CITY OF GARDEN GROVE

ACTIVE DOWNTOWN PLAN

Final | February 2020

The following Garden Grove Active Downtown Plan was funded by the Caltrans' Sustainable Communities Planning Grant.

Prepared for:

GARDEN GROVE

Prepared by:

KOA

ACKNOWLEDGMENTS

City of Garden Grove

Community & Economic Development Department
Community Services Department
Public Works Department

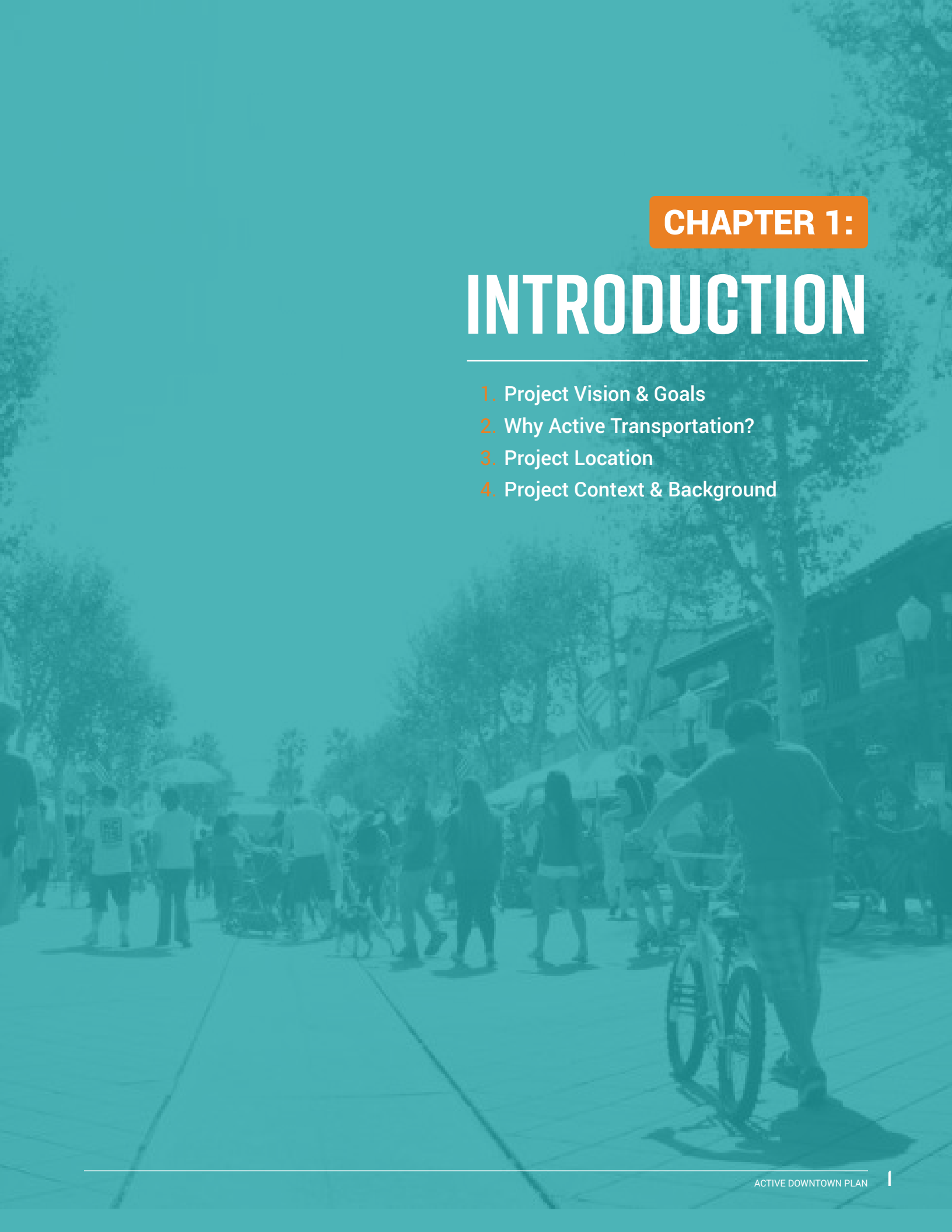
Consultant Team:

KOA Corporation
Translutions

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES



CHAPTER 1:
INTRODUCTION

1. Project Vision & Goals
2. Why Active Transportation?
3. Project Location
4. Project Context & Background

[This page is intentionally left blank]

PROJECT OVERVIEW

PROJECT VISION & GOALS

*The **City of Garden Grove** envisions Downtown as a bike and pedestrian-friendly destination where walking and biking is enjoyable and comfortable for users of all ages, abilities, backgrounds, and skill levels.*

MOBILITY & ACCESS

Support increased and improved active transportation access to key destinations within Downtown Garden Grove for people of all ages and abilities.

ARTS & CULTURE

Create a vibrant and identifiable Downtown core that is supportive of active transportation through increased placemaking and artistic programming strategies.

COMMUNITY HEALTH

Empower the Garden Grove community to lead more active lifestyles by encouraging and providing more opportunities in Downtown to walk, bike, and use alternative modes of transportation.

SAFETY

Improve the safety of all active transportation and roadway users, regardless of age and ability, traveling to, from, and within the Downtown Garden Grove area.

WHY ACTIVE TRANSPORTATION?

Healthy People: Making walking and biking safe and convenient can help people live healthier lives through increased physical activity.

Healthy Environment: Pedestrian and bike-friendly places help reduce the need to drive, and the pollution that comes with it.

Healthy Economy: Walking and biking can boost local economies and help small businesses grow by attracting more people and giving the area a vibrant atmosphere. Walking and biking more also helps reduce costs associated with driving.

Mobility for All: Not everyone can afford or has access to a car. Creating a Downtown that supports walking and biking helps provide opportunities for everyone to get around and enjoy their community.

PROJECT LOCATION

Downtown Garden Grove is located north of State Route 22 (SR-22) and generally surrounds two primary arterial roads: Euclid Street and Garden Grove Boulevard.

The Downtown study area is bounded by Stanford Avenue to the north, Garden Grove Boulevard to the south, parts of Main Street and Grove Avenue/Taft Street to the west, and 9th Street to the east. Zoning within the project boundary consists primarily of Civic Center Mixed Use with Civic Center and Village Green Parks making up the Open Space parcels.

The project area also contains the following major destinations: Garden Grove High School, Garden Grove Civic Center, Village Green Park, Civic Center Park, Coastline Community College, The Garden Amp , GEM Theatre, Steelcraft Garden Grove, and Historic Main Street.

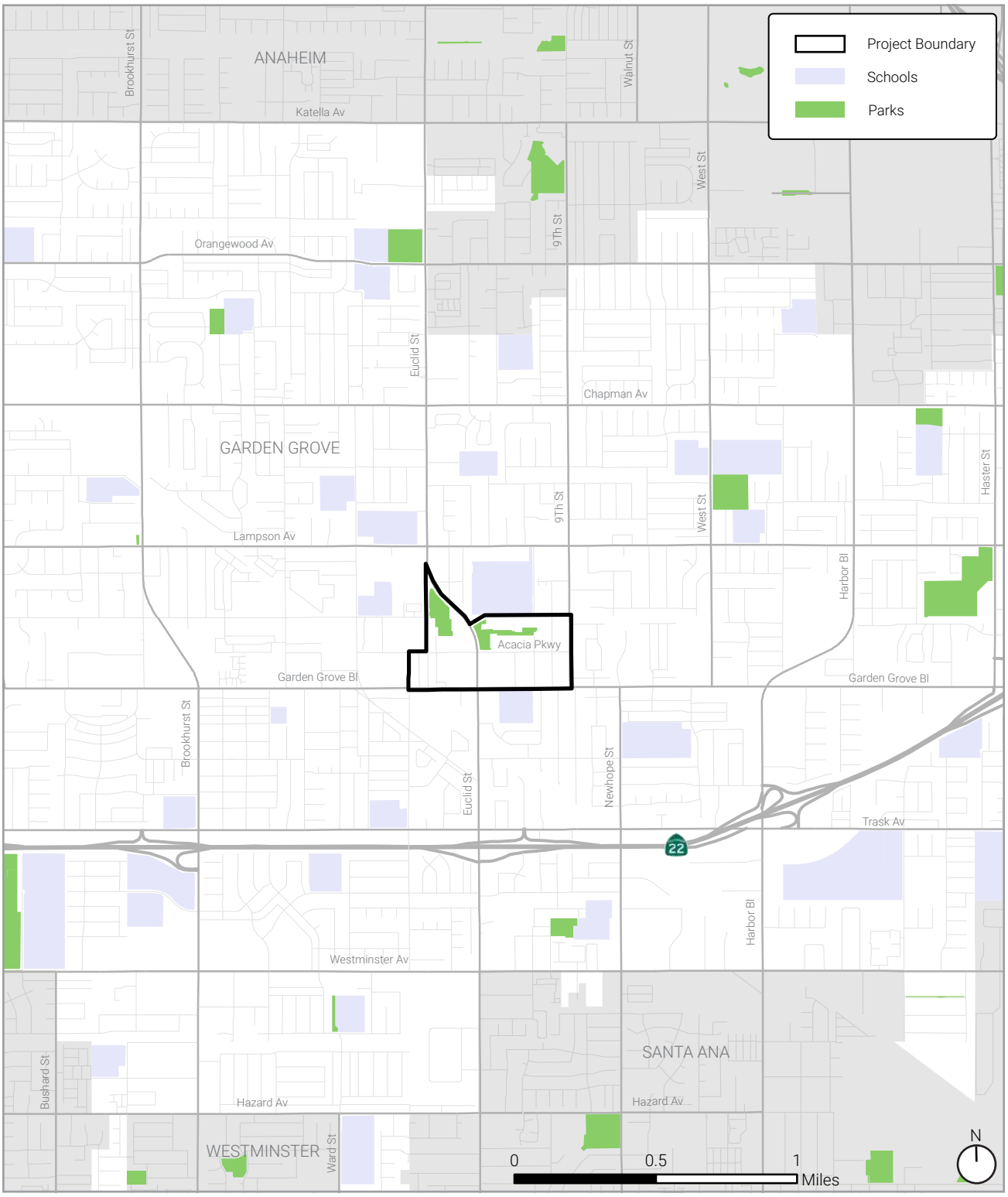


Figure 1.1. Downtown Project Area & Regional Context

PROJECT CONTEXT & BACKGROUND

In 2018, the City was awarded a Sustainable Communities Grant by Caltrans to develop the Active Downtown Plan.

This Plan stems from the policies set forth by the City's 2030 General Plan, and builds off of the Active Streets Master Plan and Re:Imagine Garden Grove initiative. In addition, this effort also emerges at a time where changes to the local and regional landscape reinforce the need for a Downtown environment supportive of alternative modes of transportation.

With the City's commitment towards a more walkable and bikeable Garden Grove, the Plan aims to create a safer, more connected, and vibrant Downtown community through active transportation strategies.

Re:Imagine Garden Grove

Over the last few years, the Re:Imagine Garden Grove initiative has built strong enthusiasm and support across the Garden Grove community for a more active Downtown area. The initiative's recent Downtown Open Streets events temporarily closed several streets off to vehicle traffic, allowing people to enjoy walking, biking, and skating in a car-free environment.

Originally known as ciclovías ("cycleway" in Spanish), these types of events first started in Bogotá, Columbia back in the 1970s. Since then, cities worldwide have begun organizing their own Open Streets as an opportunity for communities to experience their streets in a new way.

Active Streets Master Plan

In 2018, the City adopted a citywide active transportation plan that provided comprehensive guidance to creating a more walkable and bikeable Garden Grove. While the Active Streets Master Plan provided network and programming recommendations, it also identified the development of an Active Downtown Plan as a priority project.

Downtown Garden Grove already serves as Garden Grove's Civic Center, including the location of City Hall, Garden Grove Police Department, Orange County Fire Authority (OCFA), and the Regional Library by the County. However it is also the location of the Garden Grove's Historic Main Street, Village Green and Civic Center Parks, and several other key destinations.

Pacific Electric Right-of-Way Trail

Several other transportation facilities are being developed near Downtown to provide regional connections to Garden Grove and surrounding neighborhoods.

The Pacific Electric Right-of-Way (PE ROW) Trail, once developed, will be a 15.6 mile long regional bikeway corridor, connecting Garden Grove to several nearby cities. With a pilot segment of the bike trail already installed between Stanford Avenue and Nelson Street, the City is currently working on implementing a segment extension project to the north.

Designing appropriate bikeway connections to bridge the PE ROW gap between Nelson Street and Euclid Street will be an important focus for the future Downtown area.

OC Streetcar

The OC Streetcar, projected to be completed in 2022, will link the Santa Ana Regional Transportation Center (SARTC) to a new multi-modal hub in the City of Garden Grove.

Located at Harbor Boulevard and Westminster Avenue, the multi-modal hub will only be about 1.2 miles away from Downtown Garden Grove. While transit connectivity to the area will be improved, the new transportation system also provides an opportunity for first and last mile improvements for pedestrians and bicyclists.

Downtown Development

Lastly, the Active Downtown Plan comes at a moment of increasing new development in Downtown. SteelCraft Garden Grove, an open-air craft food and drink gathering space, opened in September 2019 at the corner of Euclid Street and Acacia Parkway. Additional commercial development is expected with the planned opening of Cottage Industries. The project plans to turn several existing residential properties into small-scale commercial enterprises within the Downtown area. The Smallwood Plaza, an approved mixed-used development along Main Street, will consist of ground-floor commercial space and nine residential units.

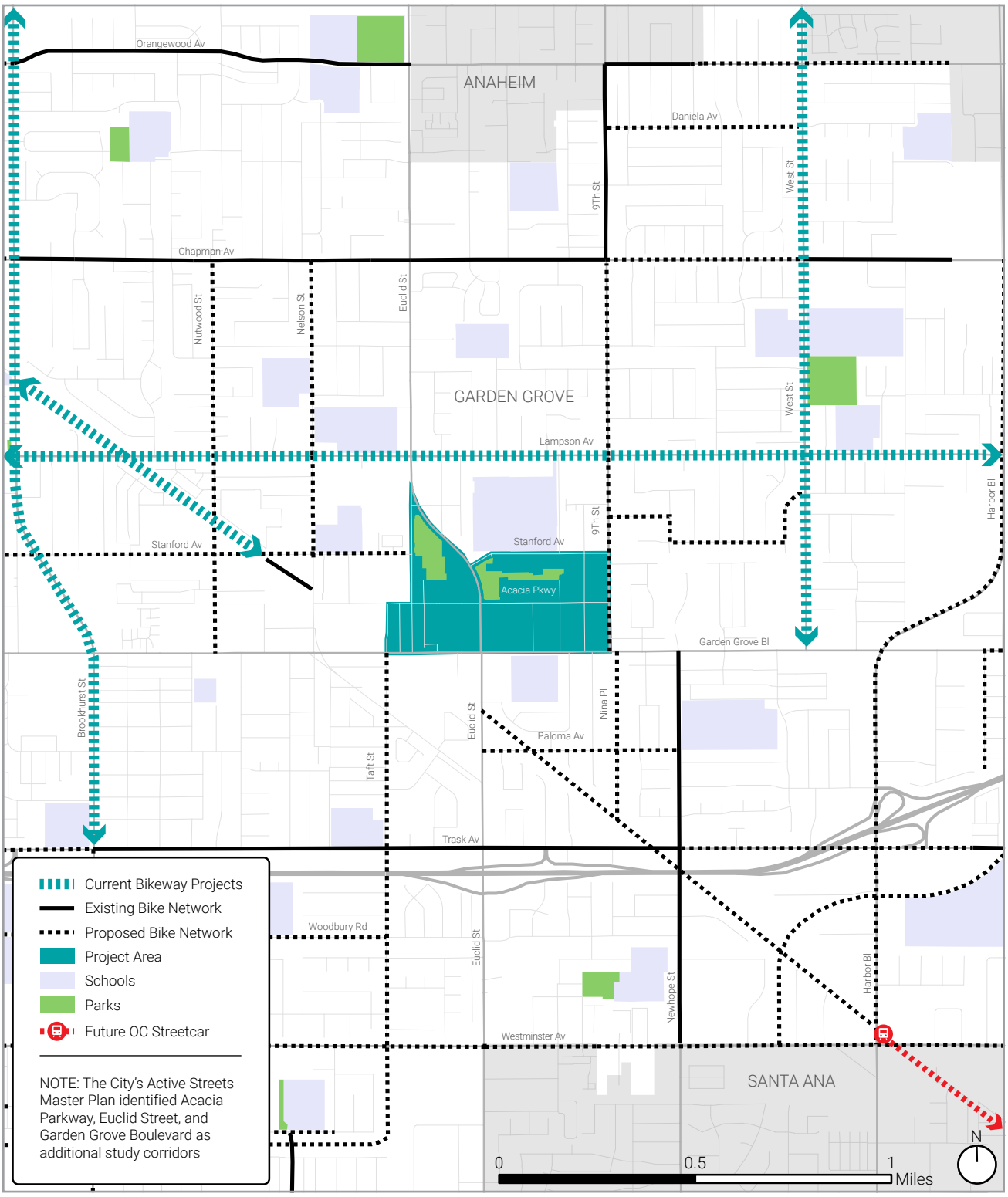


Figure 1.2. Downtown Project Area & Bike Network

Other Plans

With growing activity and development in Downtown Garden Grove and the surrounding area, other relevant studies have been developed or are being prepared to plan for these changes.

A **Downtown Parking Management Plan** was recently completed to evaluate existing parking supply and provide parking management strategies. To reduce overall parking demand, the Plan recommends incentivizing the use of alternative modes of transportation and implementing both urban design and traffic calming strategies.

The City's recently completed **Parks, Recreation & Facilities Master Plan** also recommends exploring "joint-use agreements with OCTA for the development and use of the Pacific Electric Right-of-Way as a greenbelt with bike and pedestrian pathways."

Other plans, such as the **Civic Center Park Master Plan** and **Urban Forestry Master Plan** are also currently being prepared. Both will have important implications for how the future Downtown urban landscape will look and feel. Open space, street trees, and urban greenery are central elements to pedestrian-friendly environments and walkable communities.

Other Projects:

PE ROW Trail Extension: With a $1.4 million grant from Caltrans' Active Transportation Program (ATP), the City is working to design and construct an extension of the trail from Stanford Avenue to Brookhurst Street.

BikeSafe Program: As part of the same Caltrans' ATP grant, the City will work with the Garden Grove Police Department (GGPD) to conduct education and encouragement programming on bike and pedestrian safety.

Current Bikeway Projects: The City was awarded a grant under Active Transportation Program Cycle 1 and OCTA Bicycle Corridor Improvement Program (BCIP) to design and construct bikeway facilities along five specific corridors. Selected based on high-priority streets identified in the City's Active Streets Master Plan, these projects will include both improvements to existing underutilized bikeways and construction of new bikeways. Within the vicinity of the Downtown area, these corridors include Lampson Avenue, Brookhurst Street, and West Street. Some of these corridors, surrounding Downtown, are shown in Figure 1.2 and other map exhibits in Chapter 5.

CHAPTER 2:

EXISTING CONDITIONS

1. Key Destinations & Accessibility
2. Health & Environment
3. Active Transportation Infrastructure
4. Pedestrian & Bicycle Amenities
5. Placemaking & Programming
6. Transit Infrastructure & Amenities
7. Opportunities & Constraints
8. Collision Analysis
9. Multi-modal Traffic Analysis


GEM
ONE MORE PRODUCTIONS PRESENTS
DISNEYS BEAUTY & THE BEAST
NOV 29 THRU DEC 22 THURS-SAT 8PM SUN 2PM
TICKETS AT ONEMOREPRODUCTIONS.COM 714 741-9550


STEEL
CRAFT
STEELCRAF

GARDEN GROVE TODAY

Neighbored by the cities of Los Alamitos, Anaheim, Seal Beach, Cypress, Fountain Valley, Westminster, Orange, Stanton, and Santa Ana, Garden Grove is located in the northern Orange County region. Downtown Garden Grove, most commonly known for its Historic Main Street, represents a unique focal point for the City itself. However, with wide arterial roadways, high speeds, inaccessible park space, and dispersed uses, Downtown can often feel distant and unidentifiable to residents and the local community.

"Downtown Garden Grove has the potential to be a great place to walk and bicycle, while supporting the local economy. While many of the intersections throughout downtown have crosswalks, wide streets make it difficult for pedestrians to cross easily – especially for people who have limited mobility or travel slower than the average pedestrian. Downtown Garden Grove also lacks a 'sense of place' with few notable public areas designed for leisure."

– Active Streets Master Plan

KEY DESTINATIONS & ACCESSIBILITY

Downtown Garden Grove, identified as a priority pedestrian area within the Active Streets Master Plan, is composed of a mix of residential and commercial activity. Figure 2.2 shows the extent of a 10-minute walk to and from the center of the Downtown area.

Historic Main Street: Historic block of businesses dating from the town's 19th century origins. Historic Main Street is a major attractor for residents and visitors of Garden Grove.

Higher Education: Coastline Community College, an extension of California State University Fullerton, and Concorde Career College are all near the Euclid Street and Garden Grove Boulevard intersection.

Schools: There are 50 public schools in Garden Grove, six of which are within a 10-minute walk and nine of which are within a 10-minute bike ride of the Downtown area. Of these schools, seven are elementary schools, one is an intermediate school, and one is a high school. During the 2017-2018 school year, there were over 6,500 students enrolled in the nine schools that are within walking or biking distance of Downtown. Schools are especially significant because they generally have high rates of walking, biking, and transit use.

Public Facilities: Located along Acacia Parkway and near Euclid Street, Garden Grove's City Hall is the central focus of civic center uses in Downtown. Adjacent to Civic Center Park are the Garden Grove Community Center and Regional Library. The Community Center also functions as a venue for business meetings, conferences, corporate events, trade shows, workshops, classes, parties, and even weddings.

Commercial & Entertainment: The Garden Amp and GEM Theater, located within the vicinity of Village Green Park, host a variety of musical and arts performances and is a popular attractor for residents of Garden Grove. Recently developed and located along Euclid Street, near Acacia Parkway, is the outdoor urban eatery, Steelcraft. Through outreach, live music, and community events, Steelcraft engages Garden Grove neighbors and visitors to celebrate its unique culinary experience. Other nearby commerical retailers included Home Depot, Costco, Office Depot, and Dalat Supermarket.

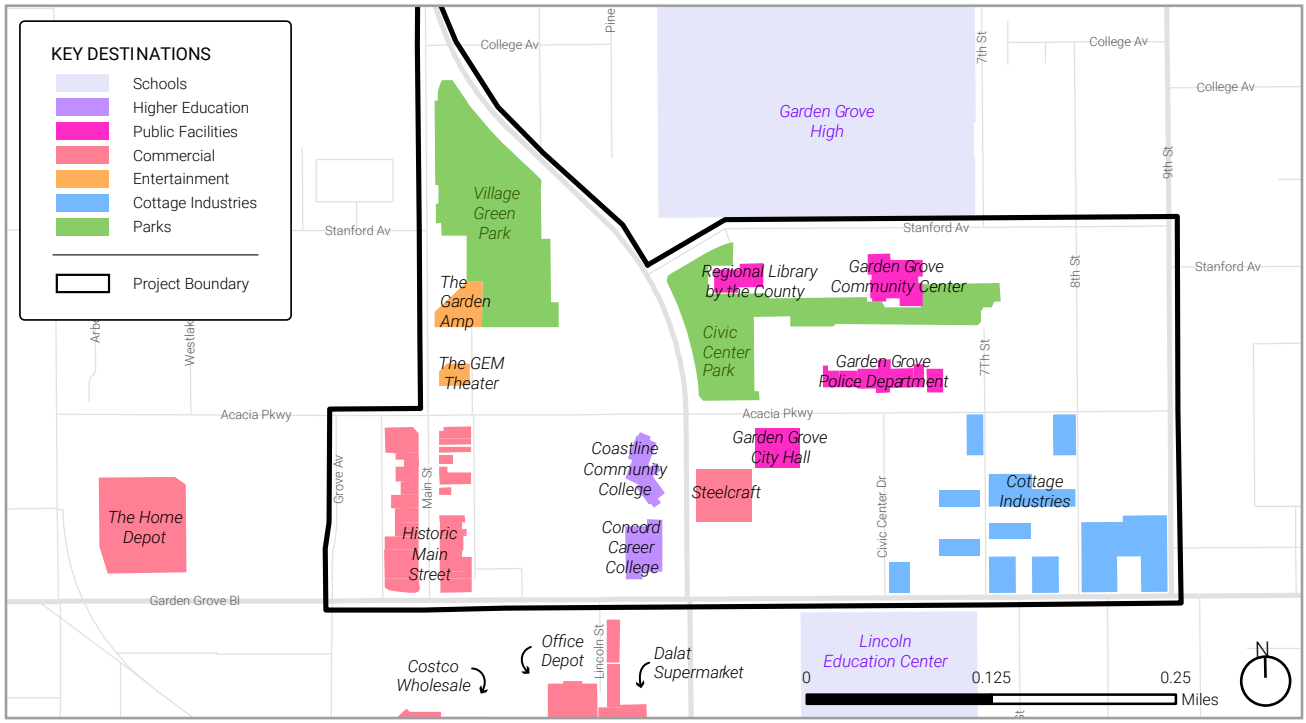


Figure 2.1. Key Destinations & Attractors

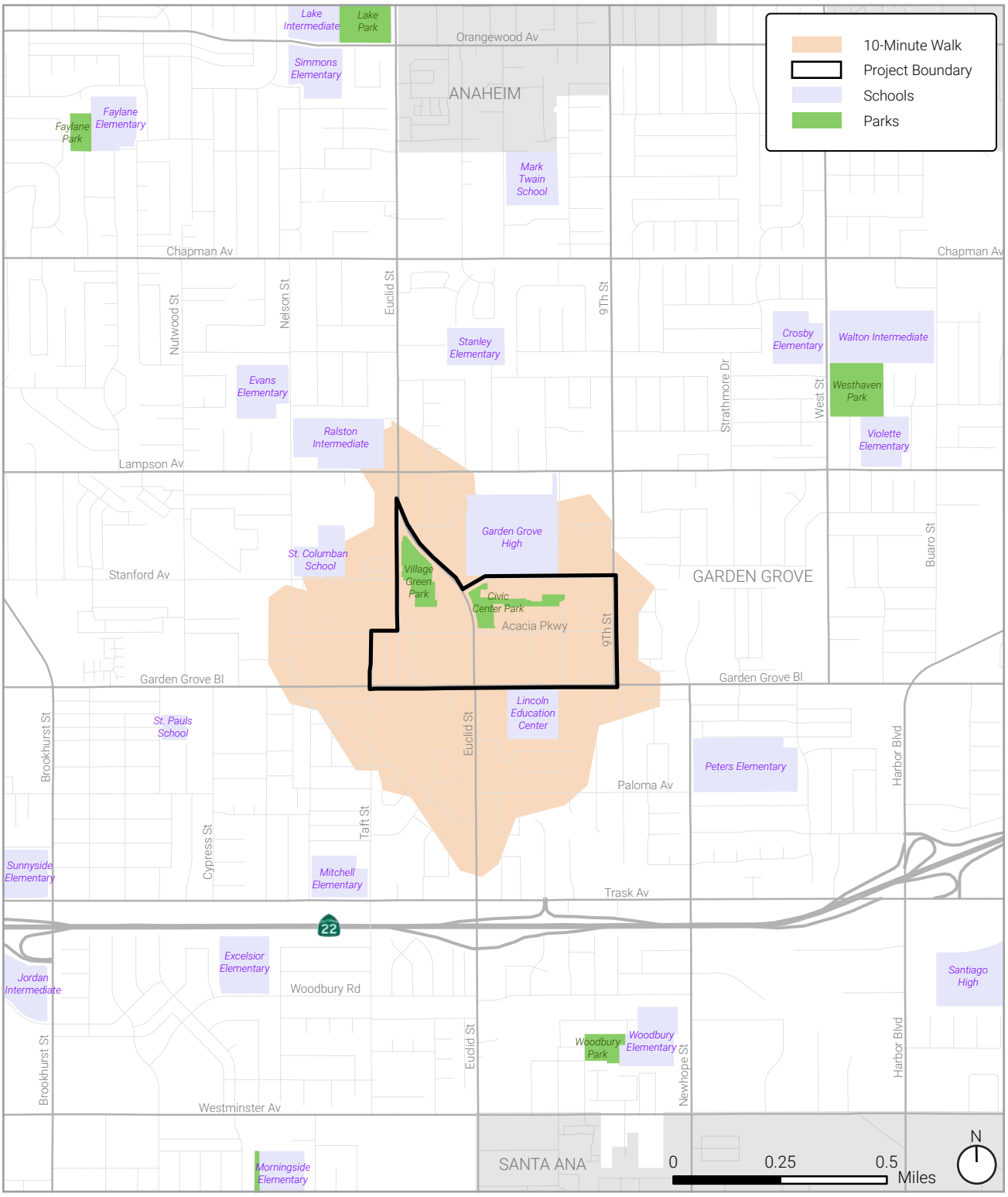


Figure 2.2. Pedestrian Walkshed (10-minute)

HEALTH & ENVIRONMENT

A community's transportation network has the potential to encourage and facilitate healthy behaviors when designed to accommodate multi-modal travel. Walkable and bikeable communities help create more opportunities for people to engage in physical activity and reduce overall vehicle miles traveled (VMTs).

Chronic Diseases

While chronic diseases are all largely preventable conditions, they are also the leading causes of death and disability.[1]

The City has an adult obesity rate of 21.6% — slightly higher than the County rate of 20.1%. In comparison to neighboring cities like Anaheim, Westminster, and Santa Ana, Garden Grove also has the highest rate of diabetes (10.6%) and lowest rate of physical activity (29.7%).[2]

At the county level, both obesity and diabetes amongst adults have gradually increased between 2013 and 2017. Twenty percent of adults in Orange County are considered obese; 8.5% have diabetes.[3] One in six fifth grade students and one in seven ninth grade students are also considered obese in Orange County.

Active environments can help reduce the prevalence of these conditions and promote more active lifestyles.

Disadvantaged Communities

Data from CalEnviroScreen further demonstrates the need for health and environmental improvements within Downtown and the City of Garden Grove.

Developed by the California Environmental Protection Agency (CalEPA), CalEnviroScreen 3.0 is an index that utilizes environmental and socio-economic data to identify California communities that are disproportionately burdened by, and vulnerable to, multiple sources of pollution. Census tracts that score at or above the 75th percentile are designated as California's disadvantaged communities.

The census tract that makes up most of the Downtown Garden Grove boundary ranks at the 73rd percentile. While the areas north and west of Downtown have lower scores, the census tract immediately to the east (bordering 9th and Newhope Streets) has a 76th percentile score. The tract east of Euclid Street and mostly south of the CA-22 is the most disadvantaged community in Garden Grove, scoring at the 93rd percentile (Figure 2.3).

While the census tract that makes up most of the study area does not meet the disadvantaged community threshold, Downtown is still heavily burdened by multiple sources of pollution and adjacent to areas that do meet the 75th percetile threshold.[4]

Together, the Downtown Garden Grove and its surrounding half-mile radius area ranks at the 79th percentile among all census tracts for the average rate of hospital visits related to cardiovascular disease. While this can be a result of an increasingly sedentary lifestyle, poor air quality conditions are also a major contributor to increased rates of chronic diseases.[5] Poor air quality conditions resulting from vehicle emissions and toxic releases from facilities, have a strong correlation with increased rates of asthma. Downtown ranks at the 49th percentile for asthma rates, higher than the City of Garden Grove (39th percentile) and Orange County (28th percentile).

Vehicle Miles Traveled (VMT)

With the transportation sector being one of the largest contributors to greenhouse gas (GHG) emissions, reducing VMTs is a key part in helping lower overall GHGs.[6] Short vehicle trips that are less than one mile, account for nearly 10 billion miles per year in the U.S.[7] Choosing to walk or bike instead of drive can help replace these vehicle trips and improve air quality, particularly in areas like Downtown.

Increasing physical activity opportunities and encouraging a less sedentary lifestyle through active transportation can help improve both the overall health and environment of Garden Grove and the Downtown community.

[1] *Center for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), National Vital Statistics System (NVSS), Mortality. 2017*

[2] *Southern California Association of Governments (SCAG) 2019 Local Profiles: Garden Grove*

[3] *OC Health Improvement Plan (OCHIP). 2017-2019*

[4] *CA Office of Environmental Health Hazard Assessment, SB 535 Disadvantaged Communities. June 2017*

[5] *U.S. EPA, Health and Environmental Effects of Particulate Matter (PM). June 2018*

[6] *U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017. 2019.*

[7] *U.S. Department of Transportation, Federal Highway Administration, 2009 National Household Travel Survey.*

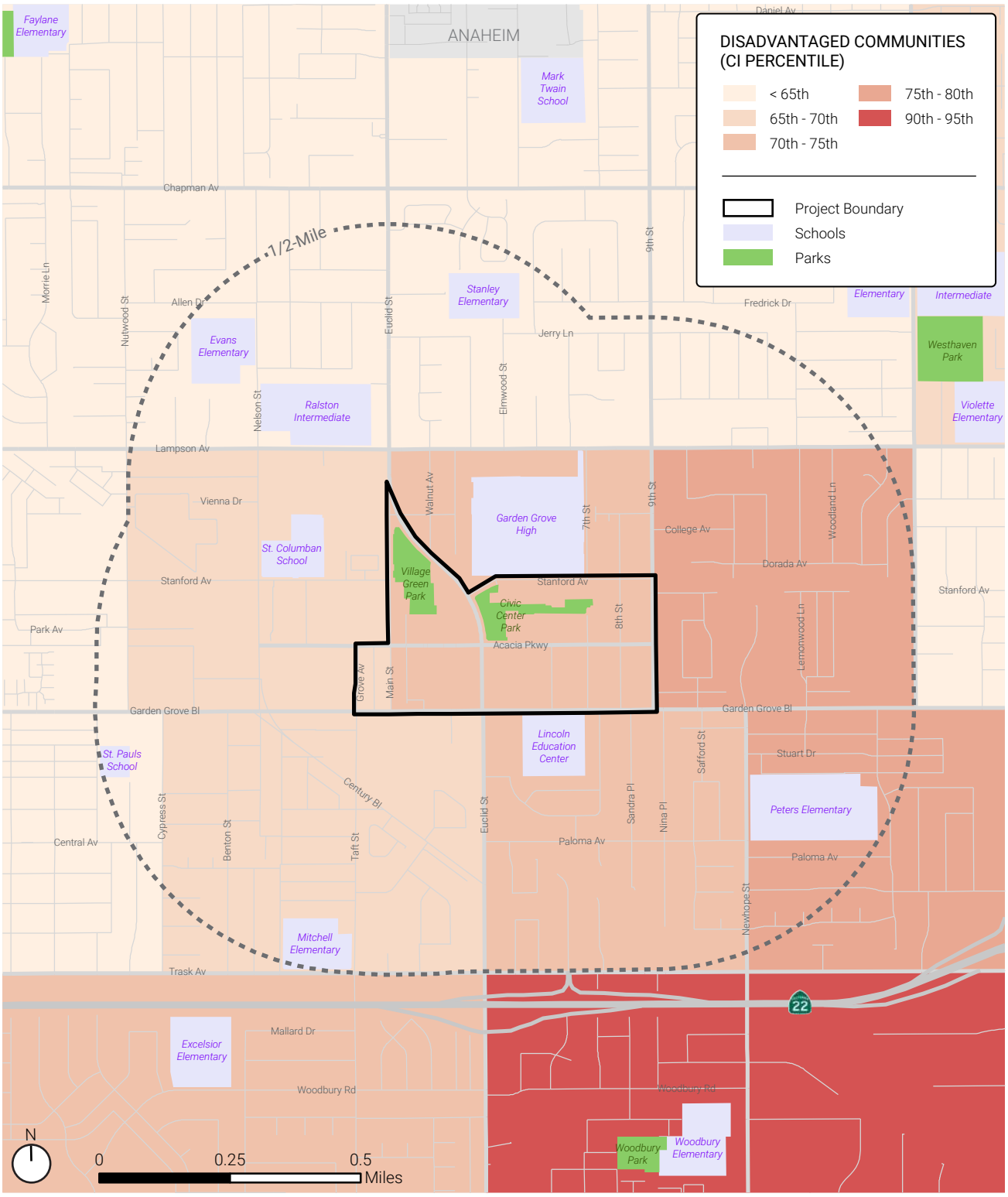


Figure 2.3. CalEnviroScreen & Disadvantaged Communities *(source: OEHHA CalEnviroScreen 3.0)*

ACTIVE TRANSPORTATION INFRASTRUCTURE

Driving a car is still the predominant mode of travel in Garden Grove. However, based on a survey conducted for the Downtown Parking Management Plan in 2018, a part of the Garden Grove community already walks and bikes to Downtown. More than 20% of respondents indicated that they walked as a primary mode of travel to Downtown and almost 10% indicated that they biked.

By identifying opportunities to improve bike and pedestrian infrastructure in Downtown, the City can begin building an active transportation network that supports local and regional access to the area.

Pedestrian Infrastructure

Sidewalks are the most fundamental component to pedestrian infrastructure. They provide a safe path of travel for people walking on any street. With a few exceptions, Downtown consists of a relatively complete sidewalk network. However, missing sidewalk segments and gaps still exist along various local and residential streets at the Downtown periphery. This includes the neighborhoods and communities within a quarter-mile distance of Lincoln Education Center, Stanley Elementary, Mitchell Elementary, Garden Grove High, Ralston Intermediate, and St. Columban's Schools.

While crosswalks are present at all major intersections within the Downtown area, high vehicle speeds, missing sidewalks, and wide arterial roadways such as Euclid Street and Garden Grove Boulevard still present challenges to the current pedestrian environment.

However, recent implementation of high visibility crosswalks and crossing enhancements such as Rectangular Rapid Flashing Beacons (RRFBs) within the Downtown continue to provide safety improvements to the area. To date, the City has installed RRFBs at three locations and will be implementing them at five additional locations, which include two along Acacia Parkway and three along the PE ROW extension segment. Midblock crosswalks with pedestrian-activated signal crossings, are also present at Lampson Avenue and Westlake Street (Ralston Intermediate School) and Newhope Street, north of Paloma Avenue (Peters Elementary School).

Figure 2.4. shows existing pedestrian infrastructure and missing sidewalks.

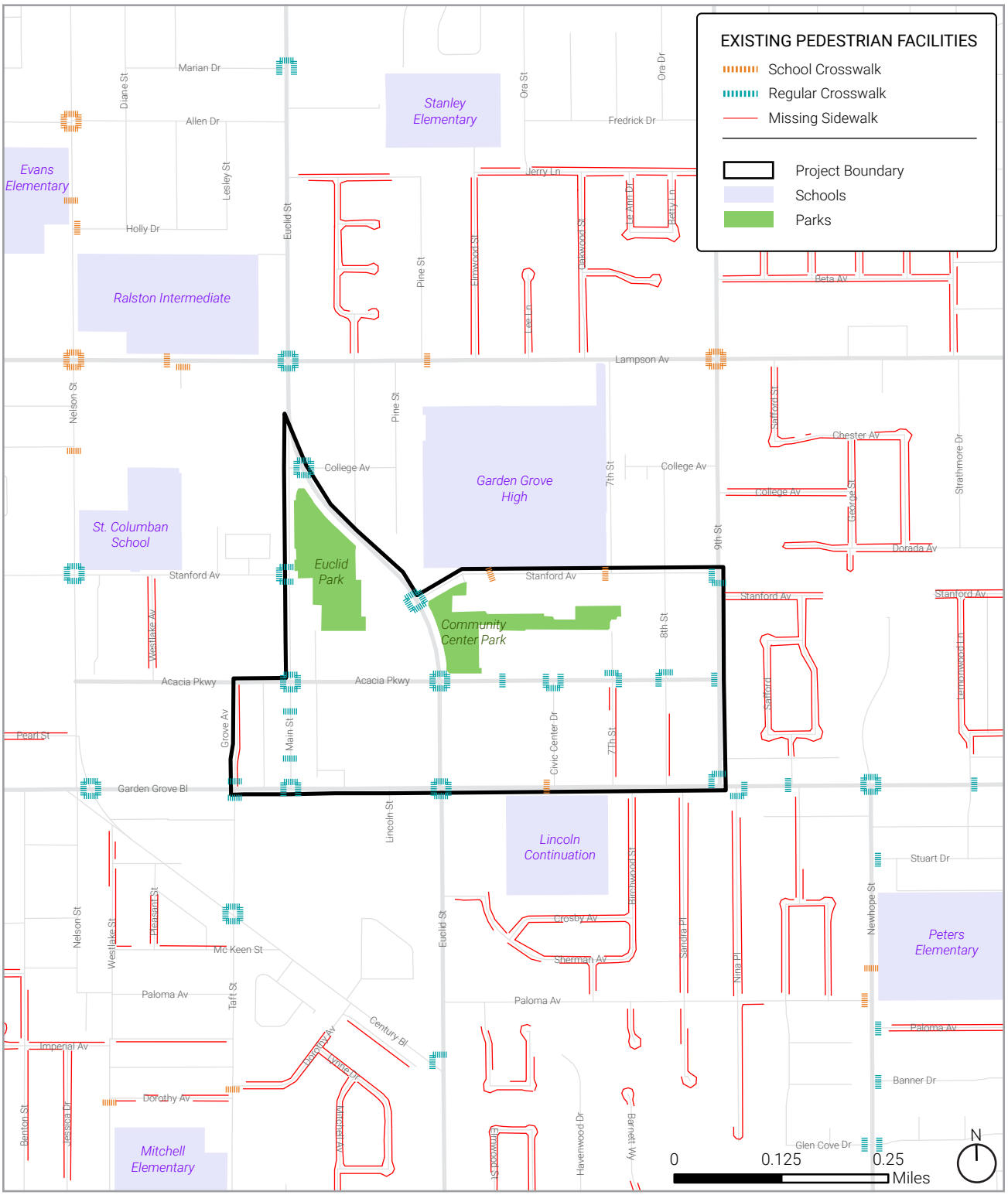


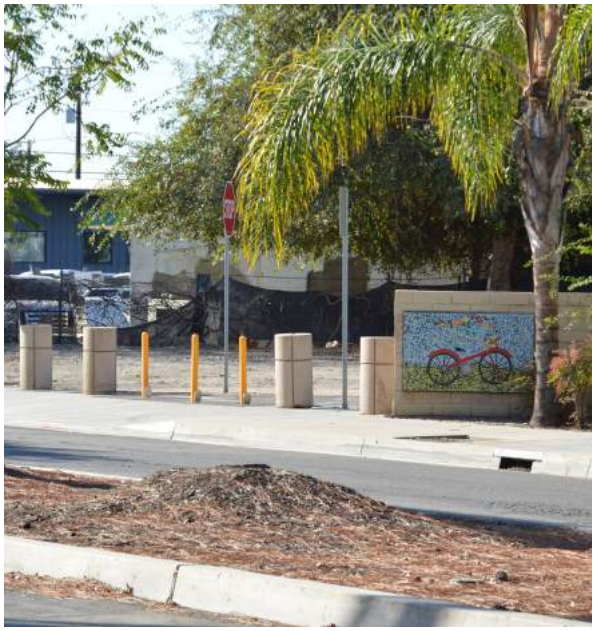
Figure 2.4. Existing Pedestrian Infrastructure

Bicycle Infrastructure

Currently, no bicycle facilities exist within the Downtown project area. Although on-street bike lanes and routes do exist along segments of Chapman Avenue, Lampson Avenue, Newhope Street, and Trask Avenue, the lack of bikeway connections into the Downtown core hinders overall accessibility.

The only completed segment of the PE ROW Trail is between Stanford Avenue and Nelson Street. However, with a $1.4 million grant from Caltrans' Active Transportation Program (ATP), the City is working to design and construct an extension of the trail from Stanford Avenue to Brookhurst Street. The added extension to the existing pilot segment will result in a one-mile long PE ROW Trail.

Although the future PE ROW Trail offers both regional and local access, the existing and funded segments still do not link to any other bikeway facilities toward Downtown. Figure 2.5 maps out existing bikeway facilities as well as proposed facilities based on the Active Streets Master Plan.



Entrance and access point to the existing PE ROW Trail segment on Nelson Street.

View of the existing PE ROW Trail segment

Bikeway classifications are described below:

Class I Bike Paths: An off-street bikeway facility that is physically separated from any street or highway, commonly planned along rights-of-way such as waterways, utility corridors, flood control access roads, railroads, and similar paths that offer continuously separated riding opportunities.

Class II Bike Lanes: A portion of the roadway that is designated by striping, signaling, and/or pavement markings for the exclusive use of bicyclists.

Class III Bike Routes: Designated roadways where bicycles and motor vehicles share a roadway. Design standards require specific signage, but additional enhancement can be provided by using shared roadway markings, or "sharrows".

Class IV Protected Bike Lanes: A protected bikeway includes a physical barrier between bicyclists and motor vehicle traffic. It combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane.

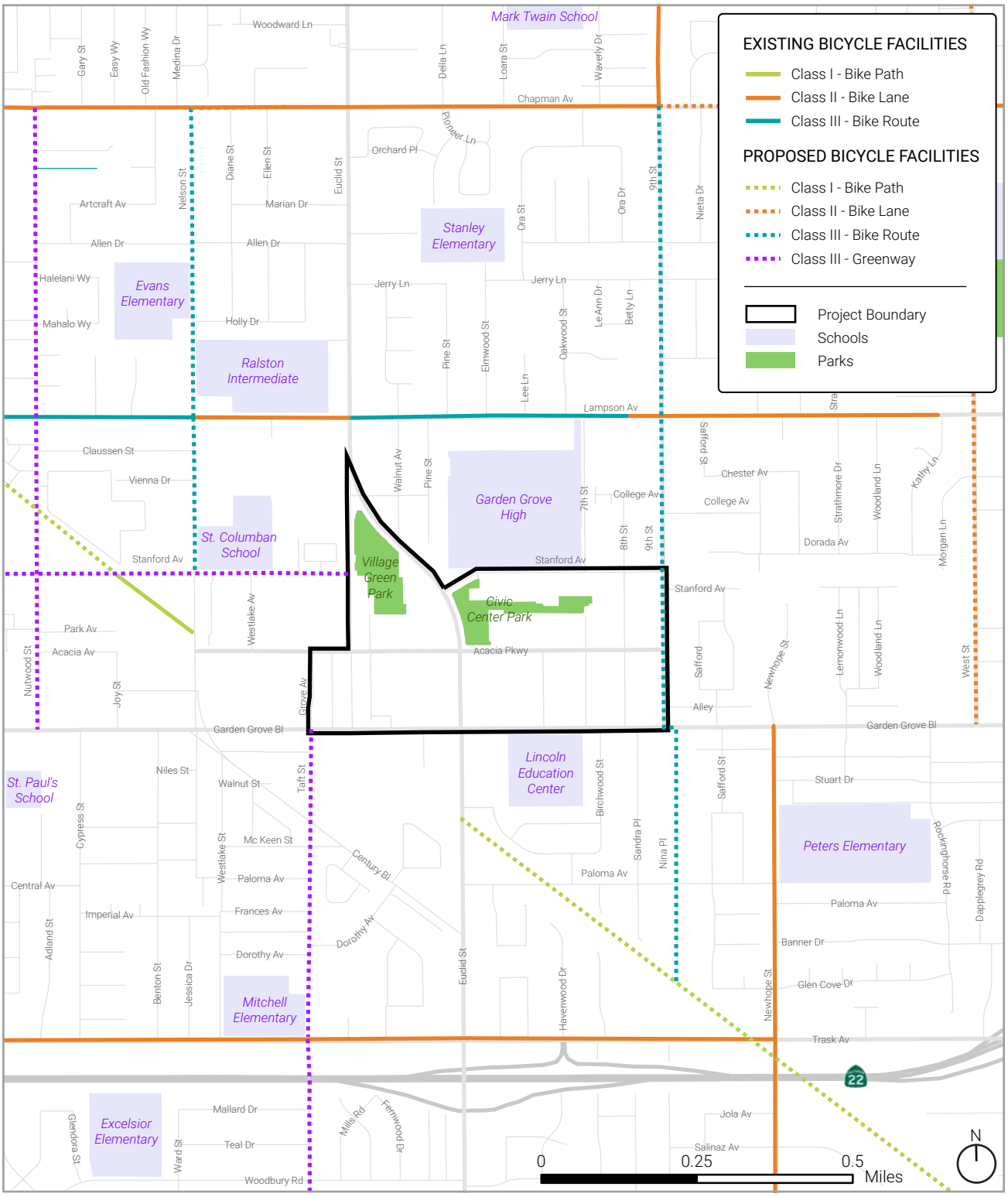


Figure 2.5. Existing & Proposed Bicycle Infrastructure *(source: Active Streets Master Plan)*

PEDESTRIAN & BICYCLE AMENITIES

Bicycle and pedestrian infrastructure are the physical aspects of what creates a safe and enjoyable walking and biking experience. However, the presence of amenities is also a crucial component to encouraging active transportation use. Supporting infrastructure helps accommodate pedestrians and bicyclists, but they can also solidify a sense walking and biking culture within the community.

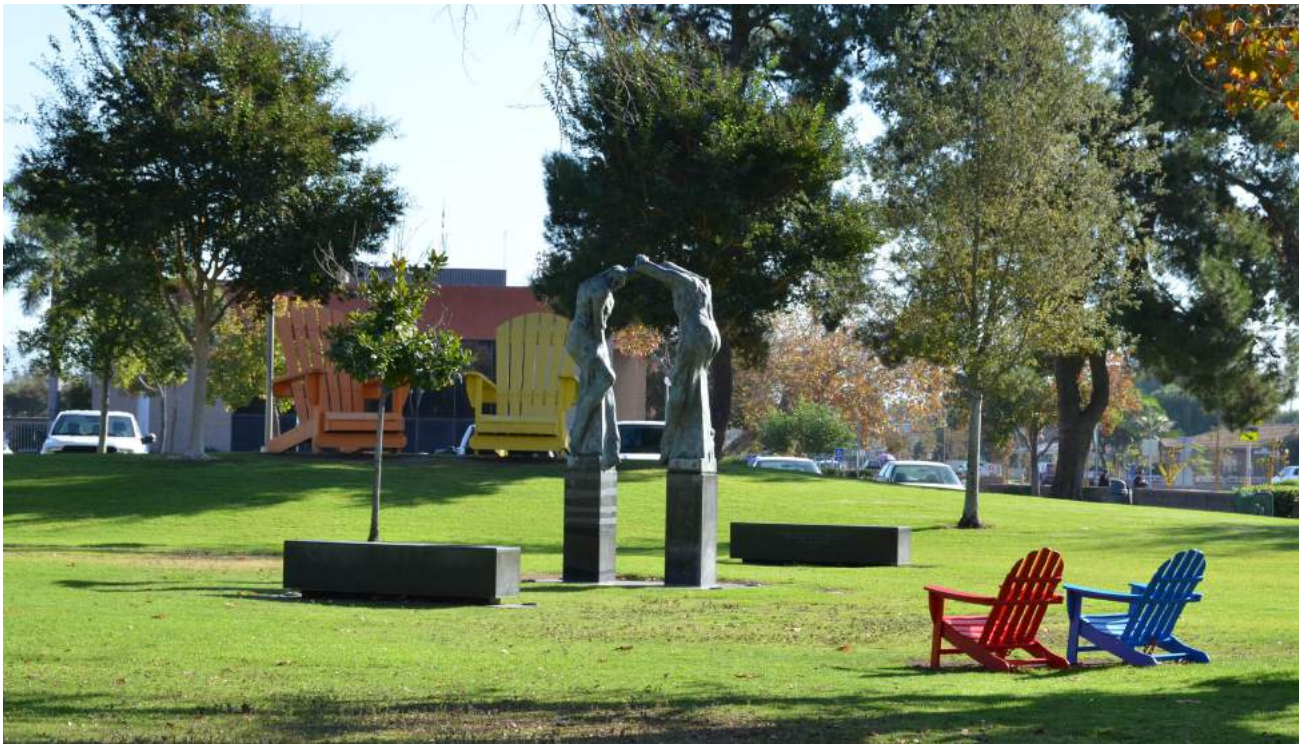
Within the Downtown area, pedestrian benches and bike parking are sporadically located along Historic Main Street. Other pedestrian seating can be found in a few locations within the Civic Center Park and also in the form of a parklet in front of GEM Theater. City Hall, the Regional Library, and Community Center all have wave bike racks for bike parking at their front entrances.

While Downtown Garden Grove does have a few bicycle and pedestrian amenities, opportunities still exist in expanding the number of creative and quality amenities. These supportive infrastructure elements can help create a vibrant and active Downtown culture that is also reflective of the community.

Parklet: a small seating area or green space created as public amenity on or alongside a sidewalk especially in a former roadside parking space.

The parklet shown below was a collaborative project between the City of Garden Grove, Republic Services, and Old Grove Auto to turn a dumpster into a parklet bench with decorative landscaping.

Wave bike rack located at the front entrance of the Orange County Public Library, Garden Grove Civic Center Branch. However, this type of bike rack is often not intuitive or user-friendly. Wave bike racks only support bike frames at one location when used as intended (APBP Essentials of Bike Parking (2015)).



Pedestrian seating at parks play an important role in the overall accessibility of open spaces. Garden Grove's iconic adirondack chairs at Civic Center Park provide a landmark for the Downtown area.

PLACEMAKING & PROGRAMMING

Open Streets

Beginning in 2014, the Re:Imagine Garden Grove initiative supported the development of three Open Streets events within the Downtown area. A fourth event is anticipated to occur in Fall 2020.

By temporarily closing streets off to vehicle traffic, Open Streets events provide communities a chance to come out and experience their city streets as public spaces. People can walk, bike, skate, and participate in community programming activities along these streets.

> *Re:Imagine Garden Grove is about creating unique public spaces through innovative and fun experiences that the whole community can enjoy and connect with.*

The City also joined six other Orange County cities in organizing "Meet on Beach" in November 2019. The event featured an Open Streets route along a 1.5 mile stretch of Beach Boulevard with several street fairs and activities across participating cities. Along with food trucks and giveaways, Garden Grove set up a bike repair station, pedestrian "safe city" exhibit, and oversize lawn games for the community to enjoy.

Downtown Art Enhancement Projects

As part of the Re:Imagine Garden Grove initiative, Downtown Art Enhancement Projects help transform the built environment through artistic placemaking. These artistic installations and projects have included murals, pedestrian seating, and sculptures. They continue to enhance the identity of the Downtown area, and contribute to the overall sense of place when people visit the community.

Re:Imagine Garden Grove's Art in the Park, held in March 2019, celebrated community art by showcasing GGUSD's 41st annual First Impressions Student Art Gallery, facilitated art-themed activities for kids, and also provided a platform for artists contributing to artistic placemaking within Garden Grove.

Active Transportation Safety

Funded by a Caltrans' ATP grant, the City is working collaboratively with the Garden Grove Police Department (GGPD) to implement a BikeSafe Program. The program aims to conduct education and encouragement activities at various intermediate and elementary schools, including surrounding low-income neighborhoods, parks, churches, and community outreach events. Encouragement activities include bike rodeos, ride-alongs, participation and booth giveaways to celebrate Walk to School Day and Bike To School events. Education activities include Safe Moves City bicycle and traffic hazard training for all ages. Other Open Streets and complete streets events will feature a BikeSafe booth with activity boards, learning materials, and other promotional materials.

> "**Open Streets** or **Ciclovías** temporarily re-purpose city streets into car-free spaces for people complemented by programmed activities fulfilling the intent of the program.
>
> These programs include encouraging physical activity, civic engagement, local economic development, community development, recovery and revitalization of public spaces and/or changing transportation behavior through walking and cycling advocacy.
>
> From 1974 forward, Open Streets have been experienced in 496 cities in 27 countries on all continents. Host cities range from large metropolises such as Los Angeles, Mexico City, and Toronto, to small towns with fewer than 10,000 residents. The prevailing model and city of reference being Bogotá's Ciclovía that began in the 1970s. Open Streets programs are multi-sectoral involving numerous partners in government, private, and non-profit sectors making Open Streets organization dynamic and collaborative.
>
> **Open Streets are ultimately a platform for change in any community – whether the goals are to improve community health, engagement, or advocate for more sustainable and human-scale cities."**
>
> ***Open Streets Trends & Opportunities by 8-80 Cities & Active Living Research***


"YOU CAN DISCOVER MORE ABOUT A PERSON FROM AN HOUR OF PLAY THAN IN A YEAR OF CONVERSATION."


ART in the PARK


Grove


GOODBYE

TRANSIT CONNECTIVITY & AMENITIES

Public transit is a fundamental component to local and regional transportation systems, as they provide opportunities for multi-modal travel. While public transportation can offer an alternative means to driving, transit service is also critical for Garden Grove residents with limited access to personal vehicles.

The Orange County Transportation Authority (OCTA) is the sole transit agency operating in Garden Grove. OCTA offers a variety of route options connecting residents and visitors locally and regionally. Of the eight route types offered in the West/Central region of Orange County (Local, Community, OC Express, Metrolink Stationlink, Bravo, Xpress, Express Service, and City Shuttle), three provide direct access to Downtown Garden Grove and operate within the area. The routes are as follows:

1. **Local Routes (1-99)** – Routes 35, 37, 43, 50, 54, 56, 60
2. **Bravo Limited Stop Service (500-599)** – Route 543
3. **Route 633** – Fullerton Park-and-Ride to Orange County Fairgrounds

Bus stops within the Downtown area, particularly along Euclid Street and Garden Grove Boulevard, include general OCTA transit amenities such as bus shelters, pedestrian seating, and trash receptacles.

To complement Orange County's Metrolink service and facilitate First/Last mile connections, a Measure M program, now called OC Go, intends to broaden the reach of Orange County's rail system to key employment, population, and activity centers.

To achieve these goals, the OC Streetcar, expected to begin operations in 2022, was initiated to link the Santa Ana Regional Transportation Center (SARTC) and countless OCTA bus routes to a new multi-modal hub at Harbor Boulevard and Westminster Avenue in Garden Grove. Although the hub and OC Streetcar are outside the Downtown Garden Grove area, the PE ROW Trail and other planned transportation connections should be considered as a future priority.

Existing bus stop amenities on Euclid Street, near Acacia Parkway. Bench seating is not situated under bus shelter.

Bus stop in front of Coastline Community College. With an existing bus turnout and bench seating, additional amenities like bus shelters and trash receptacles can help better enhance ridership experience.

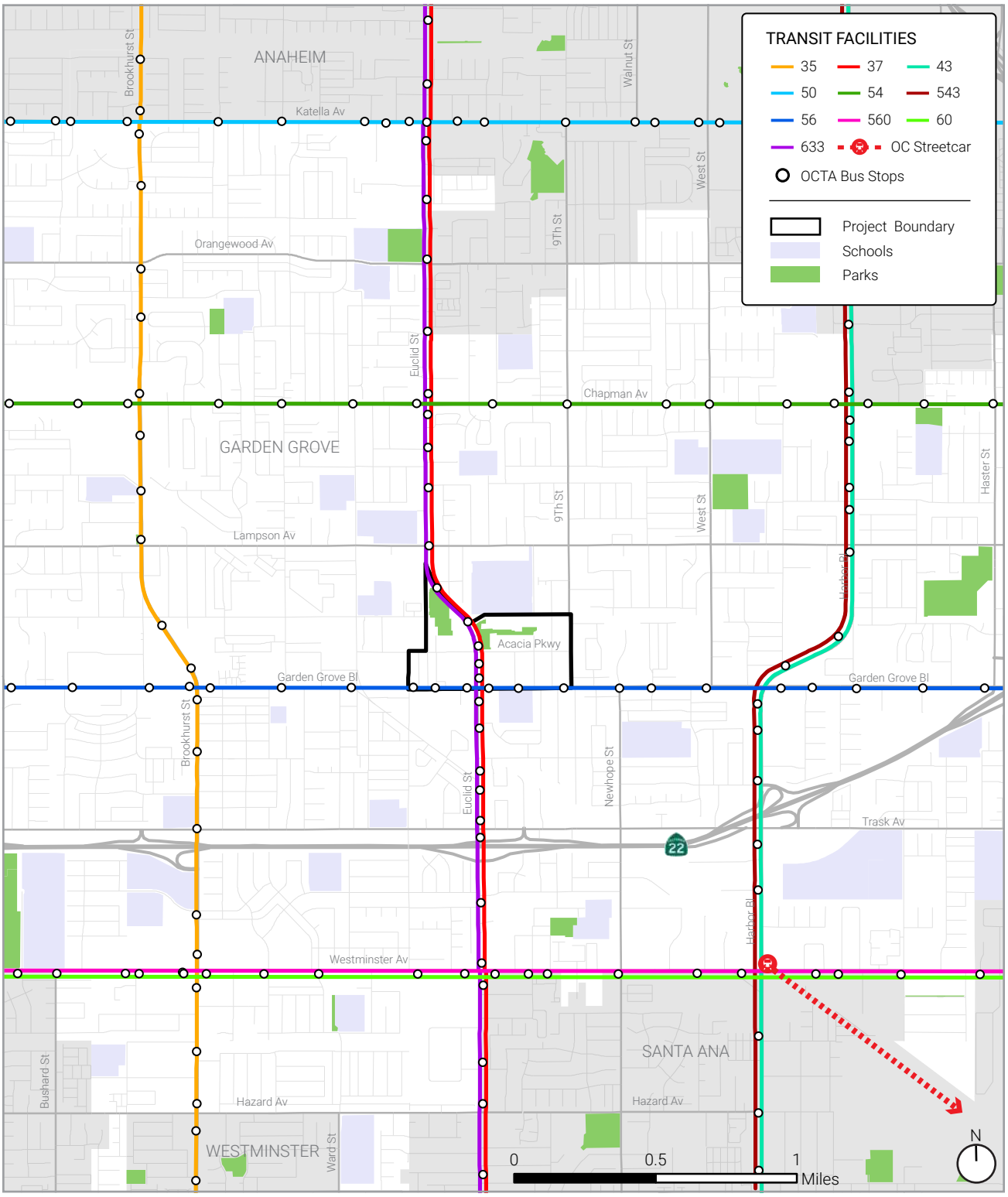


Figure 2.6. Existing OCTA Bus Stops & Routes *(source: General Transit Feed Specification (GTFS) 2019)*

OPPORTUNITIES & CONSTRAINTS

Designated as Civic Center Mixed Use within the City's 2030 General Plan Land Use Element, Downtown is primed for development that encourages pedestrian activity and active street environments. However, challenges still exist on several roadways where right-of-way is limited. Addressing the constraints of Downtown's roadway infrastructure for improvement opportunities will be a crucial element to this Plan.

Euclid Street

Located through the center of Downtown, Euclid Street is a six-lane roadway providing local and regional access from I-405 freeway in Fountain Valley to La Habra. As a corridor that spans almost 17 miles across six cities, Euclid Street accommodates both high vehicle speeds and volumes.

If the existing six-lane wide geometry is maintained, implementing bikeway facilities along Euclid Street is currently infeasible due to limited right-of-way. As a key north-south connection within the City, the Euclid Street gap in the bikeway network should be compensated with the development of more feasible bikeways on other north-south roadways.

Additional improvements to pedestrian crossings at wide intersections like Acacia Parkway and Garden Grove Boulevard can help create a more pedestrian-oriented environment in Downtown. As one of only two Downtown roadways with OCTA transit routes and stops, Euclid Street provides opportunities to enhance pedestrian accessibility to these services. Bus shelters and updated furnishings should also be incorporated along Euclid Street where these amenities are currently not available.

Garden Grove Boulevard

Garden Grove Boulevard is a six-lane roadway that provides local and regional access from Valley View Street, where State Route 22 (SR-22) freeway and the I-405 merge, to Bristol Street in Santa Ana.

Running east-west along the south edge of the Downtown area, Garden Grove Boulevard is similarly limited in right-of-way. The currently six-lane wide roadway geometry precludes the addition of any bikeway facilities. Although sidewalks and marked crosswalks are present, high vehicle speeds and volumes still create an uncomfortable pedestrian experience.

Opportunities exist to improve visibility of crosswalks, pedestrian crossing times at intersections, and accessibility to bus stops. Bus shelters and updated furnishings should also be incorporated along Garden Grove Boulevard where these amenities are currently not available.

9th Street

Located along the eastern edge of the Downtown area, 9th Street can often feel unfriendly for pedestrians and bicyclists, despite being almost entirely residential.

Volumes and high speeds from cut-through traffic can create an environment that deters pedestrians and bicyclists from crossing the roadway to reach the Downtown area. 9th Street stretches from Garden Grove Boulevard north to Cerritos Avenue in the City of Anaheim. With a travel lane in each direction and on-street parking, the current right-of-way is too narrow for Class II bike lanes to be implemented. Only one pedestrian mid-block crossing is provided between Garden Grove Boulevard and Lampson Avenue. As a planned bike route, 9th Street provides an opportunity to implement traffic calming improvements and overall enhancements to pedestrian and bicycle safety.

Downtown Garden Grove provides a variety of commercial, educational, civic, office, and open space uses that residents and visitors experience and enjoy. Improving the connectivity, accessibility, and safety of pedestrian and bikeway facilities, where opportunities exist, can help further develop the Downtown area as a destination.

Colored concrete pavement material used at major intersection pedestrian crossings for Euclid Street and Garden Grove Boulevard can lack visibility and contrast.

In most areas of Downtown, sidewalks are already wide and accommodating for pedestrian use.

Wide travel lanes present opportunities for traffic calming and accommodation of bikeway facilities.

Amenities like bus shelters and benches help enhance transit ridership experiences and in turn, multi-modal connectivity. The City should coordinate with OCTA on locations where amenity upgrades are needed.

Multiple approaches at existing all-way stop (Acacia Parkway & Main Street) intersections can limit traffic flow and impact safety of other roadway users.

Wide minor intersections nearby key destinations could be enhanced for pedestrian safety and accessibility.

COLLISION ANALYSIS

Analysis of historical collision data is critical in determining the implementation of specific countermeasures to increase pedestrian and bicyclist safety.

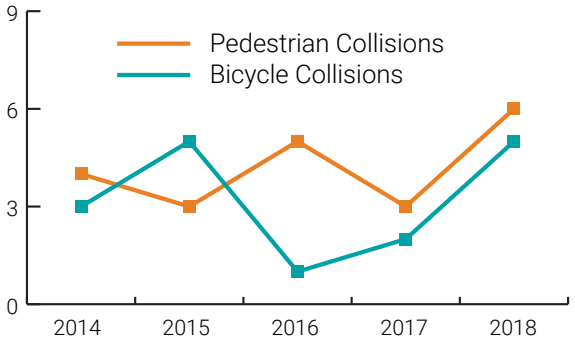
Citywide collision data from January 2014 to December 2018 was obtained through the Traffic Injury Mapping System (TIMS). The city-wide collision dataset was subset to only analyze the Downtown project area with a half-mile radius around it. Of the 162 collisions that occurred within this area, 21 involved a pedestrian and 16 involved a bicyclist. Both have seen an increase in frequency since 2017, with pedestrian-involved collisions doubling and bicyclist-involved collisions nearly tripling. Intersections with high pedestrian- and bicyclist-involved collision frequency include Garden Grove Boulevard & Nelson Street, Nelson Street & Stanford Avenue, and Euclid Street & Garden Grove Boulevard. Approximately 80% of pedestrian-involved collisions and 100% of bicyclist-involved collisions occurred within 250 feet of an intersection.

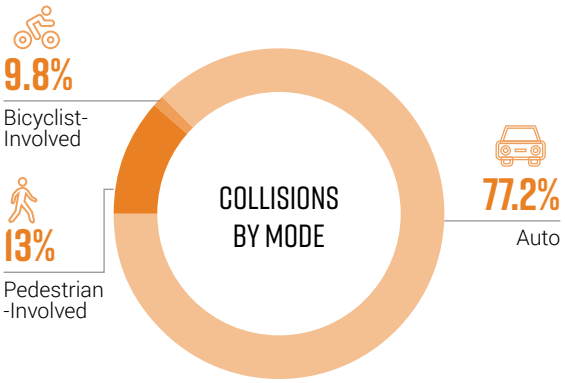
Fatal and severe pedestrian-involved collisions represent more than two-thirds of all fatal and severe collisions and almost a third of all pedestrian-involved collisions. All pedestrian-involved fatalities occurred as a pedestrian was crossing midblock or walking on the shoulder of the road.

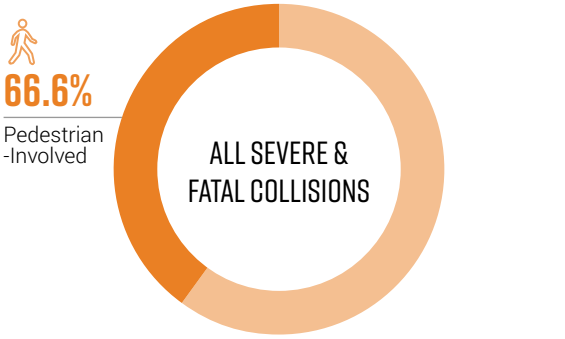
There were no bicyclist-involved collisions that resulted in a fatality or severe injury. However, nearly half occurred because the bicyclist was riding on the wrong side of the road. All other bicyclist-involved collisions were as a result of unclear or poorly maintained signals and signs, unsafe vehicle speeds, or improper turning. Approximately 81% of bicyclist-involved collisions were classified as broadside or "T-Bone" collisions.

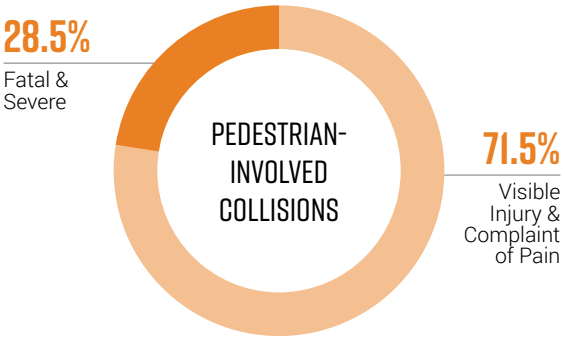
162 TOTAL COLLISIONS
21 PEDESTRIAN-RELATED
16 BICYCLIST-RELATED

Source: TIMS 2014 - 2018









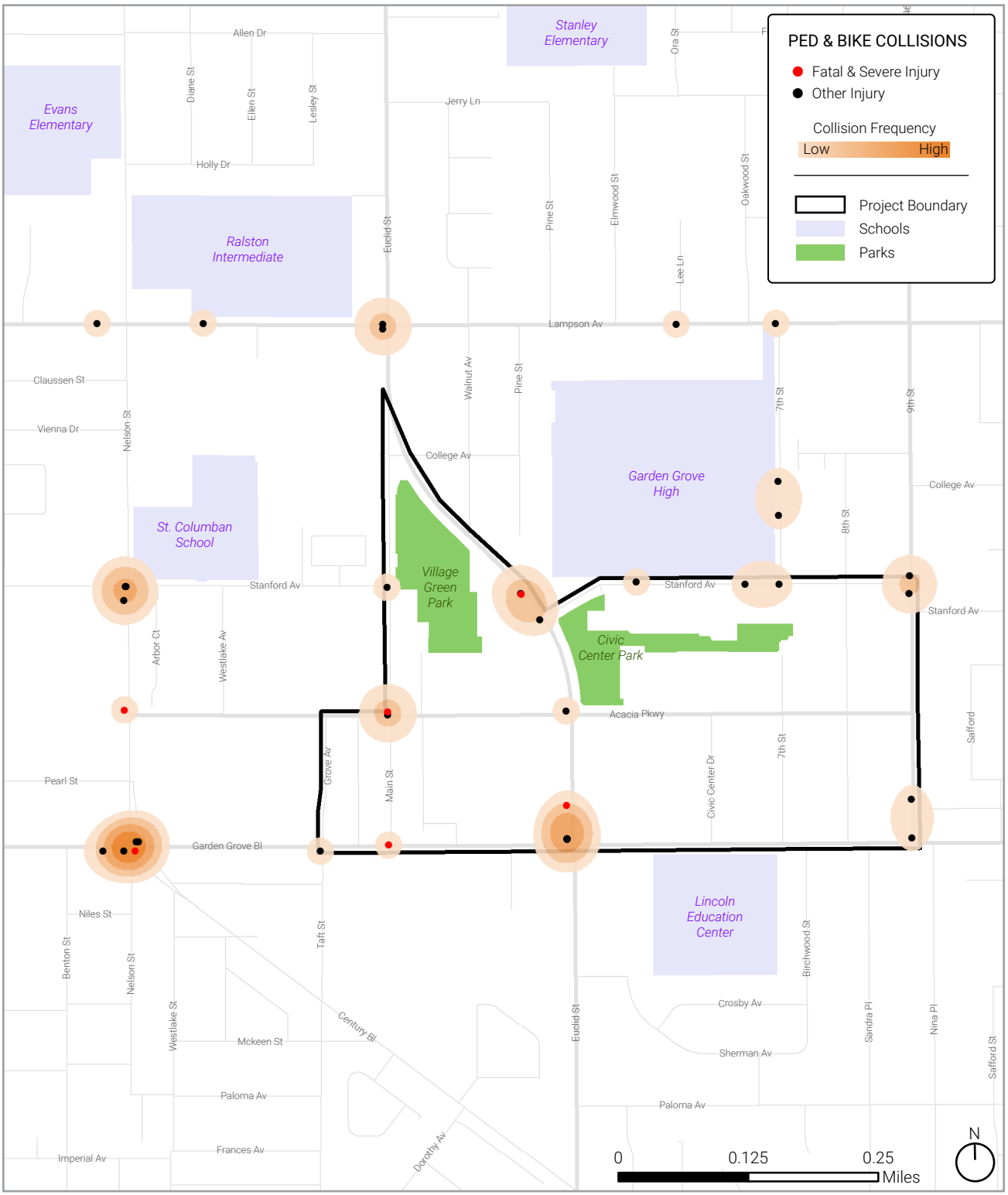


Figure 2.7. Pedestrian & Bicycle-related Collisions *(source: TIMS 2014-2018)*

MULTI-MODAL TRAFFIC ANALYSIS

To further understand the existing conditions within the Downtown study area, a multi-modal traffic analysis was conducted of existing conditions and for recommended bicycle and pedestrian facilities. The analysis looked specifically at the potential of recommended improvements reducing vehicle trips and Vehicle Miles Traveled (VMT).

This section provides a summary of the analysis conducted for existing facilities within the study area for vehicles, pedestrians, and bicyclists. The levels of service for these three modes were evaluated using the Highway Capacity Manual (HCM) 6th Edition. A more detailed discussion on the methodology and analysis can be found in the Appendices.

The analysis included the following nine study area intersections:

1. Main Street & Acacia Parkway
2. Main Street & Garden Grove Boulevard
3. Euclid Street & Main Street-College Avenue
4. Euclid Street & Stanford Avenue
5. Euclid Street & Acacia Parkway
6. Euclid Street & Garden Grove Boulevard
7. 9th Street & Stanford Avenue
8. 9th Street & Acacia Parkway
9. 9th Street & Garden Grove Boulevard

Vehicle Operations Analysis

Existing A.M. and P.M. peak hour intersection turn movement traffic volumes were collected at the study intersections in May 2019. An intersection level of service (LOS) analysis was conducted for existing conditions to determine current circulation system performance. Existing LOS for the study area intersections are summarized in Table 2.1. As shown in Table 2.1, all intersections are currently operating at satisfactory levels of service, with the exception of 9th Street / Stanford Avenue in the A.M. peak hour.

Pedestrian & Bicycle Operation Analyses

As discussed earlier in this chapter, most major roadways within the study area include sidewalks on both sides of the street. The total length of the existing sidewalks within the study area is approximately 5.4 miles. There are currently no existing bicycle facilities within the study area.

Research has shown that when people travel, they consider many factors while assessing the quality of service provided to them. For pedestrians and bicyclists, these factors include performance measures (e.g., speed) and descriptors of intersection characteristics (e.g., sidewalk width).

Based on the HCM 6th Edition, these factors are combined into a score to determine LOS for pedestrian and bicycle modes.

Pedestrian LOS

An intersection LOS analysis for each crosswalk was conducted to determine current circulation system performance. The existing pedestrian levels of service at each crosswalk for the study area intersections are summarized in Table 2.2. As shown in Table 2.2, all crosswalks at study area intersections are currently operating at satisfactory levels of service.

Bicycle LOS

An intersection LOS analysis for bicyclists was also conducted to determine current circulation system performance. Bicycle LOS scores are an indication of the typical bicyclist's perception of the overall crossing experience.

The existing bicycle LOS for the study area intersections are summarized in Table 2.3. As shown, all study area intersections are currently operating at satisfactory bicycle LOS scores.

Table 2.1. Existing Vehicle Intersection Levels of Service

			EXISTING CONDITIONS			
			AM PEAK HOUR		PM PEAK HOUR	
INTERSECTION	**LOS STANDARD**	**CONTROL**	DELAY	LOS	DELAY	LOS
Main Street / Acacia Parkway	D	AWSC	15.0	B	11.4	B
Main Street / Garden Grove Boulevard	D	Signal	26.3	C	27.6	C
Euclid Street / Main Street-College Avenue	D	Signal	8.2	A	13.7	B
Euclid Street / Stanford Avenue	D	Signal	14.0	B	21.4	C
Euclid Street / Acacia Parkway	D	Signal	19.4	B	14.6	B
Euclid Street / Garden Grove Boulevard	D	Signal	20.1	C	28.8	C
9th Street / Stanford Avenue	D	TWSC	42.7	E *	25.3	D
9th Street / Acacia Parkway	D	TWSC	20.3	C	22.5	C
9th Street / Garden Grove Boulevard	D	Signal	22.0	C	21.5	C

** Exceeds LOS Standard*
AWSC = All-Way Stop Control; TWSC = Two-Way Stop Control; For TWSC intersections, reported delay is for worst-case approach/movement

Table 2.2. Existing Pedestrian Levels of Service

		EXISTING CONDITIONS							
		AM PEAK HOUR				PM PEAK HOUR			
		EB	WB	NB	SB	EB	WB	NB	SB
INTERSECTION	**CONTROL**	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
Main Street / Acacia Parkway	AWSC	-	-	-	-	-	-	-	-
Main Street / Garden Grove Boulevard	Signal	C	C	B	B	C	C	B	B
Euclid Street / Main Street-College Avenue	Signal	B	B	C	C	B	B	C	C
Euclid Street / Stanford Avenue	Signal	C	C	C	C	B	B	C	C
Euclid Street / Acacia Parkway	Signal	B	B	C	C	B	B	C	C
Euclid Street / Garden Grove Boulevard	Signal	C	C	D	C	C	D	C	C
9th Street / Stanford Avenue [1]	TWSC	-	-	B	B	-	-	B	B
9th Street / Acacia Parkway [1]	TWSC	-	-	B	B	-	-	B	B
9th Street / Garden Grove Boulevard	Signal	C	C	B	C	C	C	B	C

** Exceeds LOS Standard*
Pedestrian LOS is based on HCM 6th Edition Pedestrian Mode Methodology. The Crosswalk Score LOS are based on traveler perception research where travelers were asked to rate the quality of service associated with a specific trip through a signalized intersection.
The letter "A" represents the best quality of service and "F" represents the worst quality of service.
[1] *Pedestrian LOS at two-way-stop-controlled intersections are based on the average pedestrian delay.*

Table 2.3. Existing Bicycle Levels of Service

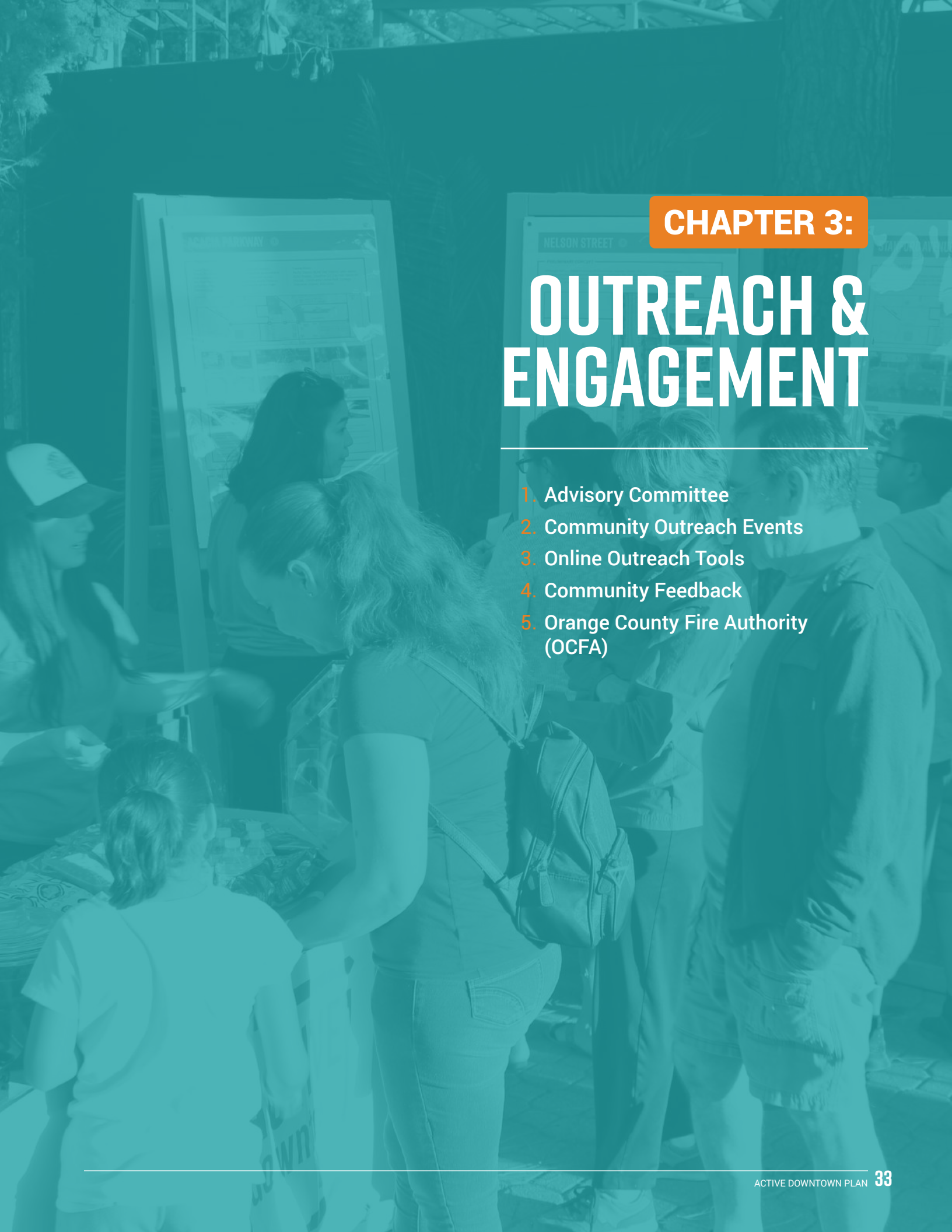
		EXISTING CONDITIONS							
		AM PEAK HOUR				PM PEAK HOUR			
		EB	WB	NB	SB	EB	WB	NB	SB
INTERSECTION	**CONTROL**	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
Main Street / Acacia Parkway [1]	AWSC	-	-	-	-	-	-	-	-
Main Street / Garden Grove Boulevard	Signal	C	C	C	C	C	C	C	C
Euclid Street / Main Street-College Avenue	Signal	C	C	C	C	C	C	C	C
Euclid Street / Stanford Avenue	Signal	C	D	C	C	C	C	C	C
Euclid Street / Acacia Parkway	Signal	C	C	C	C	C	C	C	C
Euclid Street / Garden Grove Boulevard	Signal	D	D	D	D	D	D	D	D
9th Street / Stanford Avenue [1]	TWSC	-	-	-	-	-	-	-	-
9th Street / Acacia Parkway [1]	TWSC	-	-	-	-	-	-	-	-
9th Street / Garden Grove Boulevard	Signal	C	C	C	D	C	C	C	D

** Exceeds LOS Standard*

Bicycle LOS Score is based on HCM 6th Edition Bicycle Mode Methodology. The LOS Score is an indication of the typical bicyclist's perception of the overall crossing experience.

The letter "A" represents the best quality of service and "F" represents the worst quality of service.

[1] *As of the HCM 6th Edition, no methodology specific to bicyclists has been developed to assess the performance of bicyclists at unsignalized intersections.*



CHAPTER 3:

OUTREACH & ENGAGEMENT

1. Advisory Committee
2. Community Outreach Events
3. Online Outreach Tools
4. Community Feedback
5. Orange County Fire Authority (OCFA)

"These are improvements that are much needed in Garden Grove and I really hope this comes to fruition!"

"I think it's great the City is making these improvements! It'll be more pedestrian-friendly and at the same time, advertise more healthy lifestyles and reduce vehicle congestion."

"I think adding bike lanes to some, if not all, major thoroughfares in the city will definitely improve active transportation safety. Sometimes I will skate to work, and don't always feel safe riding on the street, so I ride on sidewalks."

"It will be nice to have a more walkable neighborhood. I feel the improvements will bring new life to Downtown."

-- Online Comments from Outreach Participants

COMMUNITY OUTREACH

Over the last few years, outreach focusing on understanding general attitudes on walking and biking, travel behavior, and user characteristics in the City has largely been conducted through past efforts — the Active Streets Master Plan, Downtown Parking Management Study, Re:Imagine GG: Community in Motion, and more. In order to avoid any duplication of efforts and data, the Active Downtown team focused on gathering more direct feedback. The outreach approach aimed to understand how the community felt about more specific improvements and recommendations within Downtown and along its corridors.

ADVISORY COMMITTEE

The Active Downtown Plan was guided by an Advisory Committee that consisted of Downtown stakeholders, commissioners, residents, and other community members. Established to provide specific input on Downtown improvements, concerns, and needs, the Committee collaborated with the project team over four meetings. The first meeting focused on providing an overview, discussing outreach strategies, and reviewing potential concepts. Outreach results and revised project concepts were then presented for additional feedback at a second meeting. The third and fourth meetings allowed the Committee members to provide input on the draft versions of the Plan and comment on recommendations.

Although select Downtown Commissioners continually provided input and guidance as members of the Advisory Committee, project staff attended a regularly scheduled Downtown Commission Meeting to also present the preliminary project concepts.

COMMUNITY OUTREACH EVENTS

Outreach and engagement activities were planned at existing community events with large attendance from the Garden Grove community to inform overall recommendations for the Downtown area. Throughout the months of July and August 2019, the project team participated in four existing community events to gather input on preliminary project recommendations. Social media campaigns and email listservs were also used to further promote these events as part of the outreach process for the Plan.

Strawberry Festival

The Garden Grove Strawberry Festival is the largest public event held in Downtown Garden Grove. Visitors get to enjoy local craft and food vendors, festival rides, and entertainment every year at Village Green Park. Staff used this opportunity as a project launch event and to connect with long-time residents, visitors, and the local community about the vision of the project. Event participants were able to provide feedback on which goals and objectives they viewed as most important to the community and also any specific location-based concerns through large maps and comment cards. Factsheets, available in English, Spanish, Vietnamese, and Korean, were also handed out during the event for more project exposure.

Summer Concerts & Movie

The Active Downtown team also conducted outreach at two Summer Concerts and one Summer Movie Night. The Garden Grove Summer Concerts are an annual series of free concerts hosted by the Garden Grove Community Foundation and the City of Garden Grove. Held at Eastgate Park and Main Street, the Summer Concerts featured live music, a high school singing competition, food trucks, and additional vendors. The City also hosted a Summer Movie Night at The Garden Amp, where food trucks and vendors were also present. At each event, preliminary concepts for Downtown improvements were showcased on large wooden display easels. Project staff interacted with attendees by discussing project goals and potential recommendation on Downtown corridors. Using colorful bouncy balls and see-through container boxes, attendees were encouraged to indicate whether they supported the specific corridor concepts or if they thought other improvements could be made by dropping a ball into the respective boxes. Post-its and markers were available at each display easel for attendees to jot down additional comments. This opportunity allowed for more specific input on Downtown corridors and improvements to be made. Project staff engaged attendees on the importance of creating a more walkable and bike-able Downtown, highlighting how active transportation improvements can benefit the safety, health, and economy of the community. Over 210 responses were collected at each Summer Concert and almost 150 at the Summer Movie Night.

ONLINE OUTREACH TOOLS

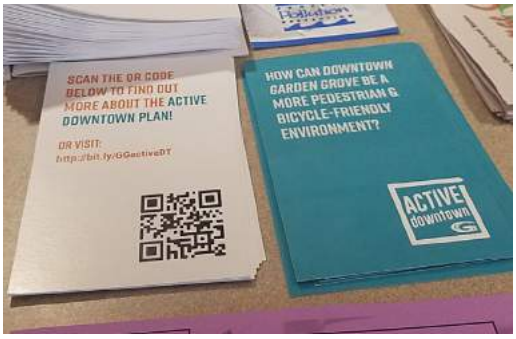
The Active Downtown team developed a series of online communication tools to also allow the larger Garden Grove community to participate in the outreach process.

All of the same information presented during community events were made available using an e-learning platform website. The site allowed online users to view information on the project, evaluate Downtown corridors, preliminary concepts, and learn more about pedestrian, bikeway, and placemaking treatments.

An online interactive map pinpointing locations of these treatments was developed and also embedded within the website for further evaluation. To gather community input on corridor concepts and improvements, a survey that mirrored the outreach event feedback activity was created and likewise embedded within the website.

Although not every online user elected to fill out the online survey, the project received over 100 responses across all four corridor-focused questions, totaling over 400 tallies. The website was promoted through a series of social media campaigns, postcard flyers, and email listservs.


ARE
YOU
WITH

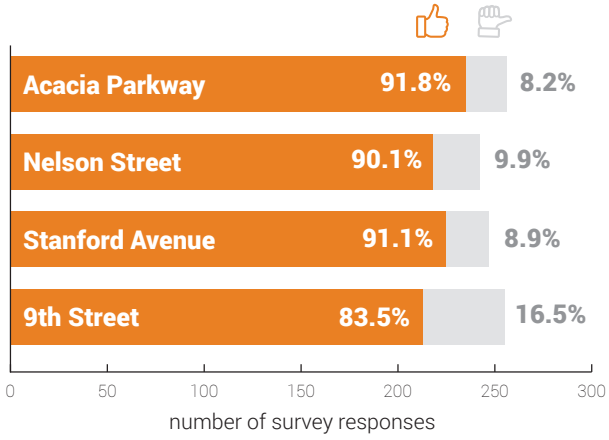

SCAN THE QR CODE
BELOW TO FIND OUT
MORE ABOUT THE ACTIVE
DOWNTOWN PLAN!
OR VISIT:
http://bit.ly/GGactiveDT
HOW CAN DOWNTOWN
GARDEN GROVE BE A
MORE PEDESTRIAN &
BICYCLE-FRIENDLY
ENVIRONMENT?
ACTIVE
DOWNTOWN

COMMUNITY FEEDBACK

Through the project's outreach process, community feedback received for both preliminary corridor improvements and potential treatments were primarily supportive and indicative of the community's desire for safer streets and facilities for alternative modes of transportation.

The Active Downtown team focused on identifying improvements at key intersections and corridors within the Downtown area. These included the corridors of Acacia Parkway, Stanford Avenue, Nelson Street, and 9th Street. Outside the constraints of Euclid Street and Garden Grove Boulevard, these four corridors and their intersections were selected due to connectivity to key destinations and feasibility for improvements.

More specific observations and comments received from the community regarding corridor-specific concepts and general Active Downtown treatments are summarized on the following page.



"Wonderful ideas to help the walking and biking community with their commutes."

"This is so needed for the community! These plans and concepts are really exciting!"

- Online Comments from Outreach Participants

Acacia Parkway:

Although there were some concerns about impacts to on-street parking and traffic, the proposed protected bike lanes and intersection improvements on Acacia Parkway received the most positive feedback from both comments and votes. Efforts were taken to minimize parking loss during the concept development process. While the protected bike lanes would narrow the width of current travel lanes, the concept does not propose removing any lanes.

With a roundabout proposed at the intersection of Acacia Parkway and Main Street, a few comments highlighted the concern that because people do not understand how to use them, they may result in traffic delays and other unintended consequences. However, at the same time, several more comments received indicated the support of having a roundabout treatment at this location.

As the northern entrance to Historic Main Street, individuals have highlighted the need for safety improvements to promote a more pedestrian and bike-friendly environment. The roundabout treatment would slow vehicle traffic down at the intersection while still facilitating a continuous flow for vehicle and bicycle travel. Additionally, pedestrian crossings would be relocated with crossing distances reduced, improving pedestrian safety and visibility throughout the intersection. Moreover, educational programming and temporary demonstrations may help ease the transition of using less familiar street treatments.

Nelson Street:

With a buffered bike lane proposed as the main connection between the existing PE ROW trail and Acacia Parkway, some concerns again, highlighted the potential traffic impact to Nelson Street. The buffered bike lane primarily utilizes unused roadway space and provides not only an important gap closure between the PE ROW and Acacia, but also helps extend the Downtown bikeway network further up to Stanford Avenue and future proposed facilities.

Comments supporting the project concept indicated the need for additional pedestrian safety improvements at the intersection of Nelson Street and Acacia Parkway. Project staff revisited the concept design and proposed the addition of bulb-outs, curb-extensions, and a refuge island to help enhance the pedestrian crossings.

Stanford Avenue:

Initial community feedback indicated the need to consider any conflicts with student pick-up and drop-off at Garden Grove High School. Wide bike lanes are proposed to help delineate a bicycle path of travel, particularly for students and those accessing the Community Meeting Center area.

Because Stanford Avenue is slightly curved for motorists traveling northbound on Euclid Street and making a right onto Stanford Avenue, travel speeds are often higher from the eastbound traffic. This is a concern for the pedestrian crossing that exists directly in front of the school. Based on feedback, project staff recommended a refuge island, RRFBs, and extending the striped median to narrow the driveway opening.

9th Street:

Initial preliminary concepts for 9th Street included four traffic circles, two at College Avenue (west and east leg), one at Stanford Avenue, and another one at Acacia Parkway. Several comments indicated the dislike of traffic circles and the inability of drivers to properly use them. Although most of these concerns were recorded at outreach events, online comments tended to favor traffic circles and the addition of other traffic calming measures. Similar to Acacia Parkway, educational programming and temporary demonstrations may help ease the transition of using less familiar street treatments.

Online comments highlighted the need for additional traffic calming improvements and the overall need for these types of recommendations due to the high volume of cut-through traffic traveling at high speeds down the corridor. 9th Street is primarily residential with single-family housing and will be the eastern boundary of the Cottage Industries development.

Similar treatments for 9th Street will be considered on other corridors that have roadway width constraints and are unable to accommodate other types of bikeway facilities.

ORANGE COUNTY FIRE AUTHORITY (OCFA)

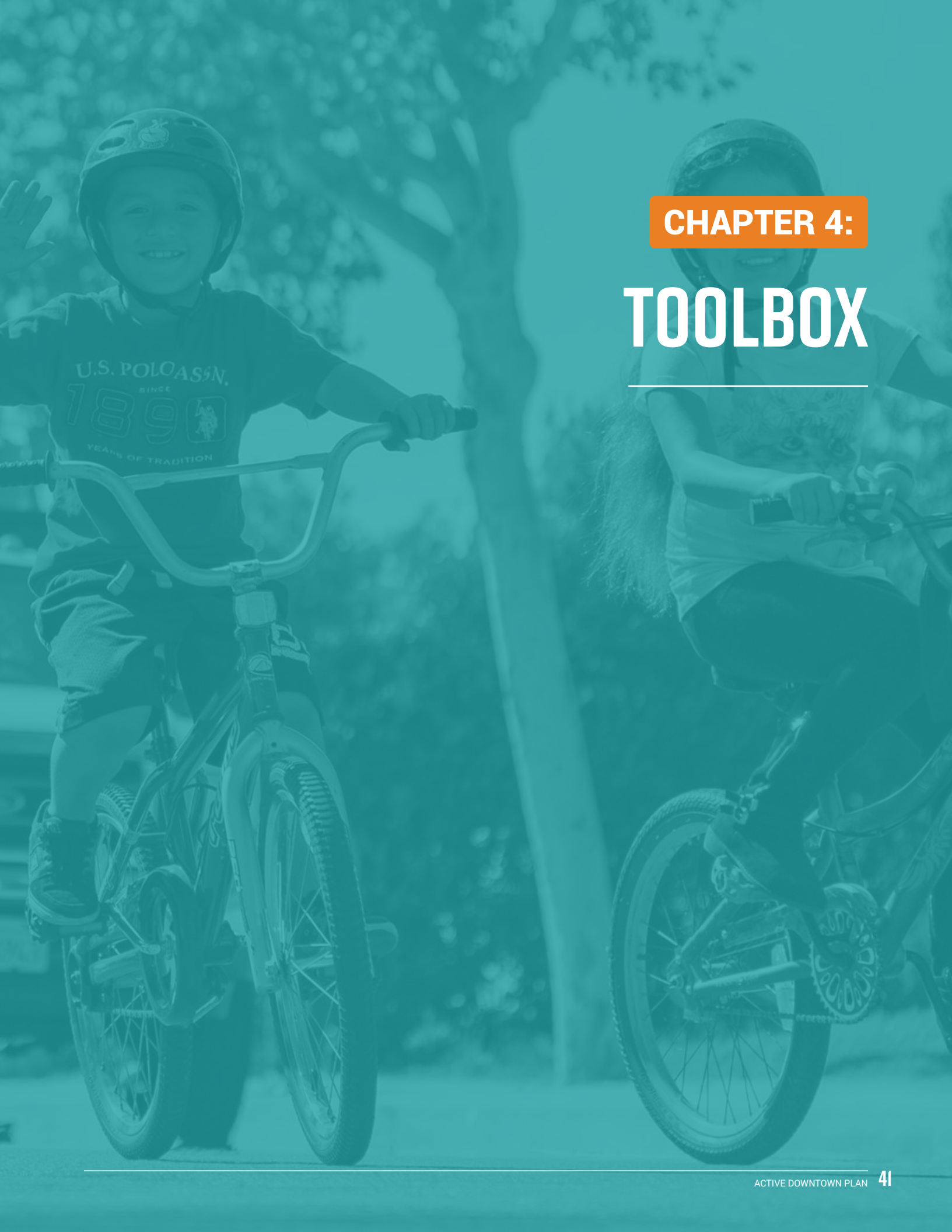
The purpose of the Active Downtown Plan is to identify potential improvements and provide concepts for future design and construction grant pursuits. Although all corridor improvements are within the City's public right-of-way, recommendations are intended to have minimal impact on emergency vehicle access.

As part of the plan development process, the City invited and met with the Orange County Fire Authority (OCFA) to discuss the feasibility of potential improvements. OCFA operates all seven of the City's fire stations, providing emergency and medical services to the Garden Grove community. With Fire Station (FS) 81 located on Acacia Parkway, right in the middle of Downtown Garden Grove, maintaining access for OCFA emergency vehicles was an important element to overall feasibility of proposed improvements.

Roundabouts and traffic circles often present the biggest concerns to fire personnel. Due to the inability of OCFA's largest emergency vehicle to maneuver around proposed traffic circles on 9th Street, the four traffic circles were ultimately eliminated from the final corridor concept. Although fully mountable traffic circles could have been implemented, the absence of vertical elements (e.g. signage, landscaping) at the center of the circles presented other concerns of functionality.

The intersection of Acacia Parkway and Main Street possesses more right-of-way than 9th Street. As such, the Active Downtown team worked with OCFA to ensure that the truck apron around the roundabout was wide enough for their largest emergency vehicle to maneuver around.

[This page is intentionally left blank]



CHAPTER 4:

TOOLBOX

[This page is intentionally left blank]

TOOLBOX

This section provides a set of engineering and placemaking tools that can be used to create safer and more comfortable walking and biking Downtown environments.

The icons to the right categorize the different toolboxes: Bicycle, Pedestrian, Traffic Calming, Creative Placemaking, and Emerging Mobility. The general use, intent, and benefits of each treatment or option are described on the following pages.

Not every tool will be applicable in any given situation. Rather, this chapter is meant to provide a starting point on what treatments and opportunities could be considered when designing for active and healthier communities. In-depth analyses on land use, collision history, existing site conditions, streetscape characteristics, feasibility, and other factors are still required for any street improvement project.

The latest editions of Caltrans HDM, FHWA, MUTCD, and other federal or state guidelines should be referenced for more specific engineering design and signage standards.

As engineering standards and best practices continue to evolve, the toolbox should be amended to account for new innovations in active transportation design.

References:

- *MUTCD (CA)*
- *Caltrans Highway Design Manual (HDM)*
- *NACTO Urban Design Bikeway Guide*
- *Essentials of Bike Parking (APBP) (2016)*
- *ADA Best Practices Toolkit for State and Local Governments*
- *FHWA Safety Program - Road Diet Information Guide*
- *Safety Benefits of Raised Medians and Pedestrian Refuge Areas - FHWA*
- *Pedestrian Hybrid Beacon Guide- Recommendations and Case Study*

BICYCLE

Bicycle-related treatments in this toolbox include bikeway facilities, bicycle parking, amenities, and intersection elements. While bicycle facilities can be classified into three categories— off-street, on-street, and shared street— these broad categories include more specific bikeway types. Recommended treatments depend on context — including street type, vehicle traffic speed, volume, and more.

PEDESTRIAN

Pedestrian-related treatments focus on enhancing pedestrian visibility, reducing motorist speed, and improving pedestrian infrastructure. Providing and improving pedestrian facilities like sidewalks and street crossing treatments can help create a more comfortable and safer experience for the entire community.

TRAFFIC CALMING

The purpose of traffic calming is to reduce the speed and volume of traffic to acceptable levels in order to improve livability, reduce vehicle collisions, and create a safer environment for everyone. Recommended treatments depend on context — including street type, vehicle traffic speed, volume, and more.

CREATIVE PLACEMAKING

This section provides a set of public art-related elements often integrated as part of active transportation infrastructure. The purpose of this toolbox is to provide inspiration for the types of projects that can help support pedestrian and bicycle infrastructure within the Downtown Garden Grove community.

EMERGING MOBILITY

As transportation priorities begin to shift, it is important to understand and consider potential emerging mobility opportunities. This toolbox provides a set of mobility options that offer an alternative mode of transportation for the Downtown community.

TYPES OF BIKEWAYS

CLASS I

BIKE PATH

An off-street bikeway facility that is physically separated from any street or highway, commonly planned along rights-of-way such as waterways, utility corridors, flood control access roads, railroads, and similar paths that offer continuously separated riding opportunities.

CLASS II

BIKE LANE

A portion of the roadway that is designated by striping, signaling, and/or pavement markings for the exclusive use of bicyclists.

BUFFERED BIKE LANE

An additional striped buffer can provide greater separation between bicyclists and vehicular traffic. Buffered bike lanes are recommended where roadway space allows.

CLASS III

BIKE ROUTE

Designated roadways where bicycles and motor vehicles share a roadway. Design standards require specific signage, but additional enhancement can be provided by using shared roadway markings, or “sharrows”.

BIKE BOULEVARD (NEIGHBORHOOD GREENWAY)

A neighborhood greenway, or bicycle boulevard, is a low-stress shared roadway. By combining bike sharrows with other traffic calming measures like traffic circles and bulb-outs, neighborhood greenways help create a safer environment for travel by all users.

CLASS IV

PROTECTED BIKE LANE

A protected bikeway includes a physical barrier between bicyclists and motor vehicle traffic. It combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane.

GREEN PAVEMENT / MARKINGS

Colored pavement can be used to increase the visibility of bikeways or, more commonly, zones with a high potential for motor vehicle/bicycle conflicts, by indicating cyclist right-of-way with a distinctive color. They are intended to regulate, warn, or guide traffic.

TWO-STAGE LEFT-TURN QUEUE BOX

Two-stage turn queue boxes offer bicyclists a safe way to make left turns at multi-lane signalized and unsignalized intersections from a cycle track or bike lane. They designate an area for bicyclists waiting to proceed in a different direction and formalizes two-stage turn maneuvers in a predictable pattern and reduces turning conflicts between bicyclists and motor vehicles.

INTERSECTION BIKE BOX

The bike box is an intersection improvement design to prevent bicycle/vehicle collisions, especially between drivers turning right and bicyclists proceeding forward. They reduce the number of bicycles and motor vehicles encroaching into pedestrian crosswalks when stopped at an intersection and can help mitigate intersection right-turn ("right-hook") conflicts.

BIKE DETECTION & PUSH BUTTON

Bicycle detection and push buttons are designed to alert the signal controller of a bicyclist on approach of and at the intersection. Actuation can be installed as push buttons or by automated means that include in-pavement loops, video detection, and microwave.

BIKE SIGNAL

Bicycle signals facilitate safe bicyclist intersection crossings by restricting conflicting vehicle movements. Bicycle signal heads are standard three lens signal heads with green-yellow and red lenses that can be applied to signalized intersections and hybrid signal crossings.

BIKE PARKING

Bicycle parking provides a location for bicyclists to securely lock or store their bikes. Short-term bicycle parking includes bike racks (inverted U, post and ring) and bike corrals. Long-term parking can include bike lockers and stations.

SIDEWALK

Sidewalks are physically separated from the roadway by a curb or unpaved buffer space, providing dedicated space intended for use by pedestrians that is safe, comfortable, and accessible to all. They are the fundamental component to any pedestrian network and help provide opportunities for walking and connections between places.

CURB RAMP

A curb ramp is a short ramp, designed and constructed to be accessible and to provide a route that people with disabilities can use to safely transition from a roadway to a curbed sidewalk. They can enhance pedestrian network connectivity and promote walking and serves as the front steps to sidewalks, activating streets socially and economically.

HIGH VISIBILITY CROSSWALK

High-visibility ladder crosswalks provide a designated walkway for pedestrians to cross from one side of a street to the other. They enhance visibility of pedestrian crossings and creates a more comfortable crossing experience for pedestrians.

MIDBLOCK CROSSING

Midblock crosswalks facilitate crossings to places that people want to go but that are not well served by existing intersection crosswalks or long blocks. They allow pedestrians to cross in the middle of a long block without walking all the way to a signalized intersection crosswalk. Pedestrian demand should be carefully analyzed to ensure implementation enhances pedestrian safety. Midblock crossings should also be supplemented with other enhancements such as curb extensions, raised median islands, advanced yield markings, and signage.

MEDIAN REFUGE ISLAND

Median refuge islands are protected spaces placed in the center of the street to facilitate bicycle and pedestrian crossings. They can allow pedestrians to feel more safe and less exposed when entering the intersection by providing a midway physical barrier for crossings.

ADVANCED YIELD LINES

Advanced yield lines are roadway markings that encourage drivers to slow down in advance when approaching a pedestrian crossing. They can offer more visibility of pedestrians crossing the roadway and may reduces the likelihood of multiple-threat crashes.

LEADING PEDESTRIAN INTERVALS

A leading pedestrian interval (LPI), also known as a "pedestrian head start" and "delayed vehicle green", gives pedestrians the opportunity to enter an intersection before vehicles are given a green indication. This allows for pedestrians to better establish their presence within the intersection, lessening the chances of a vehicle-pedestrian conflict.

SPEED FEEDBACK SIGN

A dynamic message sign that uses radar or laser technology to determine the speed of an approaching vehicle and then displays the speed to the driver. If motorists are speeding, the sign flashes the exceeded speed along with 'SLOW DOWN' or 'YOUR SPEED'. Activates when drivers exceed posted speed limit by five miles per hour.

RECTANGULAR RAPID FLASHING BEACON (RRFB)

Rectangular rapid flash beacons (RRFBs), a type of active warning beacon, that combines a pedestrian warning sign with user-activated light-emitting diodes (LEDs). The device flashes amber when activated through a pedestrian push button or by pedestrian detection.

PEDESTRIAN HYBRID BEACON

A pedestrian hybrid beacon (PHB) is a traffic control device used to increase drivers' awareness of pedestrian crossings at uncontrolled marked crosswalk locations. They indicate that a crosswalk is being used and that all motorists must come to a complete stop. PHBs can lead to lower conflict and crash rates for pedestrians and vehicles.

CURB EXTENSION / BULB-OUT

Curb extensions or bulb-outs visually and physically narrow the roadway, creating safer and shorter crossings for pedestrians while increasing the available space for street furniture, benches, plantings, and street trees. By extending the sidewalk, narrower roadways at intersections and crossings help slow down motor vehicle speeds.

TRAFFIC CIRCLE

Traffic circles, also known as “mini” roundabouts, feature a circular island in the center of an intersection. Commonly used as a traffic calming feature along bike boulevards, traffic circles help lower speeds, while still promoting a continuous flow of traffic. Unlike like roundabouts, traffic circles can operate as two-way or all-way stop controlled intersections and frequently do not include raised channelization to guide approaching traffic around the circle.

ROUNDABOUT

Roundabouts direct motorists into the intersection and guide counterclockwise travel around a circular island. Featuring yield controls for all approaches, roundabout designs typically include raised medians to channelize approaching traffic. Without unnecessary stops, they help slows vehicle speeds while better facilitating the flow of traffic, bicyclists, and pedestrians. Promotes continuous flow of traffic by not requiring full stops and slower travel speeds at the intersections. Guiding traffic in a counterclockwise travel, roundabouts reduce the possibility for T-bone and head-on collisions.

PROTECTED INTERSECTION

A protected intersection redesigns the traditional mixing zone that persist where a bicycle lane ends and the right turn lane begins. The design places bicyclists in a separated channel from motor vehicles and pedestrians at the intersection, improving yield rates amongst all users of the intersection. The intersection treatment increases visibility of bicyclists for approaching vehicles, reduces the potential risk of left or right hook collisions, and lowers vehicle speeds with tighter right-turns.

CREATIVE CROSSWALKS

Creative crosswalks provide visual cues to drivers and pedestrians with striking color and/or patterns, creating a unique crosswalk design. As a placemaking element, designs can be reflective of a theme or visual attributes that are identifiable to the community. The involvement of local artists in these projects can also create a greater sense of community pride.

ARTISTIC BIKE PARKING / RACKS

Artistic bike racks are designed with the functionality of a traditional bike rack, but with artistic elements that represent the community. They provide a unique placemaking aspect to the community. Similar to artistic crosswalks, the involvement of local artists can create a greater sense of community pride.

ARTISTIC STREETSCAPING & PAINTED INTERSECTIONS

Artist designed streetscapes may include artistic elements within traffic circles, bulb-outs, median, painted intersections, or designated pedestrian rest areas. They help to create visible, physical barriers from vehicle traffic. They can also be part of an overall strategy to promote active transportation and safety. These artistic elements can encourage community gathering and provide more opportunities for social, cultural and economic participation.

PARKLETS

Parklets convert a few on-street parking spaces into public open space and are a cost-effective way to activate streets, create more vibrant neighborhoods, and promote economic vitality. They are also a way to support community-driven projects that allow people to use streets differently. Parklets can encourage walking and biking and create more attractive and inviting commercial districts.

PEDESTRIAN SEATING

Public seating creates a comfortable, usable, and active public environment where people can rest, socialize, read, or people-watch. It is an important element in creating sense of place within a community. Artistic benches/ seating or identifiable pedestrian seating helps create spaces where people are encouraged to hang out and stay local.

WAYFINDING SIGNAGE

Wayfinding signage helps orient the community towards different destinations within the community; they can be cultural, historic, recreational, and even commercial-themed. As inexpensive solutions to fostering greater connectivity between different parts of a community, wayfinding signage can help create (or reinforce) identifiable aspects of that community.

SHARED MICROMOBILITY

Shared micromobility consists of shared-use bike, e-scooter, and e-bike fleets. This emerging mobility option has the ability to facilitate first/last mile connections to transit and between key destinations. Users can walk up to an e-scooter or bike, unlock it with their smartphone, and ride to their destination.

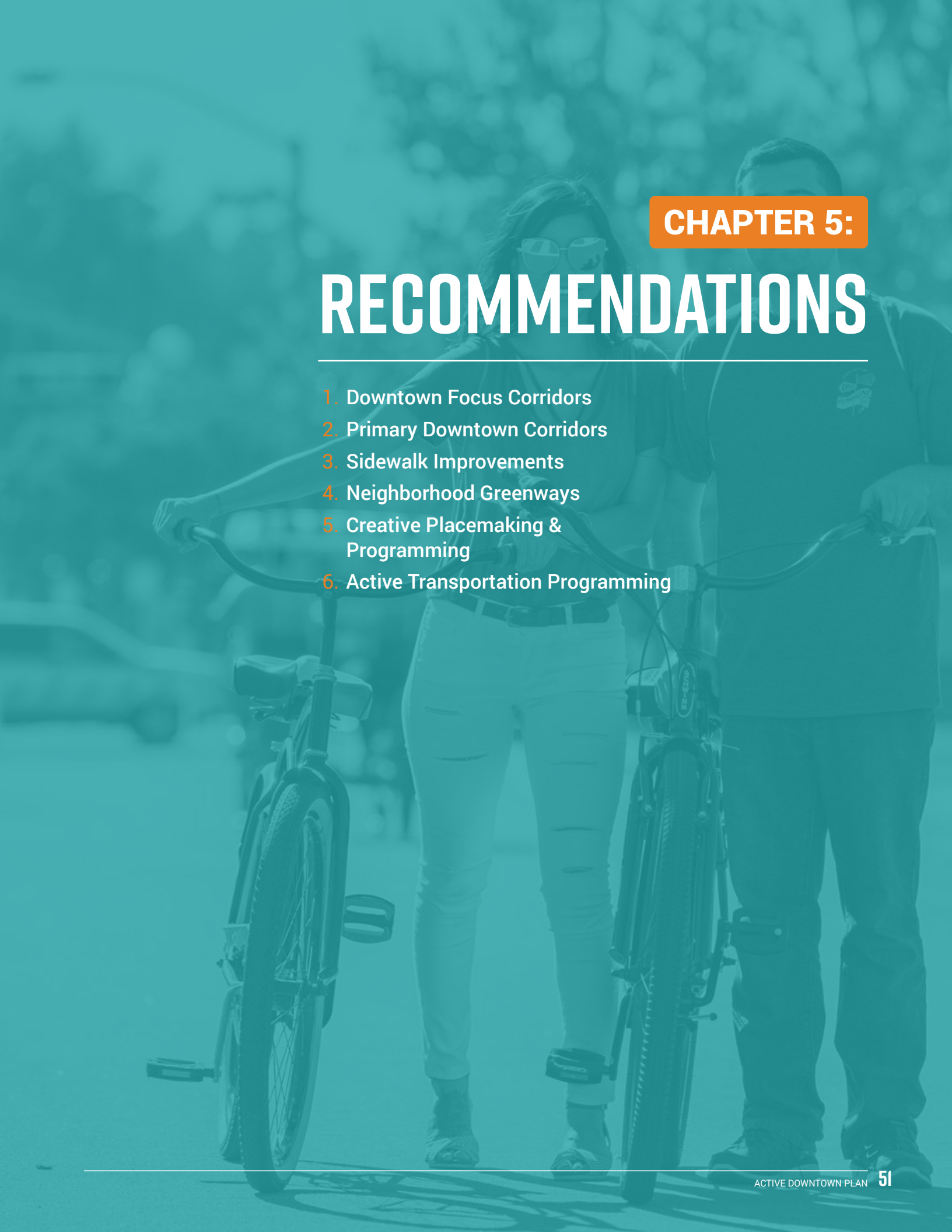
In several cities, programs have been implemented based on conditional use permits. Companies must abide by specific requirements in order to continue operation of its fleet. For example, in some cities, companies are required to only deploy their fleet at designated e-mobility drop zones. Encouragement and enforcement programming are also continuously being developed. These aim to help deter users from riding on sidewalks, against the flow of traffic, and without a helmet. As the use of micromobility continues to grow, cities are continuing to develop best practices for integrating these options into the transportation system, safely and effectively.

RIDE-HAILING SERVICES

Also known as transportation network companies (TNCs), ride-hailing companies like Uber and Lyft help match people with drivers, on-demand, via websites or mobile apps. Individuals can also opt to share a ride with other passengers for a reduced fare. In places like airports or venues, establishing proper pick-up and drop-off zones for Uber and Lyft vehicles has become an important aspect of mobility and traffic control. The use of ride-hailing apps have become almost commonplace over the last few years. As a result, cities are continuing to evaluate the impact of these trips on their transportation networks and curbside systems.

MICRO-TRANSIT

Microtransit is a publicly or privately operated on-call service where passengers can request a ride to a specific destination through a mobile app. The service, similar to ride-hailing apps like Uber and Lyft, generates the most efficient route to follow based on live traffic conditions and nearby destinations requested by other passengers. Microtransit operates as an alternative to public transit, meant to fill the gap in first/last mile connections, provide an option for short trips, and reduce parking demand in high-density locations like Downtown areas.



CHAPTER 5:
RECOMMENDATIONS

1. Downtown Focus Corridors
2. Primary Downtown Corridors
3. Sidewalk Improvements
4. Neighborhood Greenways
5. Creative Placemaking & Programming
6. Active Transportation Programming

RECOMMENDATIONS

Adopted in 2018, the City's Active Streets Master Plan provides recommended policies, tools, programs, and infrastructure improvements for a more active, healthy, and prosperous Garden Grove.

The **Active Downtown Plan** is an extension of the vision and goals set by the citywide plan, as well as the efforts of Re:Imagine Garden Grove. Specifically, the Active Downtown Plan focuses on the smaller area of Downtown, but looks to provide more detailed recommendations and design concepts for bike and pedestrian facilities. These improvements are also complemented by placemaking strategies and creative programming to further enhance the walkability and bikeability of Downtown Garden Grove.

The following section further details recommended active transportation infrastructure and non-infrastructure improvements within Downtown Garden Grove. Full engineering concept plan sheets are included within the Appendices.

As transportation priorities change, mobility trends emerge, and infrastructure gets built, the City should evaluate opportunities for the integration of new technologies and mobility options.

DOWNTOWN FOCUS CORRIDORS

Recommendations that encompass both major bicycle and pedestrian improvements within the Downtown area are concentrated along four focus corridors: Acacia Parkway, Nelson Street, Stanford Avenue (east), and 9th Street.

Both locally and regionally, these corridors represent opportunities to transform the active transportation connectivity and accessibility of Downtown Garden Grove. The following pages provide a snapshot of each corridor, recommended improvements, and potential design concepts.

Vehicle Miles Traveled (VMT) Analysis

An evaluation of the study area's related vehicle miles traveled (VMT) is based on the Orange County Transportation Analysis Model (OCTAM). The VMT for all trips originating and ending within the City of Garden Grove is an estimated 2.7 million vehicle-miles per day.

The proposed bikeway facilities represent a 12% growth from existing facilities and a 0.084% reduction in overall citywide VMTs (approximately 2,300 vehicle-miles per day).

Since the VMT analysis compares proposed infrastructure to existing citywide facilities, proposed pedestrian infrastructure for this Plan does not represent a significant growth. While any VMT reduction would be nominal, proposed pedestrian improvements still aim to improve health, safety, accessibility, and other key objectives.

Multi-Modal Traffic Analyses

An intersection LOS analysis was conducted for existing conditions with proposed project improvements for automobiles, pedestrians, and bicyclists. For each mode, all nine study area intersections (as mentioned in Chapter 2) are projected to operate at satisfactory levels of service, or experience no change from existing conditions.

A complete memorandum for the Multimodal Traffic Analyses (including VMT analysis) can be found in the Appendices.

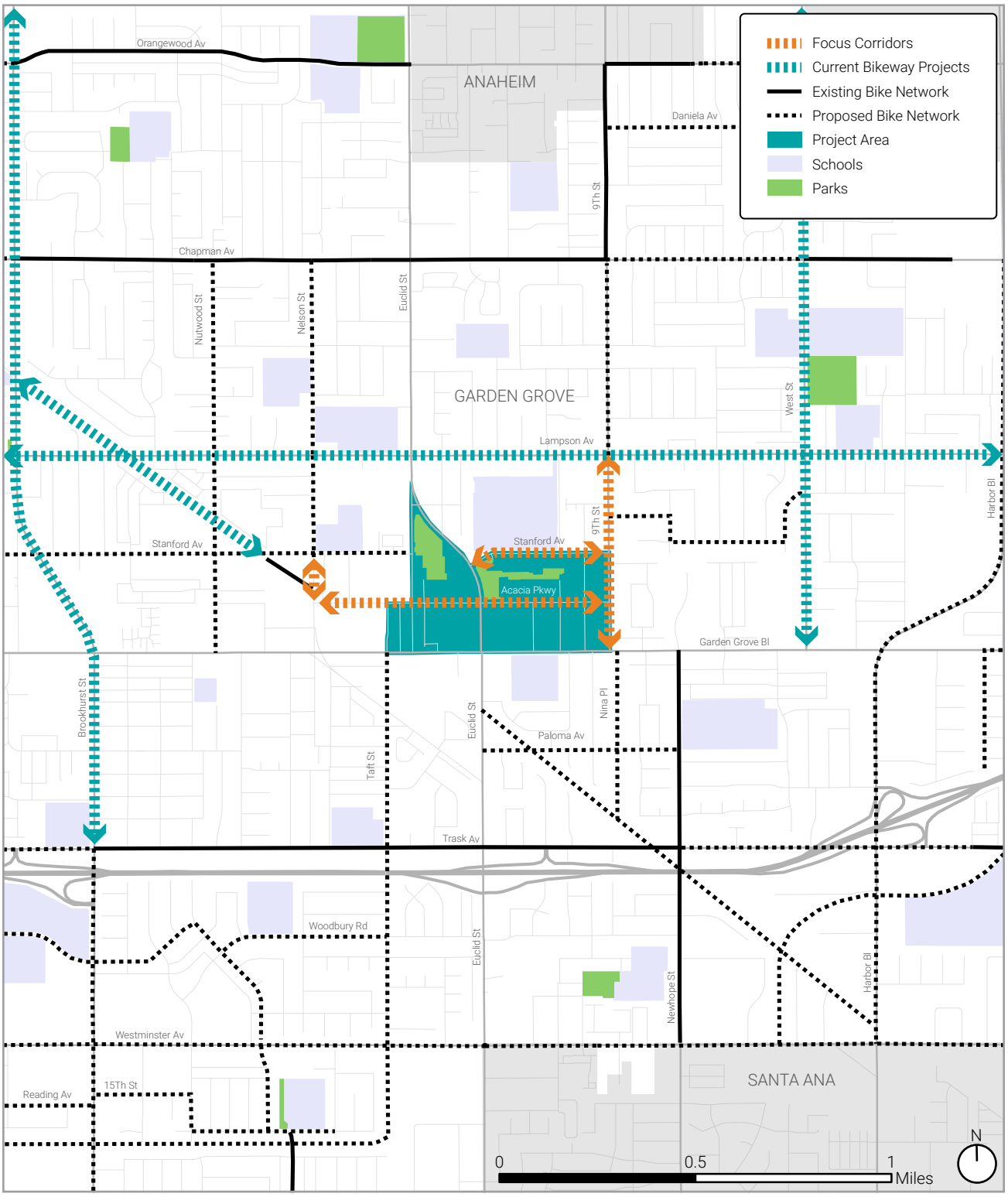


Figure 5.1. Downtown Focus Corridors

ACACIA PARKWAY

Acacia Parkway is the backbone of Downtown Garden Grove. To create a more walkable and bikeable environment that provides safe access and quality connections across the Downtown area, the Plan reimagines Acacia Parkway with protected bike lanes and improvements at several intersections.

CORRIDOR EXTENTS:

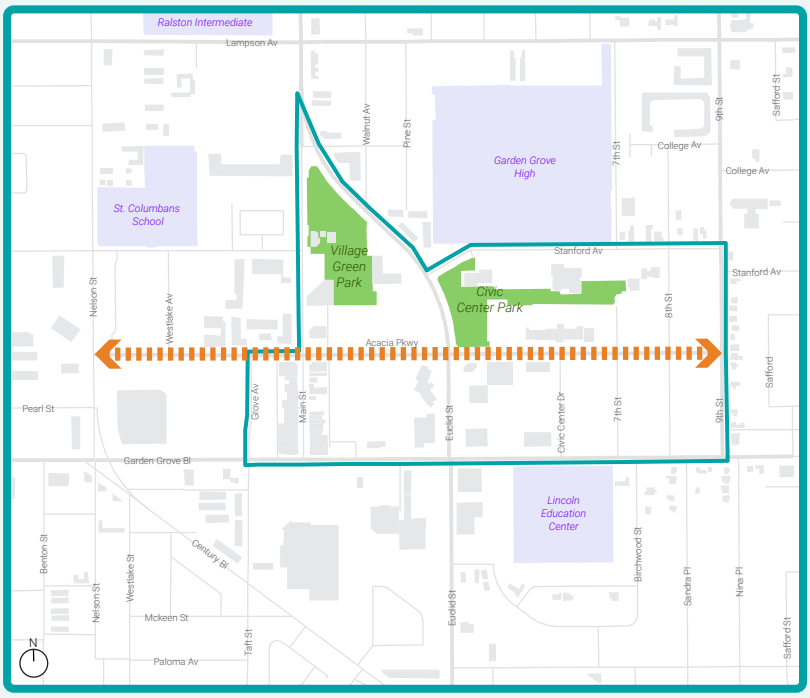
Nelson Street to 9th Street

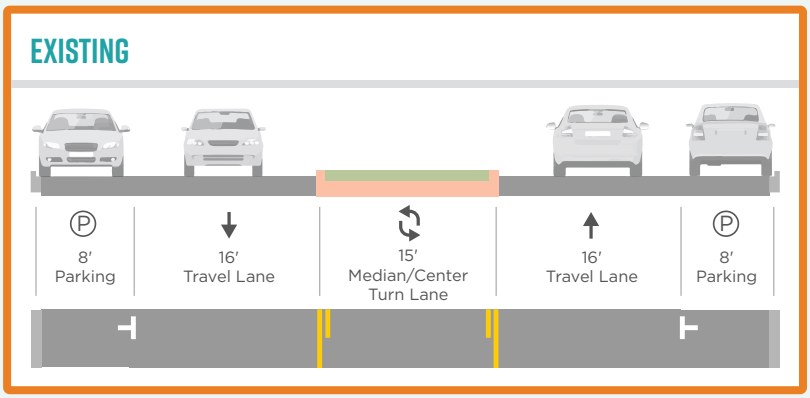
PROVIDES ACCESS TO:

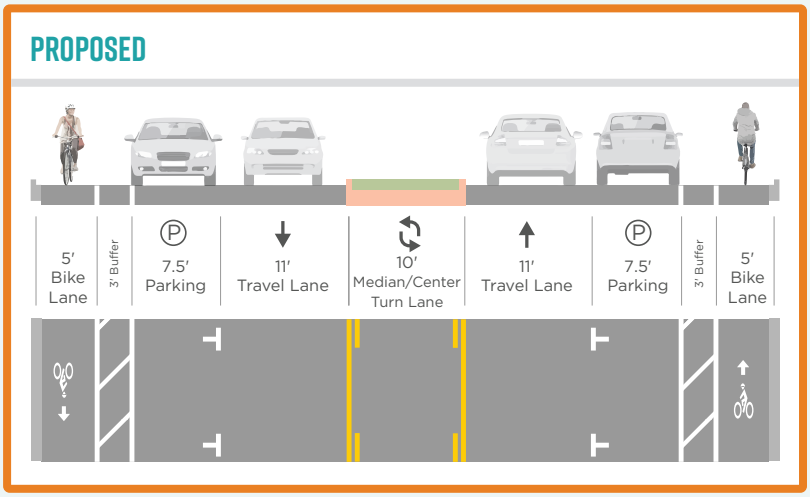
Pacific Electric ROW Trail, Historic Main Street, GEM Theatre, Coastline CC, City Hall, Steelcraft, Community Center Park, Cottage Industries (future), and more.

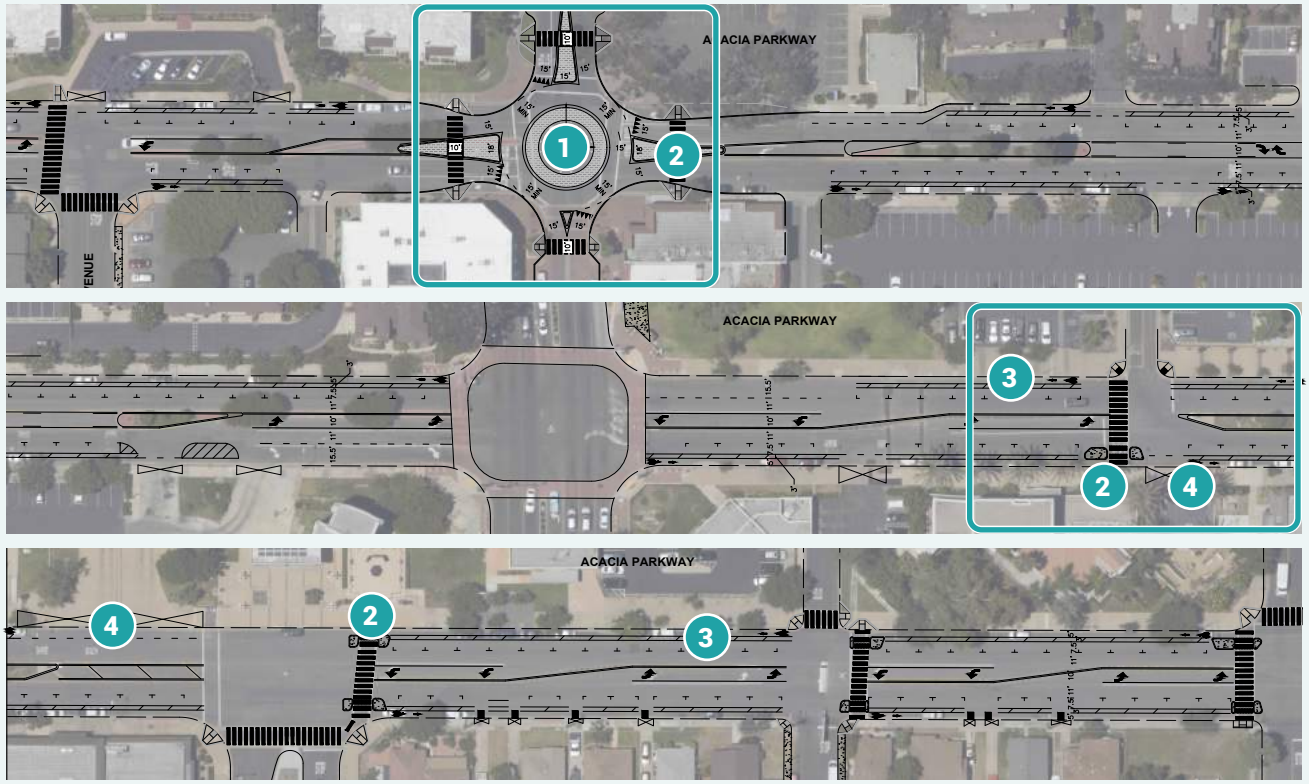
PROPOSED IMPROVEMENTS:

- **Corridor**: Reduce center median islands and turn lane to accommodate Class IV protected bike (parking-protected)
- **Intersection**: Roundabout at Main Street and Acacia Parkway
- **Intersection**: Provide pedestrian refuge islands at intersections where possible
- **Other**: Creative crosswalks for N/S crossings along the corridor and E/W crossings at Euclid Street and Civic Center Drive *(not shown in engineering concept plans)* *(see page 70-71)*
- **Other**: ADA-compliant curb ramps (where needed)

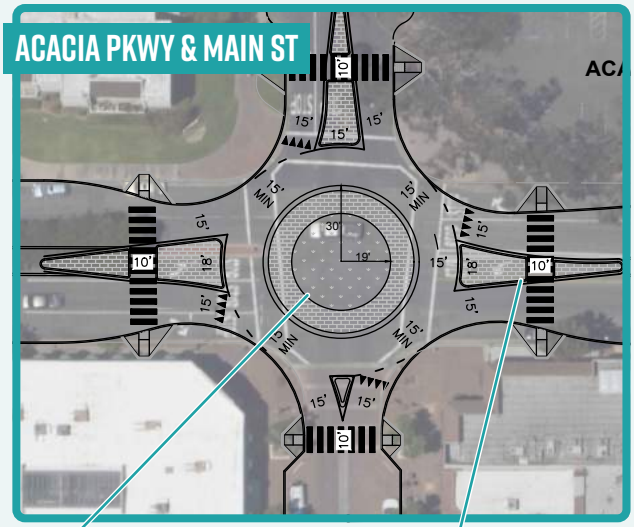




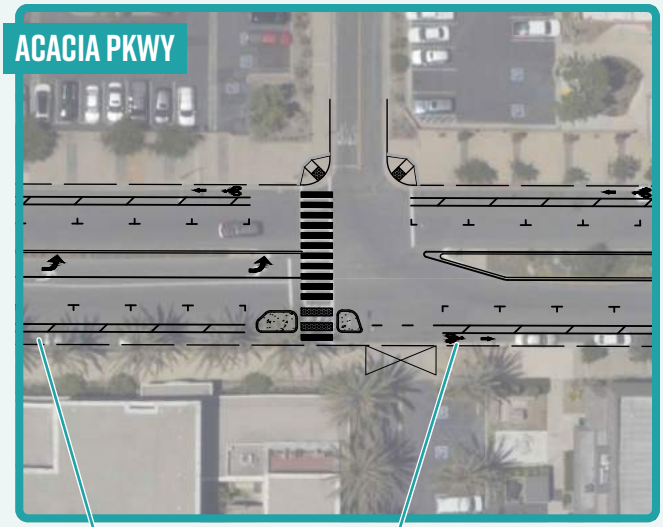




ACACIA PKWY & MAIN ST



ACACIA PKWY



1 **Roundabout:** Promotes continuous flow of traffic and reduce possibility for T-bone and head-on collisions. Outer edge of roundabout, known as the truck apron, should be mountable to maintain emergency vehicle access.

2 **Splitter Islands with Ped Refuge**: Guides vehicles to the right and provides an area of refuge for pedestrians walking across the street.

3 **Protected Bike Lanes**: Parking is positioned to the left of the bike lanes, acting as a barrier between bicyclists and moving traffic.

4 **Conflict Zone Striping**: Provides visual cues to both motorists and bicyclists of potential conflict areas such as existing driveways, intersections, etc.

CORRIDOR OVERVIEW

NELSON STREET

Although Nelson Street is outside of the Downtown Garden Grove study area, this segment provides an important connection between the PE ROW Trail and Acacia Parkway. This will also help connect future bikeways on Nelson Street (north of Stanford) and on Stanford Avenue (west of Main Street).

CORRIDOR EXTENTS:

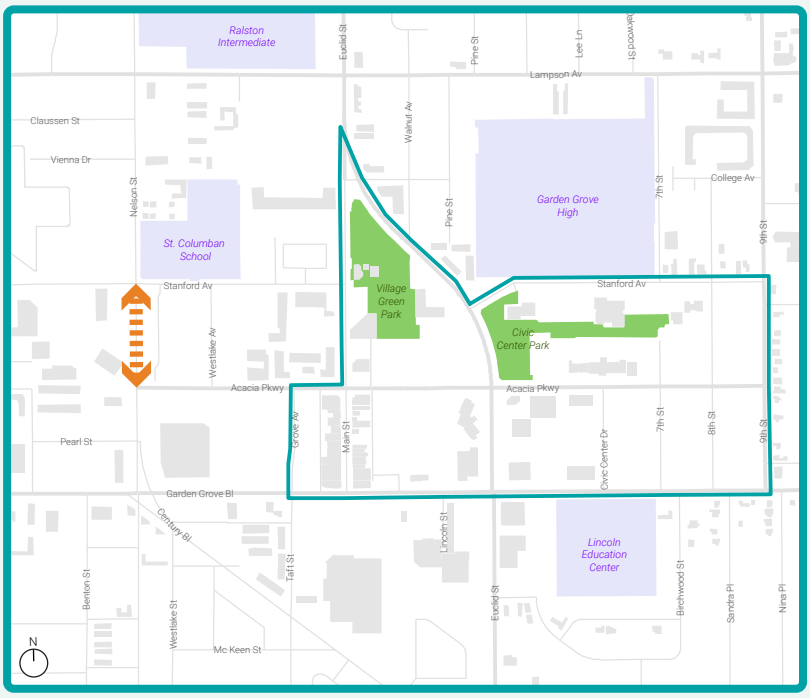
Stanford Avenue to Acacia Parkway

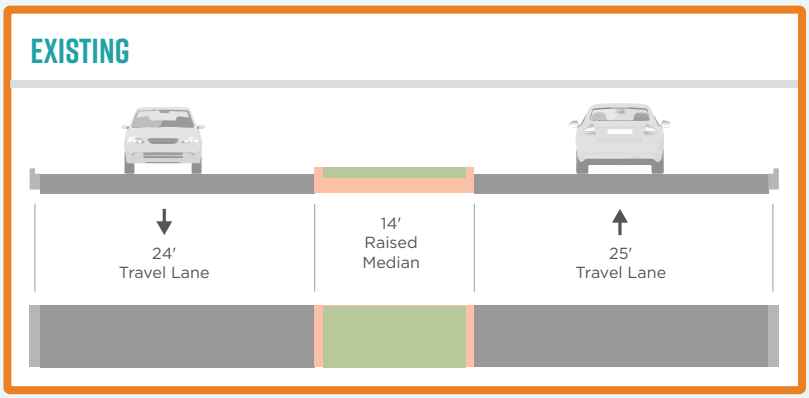
PROVIDES ACCESS TO:

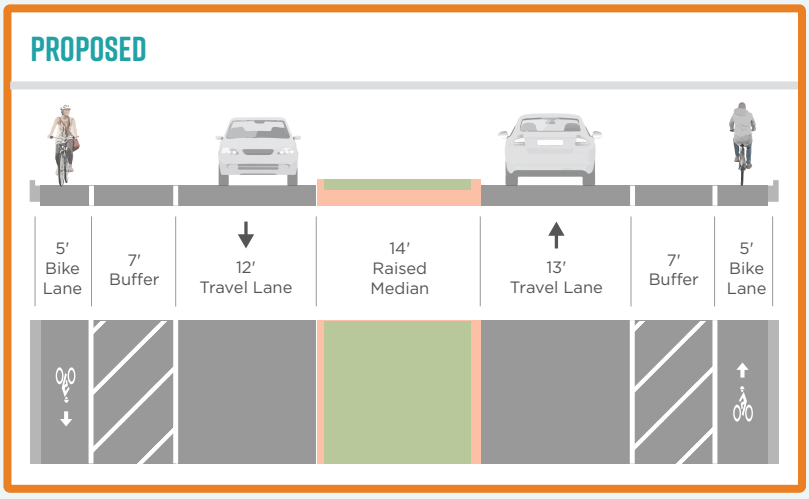
PE ROW Trail, Acacia Parkway, Proposed Bikeway Network, and more.

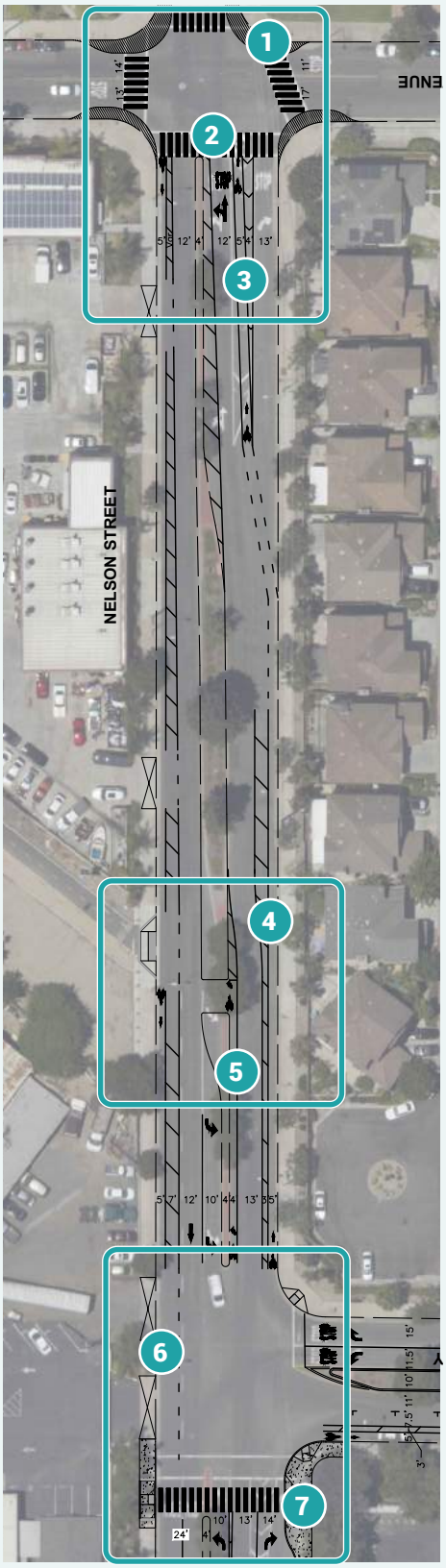
PROPOSED IMPROVEMENTS:

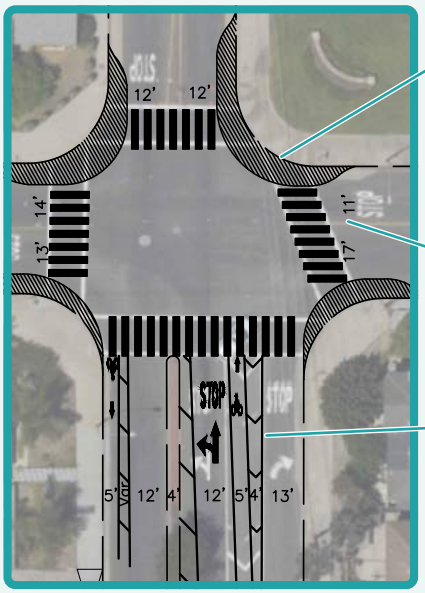
- **Corridor**: Implement Class II buffered bike lane along entire length of corridor
- **Corridor**: Install a left-turn only bike lane to the existing PE ROW trail
- **Intersection**: Install bulb-out and set back existing crosswalk at Nelson Street and Acacia Parkway
- **Intersection**: Stripe bulb-outs and high visibility crosswalks at Nelson Street and Stanford Avenue
- **Intersection**: Convert protected-permissive left turns onto Garden Grove Boulevard from Nelson Street/Century Boulevard to protected-phasing only. Protected left turn phasing helps eliminate conflicts between left-turning vehicles and pedestrians crossing at the intersection.

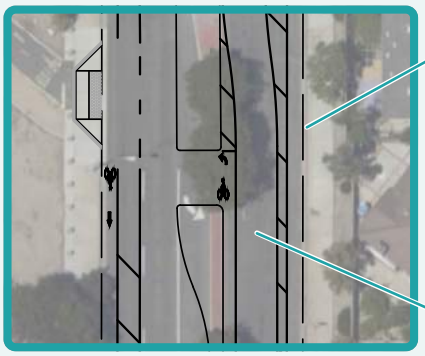


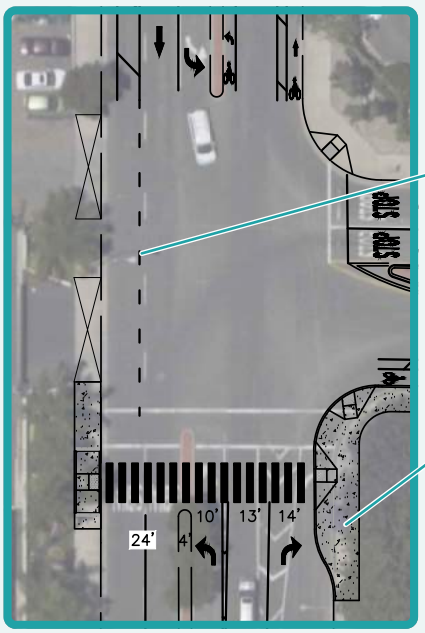












1 **Bulb-outs**: Striped bulb-outs help maintain existing drainage infrastructure while still helping visually narrow the intersection to slow vehicle speeds.

2 **High Visibility Crosswalks:** Provides enhanced visibility of pedestrian crossing.

3 **Through Bike Lane**: Striped through bike lane accommodates bicyclists traveling through the intersection further north past Stanford Avenue.

4 **Buffered Bike Lane**: Parking is currently not allowed along the corridor. With wide travel lanes, adequate space exists to stripe a buffered bike lane across this segment of Nelson Street.

5 **Left-turn Bike Lane**: Helps facilitate travel from proposed Acacia Parkway protected bike lanes to the existing PE ROW trail.

6 **Conflict Zone Striping**: Provides visual cues to both motorists and bicyclists of potential conflict areas such as existing driveways, intersections, etc.

7 **Corner Bulb-out**: Striped bulb-outs help maintain existing drainage infrastructure while still helping to visually narrow the intersection to slow vehicle speeds.

STANFORD AVENUE

Stanford Avenue (east of Euclid Street) connects a potential bike path along Euclid Street to 9th Street, allowing people to bike to several key destinations along the corridor including Garden Grove High School, Civic Center Park, and the Community Meeting Center.

CORRIDOR EXTENTS:

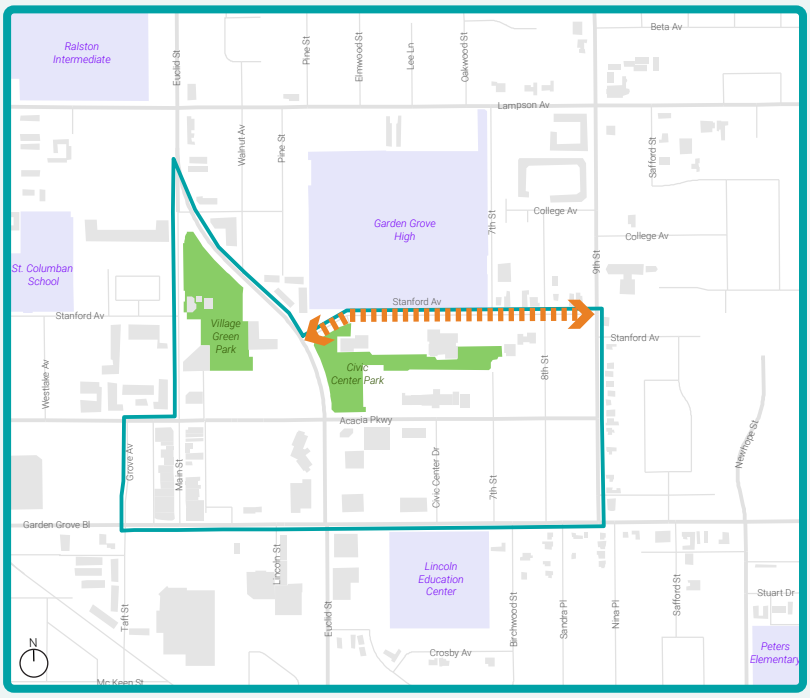
Euclid Street to 9th Street

PROVIDES ACCESS TO:

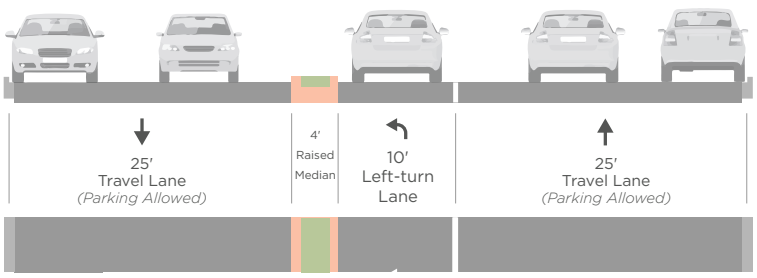
Garden Grove High School, Civic Center Park, Regional Library by the County, Garden Grove Community Meeting Center, and more.

PROPOSED IMPROVEMENTS:

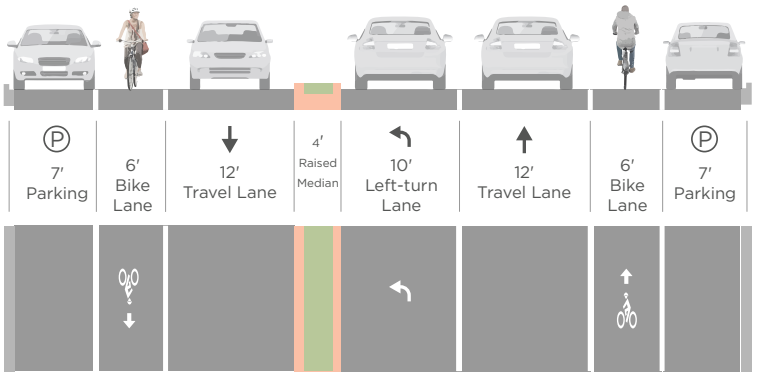
- **Corridor**: Class II Bike Lane (buffered on eastbound approach off of Euclid Street)
- **Intersection/Crossings**: Install curb extensions, high visibility crosswalks, and RRFBs at the existing pedestrian crossing near Donald R. Wash Memorial Auditorium
- **Intersection/Crossings**: Install bulb-out/curb extensions, high visibility crosswalks, and RRFBs at the existing pedestrian crossing near Stanford Avenue and 7th Street



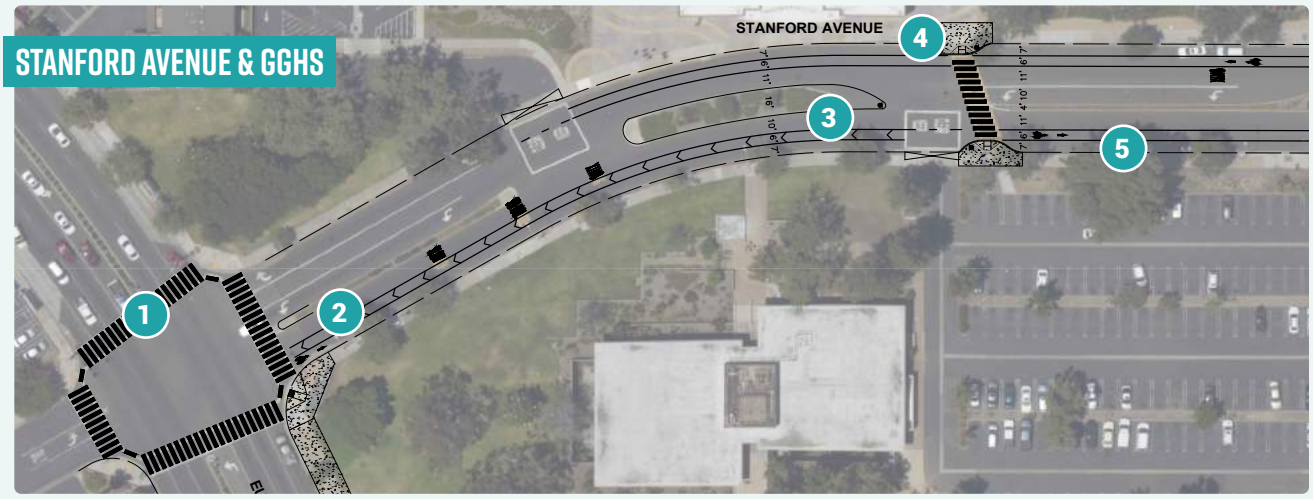
EXISTING



PROPOSED

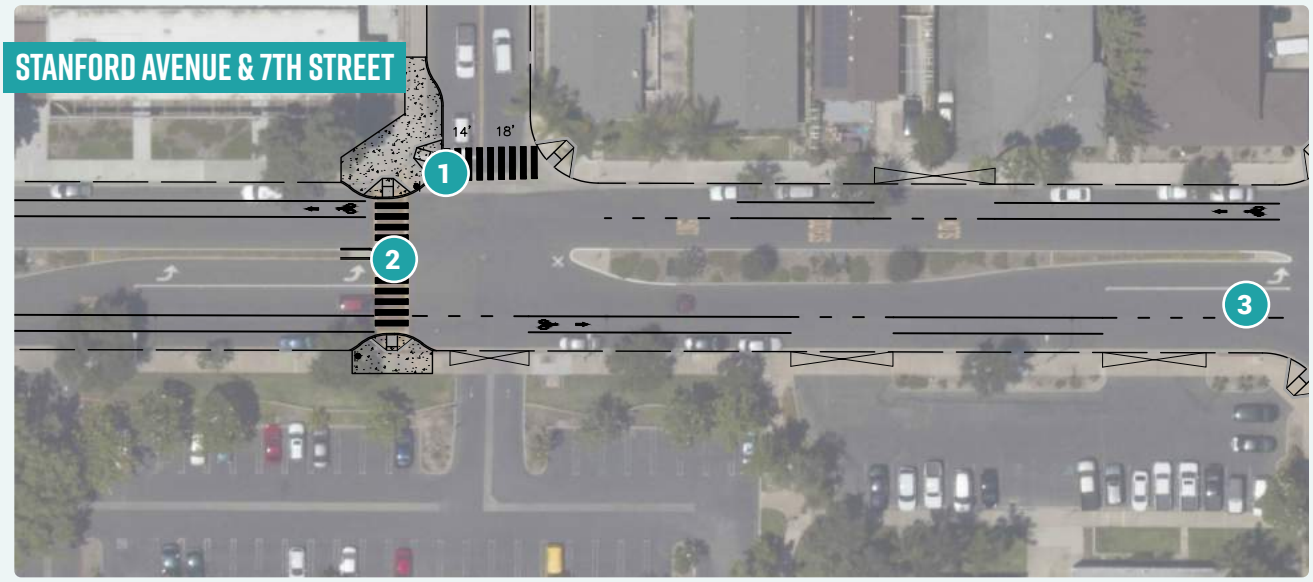


STANFORD AVENUE & GGHS



1. **School Crosswalks**: Stripe yellow ladder style crosswalks to enhance visibility and to indicate school nearby.
2. **Buffered Bike Lane**: Narrows roadway and provides buffered lane where parking is currently not allowed.
3. **Striped Median**: Extends median further into intersection to narrow area before pedestrian crossing.
4. **Enhanced Ped Crossing**: Curb extensions and RRFBs provides enhanced crossing for students.
5. **Bike Lane**: Delineates path of travel for bicyclists.

STANFORD AVENUE & 7TH STREET



1. **Bulb-out / Curb Extension**: Reduces distance that pedestrians have to cross to get to other side of roadway.
2. **Median Cut**: Current median extends into the pedestrian crosswalk. Median cuts help maintain proper crossing area.
3. **Conflict Zone Striping**: Provides visual cues to both motorists and bicyclists of potential conflict areas such as existing driveways, intersections, etc.

9TH STREET

9th Street is one of the few north-south connections within the Downtown bikeway network. As a proposed bike route, it connects to existing bike lanes on Lampson Avenue, further south towards a future bikeway on Nina Place and the PE ROW Trail, and to the upcoming Cottage Industries developments.

Similar treatments may be considered for proposed neighborhood greenways within the Downtown area (i.e. Taft St, Stanford Ave east of Main St, Paloma Ave, College Ave).

CORRIDOR EXTENTS:

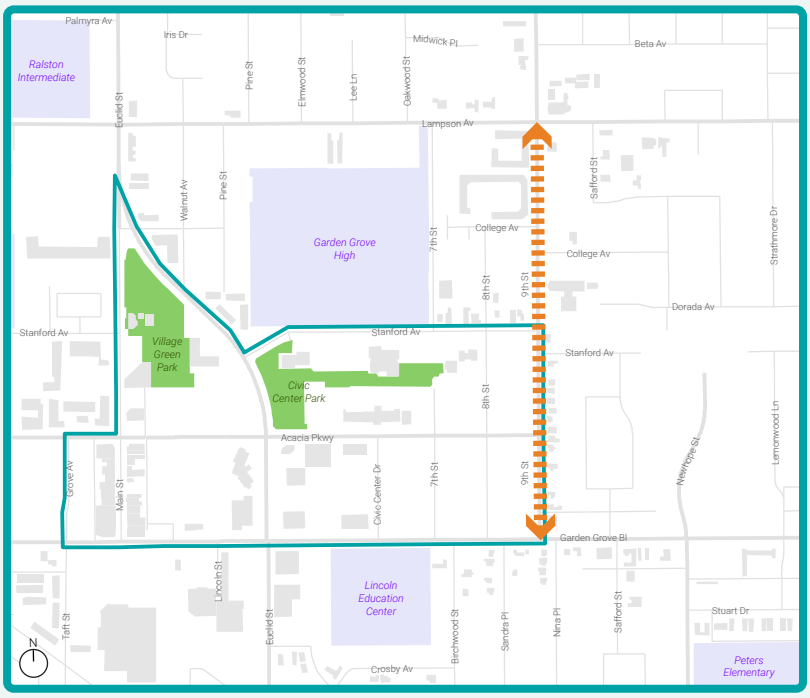
Lampson Avenue to Garden Grove Boulevard

PROVIDES ACCESS TO:

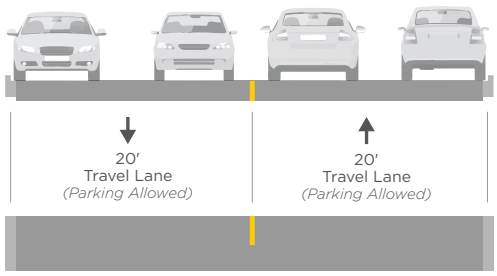
Lampson Ave bike lanes, PE ROW Trail access, future Cottage Industries, future bikeways on College Avenue, Stanford Avenue, and Acacia Parkway, and more.

PROPOSED IMPROVEMENTS:

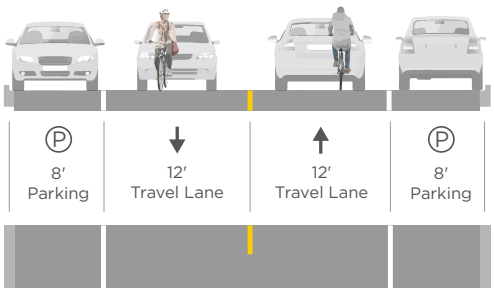
- **Corridor**: Bike Route
- **Corridor**: Bike Route Signage
- **Corridor**: Edgeline striping
- **Intersection**: High visibility crosswalks and bulb-outs at College Avenue (east and west leg), Stanford Avenue, and Acacia Parkway

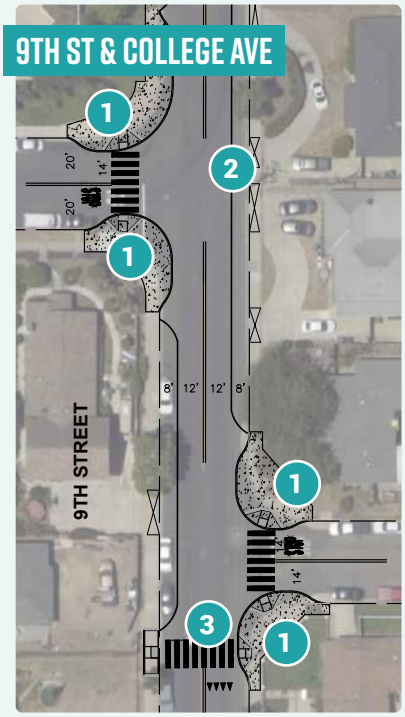


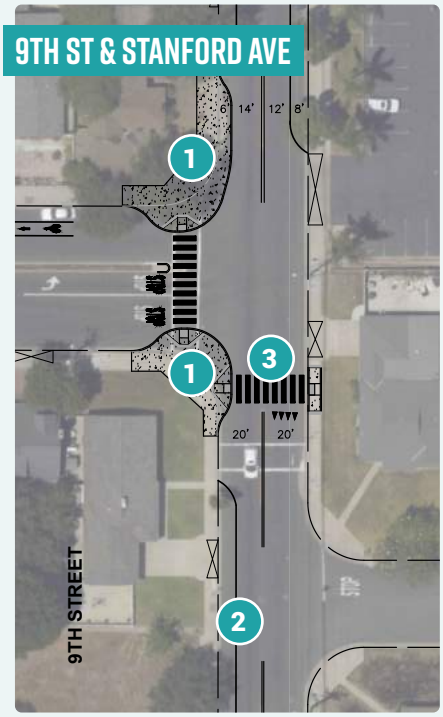
EXISTING

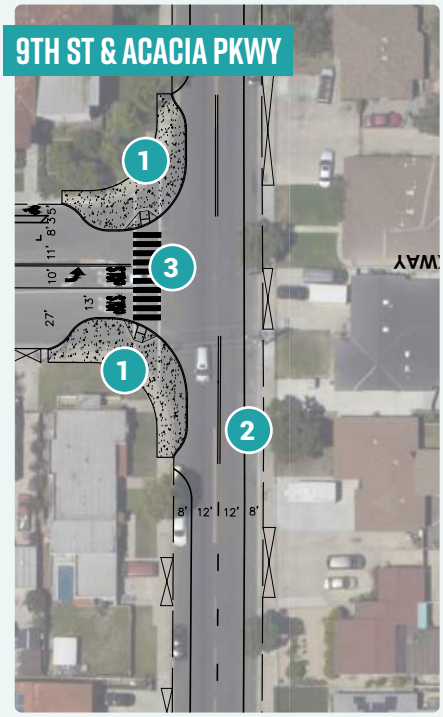


PROPOSED

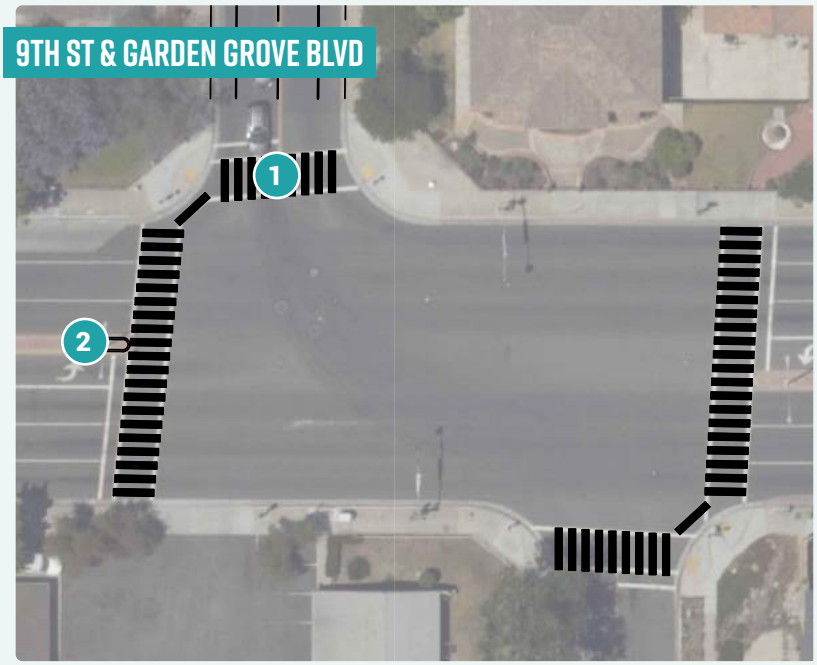








1. **Bulb-out**: Narrows intersection, calms traffic, extends sidewalk, and reduces distance of pedestrian crossings.
2. **Edgeline Striping**: Visually narrows roadways by delineating travel lanes from curbside parking.
3. **High Visibility Crosswalks:** Provides enhanced visibility of pedestrian crossing. Crosswalk near Stanford Avenue is relocated slightly north to align with the proposed bulb-out.



1. **High Visibility Crosswalks**: Provides enhanced visibility of pedestrians crossing *(cost is included as a part of the Garden Grove Boulevard improvements to prevent double counting).*
2. **Median Cut**: Current median at west side of the intersection extends into the pedestrian crosswalk. Median cuts help maintain proper crossing area *(cost is included as a part of the Garden Grove Boulevard improvements to prevent double counting).*

PRIMARY DOWNTOWN CORRIDORS

While corridors like Garden Grove Boulevard, Euclid Street, and Main Street have several constraints, as highlighted in Chapter 2, some opportunities still exist to enhance walkability along these corridors and facilitate better bikeway connections within the Downtown area.

Together, these three corridors represent the Primary Downtown Corridors. The following section highlights each of these roadways and intersections for potential spot treatment improvements.

Garden Grove Boulevard and **Euclid Street** are major arterials, accounting for some of the highest volumes of vehicular traffic in the City and County every day. Spanning from one end of the City to the other, both corridors were identified as Complete Streets study corridors within the Active Streets Master Plan.

As both regional and local jurisdictions continue to evaluate transportation needs for these corridors, improvements based on Complete Streets studies should aim to accommodate all roadway users where possible.

Historic **Main Street**, perhaps the most recognized Downtown destination, is located between Acacia Parkway and Garden Grove Boulevard. Outside of recommendations along Acacia Parkway, other improvements to pedestrian crossings along Main Street can help improve overall walkability surrounding this primary area of Downtown.

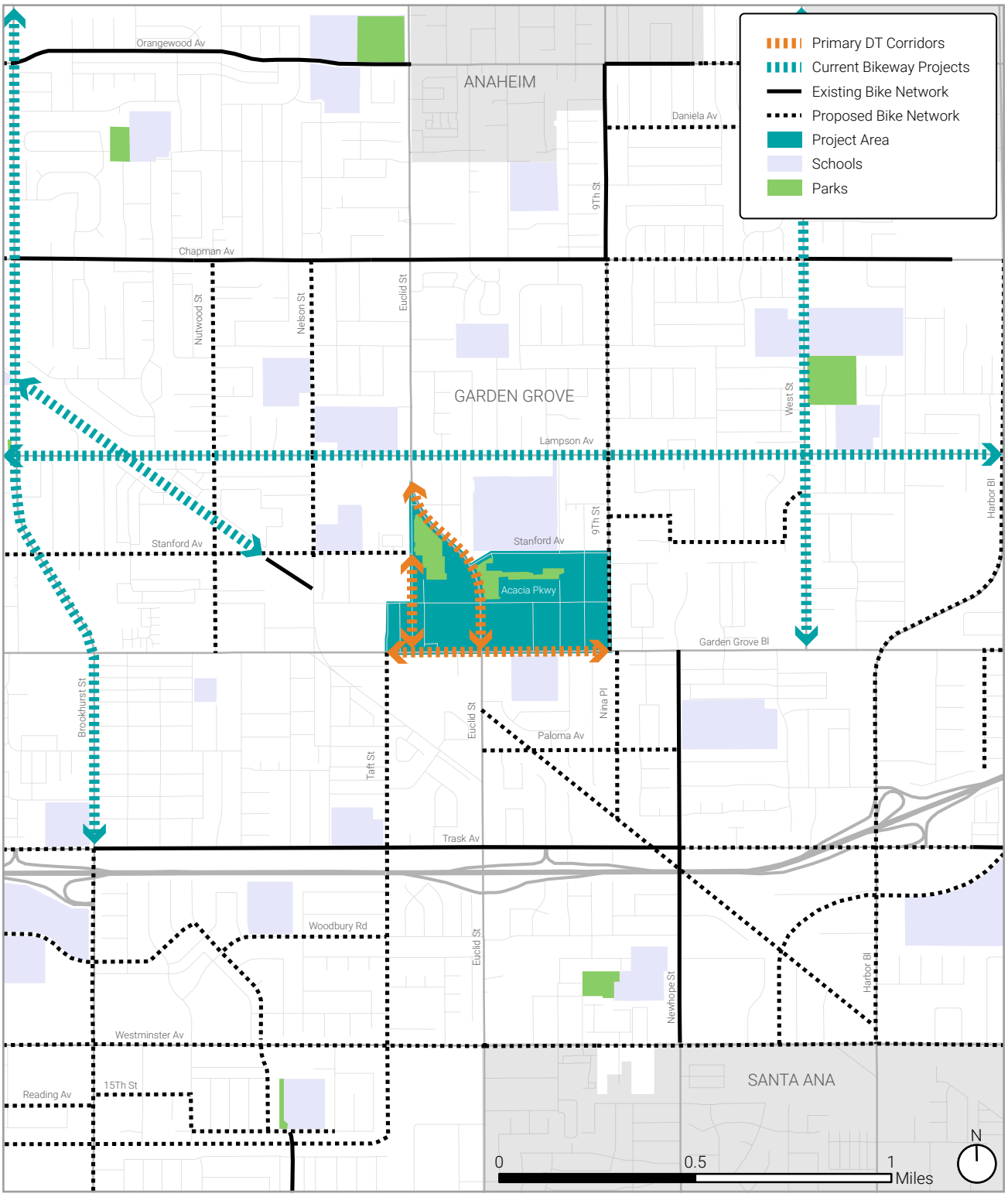


Figure 5.2. Primary Downtown Corridors

EUCLID STREET

Euclid Street, while constrained by existing roadway widths, is the primary N-S corridor that bisects Downtown Garden Grove. Civic Center Park, at the corner of Euclid Street and Acacia Parkway, provides an opportunity to extend the existing sidewalk and create a shared-use path for people walking and biking.

CORRIDOR EXTENTS:

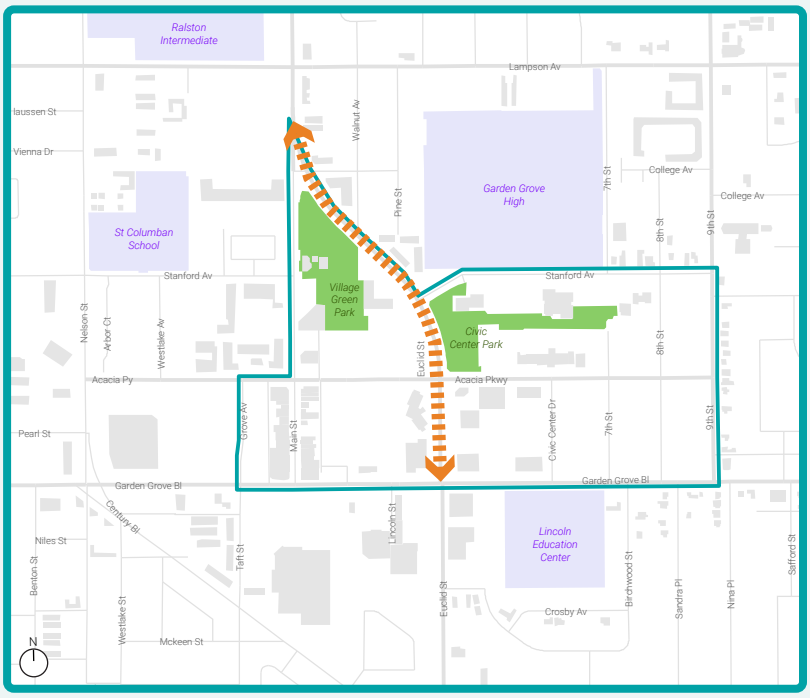
Main Street / College Avenue to Garden Grove Boulevard

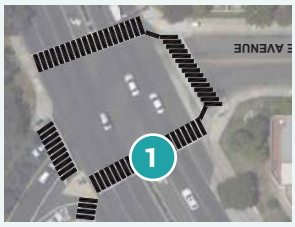
PROVIDES ACCESS TO:

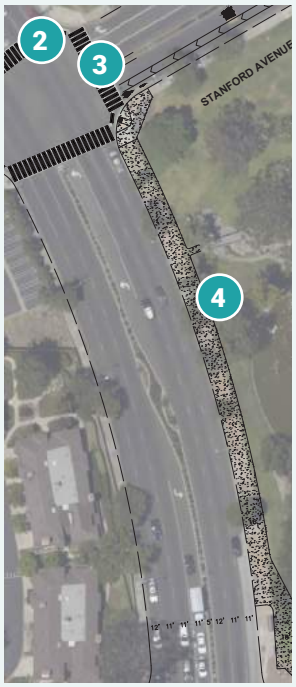
Village Green Park, Civic Center Park, Steelcraft, Concorde CC, etc.

PROPOSED IMPROVEMENTS:

- **Segment**: Extend sidewalk alongside Civic Center Park to create shared-use path
- **Intersection:** High visibility crosswalks at Euclid Street and Main Street/College Avenue
- **Intersection:** Yellow high visibility school crosswalks at Euclid Street and Stanford Avenue *(cost is included as a part of the Stanford Avenue corridor concept to prevent double counting)*







1. **High Visibility Crosswalks**: Provides enhanced visibility of pedestrians crossing at Main Street/College Avenue and Euclid Street.
2. **School Crosswalks**: Stripe yellow ladder style crosswalks to enhance visibility and to indicate school nearby *(cost is included as a part of the Stanford Avenue corridor concept to prevent double counting).*
3. **Median Cut**: Current median extends into the pedestrian crosswalk. Median cuts help maintain proper crossing area.
4. **Shared-Use Path**: Include sidewalk extension in City's future Civic Center Park Master Plan. With the absence of a Euclid Street on-street bikeway, a shared-used path can help better connect active transportation users between Stanford Avenue and Acacia Parkway.

GARDEN GROVE BOULEVARD

While Garden Grove Boulevard has limited right-of-way, the corridor still provides important local and regional connectivity for pedestrians and transit users. Improvements are focused primarily at intersections.

CORRIDOR EXTENTS:

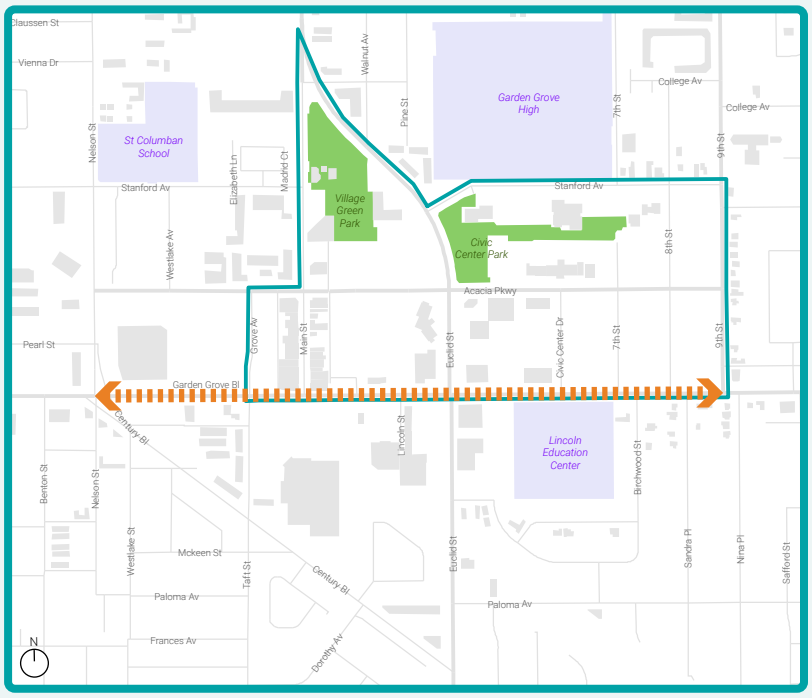
Nelson Street to 9th Street

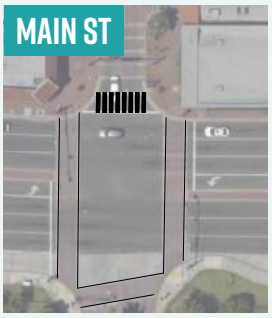
PROVIDES ACCESS TO:

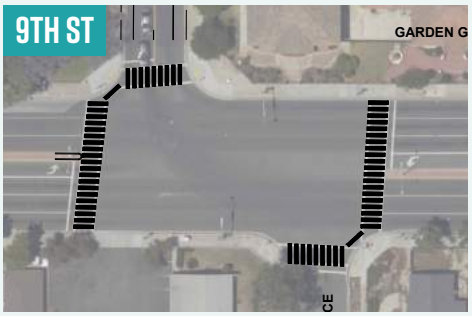
Historic Main Street, Concorde CC, Dalat Supermarket, Costco, Lincoln Continuation School, Cottage Industries (future), Community Garden, etc.

PROPOSED IMPROVEMENTS:

- **Intersection**: High visibility crosswalks at Garden Grove Boulevard and 9th Street/Nina Place
- **Intersection**: High visibility crosswalks at Garden Grove Boulevard and Grove Avenue
- **Intersection**: Striped parallel crosswalks at Garden Grove Boulevard and Euclid Street, Main Street, and Nelson Street
- **Intersection**: Convert protected-permissive left turns onto Garden Grove Boulevard from Nelson Street/ Century Boulevard to protected-phasing only. Protected left turn phasing helps eliminate conflicts between left-turning vehicles and pedestrians crossing at the intersection *(cost is included as a part of the Nelson Street corridor concept to prevent double counting).*







Striped Parallel Crosswalks: Provides enhanced visibility of existing decorative pavement crosswalks.

High Visibility Crosswalks: Provides enhanced visibility of pedestrians crossing.

Median Cut: Medians that extend into the pedestrian crosswalk encroach the crossing area. Median cuts help maintain proper crossing area and visibility of crosswalk.

MAIN STREET

While Historic Main Street already possesses a pedestrian-oriented environment, additional improved amenities, such as bike parking and pedestrian seating, can still be provided. Further north, additional intersection improvements can provide better access and connectivity to Village Green Park.

CORRIDOR EXTENTS:

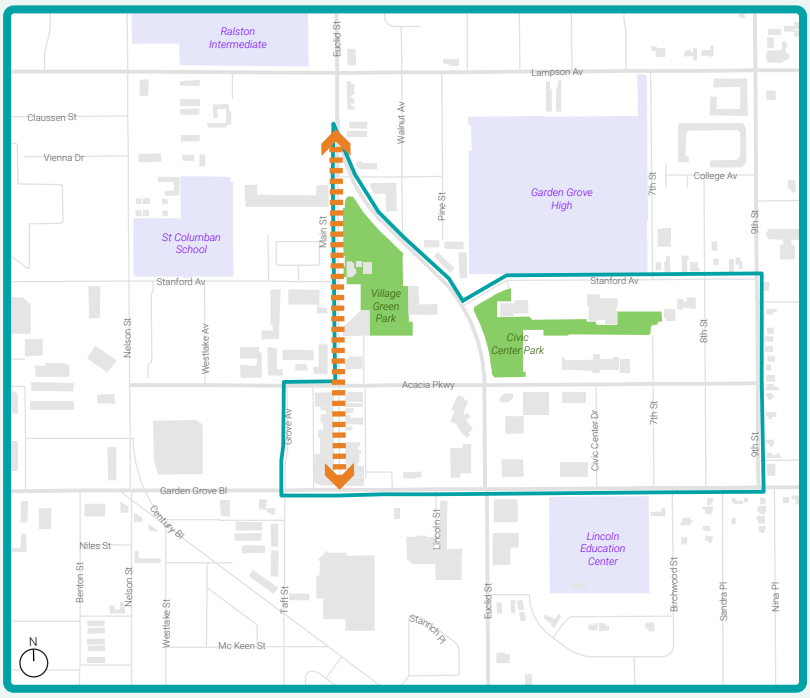
Euclid Street to Garden Grove Boulevard

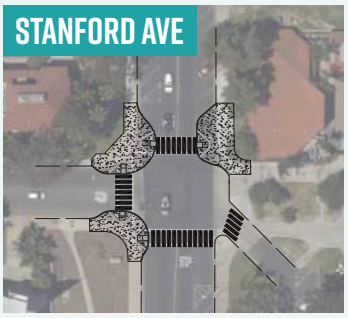
PROVIDES ACCESS TO:

Village Green Park, Historic Main Street, The Garden Amp, etc.

PROPOSED IMPROVEMENTS:

- **Intersection**: Bulb-outs and high visibility crosswalks at Stanford Avenue
- **Intersection**: Roundabout at Main Street and Acacia Parkway *(cost is included as a part of the Acacia Parkway corridor concept to prevent double counting)*
- **Intersection**: Striped parallel crosswalks at Garden Grove Boulevard *(cost is included as a part of the Garden Grove Boulevard corridor concept to prevent double counting)*

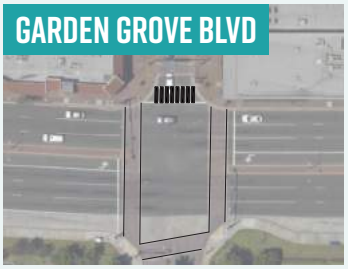




Bulb-out: Narrows intersection, calms traffic, and reduces distance of pedestrian crossing.

High Visibility Crosswalks: Provides enhanced visibility of pedestrians crossing.

Roundabout: Promotes continuous flow of traffic and reduces possibility for T-bone and head-on collisions. Outer edge of roundabout, known as the truck apron, should be mountable to maintain emergency vehicle access *(cost is included as a part of the Acacia Parkway corridor concept to prevent double counting)*.



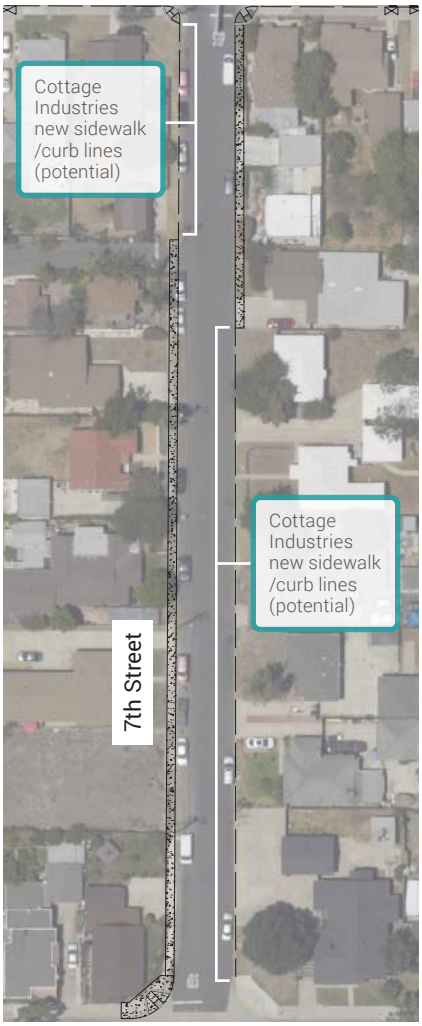
Striped Parallel Crosswalks: Provides enhanced visibility of existing decorative pavement crosswalks *(cost is included as a part of the Garden Grove Boulevard corridor concept to prevent double counting)*.

SIDEWALK IMPROVEMENTS

Within Downtown Garden Grove, there are currently missing sidewalk segments along Grove, 7th, and 8th Streets. As north-south roadways connecting Acacia Parkway to Garden Grove Boulevard, these three locations are gaps within the Downtown pedestrian network. While these are not along major corridors, eliminating these gaps will help connect pedestrians to and from existing residential and commercial areas. As the City continues to work with the Cottage Industries development, sidewalk improvement needs along these three streets should be continually evaluated. Potential new sidewalk will be added as a part of the development of several properties.

GROVE AVENUE

7TH STREET



8TH STREET

NEIGHBORHOOD GREENWAYS

Based on the proposed bikeway network within the Active Streets Master Plan, several streets right outside of the Downtown area are proposed **neighborhood greenways**. Neighborhood greenways are Class III bike routes combined with other traffic calming measures. Also known as bike boulevards, these are generally located on residential streets that are much lower in speed and traffic volumes.

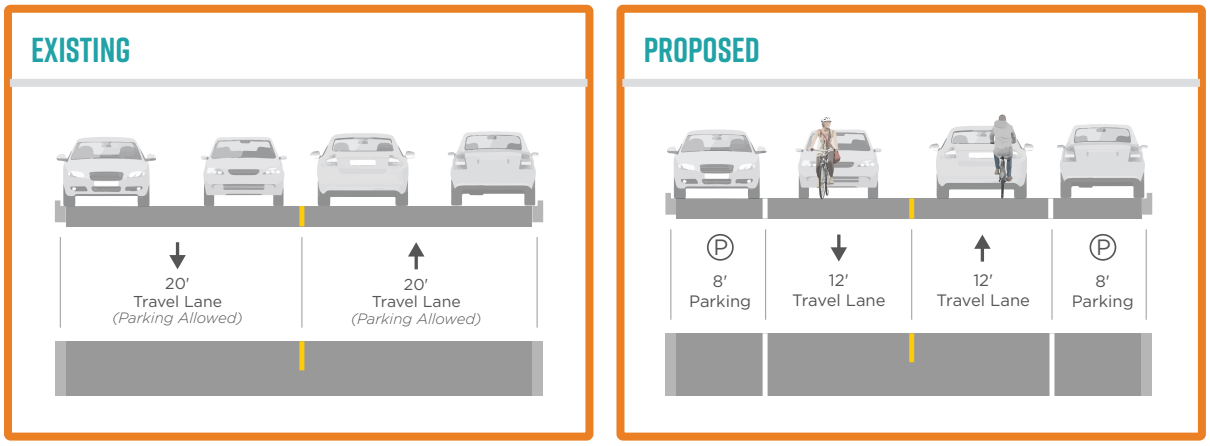
Although roadway width constraints often eliminate the possibility for a traditional bike lane or facility, neighborhood greenways can still provide important low-stress connections within the larger bikeway network.

Adjacent to the Downtown area, Taft Street, Nina Place, Paloma Avenue, College Avenue, and Stanford Avenue (west) are streets where neighborhood greenways can be implemented to enhance both local and regional connectivity.

Although this Plan focused primarily on providing recommendations within Downtown Garden Grove, these five proposed neighborhood greenways represent lower-stress bikeway alternatives to constrained primary arterials like Garden Grove Boulevard and Euclid Street.

Due to similarities in roadway widths, recommendations for 9th Street are traffic calming measures that can likewise be considered for these roadways. These include edgeline striping, bulb-outs, and proper signage and pavement markings. However, other improvements for neighborhood greenways may include traffic circles, RRFBs, high visibility crosswalks, and other traffic calming measures.

Traffic conditions for future neighborhood greenways should be monitored to understand proper applicability and design of proposed treatments.



** Other traffic calming measures not shown: traffic circles, bulb-outs, curb extensions, RRFBs, advanced yield lines, and more.*

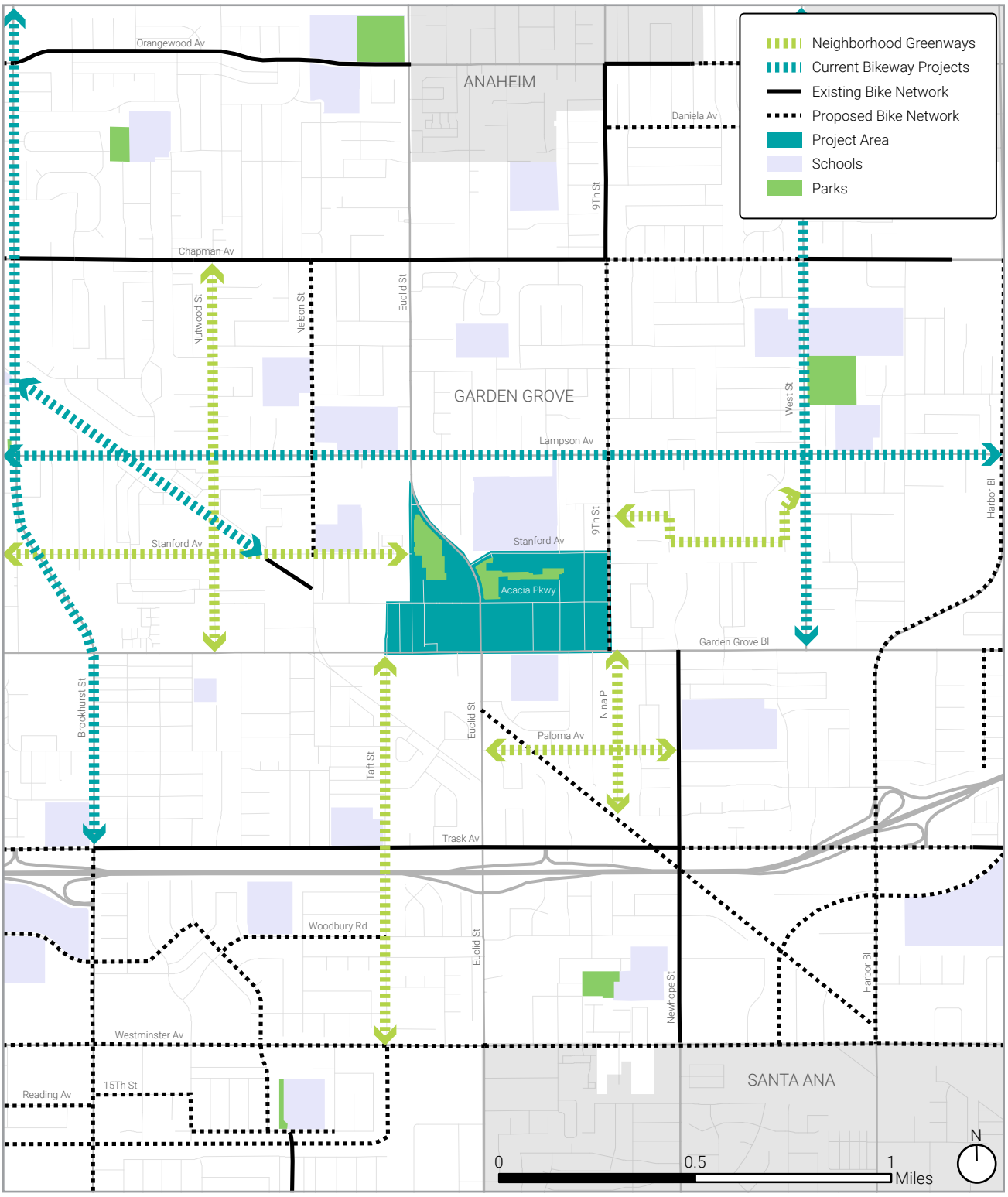


Figure 5.3. Neighborhood Greenways near Downtown

CREATIVE PLACEMAKING & PROGRAMMING

Through the Re:Imagine Garden Grove initiative, the City has continued a commitment to transforming public spaces and the Downtown area through creative placemaking and active transportation amenities.

The following recommendations seek to further enhance the City's creative placemaking and programming efforts as a primary component to a more Active Downtown:

> *"**Placemaking inspires people to collectively reimagine and reinvent public spaces as the heart of every community.** Strengthening the connection between people and the places they share, placemaking refers to a collaborative process by which we can shape our public realm in order to maximize shared value."*
>
> *- Project for Public Spaces (PPS)*

1. **Expand Re:Imagine Garden Grove efforts to include temporary and tactical demonstrations alongside Downtown corridor projects before they are permanently designed and constructed, where possible.**
2. **Develop City guidelines for the implementation of creative crosswalks, bike parking racks, and potential parklets. Include mechanisms for the selection of artists and/or community-driven artistic designs.**
3. **Develop a more formalized 'Art in Public Spaces Program', as part of Re:Imagine Garden Grove, that will create and implement guidelines for recommended creative crosswalks, bike parking, pedestrian seating, and other creative placemaking strategy locations.**
4. **Designate an Arts Coordinator who will be responsible for managing the implementation of all creative placemaking strategies, projects, and programming.**
5. **Develop a Downtown Public Arts Master Plan to strategically prioritize and fund the incorporation of arts within the Downtown built environment, while reinforcing active transportation, open space, health, and cultural identity.**
6. **Establish a separate Arts Commission or Public Arts Committee that can be dedicated to guiding implementation of creative placemaking, programming, and cultural arts efforts for the City and within Downtown.**
7. **Increase partnerships with local artists, businesses, and community organizations to develop programming events focused on the intersections of active transportation, open space, health, and public art.**
8. **Set aside a portion of funds or provide a local match where public art and/or temporary demonstrations are an allowable expenditure under a project funding source.**
9. **Prioritize local or grant funds for public art, when possible. Permanent allocation of funds for an Arts Coordinator position and an Art in Public Spaces Program provides the opportunities needed to create a more Active Downtown.**
10. **Coordinate with the Orange County Transportation Authority (OCTA) on installing bus shelters and other transit amenities, where they are missing, along Garden Grove Boulevard and Euclid Street.**
11. **Consider developing a branding and marketing strategy for Downtown Garden Grove, including the development of strategic gateway and wayfinding signage throughout the area.**

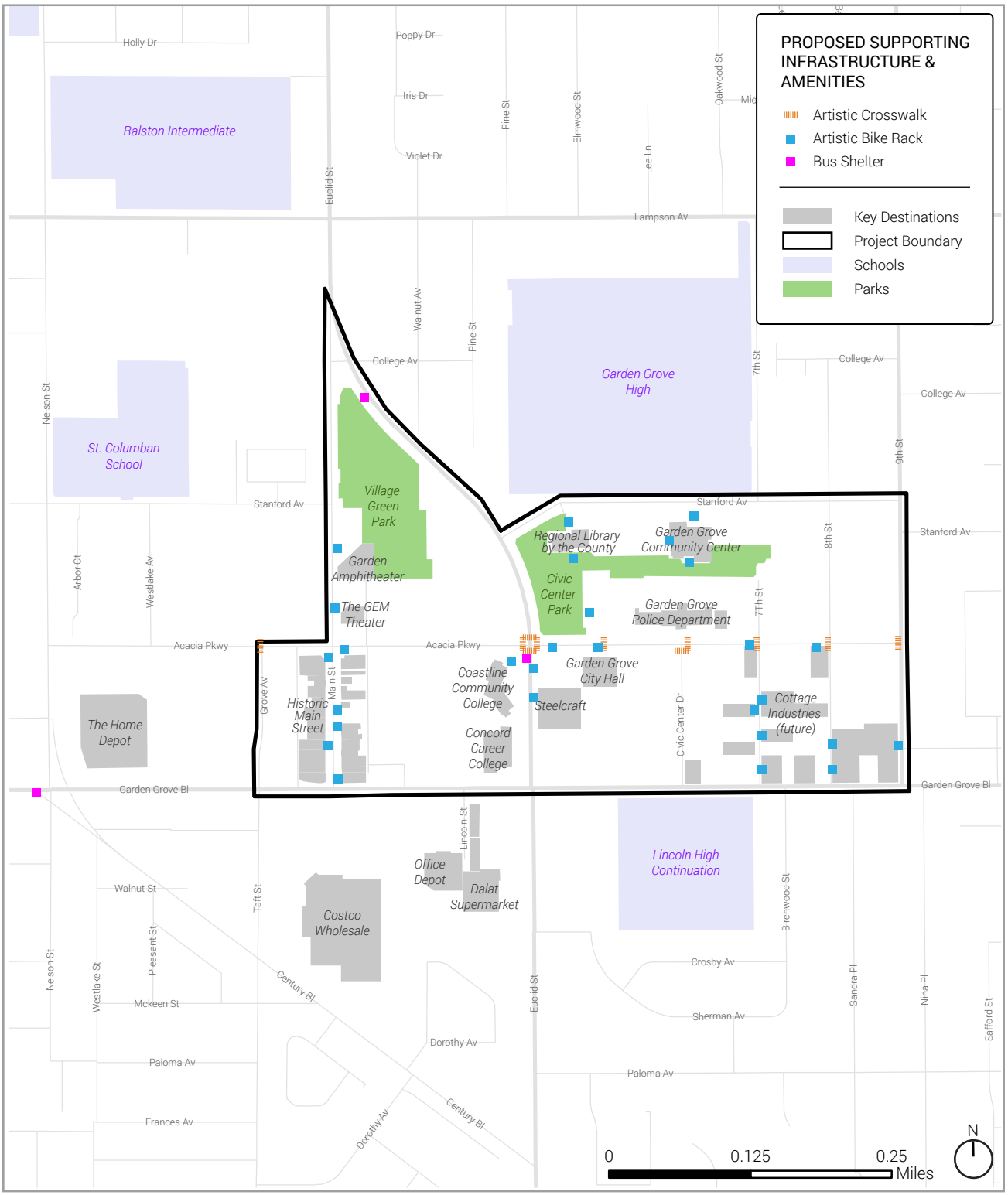


Figure 5.4. Supportive Infrastructure & Artistic Placemaking Recommendations

Similar efforts by other cities can offer examples of local practices and successful strategies. Pomona, Pasadena, and Laguna Beach are all local cities where formal public art programs and/or plans have helped maximize placemaking opportunities in their communities. In cities like Long Beach and Buena Park, isolated projects and programs (e.g. creative crosswalks) can still have an impact on the overall built environment and use of active transportation infrastructure. The following pages summarize these efforts and examples in more detail.

Pomona, CA – Art in Public Places Program

The City of Pomona, dedicated to preserving and building on the inventory of existing public art within the community, established the "Art in Public Places Program" in 2011. Initiated by the City of Pomona's Planning Division, in consultation with the Cultural Arts Commission and its Citizen's Advisory Committee, the program aims to increase the amount of original public artwork located through the City, allowing art to become a vital element of Pomona's personality and community.

The City Council established the Art in Public Places Program to include both a public art for private development component and a public acquisitions and donations component.

Pasadena, CA – Public Arts Master Plan & Public Art Program

"On October 21, 2013, the City of Pasadena City Council approved its first Public Art Master Plan which builds on the City's strong visual arts heritage, acknowledges the value of existing public art projects, and focuses on how artists can continue to enhance the public realm. The Plan incorporates the thoughts and suggestions of hundreds of citizens, acknowledges how the City of Pasadena operates, and grows from best practices in the public art field.

Intended to provide broad goals and objectives with practical strategies for implementation, the Plan articulates a unified vision for the development of new public art in Pasadena. The Plan provides an outline of priority projects and related changes to policy and procedures that will require the identification of additional resources to realize these goals." (City of Pasadena)

Pasadena's Public Arts Master Plan highlights the nexus between public art and walkable communities, all while reinforcing the importance of park and neighborhood access. Policies and implementation strategies are set forth by the Plan to better guide the integration of cultural arts in Pasadena's public realm.

"The City's Public Art Program focuses on two areas: new private development and City construction projects. The Public Art Requirement may be satisfied by the creation of site specific public art or by payment in-lieu of artwork." (City of Pasadena)

Laguna Beach, CA: "Public Art and Murals" and "Art in Public Places" Programs

"The art you see around Laguna Beach is the result of two City programs: "Public Art and Murals" and "Art in Public Places." Goals of the Public Art and Murals and Art in Public Places initiatives are to create diverse art installations of the highest quality that will, over decades, reflect the city itself and its citizens, and improve the quality of life; to be a source of pride to all Laguna Beach residents." (City of Laguna Beach)

Public Art and Murals program is funded by the Laguna Beach Arts Commission.

The **Art in Public Places Program** is a requirement of Laguna Beach's Municipal Code. Goals include:

- Distinguish Laguna Beach as a special place to live, work and visit.
- Integrate the vision of artists with the perspective of other design professionals into the planning and design of the urban landscape.
- Provide every member of the community easy visual access to public art from public street access.
- Strengthen cultural awareness, creativity and innovative thinking in the community and be a source of pride for all residents.
- Create diverse art of the highest quality.
- Installations that will, over decades, reflect the city itself and its citizens and improve the quality of life.

Long Beach, CA: Pine Avenue Creative Crosswalks

"In 2017, the Downtown Long Beach Alliance (DLBA) commissioned artist Hataya Tubtim to create the first crosswalk art project in Downtown Long Beach. The goal of the project was to further support a vibrant pedestrian environment by adding a sense of delight and discovery to the public realm. Five unique designs were installed on Pine Avenue between 1st Street and 7th Street in March 2017. Each design recognizes the legacy of human enterprise during the first century of Long Beach's development while acknowledging the importance of a vibrant marine environment along our coast. Each crosswalk has images of marine life juxtaposed with images portraying the history of innovation and industry in Long Beach. The art is considered to be temporary and will be in place for up to 3 years." (Downtown Long Beach Alliance)

DLBA released a Request for Qualifications (RFQ) in November 2015. The selected artist was contracted by the DLBA in coordination with the City of Long Beach.

"Grand Prix & Leopard Shard" | DLBA

"Spruce Goose and Brown Pelican" | DLBA

Buena Park, CA: Art in Crosswalks

"Art in Crosswalks is a new program that will activate public spaces, engage the attention of drivers or pedestrians, and celebrate the history and culture of Buena Park."

As part of the City's Art in Public Places Program, "Art in Crosswalks" seeks to implement crosswalk designs that reflect the "history, diversity, and beauty" of Buena Park. Applications were accepted up until January 2020.

"GUIDELINES: Artwork must be in a subdued-colored aesthetic that is devoid of light-reflective properties (i.e., glitter). As per the Federal Highway Administration guidelines, artwork must be patterned but may not include octagons, triangles, or other shapes, text, and logos that could be confused with standard traffic control devices, legends, or messages."

(City of Buena Park)

Other Resources on Creative Crosswalks:

Creative crosswalk design and implementation can vary between city to city and across different states. In some cases, crosswalk projects and maintenance are a part of a City-led program. In many other cases, creative crosswalks are the result of neighborhood alliances, local arts councils, local businesses, and other community-led organizing efforts.

The resources below are examples of how various cities have implemented creative and enhanced crosswalks:

City of Philadelphia | Rainbow Crosswalks: Funding and Permitting Strategies

City of Santa Monica | Call for Designers: Creative Crosswalk Pilot for Downtown Santa Monica

City of Austin | Transportation Department | Creative Crosswalks Program Guidelines

Downtown Long Beach Alliance | Creative Crosswalks

Oregon Live | Portland Creative Crosswalk

Smart Cities Dive | Creative Crosswalks: Street Art Meets Safety Enhancement

ACTIVE TRANSPORTATION PROGRAMMING

While infrastructure improvements focus on physical elements to improving safety, non-infrastructure programs and policies can also have an impact in increasing the number and safety of people walking and biking.

This section offers a set of active transportation programs under the categories of **Education, Encouragement, Enforcement, Engineering, and Evaluation,** that can be implemented as a part of this Plan. Engineering refers to recommended infrastructure improvements (as a part of this Plan), as well as programs dedicated to finding engineering solutions to safety and neighborhood concerns.

Often referred to as the sixth 'E', **Equity** is a consistent theme across the implementation of all 'Es'. In order to successfully achieve the goals defined in this Plan, it is important to consider how infrastructure and non-infrastructure strategies can serve to address the needs of disadvantaged communities.

The programming tools defined in this section focus on programs most relevant and applicable to the Downtown area. However, creating a more active Downtown environment should not be limited to just these programs. Other city or countywide programming tools can still have an impact on people walking and biking in Downtown Garden Grove. Prioritized programs for the City are further detailed within the Active Streets Master Plan.

EDUCATION

The implementation of educational program efforts in the community can have a lasting cultural impact. These programs can introduce community members to new infrastructure and help build understanding of safe practices. Education can equip the community with the knowledge, skills, and confidence to bike and walk to a desired destination.

ENCOURAGEMENT

By investing in encouragement strategies, the Plan can foster the community's growth towards active transportation trends. These can take place in the form of events, clubs, and activities that inspire walking, bicycling, or carpooling through fun activities or incentives.

ENFORCEMENT

Enforcement efforts can help ensure that the community is creating safe and responsible behaviors on the road and building respect among all road users. Focused enforcement of traffic laws should include controlling vehicle speeds, encouraging motorists to yield to pedestrians in crosswalks, and encouraging proper walking and biking behaviors.

ENGINEERING

Engineering solutions and programs address the physical environment and have the ability to create safe and accessible places to walk and bike. Corridor concepts presented at the beginning of Chapter 5 are improvements are aimed at developing physical infrastructure supportive of active transportation. Programs can also be dedicated to improving the environment through engineering solutions.

EVALUATION

Continued evaluation of improvements can help monitor both progress and impact. This allows for tracking of successes or the ability to modify the Plan in order to better achieve goals and objectives.

Education

Adult Bicycle Skills Classes – Classes that teach adults how to properly ride bikes help encourage people to bike more. They help provide individuals with the necessary skills and proper training to comfortably ride around.

Bicycle-related Ticket Diversion Class – Providing a ticket diversion class can help educate bicyclists on proper rules and traffic safety. These are offered to bicyclists who are cited for certain traffic violations, allowing them to take the class in lieu of paying a fine.

Neighborhood Traffic Unit (NTU) – NTU is an existing GGPD program that aims to enhance vehicle and pedestrian traffic safety throughout the City. The mission of the NTU is to improve the quality of life by providing the safest and most efficient flow of vehicle and pedestrian traffic throughout Garden Grove. NTU has conducted educational workshops at schools and teaches students about transportation safety.

OCTA Wrong Way Riding Campaign – This existing OCTA program raises awareness on how to properly use bike facilities. With nearly half of all bicycle-related collisions over the last five years occurring due to bicyclist riding on the wrong side of the road, this campaign serves to increase safety for not only bicyclists but for users on the road.

Student Bicycle Traffic Safety Education – This program improves safety, and promotes proper bike riding skills at the youth level. With Garden Grove High School and several other schools within the Downtown periphery, education at an early age helps establish the importance of safe riding. The Active Streets Master Plan recommends that the Garden Grove Unified School District implement a pilot education program to eventually expand to all city schools over time.

Encouragement

OCTA Rideshare Week – Every year, OCTA hosts several ridesharing events and activities as a part of Rideshare Week. The program encourages Orange County residents and employees to reduce one-person one-car travel and to instead, travel by bus, train, carpool, vanpool, or bike. OCTA Rideshare Week can be promoted by the City to encourage the more active means of travel to the Downtown area.

Bicycle-Friendly Business District (BFBD) - Having infrastructure like water bottle filling stations and bike parking for the offices and businesses located in Downtown Garden Grove can complement biking as a reliable mode of transportation. The City and Downtown Commission can encourage shop owners to offer discounts to patrons who arrive by bicycle.

OCTA Bike to Work Week – Programs like Bike to Work Week can help further encourage bicycling as an alternative mode of transportation, particularly for commute trips. With May as National Bike to Work month, OCTA generally hosts several county-wide events during one week. The City can host complementary events and activities in support of OCTA's Bike to Work Week. Within Downtown, a pilot program can be developed to specifically encourage City staff and Downtown employees to participate in week-long activities and incentives.

Open Streets Events – Re:Imagine Garden Grove's Open Streets events are important in the continuing encouragement of active transportation within the community. As the City begins to implement more bikeway and pedestrian facilities, Open Streets events can further promote the use of these new or enhanced facilities as a way to get in and around Downtown Garden Grove. The events are also a way of bringing the community together in support of more actives modes of travel.

Golden Sneaker Contest – This Safe Routes to School program is a walking competition between classes at each school. Each class strives to have as many students walking and/or biking to and from school as possible. At the end of the competition, the class that has the most participants wins the Golden Sneaker award or other prizes. The program can be piloted by GGUSD at Garden Grove High School.

Monthly Walk and Roll Days – Walk and Roll Days can encourage students to walk and bike to school, utilizing the implemented bike and pedestrian infrastructure. These reoccurring events help promote the regular use of active transportation. They can also be organized with other Safe Routes to School programs like the Golden Sneaker Contest.

Student Incentive Programs – Since Garden Grove High School is located at the project boundary, additional student incentive programs encouraging active transportation among high schoolers can help create a more Active Downtown. They can help establish healthier habits among students and promote walking and biking to other destinations in the Downtown area.

Enforcement

GGPD Fatality Reduction Campaign – Launched in 2012, the GGPD's Fatality Reduction Campaign has helped reduce the number of pedestrian fatalities in the City. GGPD issues citations to motorists who fail to yield to pedestrians in crosswalks. Doing so helps educate motorists about the rules and responsibilities of the road. The presence of the Fatality Reduction Campaign in Downtown can further support efforts to create a more walkable environment within the area.

Bicycle Helmet and Light Giveaways – Giving out free helmets and bike lights to bike riders can increase safety for bicyclists by providing proper safety equipment. This can also encourage bike ridership; especially in the Downtown area where heavy bike traffic is expected. The City can partner with GGPD and seek a California Office of Traffic Safety (OTS) non-infrastructure grant to provide these giveaways to school children. The City can also offer them during Open Streets or other Downtown events to encourage walking and biking to and from the area.

Engineering

Neighborhood Traffic Safety Program – This existing City program identifies neighborhood traffic concerns and addresses them by implementing engineering solutions such as more signage, striping, pavement markings, and other traffic management devices.

The City has also adopted a Neighborhood Traffic Safety Program with the goals of:

1. Reducing the number of car crashes, deaths, and injuries on our streets
2. Reducing the number of motorists who drive at excessive speeds
3. Reducing speeding by providing a hotline number
4. Improving the use of safety belts and enforce the State's Child Passenger Safety Law
5. Developing community support for this program
6. Reducing cut-through traffic

The Neighborhood Traffic Safety Program is a three phase program that:

1. Identifies and contacts offending drivers
2. Addresses neighborhood traffic concerns by taking minor measures such as the installation of signs, striping, and/or pavement marking.
3. Addresses longer-term traffic concerns with more restrictive physical measures.

Evaluation

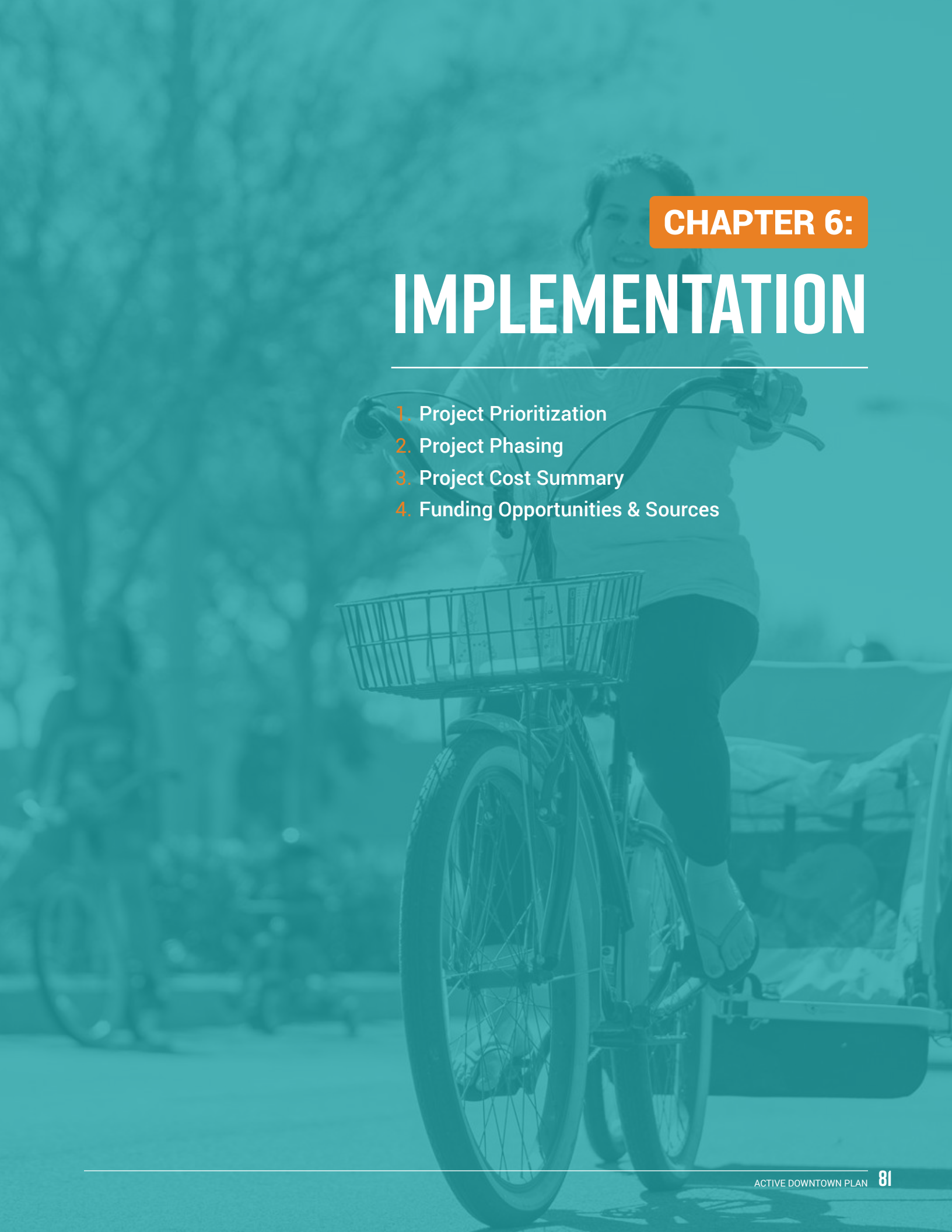
Annual Collision Data Review – Reviewing annual collision data involving bicyclists and pedestrians can help the City continue its identification of problem areas and applicable safety improvements. Within Downtown, the City can continue to monitor the impacts of new and enhanced active transportation infrastructure.

Parent Surveys – Parent surveys can provide data and feedback to the school district regarding challenges in active transportation near schools. The City and school district can then use this data to make improvements to bike and pedestrian facilities to address inefficiencies with existing active transportation infrastructure.

Pedestrian and Bike Counts – Bike and pedestrian counts contribute to a more thorough understanding of travel behavior and thus improve the ability to calculate the costs and benefits of bike and pedestrian improvements. They can be integrated into existing vehicle counts or completed at high traffic locations and commercial districts. Counts are effective in highlighting the need for infrastructure when requesting grant funding or for evaluating the impacts of infrastructure when baseline counts already exist.

As part of the Active Downtown Plan, counts were conducted at nine intersection locations within the Downtown area. These counts provide the City with baseline data to compare future counts against.

[This page is intentionally left blank]



CHAPTER 6:
IMPLEMENTATION

1. Project Prioritization
2. Project Phasing
3. Project Cost Summary
4. Funding Opportunities & Sources

IMPLEMENTATION

PROJECT PRIORITIZATION

The purpose of a prioritization analysis is to provide the City with an implementation guide to the infrastructure projects and recommendations that offer the greatest potential benefit to people walking and biking in Downtown Garden Grove.

While projects with higher rankings should be considered for implementation before projects with a lower rank, the City may choose to advance specific projects for other interests or as certain types of funding become available. Additional analyses should be conducted periodically in response to major changes in population, the environment, and transportation network.

The project prioritization model used for this Plan was developed with considerations to seven key categories, several of which were used for the City's Active Streets Master Plan.

- Community Support
- Proximity to School
- Proximity to Retail
- Proximity to Recreation & Open Space
- Safety
- Arts & Culture
- Health & Equity

The specific measures for each category are shown in Table 6.1. Weighting factors were adjusted to provide higher prioritization on some criteria than others based on City input.

Based on the scoring criteria, the four Downtown focus corridors are ranked below by priority:

1. Acacia Parkway (Class IV protected bike lane)
2. Nelson Street (Class II buffered bike lane)
3. Stanford Avenue (Class II bike lane)
4. 9th Street (Class III bike route)

Due to the fewer corridor-wide improvements to primary corridors, Garden Grove Boulevard, Euclid Street, and Main Street were not included in the prioritization analysis.

As identified by the Active Streets Master Plan, Garden Grove Boulevard and Euclid Street will be a part of larger corridor studies and require additional design and/or environmental evaluation. These arterial roadways span much further than just Downtown Garden Grove. They provide access across the entire City and to the region beyond Garden Grove.

Creative placemaking and active transportation programming efforts should be considered alongside engineering infrastructure improvements. However, due to varying eligibility factors for artistic elements, the City may seek to implement creative crosswalks, bike racks, and other placemaking strategies through local programs or non-typical funding sources.

Table 6.1. Criteria for Project Prioritization

CATEGORY	DESCRIPTION	MAX SCORE
Community Support	The project showed broad community support during outreach (10 pts) The project showed partial community support during the community input phase (5 pts)	**10**
Proximity to School	The project directly connects to a school (15 pts) The project connects to an existing facility that connects to school (7 pts) The project does not connects to a school (0 pts)	**15**
Proximity to Retail	The project directly connects to retail/commercial uses (15 pts) The project connects to an existing facility that connects to retail/ commercial uses (7 pts) The project does not connect to retail/commercial uses (0 pts)	**15**
Proximity to Recreation & Open Space	The project directly connects to a recreational opportunity or open space (15 pts) The project connects to an existing facility that connects a recreational opportunity or open space (7 pts) The project does not connect to a recreational opportunity or open space (0 pts)	**15**
Safety	The project addresses a location with a history of bicycle- and pedestrian-involved collisions (10 pts) The project is parallel to a corridor with a history of bicycle- and pedestrian-involved collisions (5 pts)	**10**
Arts & Culture	The project has several creative placemaking opportunities and strategies along the public right-of-way (10 pts) The project has some creative placemaking opportunities and strategies along the public right-of-way and/or within property premises (5 pts) The project does not possess creative placemaking opportunities and strategies (0 pts)	**10**
Connectivity	The project directly connects to an existing bikeway facility (Score / No Score)	**15**
Health & Equity	The project is within a disadvantaged community or provides Downtown access for a disadvantaged community (based on CalEnviroScreen 3.0 census tract data) (Score / No Score)	**10**
TOTAL SCORE		**100**

PROJECT PHASING

Project phasing gives general guidance about the amount of time and effort it takes to implement the projects recommended as part of this Plan. It also helps cities plan for projects that can be implemented in the near future versus the projects which may not be foreseeable until several years from now. The categories below group projects recommended in this Plan and are designed to distinguish project phasing that is chronologically scalable and fiscally conscious. When recommendations are funded on the corridor-level, however, improvements are grouped together and thus, will result in a different project implementation timeline.

SHORT-TERM (0-4 years)	MID-TERM (4-7 years)	LONG-TERM (7-10 years)
Short-term projects are those with a high "readiness" factor, meaning the proposed projects can be quickly implemented. These are opportunities for more rapid implementation and require less intensive engineering, design, construction costs/resources, and funding.	Projects included in the mid-term phasing are chronologically scaled beyond the short-term projects due to their complexity and cost. The amount of expenditures associated with mid-term projects are higher than short-term projects due to more intensive engineering, design, construction costs, and funding necessary to be implemented.	These projects can be considered as forecasted projects and require added resources prior to implementation. These projects require more attention in the engineering and design phases or include features with high unit costs.
ADA curb ramps, high visibility crosswalks, pavement markings, signage, RRFBs, striped bulb-outs	Sidewalk (with curb and gutter), curb extensions / bulb-outs	Roundabouts, median island reductions
Class II bike lane striping (where roadway width permits and does not require re-striping), Class II and Class III roadway signage	Class II bike lane striping and restriping (where roadway width permits, but requires re-striping and other roadway alterations)	Class I shared-use path (installation and associated features), Class IV protected bike lanes

PROJECT COST SUMMARY

Project costs are estimated to reflect actual cost of implementation as accurately as possible (based on 2020 dollars). As such, cost assumptions include considerations for design, construction management, storm water pollution prevention, mobilization, and traffic control. A more detailed cost breakdown for each corridor can be found in the Appendices.

While other project specific factors such as grading, acquisition costs, or landscaping may increase the actual cost of construction, an additional 30 percent contingency has been added to each project to account for these factors that may arise during the design phase.

As the City pursues funding for these projects, it should be noted that construction costs may fluctuate based on when funding becomes available and when the project is actually constructed.

Creative placemaking and active transportation programming costs will vary based on how strategies are implemented. As such, the desire to include non-infrastructure programs, temporary demonstrations, creative crosswalks, bike racks, and other potential components will increase actual project costs shown.

Table 6.2. Project Cost Summary

TYPE	CORRIDOR	~COST
Downtown Focus Corridors	Acacia Parkway	$1,142,000
	Nelson Street	$268,000
	Stanford Avenue	$473,000
	9th Street	$355,000
Primary Downtown Corridors	Euclid Street	$209,000
	Garden Grove Boulevard	$37,000
	Main Street	$153,000
Other Sidewalk Improvements	7th Street	$148,000
	8th Street	$70,000
	Grove Avenue	$130,000

FUNDING SOURCES

The following section presents potential federal, state, regional, and local funding sources that the City can seek for Plan implementation.

Funding opportunities are listed by source, agency, program name, and project eligibility, with a brief description for context. The City can consider applying for a variety of funding opportunities to implement both infrastructure and non-infrastructure recommendations.

Based on the project prioritization detailed in the previous section, the City could seek grant funding to design and construct the recommended Downtown Focus Corridors, using the rankings as a guide.

The City may also individually advance the implementation of other project treatments where there is interest, available funding, or potential of incorporation into an existing infrastructure improvement project or feasibility study.

Table 6.2. List of Funding Sources

SOURCE	AGENCY	PROGRAM	ELIGIBILITY	DESCRIPTION
Federal	Federal Highway Administration (FHWA)	Highway Safety Improvement Program (HSIP)	Infrastructure & Non-Infrastructure	The Highway Safety Improvement Program (HSIP) is a federal-aid program that was created from the FAST Act. The purpose of the program is to reduce fatalities and serious injuries on all public roads. In California, the HSIP funds are managed by the Division of Local Assistance (DLA). The City can apply for HSIP funds toward any public road or publicly owned bicycle or pedestrian pathway or trail in order to improve the safety for its users. Note: In the future HSIP Calls-for-Projects, a Local Roadway Safety Plan (or its equivalent such as Systemic Safety Analysis Report (SSAR) or Vision Zero Action Plan) will be preferred or required for an agency to be eligible to apply for federal HSIP funds: HSIP Cycle 10 (around April 2020): an LRSP (or its equivalent) will be highly recommended but not required for an agency to apply; HSIP Cycle 11 (around April 2022) and on: an LRSP (or its equivalent) will be required for an agency to be eligible to apply.
Federal	Housing and Urban Development (HUD)	Community Development Block Grant (CDBG)	Infrastructure & Non-Infrastructure	CDBG is a flexible program that provides communities with resources to address a wide range of unique community development needs. The federally-funding program is administered by the Department of Housing and Urban Development (HUD). On the local level, these funds are administered by the Riverside County Economic Development Agency (EDA) and can fund a range a projects including neighborhood revitalization, transportation services, public safety programs, flood and drainage facilities, water/sewer improvements, street improvements/sidewalks, etc.
State	California Department of Transportation (CALTRANS)	Community-Based Transportation Planning Grant (CBTP) Program	Non-Infrastructure	The Community-Based Transportation Planning grant program aims to engage the community in transportation and land use projects. Projects support concepts such as livable and sustainable communities with a transportation or mobility focus. They should also promote community identity and quality of life, as well as, provide transportation and land use benefits to communities.
State	California Department of Transportation (CALTRANS)	Active Transportation Program (ATP)	Infrastructure & Non-Infrastructure	The Active Transportation Program (ATP) was signed into legislation by Governor Brown in 2013. It consolidated existing federal and state transportation programs such as the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and Safe Routes to School (SR2S) into a single program. The Road Repair and Accountability Act of 2017 added approximately $100 million per year in available funds for the ATP. This ATP is supported with funding from the Surface Transportation Block Grant Program (STGB) administered by the FHWA. The program recently completed its fourth funding cycle.

SOURCE	AGENCY	PROGRAM	ELIGIBILITY	DESCRIPTION
State	California Office of Traffic Safety (OTS)	OTS Grants	Non-Infrastructure	The Office of Traffic Safety Grants seeks to reduce traffic deaths, injuries, and economic losses. The grants have ten areas of concentration; of these, projects identified in this Plan qualify for the following: 1. Pedestrian and Bicycle Safety 2. Police Traffic Services 3. Public Relations, Advertising, and Marketing Program 4. Roadway Safety and Traffic Records
State	California Natural Resources Agency	Urban Greening Grant Program	Infrastructure	"The Urban Greening Program receives its funding from revenue generated from the state's Cap and Trade program. The program is administered by the California Natural Resources Agency which has allocated $80 million to the program. Projects that are qualify for grants from the program are required to show net GHG benefits along with other benefits; additionally, they must include one of three project activities: 5. Sequester and store carbon by planting trees 6. Reduce building energy use by strategically planting trees to shade buildings 7. Reduce commute vehicle miles traveled by constructing bicycle paths, bicycle lanes or pedestrian facilities that provide safe routes for travel between residences, workplaces, commercial centers, and schools. "
State	California Department of Transportation (CALTRANS)	Environmental Enhancement and Mitigation (EEM) Program	Infrastructure	The Environmental Enhancement and Mitigation Program seeks to mitigate the environmental effects of transportation facilities. As provided by California Streets and Highways Code Section 164.56, the state legislature can allocate up to $7 million from the Highway Users Tax Account toward this program. One category for which funding is provided is the acquisition or enhancement of resource lands to mitigate the loss of, or the detriment to, resource lands lying within or near the right of way acquire for transportation improvements, including roadside recreational facilities,
State	California Department of Transportation (CALTRANS)	Sustainable Communities	Non-Infrastructure	Sustainable Communities grants are intended to encourage local and regional multi-modal transportation and land use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategy, where applicable. Successful projects will also contribute to the State's greenhouse gas reduction targets, employ the goals and best practices cited in the 2017 RTP Guidelines, and address the needs of disadvantaged communities. An estimated $17 million in competitive grants is available for the FY 2019-20 grant cycle. The program requires a 11.47% local match. Grants are available in amounts ranging from a minimum of $100,000 ($50,000 for disadvantaged communities) to a maximum of $1,000,000 (MPOs may only apply with sub-applicants for the competitive grants).

SOURCE	AGENCY	PROGRAM	ELIGIBILITY	DESCRIPTION
State	California Department of Transportation (CALTRANS)	Strategic Partnerships	Non-Infrastructure	Strategic Partnerships grants are intended to identify and address statewide, interregional, or regional transportation deficiencies on the State highway system in partnership with Caltrans. Successful Strategic Partnerships will strengthen government-to-governments relationships and result in programmed improvements. A total of $4.5 million in competitive grants is available for the FY 2019-20 grant cycle. Example project types include corridor studies, and corridor preservation studies, studies that identify interregional, inter-county, and/or statewide mobility and access needs, and projects that evaluate accessibility and connectivity of the multi-modal transportation network.
Regional / Local	Southern California Association of Governments (SCAG)	Sustainable Planning Grant	Non-Infrastructure	The Sustainability Planning Grant Program (formerly known as the Compass Blueprint Grant Program) provides technical support to members in SCAG's jurisdictions. Grants can be used toward planning and policy efforts that allow for the implementation of the regional RTP/SCS. Grants in the program falls into three categories: 8. Integrated Land Use – Sustainable Land Use Planning, Transit Oriented Development (TOD) and Land Use & Transportation Integration 9. Active Transportation – Bicycle, Pedestrian and Safe Routes to School Plans 10. Green Region – Natural Resource Plans, Climate Action Plans (CAPs) and Green House Gas (GHG) Reduction programs
Regional / Local	Safe Routes to School National Partnership	Safe Routes to Parks Activating Communities	Non-Infrastructure	The Safe Routes to Parks Activating Communities program provides tailored technical assistance for seven communities to develop Safe Routes to Parks action plans and awards $12,500 to each community to begin implementation of those plans. Awarded communities' action plans will address each stage of the Safe Routes to Parks Action Framework and provide clear steps to improve local park access for people walking, biking, and rolling.

[This page is intentionally left blank]

ACTIVE downtown G