

Appendix B

B

Existing Conditions Report



ACTIVE

TRANSPORTATION PLAN



CITY OF CHULA VISTA®



EXISTING
CONDITIONS
REPORT

City of Chula Vista Active Transportation Plan

Existing Conditions Report

May 2019

Prepared For:

City of Chula Vista – Engineering Department
276 Fourth Avenue
Chula Vista, CA 91910

Submitted By:

Chen Ryan Associates, Inc.
3900 Fifth Avenue, Suite 310
San Diego, CA 92103

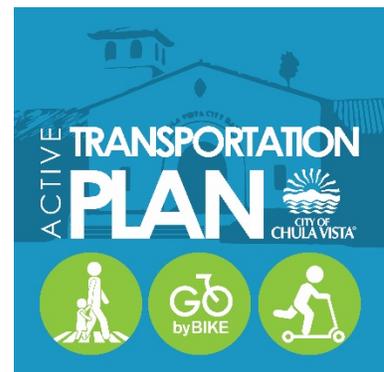


Table of Contents

1.0	Introduction.....	1
1.1	Purpose and Background.....	1
1.2	Organization of the Report.....	2
1.3	Legislative Framework.....	2
1.4	Document & Policy Review.....	3
2.0	Community Profile.....	4
2.1	Overview.....	4
2.2	Demographic Summary.....	9
2.3	Commuter Profile.....	16
2.4	Active Transportation Demand.....	23
3.0	People on Foot.....	28
3.1	Network Summary.....	28
3.2	Pedestrian Environment Quality Evaluation (PEQE).....	28
3.3	Pedestrian Safety.....	36
4.0	People on Bicycles.....	44
4.1	Network Connectivity.....	46
4.2	Level of Traffic Stress (LTS).....	48
4.3	Bicycle Collision Analysis.....	54
5.0	People on Transit.....	62
5.1	Existing Service.....	62
5.2	Transit Ridership.....	62
6.0	Opportunities and Constraints.....	66

Appendix A – Document Review

List of Figures

Figure 2.1	Chula Vista within the Region.....	5
Figure 2.2	Existing Land Uses.....	6
Figure 2.3	Existing Roadway Geometry.....	7
Figure 2.4	Posted Speed Limits.....	8
Figure 2.5	Population Density by Census Block Group.....	10
Figure 2.6	Year 2015 Employment Density by Census Block Group.....	11
Figure 2.7	Population by Age Group – City of Chula Vista and San Diego County (2013 – 2017).....	9
Figure 2.8	Youth Population by Census Block Group.....	13
Figure 2.9	Senior Population by Census Block Group.....	14
Figure 2.10	Zero Vehicle Households by Census Block Group.....	15
Figure 2.11	Where Chula Vista Residents Work (2015).....	17
Figure 2.12	Where Employees in Chula Vista Live (2015).....	18
Figure 2.13	Percent of Commuters Who Walk to Work by Census Block Group.....	20
Figure 2.14	Percent of Commuters Who Bicycle to Work by Census Block Group.....	21
Figure 2.15	Percent of Commuters Who Take Transit by Census Block Group.....	22
Figure 2.16	Travel Time to Work Chula Vista and San Diego County (2013 – 2017).....	19
Figure 2.17	Active Transportation Trip Generator Submodel.....	25
Figure 2.18	Active Transportation Trip Attractor Submodel.....	26
Figure 2.19	Active Transportation Propensity Model.....	27

Figure 3.1	Streets with No Sidewalk	29
Figure 3.2	Missing Curb Ramp Locations and Non-ADA Compliant Curb Ramps	30
Figure 3.3	Multi-Use Connections	31
Figure 3.4	Pedestrian Environmental Quality Evaluation (PEQE) Study Area	34
Figure 3.5	Pedestrian Environmental Quality Evaluation (PEQE) Results	35
Figure 3.6	Pedestrian-Involved Collisions (2013 – 2017)	37
Figure 3.7	Pedestrian Collision Severity by Roadway Location (2013 – 2017)	38
Figure 3.8	Pedestrian Collisions by Age Group (2013 – 2017)	42
Figure 3.9	Youth and Senior Pedestrian-Involved Collisions (2013 – 2017)	43
Figure 4.1	Existing Bicycle Facilities	47
Figure 4.2	Bicycle Level of Traffic Stress	50
Figure 4.3	Destinations within Three Miles by Populated Census Blocks	52
Figure 4.4	Low Stress Connections to Key Destinations	53
Figure 4.5	Bicycle-Involved Collisions (2013 – 2017)	55
Figure 4.6	Bicycle Collision Severity by Roadway Location (2013 – 2017)	56
Figure 4.7	Bicycle Collisions by Age (January 2013 – December 2017)	59
Figure 4.8	Youth and Senior Bicycle-Involved Collisions (2013 – 2017)	60
Figure 5.1	Existing Public Transportation Routes	63
Figure 5.2	Average Daily Boardings and Alightings by Transit Stop (January 2018)	64
Figure 5.3	Pedestrian and Bicycle-Involved Collisions within 500 Feet of Transit Stops (2013 – 2017) ...	65
Figure 6.1	Active Transportation Opportunities and Constraints	68

List of Tables

Table 2.1	Vehicle Availability by Household (2013 – 2017)	12
Table 2.2	Means of Transportation to Work (2013 – 2017)	16
Table 2.3	Active Transportation Trip Generator Submodel Inputs	23
Table 2.4	Attractor Submodel Inputs	24
Table 3.1	Pedestrian Environment Quality Ranking System	32
Table 3.2	Sidewalk Inventory by PEQE Rating	33
Table 3.3	Intersection Crossing Legs by PEQE Rating	33
Table 3.4	Mid-Block Crossings by PEQE Rating	36
Table 3.5	Pedestrian Collision Rate per Resident Comparison (OTS 2016 Data)	38
Table 3.6	High Pedestrian Collision Locations (2013 – 2017)	39
Table 3.7	Intersections with Multiple Severe and/or Fatal Pedestrian Collisions (2013 – 2017)	40
Table 3.8	Pedestrian Collision Violation Code by Injury Severity (2013 – 2017)	41
Table 3.9	Youth and Senior Pedestrian Collision by Violation Code (2013 – 2017)	42
Table 4.1	Bicycle Facility Design Classification	44
Table 4.2	The Four Types of Cyclists	45
Table 4.3	Bicycle Facility Classifications and Existing Network Mileage	48
Table 4.4	Level of Traffic Stress Classifications and Descriptions	49
Table 4.5	Bicycle Collision Rate per Resident Comparison – OTS 2016 Data	54
Table 4.6	Intersections with 3 or More Bicycle Collisions (2013 – 2017)	57
Table 4.7	Bicycle Collision Type (2013 – 2017)	57
Table 4.8	Bicycle Collision Violation Code by Injury Severity (2013 – 2017)	58
Table 4.9	Party-at-Fault by Roadway Location for Youth and Senior Bicycle Collisions (2013 – 2017) ...	61
Table 4.10	Youth and Senior Bicycle Collisions by Violation Code	61
Table 5.1	Transit Stops by Name and Daily Boardings and Alightings (January 2018)	62

1.0 Introduction

The Chula Vista Active Transportation Plan (ATP) is intended to help guide future pedestrian and bicycle investments within the City, and propose approaches to accommodate emerging technologies such as scooters and electric bike share. The ATP will identify ways to improve connectivity and safety, and foster innovation through high quality facilities.

This Existing Conditions Report is one of the initial steps in the planning process. It serves to document the current state of active transportation within Chula Vista by examining the physical infrastructure, the quality of walking and biking facilities, user safety, and the potential for demand.

The existing conditions analyses will be supplemented with a series of public outreach activities that serve to learn about community perceived issues and opportunities related to walking and riding a bike. The overall recommendations for the ATP will be informed by this Existing Conditions Report, input from the public, and anticipated growth and travel patterns.

1.1 Purpose and Background

The City was recently successful in pursuing Active Transportation Grant Program funding from the San Diego Association of Governments (SANDAG) for the development of the ATP. This represents the City's inaugural ATP, building upon recommendations set forth in numerous plans proceeding this effort. Chula Vista has both an adopted Bikeway Master Plan (2011) and a Pedestrian Master Plan (2010), the ATP will update and unify both of these plans into one cohesive document.

Chula Vista has worked hard to create an inviting place for people walking and bicycling as forms of transportation and recreation. The City is a certified bronze-level "Bicycle-Friendly Community" by the American League of Cyclists. It has approximately 147 miles of designated bicycle facilities, including 8.6 miles of Class I multi-use paths providing physically separated connections for both pedestrians and bicyclists along the San Diego Bayshore Bikeway, along the northern City limit and through eastern Chula Vista. An additional 0.75 miles of Class I facilities is planned to be completed in 2020. There are approximately 78 miles of Class II bicycle lanes, with 3.9 miles to be completed along Broadway in the fall of 2019. There are currently over 60 miles of Class III bicycle routes.

Additionally, the City of Chula Vista has incorporated walkability as a key design feature in the historic downtown, in established neighborhoods, as well as in new communities. The City also recognizes the unique needs of the growing senior population, and has conducted planning efforts specifically focusing on this group, including the Seniors, Sidewalks and the Centennial (2012).

The City's efforts have been historically supported by a very engaged community and network of organizations that seek to improve mobility for all roadway users. The ATP will build on these successes, research and partnerships, by leveraging adopted recommendations and existing facilities to create a roadmap for improved active transportation safety and mobility.

1.2 Organization of the Report

Following this introductory chapter, the remainder of this Existing Conditions Report is organized into the following chapters:

- *Chapter 2 Community Profile* gives an overview of the existing land uses and roadway network, Chula Vista’s demographics and the commuter characteristics of Chula Vista residents and employees.
- *Chapter 3 People on Foot* summarizes the existing pedestrian environment related to infrastructure and safety.
- *Chapter 4 People on Bicycles* summarizes the existing bicycle environment related to infrastructure and safety.
- *Chapter 5 People on Transit* identifies the existing public transportation networks, and in particular looks at the first-last mile access to transit that walking and biking can provide.
- *Chapter 6 Opportunities and Constraints* summarizes the key opportunities and constraints identified throughout the document.

1.3 Legislative Framework

Several key planning efforts and legislative actions have redefined the way community transportation planning is carried out, including Assembly Bill 1358 – The Complete Streets Act, Senate Bill 375 – The Sustainable Communities and Climate Protection Act, and Assembly Bill 32 – The Global Warming Solutions Act. A unifying theme among these documents is to achieve a more balanced, multimodal transportation system that increases travel mode options for all users, with an emphasis on active transportation and public transportation.

Assembly Bill 32 *The Global Warming Solutions Act* was adopted in 2006, which codified California’s pursuit of a low-carbon, sustainable future. The Bill enacted a mandate of reducing California’s greenhouse gas emissions to year 1990 levels by 2020, which would constitute a 15 percent overall reduction relative to baseline conditions.

In 2008, Senate Bill 375 was adopted, requiring California Metropolitan Planning Organizations (MPOs) to formulate a “sustainable communities strategy” (SCS) as part of their regional transportation plans, specifically identifying how the region will achieve targeted reductions in greenhouse gas emissions (GHG) from automobiles and light trucks.

Assembly Bill 1358 *The Complete Streets Act* went into effect in California on January 1, 2011, requiring the legislative body of a city or a county to plan for a balanced, multimodal transportation network that meets the needs of all roadway users, 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.

A statewide Active Transportation Program was created in 2013 by Senate Bill 99 and Assembly Bill 101 to encourage the increased use of active transportation modes. Funds from this program are competitively awarded through statewide grant cycle periods led by Caltrans.

On a regional level, TransNet, the half-cent sales tax, has been providing funding for local transportation projects, including two competitive grant programs that support local efforts to increase walking, biking, and transit use throughout the region: the Smart Growth Incentive Program (SGIP) and Active Transportation Grant Program (ATGP). This ATP is funded through Cycle 3 of the ATGP.

1.4 Document & Policy Review

This section summarizes the intent of the document and policy review and identifies the documents included. The full document review can be found in **Appendix A**. Reviewing adopted documents and guiding policies is one of the initial steps in the planning process, intended to provide a summary of previous efforts related to active transportation within the City. The ATP is intended to be complimentary to many of the foregoing planning efforts by incorporating the recommendations and aligning with the goals and policies previously set forth.

The review is informative to the understanding of existing conditions, as several planning efforts identify needs/issues related to active transportation. The review will also be heavily utilized in the development of infrastructural recommendations, helping to ensure feasibility and consistency with adopted guiding documents.

The following documents are included in the review:

- Bicycle Friendly Community Report Card (2018)
- Pedestrian Connectivity Plan (2018)
- Active CIP Projects List (2018)
- Parks & Recreation Master Plan Update (2018)
- F Street Promenade Streetscape Master Plan (2018)
- Chula Vista Complete Streets Safety Assessment (2017)
- Chula Vista Elementary School District Safe Routes to School Master Plan (2017)
- Otay Valley Regional Park Concept Plan Update (2017)
- Bike Lanes on Broadway Feasibility Study (2016)
- Main Street Streetscape Master Plan (2016)
- SANDAG's 2050 Revenue Constrained Regional Bike Network (2015)
- Seniors, Sidewalks and the Centennial (2012)
- Bikeway Master Plan (2011)
- I-805 Managed Lanes South FEIR EA (2011)
- Pedestrian Master Plan (2010)
- Urban Core Specific Plan (2007)
- General Plan Land Use and Transportation Element (2005)
- Greenbelt Master Plan (2003)

2.0 Community Profile

This chapter provides an overview of the City of Chula Vista, including its locational setting in the region, built environment characteristics, and demographics and commuter information. The chapter concludes with a description of existing active transportation demand.

2.1 Overview

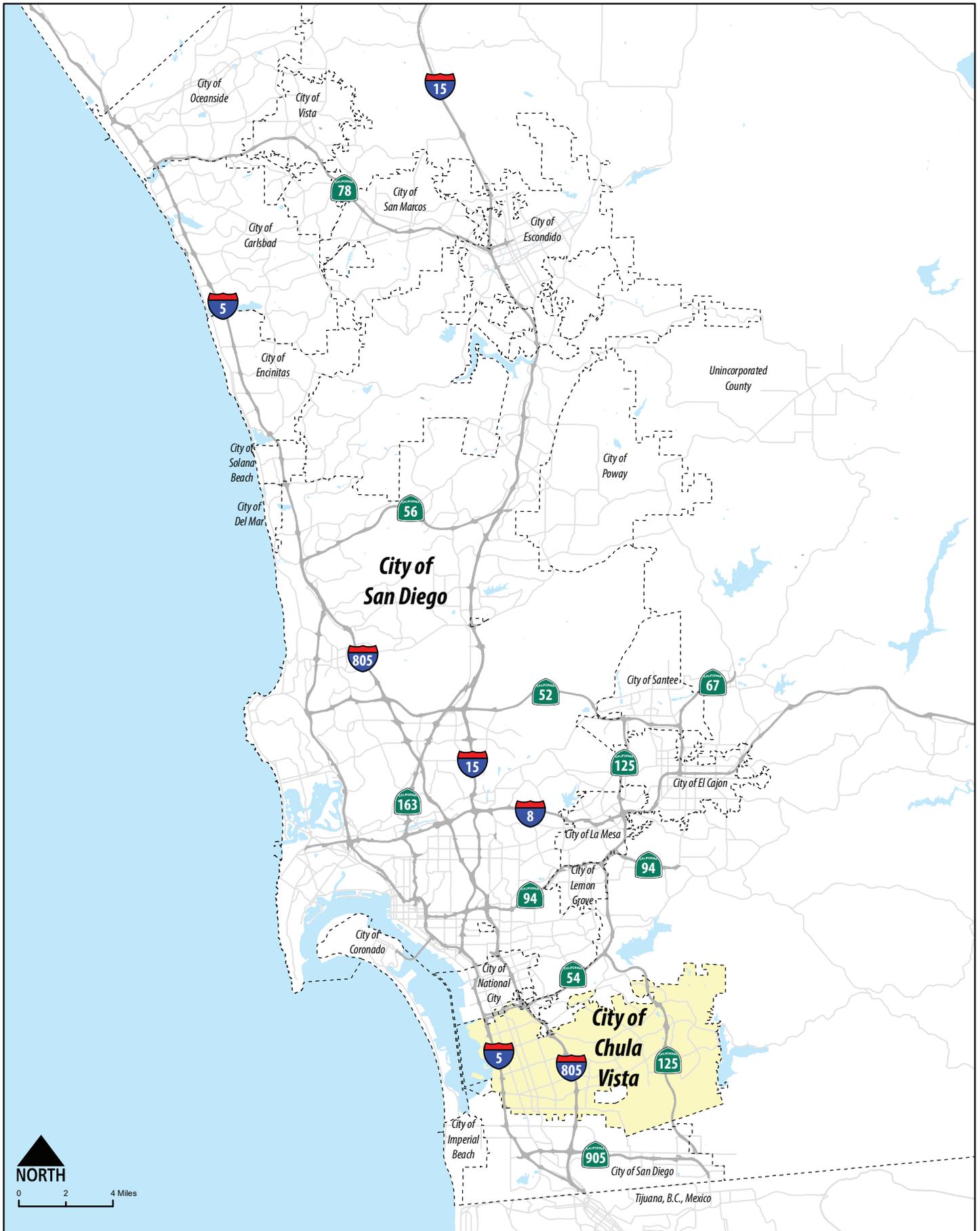
The City of Chula Vista is located in western San Diego County in Southern California, approximately 7.5 miles south of Downtown San Diego and approximately 3.5 miles north of the International Border with Mexico. Chula Vista is bordered to the north by National City, to the east by unincorporated San Diego County, to the south by the City of San Diego Otay Mesa-Nestor community, and to the west by the San Diego Bay. Interstate 5, Interstate 805 and State Route 125 traverse the City in a north-south direction, a section of State Route 54 traverses the City east-west on the north end of Chula Vista. Chula Vista's location within the region can be seen in **Figure 2.1**.

There are several factors which make Chula Vista an ideal location for walking and riding bicycles, including a temperate Southern California climate, a strong street grid and relatively flat terrain for the portion of the City west of Interstate 805, nearly 150 miles of dedicated bicycle facilities and a strong commitment to active transportation from the City.

The existing land uses are displayed in **Figure 2.2**. Like most cities in the region, Chula Vista is largely comprised of residential land uses, with commercial and industrial related uses concentrated amongst several corridors, such as Broadway, Third Avenue, H Street, Eastlake Parkway, and Main Street. Open space, parks, and recreational land uses are prominent east of Interstate 805 and along the San Diego Bayfront, with additional established park sites located throughout the western part of the City.

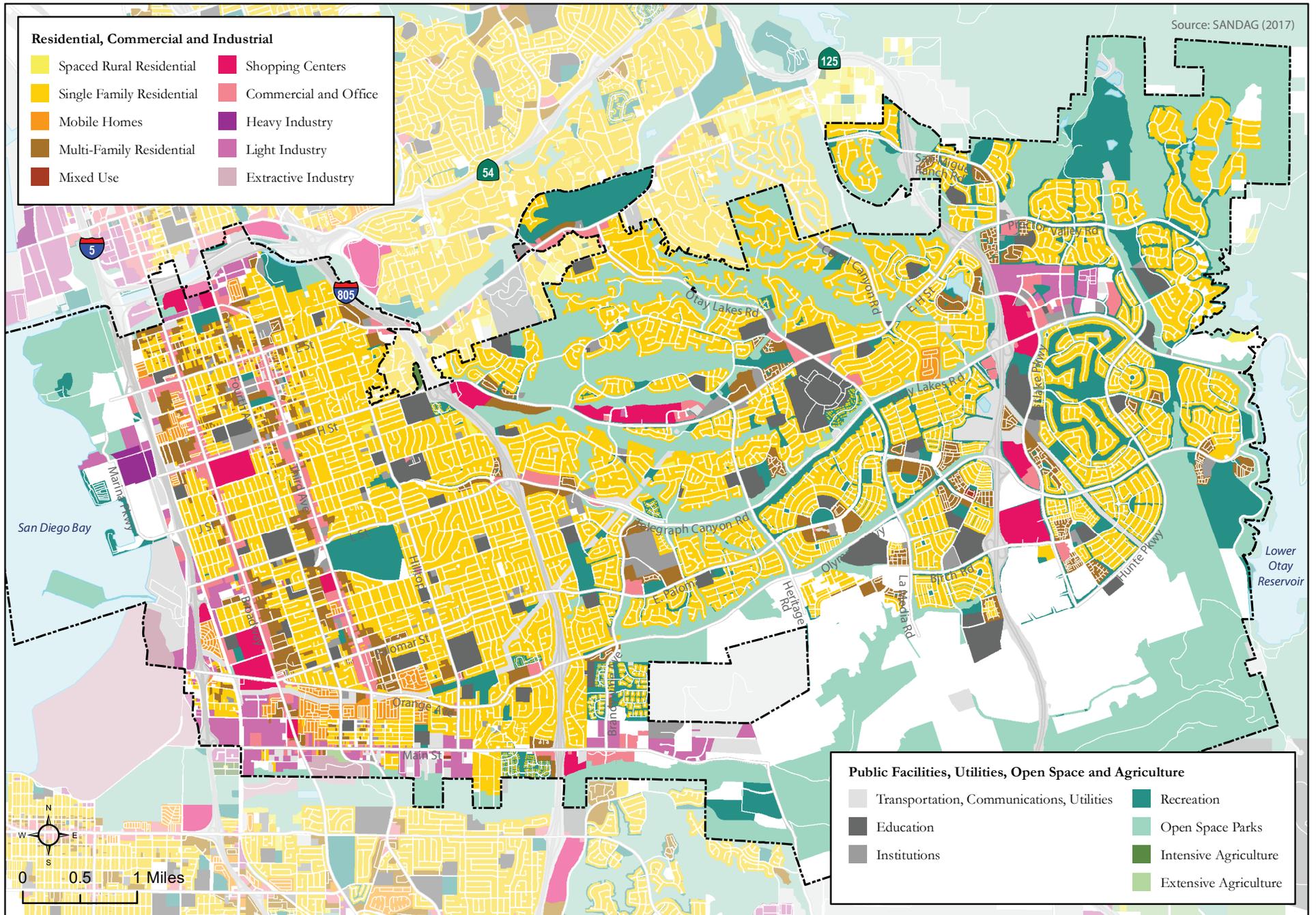
Figure 2.3 displays the roadway network, identifying number of lanes and median presence. In all, the City has more than 475 miles of roadways. The road network in western Chula Vista is characterized by a strong street grid, maximizing connections for all transportation modes. This pattern is common in older, more established communities. In the eastern portion of Chula Vista, the network is more circuitous, however, many bicycle and pedestrian connections have been incorporated into the master planned subdivisions, removing the barriers traditionally associated with suburban development. These connections are further discussed in Chapter 3.

Figure 2.4 identifies posted speed limits. Many of the roadways comprising the street grid within the western part of the City are 30 and 35 MPH, which can be comfortable for cyclists and pedestrians if traffic volumes are low and dedicated facilities are provided. The eastern area includes many 4-lane arterials with speeds of 45 and 50 MPH. These arterials are the backbone of the roadway network in the eastern part of the City, and can be the only option to reach destinations.



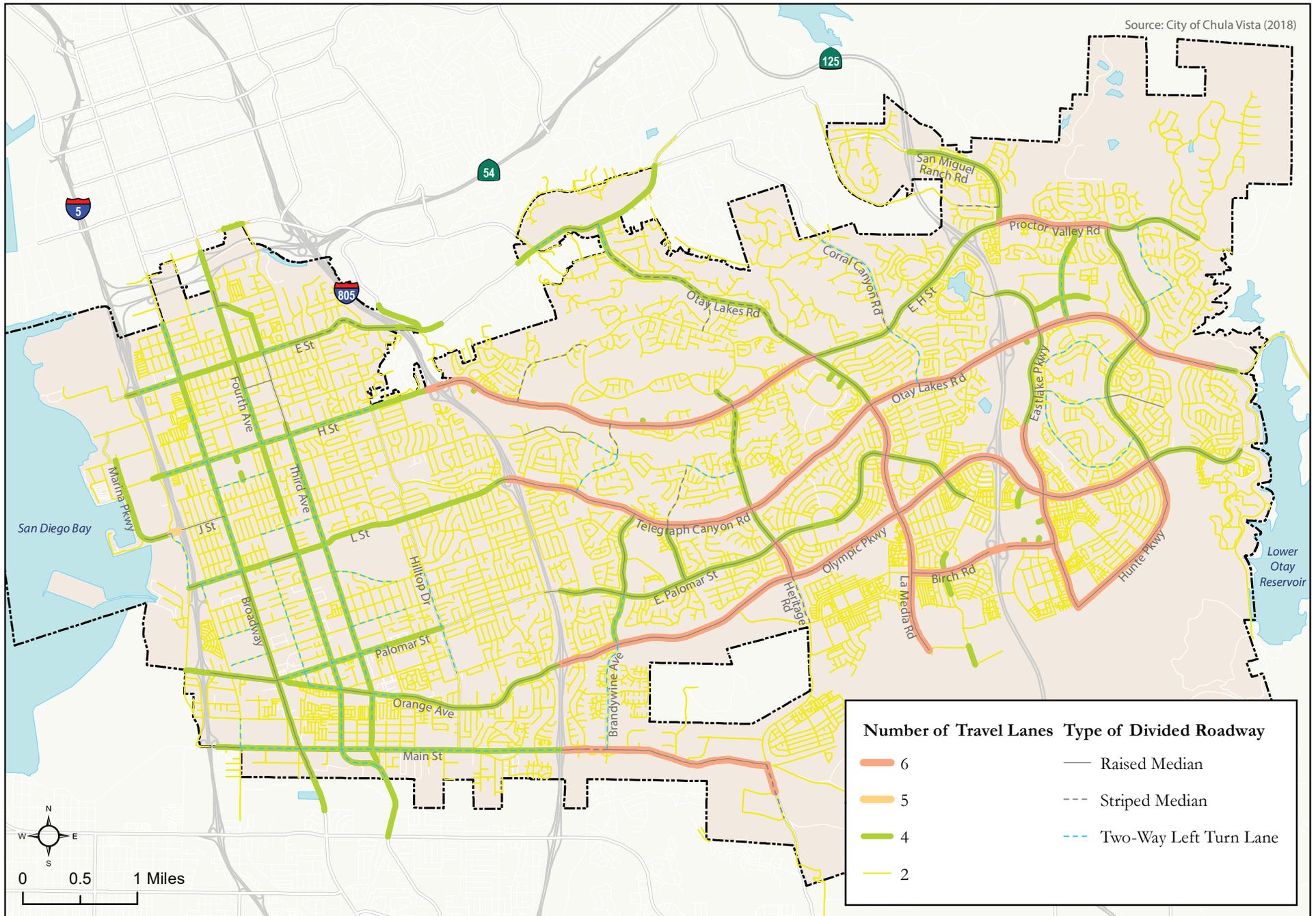
Chula Vista Active Transportation Plan

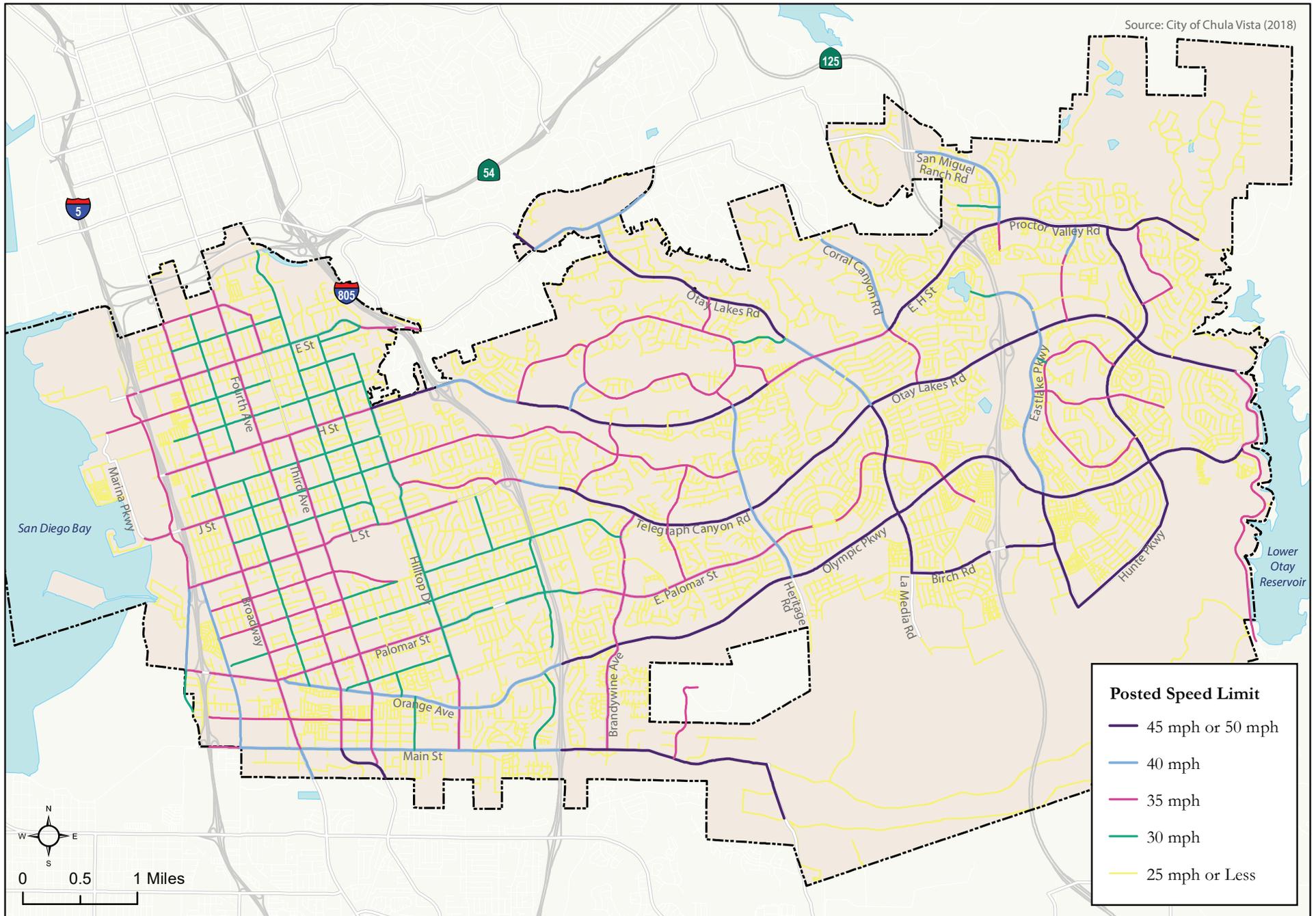
*Figure 2.1
Chula Vista within the Region*



Chula Vista Active Transportation Plan

Figure 2.2
Existing Land Uses





2.2 Demographic Summary

Demographic information is used to understand the people who live and work in Chula Vista today. Population and employment density, age groups, and vehicle ownership are described. Data was obtained from the US Census 2013-2017 American Community Survey 5-Year Estimates.

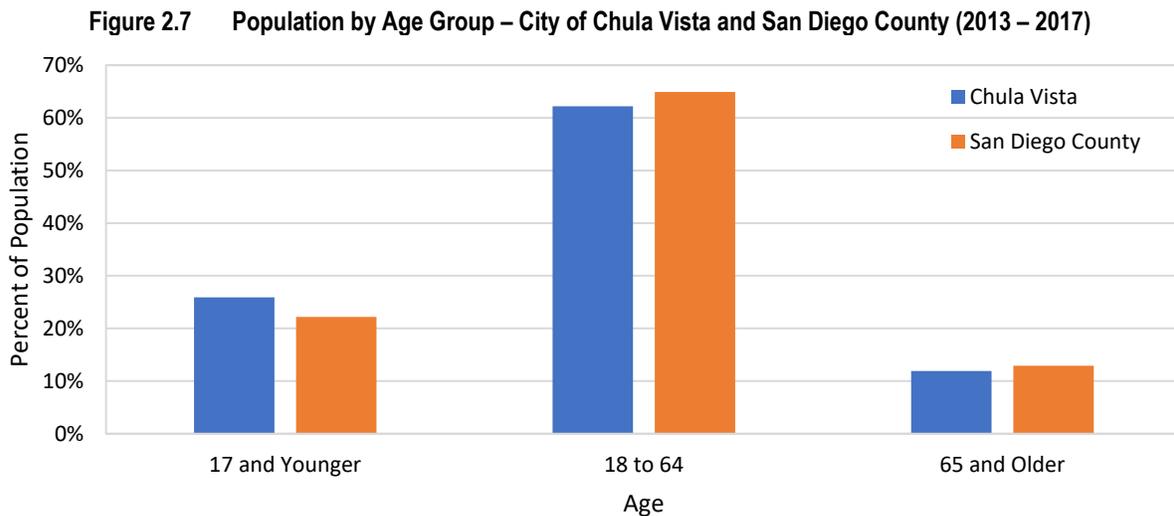
Population and Employment Density

Residential and employment Concentrations, or locations where people live and work, are important considerations in the planning process. Walking and bicycling trips frequently start from – or are generated from – residences. These trips commonly end at places of employment, or destinations such as parks, schools, retail centers, and civic uses. Determining where higher concentrations of these land uses are can help build an understanding of travel behavior.

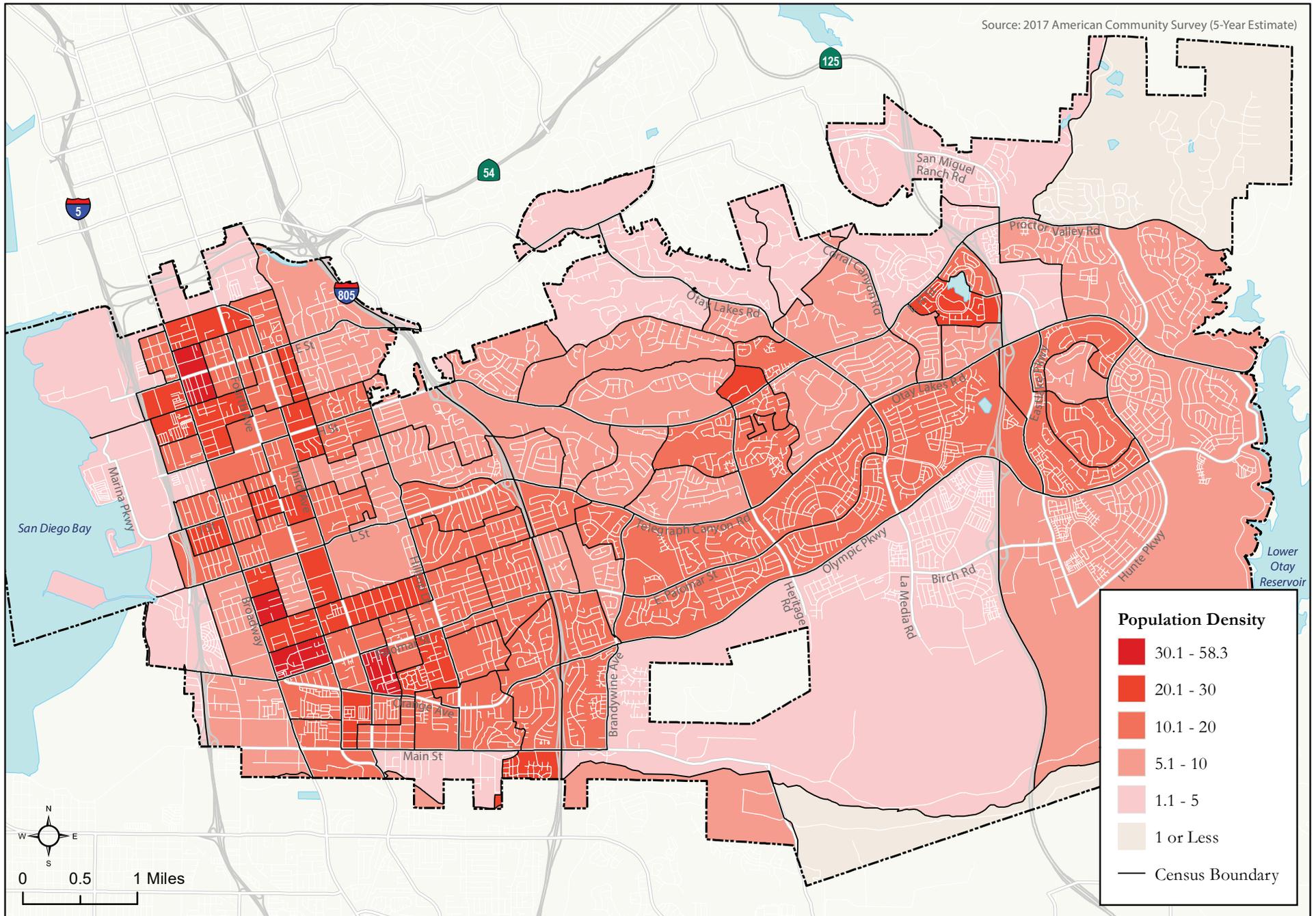
Figure 2.5 displays residential population density by Census Block Group within Chula Vista. There are several distinct clusters of higher density, predominately located in the western portion of the City between Interstate 5 and 805, as well as the area between Telegraph Canyon Road and Olympic Parkway. Figure 2.6 presents employment density by Census Block Group. As shown, the City’s main clusters of employment density are in close proximity to the areas of higher residential population density. The mixture of these higher density land uses give potential for conversion of vehicular trips to active transportation trips for commute purposes with the provision of supporting infrastructure.

Youth and Senior Populations

Youth and senior populations have more limited mobility options than the general adult population, making them more vulnerable and reliant on alternative transportation modes and infrastructure, and requiring additional consideration when planning transportation networks. Figure 2.7 summarizes the percent of youth and senior populations for Chula Vista and San Diego County. The 17 and younger populations show the largest difference, 4% greater in Chula Vista.



Source: US Census, 2013-2017 American Community Survey 5-Year Estimate (2019)



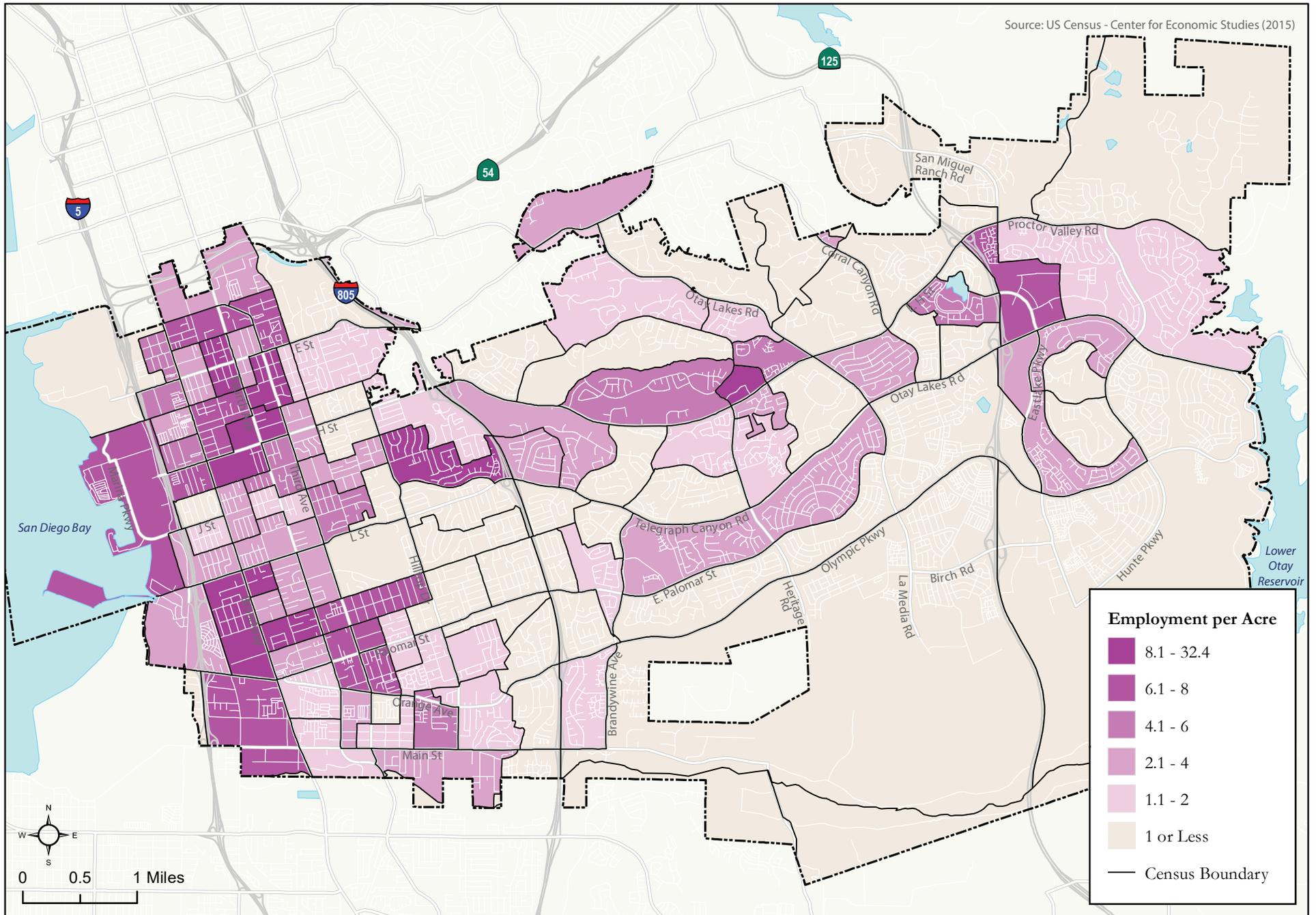


Figure 2.8 shows the percentage of Chula Vista youth populations by Census Block Group. Pockets of higher concentration are dispersed throughout the City, although it is generally greater east of State Route 125, near Bonita Vista High School, and between Telegraph Canyon Road and Olympic Parkway. Additional concentrations are located in the southwestern portion of the City and areas west of Third Avenue.

Figure 2.9 presents the distribution of the senior population within the City of Chula Vista by Census Block Group. As shown, Census Block Groups with higher percentages of senior populations are scattered throughout the City, predominately north of Telegraph Canyon Road/Otay Lakes Road. There are several Census Block Groups with senior populations greater than 20% in western Chula Vista where a number of civic facilities are located, as well as the City’s Senior Center.

Zero Household Vehicles

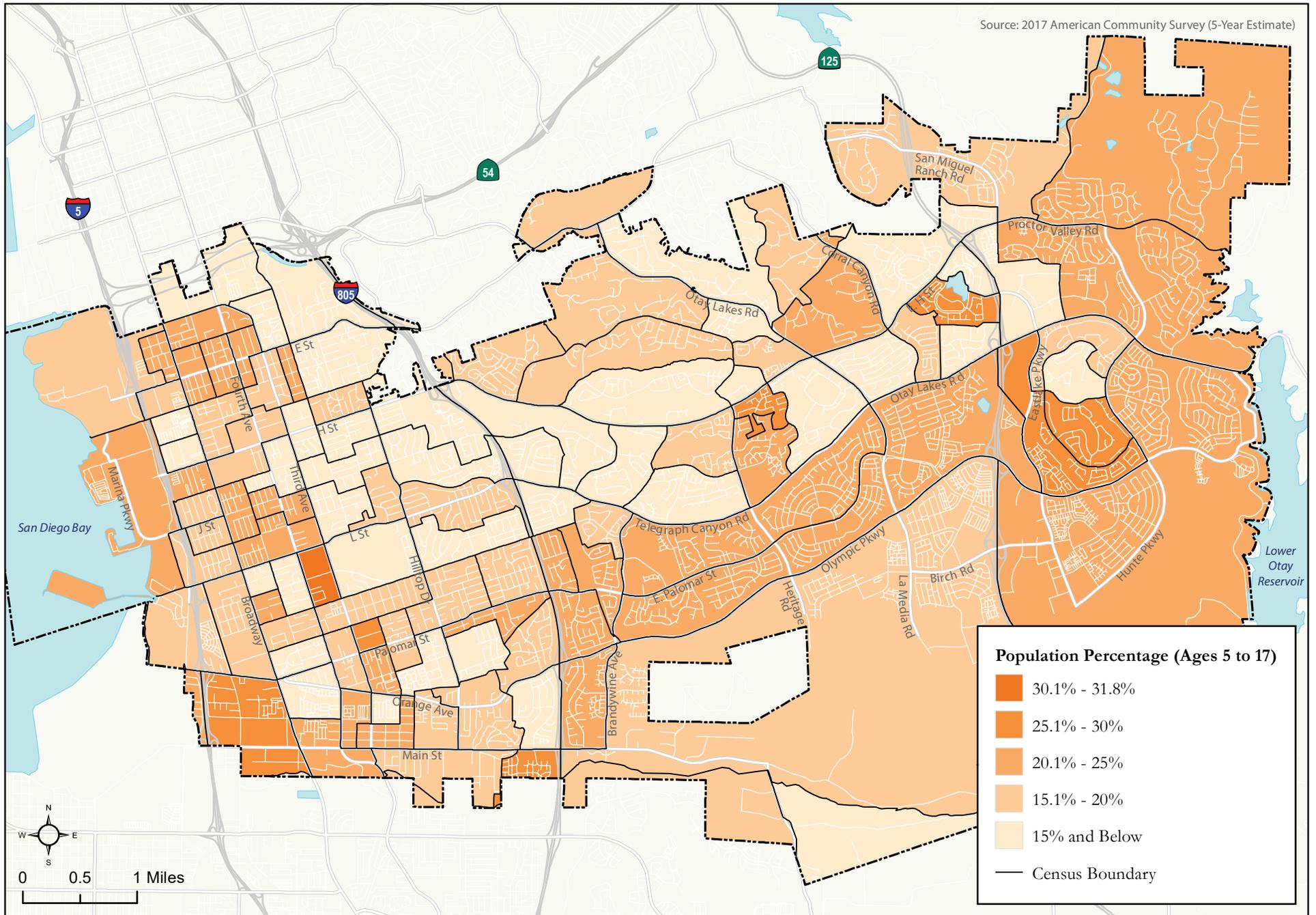
A well-considered multimodal mobility network serves the needs of all users, regardless of age, ability and socio-economic class. An indicator of social equity is access to vehicles. As can be seen in **Table 2.1**, 5.3% of households in Chula Vista are zero-vehicle households. This approximately equates to slightly more than 4,000 households.

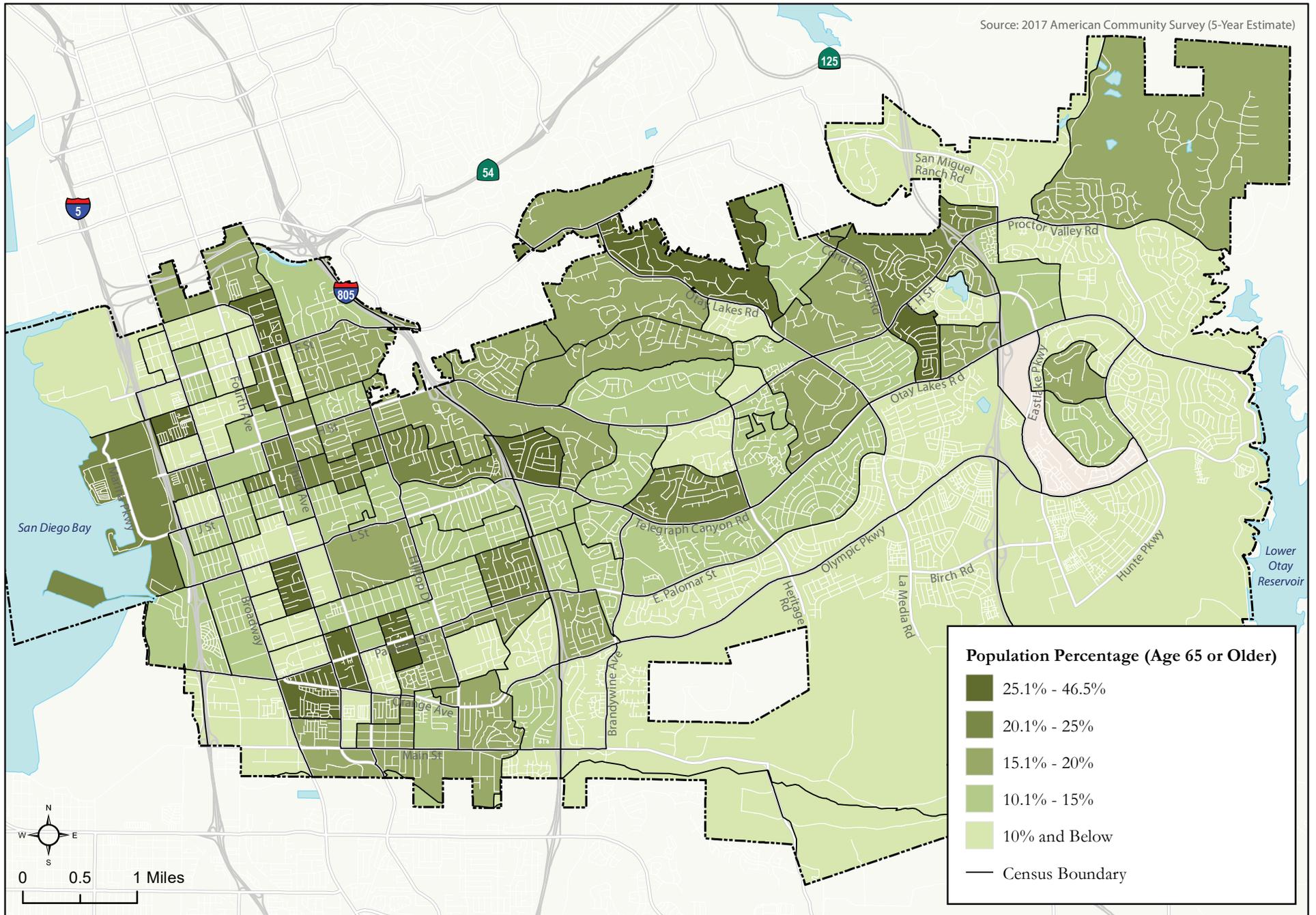
Table 2.1 Vehicle Availability by Household (2013 – 2017)

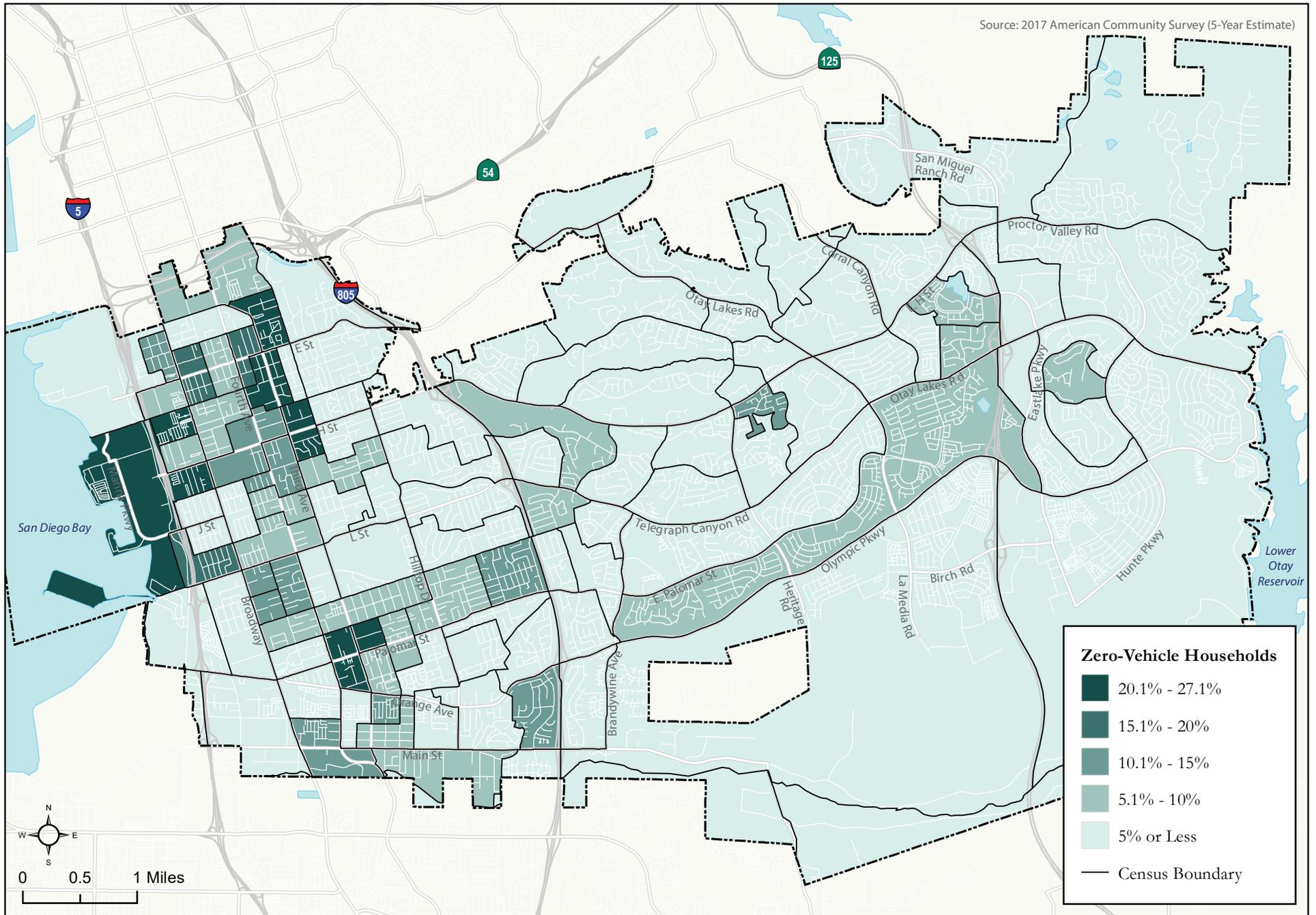
Vehicles Available	Households	Percent of Total
No Vehicles Available	4,167	5.3%
1 Vehicle Available	20,717	26.4%
2 Vehicles Available	32,885	41.9%
3 or More Vehicles Available	20,707	26.4%
Total Occupied Household Units	78,476	100.0%

Source: US Census, 2013-2017 American Community Survey 5-Year Estimate (2019)

As shown in **Figure 2.10**, there are a number of Census Block Groups west of Interstate 805 where more than 20% of households are without a vehicle, as well as several census block groups with 15.1% - 20% of zero-vehicle households. Several of these high zero-vehicle household Census Block Groups align with those exhibiting higher percentages of seniors (Figure 2.9). These areas may indicate greater population concentrations that are more reliant on transit and active transportation modes.







2.3 Commuter Profile

Examining the existing commuter patterns of residents and employees provides a deeper understanding of how people travel, and in turn, will inform the level of active transportation demand or the latent demand. **Figure 2.11** depicts work location density of Chula Vista residents, drawing from year 2015 US Census data. Approximately 40% of the Chula Vista working population is employed within 10 miles of their home Census Block, visible in the higher resident employment densities in the western part of the City, the Sharp Chula Vista Medical Center east of Interstate 805, the business park northeast of State Route 125 and Otay Lakes Road, and in National City just to the north. These concentrations have potential for active transportation and/or public transportation commute trips due to the relatively short distance between commuter origins (residences in Chula Vista) and destinations (places of employment). As eastern Chula Vista continues to buildout with balanced job and housing, there is similar potential for capturing internal commute trips via active transportation and public transit modes.

Figure 2.12 displays where employees in Chula Vista live by Census Tract. Chula Vista employees are most concentrated in Census Tracts located within the City of Chula Vista, to the northeast and to the southwest. The Census Tract where the greatest number of Chula Vista employees resides is located between Telegraph Canyon and Olympic Parkway, just west of State Route 125. Approximately one-third of employees in Chula Vista also live within the City.

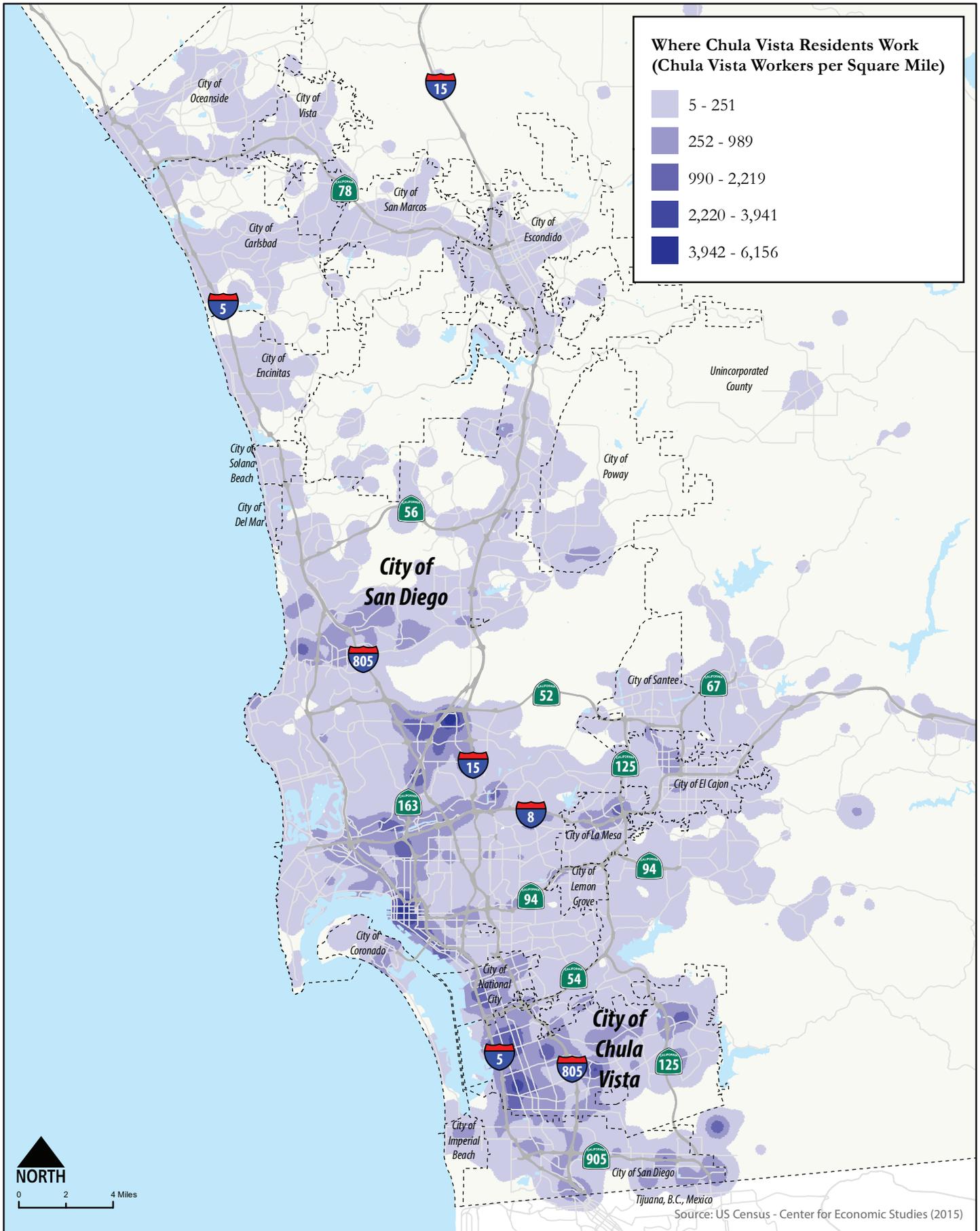
Means of Transportation to Work

Table 2.2 compares means of transportation to work for the City of Chula Vista and San Diego County. “Drove alone” rates are comparable, although slightly higher in Chula Vista. Chula Vista has a higher percentage of people that carpooled compared to San Diego County (10.4% vs. 8.9%, respectively). Public transportation use is also higher in Chula Vista than the County (3.3% vs. 3.1%, respectively). It should be noted, the South Bay Rapid began services in January 2019, providing residents an expedited public transportation option between eastern Chula Vista and Downtown San Diego, which would likely result in increased public transportation ridership. Active transportation commute trips in Chula Vista is approximately half of that reported for the County (1.8% vs. 3.6%, respectively, when combining those that walked and rode a bike). These findings may be indicative of Chula Vista’s distance to the County’s major job centers in Downtown San Diego and Sorrento Valley, which make walking and bicycling unpractical options for some.

Table 2.2 Means of Transportation to Work (2013 – 2017)

Means of Transportation	Chula Vista	San Diego County
Drove alone	78.3%	76.0%
Carpooled	10.4%	8.9%
Public transportation	3.3%	3.1%
Walked	1.5%	2.9%
Bicycle	0.3%	0.7%
Other	1.6%	1.5%
Worked at home	4.6%	7.0%

Source: US Census, 2013-2017 American Community Survey 5-Year Estimate (2019)



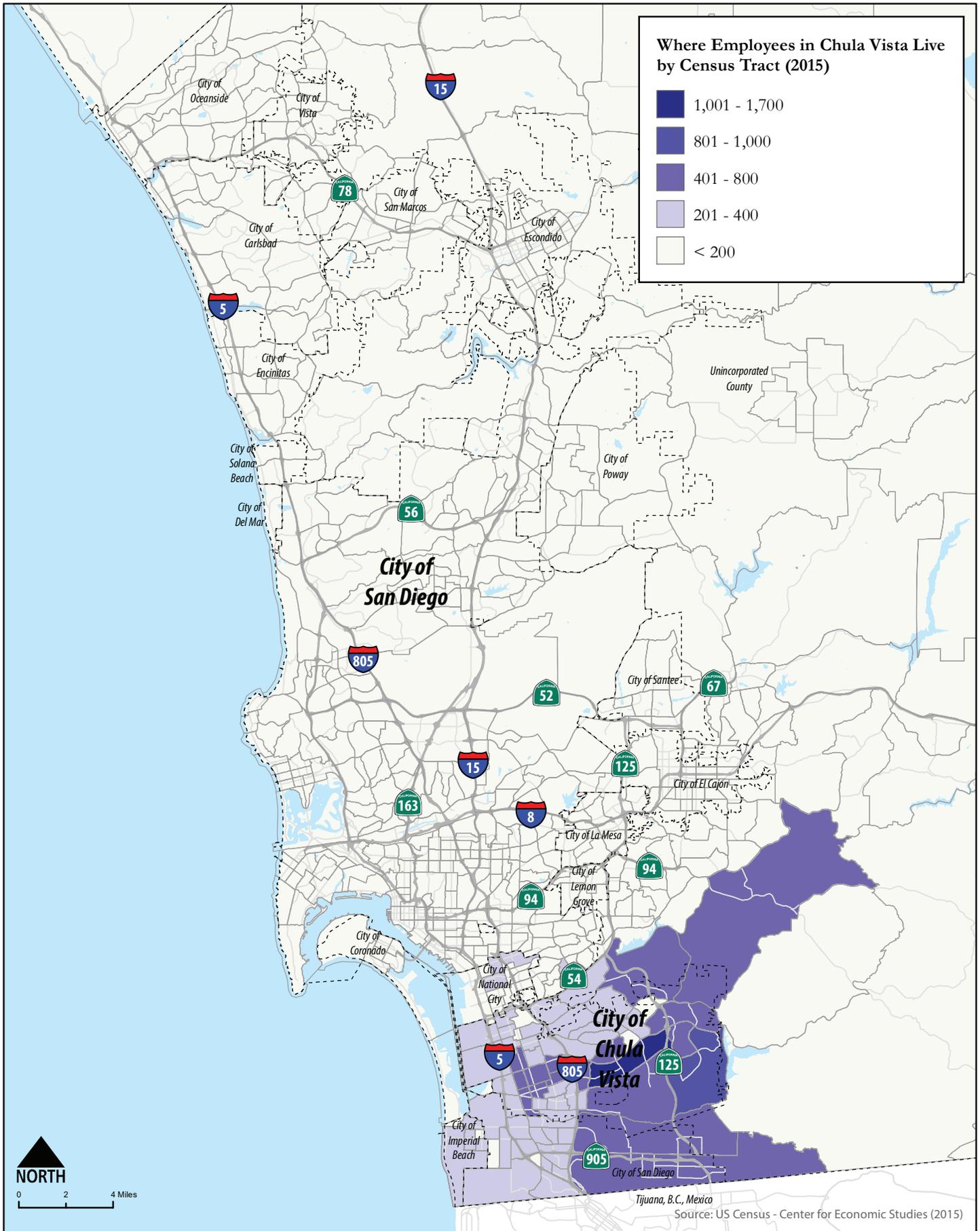


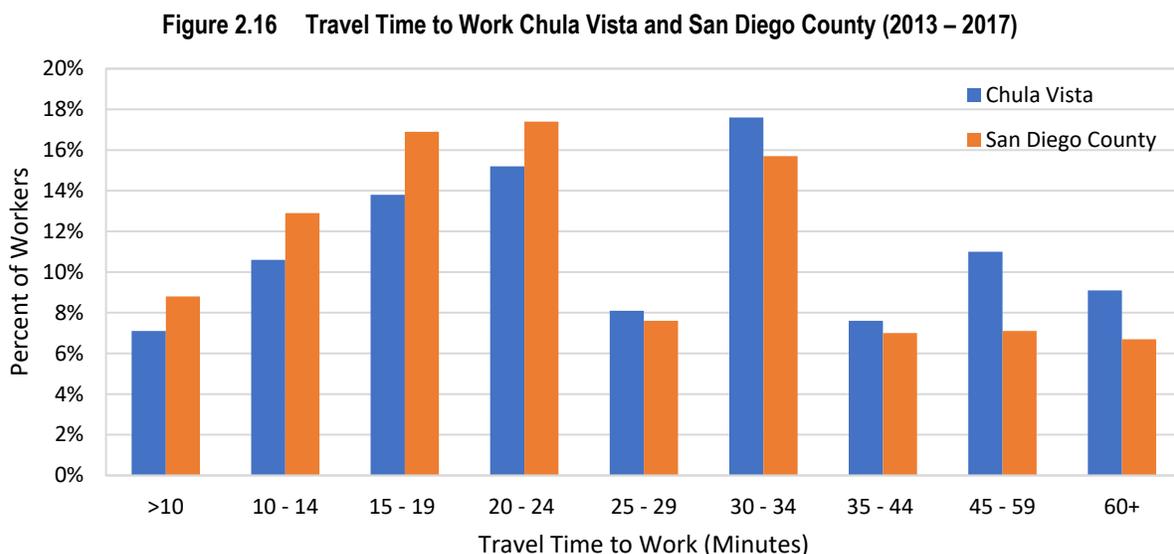
Figure 2.13 displays the percentage of Chula Vista commuters who walk to work. The Census Block Groups with the greatest percentage of walking commuters are generally concentrated within the southwestern portion of the City. On the east side, relatively higher concentrations are located in the Census Block Groups near Southwestern Community College. However, as demonstrated in Table 2.2, the share of residents walking to work is very low and therefore these concentrations only represent a small share of Chula Vista commuters.

Figure 2.14 shows the percentage of Chula Vista commuters who ride a bicycle to work. Consistent with Table 2.2, few Census Block Groups have bicycle commuters. The greatest concentrations are in western Chula Vista off Hilltop Drive and just east of Interstate 805 north of Telegraph Canyon Road. These areas with bicycle commuters are generally located adjacent to or in close proximity to the areas with higher employment density. Similar to the walking commuters, the share of residents that ride a bike to work represents a small segment of the commuting population, therefore the identified concentrations also represent a small subpopulation.

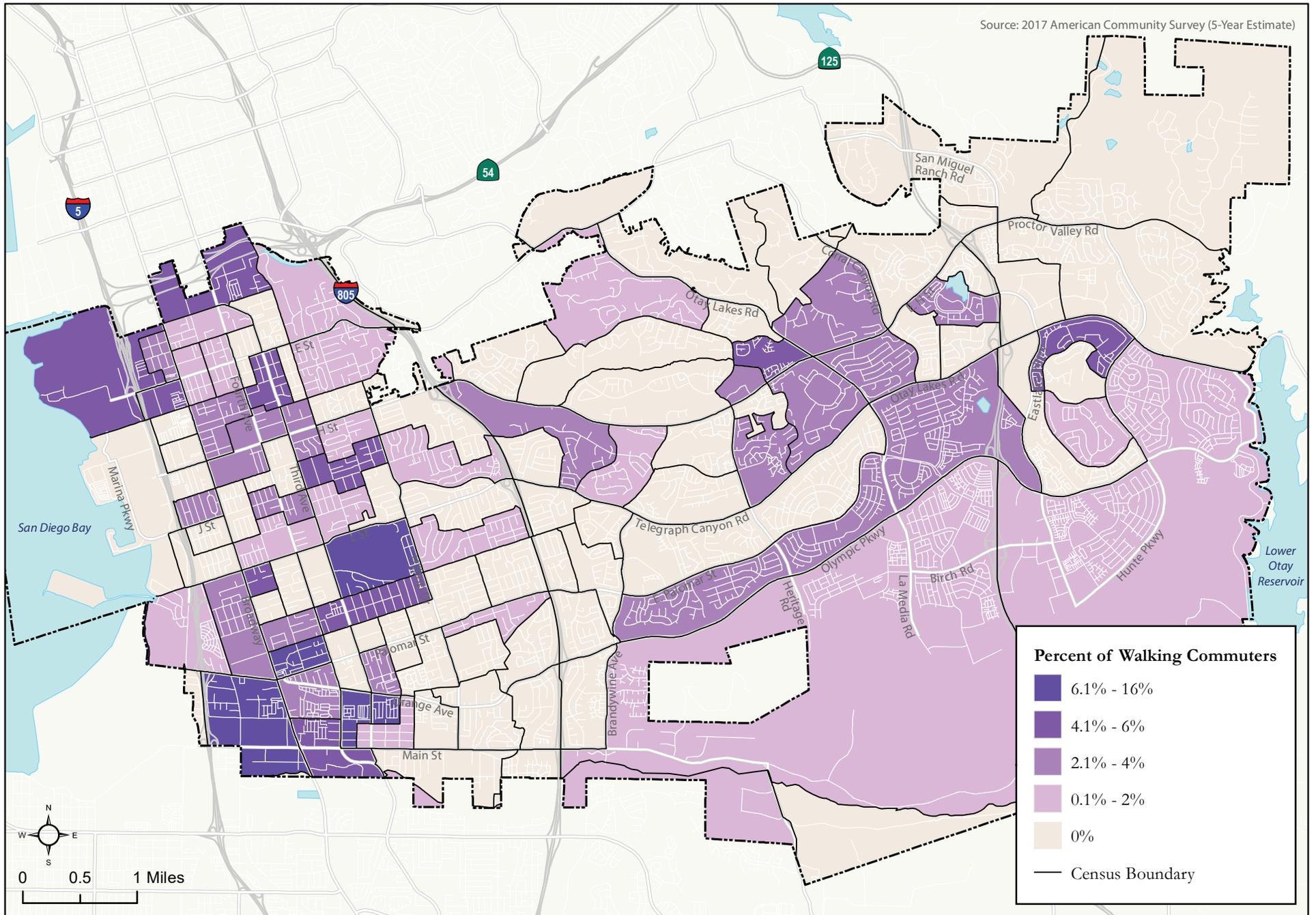
Figure 2.15 presents the distribution of Chula Vista commuters who take transit to work. Transit commuters are most prevalent within Census Block Groups near the Blue Line Trolley, which provides frequent service to Downtown San Diego and greater network connections. The new South Bay Rapid makes transit a more viable option for Chula Vista commuters, particularly those who work in Downtown San Diego.

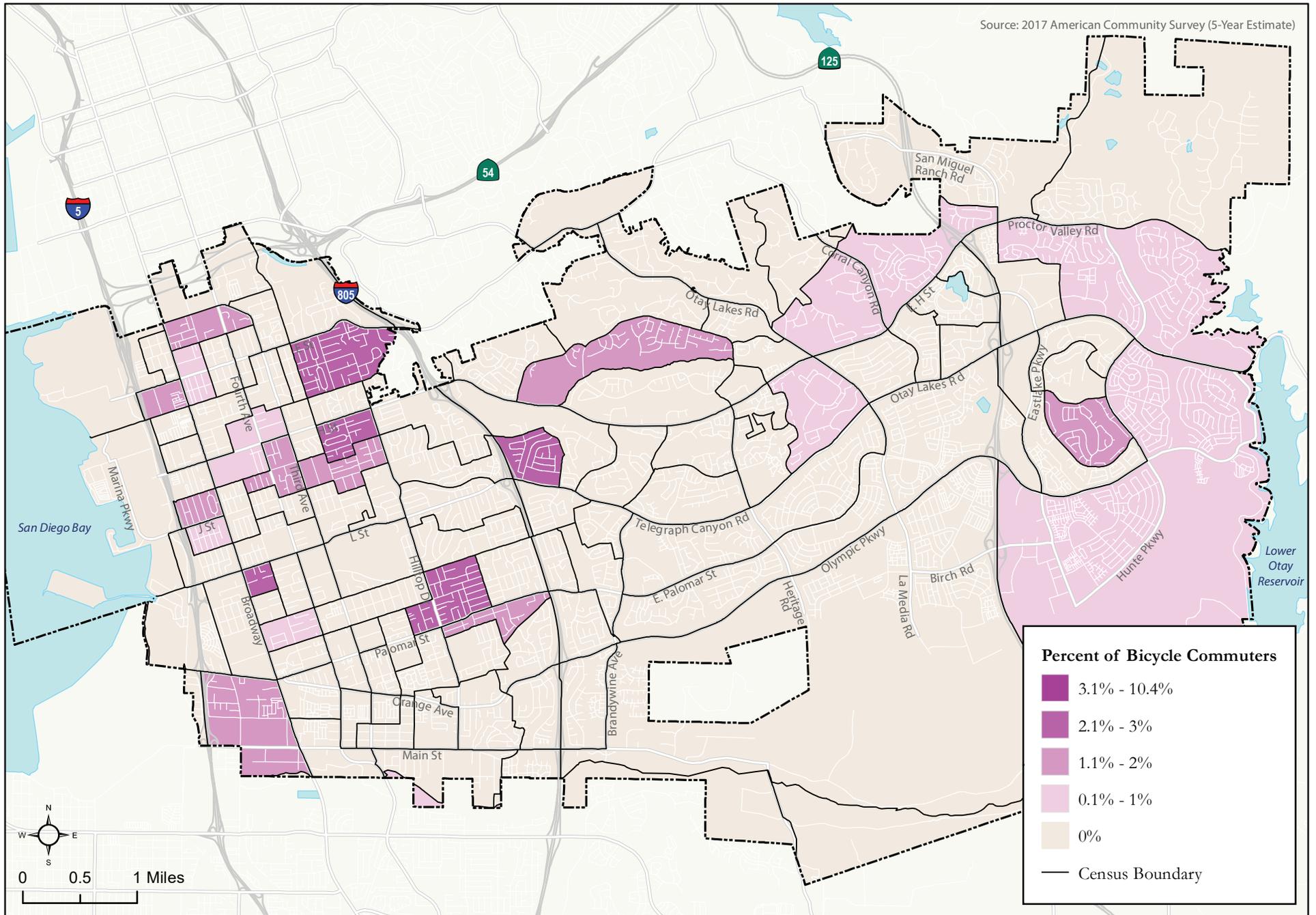
Travel Time to Work

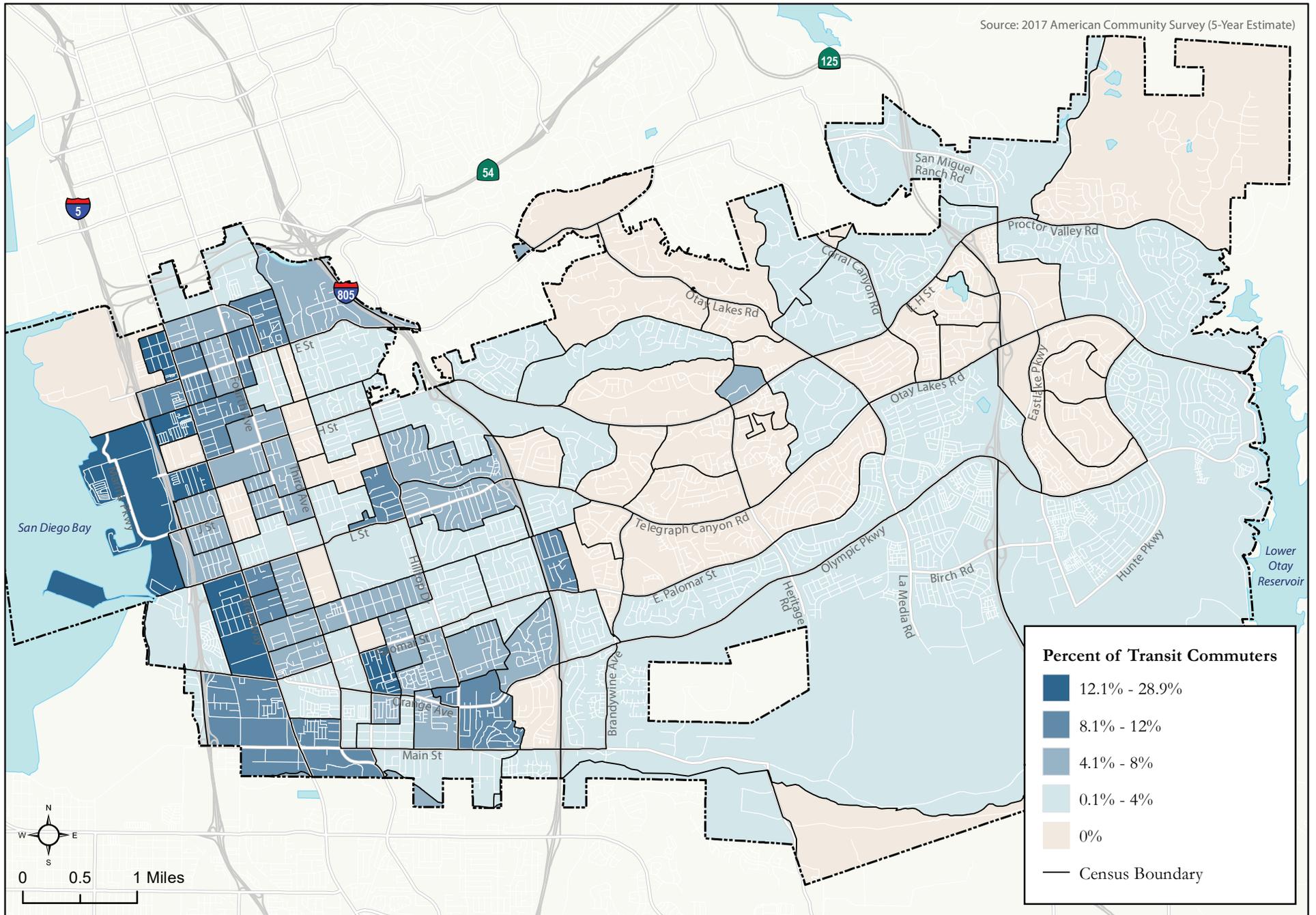
Figure 2.16 compares Chula Vista and San Diego County resident commuter travel times. The City of Chula Vista has greater percentages of workers within each category travelling over 25 minutes, while the County has greater percentages of workers within all categories travelling less than 25 minutes. The average travel time for working residents in Chula Vista is 28.7 minutes, compared to 25.7 minutes for the County as a whole.



Source: US Census, 2013-2017 American Community Survey 5-Year Estimate (2019)







2.4 Active Transportation Demand

A common analysis technique used to understand latent demand for cycling and walking – or the likelihood to make a walk or bike trip – is through an assessment of population and land use characteristics. This latent demand is depicted in an active transportation propensity model. The propensity model combines walk and bike trip generator inputs – population, employment, zero-vehicle households, pedestrian commuters, and bicycle commuters – with walk and bike trip attractors – schools, retail, parks, recreational spaces, and beaches. When combined, the active transportation generators and attractors provide a foundation for understanding active transportation demand across the City of Chula Vista.

Active Transportation Trip Generators and Attractors

Table 2.3 displays the inputs, thresholds, and multiplier values used to create the active transportation trip generator submodel. Generator input values listed as “high” reflect conditions with a greater likelihood of generating an active transportation trip. Generator input values in the “low” range are understood to generate relatively fewer trips.

Table 2.3 Active Transportation Trip Generator Submodel Inputs

Generator Inputs	Multipliers	Point Values			
		High 3	Medium 2	Low 1	Very Low 0
Population Density (persons per acre)	3	>15	10.1 – 15	5.1 – 10	≤5
Employment Density (jobs per acre)	3	>10	5.1 – 10	1.1 – 5	≤1
Bicycle Commuters (percent of commuters)	2	>1%	0.51% - 1%	0.01% - 0.5%	0%
Pedestrian Commuters (percent of commuters)	2	>5%	2.1% - 5%	1.1% - 2%	≤1%
Transit Commuters (percent of commuters)	2	>10%	5.1% - 10%	2.1% - 5%	≤2%
Median Annual Household Income	1	≤\$40,000	\$40,000 - \$65,000	\$65,000 - \$100,000	>\$100,000
Youth Population (percent of population)	1	>20%	15.1% - 20%	10.1% - 15%	≤10%
Senior Population (percent of population)	1	>20%	15.1% - 20%	10.1% - 15%	≤10%

Source: US Census, 2013 – 2017 American Community Survey 5-Year Estimates (2019); Chen Ryan Associates (2019)

Higher population and employment densities are associated with potentially higher levels of active transportation trip generation. Bicycle and pedestrian commute rates, as well as zero-vehicle households, are also contributing factors to trip generation propensity.

Figure 2.17 displays the Active Transportation Trip Generator Submodel results. As shown, a relatively higher concentration of active transportation trip generators can be found west of Hilltop Drive, with two small nodes east of Interstate 805, one northeast of the intersection of E H Street and Paseo Ranchero and the other south of Eastlake. This is consistent with findings of Chapter 2, whereby, these areas are also noted for higher rates of population and employment density, commutes by walking, and a relatively greater number of zero-vehicle households.

The Active Transportation Trip Attractor Submodel was created using the input variables displayed in **Table 2.4**. Each attractor is buffered by one-mile, with multipliers that decrease every quarter-mile interval away from the trip attractor. A point value is calculated by multiplying the distance multiplier by the weight assigned to each attractor. Particular land uses, garner progressively lower weights in terms of their ability to attract active transportation trips as the distance required to travel along the roadway network to reach them increases.

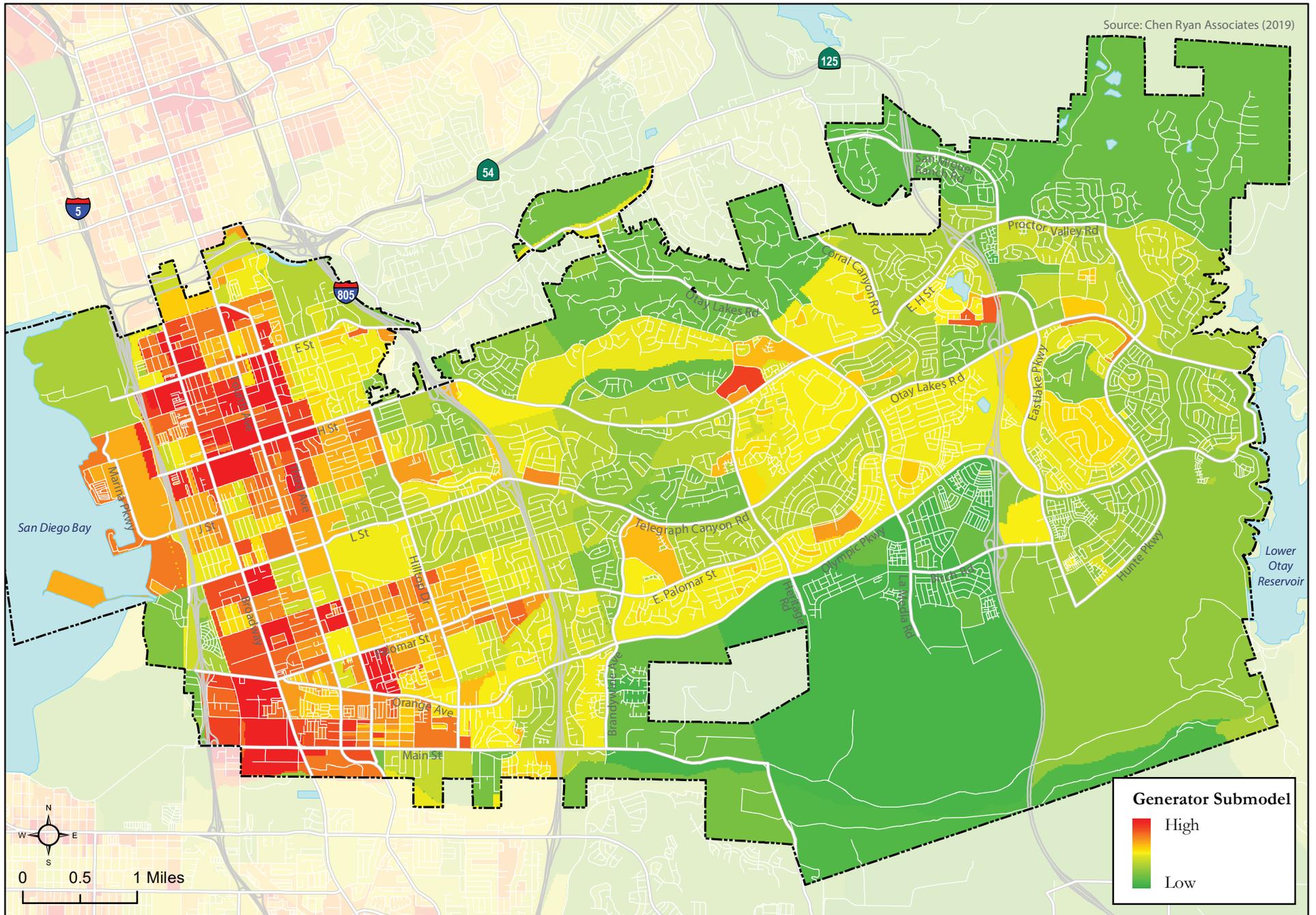
Table 2.4 Attractor Submodel Inputs

Attractor Inputs	Multipliers	Point Values			
		Within ¼ mile	Between ¼ and ½ mile	Between ½ and ¾ mile	Between ¾ mile and 1 mile
		1.5	1	0.75	0.5
Downtown District	4	6	4	3	2
Trolley Stations	4	6	4	3	2
Other Major Transit Stations	3	4.5	3	2.25	1.5
Southwestern College	3	4.5	3	2.25	1.5
Civic Land Uses	2	3	2	1.5	1
Retail Land Uses	2	3	2	1.5	1
Schools	2	3	2	1.5	1
Parks	1	1.5	1	0.75	0.5
Olympic Training Center	1	1.5	1	0.75	0.5

Source: Chen Ryan Associates (2019)

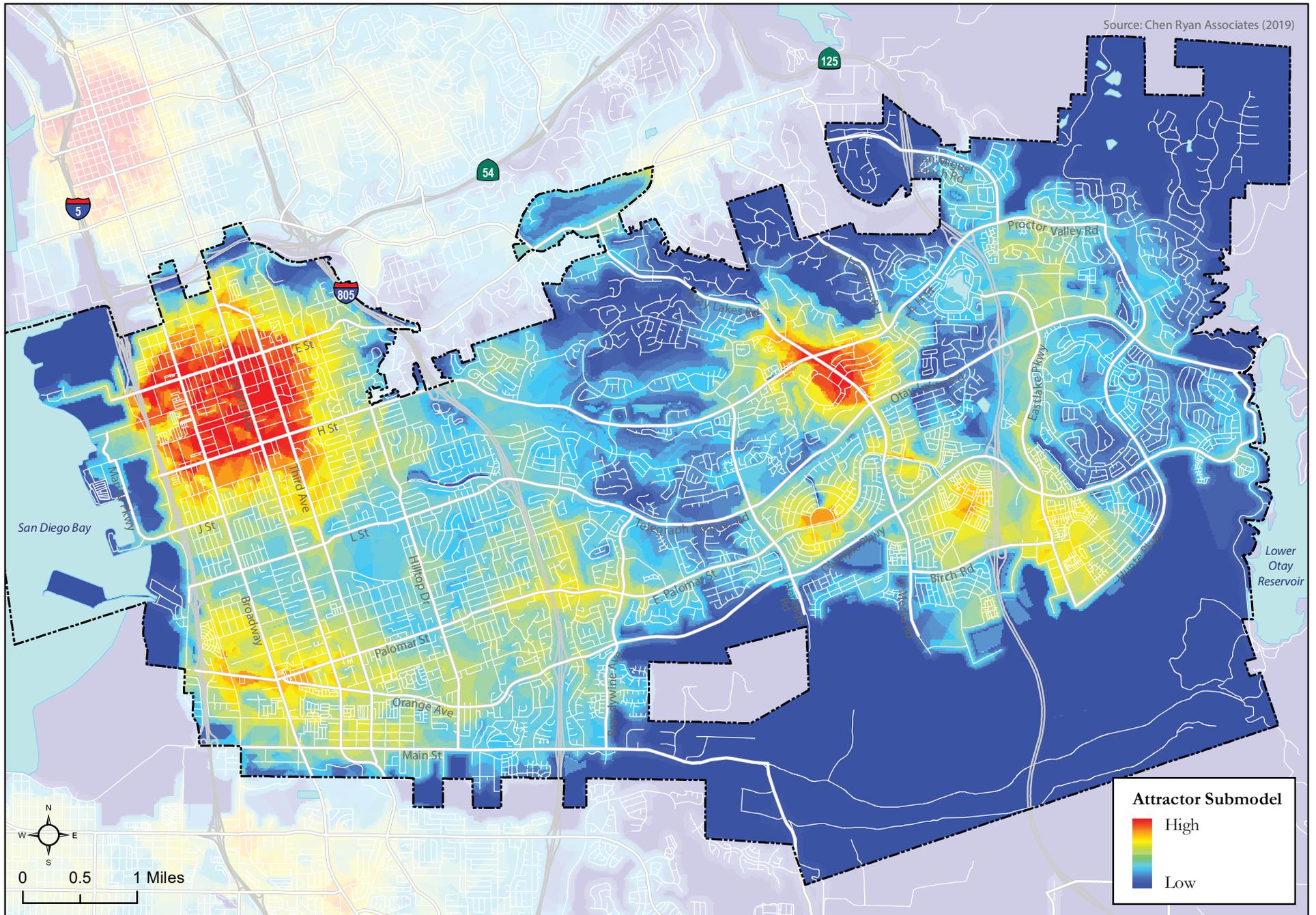
Figure 2.18 displays the Active Transportation Trip Attractor Submodel. The greatest concentration of trip attractors is in northwestern Chula Vista. Additional attractors are found in southwestern Chula Vista and around the Otay Lakes Road / E H Street intersection, and southeast of the Olympic Parkway / La Media Road intersection.

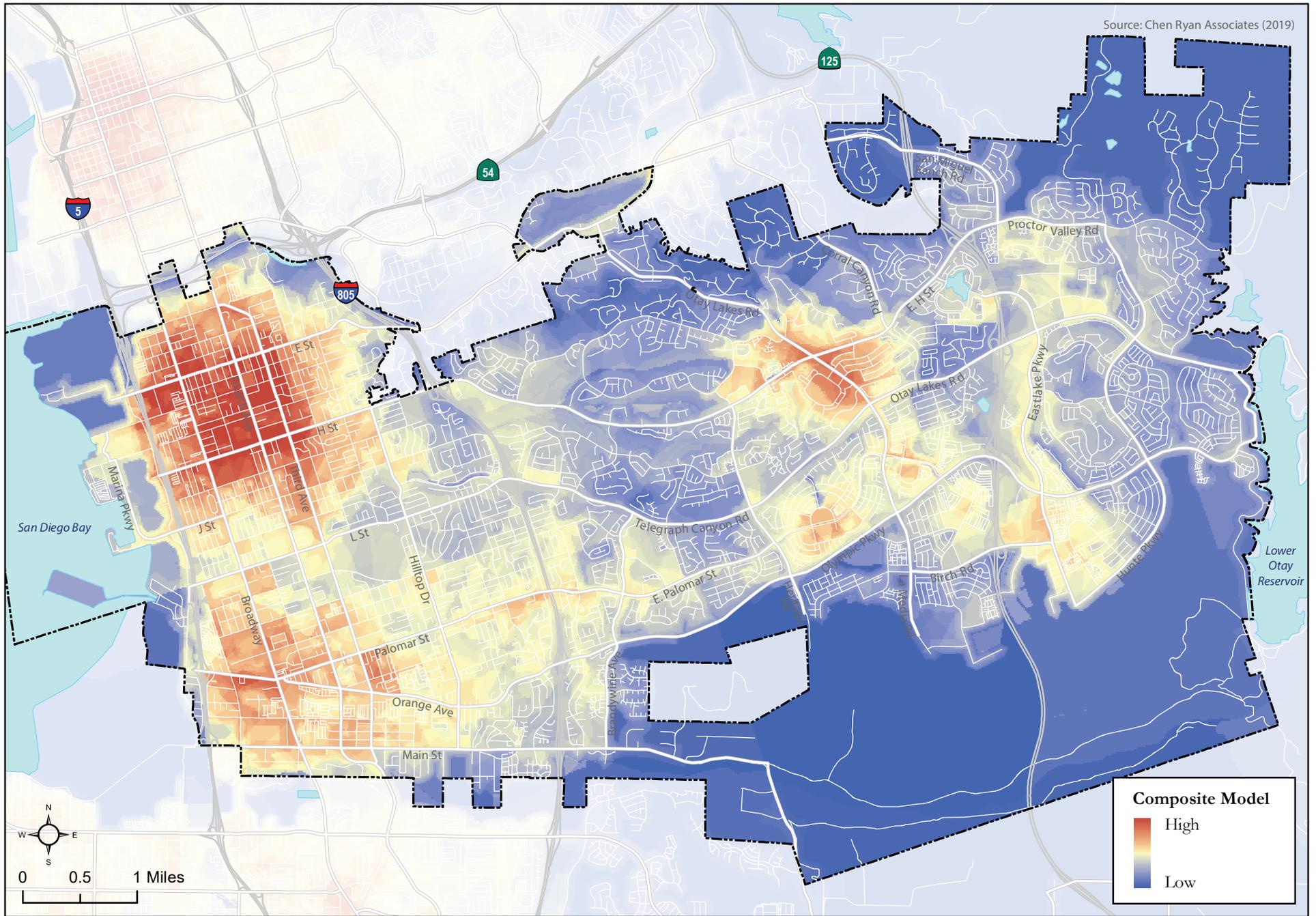
The Active Transportation Propensity Model, displayed as **Figure 2.19**, was created by combining the trip generator and trip attractor submodels with equal weighting. As shown, the results closely mirror those presented in the trip attractor and trip generator submodels, with the greatest propensity identified in the northwestern portion of Chula Vista, with two smaller concentrations in the southeastern quadrant and the area surrounding the intersection of Otay Lakes Road and East H Street. Higher propensity is indicative of areas with increased potential for active transportation due to relatively higher levels of trip attractors and trip generators. However, these areas may also have increased barriers related to active transportation, including higher posted speed limits and traffic volumes, more bicycle and pedestrian collisions, and more travel lanes.



Chula Vista Active Transportation Plan

Figure 2.17
Active Transportation Trip Generator Submodel





Chula Vista Active Transportation Plan

Figure 2.19
Active Transportation Propensity Model

3.0 People on Foot

This chapter provides an overview of the existing pedestrian environment related to connectivity, quality, and safety.

3.1 Network Summary

The pedestrian infrastructure was inventoried in this chapter. The inventory included sidewalks, curb ramps, and crosswalks. Resources used in this evaluation include geographic information system (GIS) data, satellite imagery, document review and field observations.

Figure 3.1 displays the location of missing sidewalks along public roadways, totaling approximately 3.2 centerline miles. Sidewalks may be missing along one or both sides of the identified roadways. In some instances, such as portions of Bay Boulevard, a sidewalk along one side of the roadway was deemed sufficient due to active land uses only present along the one side. As can be seen, most of the missing sidewalks are located within the older, more westerly portion of the City.

Figure 3.2 identifies the locations of missing curb ramps as well as curb ramps with missing detectable truncated domes. The City will use this inventory to prioritize curb ramp construction based on location need and consistency with future capital projects.

Figure 3.3 displays the locations of pathways and grade separated pedestrian/bicycle bridges. The pathways are generally unpaved, decomposed granite (DG) trails, and are located in the eastern half of Chula Vista, where most of the master planned communities can be found. These pathways provide unique connections for people on foot or bicycle, greatly improving connectivity considering some of the circuitous street patterns in the newer, suburban communities.

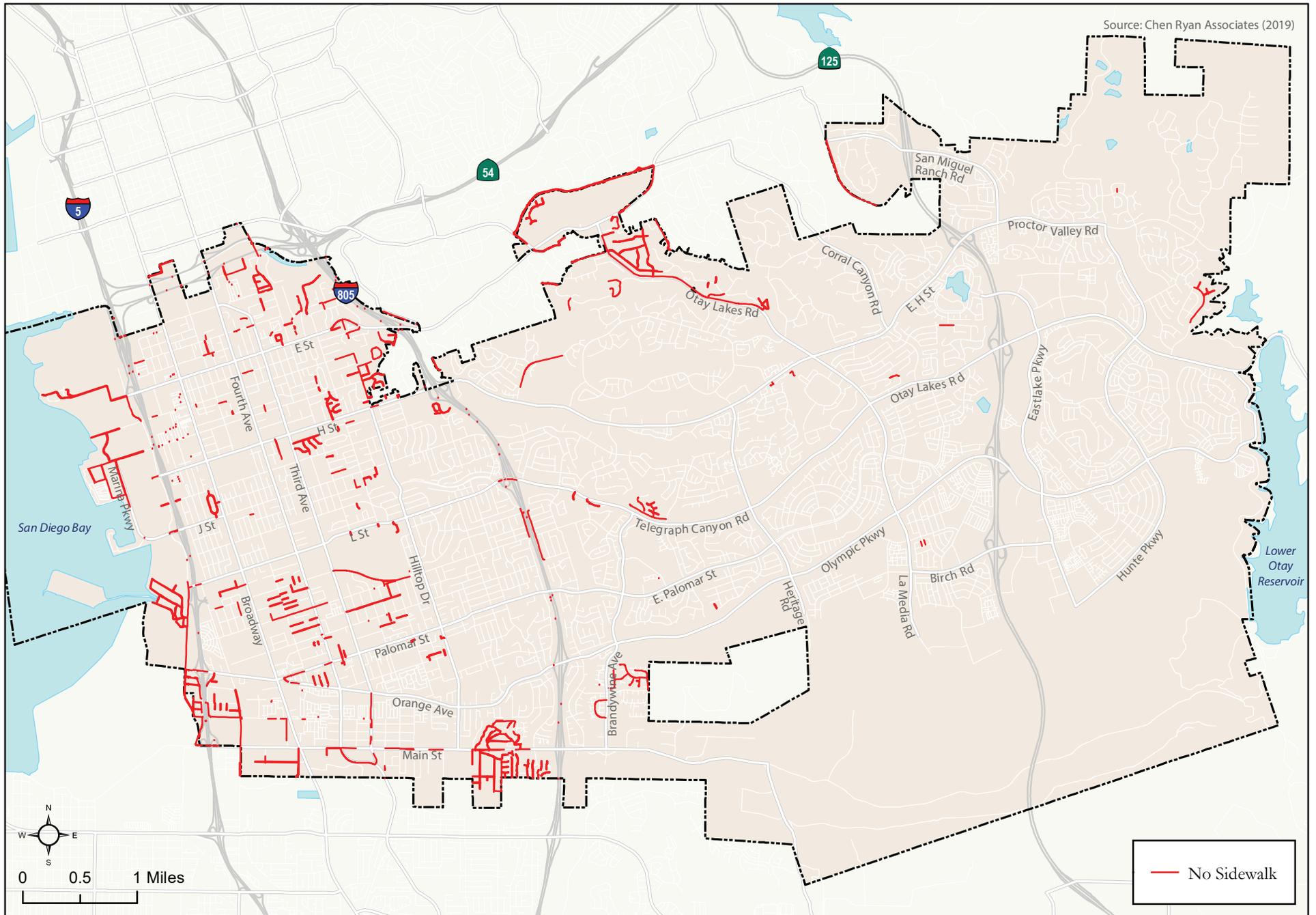
3.2 Pedestrian Environment Quality Evaluation (PEQE)

The quality of pedestrian infrastructure was evaluated using the Pedestrian Environment Quality Evaluation (PEQE). This evaluation assigns a score to each side of a roadway segment based on four measures: horizontal buffer, lighting, clear pedestrian zone, and posted speed limit.

Intersections are scored based upon the presence of four feature categories: physical features, operational features, ADA curb ramps, and type of traffic control. Additionally, mid-block crossings are scored based upon visibility, crossing distance, ADA features, and type of traffic control.

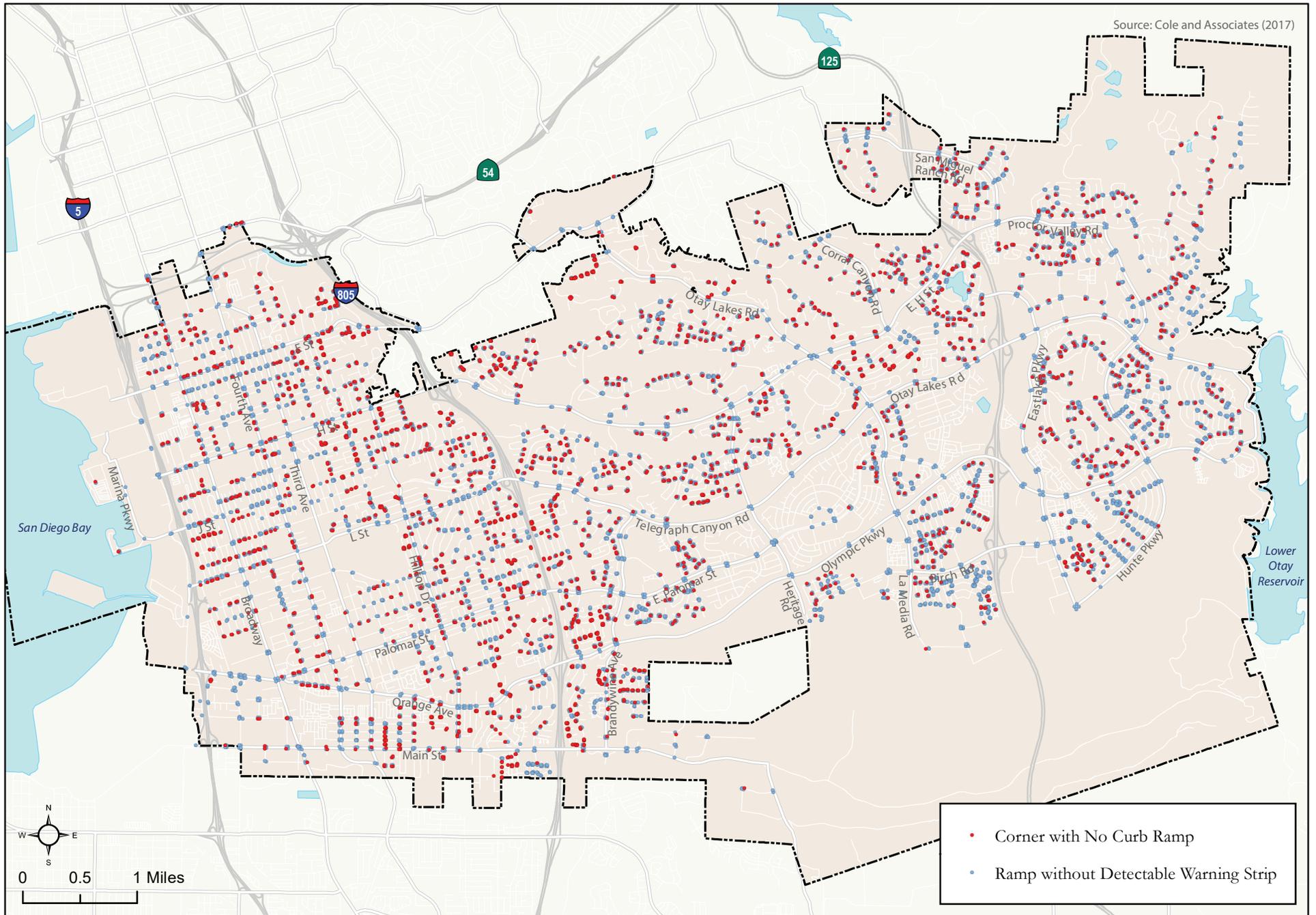
Table 3.1 details the inputs and scoring values for intersections, segments, and midblock crossings. These inputs are used to assign facility ratings of high, medium, or low, indicating the relative pedestrian comfort associated with a particular facility, based on the following scoring system:

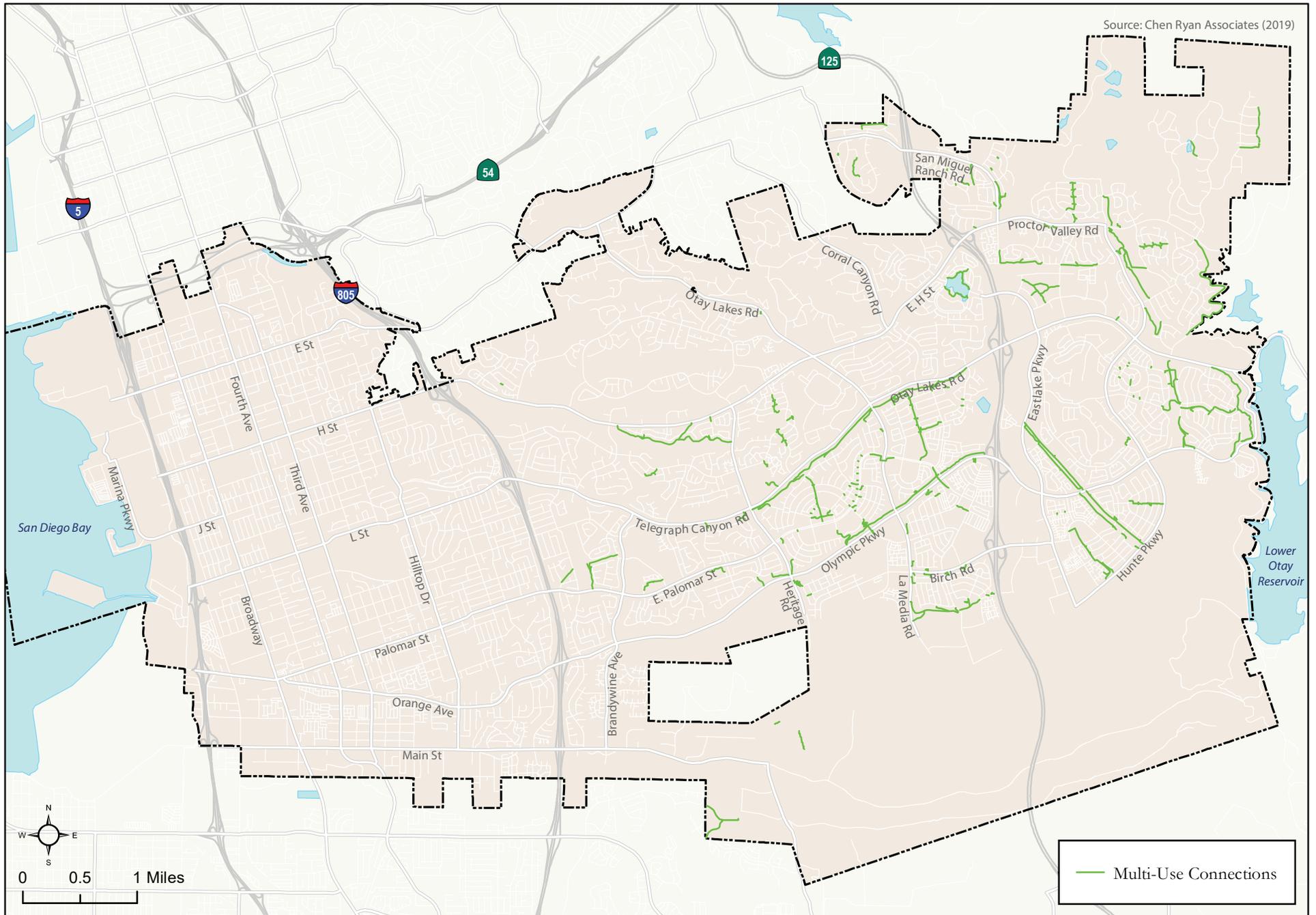
High	> 6 points
Medium	4 to 6 points
Low	< 4 points



Chula Vista Active Transportation Plan

Figure 3.1
Streets with No Sidewalk





Chula Vista Active Transportation Plan

Figure 3.3
Multi-Use Connections

Table 3.1 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment <i>between two intersections</i>	1. Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 - 14 feet 2 points: > 14 feet or vertical buffer
	2. Lighting		0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	3. Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstruction
	4. Posted Speed Limit		0 point: > 40 mph 1 point: 30 - 40 mph 2 points: < 30 mph
Maximum			8 points
Intersection by Leg	1. Physical Feature	<ul style="list-style-type: none"> Enhanced/High Visibility Crosswalk Raised Crosswalk Advanced Stop Bar Bulb out/Curb Extension 	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	2. Operational Feature	<ul style="list-style-type: none"> Pedestrian Countdown Signal Pedestrian Lead Interval No-Turn On Red Sign/Signal Additional Pedestrian Signage 	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	3. ADA Curb Ramp		0 point: no ramps and no truncated domes 1 point: ramps only, no truncated domes 2 points: meet standard/requirement
	4. Traffic Control		0 point: no control 1 point: stop sign controlled 2 points: signal/roundabout/traffic circle
Maximum			8 points
Mid-block Crossing	1. Visibility		0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	2. Crossing Distance		0 point: no treatment 2 points: with bulb out or median pedestrian refuge
	3. ADA		0 point: no ramps and no truncated domes 1 point: ramps only, no truncated domes 2 points: meet standard/requirement
	4. Traffic Control		0 point: no control 1 point: flashing beacon (In-pavement, RRFB, etc) 2 points: signal/pedestrian hybrid beacon (HAWK)
Maximum			8 points

Source: Chen Ryan Associates (2019)

Considering the intensive data collection requirements necessary to score PEQE environments, an analysis was performed to define a subset of the roadway network for PEQE analysis. The Active Transportation Propensity Model results (presented in Chapter 2) were used to identify segments with the highest propensity for active transportation trips. The highest scoring segments were initially selected from each of the City’s four Council Districts to ensure balanced geographic representation (totaling approximately four miles from each District). That initial selection was examined and manually expanded to make the study area more continuous. Additional refinements were made to ensure the inclusion of roadways next to key destinations, such as transit stations, that were close to but otherwise not captured in the initial selection. **Figure 3.4** displays the resulting PEQE study area, totaling approximately 20 miles of centerline roadway (40 miles of sidewalks).

Figure 3.5 shows the PEQE analysis results within focused inset maps for study area locations. The PEQE inputs used for the analysis are provided in **Appendix B**.

Table 3.2 summarizes the PEQE rating for sidewalks within the study area. Over 80% of the sidewalk miles analyzed received Medium ratings, while roughly 9% received High or Low ratings. The Low ratings were primarily driven by the lack of sidewalks (Industrial Boulevard) or the lack of a buffer between the sidewalk and higher speed roadways (H Street).

Table 3.2 Sidewalk Inventory by PEQE Rating

Rating	Percent	Miles
Low	9.2	3.6
Medium	82.1	32.1
High	8.7	3.4
Total Sidewalk Miles in Study Area		39.1

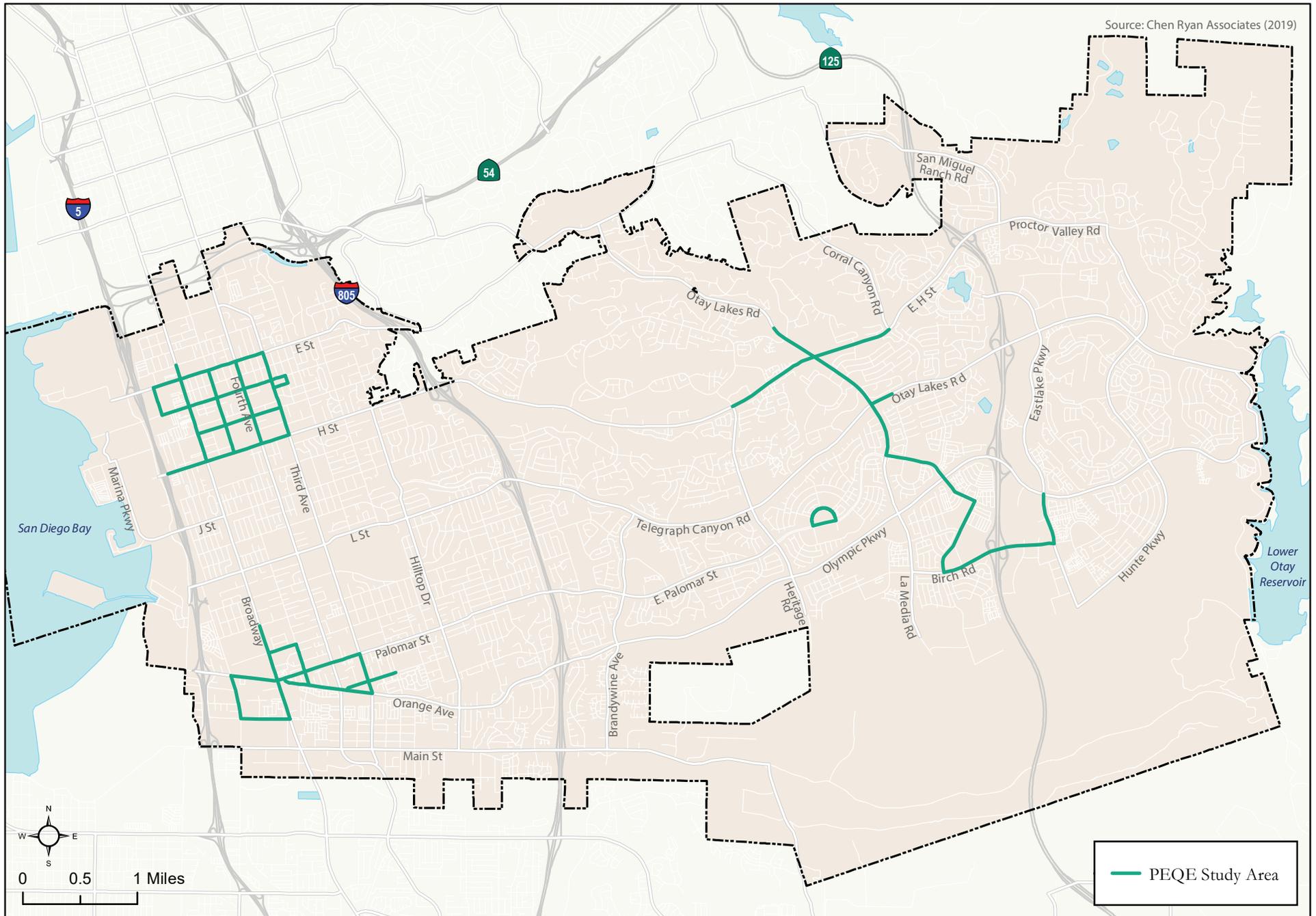
Source: Chen Ryan Associates (2019)

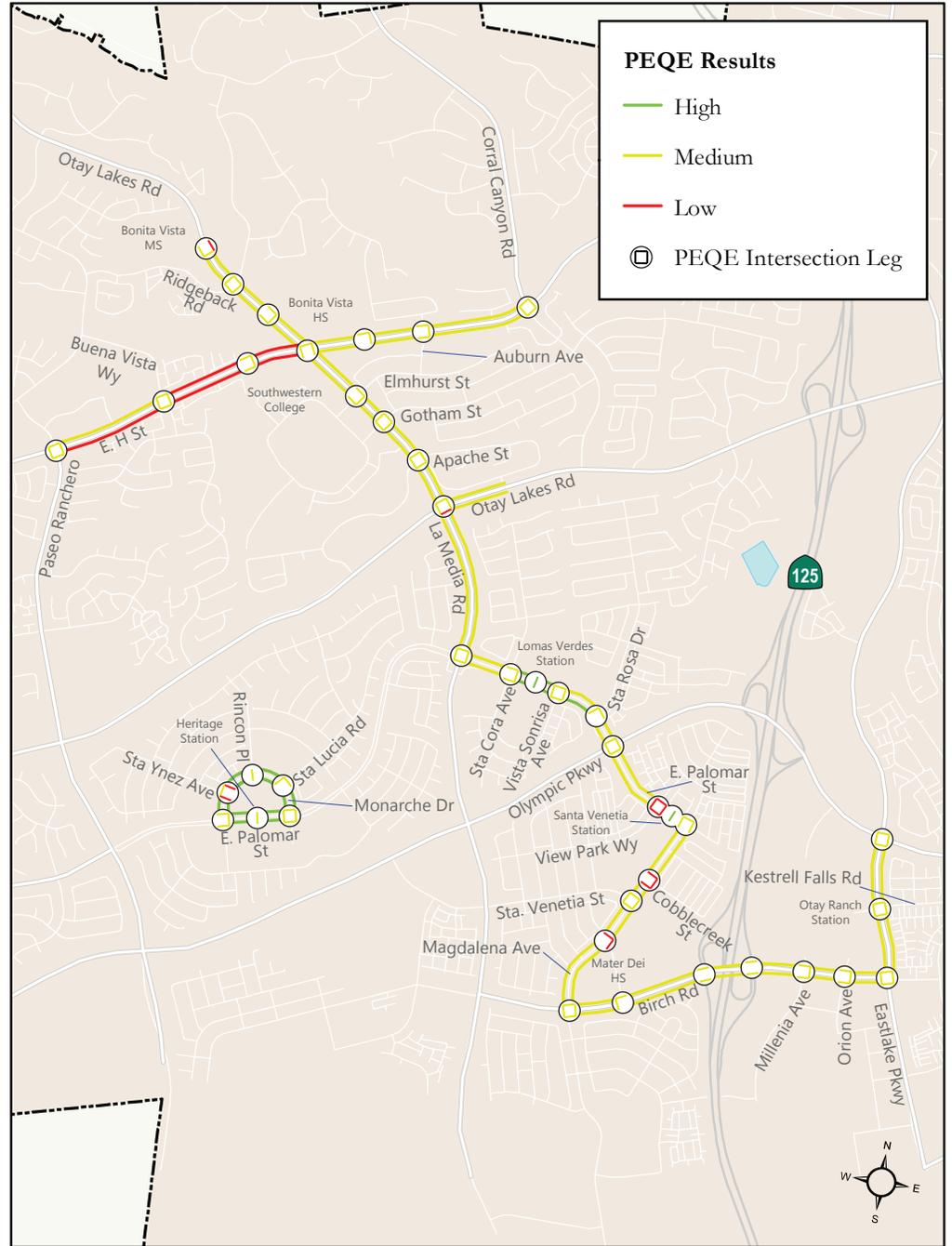
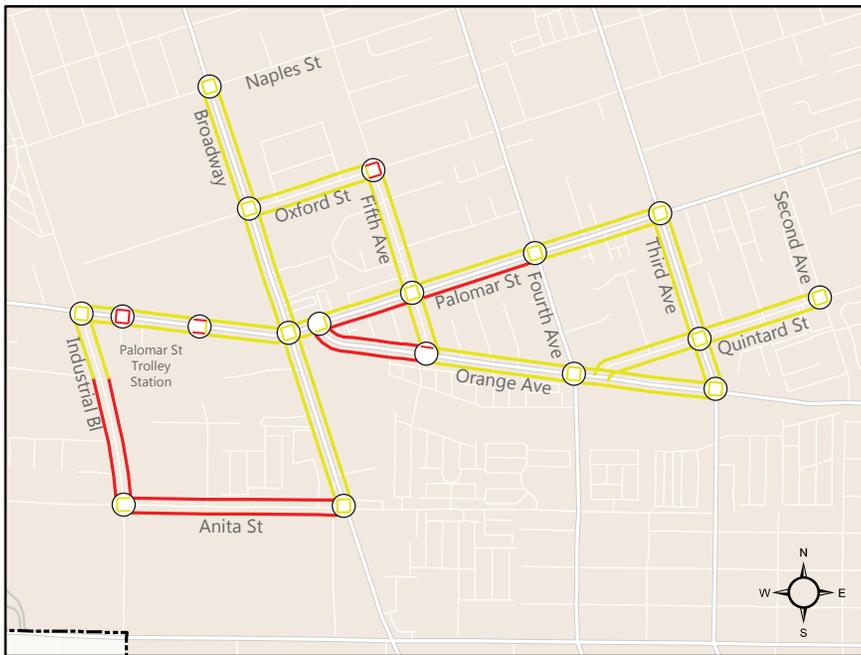
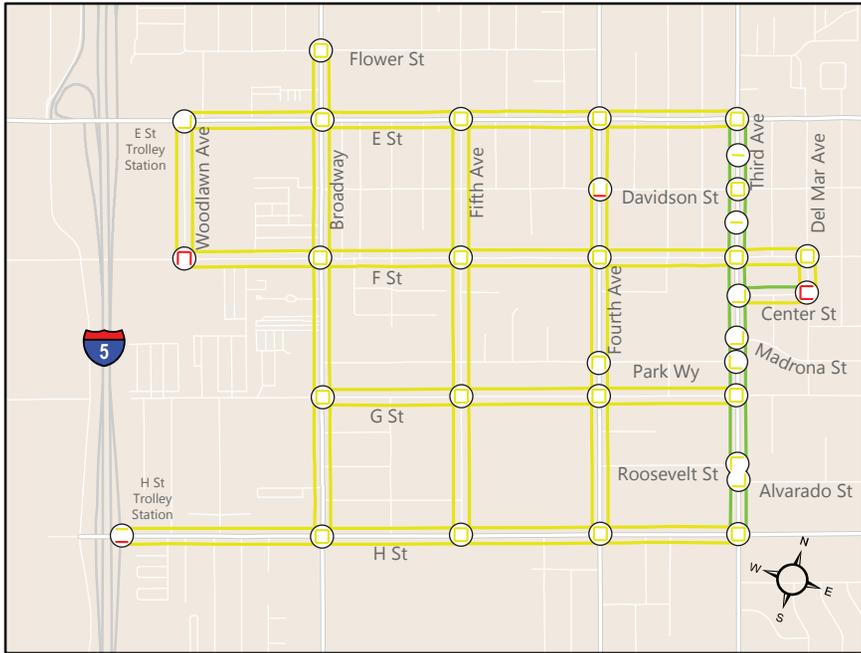
Table 3.3 summarizes intersection crossing leg ratings. The Medium rating accounted for 85.5% of the 290 legs analyzed, while the remaining 14.5% were found to exhibit Low rating characteristics. No legs were awarded a High rating. Many of the intersections lack high visibility crosswalks (defined as ladder or continental crosswalks) and advanced stop bars, the presence of which would elevate all Low rated crossing legs to Medium. Additional features, such as bulb-outs/curb-extensions, pedestrian signage, turn restrictions and lead pedestrian intervals (LPI) may only be appropriate in areas with very high pedestrian activity.

Table 3.3 Intersection Crossing Legs by PEQE Rating

Rating	Percent	Legs
Low	14.5%	42
Medium	85.5%	248
High	-	-
Total Intersection Crossing Legs		290

Source: Chen Ryan Associates (2019)





Chula Vista Active Transportation Plan

Figure 3.5
Pedestrian Environmental Quality Evaluation (PEQE) Results

Table 3.4 summarizes the five mid-block crossing PEQE ratings. Each location analyzed was rated as Medium or High, and was found to include either curb bulb-outs/extensions or a median refuge, which reduce the crossing distance for pedestrians and limit their exposure.

Table 3.4 Mid-Block Crossings by PEQE Rating

Rating	Percent	Crossings
Low	-	-
Medium	40%	2
High	60%	3
Total Mid-Block Crossings		5

Source: Chen Ryan Associates (2019)

3.3 Pedestrian Safety

The City of Chula Vista places a large emphasis on transportation safety and recognizes that pedestrians and bicyclists are some of the most vulnerable roadway users. In addition to long-term planned improvements, the City currently has a number of active transportation projects in varying design and construction phases, such as bike lanes, sidewalk infill projects and pedestrian crosswalk enhancements. A comprehensive list of active Capital Improvement Projects can be viewed at <https://www.chulavistaca.gov/departments/public-works/projects>.

Collision data can be used to identify potential deficiencies and behavioral issues related to pedestrian safety. The collision review draws from five years of data (January 2013 – December 2017) obtained from the California Statewide Integrated Traffic Records System (SWITRS). The analysis was used to identify trends and patterns related to collision locations, causes, time, party-at-fault and victim age. Ultimately, this information will help inform the identification of potential pedestrian infrastructure improvements and programmatic recommendations.

A total of 377 pedestrian-involved collisions were reported in Chula Vista during the five-year period. **Figure 3.6** displays pedestrian-involved collisions across Chula Vista. Collisions are largely concentrated within western Chula Vista, along the Broadway, H Street, and Third Avenue.

Rankings from the California Office of Traffic Safety (OTS) are a supplemental tool used to understand the magnitude of collision history within a city. The OTS compares collision histories between cities of similar size. Chula Vista is one of the top fifteen most populated cities in California, therefore it is grouped and compared to other cities with a population size of over 250,000. The collision data was then normalized by population to make a more balanced comparison, considering the large population discrepancies among the 15 most populous cities in California.

Table 3.5 displays pedestrian collision rates for the 15 cities per 10,000 residents during the most recent OTS ranking year, 2016. As shown, the Chula Vista’s collision rate was calculated to be 3.5 per 10,000 residents, representing a lower rate than nine of the 15 most populous cities in the state.

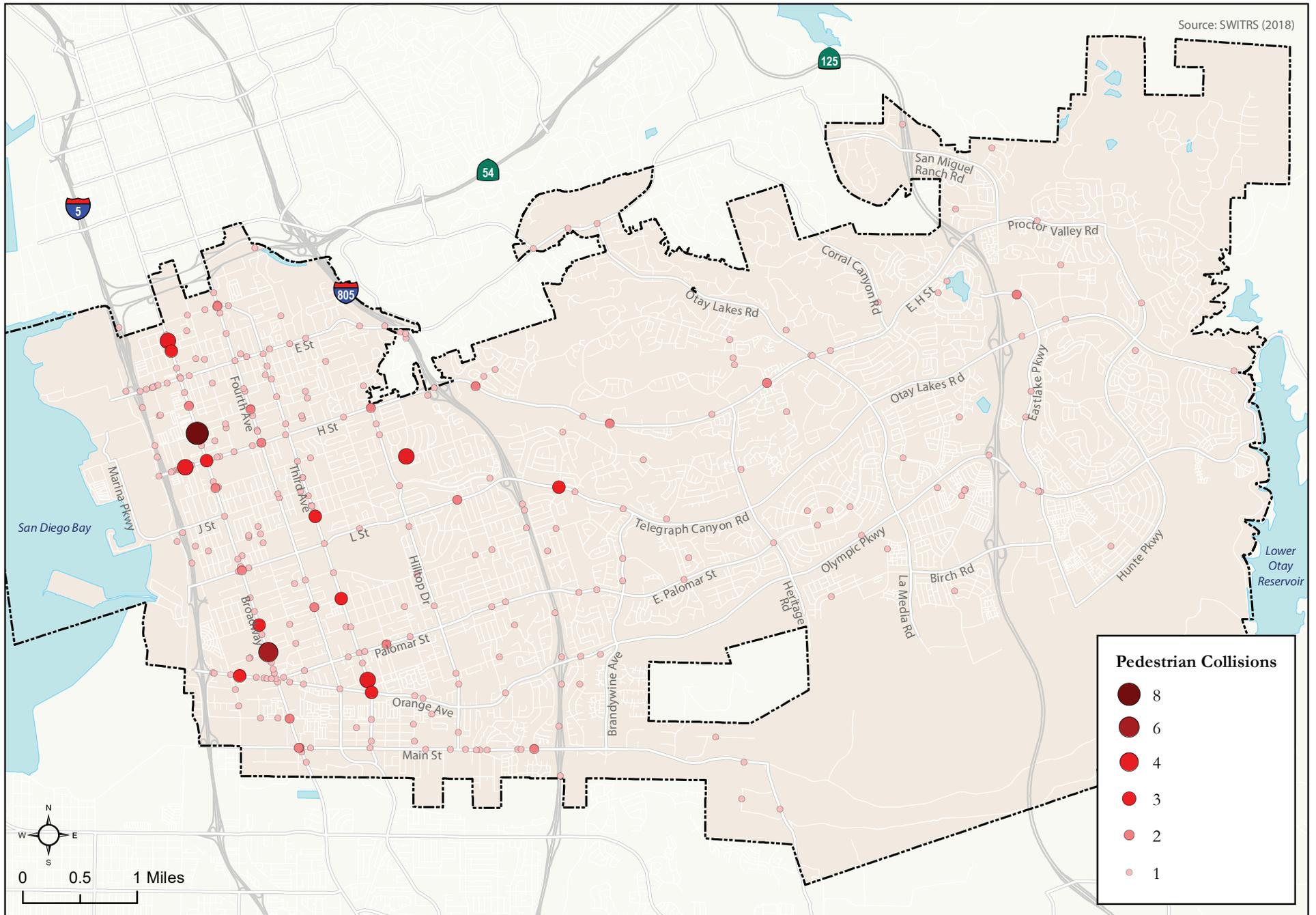


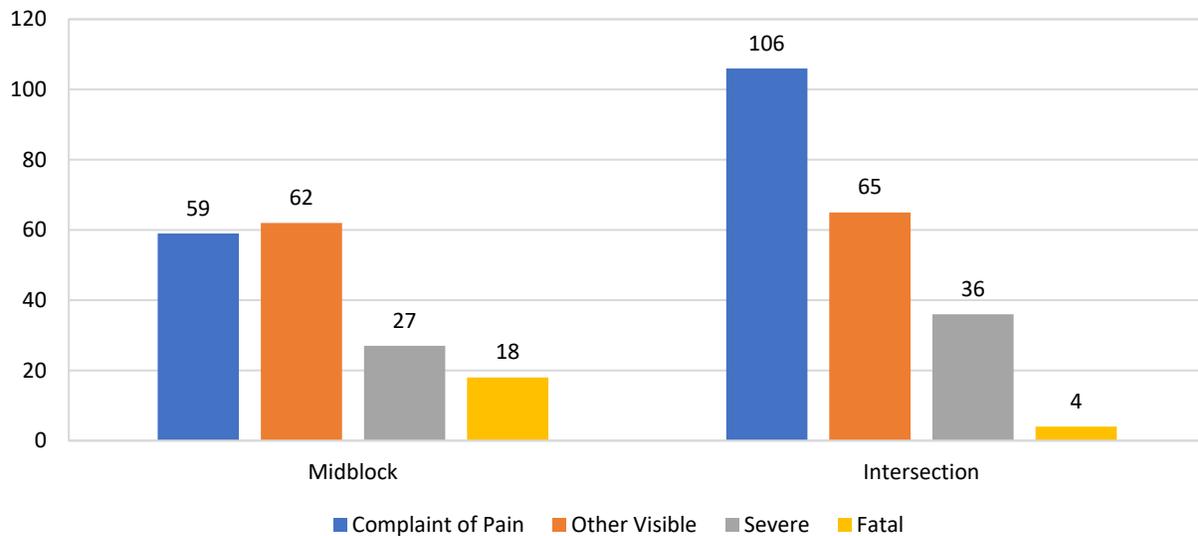
Table 3.5 Pedestrian Collision Rate per Resident Comparison (OTS 2016 Data)

Rank	City	Population	Pedestrian Collisions	Collisions per 10,000 Residents
1	San Francisco	874,008	936	10.71
2	Los Angeles	4,021,488	3,487	8.67
3	Oakland	427,503	350	8.19
4	Sacramento	494,266	299	6.05
5	Long Beach	477,628	284	5.95
6	San Diego	1,399,924	753	5.38
7	Santa Ana	337,843	167	4.94
8	Stockton	311,724	136	4.36
9	Anaheim	356,502	135	3.79
10	Chula Vista	265,357	94	3.54
11	San Jose	1,042,782	360	3.45
12	Bakersfield	382,570	124	3.24
13	Riverside	323,190	103	3.19
14	Irvine	267,097	51	1.91
15	Fresno	533,670	44	0.82

Source: California Office of Traffic Safety (2019); Chen Ryan Associates (2019)

Figure 3.7 summarizes pedestrian-involved collisions by roadway location and injury severity, differentiating between intersection and mid-block locations. As shown, over half of pedestrian-involved collisions were reported at intersection locations. A total of 85 pedestrian-involved collisions resulted in a severe or fatal injury, 22.5% of all pedestrian collisions. The severe/fatal injury collisions were evenly split among roadway environments, with 52% reported at mid-block locations and the remaining 48% reported within intersections.

Figure 3.7 Pedestrian Collision Severity by Roadway Location (2013 – 2017)



Source: SWITRS (2019); Chen Ryan Associates (2019)

Table 3.6 identifies the intersection locations where four or more pedestrian-involved collisions were reported. Three of the four locations intersections are along Broadway. The table also provides a summary of the intersection traffic control and the associated violations and movements reported at each respective location. This information will be used to inform the identification of potential recommendations.

Table 3.6 High Pedestrian Collision Locations (2013 – 2017)

Intersection	Control	Collisions	Description of Collisions
Broadway & G Street	Signalized: Permissive-Protected Left-Turns (NB/SB) / Permissive Left-Turns (EB/WB)	8	Four out of the eight collisions were due to a lack of the driver yielding the right-of-way to the pedestrian. Of those four collisions, all involved the driver making a turn (three were left-turn movements and the other was a right-turn movement). Two of the eight collisions were reported as the pedestrian failing to yield to a vehicle. The remaining two collisions were caused by the pedestrian walking into roadway at an inappropriate time.
Broadway & Oxford Street	Signalized: Protected Left-Turns (all directions)	6	A number of different collision causes were reported at this location. One collision was due to the pedestrian jaywalking, one was due to the pedestrian entering the intersection against the DO NOT CROSS symbol. Where the driver was at-fault, one record occurred due to the driver turning unsafely, another collision resulted from a driver failing to yield or take precautionary measure for a fully or partially blind pedestrian with the right-of-way.
Broadway & Chula Vista Street	Side-Street Stop Controlled (EB) / Pedestrian Actuated Flashers (NB/SB)	4	Three out of the four collisions were due to the driver failing yielding the right-of-way to the pedestrian. In all three of those collisions, the driver was heading south, while the pedestrian was traveling west. The driver was proceeding straight preceding all four collisions.
H Street & Oaklawn Avenue	Signalized ¹ : Protected Left-Turns (NB/SB) / Split Phase (EB/WB)	4	Three of the four collisions involved the vehicle driving at an unsafe high-speed for prevailing conditions. Of those three cases, the driver was proceeding straight prior to the accident.
Third Ave & Quintard St	Signalized: Protected (NB/SB) / Permissive Left-Turns (EB/WB)	4	The driver failed to yield to the pedestrian during three of the four collisions. Of those three collisions, the driver was making a left-turn movement. One of the collisions involved the pedestrian entering the roadway when there was a circular red or red arrow.
East J St & Claire Ave	Side-Street Stop Controlled (SB) / Uncontrolled (EB/WB)	4	Two of the collisions were due to pedestrian suddenly leaving the curb. The other two collisions involved the driver lacking to yield to the pedestrian, one of which was passing unsafely.

Source: SWITRS (2019); Chen Ryan Associates (2019)

Note ¹ Intersection was recently signalized in 2016, prior to that it was side-street stop controlled.

Table 3.7 identifies the two intersections where multiple severe/fatal pedestrian collisions were reported. The intersection of Broadway and G Street was reported to have the highest number of severe/fatal injury collisions, four, and was identified as experiencing the greatest number of total pedestrian-involved collisions overall, eight (Table 3.6). The intersection of Palomar Street and Palomar Trolley Center Drive was the only other intersection to experience multiple severe/fatal pedestrian collisions.

Table 3.7 Intersections with Multiple Severe and/or Fatal Pedestrian Collisions (2013 – 2017)

Rank	Intersection	Number of Severe/ Fatal Collisions
1	Broadway & G Street	4
2	Palomar Street & Palomar Trolley Center Drive	2

Source: SWITRS (2019); Chen Ryan Associates (2019)

Table 3.8 presents the violation codes by level of injury severity. The table includes the nine most frequent codes for the 377 pedestrian collisions. The most frequent code reported was 21950(a), vehicles failing to yield to pedestrians within a crosswalk, assigned 100 records. The second most frequent violation code reported was 21954(a), pedestrian failure to yield upon roadway outside of crosswalk, which was also attributed to 13 of the 22 fatal collisions (59%), six of which occurred on freeway mainlines (3 on Interstate 5 and 3 on Interstate 805).

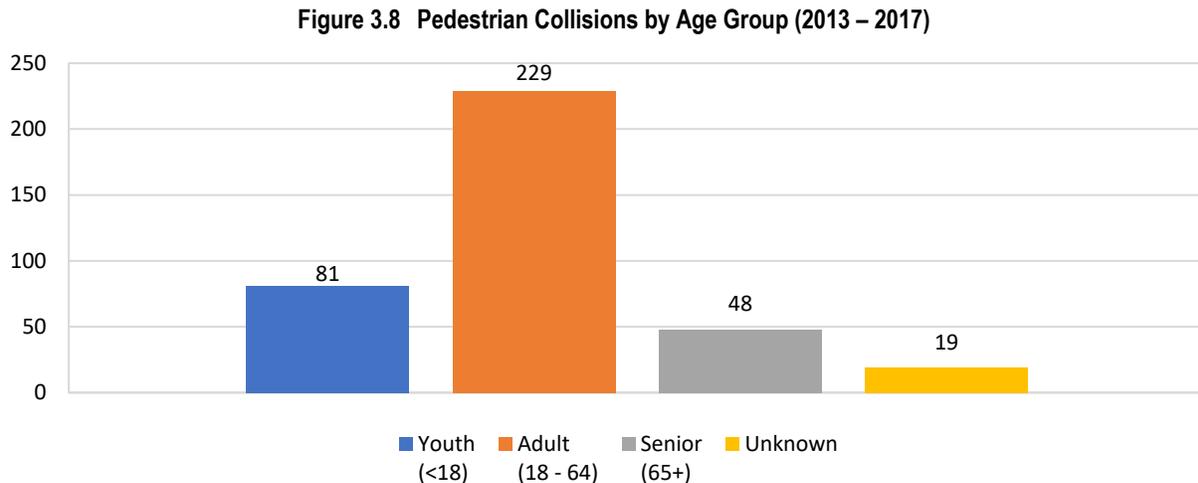
Table 3.8 Pedestrian Collision Violation Code by Injury Severity (2013 – 2017)

Violation Code & Definition ¹	Complaint of Pain	Other Visible Injury	Severe Injury	Fatal	Total
21950(a) The driver of a vehicle shall yield the right-of-way to a pedestrian crossing the roadway within any marked crosswalk or within any unmarked crosswalk at an intersection, except as otherwise provided.	56	33	11	-	100
21954(a) Every pedestrian upon a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway so near as to constitute an immediate hazard.	25	32	17	13	87
22350 No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property	15	13	3	2	33
21950(b) No pedestrian may suddenly leave a curb or other place of safety and walk or run into the path of a vehicle that is so close as to constitute an immediate hazard. No pedestrian may unnecessarily stop or delay traffic while in a marked or unmarked crosswalk.	9	9	2	1	21
21955 Between adjacent intersections controlled by traffic control signal devices or by police officers, pedestrians shall not cross the roadway at any place except in a crosswalk.	4	7	3	-	14
21456(b) No pedestrian shall start to cross the roadway in the direction of the signal, but any pedestrian who has partially completed crossing shall proceed to a sidewalk or safety zone or otherwise leave the roadway while the "WAIT" or "DON'T WALK" or approved "Upraised Hand" symbol is showing.	4	2	7	1	14
22106 No person shall start a vehicle stopped, standing, or parked on a highway, nor shall any person back a vehicle on a highway until such movement can be made with reasonable safety.	10	3	-	1	14
21952 A lamp-type turn signal shall be plainly visible and understandable in normal sunlight and at nighttime from a distance of at least 300 feet to the front and rear of the vehicle, except that turn signal lamps on vehicles of a size required to be equipped with clearance lamps shall be visible from a distance of 500 feet during such times.	8	5	-	-	13
22107 No person shall turn a vehicle from a direct course or move right or left upon a roadway until such movement can be made with reasonable safety...	4	5	4	-	13
Other	30	18	16	4	68
TOTAL	165	127	63	22	377

Source: SWITRS (2019); California Department of Motor Vehicles (2019); Chen Ryan Associates (2019)

Youth & Senior Safety

The distribution of collisions by age group, shown in **Figure 3.8**, trends with the overall population ages in Chula Vista (previously shown in Figure 2.7). Youth account for approximately 26% of the population and 23% of the pedestrian-involved collisions where age was reported. Seniors represent 12% of the population and 13% of the collisions.



Source: SWITRS (2019); Chen Ryan Associates (2019)

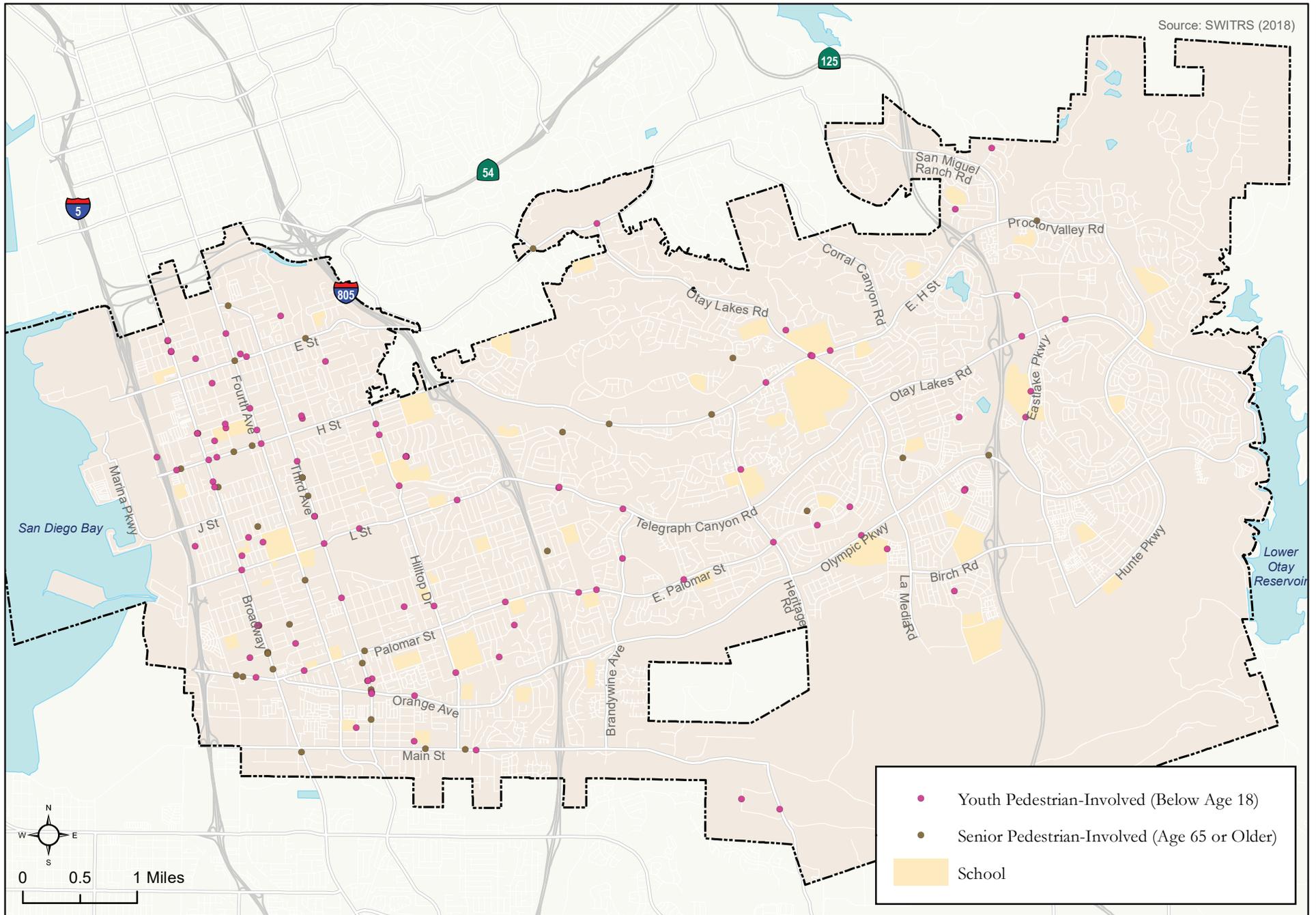
Figure 3.9 shows the locations of the youth and senior pedestrian collisions within Chula Vista. As shown, a greater concentration of collisions occurred west of the Interstate 805, where a number of schools and senior citizen facilities/dedicated housing are concentrated.

Table 3.9 identifies the leading violation codes for youth and senior collisions. The most frequent violation was 21950(a), vehicles failing to yield to pedestrians within a crosswalk, assigned 43 records, followed by code 21945(a), pedestrian failure to yield upon roadway outside of crosswalk.

Table 3.9 Youth and Senior Pedestrian Collision by Violation Code (2013 – 2017)

Violation Code & Definition ¹		TOTAL
21950(a)	The driver of a vehicle shall yield the right-of-way to a pedestrian crossing the roadway within any marked crosswalk or within any unmarked crosswalk at an intersection, except as otherwise provided.	43
21954(a)	Every pedestrian upon a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway so near as to constitute an immediate hazard.	24
21950(b)	No pedestrian may suddenly leave a curb or other place of safety and walk or run into the path of a vehicle that is so close as to constitute an immediate hazard. No pedestrian may unnecessarily stop or delay traffic while in a marked or unmarked crosswalk.	10
22350	No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property	8
Other		44
TOTAL		129

Source: SWITRS (2019); California Department of Motor Vehicles (2019); Chen Ryan Associates (2019)



4.0 People on Bicycles

This chapter provides an overview of bicycle facility classifications, a description of types of cyclists, and an overview of the existing bicycle environment related to connectivity, quality, and safety. **Table 4.1** identifies the four bicycle facility classifications recognized by Caltrans, including Class I bike paths, Class II bicycle lanes, Class III bicycle routes, and Class IV cycle tracks. These terms will be used throughout this chapter.

Table 4.1 Bicycle Facility Design Classification

Image	Description
	<p>Class I Bike Path – Also referred to as a multi-use path or shared-use path, Class I facilities provide a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Bike paths can provide connections where roadways are non-existent or unable to support bicycle travel. The minimum paved width for a two-way bike path is considered to be eight-feet (ten-feet preferred), with a two-foot wide graded area adjacent to each side of the pavement.</p> <p><i>(Bayshore Bikeway in Chula Vista pictured)</i></p>
	<p>Class II Bike Lane – Provides a striped lane designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited. Bike lanes are one-way facilities located on either side of a roadway. Pedestrian and motorist crossflows are permitted. Additional enhancements such as painted buffers and signage may be applied. The minimum bike lane width is considered to be five-feet when adjacent to on-street parking, or six-feet when posted speeds are greater than 40 miles per hour. Bike lanes can also have striped buffer areas a few feet in width to provide separation from vehicles.</p> <p><i>(Telegraph Canyon Road pictured)</i></p>
	<p>Class III Bike Route – Provides shared use of traffic lanes with cyclists and motor vehicles, identified by signage and/or street markings such as “sharrows”. Bike routes are best suited for low-speed, low-volume roadways. Bike routes provide network continuity or designate preferred routes through corridors with high demand.</p> <p><i>(Third Avenue pictured)</i></p>
	<p>Class IV Cycle Track – Also referred to as a separated or protected bikeway, cycle tracks provide a right-of-way designated exclusively for bicycle travel within the roadway and physically protected from vehicular traffic. Cycle tracks can provide for one-way or two-way travel. Types of separation include, but are not limited to, grade separation, flexible posts, or on-street parking.</p> <p><i>(J Street Two-Way Cycle Track in San Diego pictured)</i></p>

Source: Caltrans, Highway Design Manual (2016); Chen Ryan Associates (2019)

A cyclist’s skill level can dictate on which type of facility they feel most comfortable or where they will ride. Cyclists have been generally categorized as belonging to one of four types, based upon their comfort, skill level and interest in cycling (Dill, et al; *Four Types of Cyclists? Examination of Typology for Better Understanding of Bicycling Behavior and Potential, Portland State University, 2013*). **Table 4.2** provides a description of the four types of cyclists.

Table 4.2 The Four Types of Cyclists

Image	Description
	<p>The “Strong and the Fearless” represent fewer than half of a percent of the population. These are the people who will ride regardless of roadway conditions. They tend to self-identify as “cyclists,” and riding is a strong part of their identity. They are generally undeterred by roadway conditions.</p>
	<p>The “Enthusied and Confident” are those who have been attracted to cycling and are comfortable sharing the roadway with automotive traffic, but prefer to do so operating on their own facilities. They are attracted to riding where streets have been redesigned to make them work well for bicycling. They appreciate bicycle lanes and bicycle boulevards. This demographic comprises approximately seven percent of the population.</p>
	<p>The vast majority of people are the “Interested but Concerned.” These individuals are curious about bicycling. They like riding a bicycle, and they would like to ride more. However, they are cautious toward most riding conditions, and are uncomfortable with riding in mixed traffic. Very few regularly ride bicycles, and particularly not along arterials, or to major commercial and employment destinations. This group represents approximately 60 percent of the population. They would ride if they felt safer on the roadways—if cars were slower and less frequent, or were physically separated from cars.</p>
	<p>Approximately one third of the population falls into the last category - the “No Way, No How” group that is currently not interested in bicycling at all, for reasons of topography, inability, or simply a lack of interest.</p>

Source: Dill, et al (2013); Chen Ryan Associates (2019)

Generally, when planning for bicycle facilities, various levels of bicyclist abilities are considered in relation to the community and environment in which they live and cycle. Advanced cyclists are oftentimes happily served by bicycle *compatible roadways* designed to accommodate shared use by bicycles and vehicles. Basic riders, on the other hand, are more comfortable with *designated roadways* with bicycle facilities that encourage bicycle use.

A *compatible roadway* is one which incorporates design features that allow a competent bicyclist to safely share the roadway with a vehicle. Features may include carefully considered traffic volumes, speeds, and signage. Typically, this facility is a Class III bicycle route.

A *designated roadway* is one that encourages cycling through the use of lane markings and signage. Typically, this facility is a Class II bicycle lane or Class IV cycle track. Other considerations of a designated roadway may include traffic conditions, appropriate width and geometries, and directness of route. A Class I bicycle path is recommended for those inexperienced cyclists and other recreational uses since it is separated from the road and motorized traffic.

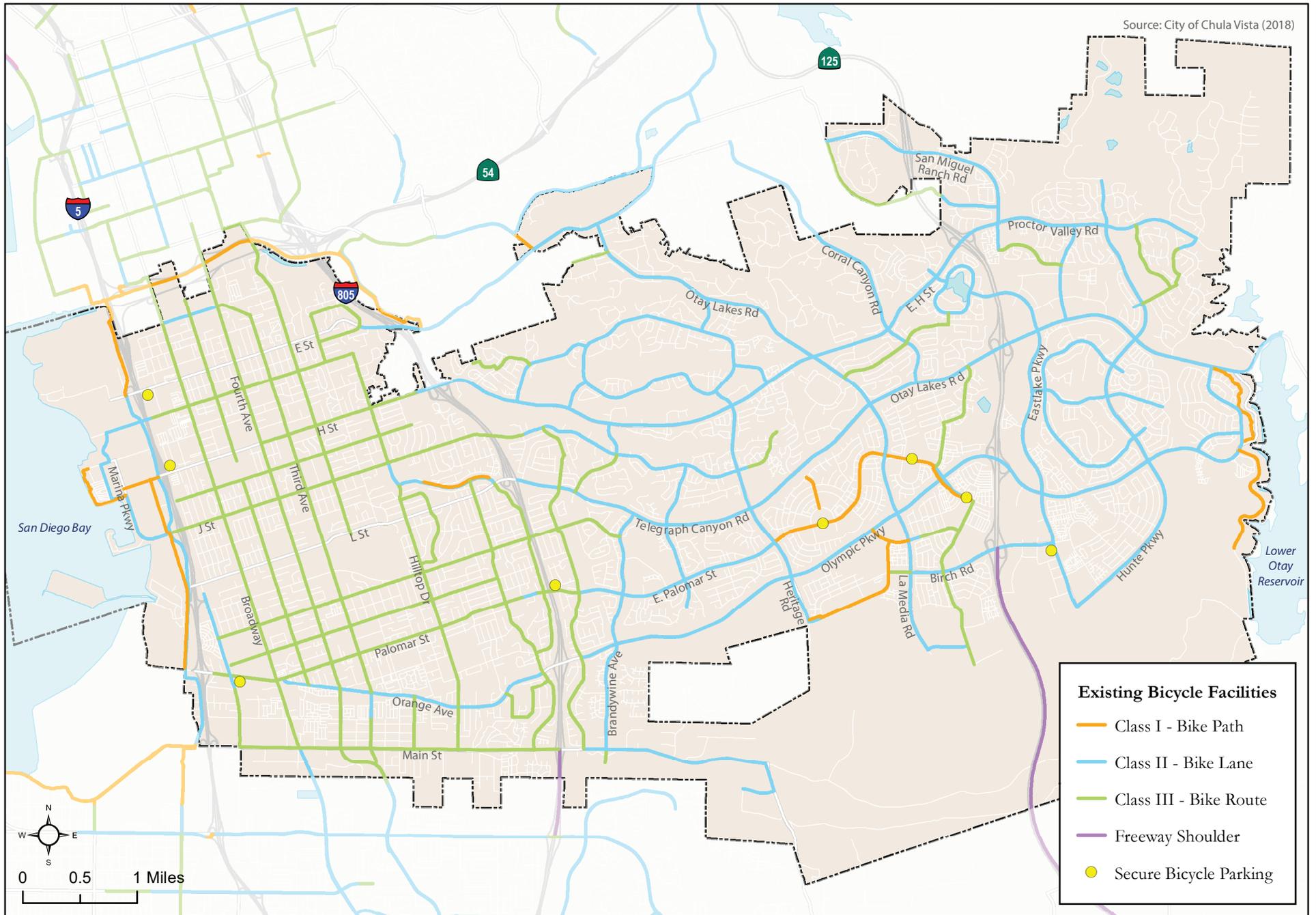
4.1 Network Connectivity

Existing bicycle facilities are displayed in **Figure 4.1**. The network is comprised of Class I, II, and III facilities. The west side of the City has an extensive network, largely comprised of bike routes, while the east side primarily consists of bike lanes along major roadways. The location of secure bicycle parking is also displayed in the figure. These are intended for long-term parking for use during commute trips or other long-term trips. They are located at Blue Line Trolley and Bus Rapid Transit stations. Noteworthy, are the multiple existing facilities that are a hybrid of Class I bike paths and Class IV cycle tracks. These facilities exhibit characteristics of each classification. Examples include H Street east of Bay Boulevard, and East Palomar Street east of Heritage Road. For the purposes of this ATP, these facilities are identified as Class I bike paths.

Many of the facilities planned in the 2011 Bikeway Master Plan have been implemented, including the Class III bike routes in western Chula Vista and Class II bike lanes to the east as well as a bike lane crossing Interstate 805 at H Street. However, some key connections still need to be implemented, such as the bike lanes on Telegraph Canyon across Interstate 805, along Main Street east of Interstate 805, and Industrial Boulevard south of Ada Street.

Since the adoption of the 2011 Bikeway Master Plan, Caltrans has recognized Class IV cycle tracks. As noted in Table 4.1, cycle tracks provide a protected facility for the exclusive use by bicyclists, which can greatly improve user comfort along roadways with relatively higher traffic volumes and speeds. This Active Transportation Plan will examine the feasibility of implementing protected facilities along higher volume arterials as a mechanism to improve safety and increase ridership.

Freeways are common barrier to active transportation travel, and Chula Vista is no exception. Interstates 5, 805, and State Route 125 cut north-south through the entire City. Freeways generally have limited opportunities to cross. Where present, freeway crossings are often located along roadways with high volumes of vehicles, high traffic speeds and multiple on- and off-ramps.



Interstate 5 has typical tight diamond interchanges with access provided by local streets that may not have sufficient roadway width to implement bicycle facilities. Interstate 805 has typical sweep ramps that make bike lanes more challenging. The City of Chula Vista recently collaborated with Caltrans and the Federal Highway Administration on the Interstate 805 Managed Lanes South project to identify multimodal improvements at on- and off-ramps. State Route 125 was more recently constructed and designed with a greater emphasis on pedestrian bicycle users. Note that even when facilities are provided across freeways, cyclists can face challenges. For example, cyclists must cross uncontrolled on-ramp lanes (J Street at I-5, H Street at I-805) or the bike lane can become interrupted by a right-turn only lane providing on-ramp access (Bonita Road at I-805).

Existing bicycle network centerline mileage is summarized by facility type in **Table 4.3**. As shown, 150 miles are currently built in Chula Vista, including freeway shoulders where riding is permitted.

Table 4.3 Bicycle Facility Classifications and Existing Network Mileage

Classification	Existing Mileage	Percent of Total
Class I Multi-Use Path	8.6	5.7%
Class II Bike Lane	77.9	52.0%
Class III Bike Route	60.8	40.6%
Class IV Cycle Track	-	-
Freeway Shoulder	2.6	1.7%
Total Mileage	149.9	100.0%

Source: City of Chula Vista (2018); SANDAG (2018); Chen Ryan Associates (2019)

An important consideration for bicycle networks is not only the provision of facilities, but ensuring those facilities are comfortable for users and connected to desirable destinations. Network quality and connectivity are further analyzed by examining key destinations which can be reached using comfortable – or low stress – facilities, this is described in the subsequent section. This Active Transportation Plan will identify opportunities to expand the network of comfortable facilities through new connections or the enhancement of existing facilities.

4.2 Level of Traffic Stress (LTS)

The bicycle environment was assessed using the bicycle Level of Traffic Stress (LTS) methodology for characterizing cycling environments, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in [Low-Stress Bicycling and Network Connectivity](#). LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist’s physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with dedicated right-turn lanes and unsignalized crossings.

Table 4.4 identifies the four LTS categories and provides a description of the traffic stress experienced by the cyclist and the environmental characteristics consistent with the category. LTS scores range from 1 (lowest stress) to 4 (highest stress) and correspond to roadways that different

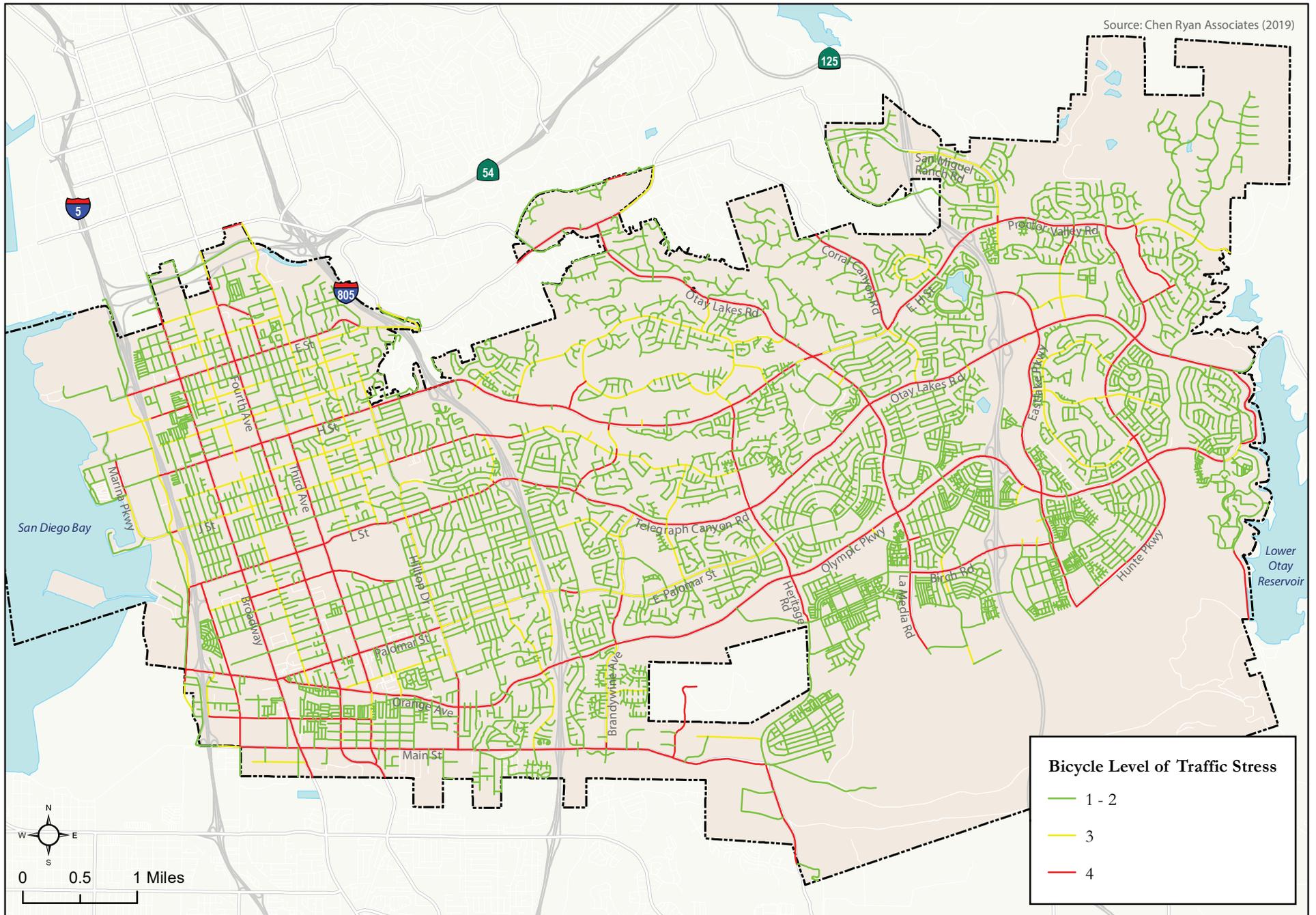
populations may find suitable for riding on, considering their stress tolerance. Each LTS classification is associated with a cyclist traffic tolerance category previously shown in Table 4.2.

Figure 4.2 displays the bicycle LTS results for all roadways and paths where cyclists are permitted in Chula Vista. Roadways with an LTS 1 or 2 environment are generally residential streets and collectors, characterized as having one lane in each direction while providing adequate width for cyclists and vehicles, with a low posted speed and low traffic volumes. The Class I bike paths (including hybrid bike path/cycle track) also received LTS 1 ratings. The majority of east-west connections across the freeways are LTS 4 environments due to high traffic volumes, high posted speed limits and the presence of right-turn only lanes. Improving the comfort of cyclists along connecting arterials will be a large focus of this Active Transportation Plan.

Table 4.4 Level of Traffic Stress Classifications and Descriptions

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

Source: Mekuria, et al., (2012); Chen Ryan Associates (2019)



Chula Vista Active Transportation Plan

Figure 4.2
Bicycle Level of Traffic Stress

The LTS analysis was further used to understand quality or comfortable connections to key destinations throughout the City. Low-stress connectivity is an analysis methodology that compares the amount of destinations that can be reached using low-stress links.

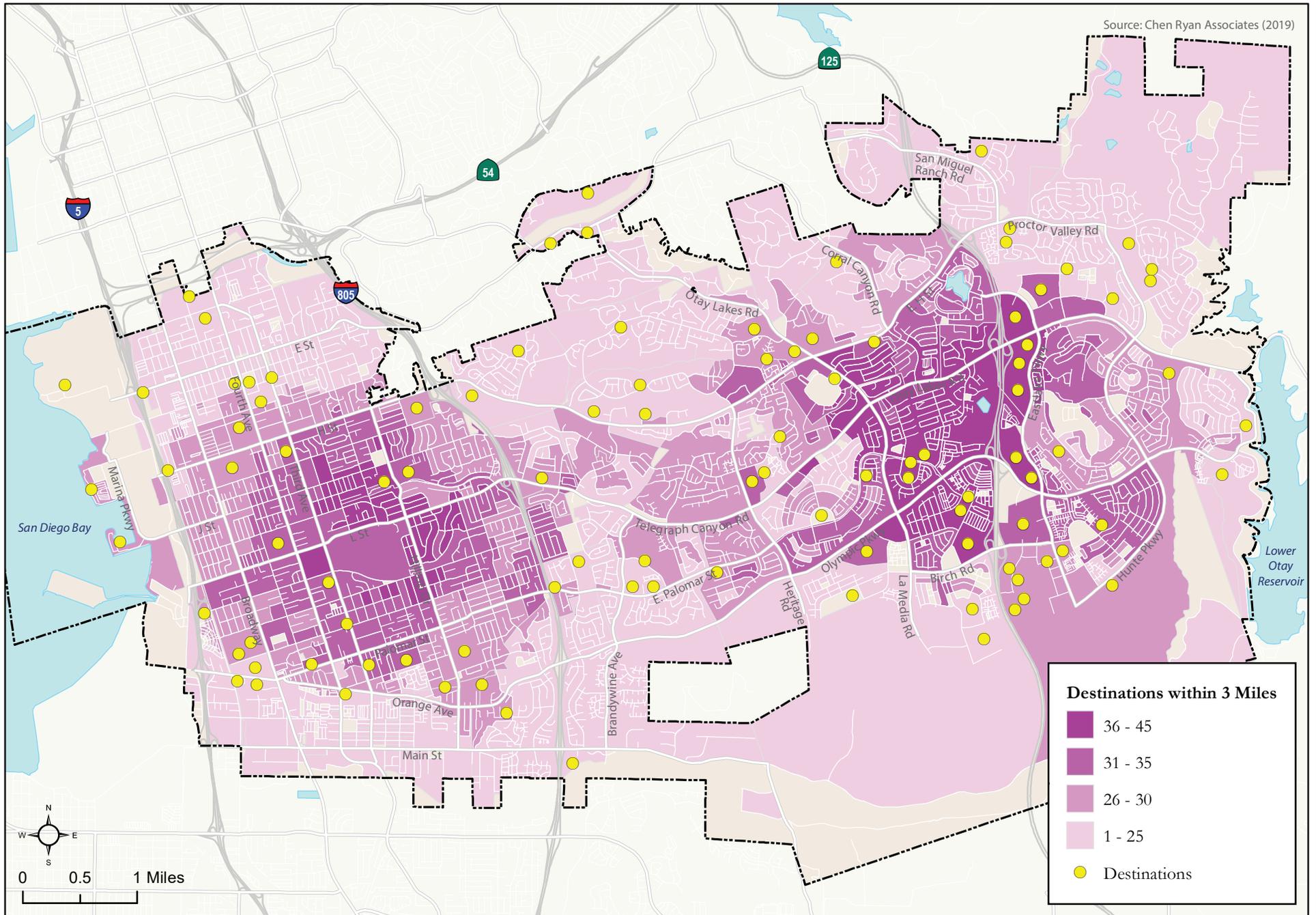
The components of the analysis include the following:

- Defined set of origins (census blocks with residential populations)
- Defined set of destinations (locations identified as Activity Centers in the General Plan, and Attractor Submodel land uses: major transit stops, parks, schools, civic building)
- Base network of all bikeable roadways
- Low-stress-only network (all bikeable roadways scoring LTS 2 or better)

Routes are generated between all origin-destination pairs that are within a three-mile travel distance of one another (excluding origin-destination pairs that are under 1,000 feet apart). This is performed one time for the base network – to determine the maximum number of destinations accessible, and one time for the low-stress network – to determine which portion of those trips can be completed on low-stress links only without significant detour. The analysis can also be run again incorporating expected future conditions, which may envision increased connectivity of the low-stress network by way of completed bicycle projects.

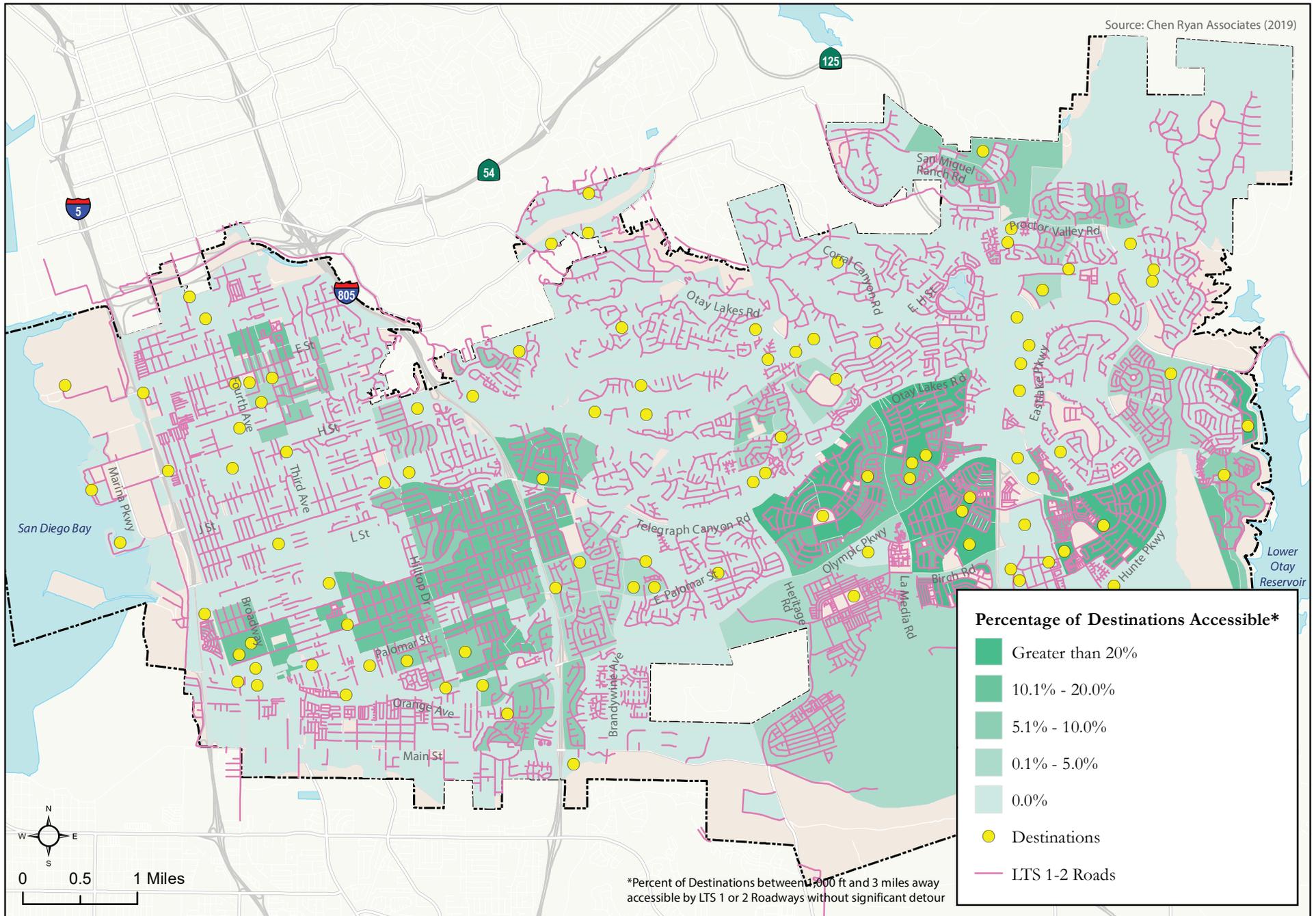
Figure 4.3 shows the locations of destinations selected for the analysis and the quantity of those destinations within three miles by census block. This output represents what is accessible along the base network and would be a best-case scenario if all existing transportation links were low-stress. Due to the uneven spatial distribution of destinations within the City, not all census blocks have the same concentration of destinations within three miles. A total of 101 destinations were coded, the census blocks in and around the Eastlake portion of the Chula Vista had the highest quantity of selected destinations within three miles (many of those blocks had between 40 and 45 destinations within three miles).

Figure 4.4 shows the results of the Low-Stress Connectivity analysis under existing conditions. The percentage quantities represented in this figure are the percent of destinations within three miles that are accessible without detour on low-stress-only links. As shown, throughout much of the city there are no destinations that are accessible without needing to traverse higher-stress links. Some portions of the city have some existing degree of low-stress-connectivity to destinations, including blocks within and around Eastlake, Heritage Park, Otay Ranch Town Center and Hilltop Park.



Chula Vista Active Transportation Plan

Figure 4.3
Destinations within Three Miles by Populated Census Blocks



4.3 Bicycle Collision Analysis

Collision data can be used to identify potential deficiencies related to bicycle travel. The collision review draws from five years of data (January 2013 – December 2017) obtained from the California Statewide Integrated Traffic Records System (SWITRS). The analysis was used to identify trends and patterns related to collision locations, causes, time, party-at-fault and victim age.

4.2.1 Collision Locations

A total of 276 bicycle-involved collisions were reported during the five-year period. Bicycle-involved collision locations are displayed in **Figure 4.5**. Collisions were most concentrated in the Downtown area, near the Palomar Avenue corridor, Broadway and L Street.

California OTS bicycle collision data for the year 2016 was used to compare Chula Vista to cities with similar population size. Collision rates per 10,000 residents were calculated to normalize the data and compensate for the large population size discrepancy among the city size group Chula Vista falls into (greater than 250,000).

Table 4.5 presents bicycle collision rates for the 15 cities in Chula Vista’s grouping. The collision rate calculation determined Chula Vista is ranked as the second best among its sister cities. While this is good news for Chula Vista, it does not take into consideration the level of ridership, which is understood to be relatively higher in dense areas like San Francisco and Long Beach.

Table 4.5 Bicycle Collision Rate per Resident Comparison – OTS 2016 Data

Rank	City	Population	Bicycle Collisions	Collisions per 10,000 Residents
1	San Francisco	874,008	590	6.75
2	Long Beach	477,628	254	5.32
3	Sacramento	494,266	254	5.14
4	Los Angeles	4,021,488	1,980	4.92
5	Oakland	427,503	206	4.82
6	Santa Ana	337,843	145	4.29
7	Stockton	311,724	130	4.17
8	San Diego	1,399,924	457	3.26
9	Irvine	267,097	84	3.14
10	Anaheim	356,502	101	2.83
11	Riverside	323,190	88	2.72
12	San Jose	1,042,782	275	2.64
13	Bakersfield	382,570	88	2.30
14	Chula Vista	265,357	51	1.92
15	Fresno	533,670	20	0.37

Source: California Office of Traffic Safety (2019); Chen Ryan Associates (2019)

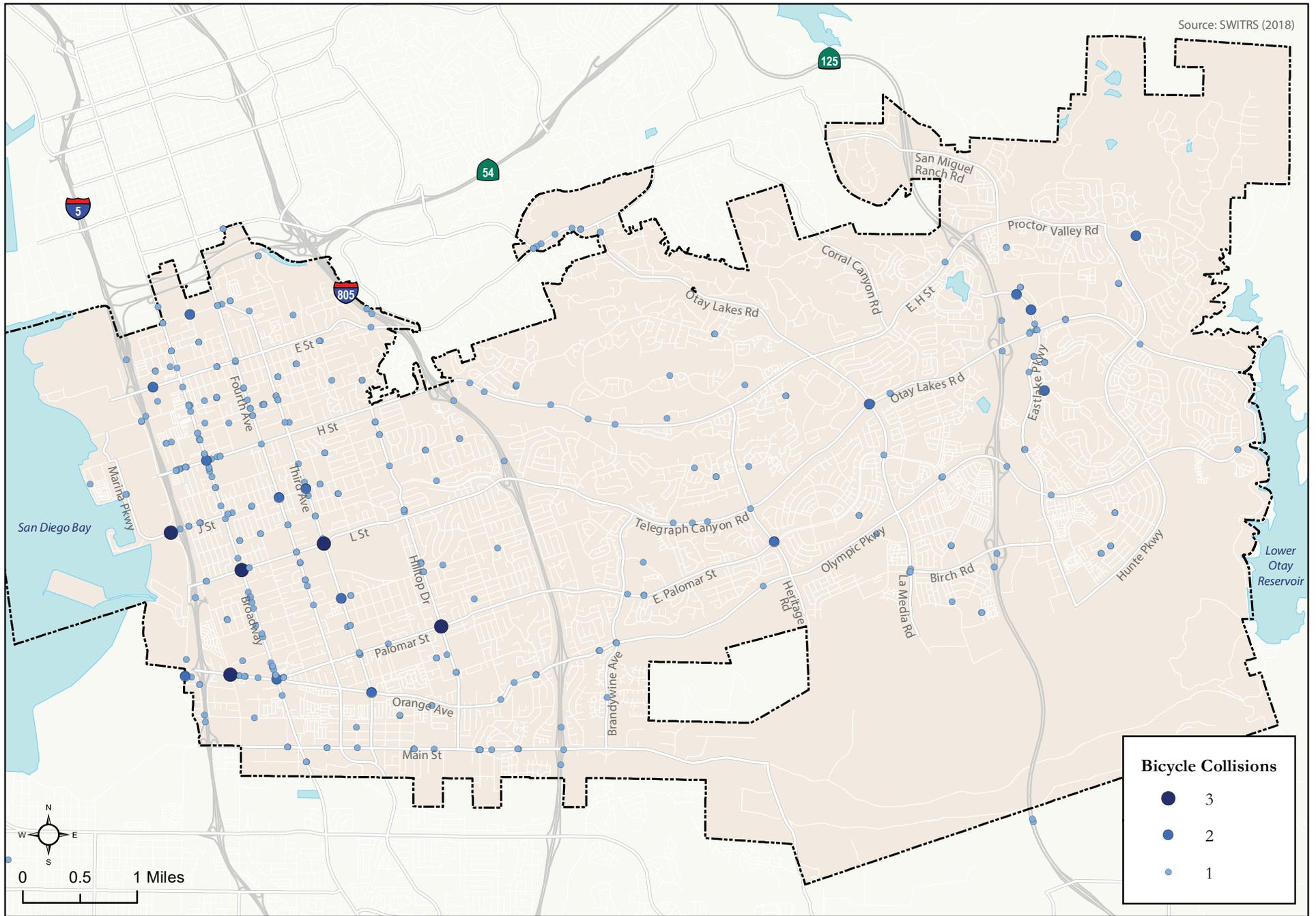
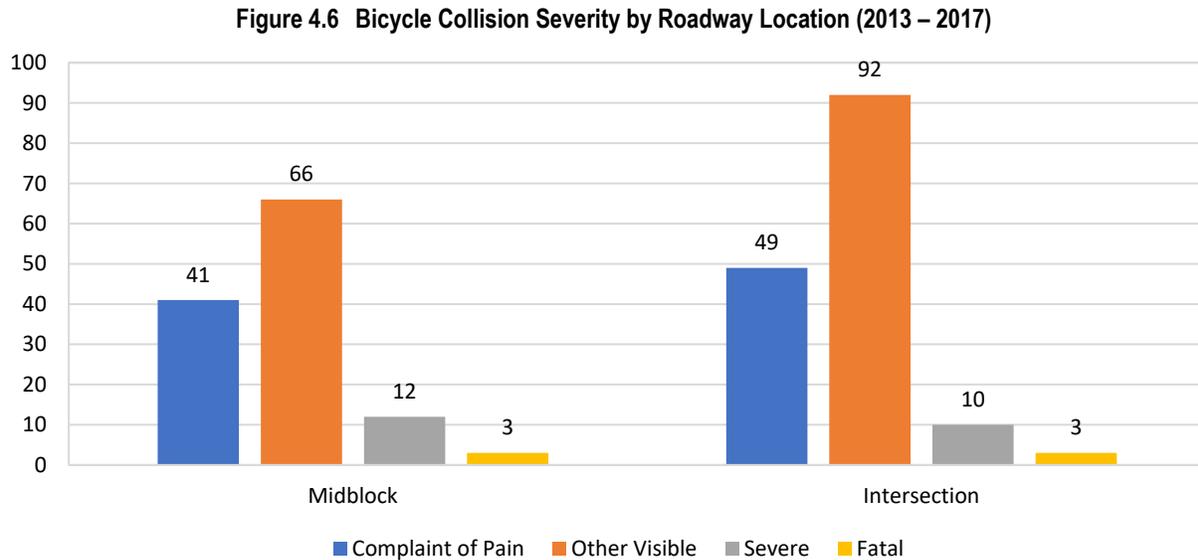


Figure 4.6 presents collision severity by roadway location. The distribution was similar among the locations, with approximately 56% of all bicycle collisions reported within intersections, and the remaining 44% at midblock locations. A total of 28 bicycle-involved collisions resulted in a severe or fatal injury, 54% of which occurred at mid-block locations.



Source: SWITRS (2019); Chen Ryan Associates (2019)

Table 4.6 identifies the five intersections where three bicycle involved collisions were reported, along with a description of the driver and bicyclist movements and party-at-fault. A variety of violations were assigned to the five intersections. Fifteen additional intersections each experienced 2 collisions. These locations are identified below, along with any recent or planned improvements, where applicable:

- Bay Boulevard / Stella Street (Bayshore Bikeway project anticipated in 2021)
- Woodlawn Avenue / E Street
- Broadway / H Street
- Broadway / Orange Avenue
- Fourth Avenue / J Street (traffic signal modification will add left-turn phase indications)
- Fifth Avenue / C Street
- Third Avenue / J Street
- Third Avenue / Naples Street
- Third Avenue / Palomar Street
- Heritage Road / E Palomar Street (recent signal and intersection improvements to support South Bay Rapid Route 225 bus guide way)
- Otay Lakes Road / La Media Road / Telegraph Canyon Road
- Eastlake Parkway / Miller Drive
- Eastlake Parkway / Fenton Street
- N. Greensview Drive / S. Greensview Drive / Clubhouse Drive
- Duncan Ranch Road / N Compass Circle

Table 4.6 Intersections with 3 or More Bicycle Collisions (2013 – 2017)

Intersection	Control	Collisions	Description of Collisions
3rd Avenue and L Street	Signalized: Protected Left-Turns (all directions)	3	Two of the three collisions involved the driver lacking to yield to the bicyclist. One of the occasions involved the driver failing to yield to an oncoming cyclist. The other occasion was the driver failing to stop at the limit line. The third collision was due to the bicyclists riding in the opposite direction of traffic.
Broadway and L Street	Signalized: Protected Left-Turns (all directions)	3	Two of the three collisions involved the driver at fault. In these cases, the driver was driving at an unsafe speed and failing to stop at the limit line.
Industrial Blvd and Palomar St	Signalized: Protected-Permissive Left-Turns (all directions)	3	One of the collisions involved the bicyclists operating in the opposite direction of traffic. Another collision involved the driver making an unsafe turn.
Bay Boulevard and J Street	All Way Stop Controlled	3	Two of the collisions involved the driver making an unsafe movement. One was due to the driver starting or backing unsafely, and the other was due to the driver making an unsafe turning movement.
Palomar Street and Hilltop Drive	Signalized: Permissive Left-Turns (all directions)	3	One of the collisions involved the bicyclists riding under the influence of alcohol, drugs, or both. One of the other collisions involved the driver operating at an unsafe speed.

Source: SWITRS (2019); Chen Ryan Associates (2019)

Crash type is reported for bicycle collisions in **Table 4.7**. Over half of the collisions were reported as broadside (53%), with the second highest category, sideswipe, at 15%. Broadside collisions are common at intersection and driveway locations, while sideswipes are more frequent midblock.

Table 4.7 Bicycle Collision Type (2013 – 2017)

Collision Type	Collisions	Percent of Total
Broadside	145	52.5%
Sideswipe	40	14.5%
Other	28	10.1%
Rear End	17	6.2%
Head-On	16	5.8%
Bicycle/Pedestrian	14	5.1%
Hit Object	8	2.9%
Overtaken	7	2.5%
Not Stated	1	0.4%
Total	276	100%

Source: SWITRS (2019); Chen Ryan Associates (2019)

Table 4.10 presents the violation codes by level of injury severity. It displays the eight most frequent codes as well as the combination of all other (less frequent) codes. The most frequent code for all injury collisions was 22350, vehicles failing to drive at a reasonable speed, which was assigned 37 records. The code with the second most collisions, was code 22107, turning a vehicle unsafely, which was attributed to the two fatal collisions, resulting in 2 of the 6 fatal collisions.

Table 4.8 Bicycle Collision Violation Code by Injury Severity (2013 – 2017)

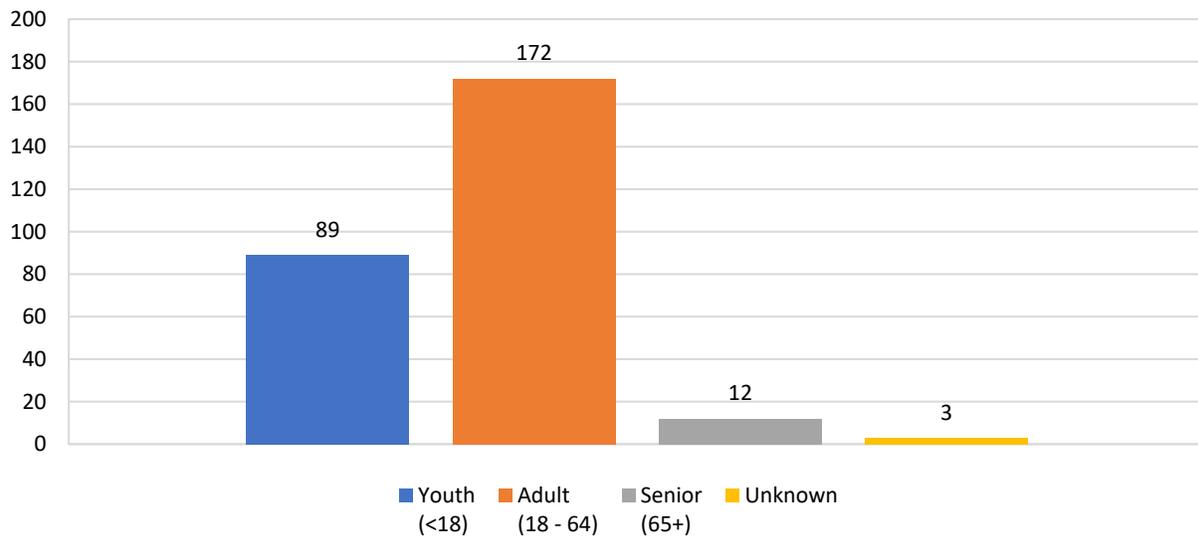
Violation Code & Definition	Other Visible Injury	Complaint of Pain	Severe Injury	Fatal	TOTAL
22350 No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.	23	9	5	-	37
22107 No person shall turn a vehicle from a direct course or move right or left upon a roadway until such movement can be made with reasonable safety...	24	9	-	2	35
21202(a) Any person operating a bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at that time shall ride as close as practicable to the right-hand curb or edge of the roadway...	21	12	2	-	35
21650.1 A bicycle operated on a roadway, or the shoulder of a highway, shall be operated in the same direction as vehicles are required to be driven upon the roadway.	9	14	2	-	25
21453(a) A driver facing a steady circular red signal alone shall stop at a marked limit line, but if none, before entering the crosswalk on the near side of the intersection or, if none, then before entering the intersection, and shall remain stopped until an indication to proceed is shown, except as provided in subdivision (b).	10	8	-	-	18
21804(a) The driver of any vehicle about to enter or cross a highway from any public or private property, or from an alley, shall yield the right-of-way to all traffic, as defined in Section 620, approaching on the highway close enough to constitute an immediate hazard, and shall continue to yield the right-of-way to that traffic until he or she can proceed with reasonable safety.	8	5	1	-	14
21650 Upon all highways, a vehicle shall be driven upon the right half of the roadway.	7	1	2	-	10
21801(a) The driver of a vehicle intending to turn to the left or to complete a U-turn upon a highway, or to turn left into public or private property, or an alley, shall yield the right-of-way to all vehicles approaching from the opposite direction which are close enough to constitute a hazard at any time during the turning movement, and shall continue to yield the right-of-way to the approaching vehicles until the left turn or U-turn can be made with reasonable safety.	5	3	1	-	9
Other	51	29	9	4	93
TOTAL	158	90	22	6	276

Source: SWITRS (2019); California Department of Motor Vehicles (2019); Chen Ryan Associates (2019)

Youth & Senior Safety

Bicycle collisions are displayed by age group in **Figure 4.7**. The 16-20-year-old age group experienced the most collisions (62 collisions), followed by the 11-15-year-old age group (42 collisions). For the youth population (17 and younger), 99 bicycle-involved collisions were reported. For seniors (65 and older), 12 bicycle-involved collisions were identified.

Figure 4.7 Bicycle Collisions by Age (January 2013 – December 2017)



Source: SWITRS (2019); Chen Ryan Associates (2019)

Figure 4.8 displays youth and senior bicycle-involved collision locations. Similar to the distribution of the bicycle collisions presented in Figure 4.5, concentrations are present in western Chula Vista.

Five of the 12 senior collisions were reported along Broadway. Many of the bicycle incidents along Broadway involve cyclists riding along sidewalks, which is not permitted in commercial zones per the Chula Vista Municipal Code. The City is in the process of converting 3.9-miles of Class III bike routes to Class II bike lanes along the Broadway corridor, which will provide a dedicated facility for cyclists, making them more visible to drivers and encourage bicyclists not to ride along the sidewalk.

An additional cluster of three collisions is at the southwestern most part of the City, including two records along Interstate 5. In the east, youth collision concentrations are present along Eastlake Parkway, near Eastlake High School, Chula Vista Community Park and Eastlake Village Market Place.

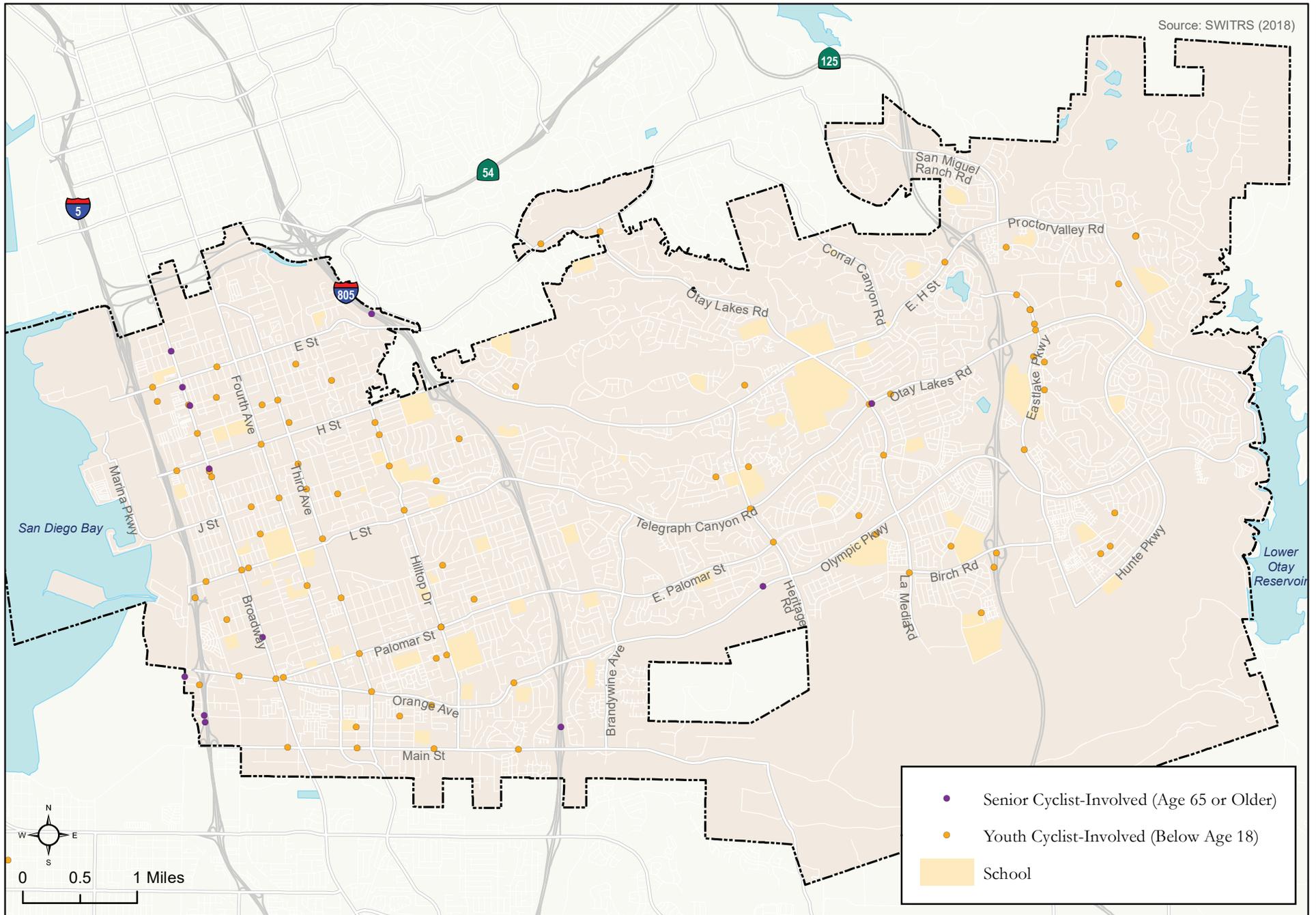


Table 4.9 identifies the party-at-fault by roadway location for youth and senior collisions. For both youth and seniors, the bicyclist was largely the party-at-fault, regardless of location.

Table 4.9 Party-at-Fault by Roadway Location for Youth and Senior Bicycle Collisions (2013 – 2017)

		Midblock	Intersection	Total
Youth	Bicycle	19	46	65
	Driver	7	17	24
	Total Youth	26	63	89
		Midblock	Intersection	Total
Senior	Bicycle	7	3	10
	Driver	1	1	2
	Total Senior	8	4	12

Source: SWITRS (2019); Chen Ryan Associates (2019)

Table 4.10 identifies the leading violation codes for youth and senior collisions. The table includes the four most frequent codes for the 101 youth and senior collisions. The most frequent violation code reported was 21202(a), bicyclist failing to ride as close to the right-hand side of the roadway as practicable, assigned 16 records. The second most frequent violation code reported was 22350, driver operating vehicle at an unreasonable and unsafe speed, regardless of conditions.

Table 4.10 Youth and Senior Bicycle Collisions by Violation Code

Violation Code & Definition ¹	TOTAL
21202(a) Any person operating a bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at that time shall ride as close as practicable to the right-hand curb or edge of the roadway.	16
22350 No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.	15
21650.1 A bicycle operated on a roadway, or the shoulder of a highway, shall be operated in the same direction as vehicles are required to be driven upon the roadway.	10
21453(a) A driver facing a steady circular red signal alone shall stop at a marked limit line, but if none, before entering the crosswalk on the near side of the intersection or, if none, then before entering the intersection, and shall remain stopped until an indication to proceed is shown, except as provided in subdivision (b).	10
Other Varies	50
	TOTAL 101

Source: SWITRS (2019); California Department of Motor Vehicles (2019); Chen Ryan Associates (2019)

5.0 People on Transit

Chula Vista is served by MTS bus and trolley service. The bus service includes the recently opened South Bay Rapid, in addition to established regular bus and limited bus service.

5.1 Existing Service

As shown in **Figure 5.1**, Chula Vista is served by Bus Routes 225, 701, 704, 705, 707, 709, 712/712L, 929 and 932, and the Blue Line Trolley. Chula Vista is well-served by east-west and north-south transit routes. However, the far eastern portion of the City is not currently served by transit.

Currently, MTS vehicles have bike racks onboard. As previously shown in Figure 4-1, secure bicycle parking is provided at major transit stops throughout the City, including all three Blue Line Trolley Stations (E Street, H Street, and Palomar Street), and multiple Rapid bus stops. This is important considering not all transit patrons are able to bring bicycles on board if on-board bike accommodation is full. Common amenities at transit stops include shelters, benches, and trash cans. Amenities are maintained by MTS, and are located at stops with relatively higher ridership.

5.2 Transit Ridership

Figure 5.2 displays daily transit ridership ranges by stop. **Table 5.1** summarizes average daily ridership at locations with an average of 500 or more boardings and alightings. The Palomar Street Station has the highest boardings and alightings of all stations in Chula Vista. This transit station is the convergence point for the Blue Line Trolley and three bus routes (701, 704, and 712).

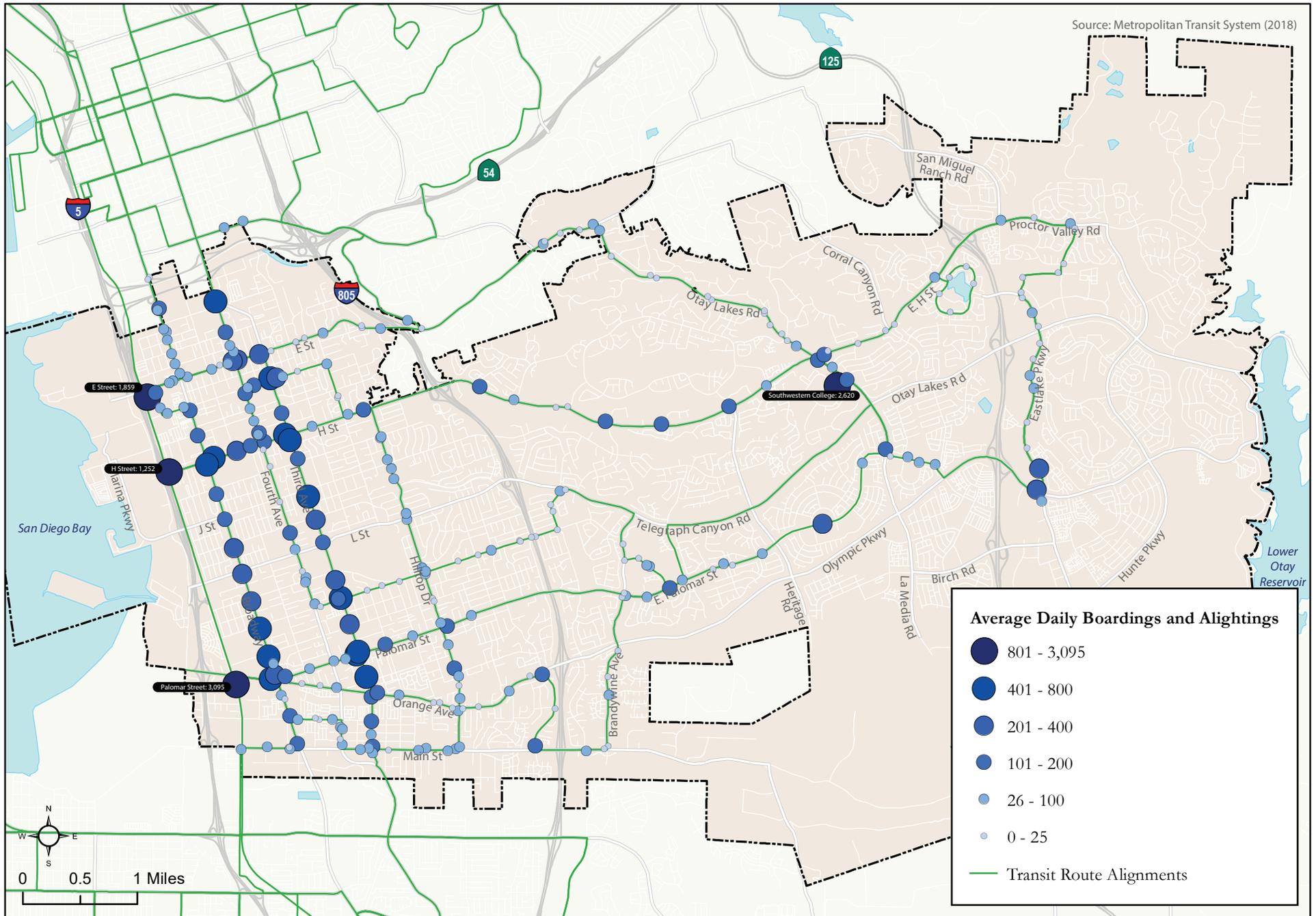
Table 5.1 Transit Stops by Name and Daily Boardings and Alightings (January 2018)

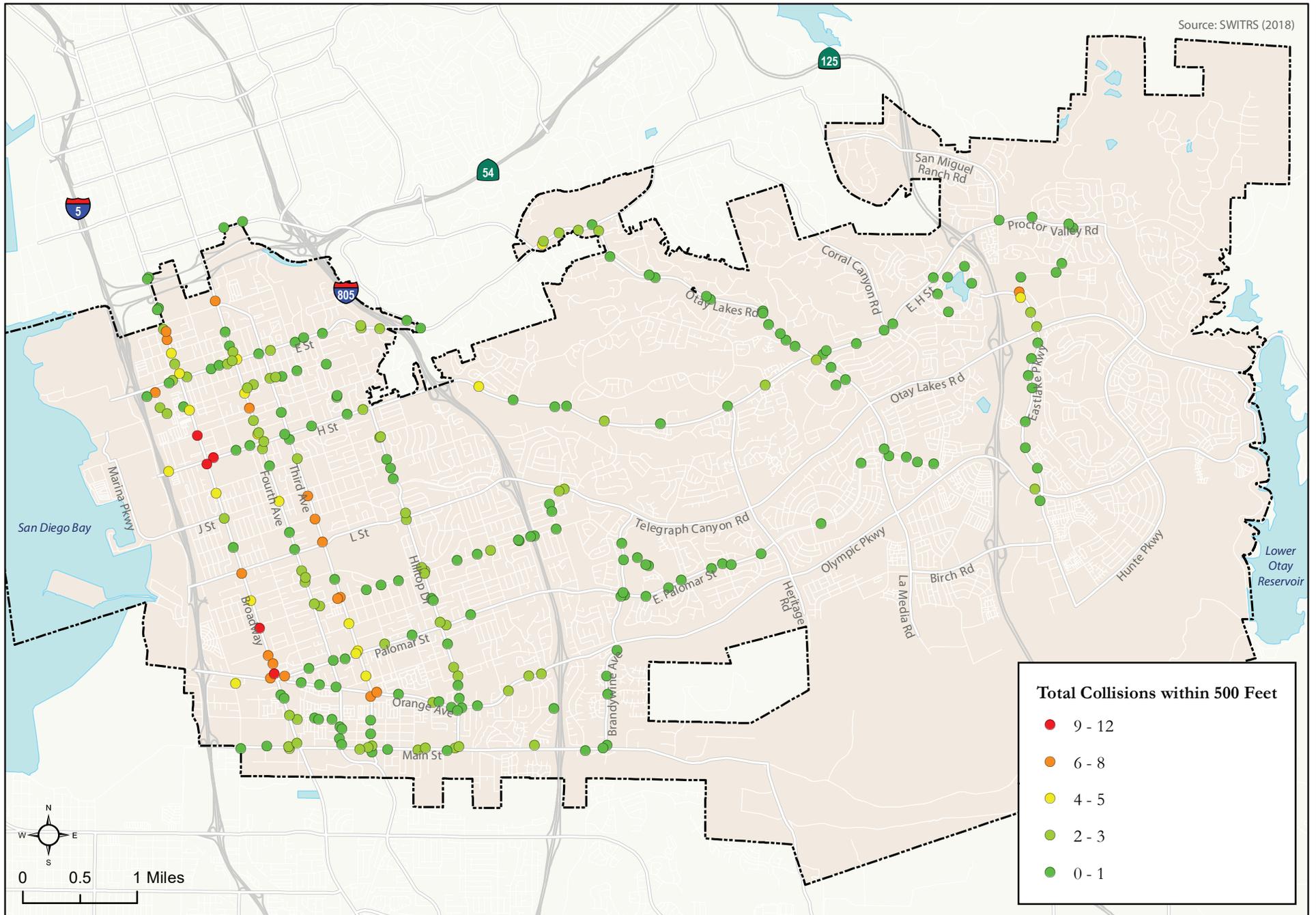
Stop Name ¹	Boardings + Alightings
Palomar Street Trolley Station	3,095
Southwestern College Transit Center	2,620
E Street Trolley Station	1,859
H Street Trolley Station	1,252
Palomar Street & 3rd Avenue Stop	778
H Street and 3rd Avenue Stop	710
Palomar Street & Broadway Stop	694
3rd Avenue & H Street	647
4th Avenue & C Street	616
H Street & Broadway	614
3rd Avenue & Palomar Street	561
Broadway & H Street	529

Source: Metropolitan Transit System (2018)

Note: ¹ Does not include South Bay Rapid ridership

Transit riders frequently access stations by walking or riding a bike, emphasizing the importance of ensuring safe active transportation mobility surrounding transit stop areas. **Figure 5.3** displays the locations of pedestrian- and bicycle-involved collisions with 500' of a transit stop.





Chula Vista Active Transportation Plan

Figure 5.3
Pedestrian and Bicycle-Involved Collisions within 500 Feet of Transit Stops (2013 - 2017)

6.0 Opportunities and Constraints

This chapter summarizes the opportunities and constraints identified through the existing conditions analysis. The synthesis incorporates information derived from the review of existing documents, review of existing infrastructure, bicycle and pedestrian demand, and collision and needs analyses.

Currently Planned or Identified Improvements

Several documents have identified or planned improvements intended to improve safety and mobility for people walking and riding bicycles. Documents such as the Active CIP Projects List, Park and Recreation Master Plan Update, F Street Promenade Streetscape Master Plan, Chula Vista Elementary School District Safe Routes to School Master Plan, and Seniors, Sidewalks, and the Centennial will be referenced throughout the identification of Active Transportation Plan improvements to ensure consistency and leverage the work completed. Additionally, the City is in the process of converting 3.9-miles of Class III bike routes to Class II bike lanes along the Broadway corridor, which will provide a dedicated facility for cyclists, making them more visible to drivers and encourage bicyclists not to ride along the sidewalk while providing a major north-south bicycle connection within western Chula Vista.

Street Grid

Strong street grid in the western part of the City maximizes connection opportunities for all travel modes. Opportunity to establish travel corridors along low-volume, low-speed roadways. Many roadways in western Chula Vista are designated as Bike Routes, which can be further enhanced with features to slow traffic or divert to arterials intended to carry higher volumes of traffic. Buffered bike lanes and bike lanes will soon be implemented along the Broadway corridor, providing a dedicated facility for the exclusive use by bicyclists where high collision frequencies have been previously reported. This will also benefit pedestrians attempting to cross Broadway, with a road diet in the northern extent and also limiting vehicular exposure by decreasing the amount of roadway intended for vehicular travel.

Multi-Use Connections & Class I Facilities

Several multi-use pathways provide unique connections for pedestrians and bicyclists in eastern Chula Vista. The pathways greatly enhance connectivity for active travel by opening up more direct routes from cul-de-sacs and an otherwise circuitous roadway network. Grade separated bridges across Olympic Parkway at E Palomar Street and across La Media Road at E Palomar Street further supplement the pathway network with safe and comfortable crossings of high-volume arterial roadways. Similarly, several Class I multi-use paths provide a facility for the exclusive use of bicyclists and pedestrians that is physically separated from vehicular traffic. Class I facilities include the Bayshore Bikeway, H Street west of Bay Boulevard, and East Palomar Street east of Heritage Road. Connecting the pathways and protected facilities to key activity centers and destinations could encourage more use of these investments and make trips by active travel more appealing.

Transit Ridership

High transit ridership, particularly in western Chula Vista, may also indicate greater bicycle and pedestrian activity in areas surrounding transit stops. The Blue Line Trolley stations, Southwestern College Transit Center and bus stops along H Street, Palomar Street and 3rd Avenue were reported as having the greatest ridership. The newly opened South Bay Rapid is also likely to draw relatively higher ridership levels. Providing enhanced bicycle and pedestrian connections to transit facilities may provide benefits for bicyclists, pedestrians, and transit riders, while also encouraging transit use and improving multimodal safety in high activity areas.

High Propensity for Active Transportation

The Active Transportation Propensity Model shows a high propensity in the northwestern quadrant of the City, with a smaller node of high propensity surrounding the intersection of East H Street and Otay Lakes Road. There are also a series of smaller nodes that track the transit stations: Palomar Station, East Palomar Station, Heritage Rapid Station, Lomas Verdes Rapid Station, Otay Ranch Rapid Station.

There are a greater number of census block groups with higher percentages of zero-vehicle households west of Interstate 805 than east of Interstate 805. There are a greater number of census block groups with higher percentages of transit commuters west of Interstate 805 than east of Interstate 805.

Freeways and High-Speed Arterials

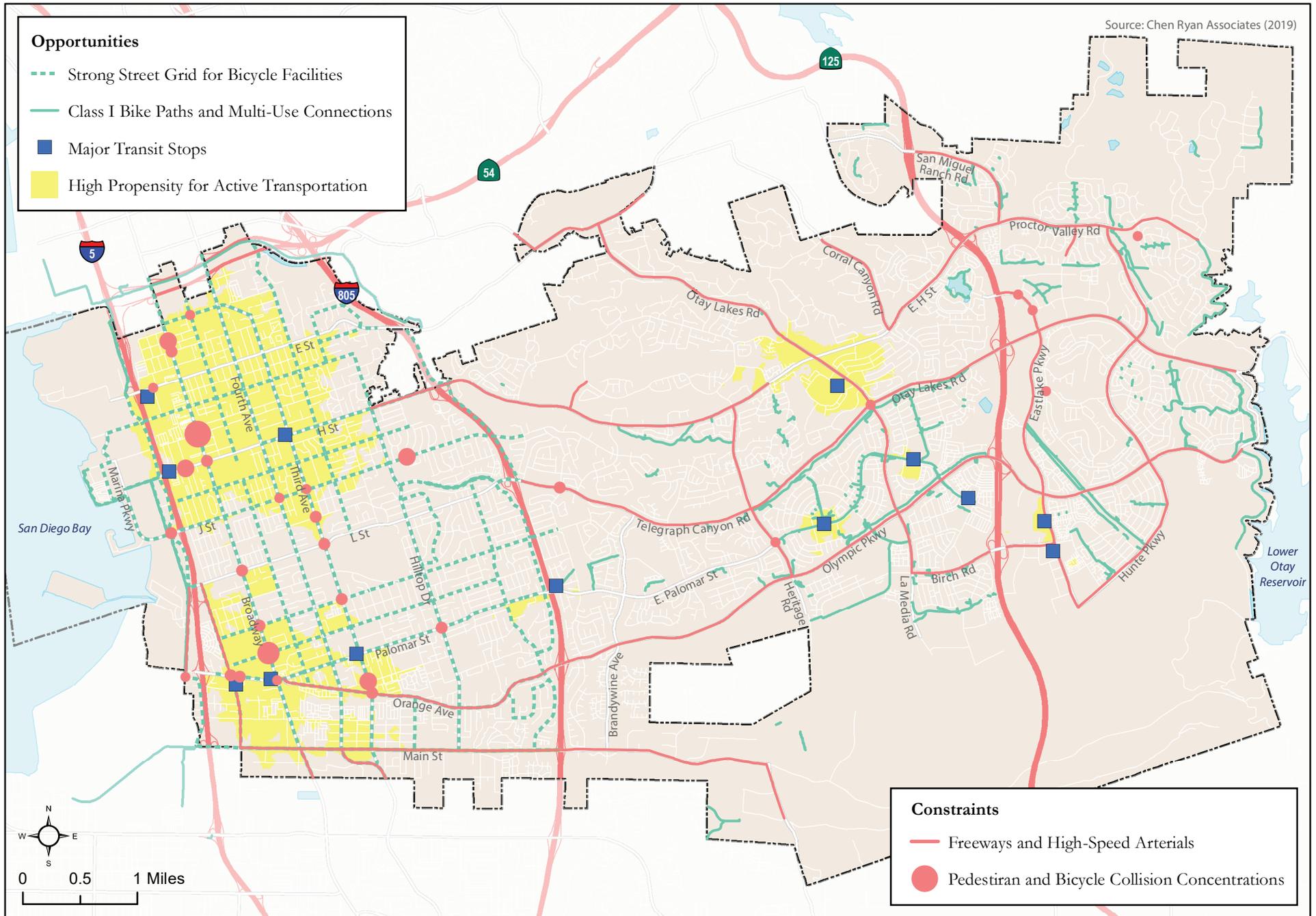
Like many cities in Southern California, the freeways are a barrier to active transportation travel. Interstates 5, 805, and State Route 125 cut north-south through the entire City. There are limited opportunities to cross each of these. Where present, the freeway crossings are often located along roadways with high volumes of vehicles, high traffic speeds and multiple on- and off-ramps, making conditions further uncomfortable for people walking and riding a bike.

As shown in the Bicycle Level of Traffic Stress and Posted Speed Limit maps the higher speed arterials create barriers for the neighborhoods east of Interstate 805, and for crossing the freeway. Many of these arterials have existing bike lanes and wide travel lanes which may be an opportunity to provide protected facilities such as cycle tracks, or alternatively buffered bike lanes which would create separation between cyclists and vehicles while also further distancing pedestrians from moving vehicles.

Collision Concentrations

Bicycle- and pedestrian-involved collisions are largely concentrated west of Interstate 805, along Broadway, H Street, Third Avenue, and Orange Avenue. In eastern Chula Vista, collisions are concentrated along Eastlake Parkway, including higher frequencies of youth collisions. The relatively higher frequency collision locations will be revisited to identify the potential for enhancements that improve the visibility of active transportation users to motorists and increase safety.

Figure 6.1 graphically depicts the opportunities and constraints.



Chula Vista Active Transportation Plan

Figure 6.1
Opportunities and Constraints

Appendix A

Document Review

City of Chula Vista

Active Transportation Plan

Document Review

February 2019

Prepared For:

City of Chula Vista – Advanced Planning
276 Fourth Avenue
Chula Vista, CA 91910

Submitted By:

Chen Ryan Associates, Inc.
3900 Fifth Avenue, Suite 310
San Diego, CA 92103

Introduction

The City of Chula Vista is developing an Active Transportation Plan (ATP) to reevaluate pedestrian and bicycle mobility in the City. The ATP will be a comprehensive document to guide future investments in pedestrian and bicycle infrastructure and supporting programs.

This Document Review is one of the initial steps in the planning process, intended to provide a summary of previous efforts related to active transportation within the City. The ATP is intended to be complimentary to many of the documents reviewed, by incorporating the recommendations and aligning with the goals and policies previously set forth. The Document Review is informative to the understanding of existing conditions, as several planning efforts identify needs/issues related to active transportation. The review will also be heavily utilized in the development of infrastructural recommendations, helping to ensure feasibility and consistency with adopted guiding documents.

The following documents are included in the review:

- Bicycle Friendly Community Report (2018)
- Active CIP Projects List (8/30/2018)
- Parks & Recreation Master Plan Update (2018)
- F Street Promenade Streetscape Master Plan (2018)
- Chula Vista Complete Streets Safety Assessment (2017)
- Chula Vista Elementary School District Safe Routes to School Master Plan (2017)
- Otay Valley Regional Park Concept Plan Update (2017)
- Bike Lanes on Broadway Feasibility Study (2016)
- Main Street Streetscape Master Plan (2016)
- SANDAG's 2050 Revenue Constrained Regional Bike Network (2015)
- Seniors, Sidewalks and the Centennial (2012)
- Bikeway Master Plan (2011)
- Interstate 805 Managed Lanes South Project Final Environmental Impact Report (2011)
- Pedestrian Master Plan (2010)
- Urban Core Specific Plan (2007)
- General Plan Land Use and Transportation Element (2005)
- Greenbelt Master Plan (2003)

Bicycle Friendly Community Report (Fall 2018)

The League of American Bicyclists designated Chula Vista as a Bronze Level Bicycle Friendly Community in Fall 2018. The designation is current for four years. The report assessed Chula Vista on ten building blocks of a bicycle friendly community, gave the City category scores for each of the 5 E's (Engineering, Education, Encouragement, Enforcement, and Evaluation & Planning) of bicycling and looked at ridership rates and safety measures. Additionally, the report provided information as to what steps the City could take to attain a Silver Level designation.

The report was partially informed by a 53-question survey administered and distributed by the League of American Bicyclists. The survey received 149 responses. The questions ranged from bicycle use to perceptions of the existing bicycle facilities to solicitation for suggestions of how to make the community more bicycle friendly, identification of existing hazards and community efforts that deserve praise.

A few areas which need improvement for Chula Vista to move from Bronze Level to Silver Level are continue to expand the bicycle network, expand the bicycle safety education at all K-12 schools, adopt a comprehensive road safety or Vision Zero policy and work with law enforcement to target motorist infractions. Additionally, the report mentions creating a new Bicycle Master Plan or updating the 2011 plan.

Active CIP Projects List (8/30/2018)

The current CIP Projects List is a comprehensive list of Capital Improvement Projects. The following projects are relevant to the Active Transportation Plan effort:

Bike Lanes

- Bike Lane Improvements on Broadway Phase I (STM384) – Broadway, C Street to G Street
- Bike Lanes on Broadway Phase II (STM392) – Broadway, G Street to L Street
- Bike Lane along East H Street (STM382) – H Street, Buena Vista Way to Southwestern College Driveway

Pedestrian Improvements

- Kellogg Elementary School Pedestrian Improvements (STL410) – Install curb extensions, enhanced crosswalks, ADA pedestrian ramps and signage at Melrose Avenue/Montclair Street. Approximately 200 feet of raised median will be installed on East Naples Street, which would prevent motorists from making mid-block left turns on East Naples Street.
- Sidewalk Installation on Palomar Street and Anita Street (STL0425) – Fifth Avenue & Palomar Street; Fourth Avenue & Palomar Street; 515 Anita Street.
- Sidewalk Gap on Various locations Citywide (STL0426) – Installation of missing curbs, gutter and sidewalk: southwest corner of First Avenue/H Street; Quintard 200 block south curb line and Third Avenue south of Orange.
- Sidewalk Replacement Citywide (STL0428) – Locations undefined.

- ADA Pedestrian Curb Ramps Program FY 2018/2019 (STL0432); FY 2014/2015 (STL0405); FY2016/2017 (STL0415) – Installation throughout the City at undefined locations.
- Anita Street Sidewalk Project (STL0435) – Install curb, gutter and sidewalks along Anita Street between Broadway and Industrial Boulevard.
- D Street Sidewalk Project (STL0436) – Install curb, gutter and sidewalks including traffic signal upgrades, along the south side of the 300 block of D Street.
- East H Street Sidewalk Improvements (STM0398) – Install/repair curb, gutter and sidewalks along East H Street between Hilltop Drive to Interstate 805.
- Hazel G Cook Elementary School Pedestrian Improvements (TF384) – Installation of curb extensions for the school safety patrols to stand and approximately 200 linear feet of raised medians on Cuyamaca Avenue and road signage. The project also includes a traffic signal modification for a protected left turn lane at L Street and Cuyamaca Avenue and ladder yellow crosswalk.
- Pedestrian Improvements at Uncontrolled Mid-block Crosswalks at Castle Park Middle School (TRF0411) – Construct an uncontrolled mid-block crosswalk on Quintard Street for Castle Park Middle School. Improvements to include, LED signs, updated signs, striping, and curb extensions as needed.
- Ladder Crosswalks at all Controlled Intersections Program (TRF0413) – Install ladder style crosswalks at all signalized and stop controlled intersections throughout the City.
- Palomar Street and Orange Avenue Sidewalk Improvements (STL0420) – Installation of missing curb, gutter and sidewalk along the south side of Palomar Street between Fifth Avenue and Orange Avenue and along the north side of Orange Avenue between Fifth Avenue and Palomar Street.
- Pedestrian Crosswalk Enhancement at Uncontrolled intersections (TF394) – H Street and Oaklawn Avenue; Fourth Avenue and Park Way; Fourth Avenue and Davidson Street.

Streets/Pavement

- Third Avenue Streetscape Improvement Project – Phase III (STL406) – Street improvements include curb extensions at pedestrian street crossings, streetscape enhancements (new median landscaping, street trees, lighting, furnishings and community gateway features, expanded bicycle parking, relocated transit stops and new transit shelters along Third Avenue between F Street and E Street.
- Bonita Road and Allen School Lane Intersection Improvements (STL418) – Install missing ADA ramps and modify existing traffic signal equipment, roadway striping and pavement legends.

Traffic Improvements

- Traffic Signal Installation at Main Street and Jacqua Street (TF398)
- Traffic Signal Modifications at Broadway/F Street and Broadway/G Street (TF402) – Project provides for protected left-turn phasing on all four approaches and ADA ramps at each intersection.

- Installation of Pedestrian Countdown Indication and Traffic Signal Modification (TF405) – Project is to replace and/or install new pedestrian countdown indications at 19 locations, and traffic signal modifications at First Avenue/L Street; Fifth Avenue/J Street; and Third Avenue/Davidson Street.
- Traffic Signal Modifications at Five Intersections (TF407) – Provide protected left-turn phasing on Broadway/Anita Street and Third Avenue/Oxford Street.
- Traffic Signal Upgrades (TRF0412) – Modifications at Fifth Avenue/K Street and East L Street/Monserate Avenue to provide protected left turn phasing and improve visibility by installing mast arm.
- Traffic Signal Modifications at Four Intersections (TF388) – Add left turn phasing at Fourth Avenue/J Street; Hilltop Drive/L Street; Third Avenue/H Street and Third Avenue/I Street.
- Modification of Traffic Signal and Pedestrian Facilities along Palomar Street Between Broadway and Murrell Drive (TF390) – Provide more accessible, ADA compliant pedestrian facilities.
- Signing/Striping Program for Schools (TRF0399) – Update signing and striping within 500 feet of schools to comply with the 2014 CA MUTCD.

This list will be revisited during the project identification phase to determine if any currently planned CIP projects can incorporate additional improvements beneficial to active transportation, potentially reducing project costs.

Parks & Recreation Master Plan Update (2018)

The Parks and Recreation Master Plan is the guiding document for the City of Chula Vista’s parks and recreation system, serving as the blueprint for future park development. Between 2018 and 2030, over 360 acres of new parkland will be developed. Active transportation planning aligns closely with many of the policies and action items included in the Parks and Recreation Master Plan. Achieving consistency between the two documents may be beneficial in the pursuit of grant funds. Further, both existing and planned parks and recreational resources will be referenced during the network evaluation and planning to ensure comfortable bicycle and pedestrian access is provided.

F Street Promenade Streetscape Master Plan (2018)

The F Street Promenade Streetscape Master Plan was designed to incorporate complete streets principles into a 1.25-mile long segment of F Street, from Third Avenue to Bay Boulevard. Key project recommendations consist of the following:

- Expand sidewalks to 12’ wide multi-use paths along both sides of F Street to accommodate cyclists and pedestrians;
- High visibility crosswalks, pedestrian lighting, street trees and wayfinding signage;
- Plazas with seating, shade trees and bike racks;
- Transformation of the former railroad bridge over I-5 into a plaza and multi-use path;

- Curb extensions at Woodlawn Avenue, Broadway, and 5th Avenue;
- Proposed roundabout at the Bay Boulevard / F Street intersection; and
- Reduce number of travel lanes from 4 lanes to 2 lanes plus a center left-turn lane between Broadway and Bay Boulevard.

The planned Class I multi-use paths will be incorporated into the planned ATP networks. The planned transformation of the corridor may necessitate additional improved connections to surrounding activity centers, such the E Street Trolley Station and future bayfront development.

Chula Vista Complete Streets Safety Assessment (2017)

The Complete Streets Safety Assessment (CSSA) was conducted by the Technology Transfer Program on the Institute of Transportation Studies at the University of California, Berkeley. The primary objective of the CSSA was to improve traffic safety along the Interstate 805 corridor where freeway ramps connect with City streets.

The report provides an overview of collision data and summarizes the characteristics of the traffic collisions in Chula Vista, in addition, to short-term, medium-term and long-term possible safety improvements for the four selected intersections along Interstate 805: at East H Street, at Telegraph Canyon Road, at East Orange Avenue/Olympic Parkway, and at Main Street. Additionally, the report examines Chula Vista's Police Department's efforts to enforce traffic laws and enhance traffic safety, this chapter includes suggestions at possibly improving traffic safety.

For the intersection at I-805 and East H Street, the possible safety improvements range from short term improvements such as changing the crosswalk striping and providing accessible pedestrian push buttons to the long term such as reconstructing the northbound on ramp, a figure of a new configuration was provided.

For the intersection at I-805 and Telegraph Canyon Road, the possible safety improvements range from the medium-term improvements such as synchronizing traffic signals, striping bike lanes and providing leading pedestrian walk intervals, as well as restricted right-turns on red to the long-term improvements such as constructing a sidewalk, providing a six-foot bike lane, using green paint for heightened awareness and widening the existing bike lanes.

For the intersection at I-805 and East Orange Avenue/Olympic Parkway, the possible safety improvements range from the medium-term improvements such as using green striping to transition cyclists, providing a six foot bike lane and leading pedestrian walk intervals, as well as restricted right-turns on red to the long-term improvements such as widening the west bound approach to provide two dedicated right-turn lanes, providing wider sidewalks on both sides of the bridge, providing luminaires that light up the crosswalk, and increasing the number of luminaires provided on the bridge.

For the intersection at I-805 and Main Street the medium-term safety improvements include adding a striped 6-foot-wide bike lane if possible, and adding green conflict paint between the

double turn lanes. The long-term safety improvements for this intersection are contingent on future interchange improvements, and include, widening Main Street under I-805, including six-foot wide sidewalks and constructing a sidewalk on the north side of Oleander Avenue, as well as providing luminaires that light up the crosswalks across the ramps and increasing the wattage of the luminaires under the bridge.

The report also offers suggestions on a citywide basis and concludes with an assessment of enforcement measures taken by the Chula Vista Police Department.

Chula Vista Elementary School District Safe Routes to School Master Plan (2017)

The purpose of the Safe Routes to School (SRTS) Master Plan was to identify safe routes to school, encourage greater levels of walking and bicycling, pilot test a comprehensive SRTS program at four schools, and to provide first-time SRTS activities and resources to additional schools. Specific plan recommendations were informed by the three primary stated goals of the project, including:

- Goal 1: Improve the health of students by focusing attention on and increasing active travel to school;
- Goal 2: Support school travel routes that are accommodating, safe convenient, and “complete” for all modes and users of all ages and abilities; and
- Goal 3: Maximize interagency cooperation in all SRTS projects and programs in an effort to build a sustainable program.

Existing infrastructure was reviewed and walk audits were conducted at 27 schools in the Chula Vista Elementary School District. The review and recorded observations during the walk audits were used to develop existing conditions maps and recommendations maps for each school. The resulting deficiency maps and recommendations will be informative in both the existing conditions analysis and recommendation development phases of the ATP.

Otay Valley Regional Park Concept Plan (2017)

The Otay Valley Regional Park Concept Plan (Concept Plan) provides policy direction for the coordinated land acquisition and development of the Otay Valley Regional Park (OVRP). The Concept Plan proposes a boundary for the OVRP while also providing for the following:

- Provides for the protection of environmentally sensitive areas and important cultural resources in an open space core;
- Identifies areas adjacent to the open space for active and passive recreational development opportunities;
- Includes a trail system with staging areas, viewpoints and overlooks, and connections to adjacent public lands and trails; and
- Envisions interpretive centers for environmental and educational programs.

Of particular interest to the City of Chula Vista's Active Transportation Plan effort are the areas related to recreation area, trail corridors and trailheads, staging area, viewpoint and overlook area, interpretive center, and park study area as ensuring adequate bicycle and pedestrian access to these locations should be provided for.

Bike Lanes on Broadway Feasibility Study (2016)

The Bike Lanes on Broadway Feasibility Study examined roadway conditions along the nearly 4-mile long Broadway corridor to identify bicycle facility opportunities. The 2011 Bikeway Master Plan recommends Class III Bike Route for the corridor and this Feasibility Study was able to provide cyclists their own right-of-way by providing Class II bike lanes. Three cross-section recommendations were made, based on the variations in right-of-way, traffic volumes, and adjacent land uses.

- C Street to G Street – 5' bike lanes with 3' buffer; single 12' vehicular travel lane in each direction; 14' two-way left-turn lane; retain existing 8' on-street parking lanes;
- G Street to L Street – 5' bike lanes; two 11' vehicular travel lanes in each direction; 10' two-way left-turn lane; retain existing 8' on-street parking lanes; and
- L Street to Main Street – 5' bike lane with 4' buffer; one 11' inside vehicular travel lane in each direction and one 12' outside vehicular travel lane in each direction; retain existing median with left-turn pockets; no on-street parking.

Green paint is recommended at locations where the bike lane approaches right-turn lanes to alert cyclists and drivers that a conflict point is present. This design was recommended at six intersections.

The recommended bike lanes will be incorporated into the ATP bicycle network moving forward.

Main Street Streetscape Master Plan (2016)

The Main Street Streetscape Master Plan serves to develop a "Complete Street" conceptual framework for Main Street between Industrial Boulevard and I-805. Improved bike and pedestrian connections are sought along Main Street to help connect key land uses and recreational facilities. The recommendations include:

- Tree-planted street medians;
- Lane diets (lanes reduced to 11' wide from 12' – 13');
- Enhanced pedestrian crossings;
- Bicycle lanes (with buffers where feasible); and
- New signalized intersections at Jacqua Street, 7th Street, Fresno Avenue, Banner Avenue, Mace Street, and Otay Valley Road/Maple Drive.

Plan view concepts and proposed cross-sections depict how these features can be implemented while considering constraints related to the existing right-of-way and property acquisition. These planned features will be incorporated into the ATP networks. Similarly, the newly signalized

intersections will be referenced as these may create additional opportunities for safe north-south bicycle/pedestrian crossings across the four-lane roadway.

SANDAG's 2050 Revenue Constrained Regional Bike Network (2015)

The currently adopted Regional Bike Network identifies the following planned facilities within the City of Chula Vista:

- Bayshore Bikeway Class I Multi-Use Path, from northern City boundary to southern City boundary. *This facility has been implemented north of E Street, from G Street to south of H Street to Palomar Street.*
- J Street Bike Boulevard, from Bay Boulevard to Paseo Del Rey. The facility then transitions to an Enhanced Class II Bike Lane until the facility terminus at Paseo Ranchero. *Class II Bike Lanes have been implemented along J Street, from Floyd Avenue to Paseo Ranchero.*
- Paseo Ranchero/Heritage Road Enhanced Class II Bike Lane, from J Street to E Palomar Street. *Class II Bike Lanes have been implemented along this segment. Additionally, a Class I Multi-Use Path runs along the east side of Paseo Ranchero, from Telegraph Canyon to Olympic Parkway.*
- E Palomar Street Bike Boulevard, from Bay Boulevard to Industrial Boulevard.
- Oxford Street Enhanced Class II Bike Lane, from Industrial Boulevard to Nacion Avenue.
- Nacion Avenue Bike Boulevard, from Oxford Street to E Palomar Street.
- E Palomar Street Bike Boulevard from Nolan Avenue to Nacion Avenue.
- E Palomar Street Enhanced Class II Bike Lane, from Nacion Avenue to Heritage Road. *Class II Bike Lanes have been implemented along this stretch of E Palomar Street. Additionally, a Class I Multi-Use Path runs along the north side of E Palomar Street from Oleander Avenue to Brashear Place and then continues along the south side east of Heritage Road.*
- E Palomar Street Class I Multi-Use Path, from Heritage Road to La Media Road. *This facility has been implemented along the south side of the roadway and continues until the roadways' terminus.*
- Otay Lakes Road Class I Multi-Use Path, from Bonita Road to the south along unbuilt portions of the roadway south of Santa Luna Street.
- Class I Multi-Use Path parallel to I-805, from northern City boundary to Telegraph Canyon Road.

The existing and still planned facilities will be incorporated into the ATP networks. Potential linkages to these regional facilities will also be explored, to leverage the greater network connections they provide.

Seniors, Sidewalks, and the Centennial (2012)

As part of Chula Vista's centennial year, the City launched the "Seniors, Sidewalks, and the Centennial" project in Spring of 2011. The intention was to engage senior citizens and disability

advocates to help the City understand and address the mobility needs of these members of the community. The project was funded through a Healthy Communities Planning Grant.

When looking at the County as a whole the south region, which includes Chula Vista, had the second highest rate of death due to heart disease (2007), highest rate of death and hospitalization due to diabetes in the County and one of the highest rates of injury to seniors due to falls. To combat these issues, the walkability for seniors and residents with disabilities, need to be improved.

The project focused on western Chula Vista since this is the older part of town with more pedestrian deficiencies, lower incomes and higher density of senior citizens than eastern Chula Vista. The geographic area was further narrowed down to three specific neighborhoods.

Neighborhood workshops in addition to a “photovoice” activity were undertaken to engage senior and disabled residents. The photovoice activity involved giving five senior volunteers disposable cameras and allowing them to document the most pressing issues through photos and descriptions.

The themes uncovered through the workshops were: sidewalks, street crossings, landscape maintenance, transit stops, behavior (of drivers, cyclists, and pedestrians), and neighborhood design. For each of the three neighborhoods priorities were identified.

Additionally, the project team made recommendations for amendments to City policies and design standards in cases where the existing language did not adequately, or could more comprehensively, consider the unique needs of the senior and disabled populations.

Bikeway Master Plan (2011)

The 2011 Bikeway Master Plan served to update the previous master plan adopted in 2005 and fulfill compliance with California Streets and Highways Code, Section 891.2 requirements for bicycle transportation plans. The goals and approach of the project were related to the following:

- The integration of the bicycle master plan into all transportation plans;
- Providing for the safe and efficient travel of cyclists;
- Maintenance, monitoring, and assessment of bicycle facilities;
- Coexistence of cyclists and drivers through training, education, enforcement, planning and design; and
- Integrated land use and transportation planning.

Significant Findings and Recommendations were identified in the document and categorized as related to the topography and development patterns, education, connectivity issues, integration with the greenbelt system, applicable legislation, and the future of cycling. Key findings related to safety include identifying the Broadway corridor as experiencing the greatest number of

reported bicycle collisions and that over half of citations issued to cyclists were written for wrong-way riding. The most emphasized recommendation is related to the need for additional education of cyclists and motorists to improve safety. The recommended facilities consist of 6.8 miles of Class I Bike Paths, 12.3 miles of Class II Bike Lanes, 33.4 miles of Class III Bike Routes (including a bicycle boulevard along Oxford Street).

The identified safety issues and locations will be revisited and compared against more recent data to determine if safety concerns related to these still persist. The recommended network will be reviewed to identify which planned facilities have been implemented and to determine the feasibility of unbuilt facilities. Similarly, the programmatic recommendations will be reviewed during the existing conditions analysis phase to identify implemented programs and their effectiveness. The planned programs and bicycle facilities will also be revisited during the recommendations stage to determine future applicability.

Interstate 805 Managed Lanes South Project Final Environmental Impact Report (2011)

The Interstate 805 Managed Lanes South project is a joint project by Caltrans and the Federal Highway Administration (FHWA). The project includes providing managed or high occupancy vehicle lanes along I-805 from the City of Chula Vista to the City of San Diego for 11.4 miles, as well as facilities to accommodate Bus Rapid Transit. In Chula Vista the intersection with I-805 and East H street would be impacted. The proposal includes realignment of both on and off ramps for the Northbound and Southbound I-805 ramps, as well as an H Street Park-N-Ride and local street improvements on East H Street.

Pedestrian Master Plan (2010)

The Pedestrian Master Plan is a long-range vision intended to guide the development of Chula Vista's pedestrian infrastructure. The stated goals of the plan include the following:

- A safe and accessible pedestrian network that provides connectivity between residential areas, activity centers and transit;
- A vibrant pedestrian-oriented development pattern that encourages people to walk and promotes community interaction; and
- Citizens are aware of pedestrian issues, accommodate pedestrians when driving and are aware of the many benefits walking affords.

These goals are further supported by a series of objectives and policies. The key issues identified through the existing conditions and needs analysis are categorized as missing and substandard infrastructure (sidewalks and curb ramps); corridor barriers (steep topographical slopes, the three freeways and light rail corridor); and traffic surrounding schools. Safe Routes to School assessments identified additional deficiencies surrounding each Chula Vista elementary school.

Identified opportunities are categorized to include the street network and land uses (particularly in western Chula Vista); improving transit access; coordinating improvements through the City's

Infrastructure Management Program; and focusing resources in the high pedestrian project opportunity areas. The plan makes recommendations to fill 57.5 miles of missing sidewalks, 911 missing curb ramps and also provides conceptual designs for 30 high priority pedestrian improvement projects. These projects consist of curb extensions, school signage, median refuge island, and crosswalks. Programmatic recommendations consist of education, encouragement and enforcement, while acknowledging the City already conducts programs targeted at these topics.

Urban Core Specific Plan (2007)

The Urban Core Specific Plan is intended to guide the revitalization and enhancement of the economic, social, cultural and recreational fabric of the City's Urban Core. Providing for multimodal mobility between the mix of land uses within the Urban Core is an overall goal of the plan. The stated modal hierarchy of emphasis is: pedestrian, bicycle, transit, and finally, the automobile. Widened sidewalks are proposed for Third Avenue, E Street, F Street, H Street and Broadway within the study area, with additional design direction provided for sidewalks, crossings, landscaping, lighting and pedestrian amenities. The plan identifies locations to consider traffic calming features, including refuge islands, curb extensions, street trees, accent paving, and narrowed travel lanes. A series of bicycle facilities are also proposed, consistent with the Bikeways Master Plan adopted by the City at the time, which has since been updated. Finally, a West Side Shuttle Route is proposed to serve the Specific Plan area and the Bayfront Master Plan area, providing localized service with connections to the regional transit system (E & H Street Trolley Stations). This route is consistent with the local feeder bus recommendation from the General Plan Land Use and Transportation Element.

General Plan Land Use and Transportation Element (2005)

The Land Use and Transportation Element guides the physical development of the City's land and transportation infrastructure. An Urban Circulation Element is also included to support transportation choices through flexible policies and standards as a means to improve the transit, pedestrian and bicycle environment. Five roadway classifications are identified within the Urban Core Subarea and portions of the Otay Ranch Subarea with more tolerant LOS standards than other areas of the City. The roadway classifications will be referenced to understand potential future roadway modifications or limitations during the Active Transportation Plan network development phase. Local feeder bus routes are proposed to supplement the existing public transit service. Ensuring safe and convenient pedestrian and bicycle mobility along the proposed feeder bus routes should be taken into consideration during the Active Transportation Plan network development process.

Greenbelt Master Plan (2003)

The Greenbelt Master Plan is a tool to guide future planning decisions. It addresses existing and potential trail locations, trail and staging area development standards, maintenance responsibilities and a trails and open space system to create a linked network. The Greenbelt largely follows the City's municipal boundary, running through land predominantly categorized as park or open space. The existing and planned trailhead locations and Greenbelt alignments

should be considered throughout development of the Active Transportation Plan to ensure residents and visitors have safe and comfortable access to this valuable community asset.

Next Steps

The needs/issues identified in the Bikeway Master Plan (2011), Pedestrian Master Plan (2010), and CVESD Safe Routes to School Master Plan (2017) will be revisited during the existing conditions analysis to determine if they are still relevant. Similarly, the adopted documents' recommendations identified in this Document Review will be reevaluated during the ATP's network and recommendation development phase and incorporated where appropriate.

City of Chula Vista

Active Transportation Plan

Document Review

February 2019

Prepared For:

City of Chula Vista – Advanced Planning
276 Fourth Avenue
Chula Vista, CA 91910

Submitted By:

Chen Ryan Associates, Inc.
3900 Fifth Avenue, Suite 310
San Diego, CA 92103

Introduction

The City of Chula Vista is developing an Active Transportation Plan (ATP) to reevaluate pedestrian and bicycle mobility in the City. The ATP will be a comprehensive document to guide future investments in pedestrian and bicycle infrastructure and supporting programs.

This Document Review is one of the initial steps in the planning process, intended to provide a summary of previous efforts related to active transportation within the City. The ATP is intended to be complimentary to many of the documents reviewed, by incorporating the recommendations and aligning with the goals and policies previously set forth. The Document Review is informative to the understanding of existing conditions, as several planning efforts identify needs/issues related to active transportation. The review will also be heavily utilized in the development of infrastructural recommendations, helping to ensure feasibility and consistency with adopted guiding documents.

The following documents are included in the review:

- Bicycle Friendly Community Report (2018)
- Active CIP Projects List (8/30/2018)
- Parks & Recreation Master Plan Update (2018)
- F Street Promenade Streetscape Master Plan (2018)
- Chula Vista Complete Streets Safety Assessment (2017)
- Chula Vista Elementary School District Safe Routes to School Master Plan (2017)
- Otay Valley Regional Park Concept Plan Update (2017)
- Bike Lanes on Broadway Feasibility Study (2016)
- Main Street Streetscape Master Plan (2016)
- SANDAG's 2050 Revenue Constrained Regional Bike Network (2015)
- Seniors, Sidewalks and the Centennial (2012)
- Bikeway Master Plan (2011)
- Interstate 805 Managed Lanes South Project Final Environmental Impact Report (2011)
- Pedestrian Master Plan (2010)
- Urban Core Specific Plan (2007)
- General Plan Land Use and Transportation Element (2005)
- Greenbelt Master Plan (2003)

Bicycle Friendly Community Report (Fall 2018)

The League of American Bicyclists designated Chula Vista as a Bronze Level Bicycle Friendly Community in Fall 2018. The designation is current for four years. The report assessed Chula Vista on ten building blocks of a bicycle friendly community, gave the City category scores for each of the 5 E's (Engineering, Education, Encouragement, Enforcement, and Evaluation & Planning) of bicycling and looked at ridership rates and safety measures. Additionally, the report provided information as to what steps the City could take to attain a Silver Level designation.

The report was partially informed by a 53-question survey administered and distributed by the League of American Bicyclists. The survey received 149 responses. The questions ranged from bicycle use to perceptions of the existing bicycle facilities to solicitation for suggestions of how to make the community more bicycle friendly, identification of existing hazards and community efforts that deserve praise.

A few areas which need improvement for Chula Vista to move from Bronze Level to Silver Level are continue to expand the bicycle network, expand the bicycle safety education at all K-12 schools, adopt a comprehensive road safety or Vision Zero policy and work with law enforcement to target motorist infractions. Additionally, the report mentions creating a new Bicycle Master Plan or updating the 2011 plan.

Active CIP Projects List (8/30/2018)

The current CIP Projects List is a comprehensive list of Capital Improvement Projects. The following projects are relevant to the Active Transportation Plan effort:

Bike Lanes

- Bike Lane Improvements on Broadway Phase I (STM384) – Broadway, C Street to G Street
- Bike Lanes on Broadway Phase II (STM392) – Broadway, G Street to L Street
- Bike Lane along East H Street (STM382) – H Street, Buena Vista Way to Southwestern College Driveway

Pedestrian Improvements

- Kellogg Elementary School Pedestrian Improvements (STL410) – Install curb extensions, enhanced crosswalks, ADA pedestrian ramps and signage at Melrose Avenue/Montclair Street. Approximately 200 feet of raised median will be installed on East Naples Street, which would prevent motorists from making mid-block left turns on East Naples Street.
- Sidewalk Installation on Palomar Street and Anita Street (STL0425) – Fifth Avenue & Palomar Street; Fourth Avenue & Palomar Street; 515 Anita Street.
- Sidewalk Gap on Various locations Citywide (STL0426) – Installation of missing curbs, gutter and sidewalk: southwest corner of First Avenue/H Street; Quintard 200 block south curb line and Third Avenue south of Orange.
- Sidewalk Replacement Citywide (STL0428) – Locations undefined.

- ADA Pedestrian Curb Ramps Program FY 2018/2019 (STL0432); FY 2014/2015 (STL0405); FY2016/2017 (STL0415) – Installation throughout the City at undefined locations.
- Anita Street Sidewalk Project (STL0435) – Install curb, gutter and sidewalks along Anita Street between Broadway and Industrial Boulevard.
- D Street Sidewalk Project (STL0436) – Install curb, gutter and sidewalks including traffic signal upgrades, along the south side of the 300 block of D Street.
- East H Street Sidewalk Improvements (STM0398) – Install/repair curb, gutter and sidewalks along East H Street between Hilltop Drive to Interstate 805.
- Hazel G Cook Elementary School Pedestrian Improvements (TF384) – Installation of curb extensions for the school safety patrols to stand and approximately 200 linear feet of raised medians on Cuyamaca Avenue and road signage. The project also includes a traffic signal modification for a protected left turn lane at L Street and Cuyamaca Avenue and ladder yellow crosswalk.
- Pedestrian Improvements at Uncontrolled Mid-block Crosswalks at Castle Park Middle School (TRF0411) – Construct an uncontrolled mid-block crosswalk on Quintard Street for Castle Park Middle School. Improvements to include, LED signs, updated signs, striping, and curb extensions as needed.
- Ladder Crosswalks at all Controlled Intersections Program (TRF0413) – Install ladder style crosswalks at all signalized and stop controlled intersections throughout the City.
- Palomar Street and Orange Avenue Sidewalk Improvements (STL0420) – Installation of missing curb, gutter and sidewalk along the south side of Palomar Street between Fifth Avenue and Orange Avenue and along the north side of Orange Avenue between Fifth Avenue and Palomar Street.
- Pedestrian Crosswalk Enhancement at Uncontrolled intersections (TF394) – H Street and Oaklawn Avenue; Fourth Avenue and Park Way; Fourth Avenue and Davidson Street.

Streets/Pavement

- Third Avenue Streetscape Improvement Project – Phase III (STL406) – Street improvements include curb extensions at pedestrian street crossings, streetscape enhancements (new median landscaping, street trees, lighting, furnishings and community gateway features, expanded bicycle parking, relocated transit stops and new transit shelters along Third Avenue between F Street and E Street.
- Bonita Road and Allen School Lane Intersection Improvements (STL418) – Install missing ADA ramps and modify existing traffic signal equipment, roadway striping and pavement legends.

Traffic Improvements

- Traffic Signal Installation at Main Street and Jacqua Street (TF398)
- Traffic Signal Modifications at Broadway/F Street and Broadway/G Street (TF402) – Project provides for protected left-turn phasing on all four approaches and ADA ramps at each intersection.

- Installation of Pedestrian Countdown Indication and Traffic Signal Modification (TF405) – Project is to replace and/or install new pedestrian countdown indications at 19 locations, and traffic signal modifications at First Avenue/L Street; Fifth Avenue/J Street; and Third Avenue/Davidson Street.
- Traffic Signal Modifications at Five Intersections (TF407) – Provide protected left-turn phasing on Broadway/Anita Street and Third Avenue/Oxford Street.
- Traffic Signal Upgrades (TRF0412) – Modifications at Fifth Avenue/K Street and East L Street/Monserate Avenue to provide protected left turn phasing and improve visibility by installing mast arm.
- Traffic Signal Modifications at Four Intersections (TF388) – Add left turn phasing at Fourth Avenue/J Street; Hilltop Drive/L Street; Third Avenue/H Street and Third Avenue/I Street.
- Modification of Traffic Signal and Pedestrian Facilities along Palomar Street Between Broadway and Murrell Drive (TF390) – Provide more accessible, ADA compliant pedestrian facilities.
- Signing/Striping Program for Schools (TRF0399) – Update signing and striping within 500 feet of schools to comply with the 2014 CA MUTCD.

This list will be revisited during the project identification phase to determine if any currently planned CIP projects can incorporate additional improvements beneficial to active transportation, potentially reducing project costs.

Parks & Recreation Master Plan Update (2018)

The Parks and Recreation Master Plan is the guiding document for the City of Chula Vista’s parks and recreation system, serving as the blueprint for future park development. Between 2018 and 2030, over 360 acres of new parkland will be developed. Active transportation planning aligns closely with many of the policies and action items included in the Parks and Recreation Master Plan. Achieving consistency between the two documents may be beneficial in the pursuit of grant funds. Further, both existing and planned parks and recreational resources will be referenced during the network evaluation and planning to ensure comfortable bicycle and pedestrian access is provided.

F Street Promenade Streetscape Master Plan (2018)

The F Street Promenade Streetscape Master Plan was designed to incorporate complete streets principles into a 1.25-mile long segment of F Street, from Third Avenue to Bay Boulevard. Key project recommendations consist of the following:

- Expand sidewalks to 12’ wide multi-use paths along both sides of F Street to accommodate cyclists and pedestrians;
- High visibility crosswalks, pedestrian lighting, street trees and wayfinding signage;
- Plazas with seating, shade trees and bike racks;
- Transformation of the former railroad bridge over I-5 into a plaza and multi-use path;

- Curb extensions at Woodlawn Avenue, Broadway, and 5th Avenue;
- Proposed roundabout at the Bay Boulevard / F Street intersection; and
- Reduce number of travel lanes from 4 lanes to 2 lanes plus a center left-turn lane between Broadway and Bay Boulevard.

The planned Class I multi-use paths will be incorporated into the planned ATP networks. The planned transformation of the corridor may necessitate additional improved connections to surrounding activity centers, such the E Street Trolley Station and future bayfront development.

Chula Vista Complete Streets Safety Assessment (2017)

The Complete Streets Safety Assessment (CSSA) was conducted by the Technology Transfer Program on the Institute of Transportation Studies at the University of California, Berkeley. The primary objective of the CSSA was to improve traffic safety along the Interstate 805 corridor where freeway ramps connect with City streets.

The report provides an overview of collision data and summarizes the characteristics of the traffic collisions in Chula Vista, in addition, to short-term, medium-term and long-term possible safety improvements for the four selected intersections along Interstate 805: at East H Street, at Telegraph Canyon Road, at East Orange Avenue/Olympic Parkway, and at Main Street. Additionally, the report examines Chula Vista's Police Department's efforts to enforce traffic laws and enhance traffic safety, this chapter includes suggestions at possibly improving traffic safety.

For the intersection at I-805 and East H Street, the possible safety improvements range from short term improvements such as changing the crosswalk striping and providing accessible pedestrian push buttons to the long term such as reconstructing the northbound on ramp, a figure of a new configuration was provided.

For the intersection at I-805 and Telegraph Canyon Road, the possible safety improvements range from the medium-term improvements such as synchronizing traffic signals, striping bike lanes and providing leading pedestrian walk intervals, as well as restricted right-turns on red to the long-term improvements such as constructing a sidewalk, providing a six-foot bike lane, using green paint for heightened awareness and widening the existing bike lanes.

For the intersection at I-805 and East Orange Avenue/Olympic Parkway, the possible safety improvements range from the medium-term improvements such as using green striping to transition cyclists, providing a six foot bike lane and leading pedestrian walk intervals, as well as restricted right-turns on red to the long-term improvements such as widening the west bound approach to provide two dedicated right-turn lanes, providing wider sidewalks on both sides of the bridge, providing luminaires that light up the crosswalk, and increasing the number of luminaires provided on the bridge.

For the intersection at I-805 and Main Street the medium-term safety improvements include adding a striped 6-foot-wide bike lane if possible, and adding green conflict paint between the

double turn lanes. The long-term safety improvements for this intersection are contingent on future interchange improvements, and include, widening Main Street under I-805, including six-foot wide sidewalks and constructing a sidewalk on the north side of Oleander Avenue, as well as providing luminaires that light up the crosswalks across the ramps and increasing the wattage of the luminaires under the bridge.

The report also offers suggestions on a citywide basis and concludes with an assessment of enforcement measures taken by the Chula Vista Police Department.

Chula Vista Elementary School District Safe Routes to School Master Plan (2017)

The purpose of the Safe Routes to School (SRTS) Master Plan was to identify safe routes to school, encourage greater levels of walking and bicycling, pilot test a comprehensive SRTS program at four schools, and to provide first-time SRTS activities and resources to additional schools. Specific plan recommendations were informed by the three primary stated goals of the project, including:

- Goal 1: Improve the health of students by focusing attention on and increasing active travel to school;
- Goal 2: Support school travel routes that are accommodating, safe convenient, and “complete” for all modes and users of all ages and abilities; and
- Goal 3: Maximize interagency cooperation in all SRTS projects and programs in an effort to build a sustainable program.

Existing infrastructure was reviewed and walk audits were conducted at 27 schools in the Chula Vista Elementary School District. The review and recorded observations during the walk audits were used to develop existing conditions maps and recommendations maps for each school. The resulting deficiency maps and recommendations will be informative in both the existing conditions analysis and recommendation development phases of the ATP.

Otay Valley Regional Park Concept Plan (2017)

The Otay Valley Regional Park Concept Plan (Concept Plan) provides policy direction for the coordinated land acquisition and development of the Otay Valley Regional Park (OVRP). The Concept Plan proposes a boundary for the OVRP while also providing for the following:

- Provides for the protection of environmentally sensitive areas and important cultural resources in an open space core;
- Identifies areas adjacent to the open space for active and passive recreational development opportunities;
- Includes a trail system with staging areas, viewpoints and overlooks, and connections to adjacent public lands and trails; and
- Envisions interpretive centers for environmental and educational programs.

Of particular interest to the City of Chula Vista's Active Transportation Plan effort are the areas related to recreation area, trail corridors and trailheads, staging area, viewpoint and overlook area, interpretive center, and park study area as ensuring adequate bicycle and pedestrian access to these locations should be provided for.

Bike Lanes on Broadway Feasibility Study (2016)

The Bike Lanes on Broadway Feasibility Study examined roadway conditions along the nearly 4-mile long Broadway corridor to identify bicycle facility opportunities. The 2011 Bikeway Master Plan recommends Class III Bike Route for the corridor and this Feasibility Study was able to provide cyclists their own right-of-way by providing Class II bike lanes. Three cross-section recommendations were made, based on the variations in right-of-way, traffic volumes, and adjacent land uses.

- C Street to G Street – 5' bike lanes with 3' buffer; single 12' vehicular travel lane in each direction; 14' two-way left-turn lane; retain existing 8' on-street parking lanes;
- G Street to L Street – 5' bike lanes; two 11' vehicular travel lanes in each direction; 10' two-way left-turn lane; retain existing 8' on-street parking lanes; and
- L Street to Main Street – 5' bike lane with 4' buffer; one 11' inside vehicular travel lane in each direction and one 12' outside vehicular travel lane in each direction; retain existing median with left-turn pockets; no on-street parking.

Green paint is recommended at locations where the bike lane approaches right-turn lanes to alert cyclists and drivers that a conflict point is present. This design was recommended at six intersections.

The recommended bike lanes will be incorporated into the ATP bicycle network moving forward.

Main Street Streetscape Master Plan (2016)

The Main Street Streetscape Master Plan serves to develop a "Complete Street" conceptual framework for Main Street between Industrial Boulevard and I-805. Improved bike and pedestrian connections are sought along Main Street to help connect key land uses and recreational facilities. The recommendations include:

- Tree-planted street medians;
- Lane diets (lanes reduced to 11' wide from 12' – 13');
- Enhanced pedestrian crossings;
- Bicycle lanes (with buffers where feasible); and
- New signalized intersections at Jacqua Street, 7th Street, Fresno Avenue, Banner Avenue, Mace Street, and Otay Valley Road/Maple Drive.

Plan view concepts and proposed cross-sections depict how these features can be implemented while considering constraints related to the existing right-of-way and property acquisition. These planned features will be incorporated into the ATP networks. Similarly, the newly signalized

intersections will be referenced as these may create additional opportunities for safe north-south bicycle/pedestrian crossings across the four-lane roadway.

SANDAG's 2050 Revenue Constrained Regional Bike Network (2015)

The currently adopted Regional Bike Network identifies the following planned facilities within the City of Chula Vista:

- Bayshore Bikeway Class I Multi-Use Path, from northern City boundary to southern City boundary. *This facility has been implemented north of E Street, from G Street to south of H Street to Palomar Street.*
- J Street Bike Boulevard, from Bay Boulevard to Paseo Del Rey. The facility then transitions to an Enhanced Class II Bike Lane until the facility terminus at Paseo Ranchero. *Class II Bike Lanes have been implemented along J Street, from Floyd Avenue to Paseo Ranchero.*
- Paseo Ranchero/Heritage Road Enhanced Class II Bike Lane, from J Street to E Palomar Street. *Class II Bike Lanes have been implemented along this segment. Additionally, a Class I Multi-Use Path runs along the east side of Paseo Ranchero, from Telegraph Canyon to Olympic Parkway.*
- E Palomar Street Bike Boulevard, from Bay Boulevard to Industrial Boulevard.
- Oxford Street Enhanced Class II Bike Lane, from Industrial Boulevard to Nacion Avenue.
- Nacion Avenue Bike Boulevard, from Oxford Street to E Palomar Street.
- E Palomar Street Bike Boulevard from Nolan Avenue to Nacion Avenue.
- E Palomar Street Enhanced Class II Bike Lane, from Nacion Avenue to Heritage Road. *Class II Bike Lanes have been implemented along this stretch of E Palomar Street. Additionally, a Class I Multi-Use Path runs along the north side of E Palomar Street from Oleander Avenue to Brashear Place and then continues along the south side east of Heritage Road.*
- E Palomar Street Class I Multi-Use Path, from Heritage Road to La Media Road. *This facility has been implemented along the south side of the roadway and continues until the roadways' terminus.*
- Otay Lakes Road Class I Multi-Use Path, from Bonita Road to the south along unbuilt portions of the roadway south of Santa Luna Street.
- Class I Multi-Use Path parallel to I-805, from northern City boundary to Telegraph Canyon Road.

The existing and still planned facilities will be incorporated into the ATP networks. Potential linkages to these regional facilities will also be explored, to leverage the greater network connections they provide.

Seniors, Sidewalks, and the Centennial (2012)

As part of Chula Vista's centennial year, the City launched the "Seniors, Sidewalks, and the Centennial" project in Spring of 2011. The intention was to engage senior citizens and disability

advocates to help the City understand and address the mobility needs of these members of the community. The project was funded through a Healthy Communities Planning Grant.

When looking at the County as a whole the south region, which includes Chula Vista, had the second highest rate of death due to heart disease (2007), highest rate of death and hospitalization due to diabetes in the County and one of the highest rates of injury to seniors due to falls. To combat these issues, the walkability for seniors and residents with disabilities, need to be improved.

The project focused on western Chula Vista since this is the older part of town with more pedestrian deficiencies, lower incomes and higher density of senior citizens than eastern Chula Vista. The geographic area was further narrowed down to three specific neighborhoods.

Neighborhood workshops in addition to a “photovoice” activity were undertaken to engage senior and disabled residents. The photovoice activity involved giving five senior volunteers disposable cameras and allowing them to document the most pressing issues through photos and descriptions.

The themes uncovered through the workshops were: sidewalks, street crossings, landscape maintenance, transit stops, behavior (of drivers, cyclists, and pedestrians), and neighborhood design. For each of the three neighborhoods priorities were identified.

Additionally, the project team made recommendations for amendments to City policies and design standards in cases where the existing language did not adequately, or could more comprehensively, consider the unique needs of the senior and disabled populations.

Bikeway Master Plan (2011)

The 2011 Bikeway Master Plan served to update the previous master plan adopted in 2005 and fulfill compliance with California Streets and Highways Code, Section 891.2 requirements for bicycle transportation plans. The goals and approach of the project were related to the following:

- The integration of the bicycle master plan into all transportation plans;
- Providing for the safe and efficient travel of cyclists;
- Maintenance, monitoring, and assessment of bicycle facilities;
- Coexistence of cyclists and drivers through training, education, enforcement, planning and design; and
- Integrated land use and transportation planning.

Significant Findings and Recommendations were identified in the document and categorized as related to the topography and development patterns, education, connectivity issues, integration with the greenbelt system, applicable legislation, and the future of cycling. Key findings related to safety include identifying the Broadway corridor as experiencing the greatest number of

reported bicycle collisions and that over half of citations issued to cyclists were written for wrong-way riding. The most emphasized recommendation is related to the need for additional education of cyclists and motorists to improve safety. The recommended facilities consist of 6.8 miles of Class I Bike Paths, 12.3 miles of Class II Bike Lanes, 33.4 miles of Class III Bike Routes (including a bicycle boulevard along Oxford Street).

The identified safety issues and locations will be revisited and compared against more recent data to determine if safety concerns related to these still persist. The recommended network will be reviewed to identify which planned facilities have been implemented and to determine the feasibility of unbuilt facilities. Similarly, the programmatic recommendations will be reviewed during the existing conditions analysis phase to identify implemented programs and their effectiveness. The planned programs and bicycle facilities will also be revisited during the recommendations stage to determine future applicability.

Interstate 805 Managed Lanes South Project Final Environmental Impact Report (2011)

The Interstate 805 Managed Lanes South project is a joint project by Caltrans and the Federal Highway Administration (FHWA). The project includes providing managed or high occupancy vehicle lanes along I-805 from the City of Chula Vista to the City of San Diego for 11.4 miles, as well as facilities to accommodate Bus Rapid Transit. In Chula Vista the intersection with I-805 and East H street would be impacted. The proposal includes realignment of both on and off ramps for the Northbound and Southbound I-805 ramps, as well as an H Street Park-N-Ride and local street improvements on East H Street.

Pedestrian Master Plan (2010)

The Pedestrian Master Plan is a long-range vision intended to guide the development of Chula Vista's pedestrian infrastructure. The stated goals of the plan include the following:

- A safe and accessible pedestrian network that provides connectivity between residential areas, activity centers and transit;
- A vibrant pedestrian-oriented development pattern that encourages people to walk and promotes community interaction; and
- Citizens are aware of pedestrian issues, accommodate pedestrians when driving and are aware of the many benefits walking affords.

These goals are further supported by a series of objectives and policies. The key issues identified through the existing conditions and needs analysis are categorized as missing and substandard infrastructure (sidewalks and curb ramps); corridor barriers (steep topographical slopes, the three freeways and light rail corridor); and traffic surrounding schools. Safe Routes to School assessments identified additional deficiencies surrounding each Chula Vista elementary school.

Identified opportunities are categorized to include the street network and land uses (particularly in western Chula Vista); improving transit access; coordinating improvements through the City's

Infrastructure Management Program; and focusing resources in the high pedestrian project opportunity areas. The plan makes recommendations to fill 57.5 miles of missing sidewalks, 911 missing curb ramps and also provides conceptual designs for 30 high priority pedestrian improvement projects. These projects consist of curb extensions, school signage, median refuge island, and crosswalks. Programmatic recommendations consist of education, encouragement and enforcement, while acknowledging the City already conducts programs targeted at these topics.

Urban Core Specific Plan (2007)

The Urban Core Specific Plan is intended to guide the revitalization and enhancement of the economic, social, cultural and recreational fabric of the City's Urban Core. Providing for multimodal mobility between the mix of land uses within the Urban Core is an overall goal of the plan. The stated modal hierarchy of emphasis is: pedestrian, bicycle, transit, and finally, the automobile. Widened sidewalks are proposed for Third Avenue, E Street, F Street, H Street and Broadway within the study area, with additional design direction provided for sidewalks, crossings, landscaping, lighting and pedestrian amenities. The plan identifies locations to consider traffic calming features, including refuge islands, curb extensions, street trees, accent paving, and narrowed travel lanes. A series of bicycle facilities are also proposed, consistent with the Bikeways Master Plan adopted by the City at the time, which has since been updated. Finally, a West Side Shuttle Route is proposed to serve the Specific Plan area and the Bayfront Master Plan area, providing localized service with connections to the regional transit system (E & H Street Trolley Stations). This route is consistent with the local feeder bus recommendation from the General Plan Land Use and Transportation Element.

General Plan Land Use and Transportation Element (2005)

The Land Use and Transportation Element guides the physical development of the City's land and transportation infrastructure. An Urban Circulation Element is also included to support transportation choices through flexible policies and standards as a means to improve the transit, pedestrian and bicycle environment. Five roadway classifications are identified within the Urban Core Subarea and portions of the Otay Ranch Subarea with more tolerant LOS standards than other areas of the City. The roadway classifications will be referenced to understand potential future roadway modifications or limitations during the Active Transportation Plan network development phase. Local feeder bus routes are proposed to supplement the existing public transit service. Ensuring safe and convenient pedestrian and bicycle mobility along the proposed feeder bus routes should be taken into consideration during the Active Transportation Plan network development process.

Greenbelt Master Plan (2003)

The Greenbelt Master Plan is a tool to guide future planning decisions. It addresses existing and potential trail locations, trail and staging area development standards, maintenance responsibilities and a trails and open space system to create a linked network. The Greenbelt largely follows the City's municipal boundary, running through land predominantly categorized as park or open space. The existing and planned trailhead locations and Greenbelt alignments

should be considered throughout development of the Active Transportation Plan to ensure residents and visitors have safe and comfortable access to this valuable community asset.

Next Steps

The needs/issues identified in the Bikeway Master Plan (2011), Pedestrian Master Plan (2010), and CVESD Safe Routes to School Master Plan (2017) will be revisited during the existing conditions analysis to determine if they are still relevant. Similarly, the adopted documents' recommendations identified in this Document Review will be reevaluated during the ATP's network and recommendation development phase and incorporated where appropriate.