	✓	917	30	70	100
10267	Market Street / Merlin Drive	N		✓	✓	917	10	20	30
10268	Skyline Drive / Radio Drive	N		✓	✓	11	40	90	130
10273	Imperial Avenue / 62nd Street	F	✓	✓	✓	4	170	80	250
10276	Imperial Avenue / 63rd Street	N		✓	✓	4	130	30	160
10280	Skyline Drive / Detroit Place	N		✓	✓	11	20	60	80

TABLE 5.2
PREFERRED PLAN
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND
AVERAGE DAILY BOARDINGS AND ALIGHTINGS

Stop ID	Location		Amenities			Route	Boardings	Alightings	Total
	Intersection	Far Side / Near Side	Shelter	Bench	Trash Cans				
10286	Imperial Avenue / Woodman Street	N		✓	✓	4 & 961	20	50	70
10287	Skyline Drive / Woodman Street	N		✓	✓	11	40	70	110
10291	Imperial Avenue / 68th Street	N		✓	✓	4	10	70	80
10292	Imperial Avenue / 69th Street	N		✓	✓	4	20	100	120
10293	Skyline Drive / 69th Street	N		✓	✓	11	120	180	300
10624	Imperial Avenue / 47th Street	F		✓	✓	4 & 955	120	100	220
10625	Market Street / 47th Street	F		✓	✓	5 & 13	120	180	300
10629	Logan Avenue / 49th Street	F		✓	✓	3 & 11	90	190	280
10635	Olvera Avenue / Euclid Avenue	F		✓	✓	11	300	160	460
10636	Imperial Avenue / Euclid Avenue	F		✓	✓	4	80	30	110
10637	Federal Boulevard / Euclid Avenue	F	✓	✓	✓	916	20	60	80
10638	Roswell Street / 51st Street	N		✓	✓	917	10	10	20
10641	Imperial Avenue / San Jacinto Drive	F		✓	✓	4	20	30	50
10642	Federal Boulevard / Pentecost Way	F		✓	✓	916	10	20	30
10647	Olvera Avenue / Santa Isabel Drive	F		✓	✓	11	20	40	60
10650	Imperial Avenue / 54th Street	F		✓	✓	4	50	180	230
10651	Roswell Street / Derby Street	F		✓	✓	917	10	30	40
10653	Imperial Avenue / 55th Street	F		✓	✓	4	10	10	20
10658	Imperial Avenue / Valencia Parkway	F		✓	✓	4	10	30	40
10664	Imperial Avenue / Linnet Street	F		✓	✓	4	20	40	60
10669	Imperial Avenue / 60th Street	F		✓	✓	4	10	40	50
10672	Skyline Drive / 61st Street	F		✓	✓	11	60	160	220
10678	Skyline Drive / Omeara Street	F		✓	✓	11	30	90	120
10686	Imperial Avenue / 65th Street	F		✓	✓	4 & 961	30	60	90
10690	Skyline Drive / Rio Lindo Drive	F		✓	✓	11	10	40	50
10997	Imperial Avenue / 47th Street	N		✓	✓	4	40	30	70

TABLE 5.2
PREFERRED PLAN
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND
AVERAGE DAILY BOARDINGS AND ALIGHTINGS

Stop ID	Location		Amenities			Route	Boardings	Alightings	Total
	Intersection	Far Side / Near Side	Shelter	Bench	Trash Cans				
10998	Market Street / 47th Street	N		✓	✓	5	70	30	100
11000	Logan Avenue / Jarrett Court	N		✓	✓	3 & 11	160	60	220
11007	Imperial Avenue / 50th Street	N	✓	✓	✓	4 & 955	160	190	350
11011	Olvera Avenue / Euclid Avenue	N		✓	✓	11	90	290	380
11012	Roswell Street / 51st Street	N		✓	✓	916	10	10	20
11015	Imperial Avenue / San Jacinto Drive	N		✓	✓	4	20	20	40
11019	Roswell Street / Hilltop Drive	N		✓	✓	916	20	10	30
11022	Imperial Avenue / 54th Street	N		✓	✓	4	150	40	190
11023	Roswell Street / Hanover Street	N		✓	✓	916	10	10	20
11024	Olvera Avenue / San Onofre Terrace	N		✓	✓	11	30	10	40
11027	Roswell Street / 56th Street	N		✓	✓	916	40	10	50
11029	Market Street / Radio Drive	N		✓	✓	916	10	10	20
11032	Market Street / Merlin Drive	N		✓	✓	916	20	20	40
11042	Imperial Avenue / 63rd Street	F		✓	✓	4 & 961	60	710	770
11047	Imperial Avenue / 65th Street	N		✓	✓	4 & 961	30	50	80
11051	Skyline Drive / Leghorn Avenue	N		✓	✓	11	50	40	90
11054	Imperial Avenue / 68th Street	N		✓	✓	4	70	10	80
11056	Lisbon Street / Imperial Avenue	N		✓	✓	4	110	20	130
11058	Madera Street / Primera Street	F		✓	✓	916	10	10	20
11371	Logan Avenue /47th Street	F		✓	✓	11 & 955	280	320	600
11375	Imperial Avenue / 49th Street	F		✓	✓	4 & 955	100	180	280
11382	Logan Avenue / Euclid Avenue	F		✓	✓	3 & 11	150	90	240
11386	Olvera Avenue / Gwen Street	F		✓	✓	11	20	10	30
11391	Olvera Avenue / Santa Isabel Drive	F		✓	✓	11	40	10	50
11397	Olvera Avenue / Las Flores Terrace	F		✓	✓	11	20	10	30
11407	Imperial Avenue / Merlin Drive	F		✓	✓	4	30	10	40
11408	Skyline Drive / Radio Drive	N		✓	✓	11	90	30	120
11410	Imperial Avenue / 60th Street	F		✓	✓	4	20	10	30

TABLE 5.2
PREFERRED PLAN
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND
AVERAGE DAILY BOARDINGS AND ALIGHTINGS

Stop ID	Location		Amenities			Route	Boardings	Alightings	Total
	Intersection	Far Side / Near Side	Shelter	Bench	Trash Cans				
11411	Skyline Drive / Ozzie Way	F		✓	✓	11	110	60	170
11416	Imperial Avenue / 62nd Street	F		✓	✓	4	40	30	70
11417	Skyline Drive / Omeara Street	F		✓	✓	11	90	40	130
11423	Skyline Drive / Detroit Place	F		✓	✓	11	60	30	90
11429	Imperial Avenue / 66th Street	F		✓	✓	4 & 961	50	30	80
11432	Skyline Drive / Rio Lindo Drive	F	✓	✓	✓	11	30	10	40
11434	Skyline Drive / 69th Street	F	✓	✓	✓	11	190	170	360
11737	47th Street / T Street	F		✓	✓	3 & 955	60	130	190
11749	Euclid Avenue / La Paz Drive	F		✓	✓	3 & 13	80	270	350
11750	Euclid Avenue / Guymon Street	N		✓	✓	917 & 955	40	30	70
11765	Pyramid Street / Kenwood Street	N		✓	✓	917	10	10	20
11766	Kelton Road / Pyramid Street	N		✓	✓	917	10	30	40
11767	58th Street / Mira Flores Drive	N		✓	✓	11	60	20	80
11768	Pitta Street / Market Street	N		✓	✓	917	30	20	50
11793	Madera Street / Ramon Street	N		✓	✓	916	10	10	20
12149	47th Street / Ocean View Boulevard	F		✓	✓	955	60	70	130
12150	47th Street / Imperial Avenue	F		✓	✓	955	110	50	160
12151	47th Street / Craigie Street	F		✓	✓	13	90	80	170
12152	47th Street / Hwy 94 (Overpass)	F		✓	✓	13	10	20	30
12164	Euclid Avenue / Trinidad Way	N		✓	✓	3 & 13	50	60	110
12165	Euclid Avenue / Brooks Hoffman Place	F		✓	✓	3 & 13	230	180	410
12166	Euclid Avenue / Unity Place	N		✓	✓	3, 4, 13 & 955	730	70	800
12167	Euclid Avenue / Hilltop Drive	N		✓	✓	917 & 955	90	70	160
12527	47th Street / Guymon Street	N		✓	✓	13	130	60	190
12528	47th Street / Hilltop Drive	N		✓	✓	13	50	150	200
12541	Euclid Avenue / La Paz Drive	N		✓	✓	3 & 13	420	270	690
12542	Euclid Avenue / Trinidad Way	N		✓	✓	3 & 13	60	40	100
12543	Euclid Avenue / Guymon Street	N		✓	✓	916 & 955	50	60	110

TABLE 5.2
PREFERRED PLAN
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND
AVERAGE DAILY BOARDINGS AND ALIGHTINGS

Stop ID	Location		Amenities			Route	Boardings	Alightings	Total
	Intersection	Far Side / Near Side	Shelter	Bench	Trash Cans				
12544	Euclid Avenue / Hilltop Drive	N		✓	✓	916 & 955	90	110	200
12556	Kelton Road / Bollenbacher Street	N		✓	✓	916	30	10	40
12878	47th Street / Logan Avenue	F		✓	✓	3 & 955	270	210	480
12879	47th Street / T Street	F		✓	✓	3 & 955	130	60	190
12880	47th Street / Ocean View Boulevard	F	✓	✓	✓	955	50	110	160
12892	Euclid Avenue / Manzanares Way	F		✓	✓	3 & 13	60	180	240
12893	Euclid Avenue / Naranja Street	N		✓	✓	3, 4, 13 & 955	50	550	600
12922	Pyramid Street / Kenwood Street	F		✓	✓	916	10	10	20
12923	58th Street / Mira Flores Drive	F		✓	✓	11	10	80	90
12965	Madera Street / Primera Street	F		✓	✓	917	20	20	40
12967	Madera Street / Ramon Street	F		✓	✓	917	10	10	20
13109	Bayview Heights Drive / Bayview Heights Place	F		✓	✓	916	10	40	50
13116	Lisbon Street / 71st Street	N		✓	✓	4	20	10	30
13306	Imperial Avenue / Valencia Parkway	N	✓	✓	✓	4	50	20	70
13308	Imperial Avenue / Valencia Parkway	N		✓	✓	4	20	40	60
13467	Lisbon Street / Woodrow Avenue	F		✓	✓	4	110	20	130
41049	Roswell Street / Hilltop Drive	F		✓	✓	917	20	20	40
50099	Euclid Avenue / Solola Avenue	N		✓	✓	13	20	50	70
50121	Euclid Avenue /Division Street	N		✓	✓	13	100	160	260
50122	Euclid Avenue / Alpha Street	F		✓	✓	13	20	70	90
50123	Euclid Avenue / Logan Avenue	N		✓	✓	13	140	90	230
50172	Euclid Avenue / Division Street	F		✓	✓	13	220	140	360
50173	Euclid Avenue / Solola Avenue	F		✓	✓	13	50	30	80
59009	Ava Street / Division Street	N		✓	✓	967	30	30	60
60715	Woodman Street / Alscacia Street	F		✓	✓	961	60	30	90
60716	Woodman Street / Alcona Street	F		✓	✓	961	30	20	50

TABLE 5.2
PREFERRED PLAN
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND
AVERAGE DAILY BOARDINGS AND ALIGHTINGS

Stop ID	Location		Amenities			Route	Boardings	Alightings	Total
	Intersection	Far Side / Near Side	Shelter	Bench	Trash Cans				
60724	Woodman Street / Paradise Valley	F		✓	✓	961	70	110	180
60725	Woodman Street / Doriana Street	F		✓	✓	961	30	20	50
60726	Woodman Street / Alscacia Street	F		✓	✓	961	50	50	100
70024	Euclid Avenue Trolley Station	-	✓	✓	✓	3	830	1,040	1,870
91031	Euclid Avenue Trolley Station	-		✓	✓	955	1,540	880	2,420
91032	Euclid Avenue Trolley Station	-		✓	✓	13	760	1,440	2,200
91033	Euclid Avenue Trolley Station	-		✓	✓	916	400	10	410
91035	Euclid Avenue Trolley Station	-	✓	✓	✓	960	190	140	330
91037	Euclid Avenue Trolley Station	-	✓	✓	✓	4	640	340	980
91038	Euclid Avenue Trolley Station	-	✓	✓	✓	4	330	470	800
91040	Euclid Avenue Trolley Station	-	✓	✓	✓	955	930	1,360	2,290
91041	Euclid Avenue Trolley Station	-	✓	✓	✓	5	1,310	1,060	2,370
91043	Euclid Avenue / Groveland Drive	F	✓	✓	✓	3, 4, 13 & 955	290	250	540
94017	Euclid Avenue Trolley Station	-	✓	✓	✓	13 & 917	1,920	800	2,720
99087	62nd Street Trolley Station	N		✓	✓	916	40	50	90
99106	Woodman Street / Skyline Drive	F		✓	✓	961	40	60	100
99107	Woodman Street / Skyline Drive	F		✓	✓	961	70	50	120
99108	62ndStreet Trolley Station	F		✓	✓	917 & 961	550	360	910
99110	Woodman Street / Paradise Valley	N		✓	✓	961	100	80	180
99113	Mariposa Place / 58th Street	N		✓	✓	967	10	20	30
99114	Division Street / 58th Street	N		✓	✓	967	30	20	50
99117	Woodman Street / Jamie Avenue	F		✓	✓	961	20	10	30
99233	Brooklyn Avenue / 63rd Street	N		✓	✓	916	10	10	20
99234	Brooklyn Avenue / Stork Street	F		✓	✓	917	10	10	20
99235	Brooklyn Avenue / 65th Street	F		✓	✓	916	10	10	20
99236	65th Street / Brooklyn Avenue	F		✓	✓	917	10	10	20
99237	Broadway / Klauber Avenue	N		✓	✓	916	10	10	20
99238	Broadway / 65th Street	F		✓	✓	917	10	20	30

TABLE 5.2
PREFERRED PLAN
TRANSIT STATION/STOP LOCATIONS, AMENITIES AND
AVERAGE DAILY BOARDINGS AND ALIGHTINGS

Stop ID	Location		Amenities			Route	Boardings	Alightings	Total
	Intersection	Far Side / Near Side	Shelter	Bench	Trash Cans				
99239	Broadway / Madera Street	N		✓	✓	917	10	20	30
99240	Madera Street / Bittern Street	F		✓	✓	916	10	10	20
99322	Woodman Street / Benson Avenue	N		✓	✓	961	20	30	50
99323	Woodman Street / Benson Avenue	N		✓	✓	961	40	20	60
99324	Woodman Street / Plaza Boulevard	F		✓	✓	961	40	10	50
99325	Woodman Street / Plaza Boulevard	N		✓	✓	961	30	20	50
99326	Woodman Street / Bullock Drive	N		✓	✓	961	50	20	70
99327	Woodman Street / Bullock Drive	F		✓	✓	961	40	80	120
99371	Imperial Avenue / Willie James Jones Avenue	F		✓	✓	4 & 955	240	280	520
75066	EB 62nd Street Trolley Station	-	✓	✓	✓	Orange Line	2,130	1,120	3,250
75067	WB 62nd Street Trolley Station	-	✓	✓	✓	Orange Line	1,190	2,090	3,280
75068	EB Euclid Avenue Trolley Station	-	✓	✓	✓	Orange Line			
75069	WB Euclid Avenue Trolley Station	-	✓	✓	✓	Orange Line			
75070	EB 47th Street Trolley Station	-	✓	✓	✓	Orange Line			
75071	WB 47th Street Trolley Station	-	✓	✓	✓	Orange Line	3,510	2,620	6,130

Source: Chen Ryan Associates, February 2015

As shown, transit boardings and alightings are projected to steadily grow throughout the community.

5.2.3 Transit LOS Analysis and Results

Transit LOS was evaluated along the major urban corridors throughout the community, including Market Street, Imperial Avenue, National Avenue, Logan Avenue, 47th Street and Euclid Avenue, using the CSLOS methodologies described in Chapter 2.0.

Tables 5.3A and **5.3B** summarize transit LOS analysis results for roadway segments during the AM and PM peak hours (respectively), under buildout of the Preferred Plan.

Figures 5-5a and **5-5b** display transit LOS results by segment and by direction, for the AM and PM peak hours, respectively. Peak hour transit CSLOS analysis output is provided in **Appendix Q**.

ENCANTO COMMUNITY PLAN UPDATE

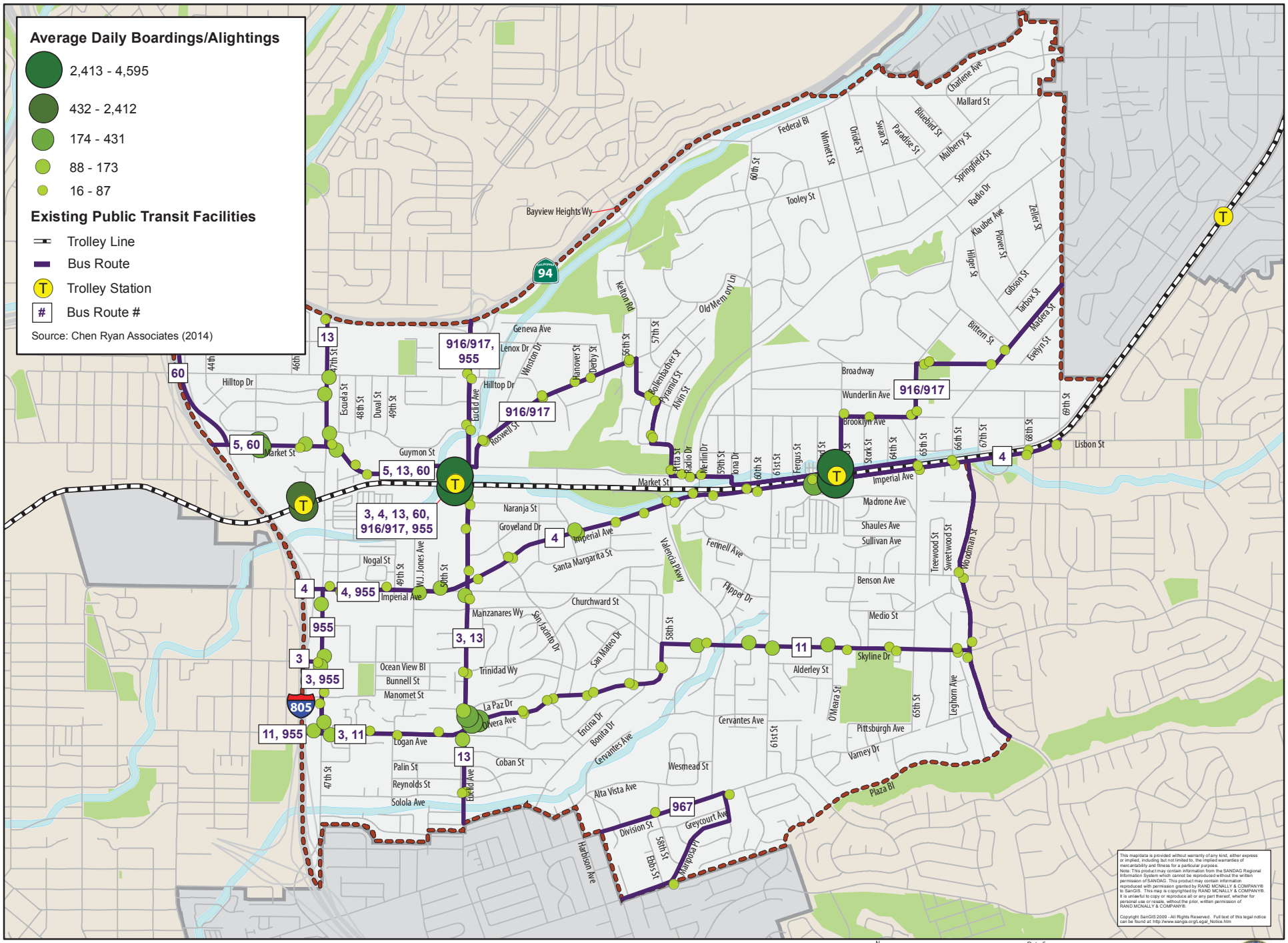


Figure 5-4: Preferred Plan Transit Activity

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

ENCANTO COMMUNITY PLAN UPDATE

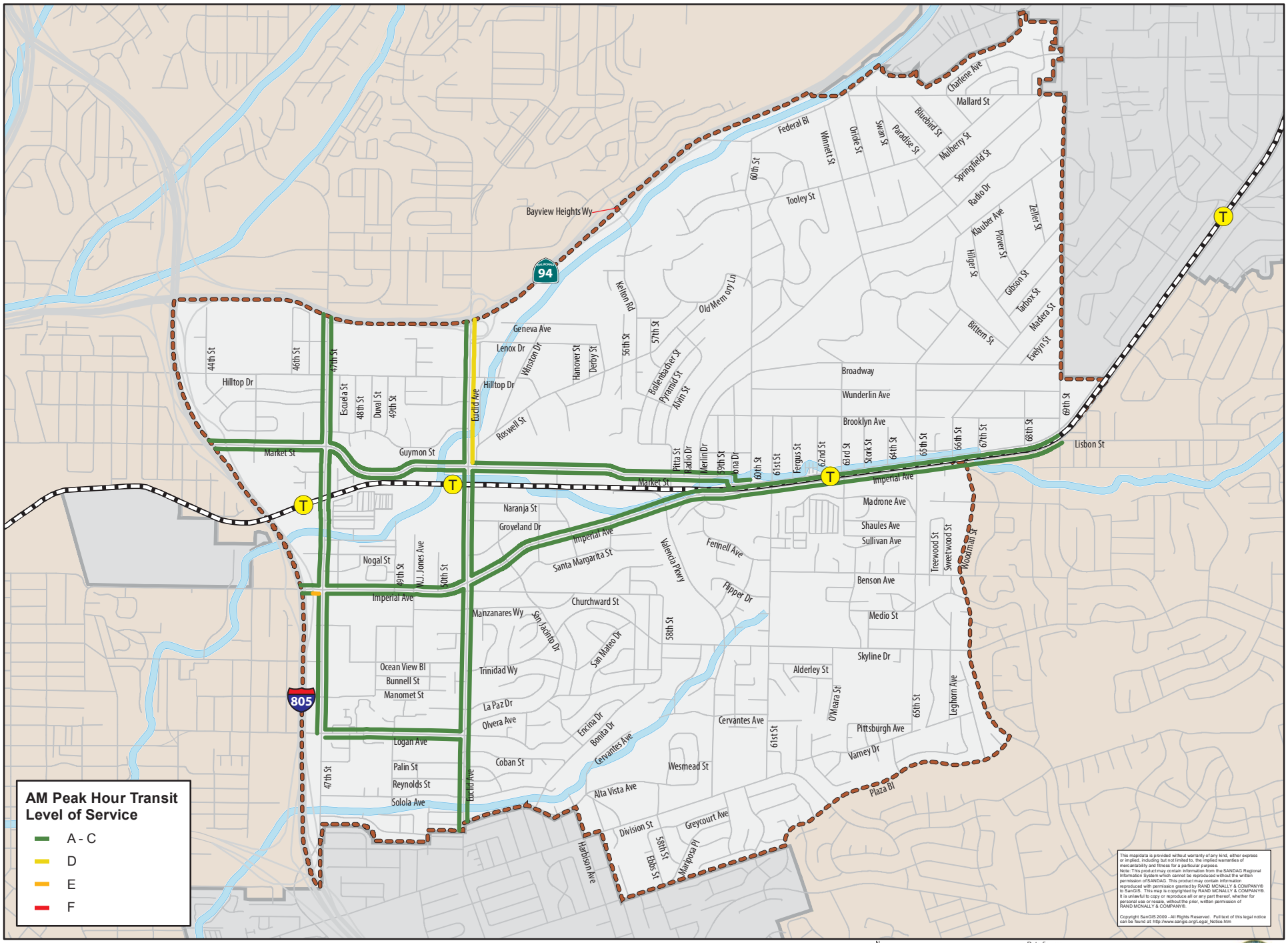


Figure 5-5a: Preferred Plan AM Peak Period Transit Level of Service

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

ENCANTO COMMUNITY PLAN UPDATE

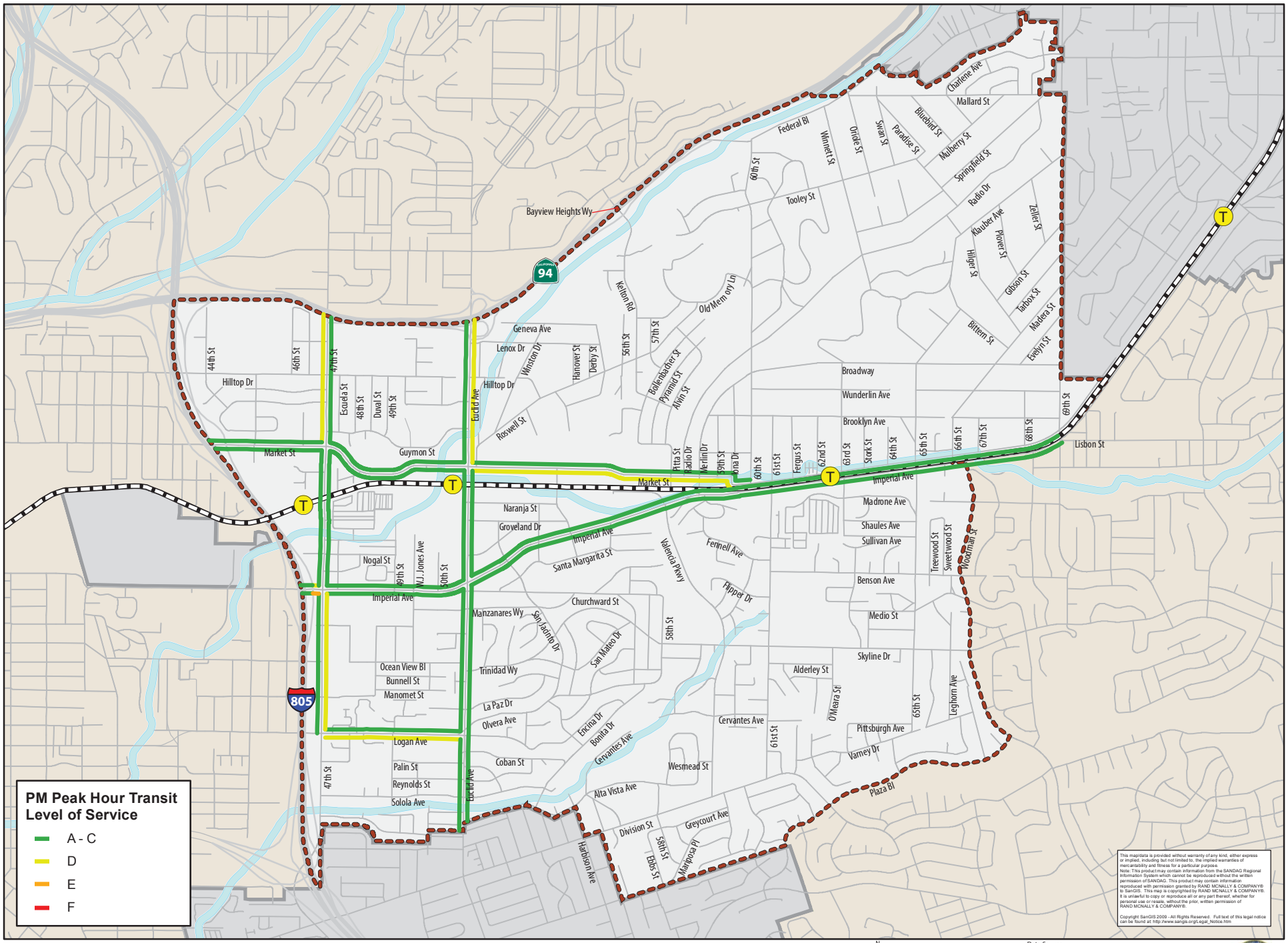


Figure 5-5b: Preferred Plan PM Peak Period Transit Level of Service

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

TABLE 5.3A
PREFERRED PLAN MULTI-MODAL ANALYSIS – TRANSIT LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.46	B	1.93	A
	I-805 NB Ramps & 47th Street		2.14	B		
	47th Street & Euclid Avenue		0.63	A		
	Euclid Avenue & 60th Street		2.48	B		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.14	B	1.40	A
	I-805 NB Ramps & 47th Street		1.55	A		
	47th Street & Euclid Avenue		0.22	A		
	Euclid Avenue & 60th Street		1.88	A		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.45	B	1.67	A
	I-805 NB Ramps & 47th Street		4.47	E		
	47th Street & Euclid Avenue		1.38	A		
	Euclid Avenue & Valencia Parkway		1.84	A		
	Valencia Parkway & Woodman Street		1.21	A		
	Woodman Street & 69th Street		2.67	B		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.96	C	1.55	A
	I-805 NB Ramps & 47th Street		3.46	C		
	47th Street & Euclid Avenue		1.59	A		
	Euclid Avenue & Valencia Parkway		1.64	A		
	Valencia Parkway & Woodman Street		1.24	A		
	Woodman Street & 69th Street		1.66	A		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	3.96	D	3.96	D
	47th Street & Euclid Avenue	Westbound	1.74	A	1.74	A
47th Street	SR-94 & Market Street	Northbound	2.13	B	1.65	A
	Market Street & Imperial Avenue		1.25	A		
	Imperial Avenue & Logan Avenue		1.61	A		
	Logan Avenue & I-805 NB Ramps		N/A	N/A		
	I-805 NB Ramps & I-805 SB Ramps		N/A	N/A		
	I-805 SB Ramps & Division Street		N/A	N/A		
	SR-94 & Market Street	Southbound	2.69	B	1.59	A
	Market Street & Imperial Avenue		0.98	A		
	Imperial Avenue & Logan Avenue		1.21	A		

TABLE 5.3A
PREFERRED PLAN MULTI-MODAL ANALYSIS – TRANSIT LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	Logan Avenue & I-805 NB Ramps	Southbound	N/A	N/A	1.59	A
	I-805 NB Ramps & I-805 SB Ramps		N/A	N/A		
	I-805 SB Ramps & Division Street		N/A	N/A		
Euclid Avenue	SR-94 & Market Street	Northbound	3.83	D	2.52	B
	Market Street & Imperial Avenue		1.93	A		
	Imperial Avenue & Logan Avenue		2.75	C		
	Logan Avenue & Division Street		1.55	A		
	SR-94 & Market Street	Southbound	3.49	C	2.51	B
	Market Street & Imperial Avenue		2.00	B		
	Imperial Avenue & Logan Avenue		2.54	B		
	Logan Avenue & Division Street		2.05	B		

Source: Chen Ryan Associates; February 2015

Notes:
Bold letter indicates segment LOS E or F.
N/A represents segments not served by transit
The transit LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

TABLE 5.3B
PREFERRED PLAN MULTI-MODAL ANALYSIS – TRANSIT LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.20	B	2.49	B
	I-805 NB Ramps & 47th Street		2.06	B		
	47th Street & Euclid Avenue		0.50	A		
	Euclid Avenue & 60th Street		3.73	D		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.65	B	1.44	A
	I-805 NB Ramps & 47th Street		1.30	A		
	47th Street & Euclid Avenue		0.11	A		
	Euclid Avenue & 60th Street		2.05	B		

TABLE 5.3B
PREFERRED PLAN MULTI-MODAL ANALYSIS – TRANSIT LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.40	B	2.06	B
	I-805 NB Ramps & 47th Street		4.26	E		
	47th Street & Euclid Avenue		2.81	C		
	Euclid Avenue & Valencia Parkway		2.52	B		
	Valencia Parkway & Woodman Street		1.11	A		
	Woodman Street & 69th Street		2.55	B		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.22	C	1.57	A
	I-805 NB Ramps & 47th Street		3.69	D		
	47th Street & Euclid Avenue		1.69	A		
	Euclid Avenue & Valencia Parkway		1.65	A		
	Valencia Parkway & Woodman Street		1.28	A		
	Woodman Street & 69th Street		1.47	A		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	4.03	D	4.03	D
	47th Street & Euclid Avenue	Westbound	3.34	C	3.34	C
47th Street	SR-94 & Market Street	Northbound	2.24	B	2.53	B
	Market Street & Imperial Avenue		1.24	A		
	Imperial Avenue & Logan Avenue		4.05	D		
	Logan Avenue & I-805 NB Ramps		N/A	N/A		
	I-805 NB Ramps & I-805 SB Ramps		N/A	N/A		
	I-805 SB Ramps & Division Street		N/A	N/A		
	SR-94 & Market Street	Southbound	3.92	D	1.94	A
	Market Street & Imperial Avenue		0.90	A		
	Imperial Avenue & Logan Avenue		1.20	A		
	Logan Avenue & I-805 NB Ramps		N/A	N/A		
	I-805 NB Ramps & I-805 SB Ramps		N/A	N/A		
	I-805 SB Ramps & Division Street		N/A	N/A		
Euclid Avenue	SR-94 & Market Street	Northbound	3.82	D	2.55	B
	Market Street & Imperial Avenue		2.14	B		
	Imperial Avenue & Logan Avenue		2.74	B		
	Logan Avenue & Division Street		1.54	A		

TABLE 5.3B
PREFERRED PLAN MULTI-MODAL ANALYSIS – TRANSIT LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Euclid Avenue	SR-94 & Market Street	Southbound	1.99	A	2.11	B
	Market Street & Imperial Avenue		1.90	A		
	Imperial Avenue & Logan Avenue		2.54	B		
	Logan Avenue & Division Street		1.96	A		

Source: Chen Ryan Associates; February 2015

Notes:
Bold letter indicates segment LOS E or F.
N/A represents segments not served by transit
The transit LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

As shown, all transit facilities are projected to operate at LOS D or better under buildout of the Preferred Plan, with the exception of Imperial Avenue between I-805 NB ramps and 47th Street (LOS E). The assumed transit improvements outlined in SANDAG's RTP are projected to maintain or improve the transit CSLOS along the majority of the urban corridors within the Encanto community, when compared to the current levels of operation.

5.3 Street and Freeway System

This section presents future conditions analysis of key study roadways, intersections and freeways facilities located within Encanto, under buildout of the Preferred Plan alternative.

5.3.1 Proposed Roadway Improvements

A guiding strategy for street system planning for the Encanto community is to make recommendations limited to modifications within the current roadway curb-to-curb widths to the extent possible. This strategy facilitates implementation of the recommendations since they tend to be lower cost by avoiding property acquisition and major construction involving moving curbs and drainage.

While the majority of roadways in Encanto would remain as the current cross-sections, the Preferred Plan includes the implementation of a few roadway widening/restriping to accommodate high future traffic demands, as well as a number of proposed road diets and lane diets (reducing the number of travel lanes and lane widths) to provide a balance between vehicular, bicycle, and pedestrian travel across the community. The propose facility changes include:

Roadway Widening/Restriping

- Market Street, between I-805 and Pitta Street;
- Euclid Avenue, between SR-94 and Market Street; and
- Division Street, between Harbison Avenue and 58th Street, and between Valencia Parkway and 61st Street.

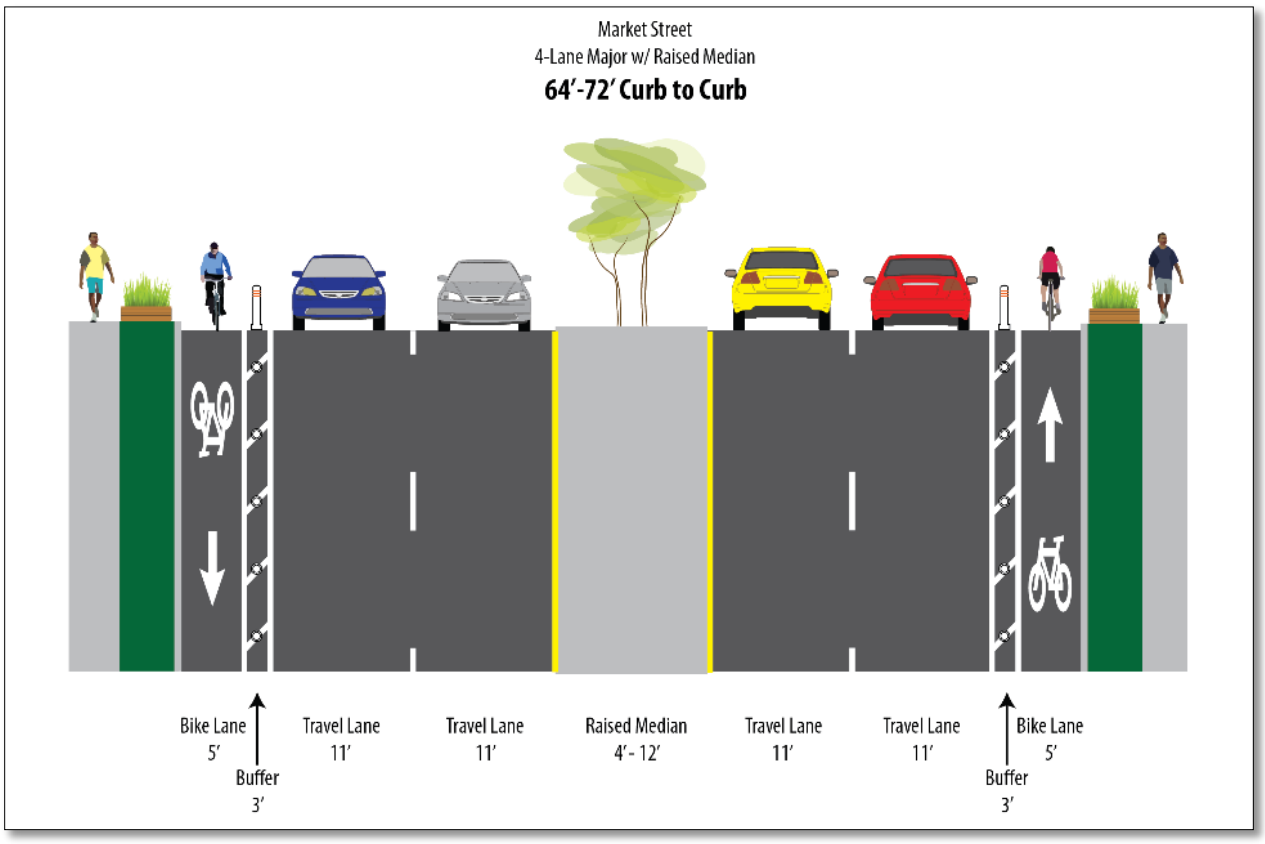
Road/Lane Diet

- Imperial Avenue, between I-805 to Community Boundary;
- Logan Avenue, between the 47th Street and Euclid Avenue;
- 47th Street, between SR-94 and Logan Avenue;
- Euclid Avenue, between Imperial Avenue and Community Boundary;
- Skyline Drive, between 61st Street and Henson Street; and
- Woodman Street, between Skyline Drive and Community Boundary.

The proposed changes to each roadway are detailed below.

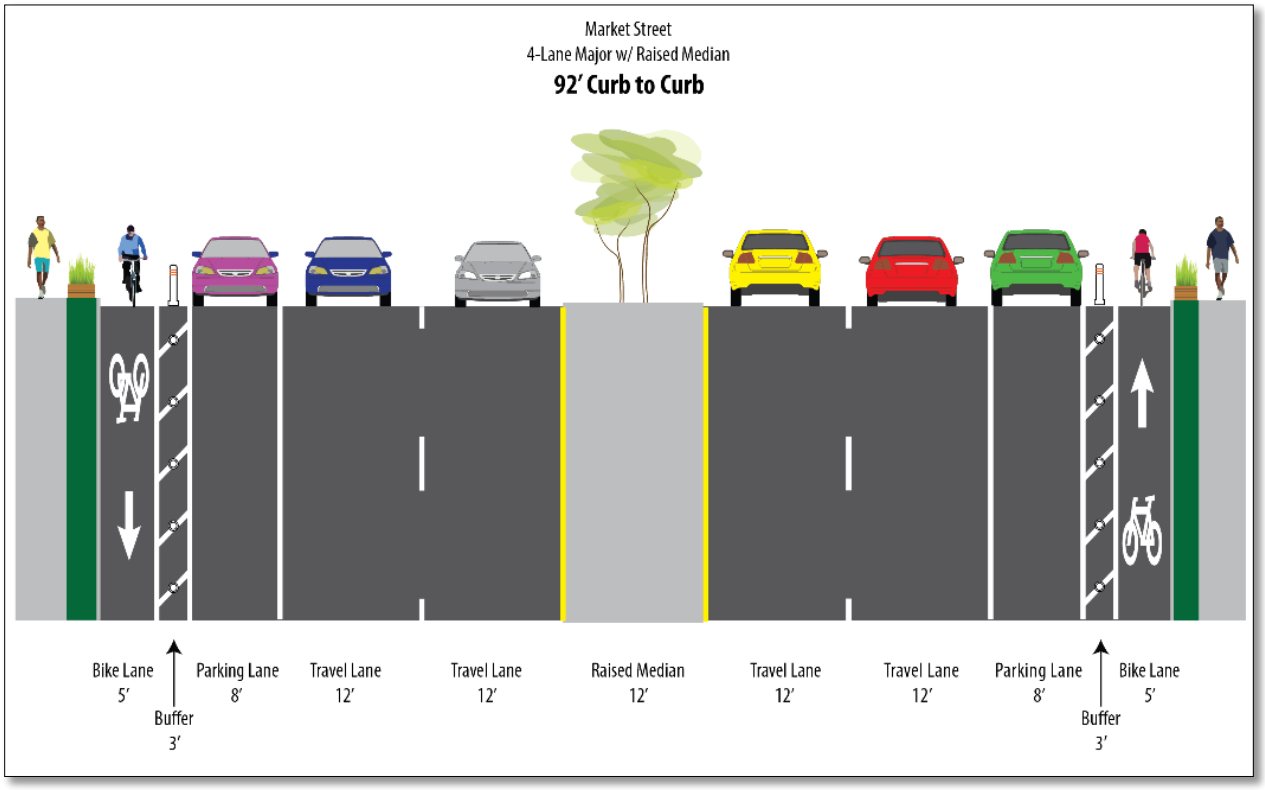
Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Market Street – Market Street between I-805 and 47th Street will be restriped from an undivided Four-Lane Collector to a Four-Lane Major. One-way cycle tracks will also be provided along this segment of Market Street. To provide the additional right-of-way required for the raised median and cycle track facilities, on-street parking will be removed from both sides of the roadway (approximately 36 spaces). The cross-section below displays the proposed configuration of Market Street, between I-805 and 47th Street.



Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Additionally, Market Street between 47th Street and Euclid Avenue will be widened from an undivided Four-Lane Collector without a center turn-lane and with no bicycle facilities to a Four-Lane Major with a raised median and one-way cycle track facilities. The cross-section below displays the proposed conceptual configuration of Market Street between 47th Street and Euclid Avenue.



Market Street between Euclid Avenue and Pitta Street will be widened in order to accommodate one-way cycle tracks in both directions and sidewalks.

Concept plans for Market Street are displayed on the following page.

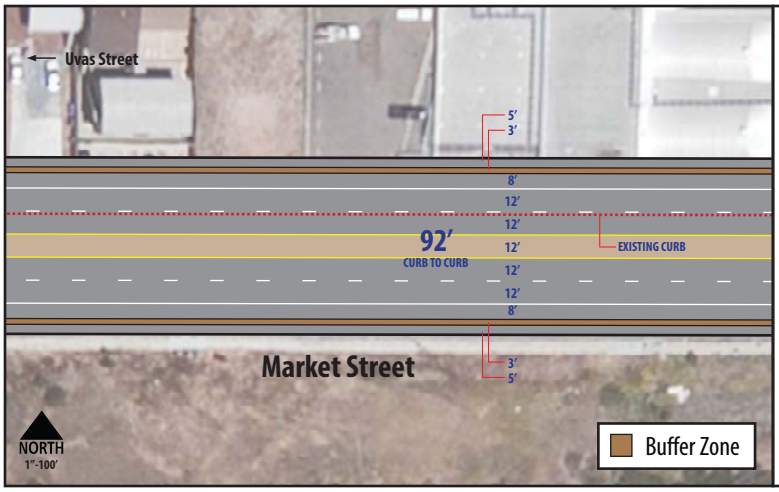
Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Market Street

From I-805 NB Ramps to 47th Street

Bicycle Facility: One-Way Cycle Track
Road Type: 4-Lane w/RM
Parking: None
Curb to Curb Range: 64′-72′
Typical Cross-Section: 5-3-11-11-X-11-11-3-5

Median Size (X) Varies Based on Curb to Curb Width



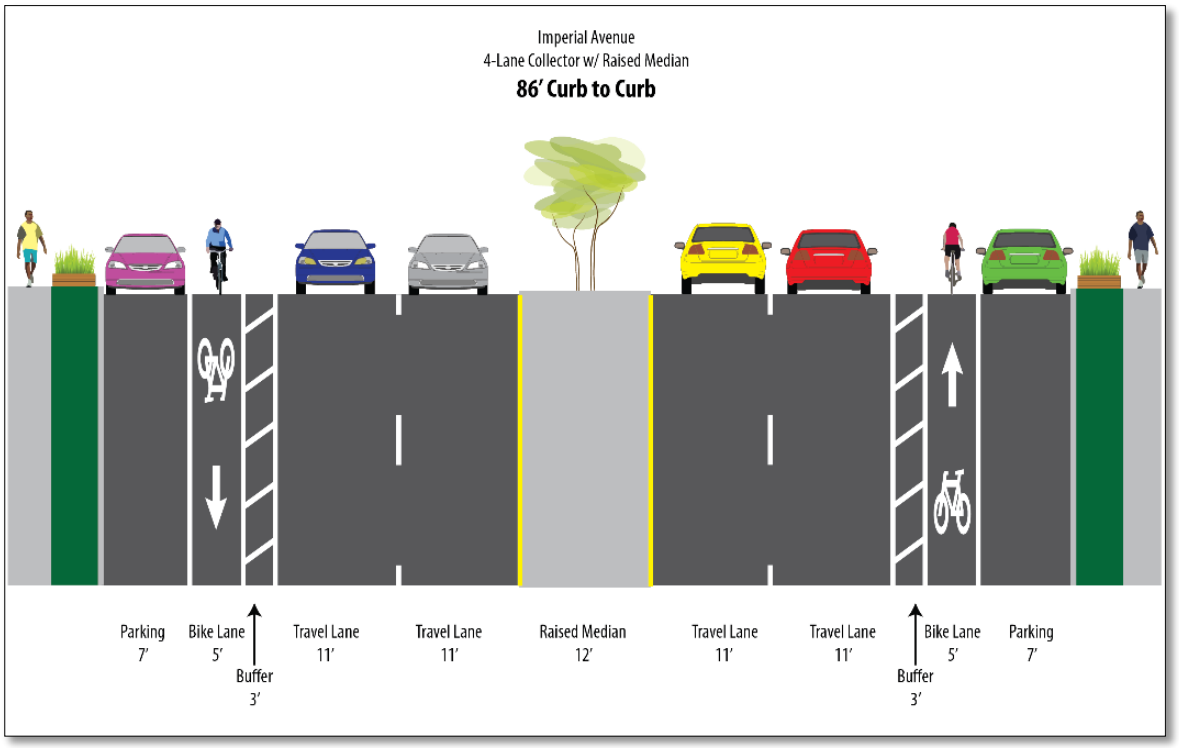
Market Street

From 47th Street to Euclid Avenue

Bicycle Facility: One-Way Cycle Track
Road Type: 4-Lane w/RM
Parking: Both Sides
Curb to Curb Range: 92′
Typical Cross-Section: 5-3-8-12-12-12-12-12-8-3-5

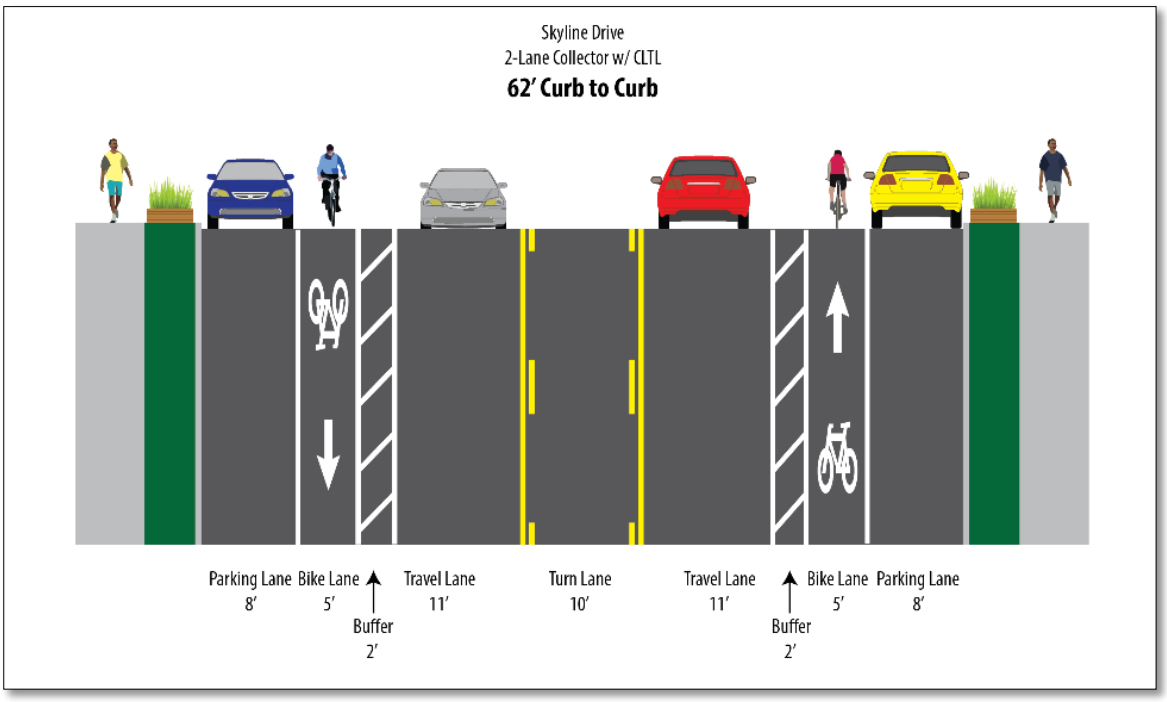
Conceptual street layouts, cross sections, lane dimensions, and bicycle facility configurations are provided to demonstrate general feasibility of proposals only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Imperial Avenue – Under the buildout of the Preferred Plan, the lane and median widths along Imperial Avenue, between I-805 and the community boundary will be narrowed to provide buffered bike lanes, as shown in the typical cross-section below.



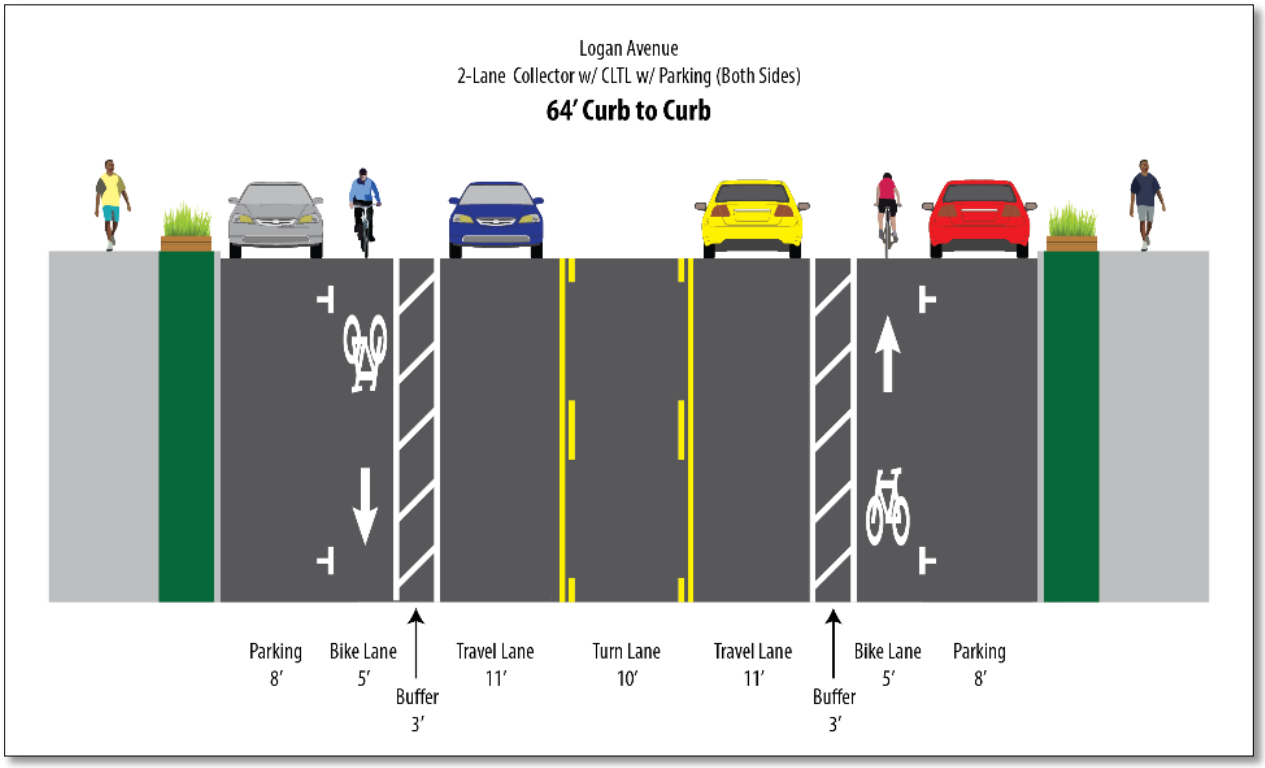
Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Skyline Drive – Under the Preferred Plan the lane and median widths along Skyline Drive between 61st Street and Henson Street will be narrowed to provide buffered bike lanes, as shown in the typical cross-section below.



Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

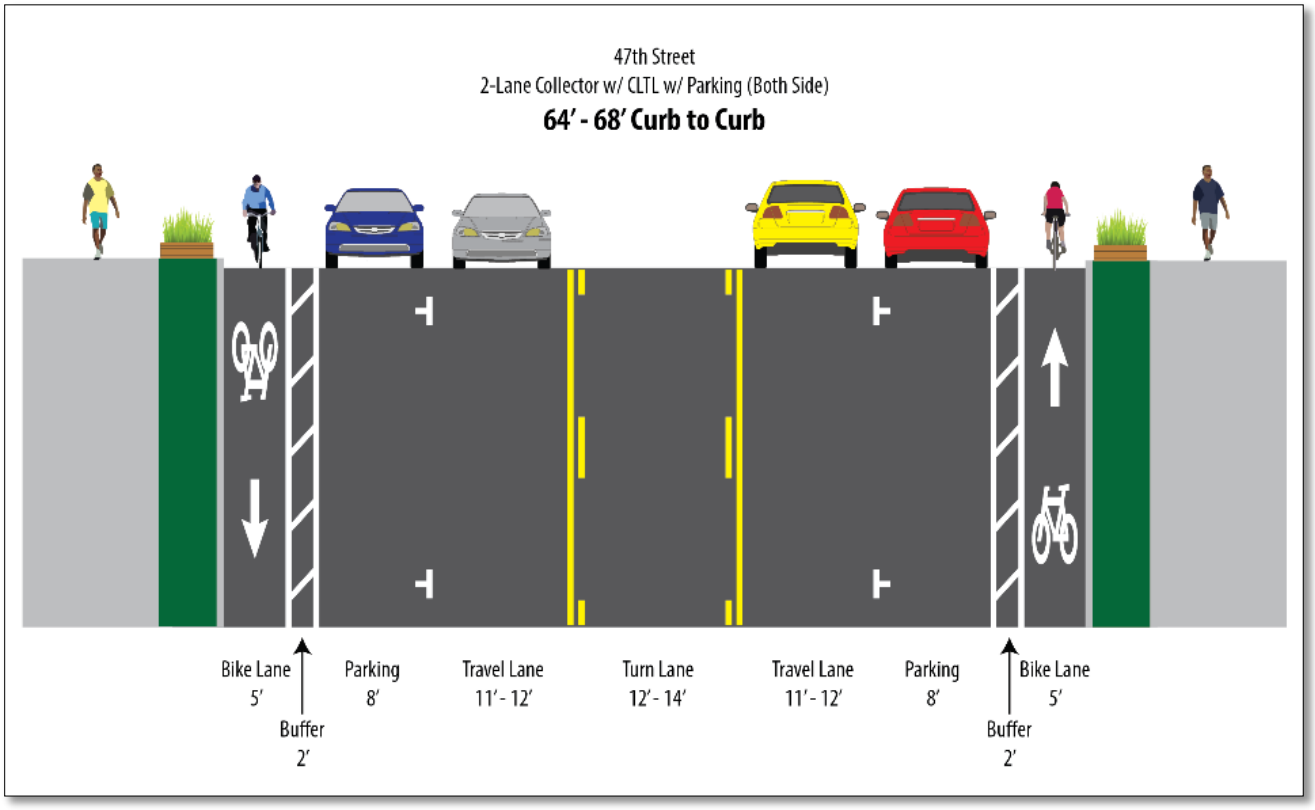
Logan Avenue – Under the buildout of the Preferred Plan Logan Avenue between 47th Street and Euclid Avenue will be reduced from a Four-Lane Collector to a Two-Lane Collector Street with a two-way center left-turn lane. Buffered bike lanes in each direction will be implemented, as shown in the typical cross-section below.



Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

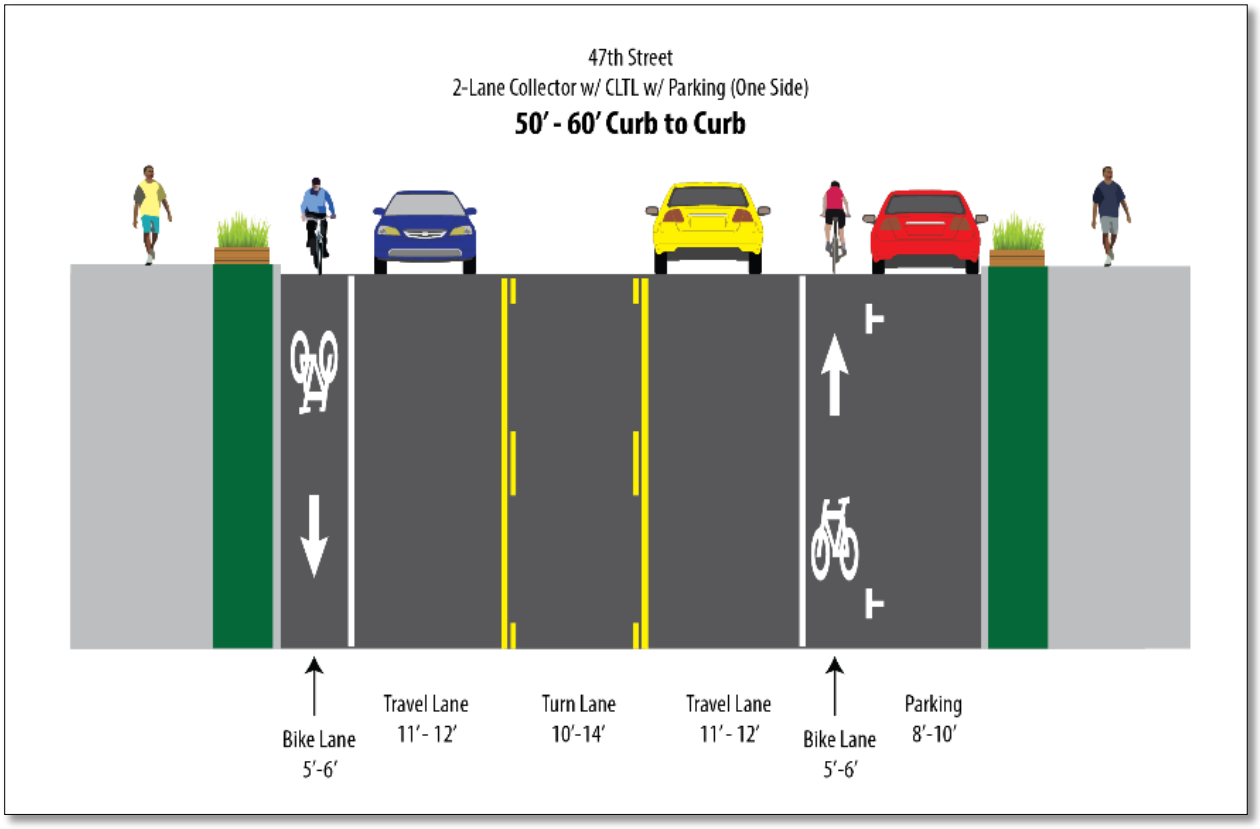
Division Street – Under buildout of the Preferred Plan, Division Street between Harbison Avenue and 58th Street, as well as between Valencia Parkway and 61st Street will be restriped from an undivided Two-Lane Collector to a Two-Lane Collector with two-way center left-turn Lane and bike lanes.

47th Street - Under the Preferred Plan, 47th Street, between SR-94 and Market Street as well as between Nogal Street and Logan Avenue will be reduced from a Four-Lane Major Arterial to a Two-Lane Collector Street with a two-way center left-turn lane. One-way cycle tracks will be implemented on both sides of the roadway, as shown in the cross-section below.



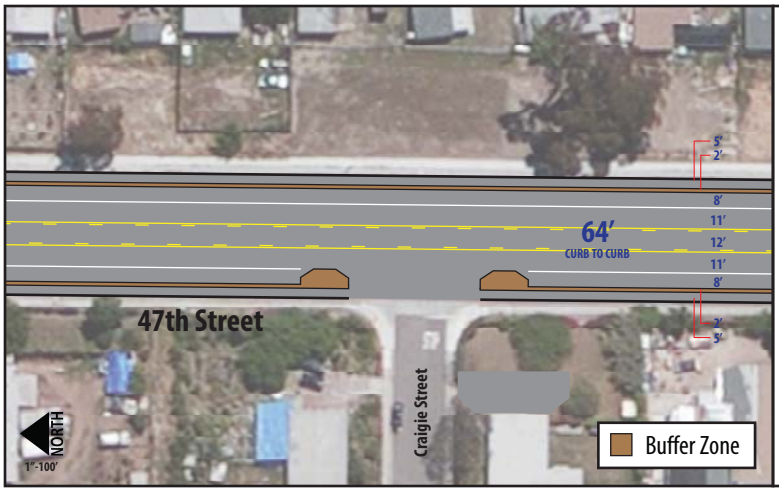
Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

47th Street between Market Street and Nogal Street is currently constructed as a Two-Lane Collector with a two-way center left-turn lane; therefore, it is proposed that the on-street parking along this segment of 47th Street (50 spaces) be removed to provide the right-of-way for Class II Bike Lanes, as shown in the cross-section below.



Concept plans for 47th Street are displayed on the following page.

Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.



47th Street

From SR-94 EB Ramps to F Street

From Market Street to Hartley Street

From Cereza Street to Logan Avenue

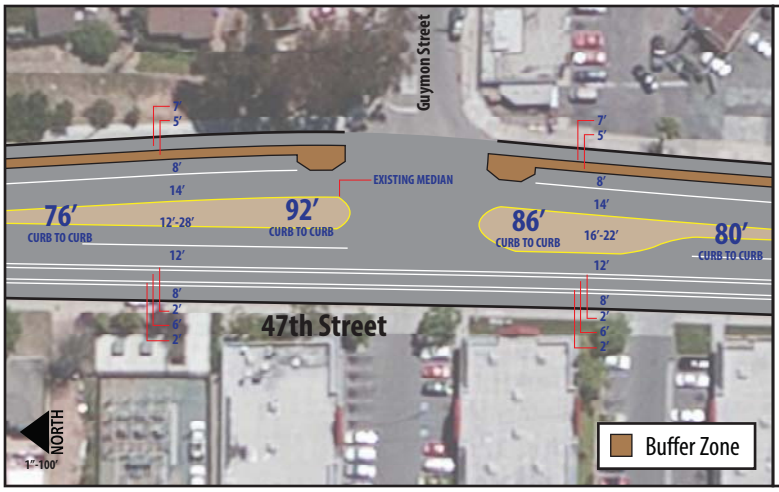
Bicycle Facility: One-Way Cycle Track

Road Type: 2-Lane w/CLTL

Parking: Both Sides

Curb to Curb Range: 64′-68′

Typical Cross-Section: 5-2-8-11-12-11-8-2-5



47th Street

From F Street to Market Street

Bicycle Facility: One-Way Cycle Track (NB)
Buffered Bike Lane (SB)

Road Type: 2-Lane w/RM

Parking: Both Sides

Curb to Curb Range: 68′-92′

Typical Cross-Section: 7-5-8-14-X-12-2-6-2-8

Median Size (X) Varies Based on Curb to Curb Width

47th Street

From Hartley Street to Cereza Street

Bicycle Facility: Bike Lanes

Road Type: 2-Lane w/CLTL

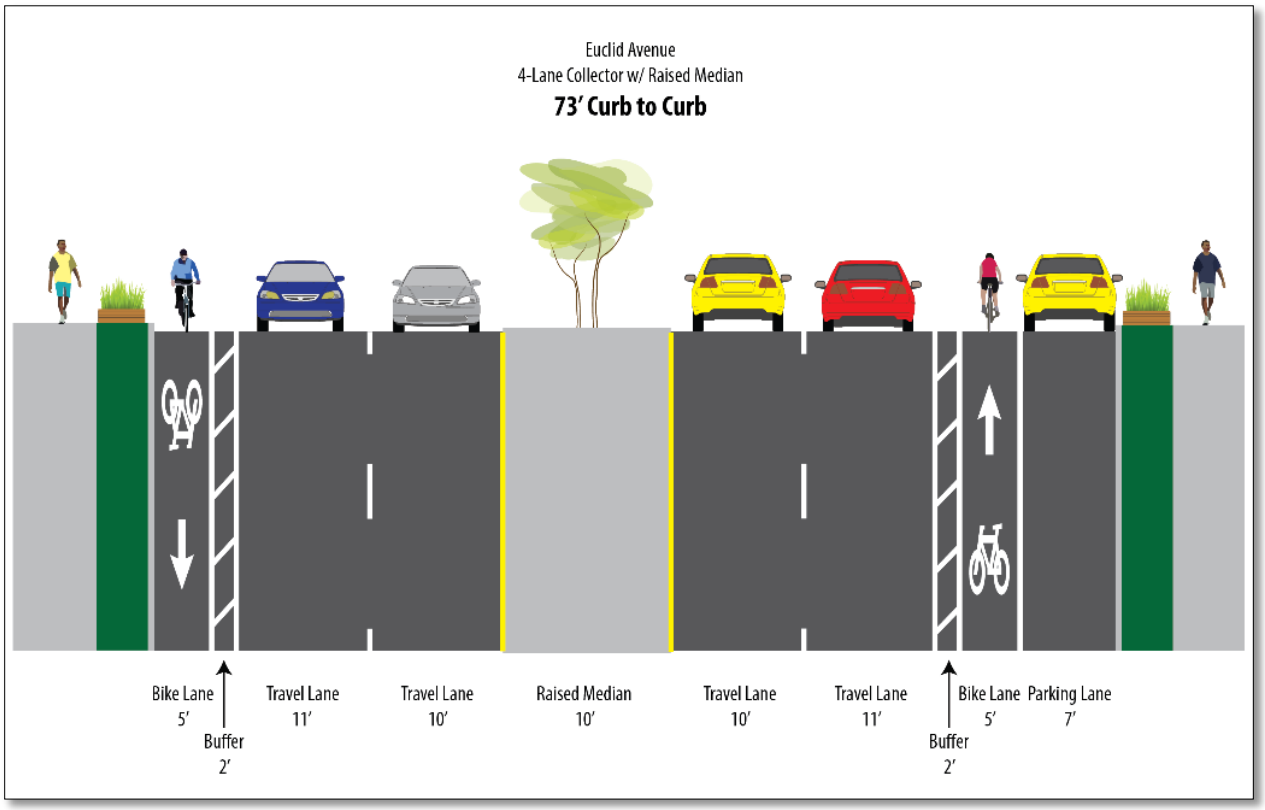
Parking: One Side

Curb to Curb Range: 50′-60′

Typical Cross-Section: 5-11-10-11-5-8

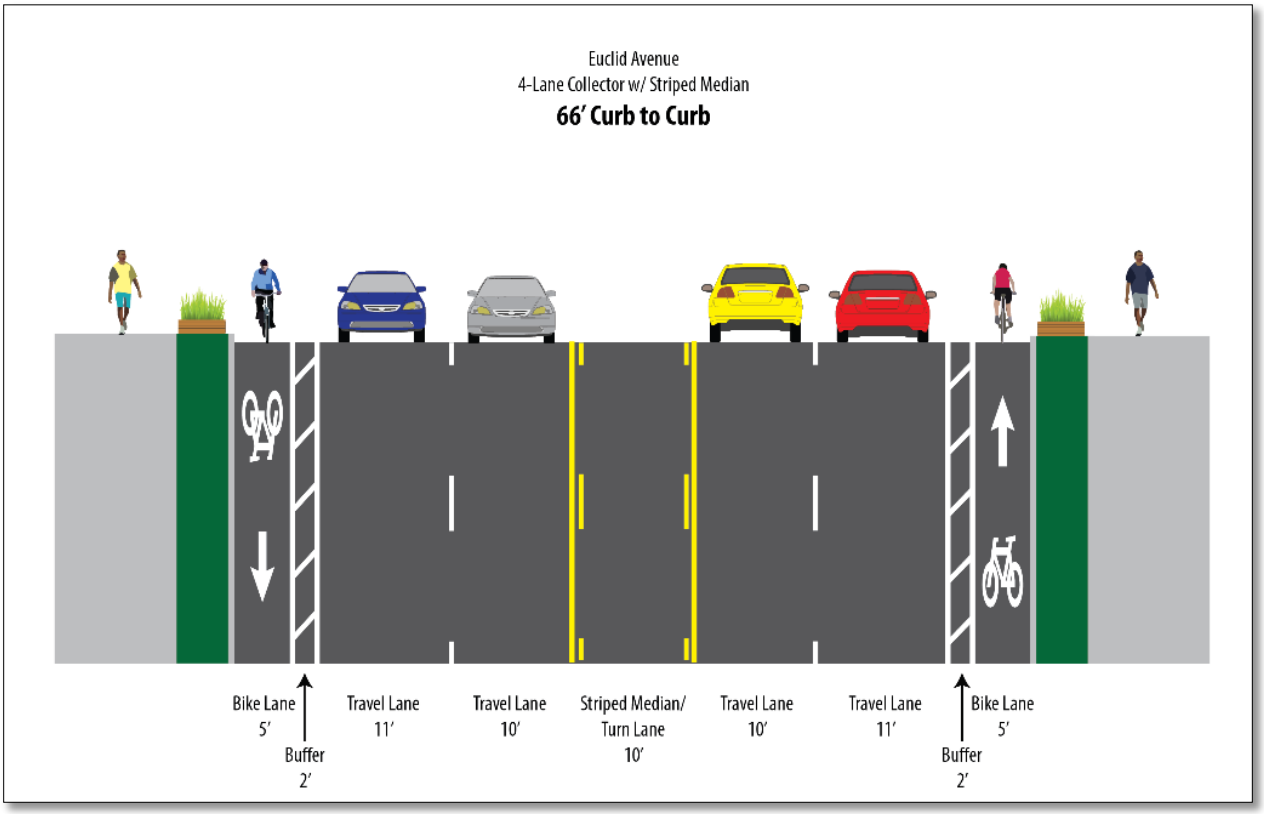
Conceptual street layouts, cross sections, lane dimensions, and bicycle facility configurations are provided to demonstrate general feasibility of proposals only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Euclid Avenue - Under buildout of the Preferred Plan, Euclid Avenue between SR-94 and Market Street will be widened from an undivided Four-Lane Collector to a Four-Lane Major and buffered bike lane facilities in each direction, as shown in the typical cross-section below.



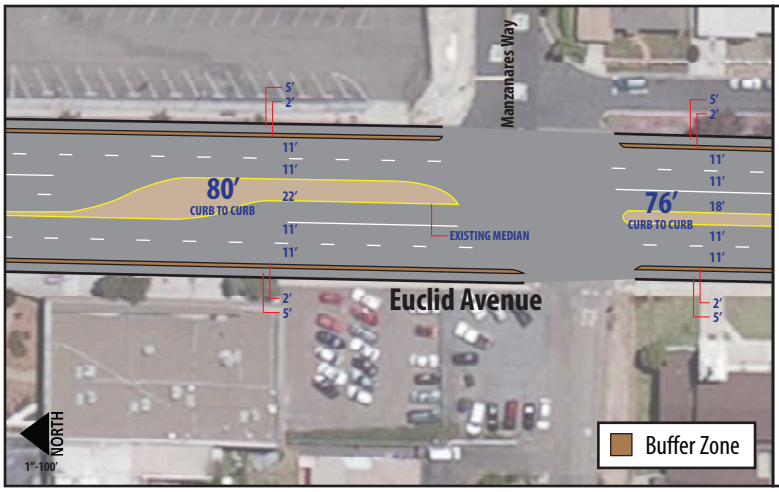
Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

Euclid Avenue – Under the Preferred Plan, the lane widths along Euclid Avenue, between Imperial Avenue and the community boundary will be reduced from 12 feet to 11 feet to provide the additional right-of-way for the existing Class II bikes lanes to be upgraded to one-way cycle tracks, as shown in the cross-section below.



Concept plans for Euclid Avenue are displayed on the following page.

Note that cross-section and conceptual plan illustrations are provided to demonstrate general feasibility of the subject proposal only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

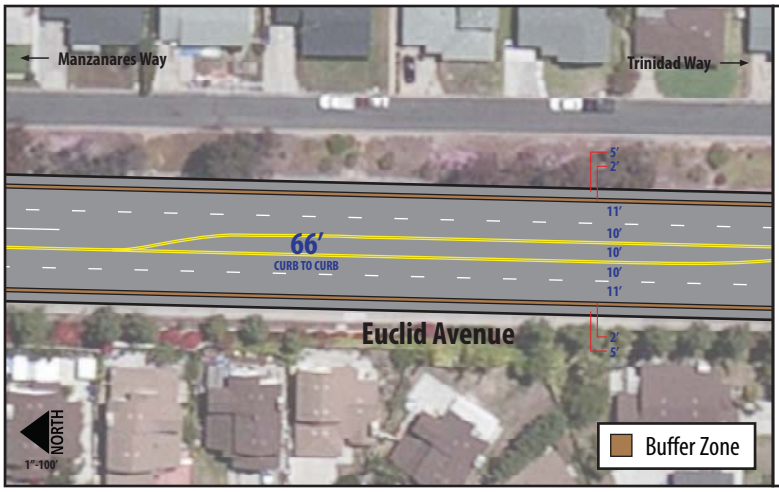


Euclid Avenue

From Churchward Street to St. Rita Place

Bicycle Facility: One-Way Cycle Track
Road Type: 4-Lane w/RM
Parking: None
Curb to Curb Range: 72′-82′
Typical Cross-Section: 5-2-11-11-X-11-11-2-5

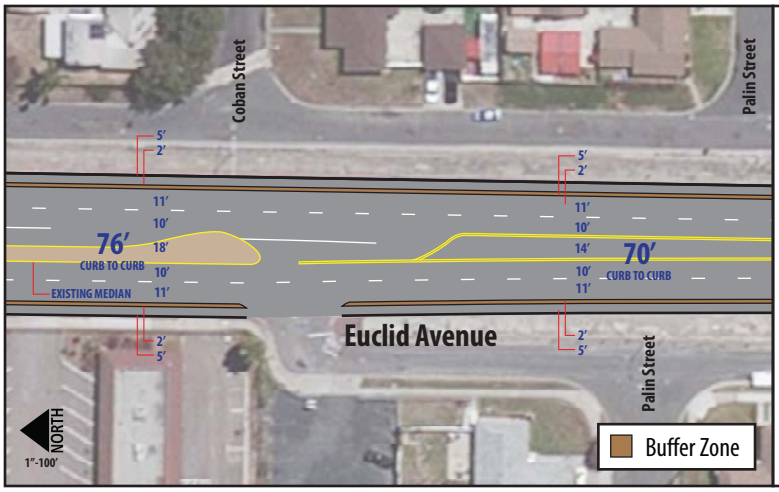
Median Size (X) Varies Based on Curb to Curb Width



Euclid Avenue

From St. Rita Place to Trinidad Way

Bicycle Facility: One-Way Cycle Track
Road Type: 4-Lane w/SM
Parking: None
Curb to Curb Range: 66′
Typical Cross-Section: 5-2-11-10-10-10-11-2-5



Euclid Avenue

From Trinidad Way to La Paz Drive

From Logan Avenue to Solola Avenue

Bicycle Facility: One-Way Cycle Track
Road Type: 4-Lane w/RM-SM
Parking: None
Curb to Curb Range: 66′-78′
Typical Cross-Section: 5-2-11-10-X-10-11-2-5

Median Size (X) Varies Based on Curb to Curb Width

Conceptual street layouts, cross sections, lane dimensions, and bicycle facility configurations are provided to demonstrate general feasibility of proposals only. Actual improvements will require additional engineering studies and design work and shall be to the satisfaction of the City Engineer.

5.3.2 Other Roadway Improvements

In addition to the improvements proposed as part of this plan (as described above), there are several other roadway and intersection improvements that were identified be previous planning and engineering efforts. These improvements tend to be very specific or minor in nature and therefore were not analyzed/addressed at the community planning level. The following summarizes the additional specific and/or minor improvements within the Encanto community that were identified through other studies.

Public Facilities Financing Plan

The adopted *Public Facilities Financing Plan* (PFFP) for Encanto currently contains planned transportation improvement projects that have not yet been completed. The following list summarizes some of the top ranked transportation projects planned for Encanto, as outlined in the 2003 PFFP:

- SESD-T21 Division Street / Valencia Parkway Intersection - This project provides for the installation of a traffic signal at the intersection of Division Street and Valencia Parkway. ($140,000, unfunded)
- SESD-T21 Market Street / Pitta Street Intersection - This project provides for the installation of a traffic signal at the intersection of Market Street and Pitta Street. ($140,000, unfunded)
- SESD-T23 Traffic Signal Upgrades - This project provides for upgrading existing traffic signals as necessary to improve traffic flow and promote safety. Locations include: 47th Street and Hilltop Drive ($6,000, unfunded) and 47th Street and Logan Avenue ($13,000, DIF)
- SESD-T24 Street Connections - This project provides for the connection of existing sections of fully improved streets through locations where only partial street improvements exist. ($7.0 million, unfunded)
- SESD-T26 Street improvements and upgrades - This project provides for the improvements of existing streets at locations where there are inadequate gutters, cross gutters and curbs as a result of street resurfacing and/or deterioration. ($3.0 million, unfunded)

Note that this PFFP was adopted in 2003. Projects identified above could be no longer needed and by the same token, new projects could be added.

Additional transportation related improvements within the Encanto community have been identified in the City of San Diego's Transportation Unfunded Needs List (TUNL) and Transportation and Storm Water Department's FY14 Transportation Plan. However, these improvements are typically too minor to analyze at the Community Plan level and therefore were not taken into account for this study. A list of the current projects on the City of San Diego's TUNL within the Encanto community are included in Appendix O. It should be noted this list is being updated on a regular basis and Appendix O only reflects a snap shot of the needs and planned improvements throughout the community at the time in which this report was prepared.

The *Fifth Amendment to the Central Imperial Redevelopment Plan (Fifth Amendment) EIR, Adopted March 2009* also identified additional improvements within the Encanto community in the form of mitigation measures associated with proposed higher density in redevelopment sites. The EIR and subsequent traffic study performed a detailed review of the vehicular traffic related impacts associated with the specific redevelopment sites contained in the plan and identified improvements to mitigate those impacts, as listed in Appendix O. However, the vision of this community plan shifts the focus to balance and comprehensive multi-modal facilities throughout the community that work in concert with the land use. In addition, several land use assumptions in this community plan are less intense than those evaluated in the Fifth Amendment. Therefore, not all of the identified improvements contained within the Fifth Amendment EIR are recommended at this time as part of the community plan update preferred plan.

5.3.3 Roadway Analysis

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

Roadway Classification, Average Daily Traffic (ADT) and LOS

Table 5.4 and **Figure 5-6** display the proposed roadway segment classifications, projected ADT volume and associated roadway LOS under buildout of the Preferred Plan alternative. Section 4.2 describes the process used to develop projected ADT volume estimations and roadway LOS (land use assumptions are provided in Appendix M).

As shown in the table, assuming the proposed roadway diets and widening, the following twenty-four (24) study area roadway segments are projected to operate at LOS E or F under buildout of the Preferred Plan:

- Mallard Street, between Federal Boulevard and 69th Street (LOS F)
- Market Street, between I-805 SB Ramps and -805 SB Ramps (LOS F)
- Market Street/Atkins Avenue between Euclid Avenue and 60th Street (LOS F)
- Imperial Avenue between San Jacinto Drive and Valencia Parkway (LOS F)
- Lisbon Street, between Imperial Avenue and 71st Street (LOS F)
- Skyline Drive, between Valencia Parkway and 61st Street (LOS F)
- Skyline Drive, between 61st Street and Omeara Street (LOS E)
- Logan Avenue, between 45th Street and 47th Street (LOS E)
- Logan Avenue, between 47th Street and Euclid Avenue (LOS F)
- Olvera Avenue/58th Street, between Euclid Avenue and Skyline Drive (LOS E)
- Division Street, between Harbison Avenue and 58th Street (LOS E)
- Division Street, between 58th Street and Valencia Parkway (LOS E)
- Plaza Boulevard, between Division Street and Woodman Street (LOS E)
- 47th Street, between SR-94 EB On-Ramp and Market Street (LOS F)
- 47th Street, between Market Street and Imperial Avenue (LOS F)

- 47th Street, between Imperial Avenue and Logan Avenue (LOS F)
- 47th Street, between Logan Avenue and I-805 NB Ramps (LOS F)
- Bayview Heights Way, between SR-94 WB Ramps and SR-94 EB Ramps (LOS F)
- Kelton Road, between SR-94 EB Ramps and Alvin Street (LOS F)
- Alvin Street, between Kelton Road and Pitta Street (LOS F)
- Pitta Street, between Alvin Street and Market Street (LOS F)
- 60th Street, between Federal Boulevard and Imperial Avenue (LOS F)
- 61st Street, between Imperial Avenue and Division Street (LOS E)
- Woodman Street, between Imperial Avenue and Skyline Drive (LOS F)

It should be noted that additional vehicular capacity improvements are not proposed in order to improve the projected vehicular level of service at the roadway segments listed above for a variety of reasons. The primary reasons being the constrained right-of-way and/or a desire to improve (or not negatively impact) the quality of the pedestrian, bicycle, and transit environment in order to more safely accommodate and promote these modes of transportation.

Figure 5-7 displays the roadway average daily traffic volumes and LOS under buildout of the preferred plan.

TABLE 5.4
PREFERRED PLAN ROADWAY SEGMENT ANALYSIS

No.	Roadway	Segment	Description	Capacity (LOS E)	ADT	LOS
1	Mallard Street	Federal Boulevard & 69th Street	Collector (2-lane commercial)	8,000	8,200	F
2	Federal Boulevard	60th Street & Mallard Street	Collector (4-lane w/ center lane)	30,000	17,300	C
3		Mallard Street & MacArthur Drive	Collector (3-lane w/ CLTL)	15,000	11,000	D
4	Tooley Street	60th Street & Paradise Street	Collector (2-lane multi-family)	8,000	600	A
5	Hilltop Drive	I-805 & 47th Street	Collector (2-lane multi-family)	8,000	4,700	C
6	Roswell Street	51st Street & Old Memory Lane	Collector (2-lane multi-family)	8,000	2,900	B
7	Old Memory Lane	Roswell Street & 60th Street	Collector (2-lane multi-family)	8,000	1,400	A
8	Radio Drive	60th Street & Mallard Street	Collector (2-lane multi-family)	8,000	1,200	A
9	Klauber Avenue	Broadway & 69th Street	Collector (2-lane multi-family)	8,000	1,000	A
10	Broadway	60th Street & Madera Street	Collector (2-lane multi-family)	8,000	3,600	C
11	Market Street	I-805 SB Ramps & I-805 NB Ramps	Collector (2-lane w/CLTL) [1]	15,000	20,200	F
12		I-805 NB Ramps & 47th Street	Major Arterial (4-lane, divided)[2]	40,000	21,600	C
13		47th Street & Euclid Avenue	Major Arterial (4-lane, divided)[2]	40,000	22,200	C
14	Market Street/Akins Avenue	Euclid Avenue & 60th Street	Collector (2-lane no fronting)	10,000	11,700	F
15	Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Major Arterial (4-lane, divided)	40,000	28,900	C
16		I-805 NB Ramps & 47th Street	Major Arterial (4-lane, divided)	40,000	34,400	D
17		47th Street & Euclid Avenue	Major Arterial (4-lane, divided)	40,000	31,700	D
18		Euclid Avenue & San Jacinto Drive	Major Arterial (4-lane, divided)	40,000	28,900	C
19		San Jacinto Drive & Valencia Parkway	Collector (2-lane w/CLTL) [3]	15,000	22,800	F
20		Valencia Parkway & Woodman Street	Major Arterial (4-lane, divided)	40,000	17,800	B
21		Woodman Street & 69th Street	Major Arterial (4-lane, divided)	40,000	25,300	C
22		69th Street & Viewcrest Drive	Major Arterial (4-lane, divided)	40,000	16,300	B

TABLE 5.4
PREFERRED PLAN ROADWAY SEGMENT ANALYSIS

No.	Roadway	Segment	Description	Capacity (LOS E)	ADT	LOS
23	Lisbon Street	Imperial Avenue & 71st Street	Collector (2-lane w/CLTL)	15,000	15,500	F
24	Churchward Street/58th Street	Euclid Avenue & Skyline Drive	Collector (2-lane multi-family)	8,000	5,100	D
25	Skyline Drive	58th Street & Valencia Parkway	Collector (2-lane w /CLTL)	15,000	9,600	C
26		Valencia Parkway & 61st Street	Collector (2-lane w/CLTL)	15,000	16,400	F
27		61st Street & Omeara Street	Collector (2-lane w/ CLTL) [1]	15,000	13,300	E
28		Omeara Street & Woodman Street	Collector (2-lane w/ CLTL)	15,000	12,900	D
29		Woodman Street & 69th Street	Collector (2-lane w/ CLTL)	15,000	11,900	D
30	Logan Avenue	45th Street & 47th Street	Collector (2-lane w/ CLTL) [1]	15,000	14,000	E
31		47th Street & Euclid Avenue	Collector (2-lane w/ CLTL) [1]	15,000	15,900	F
32	Olvera Avenue/58th Street	Euclid Avenue & Skyline Drive	Collector (2-lane multi-family)	8,000	7,700	E
33	Division Street	Palm Avenue & Euclid Avenue	Major Arterial (4-lane, divided)	40,000	18,800	B
34		Euclid Avenue & Harbison Avenue	Collector (4-lane w/ center lane)	30,000	13,400	B
35		Harbison Avenue & 58th Street	Collector (2-lane w/CLTL)[2]	15,000	14,300	E
36		58th Street & Valencia Parkway	Collector (2-lane w/ CLTL)	15,000	13,500	E
37		Valencia Parkway & 61st Street	Collector (2-lane w/CLTL)[2]	15,000	9,600	C
38		61st Street & Plaza Boulevard	Collector (2-lane w/ CLTL)	15,000	8,200	C
39	Plaza Boulevard	Paradise Valley Road & Division Street	Collector (4-lane)	15,000	9,500	C
40		Division Street & Woodman Street	Collector (2-lane no fronting)	10,000	9,600	E
41	47th Street	SR-94 EB On-Ramp & Market Street	Collector (2-lane w/ CLTL) [1]	15,000	19,000	F
42		Market Street & Imperial Avenue	Collector (2-lane w/ CLTL) [1]	15,000	17,300	F
43		Imperial Avenue & Logan Avenue	Collector (2-lane w/CLTL) [1]	15,000	16,600	F
44		Logan Avenue & I-805 NB Ramps	Collector (2-lane w /CLTL) [1]	15,000	17,200	F

TABLE 5.4
PREFERRED PLAN ROADWAY SEGMENT ANALYSIS

No.	Roadway	Segment	Description	Capacity (LOS E)	ADT	LOS
45	47th Street/Palm Avenue	I-805 NB Ramps & I-805 SB Ramps	Major Arterial (4-lane, divided)	40,000	21,200	C
46		I-805 SB Ramps & Division Street	Major Arterial (4-lane, divided)	40,000	27,900	C
47	Euclid Avenue	SR-94 WB Ramps & SR-94 EB Ramps	Major Arterial (4-lane, divided)	40,000	34,200	D
48		SR-94 EB Ramps & Market Street	Major Arterial (4-lane, divided)[2]	40,000	30,800	D
49		Market Street & Imperial Avenue	Major Arterial (4-lane, divided)[2]	40,000	27,700	C
50		Imperial Avenue & Logan Avenue	Collector (4-lane w/ center lane)	30,000	14,100	C
51		Logan Avenue & Division Street	Collector (4-lane w/ center lane)	30,000	13,600	C
52	51st Street	Market Street & Roswell Street	Collector (2-lane no fronting)	10,000	4,000	A
53	San Jacinto Drive	Imperial Avenue & Olvera Avenue	Collector (2-lane multi-family)	8,000	3,800	C
54	Bayview Heights Way	SR-94 WB Ramps & SR-94 EB Ramps	Collector (2-lane no fronting)	10,000	17,100	F
55	Kelton Road	SR-94 EB Ramps & Alvin Street	Collector (2-lane multi-family)	8,000	12,900	F
56	Alvin Street	Kelton Road & Pitta Street	Collector (2-lane multi-family)	8,000	9,800	F
57	Pitta Street	Alvin Street & Market Street	Collector (2-lane multi-family)	8,000	10,000	F
58	Merlin Drive	Broadway & Imperial Avenue	Collector (2-lane multi-family)	8,000	4,700	C
59	Valencia Parkway	Imperial Avenue & Skyline Drive	Major Arterial (4-lane, divided)	40,000	7,800	A
60		Skyline Drive & Cervantes Avenue	Collector (4-lane)	15,000	5,600	B
61		Cervantes Avenue & Wesmead Street	Collector (4-lane)	15,000	6,200	B
62		Wesmead Street & Division Street	Collector (2-lane multi-family)	8,000	6,200	D
63	60th Street	Federal Boulevard & Imperial Avenue	Collector (2-lane multi-family)	8,000	11,700	F
64	61st Street	Imperial Avenue & Division Street	Collector (2-lane multi-family)	8,000	7,700	E
65	Winnett Street	Federal Boulevard & Radio Drive	Collector (2-lane multi-family)	8,000	3,300	B
66	Paradise Street	Mallard Street & Radio Drive	Collector (2-lane multi-family)	8,000	900	A

TABLE 5.4
PREFERRED PLAN ROADWAY SEGMENT ANALYSIS

No.	Roadway	Segment	Description	Capacity (LOS E)	ADT	LOS
67	Madera Street	Massachusetts Avenue & 69th Street	Collector (2-lane multi-family)	8,000	3,500	B
68	Madera Street/66th Street	69th Street & Akins Avenue	Collector (2-lane multi-family)	8,000	4,200	C
69	Woodman Street	Imperial Avenue & Skyline Drive	Collector (2-lane commercial)	8,000	10,800	F
70		Skyline Drive & Plaza Boulevard	Major Arterial (4-lane, divided)	40,000	12,900	A
71		Plaza Blvd & Paradise Valley Road	Major Arterial (4-lane, divided)	40,000	17,600	B
72	69th Street	San Miguel Avenue & Mallard Street	Collector (2-lane multi-family)	8,000	5,600	D
73		Mallard Street & Imperial Avenue	Collector (2-lane multi-family)	8,000	4,700	C
74		Imperial Avenue & Skyline Drive	Collector (2-lane multi-family)	8,000	4,700	C
75	Hilltop Drive	47th & Euclid	Collector (2-lane multi-family)	8,000	5,500	D

Source: Chen Ryan Associates; February 2015

Notes:
Bold letter indicates segment LOS E or F.
[1]Proposed Road/Lane Diet
[2]Proposed Road Widening/Restriping
[3] The CPU classification for this street is a 4-lane major but due to uncertainty/difficulty with widening necessary for implementation (due to adjacent existing single family development), the analysis assumes the current cross-section.

ENCANTO COMMUNITY PLAN UPDATE

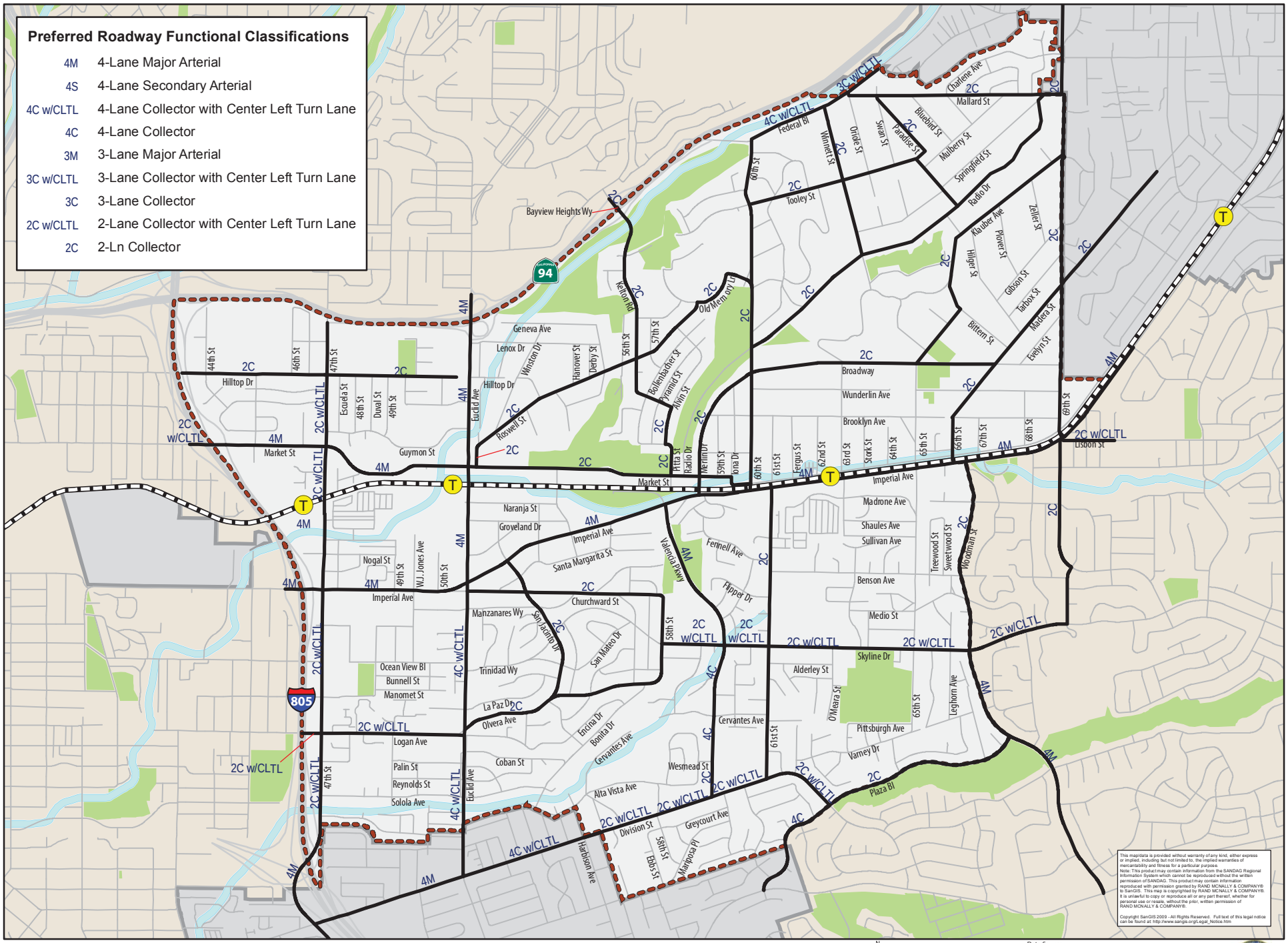


Figure 5-6: Preferred Plan Roadway Network

ENCANTO COMMUNITY PLAN UPDATE

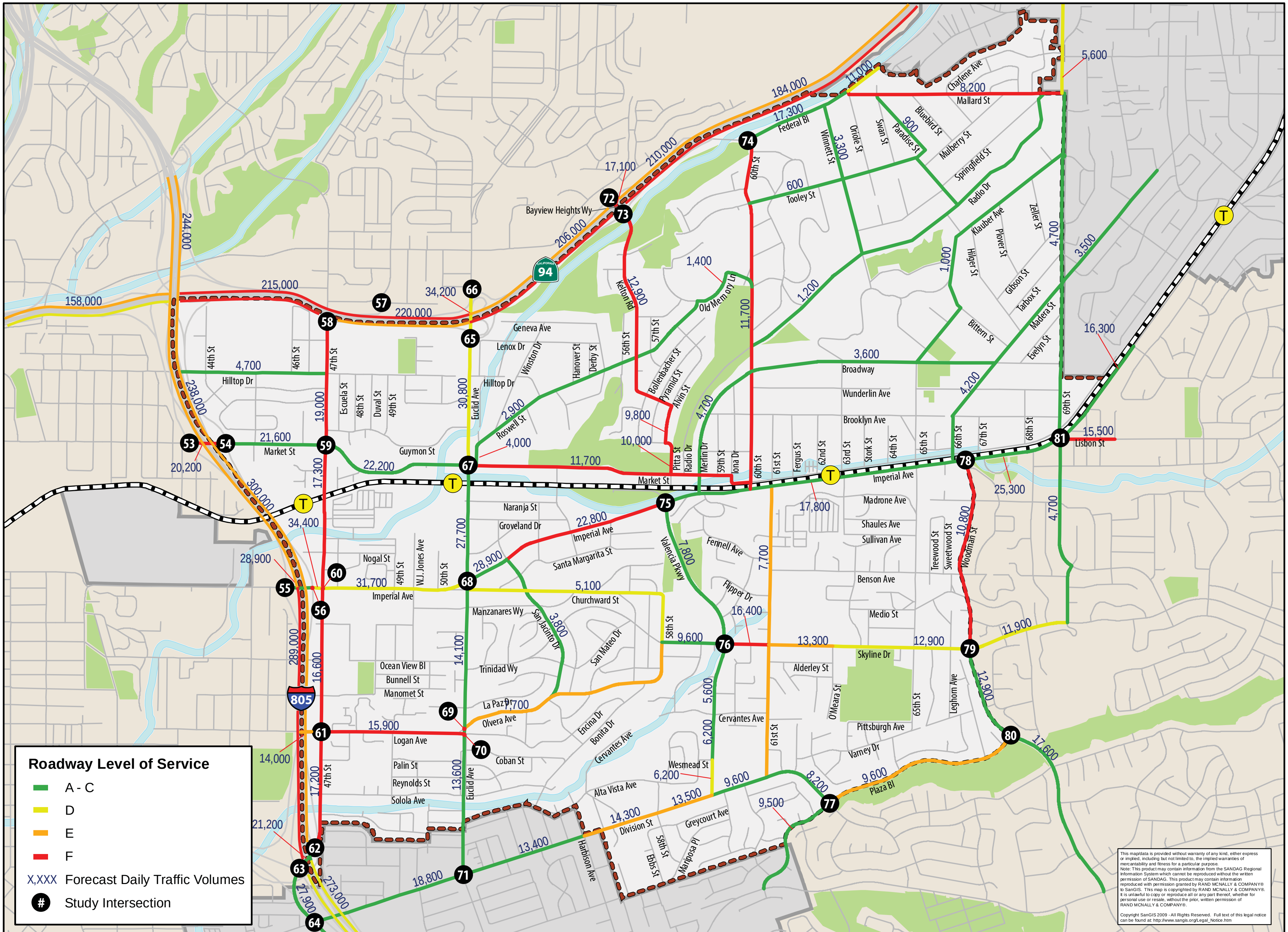


Figure 5-7: Preferred Plan Roadway Traffic Volumes and Level of Service

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

SanGIS

Arterial Analysis

As shown in the previous section, the proposed roadway diets along Market Street, Logan Avenue, 47th Street and Euclid Avenue are projected to degrade daily roadway operations to undesirable LOS E or F along the majority of the roadway. However, roadway LOS is generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical and operational attributes. Often, a roadway segment that is analyzed to be 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 to provide a more accurate indication of LOS. Therefore to better understand the true impacts of the proposed roadway diets, peak hour arterial analyses were conducted for roadways in which a reduction in vehicular travel lanes is proposed.

Table 5.5 displays peak hour arterial analyses for all facilities in which a roadway diet is proposed under buildout of the Preferred Plan alternative. Peak hour arterial Analysis worksheets are provided in **Appendix R**.

TABLE 5.5
PREFERRED PLAN PEAK HOUR ROADWAY ARTERIAL ANALYSIS

Roadway	Segment	AM Peak Hour				PM Peak Hour			
		EB/NB		WB/SB		EB/NB		WB/SB	
		Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	18.2	C	16.8	D	11.1	E	16.2	D
	I-805 NB Ramps & 47th Street	23.6	C	14.6	D	18.0	D	16.5	D
	47th Street & Euclid Avenue	26.5	B	21.6	C	18.2	C	22.7	C
Skyline Drive	58th Street & Valencia Parkway	20.1	C	18.3	B	17.1	D	20.5	C
	Valencia Parkway & 61st Street	20.6	C	25.8	B	25.4	B	27.7	B
	61st Street & Omeara Street	20.6	C	22.4	C	25.4	B	27.7	B
	Omeara Street & Woodman Street	20.6	C	22.4	C	25.4	B	27.7	B
	Woodman Street & 69th Street	29.4	B	7.5	F	30.1	A	25.3	B
Logan Avenue	45th Street & 47th Street	23.8	C	20.6	C	21.7	C	20.6	C
	47th Street & Euclid Avenue	17.9	D	20.5	C	13.1	E	20.5	C

TABLE 5.5
PREFERRED PLAN PEAK HOUR ROADWAY ARTERIAL ANALYSIS

Roadway	Segment	AM Peak Hour				PM Peak Hour			
		EB/NB		WB/SB		EB/NB		WB/SB	
		Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
47th Street	SR-94 EB On-Ramp & Market Street	34.0	B	21.6	D	34.0	B	18.7	D
	Market Street & Imperial Avenue	21.1	D	17.3	D	22.0	D	21.1	D
	Imperial Avenue & Logan Avenue	18.9	D	25.8	C	24.9	D	24.5	C
	Logan Avenue & I-805 NB Ramps	21.8	C	24.5	C	25.4	C	34.8	B
	I-805 NB Ramps & I-805 SB Ramps	26.6	C	22.7	C	23.5	C	10.7	F
Euclid Avenue	SR-94 WB Ramps & SR-94 EB Ramps	21.8	C	21.5	C	21.2	C	18.5	C
	SR-94 EB Ramps & Market Street	25.6	B	16.7	D	24.7	B	13.8	E
	Market Street & Imperial Avenue	19.5	C	16.9	D	17.6	D	18.8	C
	Imperial Avenue & Logan Avenue	17.4	D	11.8	E	20.4	C	13.7	E
	Logan Avenue & Division Street	26.3	B	17.7	D	27.1	B	15.7	D

Source: Chen Ryan Associates; February 2015

Note:
Bold letter indicates segment LOS E or F.

As shown in the table, the majority of the roadway segments, in which a roadway diet is proposed, are projected to operate at LOS D or better during both the AM and PM peak hours. There would be some minor pinch points along the roadways in which the arterial operations are projected to drop to LOS E or F; however, roadway speeds are not anticipated to drop below 10 mph hour along any segments.

Figures 5-8a and **5-8b** display AM and PM peak hour automobile LOS, respectively, using the HCM 2000 arterial analysis.

5.3.4 Intersection Geometry and LOS Analysis

AM and PM peak hour intersection LOS analyses were conducted for Preferred Plan conditions. It was assumed under buildout of the Preferred Plan the intersection geometries at several locations would be improved, as follows:

- I-805 SB Ramps & Market Street – Restripe the EB approach to include an exclusive right-turn lane.
- Euclid Avenue / SR-94 WB – Signalize intersection
- Euclid Avenue / SR-94 EB – Signalize intersection
- Bayview Heights Way / SR-94 WB Ramps – Signalize intersection
- Kelton Road / SR-94 EB Ramps – Signalize intersection
- Division Street / Plaza Boulevard – Signalize intersection

Traffic signal warrants were conducted at above 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 nine intersections would meet the warrants. Signal warrants worksheets are included in **Appendix S**.

Figures 5-9 and Figure 5-10 display the proposed intersection geometrics and forecast AM and PM peak hour turning movement volumes under buildout of the Preferred Plan, respectively.

Table 5.6 displays the LOS results for the key study intersections located within the Encanto Community Planning Area under Preferred Plan conditions. LOS analyses were conducted using the methodologies described in Chapter 2.0. Intersection LOS calculation worksheets are provided in **Appendix T**.

As shown in the table, the following four (4) study intersections are anticipated to operate at LOS E or F under buildout of the Preferred Plan:

- 47th Street / I-805 SB Ramps (PM: LOS E)
- Euclid Avenue / Imperial Avenue (PM: LOS E)
- Euclid Avenue / Olvera Avenue (AM: LOS E, PM: LOS E)
- Woodman Street / Skyline Drive (AM: LOS E)

Figure 5-11 displays the Preferred Plan intersection LOS analysis results.

It should be noted that additional vehicular capacity improvements are not proposed in order to improve the projected vehicular level of service at the intersections listed above for a variety of reasons. The primary reasons being the constrained right-of-way and/or a desire to improve (or not negatively impact) the quality of the pedestrian, bicycle, and transit environment in order to more safely accommodate and promote these modes of transportation.

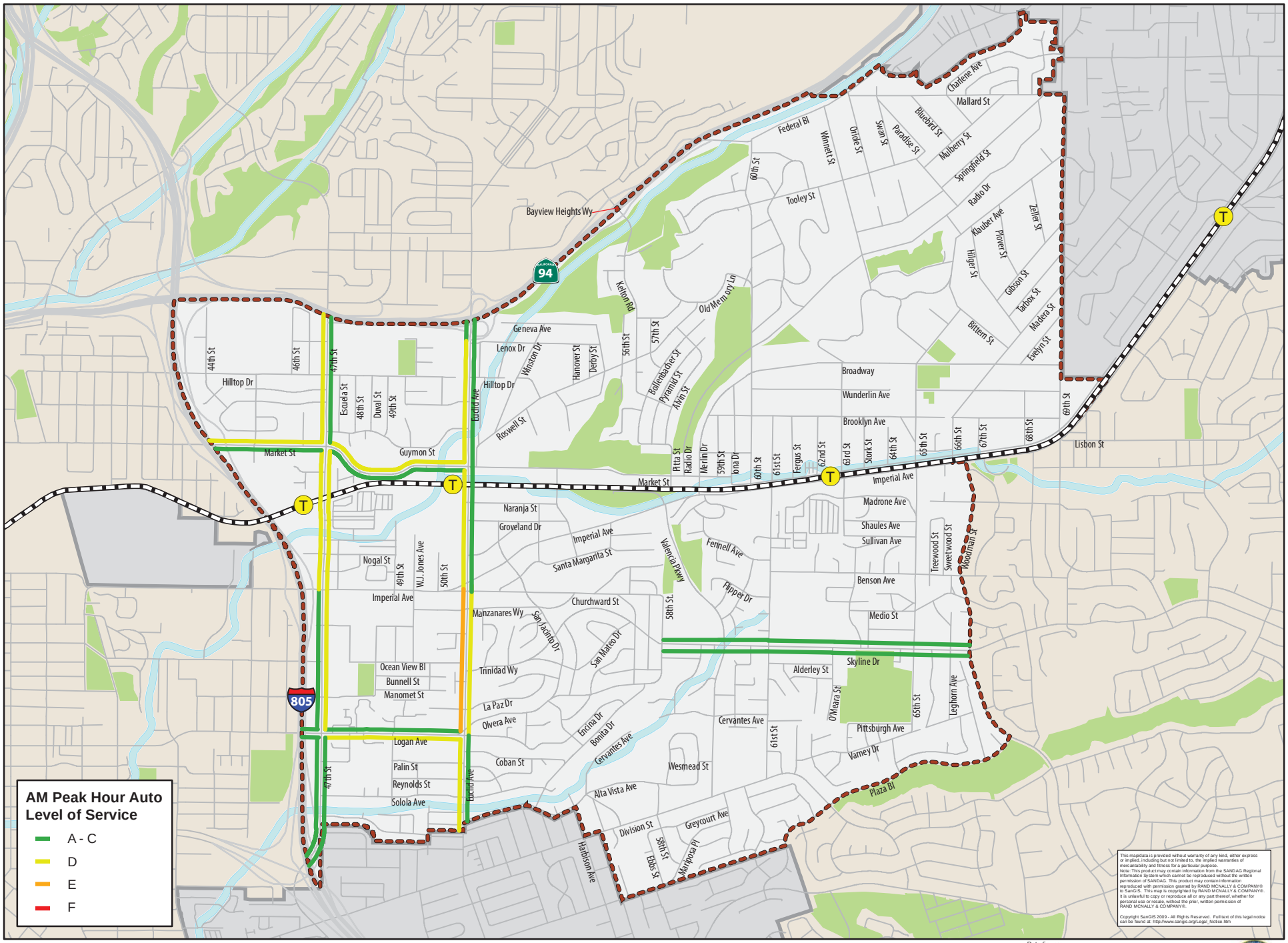


Figure 5-8a: Prefered Plan AM Peak Hour Auto Arterial Analysis Level of Service CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

ENCANTO COMMUNITY PLAN UPDATE

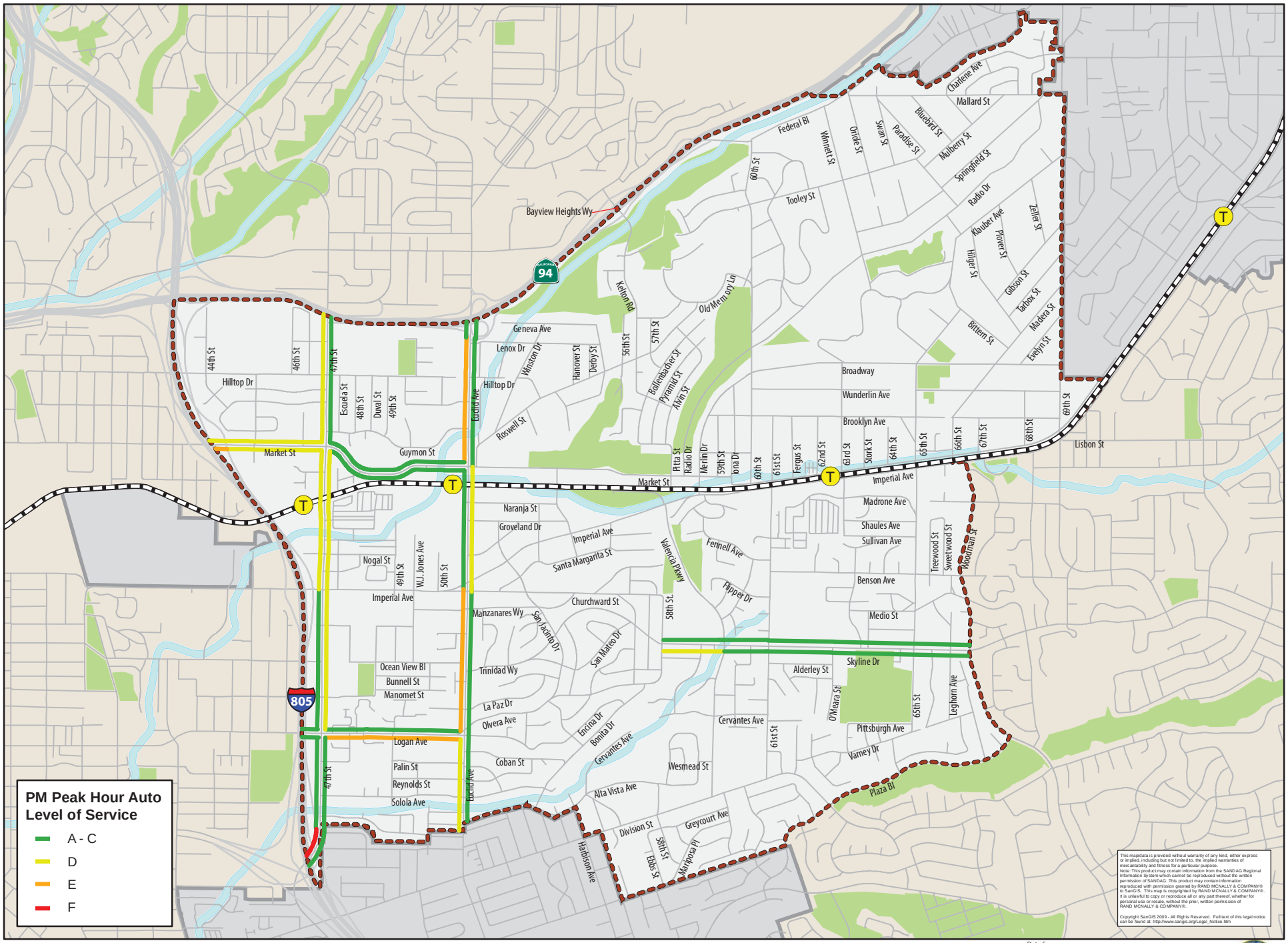
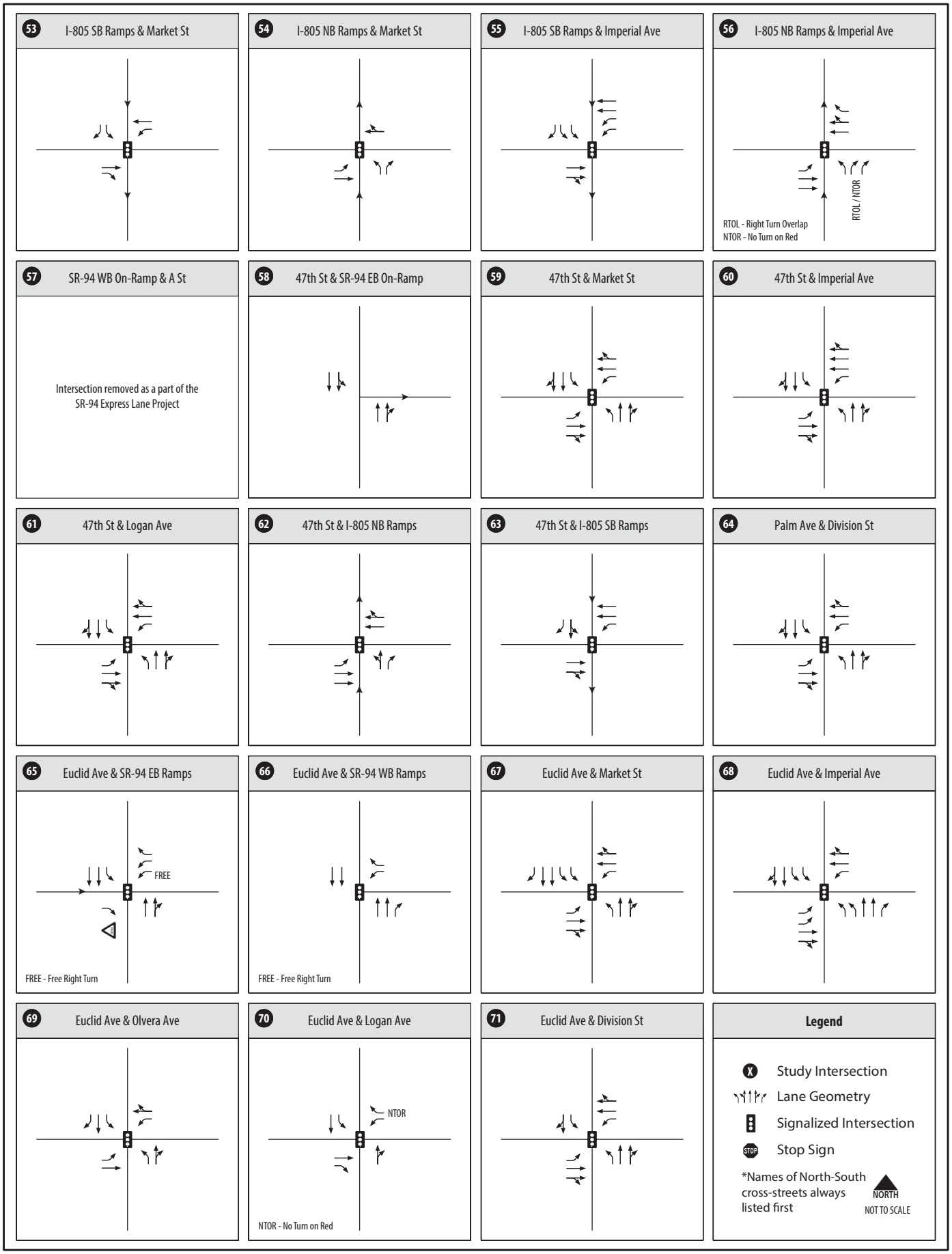


Figure 5-8b: Prefered Plan PM Peak Hour Auto Arterial Analysis Level of Service CHEN RYAN

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

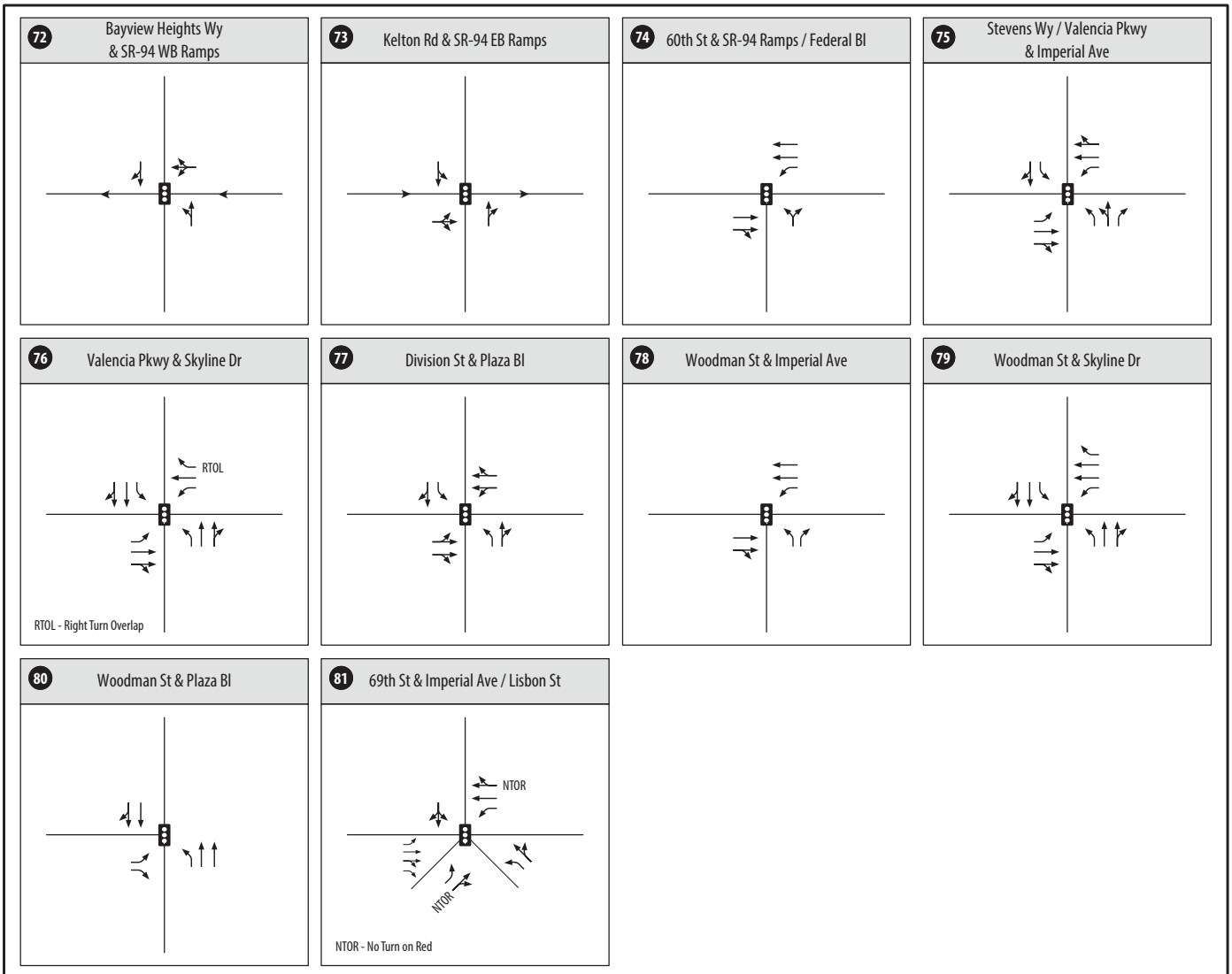


Encanto Community Plan Update

Figure 5-9

CHEN RYAN

Preferred Plan Intersection Geometry
Intersections 53-71 (Page 1 of 2)

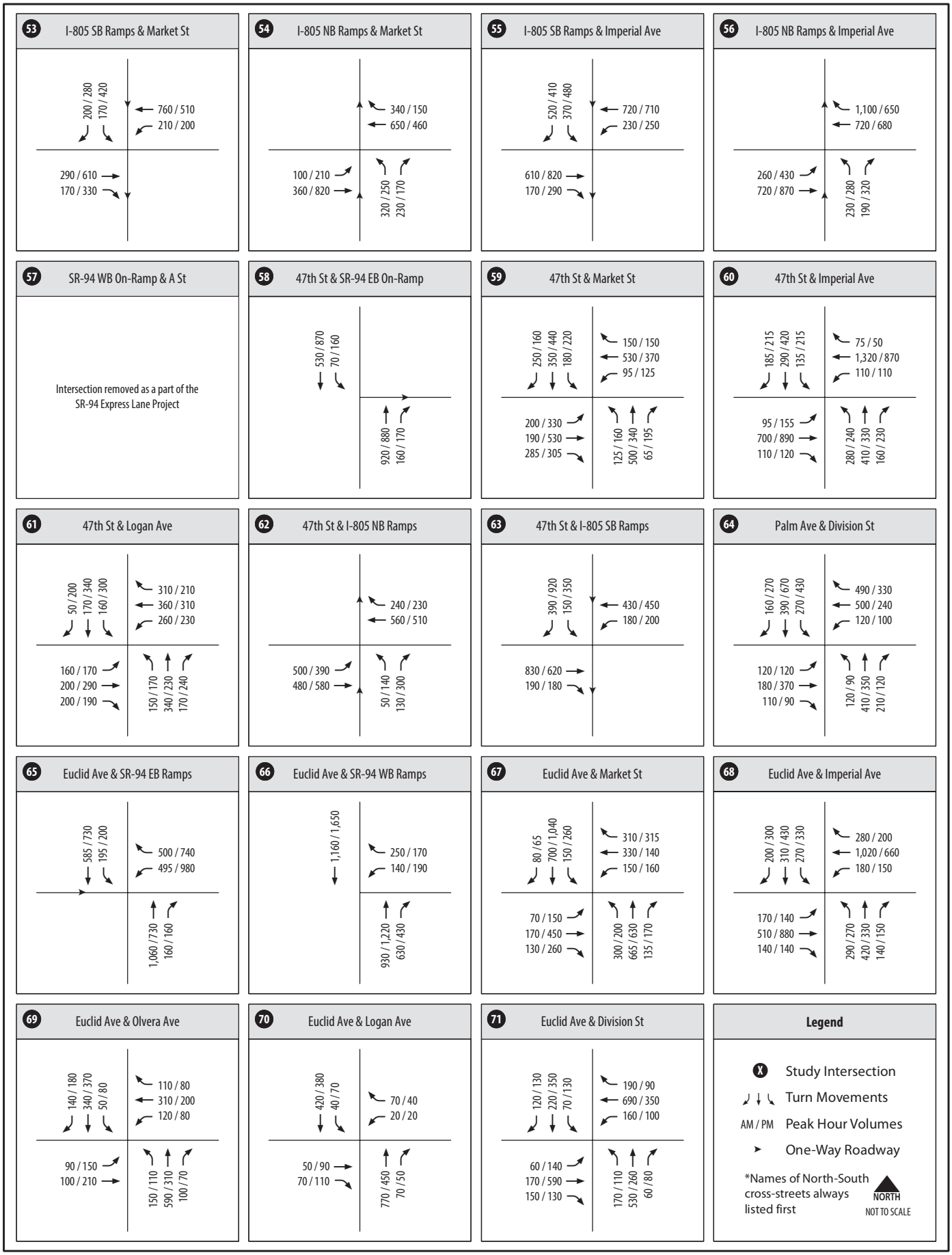


Encanto Community Plan Update

Figure 5-9

Preferred Plan Intersection Geometry
Intersections 72-81 (Page 2 of 2)

CHEN RYAN

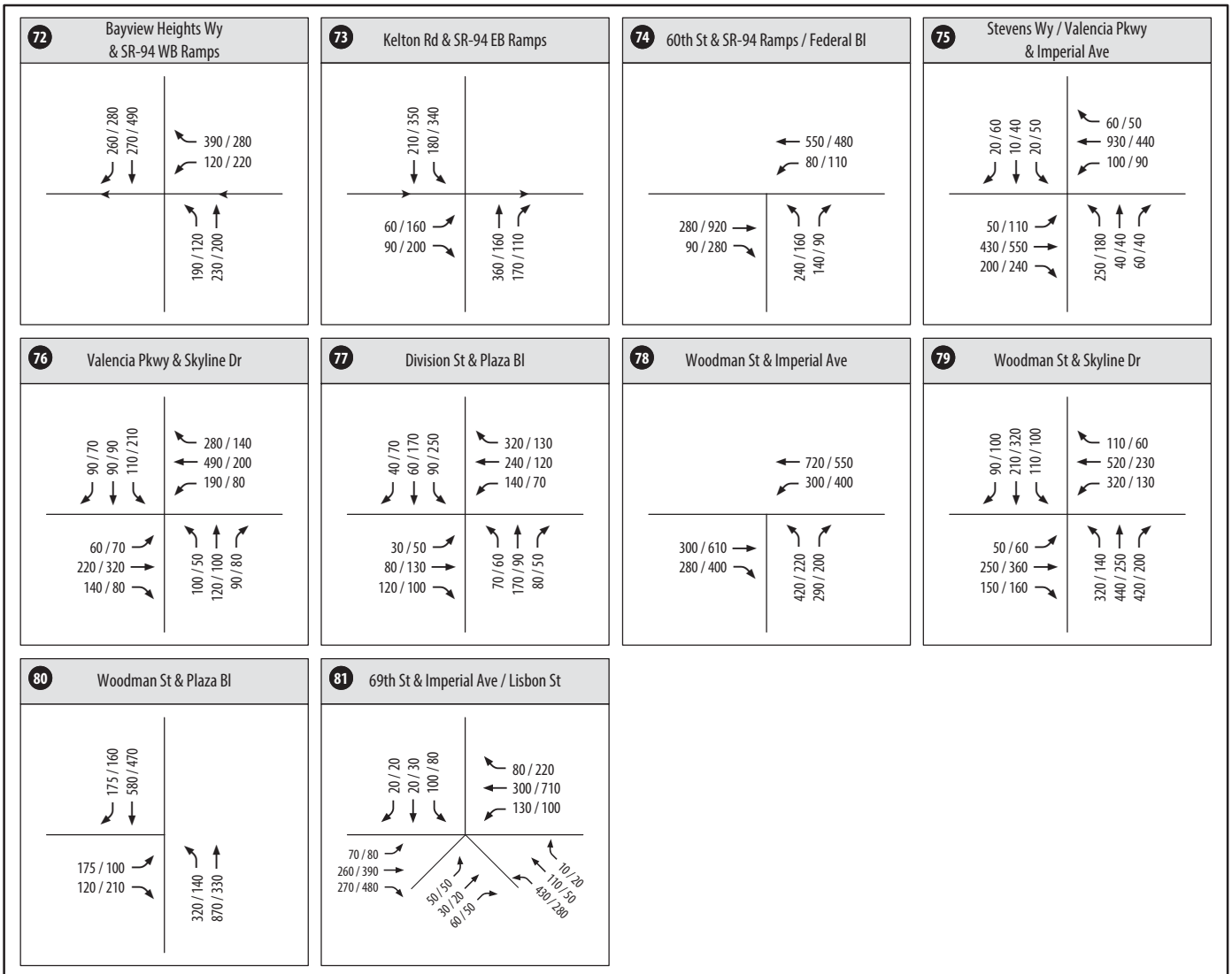


Encanto Community Plan Update

Figure 5-10

CHEN RYAN

Preferred Plan Intersection Turning Movements
Intersections 53-71 (Page 1 of 2)



Encanto Community Plan Update

Figure 5-10

CHEN RYAN

Preferred Plan Intersection Turning Movements
Intersections 72-81 (Page 2 of 2)

ENCANTO COMMUNITY PLAN UPDATE

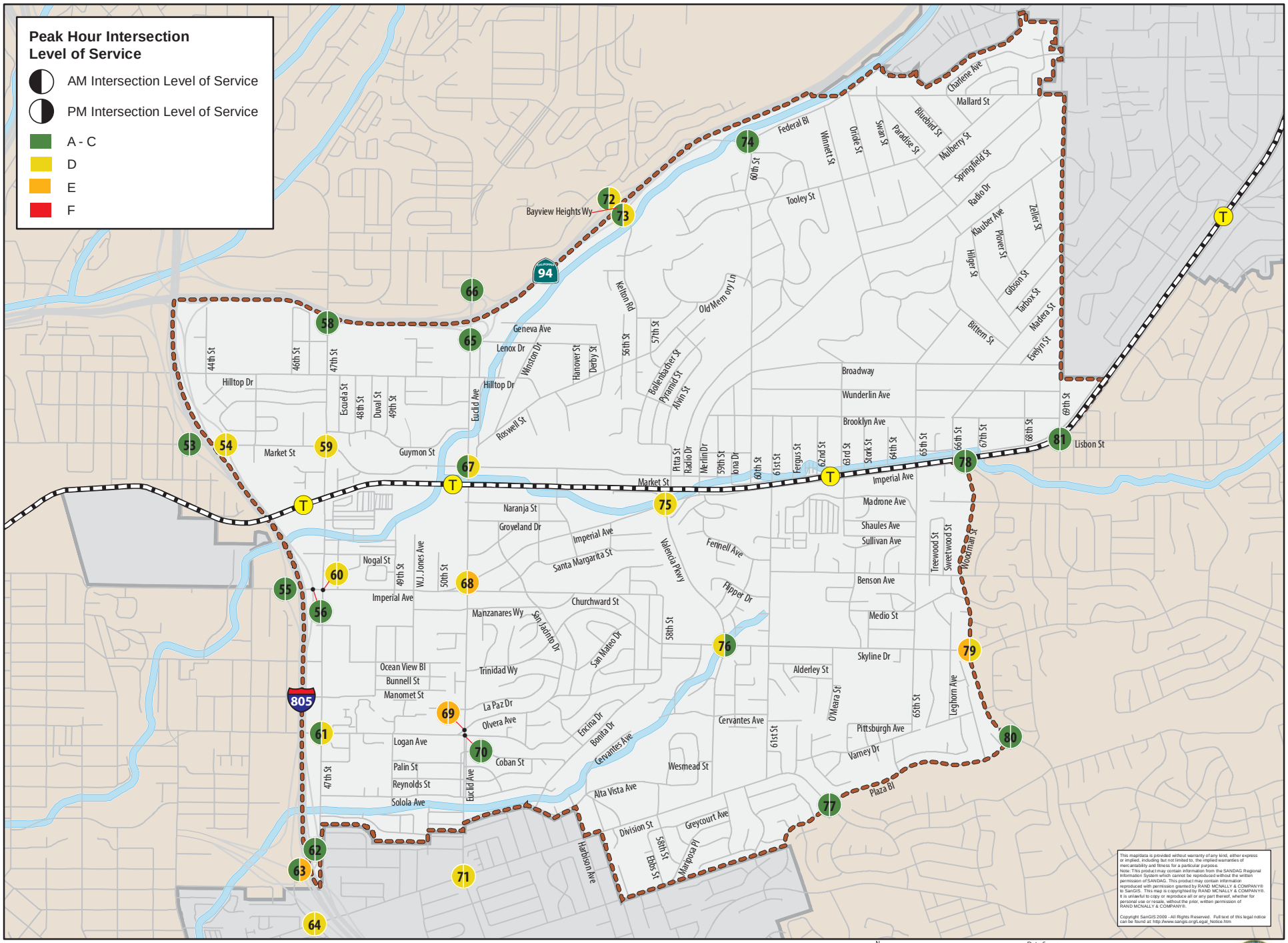


Figure 5-11: Preferred Plan Intersection Level of Service

TABLE 5.6
PREFERRED PLAN INTERSECTION PEAK HOUR LEVEL OF SERVICE

ID	Intersection	Control Type	AM Peak Hour			PM Peak Hour		
			Avg. Delay (sec)	Future LOS	Existing LOS	Avg. Delay (sec)	Future LOS	Existing LOS
53	Market Street / I-805 SB Ramps	Signal	13.3	B	B	26.2	C	C
54	Market Street / I-805 NB Ramps	Signal	45.9	D	B	42.4	D	B
55	Imperial Avenue / I-805 SB Ramps	Signal	27.3	C	C	24.5	C	C
56	Imperial Avenue / I-805 NB Ramps	Signal	23.8	C	B	34.4	C	B
57	SR-94 WB On-Ramp / A Street	*Intersection removed as a part of the SR-94 Express Lane Project*						
58	47th Street / SR-94 EB On-Ramp	OWSC	2.1	A	A	3.3	A	A
59	47th Street / Market Street	Signal	37.8	D	C	43.9	D	C
60	47th Street / Imperial Avenue	Signal	54.7	D	C	49.6	D	D
61	47th Street / Logan Avenue	Signal	34.2	C	C	39.1	D	C
62	47th Street / I-805 NB Ramps	Signal	24.4	C	B	14.4	B	A
63	47th Street / I-805 SB Ramps	Signal	17.3	B	B	67.1	E	C
64	Palm Avenue / Division Street	Signal	52.7	D	C	37.8	D	C
65	Euclid Avenue / SR-94 EB Ramps	Signal	19.4	B	E	16.4	B	F
66	Euclid Avenue / SR-94 WB Ramps	Signal	6.8	A	F	7.9	A	F
67	Euclid Avenue / Market Street	Signal	34.4	C	C	54.3	D	C
68	Euclid Avenue / Imperial Avenue	Signal	45.9	D	D	56.9	E	D
69	Euclid Avenue / Olvera Avenue	Signal	74.9	E	D	56.1	E	D
70	Euclid Avenue / Logan Avenue	Signal	14.9	B	B	23.9	C	C
71	Euclid Avenue / Division Street	Signal	36.3	D	C	38.1	D	C

TABLE 5.6
PREFERRED PLAN INTERSECTION PEAK HOUR LEVEL OF SERVICE

ID	Intersection	Control Type	AM Peak Hour			PM Peak Hour		
			Avg. Delay (sec)	Future LOS	Existing LOS	Avg. Delay (sec)	Future LOS	Existing LOS
72	Bayview Heights Way / SR-94 WB Ramps	Signal	28.6	C	C	47.1	D	C
73	Kelton Road / SR-94 EB Ramps	Signal	10.4	B	B	36.8	D	C
74	60th Street / SR-94 Ramps/Federal Boulevard	Signal	13.8	B	B	16.5	B	B
75	Valencia Parkway / Imperial Avenue	Signal	35.2	D	C	35.3	D	C
76	Valencia Parkway / Skyline Drive	Signal	49.8	D	C	25.7	C	C
77	Division Street / Plaza Boulevard	Signal	19.2	B	B	15.0	B	A
78	Woodman Street / Imperial Avenue	Signal	26.6	C	B	30.4	C	B
79	Woodman Street / Skyline Drive	Signal	78.8	E	D	35.7	D	C
80	Woodman Street / Plaza Boulevard	Signal	29.2	C	B	13.6	B	B
81	Woodman Street / Skyline Drive	Signal	20.8	C	D	22.1	C	D

Source: Chen Ryan Associates; February 2015

Notes:
Bold letter indicates unacceptable LOS E or F.
OWSC = One-way stop controlled.
For one or two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

5.3.5 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 5.7 displays the intersection queuing analysis during the AM/PM peak hours under Preferred Plan conditions. The Synchro intersection queuing reports are provided in Appendix T following the intersection LOS worksheets.

TABLE 5.7
PREFERRED PLAN PEAK HOUR INTERSECTION QUEUING ANALYSIS

ID	Intersection	Turning Movement	Pocket Length (ft)	95% Queue			50% Queue		
				Queue Length (ft) (AM/PM)	Excess Queue (ft) (AM/PM)	Exceed Storage ?	Queue Length (ft) (AM/PM)	Excess Queue (ft) (AM/PM)	Exceed Storage ?
53	Market Street / I-805 SB Ramps	SBL	330	128 / 431	0 / 101	Yes	60 / 253	0 / 0	No
		SBR	330	96 / 64	0 / 0	No	30 / 0	0 / 0	No
		WBL	290	160 / 255	0 / 0	No	70 / 121	0 / 0	No
		WBT	530	308 / 254	0 / 0	No	126 / 147	0 / 0	No
54	Market Street / I-805 NB Ramps	NBL	550	387 / 158	0 / 0	No	272 / 82	0 / 0	No
		NBR	550	67 / 70	0 / 0	No	0 / 23	0 / 0	No
		EBL	100	227 / 326	127 / 226	Yes	90 / 103	0 / 3	Yes
		EBT	530	176 / 676	0 / 0	No	99 / 170	0 / 0	No
55	Imperial Avenue / I-805 SB Ramps	SBL	540	92 / 163	0 / 0	No	73 / 115	0 / 0	No
		SBR	540	350 / 284	0 / 0	No	254 / 169	0 / 0	No
		WBL	190	123 / 140	0 / 0	No	61 / 71	0 / 0	No
		WBT	410	188 / 169	0 / 0	No	139 / 102	0 / 0	No
56	Imperial Avenue / I-805 NB Ramps	NBT	260	246 / 240	0 / 0	No	144 / 133	0 / 0	No
		NBR	260	28 / 121	0 / 0	No	18 / 82	0 / 0	No
		EBL	140	287 / 361	147 / 221	Yes	151 / 192	11 / 52	Yes
57	SR-94 WB On-Ramp / A Street	*Intersection removed as a part of the SR-94 Express Lane Project*							
58	47th Street / SR-94 EB On-Ramp	SBTL	290	12 / 28	0 / 0	No	10 / 18	0 / 0	No
59	47th Street / Market Street	NBL	90	263 / 253	173 / 163	Yes	105 / 106	15 / 16	Yes
		SBL	80	259 / 324	179 / 244	Yes	107 / 145	27 / 65	Yes
		EBL	120	294 / 443	174 / 323	Yes	142 / 256	22 / 136	Yes
		WBL	120	108 / 192	0 / 72	Yes	58 / 85	0 / 0	No
60	47th Street / Imperial Avenue	NBL	120	412 / 401	292 / 281	Yes	307 / 231	187 / 111	Yes
		SBL	130	198 / 264	68 / 134	Yes	145 / 180	15 / 50	Yes
		EBL	70	190 / 202	120 / 132	Yes	101 / 127	31 / 57	Yes
		EBT	100	440 / 491	340 / 391	Yes	418 / 350	318 / 250	Yes
		WBL	210	205 / 220	0 / 10	Yes	119 / 96	0 / 0	No

TABLE 5.7
PREFERRED PLAN PEAK HOUR INTERSECTION QUEUING ANALYSIS

ID	Intersection	Turning Movement	Pocket Length (ft)	95% Queue			50% Queue		
				Queue Length (ft) (AM/PM)	Excess Queue (ft) (AM/PM)	Exceed Storage ?	Queue Length (ft) (AM/PM)	Excess Queue (ft) (AM/PM)	Exceed Storage ?
61	47th Street / Logan Avenue	NBL	200	211 / 192	11 / 0	Yes	96 / 99	0 / 0	No
		SBL	110	207 / 377	97 / 267	Yes	114 / 188	4 / 78	Yes
		EBL	100	194 / 226	94 / 126	Yes	98 / 102	0 / 2	Yes
		WBL	130	315 / 315	185 / 185	Yes	167 / 154	37 / 24	Yes
62	47th Street / I-805 NB Ramps	NBT	120	66 / 125	0 / 5	Yes	32 / 68	0 / 0	No
		NBR	95	50 / 86	0 / 0	No	0 / 11	0 / 0	No
		EBL	80	463 / 397	383 / 317	Yes	293 / 121	213 / 41	Yes
		EBT	490	40 / 71	0 / 0	No	20 / 35	0 / 0	No
		WBT	220	267 / 74	47 / 0	Yes	191 / 35	0 / 0	No
63	47th Street / I-805 SB Ramps	SBT	820	104 / 224	0 / 0	No	65 / 149	0 / 0	No
		SBR	820	89 / 898	0 / 78	Yes	21 / 652	0 / 0	No
		EBT	430	268 / 402	0 / 0	No	152 / 274	0 / 0	No
		WBL	140	165 / 282	25 / 142	Yes	75 / 136	0 / 0	No
		WBT	490	57 / 141	0 / 0	No	24 / 103	0 / 0	No
64	Palm Avenue / Division Street	NBL	200	133 / 187	0 / 0	No	71 / 54	0 / 0	No
		SBL	200	357 / 545	157 / 345	Yes	207 / 230	7 / 30	Yes
		EBL	65	213 / 216	148 / 151	Yes	92 / 69	27 / 4	Yes
		WBL	160	208 / 173	48 / 13	Yes	83 / 55	0 / 0	No
65	Euclid Avenue / SR-94 EB Ramps	WBL	470	127 / 147	0 / 0	No	85 / 57	0 / 0	No
66	Euclid Avenue / SR-94 WB Ramps	SBL	350	171 / 305	0 / 0	No	78 / 170	0 / 0	No
		WBL	360	32 / 122	0 / 0	No	0 / 66	0 / 0	No
67	Euclid Avenue / Market Street	NBL	140	304 / 320	164 / 180	Yes	113 / 163	0 / 23	Yes
		SBL	170	113 / 163	0 / 0	No	43 / 106	0 / 0	No
		EBL	110	99 / 220	0 / 110	Yes	41 / 118	0 / 8	Yes
		WBL	60	232 / 272	172 / 212	Yes	99 / 131	39 / 71	Yes
68	Euclid Avenue / Imperial Avenue	NBL	135	222 / 209	87 / 74	Yes	129 / 124	0 / 0	No
		NBR	85	63 / 46	0 / 0	No	10 / 3	0 / 0	No
		SBL	200	128 / 259	0 / 59	Yes	98 / 168	0 / 0	No
		EBL	160	144 / 91	0 / 0	No	74 / 47	0 / 0	No
		WBL	195	265 / 269	70 / 74	Yes	150 / 142	0 / 0	No

TABLE 5.7
PREFERRED PLAN PEAK HOUR INTERSECTION QUEUING ANALYSIS

ID	Intersection	Turning Movement	Pocket Length (ft)	95% Queue			50% Queue		
				Queue Length (ft) (AM/PM)	Excess Queue (ft) (AM/PM)	Exceed Storage ?	Queue Length (ft) (AM/PM)	Excess Queue (ft) (AM/PM)	Exceed Storage ?
69	Euclid Avenue / Olvera Avenue	NBL	32	212 / 156	180 / 124	Yes	147 / 97	115 / 65	Yes
		SBL	160	84 / 110	0 / 0	No	43 / 59	0 / 0	No
		SBR	290	61 / 72	0 / 0	No	0 / 5	0 / 0	No
		EBL	100	150 / 195	50 / 95	Yes	103 / 144	3 / 44	Yes
		WBL	110	157 / 103	47 / 0	Yes	111 / 68	1 / 0	Yes
70	Euclid Avenue / Logan Avenue	SBL	32	31 / 71	0 / 39	Yes	11 / 57	0 / 25	Yes
		EBR	175	59 / 39	0 / 0	No	13 / 0	0 / 0	No
		WBR	190	109 / 71	0 / 0	No	74 / 46	0 / 0	No
71	Euclid Avenue / Division Street	NBL	100	199 / 136	99 / 36	Yes	91 / 56	0 / 0	No
		SBL	85	87 / 108	2 / 23	Yes	35 / 57	0 / 0	No
		EBL	150	92 / 158	0 / 8	Yes	30 / 64	0 / 0	No
		WBL	140	176 / 124	36 / 0	Yes	82 / 50	0 / 0	No
72	Bayview Heights Way / SR-94 WB Ramps	NBTL	290	315 / 294	25 / 4	Yes	155 / 151	0 / 0	No
		SBTR	170	161 / 442	0 / 272	Yes	88 / 236	0 / 66	Yes
		WBLTR	720	275 / 411	0 / 0	No	97 / 229	0 / 0	No
73	Kelton Road / SR-94 EB Ramps	NBTR	750	160 / 58	0 / 0	No	93 / 34	0 / 0	No
		SBTL	290	295 / 531	5 / 241	Yes	78 / 259	0 / 0	No
		EBLTR	1,000	62 / 298	0 / 0	No	37 / 151	0 / 0	No
74	60th Street / SR-94 Ramps/Federal Boulevard	WBL	150	68 / 113	0 / 0	No	22 / 44	0 / 0	No
75	Valencia Parkway / Imperial Avenue	NBL	260	130 / 110	0 / 0	No	71 / 51	0 / 0	No
		SBL	290	34 / 67	0 / 0	No	15 / 32	0 / 0	No
75	Valencia Parkway / Imperial Avenue	EBL	250	93 / 125	0 / 0	No	36 / 63	0 / 0	No
		WBL	100	169 / 162	69 / 62	Yes	67 / 60	0 / 0	No
76	Valencia Parkway / Skyline Drive	NBL	125	124 / 63	0 / 0	No	51 / 17	0 / 0	No
		SBL	250	162 / 297	0 / 47	Yes	85 / 70	0 / 0	No
		EBL	170	97 / 126	0 / 0	No	37 / 24	0 / 0	No
		WBL	160	290 / 146	130 / 0	Yes	155 / 29	0 / 0	No
		WBR	120	57 / 29	0 / 0	No	21 / 0	0 / 0	No

TABLE 5.7
PREFERRED PLAN PEAK HOUR INTERSECTION QUEUING ANALYSIS

ID	Intersection	Turning Movement	Pocket Length (ft)	95% Queue			50% Queue		
				Queue Length (ft) (AM/PM)	Excess Queue (ft) (AM/PM)	Exceed Storage ?	Queue Length (ft) (AM/PM)	Excess Queue (ft) (AM/PM)	Exceed Storage ?
77	Division Street / Plaza Boulevard	NBLTR	420	124 / 71	0 / 0	No	97 / 24	0 / 0	No
		SBL	90	71 / 144	0 / 54	Yes	41 / 57	0 / 0	No
		SBLTR	790	42 / 97	0 / 0	No	21 / 41	0 / 0	No
		EBLTR	300	26 / 54	0 / 0	No	19 / 23	0 / 0	No
		WBLTR	1,340	99 / 59	0 / 0	No	92 / 22	0 / 0	No
78	Woodman Street / Imperial Avenue	NBL	65	384 / 188	319 / 123	Yes	250 / 130	185 / 65	Yes
		WBL	100	308 / 442	208 / 342	Yes	188 / 227	88 / 127	Yes
79	Woodman Street / Skyline Drive	NBL	300	406 / 223	106 / 0	Yes	536 / 60	236 / 0	Yes
		SBL	80	252 / 169	172 / 89	Yes	168 / 42	88 / 0	Yes
		EBL	140	92 / 85	0 / 0	No	63 / 22	0 / 0	No
		WBL	80	470 / 211	390 / 131	Yes	500 / 60	420 / 0	Yes
		WBR	75	43 / 0	0 / 0	No	26 / 0	0 / 0	No
80	Woodman Street / Plaza Boulevard	NBL	190	293 / 129	103 / 0	Yes	258 / 41	68 / 0	Yes
81	69th Street / Imperial Avenue/Lisbon	NBL	70	47 / 77	0 / 7	No	29 / 36	0 / 0	No
		NWL	225	379 / 405	154 / 180	Yes	171 / 208	0 / 0	Yes
		EBL	135	75 / 161	0 / 26	Yes	29 / 59	0 / 0	No
		WBL	195	147 / 189	0 / 0	No	53 / 72	0 / 0	No

Source: Chen Ryan Associates; February 2015

Note:
XX/YY = AM/PM queue lengths.

As shown, under buildout of the preferred plan, 53 different movements within the Encanto community are projected to have queue lengths that exceed their storage capacity at the most congested point of the peak hour (95th % Queue). 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 30 movements are anticipated to have queues that exceed their storage capacity on an average during either peak hour (50th % Queue).

5.3.6 Freeway Segments and LOS Analysis

The Preferred Plan network includes freeway improvements that would directly impact the community as described in the SANDAG 2050 Regional Transportation Plan 2050. Planned freeway improvements include the following:

- **SR-94 Express Lane Project (Alternative 1):** includes two HOV/Express Lanes within the freeway median (one in each direction) between I-5 and I-805, with a direct freeway-to-freeway High Occupancy Vehicle (HOV) connector at I-805. The Express Lanes would accommodate carpools/vanpools, in addition to new Bus Rapid Transit (BRT) service. The SR-94 Express Lane Project (Alternative 1) also proposes the following modification to interchanges along the SR-94 corridors:
    - Removal of Eastbound SR-94/32nd Street On-ramp
    - Replace On and Off-ramps at Market Street and SR 15
    - Replacement of Left-land Freeway-to-Freeway Interchange with Standard Right-hand connectors
    - Replacement of Westbound SR-94/Home Avenue On-Ramp
    - Removal of Northbound SR-15 to Westbound SR-93 Loop Connector
    - Replacement of Westbound SR-94 to Southbound SR-15 connector
    - Removal of Westbound SR-94/49th Street/A Street On-Ramp

- I-805 South Project (Phase 1): Includes two HOV/Express Lanes within the freeway median (one in each direction) between East Palomar Street in Chula Vista and the I-805/SR-15 interchange in San Diego.

Table 5.8 displays the freeway segment LOS in the vicinity of the Encanto Community Planning Area. Forecast freeway volumes were obtained from the modeling process described in Chapter 4.0.

As shown in the table, under buildout of the Preferred Plan, numerous of study area freeway segments are anticipated to operate at less than desirable LOS E or F within the mainline. In addition, all of the proposed HOV lanes along I-805 and SR-94 are anticipated to operate at LOS D or better, with the exception of the following:

- I-805 Southbound, between Market Street and Imperial Avenue (LOS E)
- I-805 Northbound, between Market Street and Imperial Avenue (LOS E)
- I-805 Southbound, Imperial Avenue & 43rd Street (LOS E)

TABLE 5.8
PREFERRED PLAN FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

ID	Freeway	Segment	Direction	ADT	# of Lanes	Capacity	K[1]	HV[2]	Peak Hour Volume	V/C Ratio	LOS
1	I-805	Home Avenue & SR-94	NB	124,700	4M	9,400	7.0%	6.5%	9,200	0.98	E
				29,000	1 HOV	2,350	7.0%	6.5%	2,100	0.89	D
			SB	112,500	4M	9,400	7.8%	6.5%	9,200	0.98	E
				22,600	1 HOV	2,350	7.8%	6.5%	1,900	0.81	D
2		SR-94 & Market Street	NB	121,500	4M	9,400	7.0%	6.5%	8,900	0.95	E
				27,400	1 HOV	2,350	7.0%	6.5%	2,000	0.85	D
			SB	110,000	4M	9,400	7.8%	6.5%	9,000	0.96	E
				22,800	1 HOV	2,350	7.8%	6.5%	1,900	0.81	D
3		Market Street & Imperial Avenue	NB	156,800	4M+2A	12,220	7.0%	6.5%	11,500	0.94	E
				29,400	1 HOV	2,350	7.0%	6.5%	2,200	0.94	E
			SB	142,000	4M+2A	12,220	7.8%	6.5%	11,700	0.96	E
				28,500	1 HOV	2,350	7.8%	6.5%	2,300	0.98	E
4		Imperial Avenue & 43rd Street	NB	150,500	5M	11,750	7.0%	6.5%	11,000	0.94	E
				29,100	1 HOV	2,350	7.0%	6.5%	2,100	0.89	D
			SB	141,200	4M+1A	10,810	7.5%	6.5%	11,100	1.03	F
				28,200	1 HOV	2,350	7.5%	6.5%	2,200	0.94	E
5		43rd Street & Plaza Boulevard	NB	159,500	4M+2A	12,220	6.0%	6.5%	10,100	0.83	D
				28,100	1 HOV	2,350	6.0%	6.5%	1,800	0.77	C
			SB	131,700	5M	11,750	7.5%	6.5%	10,500	0.89	D
				23,500	1 HOV	2,350	7.5%	6.5%	1,900	0.81	D
6	SR-94	Home Avenue & I-805	EB	101,300	4M+1A	10,810	8.6%	4.2%	9,200	0.85	D
				5,900	1 HOV	2,350	8.6%	4.2%	500	0.21	A
			WB	111,300	4M	9,400	7.6%	4.2%	8,900	0.95	E
				2,100	1 HOV	2,350	7.6%	4.2%	200	0.09	A
7		I-805 & 47th Street	EB	146,000	5M	11,750	8.6%	3.9%	13,300	1.13	F
			WB	160,400	4M+1A	10,810	7.6%	3.9%	12,800	1.18	F
8		47th Street & Euclid Avenue	EB	140,000	5M+1A	13,160	8.6%	3.9%	12,700	0.97	E
				5,300	1 HOV	2,350	8.6%	3.9%	500	0.21	A
			WB	153,800	4M+1A	10,810	7.6%	3.9%	12,300	1.14	F
				7,600	1 HOV	2,350	7.6%	3.9%	600	0.26	A
9		Euclid Avenue & Kelton Road	EB	131,600	5M	11,750	8.6%	3.9%	12,000	1.02	F
				5,100	1 HOV	2,350	8.6%	3.9%	500	0.21	A

TABLE 5.8
PREFERRED PLAN FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

ID	Freeway	Segment	Direction	ADT	# of Lanes	Capacity	K[1]	HV[2]	Peak Hour Volume	V/C Ratio	LOS
9	SR-94	Euclid Avenue & Kelton Road	WB	136,100	4M+1A	10,810	7.3%	3.9%	10,500	0.97	E
				6,500	1 HOV	2,350	7.3%	3.9%	500	0.21	A
10		Kelton Road & Federal Boulevard	EB	128,300	4M+1A	10,810	8.6%	3.9%	11,600	1.07	F
				3,700	1 HOV	2,350	8.6%	3.9%	300	0.13	A
			WB	140,100	4M+1A	10,810	7.3%	3.9%	10,800	1.00	E
				6,000	1 HOV	2,350	7.3%	3.9%	500	0.21	A
11		Federal Boulevard & College Grove Way	EB	110,600	4M	9,400	8.6%	3.9%	10,000	1.06	F
				3,800	1 HOV	2,350	8.6%	3.9%	300	0.13	A
			WB	120,800	4M	9,400	7.3%	3.9%	9,300	0.99	E
				6,500	1 HOV	2,350	7.3%	3.9%	500	0.21	A
12		College Grove Way & College Avenue	EB	113,400	4M	9,400	8.6%	3.9%	10,200	1.09	F
				3,800	1 HOV	2,350	8.6%	3.9%	300	0.13	A
			WB	124,500	4M	9,400	7.8%	3.9%	10,300	1.10	F
				5,500	1 HOV	2,350	7.8%	3.9%	500	0.21	A

Source: Chen Ryan Associates; February 2015

Notes:
Bold letter indicates unacceptable LOS E or F.
M = Mainline. A = Auxiliary Lane. HOV = High Occupancy Vehicle Only
[1] K = Peak hour %.
[2] HV = Heavy vehicle %.

5.3.7 Meter Analysis

Table 5.9 summarizes the freeway ramp metering analysis results, under buildout of the Preferred Plan, for all ramp meter locations within the Encanto community. The volumes were derived using the outputs for the modeling described in Chapter 5.0.

As shown in the table, the anticipated peak hour demand is not anticipated exceed the anticipated meter rate at any of the study ramp meter locations. Therefore, no freeway on-ramp queuing issues are anticipated under buildout of the Preferred Plan.

TABLE 5.9
PREFERRED PLAN FREEWAY RAMP METERING ANALYSIS

On-Ramp	# of Lanes		Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay[4] (min)	Queue[5] (ft)
	SOV	HOV						
SR-94 WB On-Ramp @ Euclid Avenue	2	0	AM	630	1,522	0	0	0
SR-94 WB On-Ramp @ Kelton Road	1	1	AM	480	577	0	0	0
SR-94 WB On-Ramp @ Federal Boulevard / Home Avenue	1	0	AM	800	805	0	0	0
I-805 NB On-Ramp @ 47th Street	2	0	AM	740	880	0	0	0
I-805 NB On-Ramp @ Imperial Avenue	2	0	AM	1,380	1,589	0	0	0

Source: Chen Ryan Associates; February 2015

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.

5.4 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 Encanto community:

- Expand signal coordination along major roadway corridors including: Market Street, Imperial Avenue, Logan Avenue, 47th Street, Euclid 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.

5.5 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 and from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Walking
- Bicycling
- Carpooling
- Vanpooling
- Transit
- Car-sharing
- 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:

- RideMatcher – resources for finding carpool partners or available vanpool seats
- SchoolPool – a program that enrolls schools to encourage parents to carpool
- Transit Information - provides a linkage to transit service provider web pages
- Bicycle Information – provides a link to SANDAG's Regional Bikeway Master Plan, which has been updated to show bicycle paths, lanes and routes in the region
- Guaranteed Ride Home – a program that allows vanpool riders affordable rides home to deal with emergency meetings or illness

In addition to the iCommute program, Caltrans owns and/or maintains several park-and-ride lots in the region that are used to promote carpool 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 is also coordinating with SANDAG on the implementation of a car-sharing demonstration program. Pricing strategies are also used to reduce demand on the transportation system.

5.6 Cycling Environment

Bicycle facilities are an integral component of the community's transportation system. Adequate bicycle facilities encourage non-motorized transportation, enhance recreational opportunities, and help attract visitors. Bikeways not only provide local opportunities for cyclists, but also offer regional connections. One of the most heavily used regional corridors in San Diego is the Bayshore Bikeway, located just outside of the community planning area; this section of the report discusses the Preferred Plan facilities proposed for the Encanto Community Planning Area.

5.6.1 Cycling Environment

The Preferred Plan proposes a well-connected network of bicycle facilities. The plan proposes a variety of standard and innovative bicycle facilities in Encanto, as described below:

- Market Street, between I-805 and Pita Street – One-way cycle track in both directions.
- Imperial Avenue, between I-805 Street and Madera Street – Buffered bike lanes in both directions.
- Logan Avenue, between I-805 and Euclid Avenue - Buffered bike lanes in both directions.
- 47th Street, between SR-94 and Market Street & Nogal Street and Logan Avenue - One-way cycle track in both directions.
- 47th Street, between Market Street and Nogal Street – Bike lanes in both directions (requires the removal of 50 on-street parking spaces).
- Euclid Avenue, between SR-94 and Imperial Avenue, – Buffered bike lanes in both directions.
- Euclid Avenue, between Imperial Avenue and Solola Avenue - One-way cycle track in both directions.
- Skyline Drive, between 61st Street and the community boundary – Buffered bike lanes in both directions.
- Woodman Street, between Skyline Drive and the community boundary - Buffered bike lanes in both directions.

Table 5.10 summarizes bicycle facility mileage for existing conditions and for the preferred plan.

Figure 5-12 displays the location of bicycle facilities within the Encanto Community Planning Area. The bicycle facility classifications used in Figure 5-12 are based on SANDAG's bicycle facility classification system, which is described in **Appendix U**.

As shown, the Preferred Plan will provide over 4 times the amount of bicycle facilities that are currently available in the Encanto community, including separated facilities (cycle tracks) along Market Street, sections of 47th Street and Euclid Avenue, and buffered bike lanes along Imperial Avenue and sections of Logan Avenue, Skyline Drive, 47th Street, Euclid Avenue and Woodman Street.

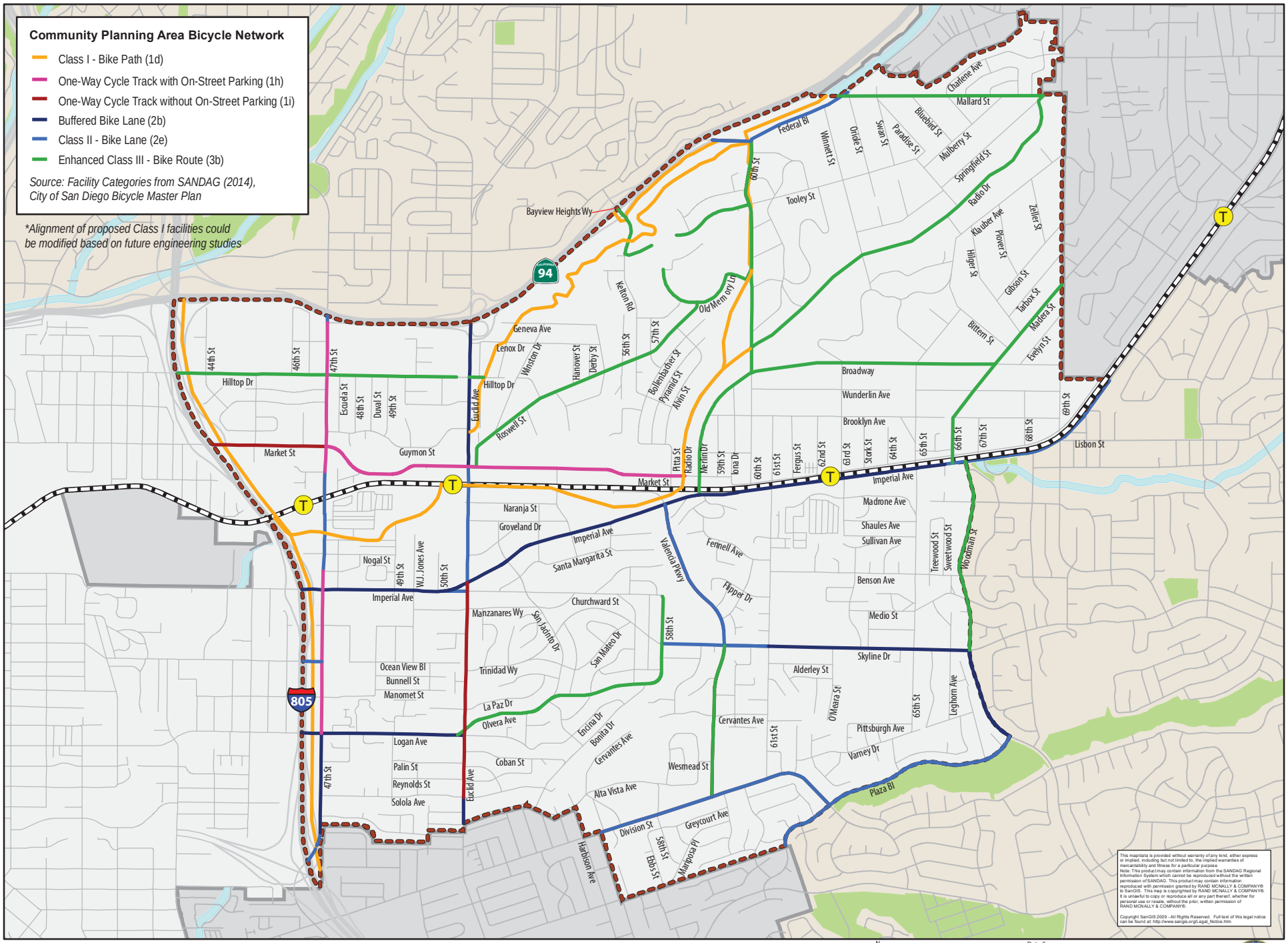


Figure 5-12: Preferred Plan Bicycle Network

TABLE 5.10
MILEAGE OF PREFERRED PLAN BICYCLE FACILITY EXISTING VS. PREFERRED PLAN

Facility Type	Existing		Preferred Plan	
	Mileage	Percent of Total	Mileage	Percent of Total
Class I Multi-Use Path	0.4 miles	5.6%	7.2 miles	24.8%
One-Way or Two-Way Cycle Track	0 miles	0%	4.2 miles	14.5%
Buffered Bike Lane	0 miles	0%	4.0 miles	13.8%
Class II Bicycle Lane	4.4 miles	61.1%	5.5 miles	19.0%
Class III Bicycle Route	2.4 miles	33.3%	8.1 miles	27.9%
TOTAL	7.2 miles	100%	29.1 miles	100%

Source: SANDAG; Chen Ryan Associates; February 2015

5.6.2 Cycling Activity Levels

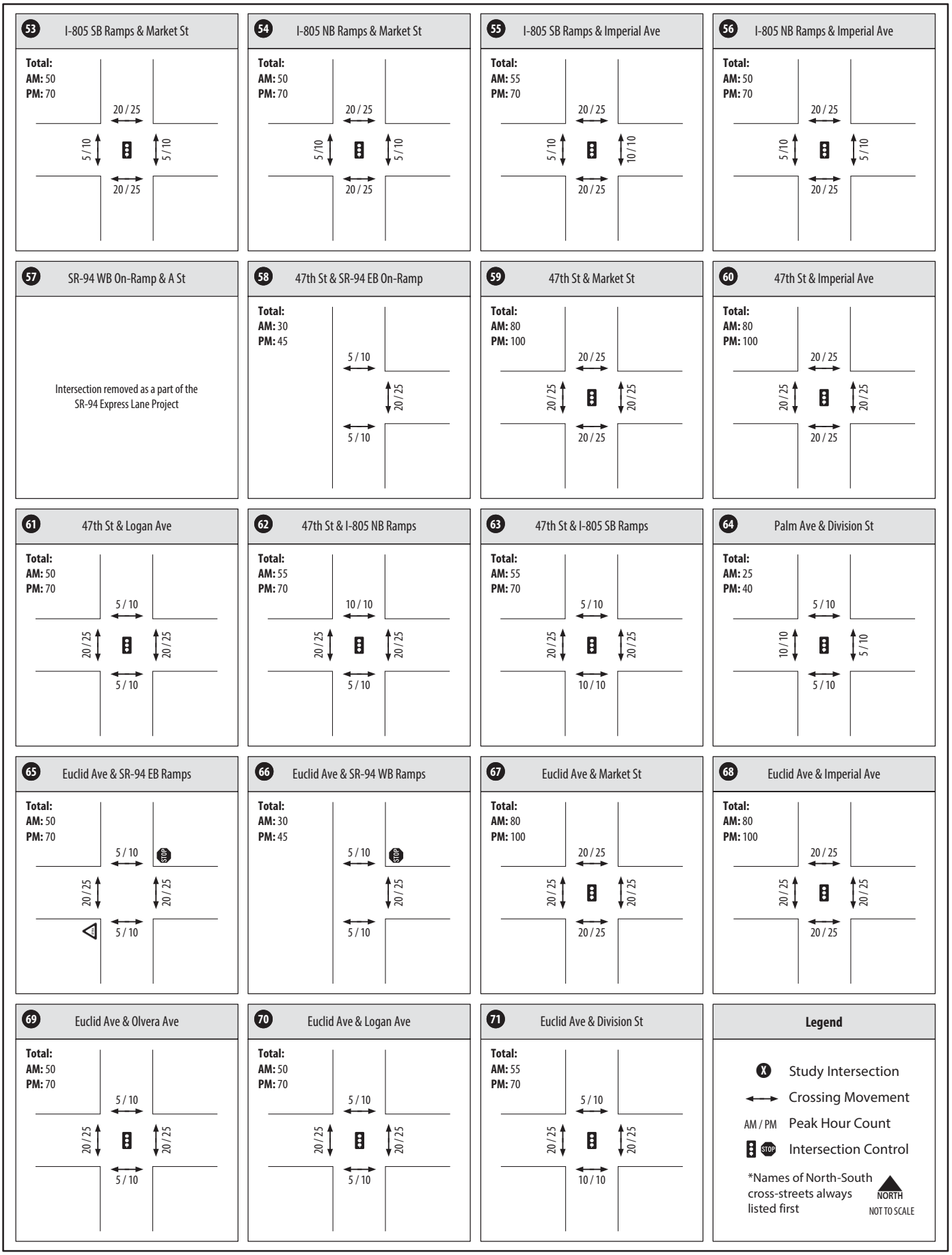
While projecting increases in multi-modal trips requires some level of judgment and is dependent on numerous factors, quantitative methods are available to assist in this process. A community-wide bicycle activity growth factor was derived based on future growth estimates from the *Euclid Avenue Corridor Master Plan – Future Multi-Modal Conditions Report; Fehr & Peers*, *April 2014* conducted within the Encanto community. These master plan studies utilized SANDAG's Trip Generation for Smart Growth Tool (MXD) to estimate the specific growth in bicycle activities along the major corridors throughout the community (Market Street, Imperial Avenue, Logan Avenue, 47th Street and Euclid Avenue). Relevant pages from the previous master plan technical reports are provided in Appendix N.

Based on the MXD results in the previous master plans, a 1.6 growth factor was applied to existing bicycle volumes throughout the community, which accounts for external bicycle trips and internal bicycle activities. To be conservative, in addition to applying the 1.6 growth factor to all bicycle volumes, a minimum of 20 additional cyclists in the AM peak hour and 25 cyclists in the PM peak hour were assumed along major facilities (Market Street, Imperial Avenue, Logan Avenue, 47th Street and Euclid Avenue), and a minimum of 5 additional cyclists in the AM peak hour and 10 cyclists in the PM peak hour along minor side streets.

Figure 5-13 displays the projected bicycle within the Encanto community under buildout of the Preferred Plan.

5.6.3 Cycling LOS Analysis and Results

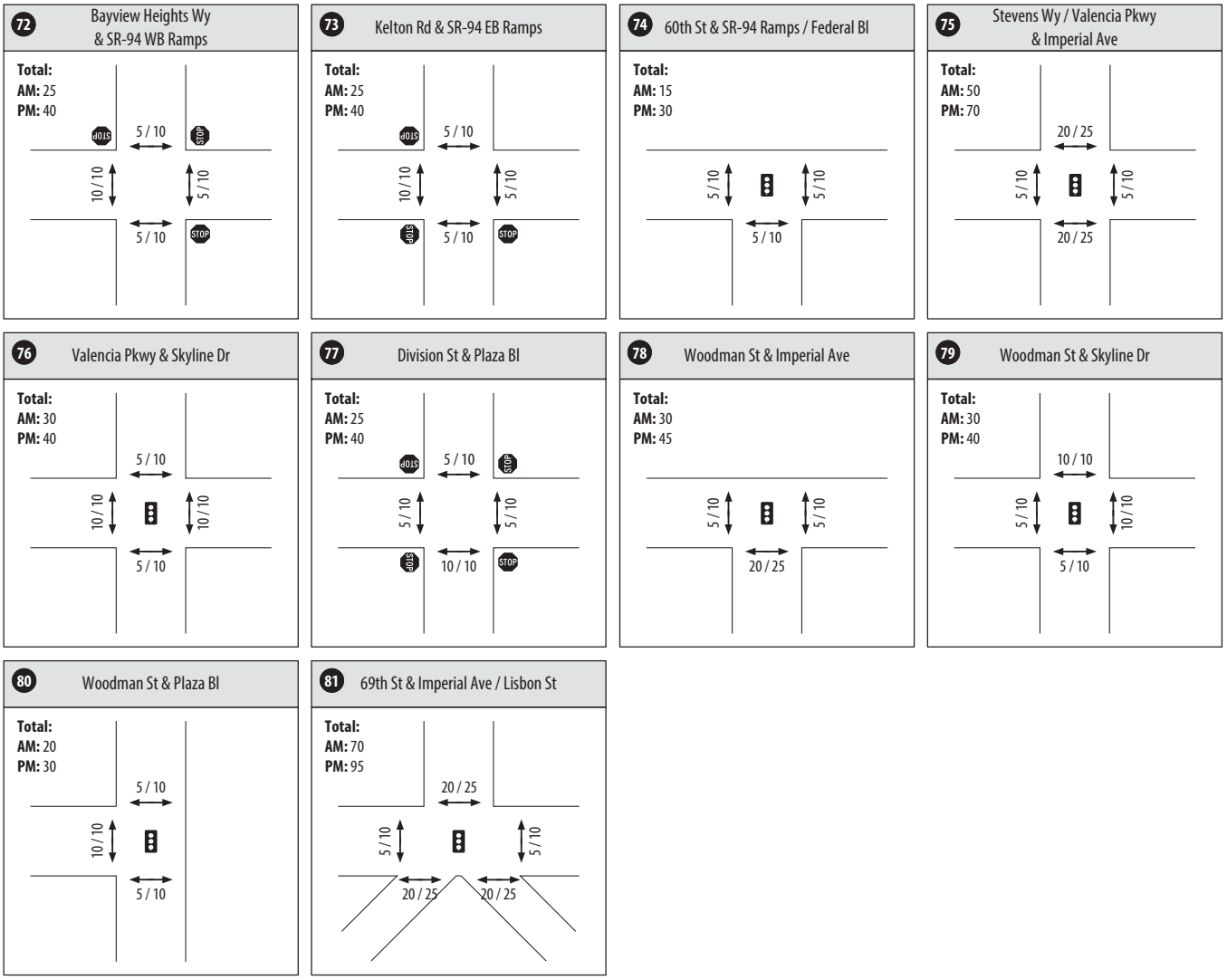
Bicycle LOS was evaluated along the major urban corridors throughout the community, including Market Street, Imperial Avenue, Logan Avenue, 47th Street and Euclid Avenue, using the CSLOS methodology described in Chapter 2.



Encanto Community Plan Update
Preferred Plan
CHEN RYAN

Figure 5-13

Projected Bicycle Activity Levels
Intersections 53-71 (Page 1 of 2)



Encanto Community Plan Update
Preferred Plan
CHEN RYAN

Figure 5-13

Projected Bicycle Activity Levels
Intersections 72-81 (Page 2 of 2)

Tables 5.11A and **5.11B** display the Preferred Plan LOS for cyclists on along major urban streets during the AM and PM peak periods, respectively, by segment and by direction. All of the Urban Street segments within the Encanto community are operating at LOS D or better during build out of the preferred plan. Peak hour bicycle CSLOS analysis output is provided in **Appendix V**.

TABLE 5.11A
PREFERRED PLAN MULTI-MODAL ANALYSIS – BICYCLE LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.94	C	3.09	C
	I-805 NB Ramps & 47th Street		3.20	C		
	47th Street & Euclid Avenue		3.26	C		
	Euclid Avenue & 60th Street		2.97	C		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.91	C	2.63	B
	I-805 NB Ramps & 47th Street		2.92	C		
	47th Street & Euclid Avenue		3.00	C		
	Euclid Avenue & 60th Street		2.90	C		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.26	C	2.76	C
	I-805 NB Ramps & 47th Street		3.13	C		
	47th Street & Euclid Avenue		2.80	C		
	Euclid Avenue & Valencia Parkway		2.86	C		
	Valencia Parkway & Woodman Street		2.63	B		
	Woodman Street & 69th Street		2.71	B		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.41	C	2.62	B
	I-805 NB Ramps & 47th Street		2.99	C		
	47th Street & Euclid Avenue		2.50	B		
	Euclid Avenue & Valencia Parkway		2.58	B		
	Valencia Parkway & Woodman Street		2.43	B		
	Woodman Street & 69th Street		3.21	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	2.62	B	2.62	B
	47th Street & Euclid Avenue	Westbound	2.29	B	2.29	B
47th Street	SR-94 & Market Street	Northbound	1.82	A	2.21	B
	Market Street & Imperial Avenue		2.75	C		
	Imperial Avenue & Logan Avenue		1.71	A		
	Logan Avenue & I-805 NB Ramps		2.45	B		

TABLE 5.11A
PREFERRED PLAN MULTI-MODAL ANALYSIS – BICYCLE LOS
AM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
47th Street	I-805 NB Ramps & I-805 SB Ramps	Northbound	2.17	B	2.21	B
	I-805 SB Ramps & Division Street		2.46	B		
	SR-94 & Market Street	Southbound	3.83	D	3.46	C
	Market Street & Imperial Avenue		4.36	E		
	Imperial Avenue & Logan Avenue		3.47	C		
	Logan Avenue & I-805 NB Ramps		2.51	B		
	I-805 NB Ramps & I-805 SB Ramps		2.31	B		
	I-805 SB Ramps & Division Street		2.95	C		
Euclid Avenue	SR-94 & Market Street	Northbound	3.21	C	2.88	C
	Market Street & Imperial Avenue		2.68	B		
	Imperial Avenue & Logan Avenue		2.74	B		
	Logan Avenue & Division Street		2.87	C		
	SR-94 & Market Street	Southbound	3.31	C	3.79	D
	Market Street & Imperial Avenue		2.81	C		
	Imperial Avenue & Logan Avenue		4.59	E		
	Logan Avenue & Division Street		4.19	D		

Source: Chen Ryan Associates, February 2015

Notes:
Bold letter indicates segment LOS E or F.
The bicycle LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

TABLE 5.11B
PREFERRED PLAN MULTI-MODAL ANALYSIS – BICYCLE LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Eastbound	2.94	C	2.83	C
	I-805 NB Ramps & 47th Street		3.15	C		
	47th Street & Euclid Avenue		2.22	B		
	Euclid Avenue & 60th Street		3.02	C		

TABLE 5.11B
PREFERRED PLAN MULTI-MODAL ANALYSIS – BICYCLE LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Market Street	I-805 SB Ramps & I-805 NB Ramps	Westbound	2.92	C	2.67	B
	I-805 NB Ramps & 47th Street		2.92	C		
	47th Street & Euclid Avenue		1.92	A		
	Euclid Avenue & 60th Street		2.94	C		
Imperial Avenue	I-805 SB Ramps & I-805 NB Ramps	Eastbound	3.24	C	2.74	B
	I-805 NB Ramps & 47th Street		3.10	C		
	47th Street & Euclid Avenue		2.71	B		
	Euclid Avenue & Valencia Parkway		2.82	C		
	Valencia Parkway & Woodman Street		2.64	B		
	Woodman Street & 69th Street		2.73	B		
	I-805 SB Ramps & I-805 NB Ramps	Westbound	3.45	C	2.62	B
	I-805 NB Ramps & 47th Street		2.98	C		
	47th Street & Euclid Avenue		2.49	B		
	Euclid Avenue & Valencia Parkway		2.58	B		
	Valencia Parkway & Woodman Street		2.43	B		
	Woodman Street & 69th Street		3.24	C		
Logan Avenue	47th Street & Euclid Avenue	Eastbound	2.63	B	2.63	B
	47th Street & Euclid Avenue	Westbound	2.27	B	2.27	B
47th Street	SR-94 & Market Street	Northbound	1.81	A	2.20	B
	Market Street & Imperial Avenue		2.76	C		
	Imperial Avenue & Logan Avenue		1.62	A		
	Logan Avenue & I-805 NB Ramps		2.45	B		
	I-805 NB Ramps & I-805 SB Ramps		2.34	B		
	I-805 SB Ramps & Division Street		2.47	B		
	SR-94 & Market Street	Southbound	3.80	D	3.50	C
	Market Street & Imperial Avenue		4.50	E		
	Imperial Avenue & Logan Avenue		3.48	C		
	Logan Avenue & I-805 NB Ramps		2.52	B		
	I-805 NB Ramps & I-805 SB Ramps		2.40	B		
	I-805 SB Ramps & Division Street		2.97	C		

TABLE 5.11B
PREFERRED PLAN MULTI-MODAL ANALYSIS – BICYCLE LOS
PM PEAK HOUR

Roadway	Segment	Direction	Segment By Direction		Facility by Direction[1]	
			Score	LOS	Score	LOS
Euclid Avenue	SR-94 & Market Street	Northbound	3.21	C	2.87	C
	Market Street & Imperial Avenue		2.69	B		
	Imperial Avenue & Logan Avenue		2.74	B		
	Logan Avenue & Division Street		2.84	C		
	SR-94 & Market Street	Southbound	3.40	C	3.81	D
	Market Street & Imperial Avenue		2.84	C		
	Imperial Avenue & Logan Avenue		4.59	E		
	Logan Avenue & Division Street		4.16	D		

Source: Chen Ryan Associates, February 2015

Notes:
Bold letter indicates segment LOS E or F.
The bicycle LOS is calculated based on the NCHRP 3-70 methodology.
[1]The facility score is calculated as the weighted average of each individual segment taking in consideration the length of each segment.

As shown in the tables, all of the urban street facilities within the Encanto community are expected to operate at LOS D or better for cyclists during the AM and PM peak hours, with two (2) exceptions:

- 47th Street, southbound between Market Street and Imperial Avenue – LOS E during the both AM and PM peak hour; and
- Euclid Avenue, southbound between Imperial Avenue and Logan Avenue – LOS E during both the AM and PM peak hour.

The bicycle improvements proposed under the Preferred Plan alternative, are projected to improve or maintain the bicycle CSLOS along the majority of the urban corridors within the Encanto community, when compared to the current levels of operation.

Figures 5-14a and **5-14b** display bicycle LOS for the AM and PM peak periods, respectively, within the Encanto Community Planning Area.

ENCANTO COMMUNITY PLAN UPDATE

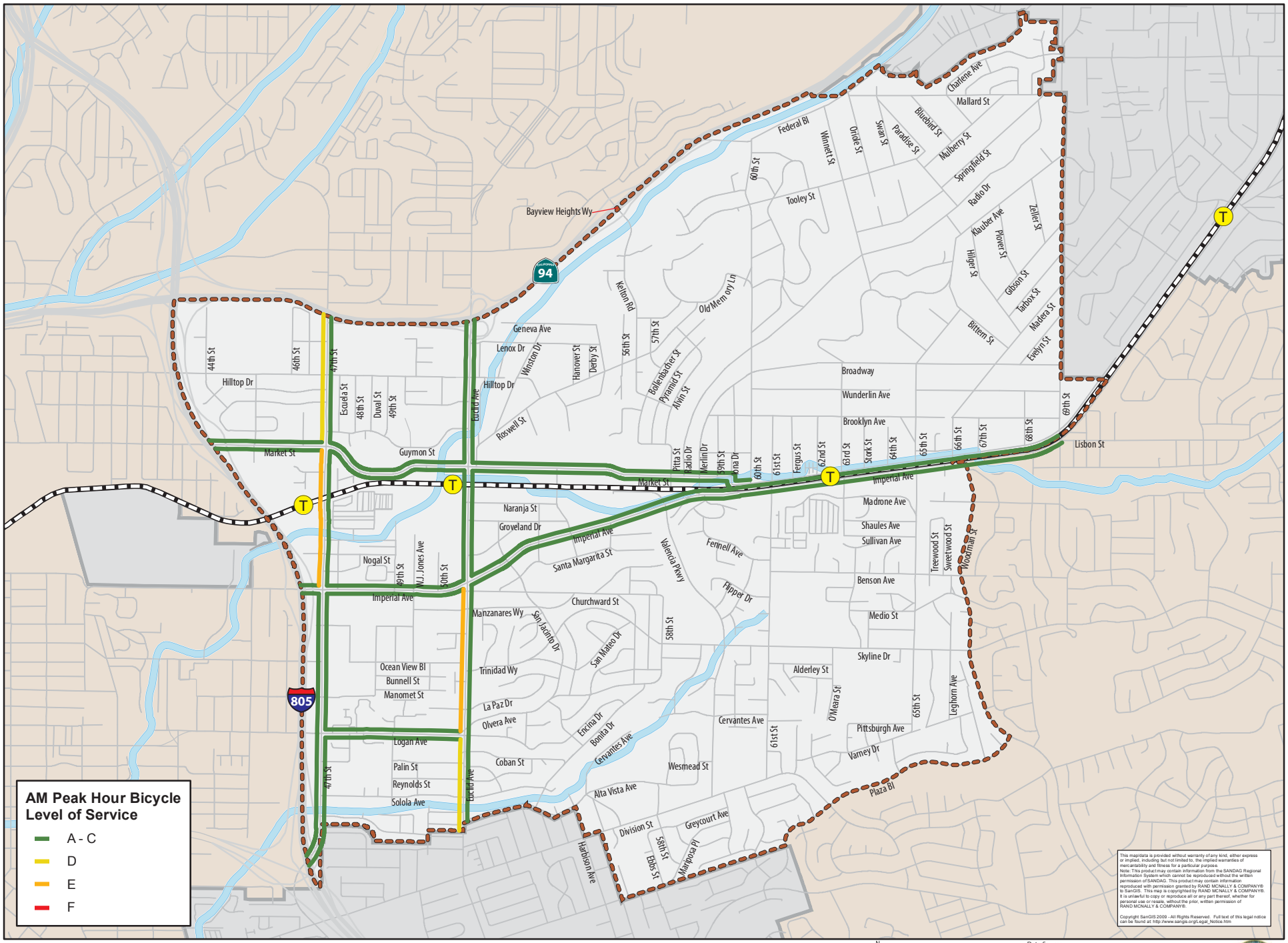


Figure 5-14a: Preferred Plan AM Peak Period Bicycle Level of Service

Data Source:
City of San Diego, 2012; SanGIS Regional Data Warehouse, 2012;
Dyett & Bhatia, 2012

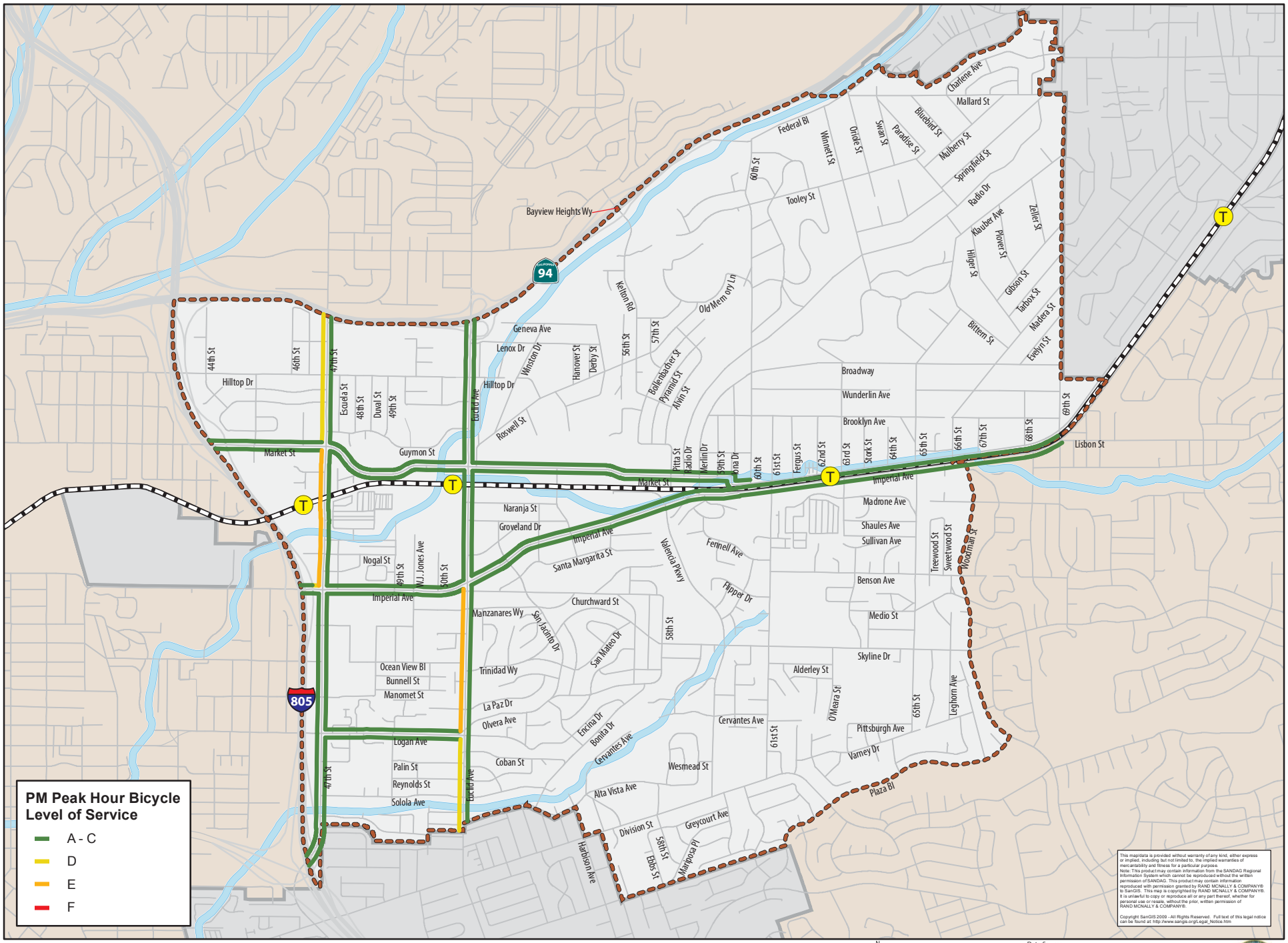


Figure 5-14b: Preferred Plan PM Peak Period Bicycle Level of Service

5.7 Parking Management

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

- An estimated 50 on-street parking spaces on the eastside of 47th Street, between Market Street and Nogal Street. These spaces are proposed to be removed in order to provide the right-of-way for new Class II Bike Lanes along 47th Street. However, the on-street parking spaces on these segments of 47th Street are not heavily utilized (58% occupancy or 29 occupied spaces during the peak period). The parking demand for the removed spaces should be able to be absorbed by the available capacity on adjacent side streets (Nogal Street – east of 47th Street and Hartley Street – west of 47th Street) which has a combine 22% occupancy rate.

- An estimated 56 on-street parking spaces on Market Street, between I-805 and 47th Street. These spaces are proposed to be removed in order to provide the right-of-way for a new regional Class I Cycle Track facility on Market Street. However, the on-street parking spaces on these segments of Market Street are not heavily utilized (60% occupancy or 34 occupied spaces during the peak period). The parking demand for the removed spaces should be able to be absorbed by the available capacity on adjacent side streets (45th Street – north of Market Street and G Street – east and west of 45th Street) which has a combined 25% occupancy rate during the peak period.

- An estimated 58 on-street parking spaces on Woodman Street, between Skyline Drive and Plaza Boulevard. These spaces are proposed to be removed in order to provide the right-of-way for a new Buffered Bike lane facility on Woodman Street. However, the on-street parking spaces on these segments of Woodman Street are not utilized (0% occupancy or 0 occupied spaces during the peak period).

- Additional on-street parking spaces will need to be removed on either side of driveways or other access points (30 feet to allow for adequate visibility) along roadways in which the proposed cycle tracks are implemented (Market Street, 47th Street and Euclid Avenue). Based on national research, this typically results in the loss of 15-25% of on-street parking spaces along roadway corridors with cycle tracks. Within Encanto, 47th Street between Imperial Avenue and Logan Avenue currently has an occupancy rate between 70% and 84% during most hours of the day, so there is potential for this segment to be impacted by a loss of parking. However, all other segments in which on-street parking will be available and a cycle track is proposed typically have a parking occupancy rate under 50%.

Appendices

Appendix A	Peak Hour Pedestrian Counts
Appendix B	Peak Hour Pedestrian CSLOS Output – Existing Conditions
Appendix C	Peak Hour Transit CSLOS Output – Existing Conditions
Appendix D	Roadway Average Daily Traffic Counts
Appendix E	Peak Hour Arterial Analysis Worksheets – Existing Conditions
Appendix F	Peak Period Intersection Turning Movement Counts
Appendix G	Peak Hour Intersection LOS Analysis Worksheets – Existing Conditions
Appendix H	Caltrans Freeway Traffic Volumes (2011)
Appendix I	Caltrans Ramp Meter Rates
Appendix J	Peak Hour Bicycle Counts
Appendix K	Peak Hour Bicycle CSLOS Output – Existing Conditions
Appendix L	Existing Parking Occupancy
Appendix M	SANDAG Series 12 Model Outputs, Documentation and VMT Analysis
Appendix N	Other Master Plan Studies – Multi-Modal Activity Growth
Appendix O	Additional Improvements List
Appendix P	Peak Hour Pedestrian CSLOS Output – Preferred Plan
Appendix Q	Peak Hour Transit CSLOS Output – Preferred Plan
Appendix R	Peak Hour Arterial Analysis Worksheets - Preferred Plan
Appendix S	Traffic Signal Warrants – Preferred Plan
Appendix T	Peak Hour Intersection LOS Analysis Worksheets – Preferred Plan
Appendix U	SANDAG Bicycle Facility Categories
Appendix V	Peak Hour Bicycle CSLOS Output – Preferred Plan