

# ACTIVE STREETS

# GARDEN GROVE ACTIVE STREETS MASTER PLAN

*Transforming Transportation for a Healthy and Vibrant Future*



# ACKNOWLEDGEMENTS

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*The Plan was funded by a Sustainability Planning Grant from the Southern California Association of Governments (SCAG).*





## CITY OF GARDEN GROVE

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Dear Stakeholder,

After years of setting the various pieces in motion towards becoming a more active, safer, healthier, revitalized and better connected community, the City of Garden Grove is thrilled to be rolling out its very first ever bicycle and pedestrian master plan.

From the application of mixed use zoning overlays, to the programming of community events geared to get people out of their cars, to interactions with regional transportation agencies about cleaning up blighted and underutilized rail corridors, it has been a truly collaborative exercise getting to this point. Many hands have touched the crafting of this plan, which will be used to promote the city's ongoing desire to Re:Imagine itself and carve out a fresh new identity within Orange County.

The Garden Grove Active Streets Plan will serve as a working document to help foster shared vision for planning purposes. It will also become a valuable tool in our continued pursuit of grant funding opportunities to help implement the construction of bikeway and pedestrian improvements over the next two decades.

Thank you for taking the time to peruse the following pages and I encourage you to be active involved in reshaping our City's future!

Sincerely,

Mayor Steve Jones



*Pedestrians and bicyclists are an “indicator species” of healthy communities. Their presence helps to enliven streets and make communities more viable.*



## EXECUTIVE SUMMARY

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In 2015, the City released *Re:Imagine Garden Grove*, a program focused on active transportation, open space, and revitalization in Garden Grove. The Active Streets Plan continues to build upon these efforts to transform Garden Grove into a city known for its walk and bike-friendliness and as an active, healthy, and prosperous place to live, work, and play.

The plan summarizes the planning process and describes the biking and walking conditions in Garden Grove today. It recommends policy's and tools for the City and its partners to use in implementing programs and infrastructure improvements, and provides implementation strategies to create better connectivity throughout Garden Grove and to the surrounding region.

### BIKING & WALKING IN GARDEN GROVE TODAY

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**Chapter I:  
INTRODUCTION & GOALS**

**Chapter II:  
EXISTING CONDITIONS**

**Chapter III:  
NEEDS ANALYSIS**

### RECOMMENDATIONS TO IMPROVE BIKING & WALKING

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**Chapter IV:  
POLICY RECOMMENDATIONS**

**Chapter V:  
NETWORK RECOMMENDATIONS**

**Chapter VI:  
POLICY RECOMMENDATIONS**

### IMPLEMENTATION

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**Chapter VII:  
IMPLEMENTATION PLAN**

**Chapter VIII:  
PE ROW TRAIL &  
BIKEWAY IDENTITY**

## THE PLAN'S VISION

The City of Garden Grove is a community where people of all ages and abilities easily, comfortably, and safely walk, ride a bicycle, or use other non-motorized wheeled devices to access jobs, schools, public transit, recreation facilities, shopping, and other destinations as a part of daily life.

## THE PLAN'S GOALS

**Goal 1: MOBILITY AND ACCESS** Increase and improve pedestrian and bicycle access to employment centers, schools, transit, recreation facilities, and other community destinations across the City of Garden Grove for people of all ages and abilities.

**Goal 2: SAFETY** Improve safety for active transportation users through the design and maintenance of sidewalks, streets, intersections, and other roadway improvements such as signage, lighting, and landscaping, as well as best practice non-infrastructure programs to enhance and improve the overall safety of people walking and bicycling.

**Goal 3: INFRASTRUCTURE AND SUPPORT FACILITIES** Maintain and improve the quality, operation, and integrity of the pedestrian and bicycle network infrastructure that allows for convenient and direct connections throughout Garden Grove. Increase the number of high quality support facilities to complement the network, and create public pedestrian and bicycle environments that are attractive, functional, and accessible to all people.

### Goal 4: NON-INFRASTRUCTURE PROGRAMS

Increase awareness of the value of pedestrian and bicycle travel for commute and non-commute trips through encouragement, education, enforcement, and evaluation programs that support walking and bicycling.

**Goal 5: EQUITY** Improve accessibility for all people walking and bicycling through equity in public engagement, service delivery, and capital investments.

**Goal 6: IMPLEMENTATION** Implement the Active Streets Master Plan over the next 20 years.

*See Chapter I: Introduction & Goals and Chapter IV: Policy Recommendations for objectives and policies to achieve the plan's goals.*



## KEY PROJECT THEMES AND PLAN PRIORITIES

Based on the evaluation of Garden Grove’s safety, infrastructure, and user needs, six key project themes and plan priorities have been developed and are highlighted in this executive summary.

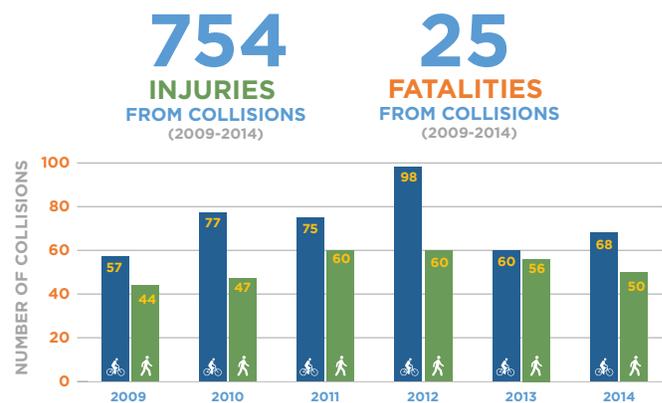


### IMPROVE CYCLING AND PEDESTRIAN SAFETY

Garden Grove’s collision history reveals a need to improve safety for people riding bicycles and people walking. The plan recommends policy updates, infrastructure improvements and programs that can work together to improve safety.

## COLLISIONS

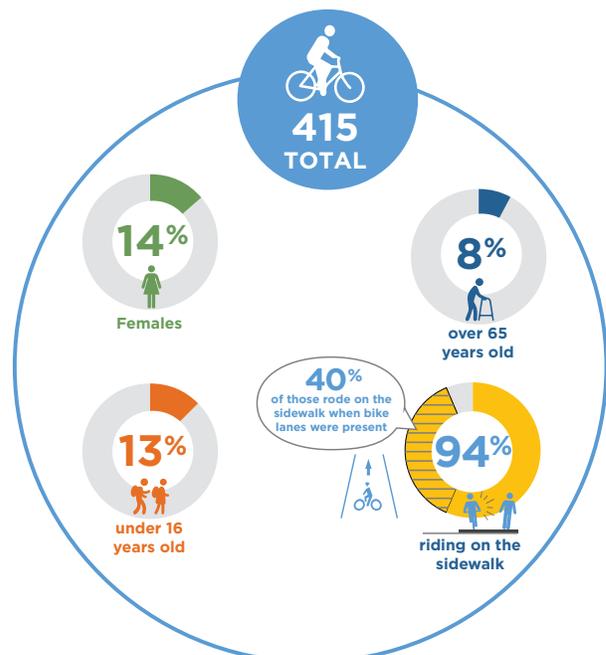
The *Active Streets Master Plan* reviews collision data to identify safety concerns. Between 2009 and 2014, 754 collisions were reported in Garden Grove that involved a bicyclist or a pedestrian. Of these, 20 pedestrians and five bicyclists died as a result of a collision. These results indicate a need to improve safety for people riding bicycles or walking.



## COUNTS

Bicycle and pedestrian counts were conducted at nine locations across the city to document how many people are biking and walking today or on an average day. Of the 415 bicyclists counted, 389 were traveling on the sidewalk, against the flow of traffic. Forty percent of the persons riding on the sidewalk were traveling along a roadway with bike lanes present. 1,652 pedestrians, skateboarders, and persons using a scooter or mobility device were counted during the specified periods.

Riding a bicycle on a sidewalk is a relatively common (and generally unsafe) activity in Garden Grove. Making safer spaces for bicyclists on the road can reduce the incidents of sidewalk-bicycle riding and create safer conditions for all users.



*i* See Chapter II: Existing Conditions



## CONSIDER BROADER BENEFITS OF ACTIVE TRANSPORTATION

There is strong interest in investing in active transportation as a community development tool (targeting under-served areas), as a means of promoting health and wellness, and as an economic development tool (better connecting people to commercial and retail destinations and increasing quality of life and tourism opportunities).

### COMMUNITY ENGAGEMENT

The public outreach process included five major components including an Open Streets event, two community workshops, a Community Advisory Committee, and a project website with interactive online map and online survey. The major themes and community priorities identified through these outreach processes support the broader benefits of active transportation including:

- Provide sustainable, alternative transportation options for the City
- Enhance the regional bikeway network
- Promote quality pedestrian facilities for transportation and recreation

### DEMAND & EQUITY

A demand analysis was conducted to help define citywide variation in bicycle and pedestrian demand. An equity analysis examined the existing distribution of bicycle facilities compared to the distribution of underserved populations. Demand and equity were used to help develop an active streets network that serves all areas of Garden Grove. These factors were also considered during project prioritization to help address needs in high-demand, underserved areas of Garden Grove.

 See Chapter III: Needs Analysis

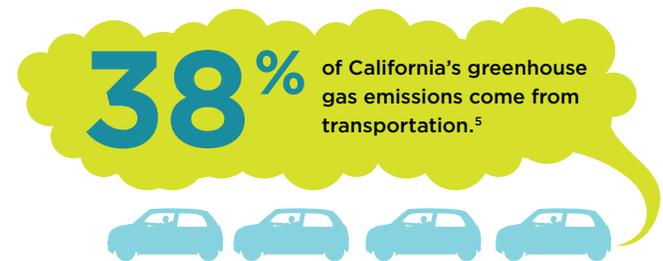
### WHY WALK & BIKE?

for **HEALTH**

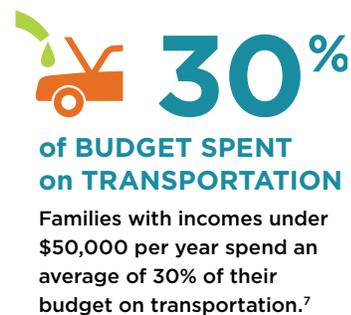
Nearly  
**1 in 4**  
Adults in the  
Orange County  
are **OBESE**.<sup>2</sup>



for **THE ENVIRONMENT**



for **EQUITY**





## ENHANCE EXISTING BIKEWAYS

Garden Grove has an opportunity to leverage its overall biking network and better connect city residents, visitors, and commuters by closing gaps and enhancing its existing bikeways.

## BICYCLE NETWORK RECOMMENDATIONS

The recommended bicycle network is made up of off-road shared-use paths, bicycle lanes (including buffered and separated facilities), signed bicycle routes, and neighborhood greenways. A variety of on- and off-street bicycle facilities are recommended to accommodate 1) the range of abilities and comfort levels of bicyclists; 2) the range of conditions for bicycling on different roadway environments; and 3) local preferences identified through the public input process.

In total, the plan recommends 55.3 miles of new bicycle facilities, as well as 9.3 miles of updated existing facilities. The plan also recommends 20.4 miles of Complete Streets and Separated Bikeway study corridors. The estimated construction costs for new bikeways and trails is approximately \$18.2 Million.

 See Chapter V: Network Recommendations

## IMPLEMENTATION

Recommended projects were prioritized using feedback from City staff and the Community Advisory Committee as well as input from the community. Outreach at public events, like Garden Grove's 60th Anniversary Diamond Jubilee, supports the results of the prioritized projects. Priority projects are listed to the right.

 See Chapter VII: Implementation

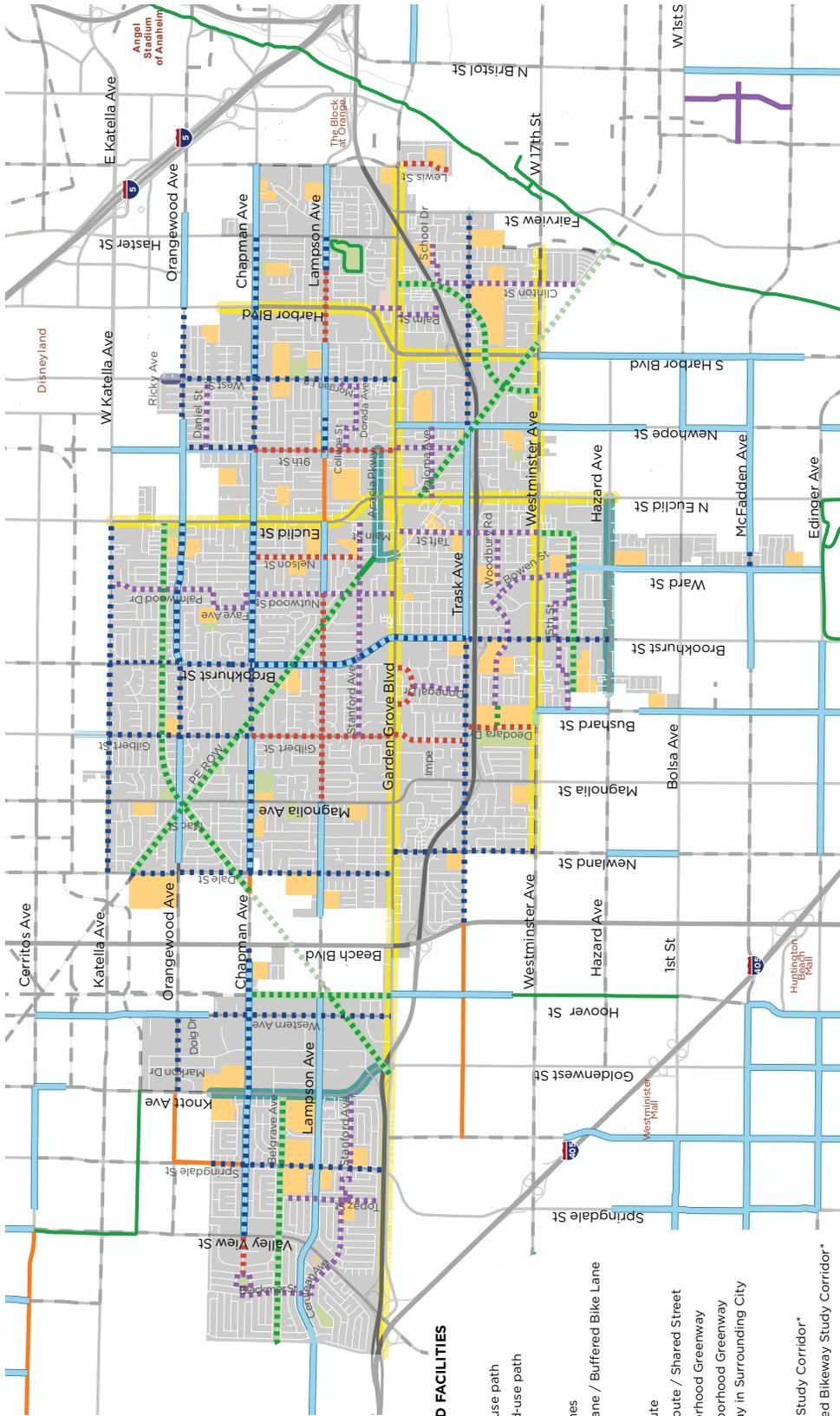
**55**  
MILES   
of new bicycle facilities

**10**  
MILES   
of updated existing bicycle facilities

**20**  
MILES   
of Complete Streets and Separated Bikeway study corridors

## PRIORITY PROJECTS

- Pacific Electric Right-of-Way (PE ROW) Trail
- Early Action Projects including West Street Road Rebalancing
- Westside Neighborhood Greenway
- Garden Grove Boulevard Complete Street Study
- Downtown Active transportation Improvements
- Safe Routes to School plan



**EXISTING & PROPOSED FACILITIES**

- Class I**
  - Existing Shared-use path
  - Proposed Shared-use path
- Class II**
  - Existing Bike Lanes
  - Proposed Bike Lane / Buffered Bike Lane
- Class III**
  - Existing Bike Route
  - Proposed Bike Route / Shared Street
  - Existing Neighborhood Greenway
  - Proposed Neighborhood Greenway
  - Proposed Bikeway in Surrounding City
- STUDY CORRIDORS**
  - Complete Street Study Corridor\*
  - Class IV Separated Bikeway Study Corridor\*
  - Class II Bike Lane Study Corridor\*

**PROPOSED BIKE FACILITY NETWORK**

Garden Grove Active Streets Master Plan

**LAND USE**

- Schools
- \* Additional study needed to determine feasibility and design.



## IMPROVE PEDESTRIAN CROSSINGS

Many existing pedestrian crossings do not convey information on when and where to cross or have deficient signal timing that leads to long wait times for pedestrians. Wide crossings also leave pedestrians at higher risk for crashes.

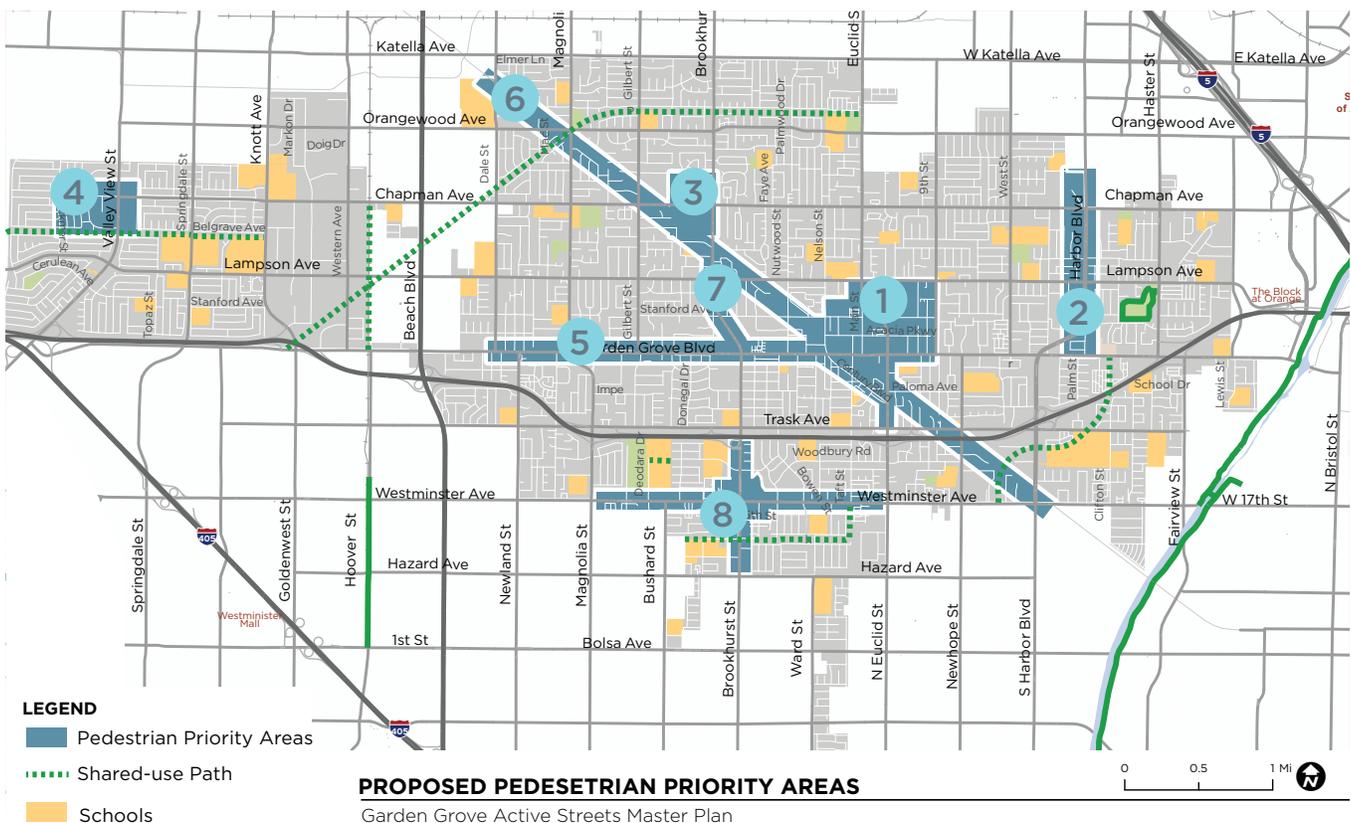
## PEDESTRIAN RECOMMENDATIONS

The pedestrian network should accommodate people with a variety of needs, abilities, and possible impairments. The recommendations in this plan will help improve pedestrian access and comfort and fall into three categories: sidewalks, crossings and intersections, and traffic signals and warning beacons. See Chapter V: Network Recommendations

## PEDESTRIAN PRIORITIES

- Close sidewalk gaps in school zones
- Improve uncontrolled crossings
- Improve pedestrian signal timing
- Improve pedestrian lighting
- Plant shade trees

The top implementation priorities for pedestrian facilities are shown to the right. The plan also identifies pedestrian priority areas and corridors, as shown below. See Chapter VII: Implementation





## LEVERAGE SUPPORT AND MOTIVATION FROM PROJECT CHAMPIONS

Support for safe and active transportation options is a concept that everyone can get behind, but it will take the actions of a few key community champions to lead the way. Those with active interests in making safe connections for walking and biking within Garden Grove, such as the Parent Teacher Association, local advocates, and high school students, can help maintain project momentum and advance community conversations recognizing the benefits to the economy, safety, and physical and mental health that is associated with increased walking and biking.

## COMMUNITY ENGAGEMENT

The public outreach process included five major components:

- Community Advisory Committee meetings
- Community workshop #1 and Open Street event (October 2015)
- Project website and social media presence
- Interactive online map (hosted on project website) and online survey
- Community workshop #2 at the Garden Grove Diamond Jubilee to present the Draft Plan and collect input on priority projects (June 2016)

*i See Chapter III: Needs Analysis*

## PROGRAMS

Programs, such as Open Street events, are a great way to keep community members engaged. The plan recommends continuing existing programs and implementing new programs related to bicycling and walking. Further, it offers a plan for how to prioritize programs, which are broken out into Education, Encouragement, Enforcement, and Evaluation.

*i See Chapter VI: Program Recommendations*



*The plan was well supported by the Garden Grove community*



*Adults and children enjoying Garden Grove's Open Streets event (2015)*



## CREATE AN URBAN GREENWAY ALONG THE PACIFIC ELECTRIC RIGHT-OF-WAY (PE ROW)

Garden Grove is already working to create a brand that builds upon the City's desire to be a community that is healthy and active. Improving the PE ROW trail infrastructure can directly support this effort and change how people experience the city on bike and on foot, while increasing demand for similar facilities that more effectively connect residents and visitors.

### PACIFIC ELECTRIC RIGHT-OF-WAY TRAIL

Rail service along the PE ROW has been discontinued since 1950. Development of an urban greenway along this 100 foot wide corridor will be catalytic project in Garden Grove, creating a diagonal active transportation, recreational and ecological spine through the heart of the city. The City installed a pilot trail segment of the PE ROW trail between Nelson and Nutwood Streets and is actively pursuing the next steps of trail development.



*Conceptual rendering of the PE ROW Trail crossing at Gilbert Street*

### IDENTITY

In keeping with the City of Garden Grove's goal of becoming a community that is healthy, engaged, economically vibrant, family-oriented, and safe, the bikeway and trails vision seeks to keep this identity throughout, with attention to the character of individual neighborhoods.



Two themes to articulate the "Gardens and Groves" identity have been developed based on public outreach and feedback from City Staff. The two themes are natural (left) and vivid (right). These themes serve as options for the City to finalize an identity for the trail and bikeway system.

**i** See Chapter VIII: PE ROW Trail and Bikeways Identity

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*Garden Grove's street network provides connectivity for pedestrians and transit users.*



# I. INTRODUCTION & GOALS

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*The Garden Grove lifestyle is all about the culture, character, and communities that thrive in our city. The open streets event amplifies those elements to achieve a downtown 'urban cool' using creative alternatives, such as biking and walking, to feel better, live better, and enjoy what we love about Garden Grove.*

*-- Mayor (2014-2016) Bao Nguyen*

## Introduction

The City of Garden Grove developed this Active Streets Master Plan to propel its overarching goal of becoming **a community that is healthy, engaged, economically vibrant, family-oriented, and safe**. The Plan is to be used as a tool for implementing infrastructure improvements for better connectivity throughout Garden Grove to surrounding cities and the region that will provide safe and comfortable walking and biking linkages. These linkages will create better connectivity throughout Garden Grove and to the surrounding region.

The project team, consisting of city representatives, implementation partners such as the Southern California Association of Governments (SCAG), and consultants Alta Planning + Design, Community Arts Resources (CARs), and Iteris, began the planning process in Summer 2015. Building off of the momentum and data received from the City's previous planning effort *Re:Imagine Garden Grove: Community in Motion*, the project team familiarized themselves with local factors influencing biking and walking conditions. The project team utilized these findings in developing a long-term vision for biking in Garden Grove and setting priorities to help the city in achieving this vision. **This document summarizes the planning process and findings from this effort, and provides tools for the city and its partners to use in implementing the long-term vision presented herein.**

## Project Purpose

The *Active Streets Master Plan* will engage residents and visitors of Garden Grove toward **healthier and more sustainable living** through the development of a comprehensive pedestrian and biking network that provides **safe and comfortable access** to local parks, schools, workplaces, shopping, and dining, as well as to destinations in other Orange County communities.

**Garden Grove, however, faces some barriers to active transportation that can be addressed**, such as wide roadways with fast-moving traffic, freeway interchanges, and busy arterials. Many roadways in the city are classified as major, primary, or secondary highways with high traffic volumes and speeds. Garden Grove's existing bicycle network helps to integrate biking into the roadway system but opportunities exist for enhancing the user's experience. Many of the bicycle lanes are narrow or are not well-delineated. Research suggests that this can greatly affect people's perception of the safety and comfort of a facility, which in turn contributes to their travel behavior and mode choices. Additionally, when collisions occur, people who walk or bike are much more likely to suffer severe or fatal injuries when speeds are higher. Streets with higher speeds also tend to be wider and accommodate more lanes, thereby increasing the time, distance, and conflicts encountered by pedestrians crossing



*Pedestrians going for a leisurely stroll along Euclid Street*

the street. Long distances between signalized crossings can also be a challenge for pedestrians, by limiting their visibility and opportunities to cross the street at locations that feel comfortable. These barriers must be overcome to make Garden Grove a community where biking and walking are inviting, safe, and attractive transportation choices for people of all ages and abilities.

Garden Grove's residents and visitors, even those who choose not to walk or bicycle, could greatly benefit from the improvements recommended within this plan. **California and Orange County are some of the lowest-ranking areas in the nation in-terms of public health** (in 2013, the Orange County Health Profile determined that one in four adults in Orange County are obese). Lower ranking public health leads to higher health care costs and poorer workforce productivity, placing this added burden directly on taxpayers. One of the leading contributors to poor public health is adult obesity and physical inactivity. **A key strategy to fighting obesity and inactivity is to create a better physical environment that encourages walking and biking.** This has been shown to have substantial impacts with relatively limited public investment.

In addition, the City of Garden Grove has some deeply impoverished areas. Some census block groups in Garden Grove are characterized by having over 40 percent of its residents living below the poverty line, and over 30 percent of households without access to a motor vehicle. **Improving the public realm for walking and biking are proven, cost-effective ways to help those with financial difficulties** become financially independent and access essential services, good jobs, and healthy food sources. Providing people the opportunity for financial independence benefits the well-being and prosperity of not only those in need, but the entire community. The City sought funding through



the Southern California Council of Governments (SCAG) as a tool to help “make our city healthier and more attractive for people of all ages, especially young people.” The City realizes the substantial, positive impact that reduced reliance on personal automobiles would have citywide.

**This plan continues to build upon recent efforts to transform Garden Grove into a city known for its walk and bicycle-friendliness and as an active, healthy, and prosperous place to live, work, and play.** The *Community in Motion* plan developed by the California State Polytechnic Institute 606 Studio and the Re:Imagine Downtown Open Streets event are two catalytic projects that engaged the community and gathered support and momentum to improve the city’s active transportation network. Additionally, the pilot segment of the Pacific Electric Right-of-Way (PE ROW) Trail has been well-received, and residents are asking for it to be extended as soon as possible. Building upon this momentum, the City is looking to develop an innovative, thoughtful and inspiring Active Streets Master Plan.

Through engaging the community in a multi-faceted, interactive outreach approach, including a second Open Streets event, this project is an opportunity to educate the community on

possible improvements to biking and walking. These outreach strategies will also help gauge the community’s commitment level to active transportation facilities, increase awareness and promote mutual respect between road users, and identify current bicycle and pedestrian network deficiencies and safety issues. The resulting plan will reflect the community’s input and recommend a comprehensive active transportation network and safety improvements, as well as establish policies and programs to help implement the plan.



Cover of the Mobility Plan and Citywide Non-Motorized Network developed by Cal Poly’s 606 Studio



View of the Pacific Electric Right-of-Way Trail in Garden Grove

## Benefits of Active Transportation

Improved active transportation and recreation can have a positive impact on the acute health, safety, and economic issues that many cities like Garden Grove face today. The following section summarizes the estimated, quantified benefits that would result from increasing walking and biking rates and safety in Garden Grove. These benefits offer a powerful statement regarding Garden Grove's return on investment for implementing the recommendations in this plan.

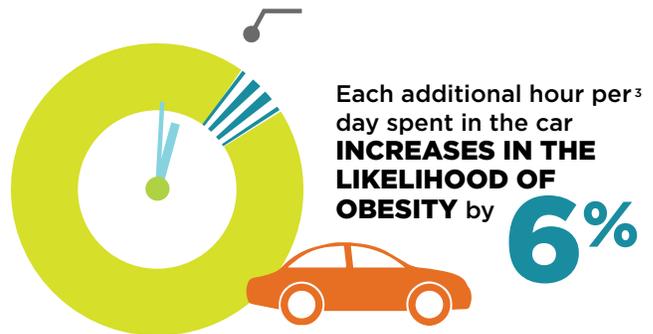
### HEALTH

**60**  
MINUTES



Children and adolescents should have 60 minutes (1 hour) or more of physical activity daily.<sup>1</sup>

Nearly  
**1 in 4**  
Adults in the Orange County are **OBESSE**.<sup>2</sup>



### ENVIRONMENT

In 2011, 56 billion gallons of CO<sub>2</sub> were produced during congestion in U.S. urban areas.<sup>4</sup>



**38%**

of California's greenhouse gas emissions come from transportation.<sup>5</sup>



Increasing a neighborhood's walkability by 5% can result in:

**5.5%** fewer grams of volatile organic compounds (VOCs)

**5.6%** fewer grams of Nitrogen oxide (NOx)<sup>6</sup>

### EQUITY

**30%**  
of BUDGET SPENT  
on TRANSPORTATION

Families with incomes under \$50,000 per year spend an average of 30% of their budget on transportation.<sup>7</sup>

### FATALITY RATE

**30%** HIGHER FOR HISPANIC BICYCLISTS

**23%** HIGHER FOR AFRICAN-AMERICAN BICYCLISTS

The fatality rate for bicyclists is 23% higher for Hispanic than white bicyclists and 30% higher for African American than white bicyclists.<sup>8</sup>

1. Centers for Disease Control. [www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm](http://www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm).

2. Orange County Health Profile (2013). <https://www.cdph.ca.gov/data/informatics/Documents/OC%20Health%20Profile%20FINAL%202013-12-12.pdf>

3. Southern California Association of Governments (SCAG), 2012. Regional Transportation Plan Sustainable Communities Strategy (p.30)

4. Schrank, D., Eisele, B., and Lomax, T. (2012). 2012 TTI's Urban Mobility Report.

5. <http://www.arb.ca.gov/cc/inventory/data/graph/graph.htm>

6. Frank et al., 2006. Many Pathways from Land Use to Health: Associations between Neighborhood Walkability and Active Transportation, Body Mass Index, and Air Quality. Journal of the American Planning Association #3.

7. League of American Bicyclists. "The New Majority: Pedaling Towards Equity." [http://bikeleague.org/sites/default/files/equity\\_report.pdf](http://bikeleague.org/sites/default/files/equity_report.pdf)

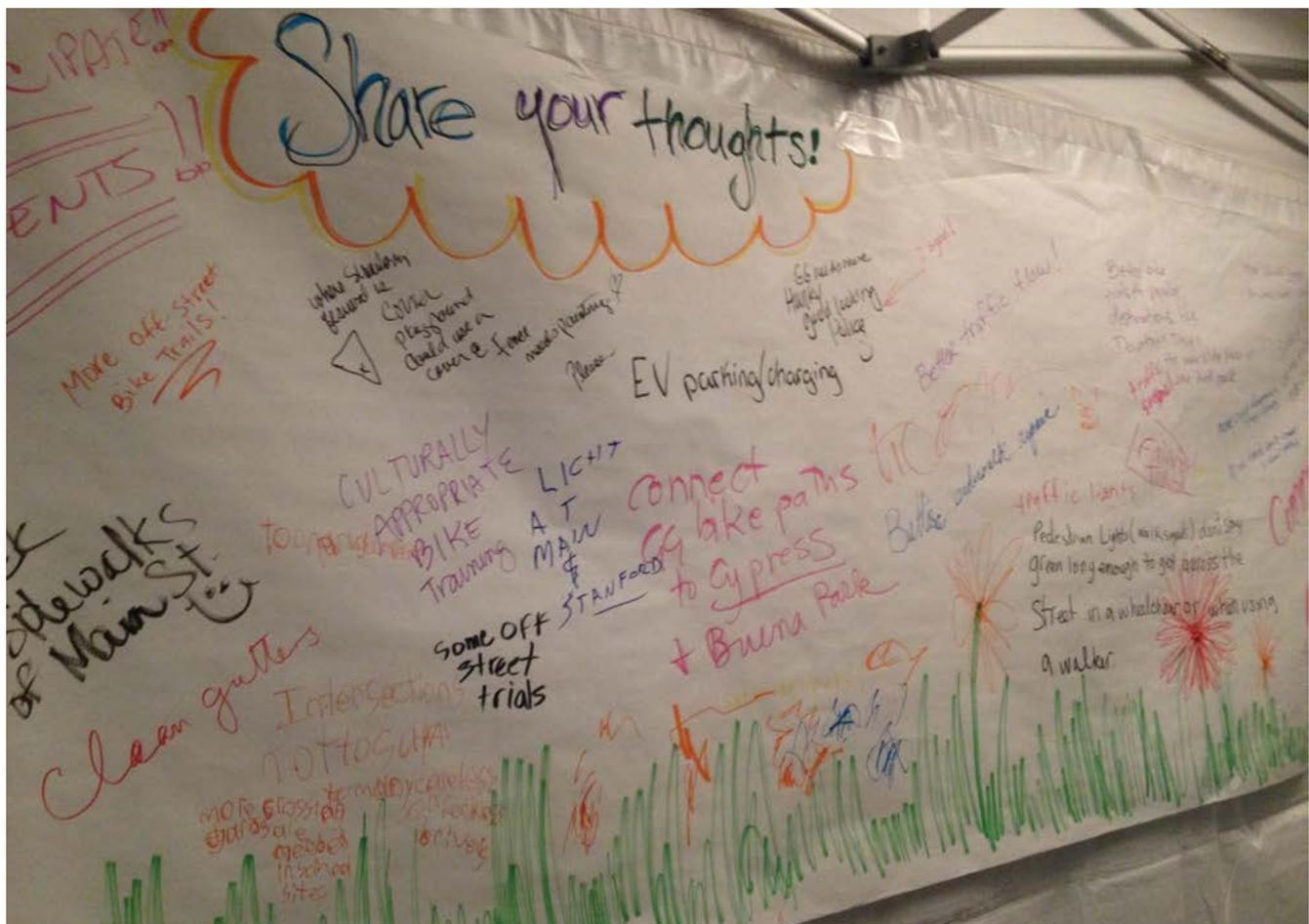
8. Center for Disease Control. <http://safety.fhwa.do>



## Vision

*The City of Garden Grove is a community where people of all ages and abilities easily, comfortably, and safely walk, ride a bicycle, or use other non-motorized wheeled devices to access jobs, schools, public transit, recreation facilities, shopping, and other destinations as a part of daily life.*

The City of Garden Grove will provide and promote pedestrian- and bicycle- friendly environments including streets, sidewalks, and pathways that are attractive, convenient, and safe for active transportation modes. The City will also implement policies and programs to educate and encourage residents and visitors to use a variety of transportation choices as they travel throughout Garden Grove.



Word cloud of thoughts shared by attendees during the Garden Grove Open Streets event

## Goals

This plan has a number of goals that reflect the plan’s vision and guide the policy recommendations outlined in Chapter IV, network recommendations in Chapter V, and program recommendations outlined in Chapter VI. The following goals are consistent with and support the Garden Grove General Plan 2030.



### MOBILITY & ACCESS

**Increase and improve pedestrian and bicycle access to employment centers, schools, transit, recreation facilities, and other community destinations across the City of Garden Grove for people of all ages and abilities.**



### SAFETY

**Improve safety for active transportation users through the design and maintenance of sidewalks, streets, intersections, and other roadway improvements such as signage, lighting, and landscaping; as well as best practice non-infrastructure programs to enhance and improve the overall safety of people walking and biking.**



### INFRASTRUCTURE AND SUPPORT FACILITIES

**Maintain and improve the quality, operation, and integrity of the pedestrian and bicycle network infrastructure that allows for convenient and direct connections throughout Garden Grove. Increase the number of high quality support facilities to complement the network, and create public pedestrian and bicycle environments that are attractive, functional, and accessible to all people.**



### NON-INFRASTRUCTURE PROGRAMS

**Increase awareness of the value of pedestrian and bicycle travel for commute and non-commute trips through encouragement, education, enforcement, and evaluation programs that support walking and biking.**



### EQUITY

**Improve accessibility for all people walking and biking through equity in public engagement, service delivery, and capital investments.**



### IMPLEMENTATION

**Implement the Active Streets Master Plan over the next 20 years.**





*Downtown Garden Grove is a commercially-rich district with opportunities to enhance facilities for people walking and biking.*



## II. EXISTING CONDITIONS

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*Open streets events are a great way to show the potential of bicycles as an avid form of transportation. The concept fits right into the vision of OCTA to advance transportation and grow interconnecting bikeways county wide.*

*-- Janet Nguyen, Orange County Supervisor and OCTA Board of Directors*

This chapter provides an overview of the major components of the City of Garden Grove's existing environment for walking and biking. **It includes an assessment of the primary opportunities and constraints that exist for development of a safe and connected bicycle and pedestrian network.** The assessment is based on the project team's review of existing plans, field observations, and GIS-based mapping analysis.

This chapter includes:

- Plan Review
- Results of Data Collection
- Analysis of Opportunities and Constraints

## Plan Review

The goals and recommendations presented in this plan are intended to affirm the objectives established in the Garden Grove General Plan - the city's 2030 comprehensive plan adopted in 2008. The plan states, "Garden Grove will be a community that is safe, economically sound, family-oriented, diverse, well-maintained, informed, and well-administered, and offers a high quality-of-life."

A number of recent planning efforts in Garden Grove have provided the blueprint for the Active Streets Master Plan. As part of the plan, the project team performed a thorough review of bicycle and pedestrian planning-related efforts in the City of Garden Grove, as well as relevant regional, state, and federal plans. The 11 planning documents reviewed for this plan are listed in Table 2-1 and described in more detail in Appendix A.

The City and other local and regional agencies are aware of the importance of bicycle and pedestrian facilities, as shown in the many goals, policies, implementation programs, and recommendations in the following planning documents. Key recommendations include providing sustainable, alternative transportation options for the city and region; enhancing the regional bikeway network; and promoting quality pedestrian facilities for transportation and recreation.

Table 2-1: Relevant Bicycle and Pedestrian Planning Documents Reviewed

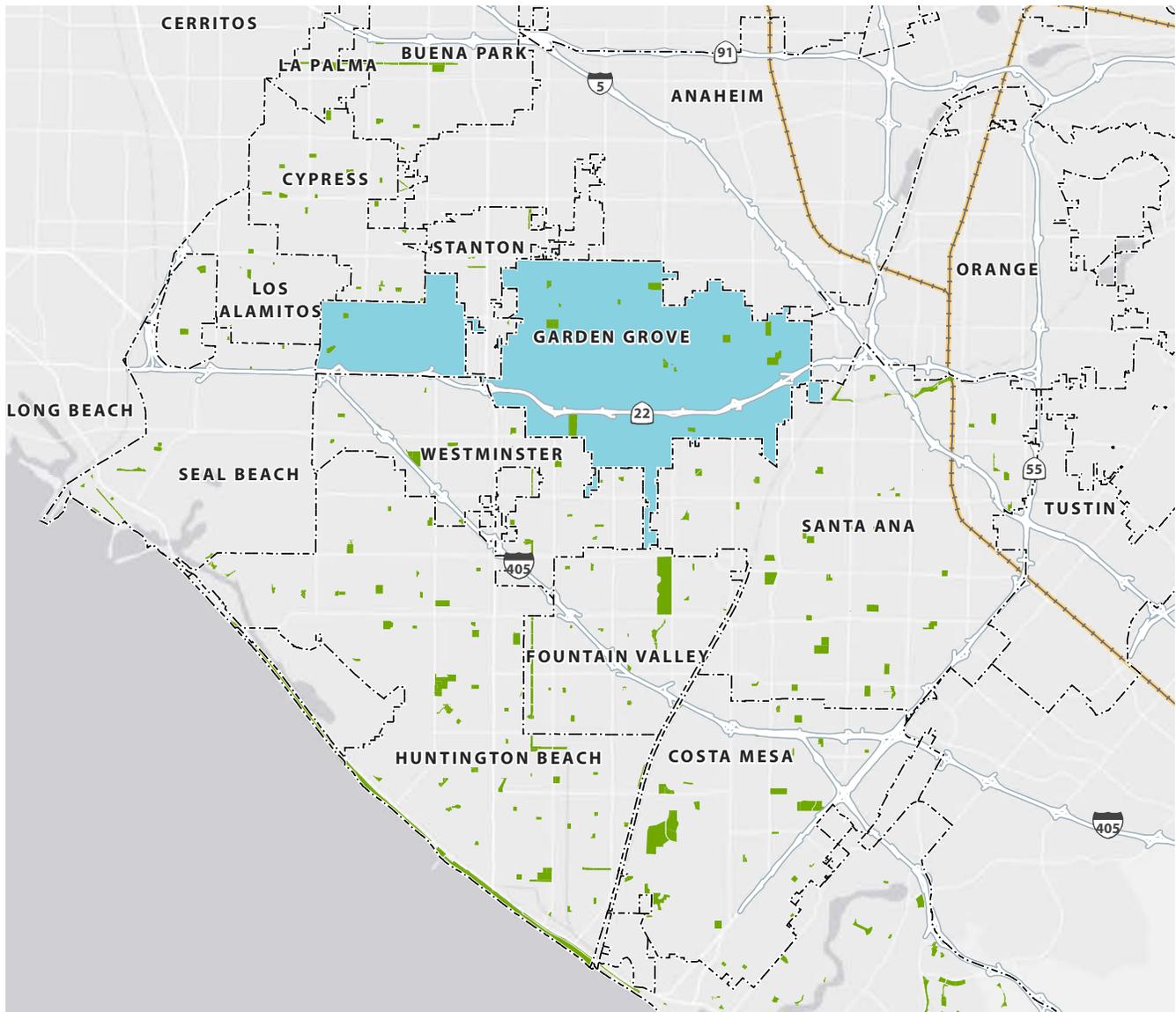
Plan	Agency	Year
Harbor Corridor Specific Plan	City of Garden Grove	1985
Community Center Specific Plan	City of Garden Grove	1985
Brookhurst/Chapman Specific Plan	City of Garden Grove	1988
City of Garden Grove General Plan 2030	City of Garden Grove	2008
OCTA Commuter Bikeways Strategic Plan	Orange County Transportation Authority (OCTA)	2009
Outlook 2035: OCTA Long Range Transportation Plan	Orange County Transportation Authority (OCTA)	2010
Nonmotorized Metrolink Accessibility Strategy	Orange County Transportation Authority (OCTA)	2013
SCAG Regional Transportation Plan/Sustainable Communities Strategy	Southern California Association of Governments (SCAG)	2012
OCTA Districts 1 and 2 Bikeways Strategy	Orange County Transportation Authority (OCTA)	2013
OCTA Streetcar	Orange County Transportation Authority (OCTA)	2015
<i>Community in Motion</i> study	California State Polytechnic University, Pomona Department of Landscape Architecture Studio 606	2015



## Project Context

The City of Garden Grove is located south of Los Angeles in the northwest portion of Orange County, California. This diverse, residential community is home to approximately 175,078 residents (ACS, 2014), making it the fifth largest city in Orange County. The city's linear layout is in a grid-system that runs north to south (approximately 5.86 miles) and east to west (approximately 10.25 miles). Its proximity to local and regional attractors such as Disneyland, Knotts Berry Farm, and local beaches make it an ideal tourist destination. The city can be easily accessed by Interstate 405, Interstate 5, and State Highway 22 (also known as Garden Grove Freeway) - all of which provide local and regional connections to the surrounding communities of Anaheim, Orange, Santa Ana, Westminster, and Cypress. While rail service can only be accessed from the neighboring cities of Anaheim or Santa Ana, bus service is provided throughout Garden Grove by the Orange County Transit Authority (OCTA).

Figure 2-1: Garden Grove context map in Orange County



**EXISTING BICYCLE INFRASTRUCTURE**

A first step in evaluating the city's bicycling environment was mapping the existing facilities as noted in the map in Figure 2-2.

The City of Garden Grove's bicycle network has approximately 21.3 miles of existing bikeway facilities as noted in Table 2-2. This includes 0.9 miles of off-road bicycle facilities (shared-use paths), 19.3 miles of designated on-road bicycle lanes, and 1.1 miles of designated bicycle routes. Gaps within the existing bike lane network are highlighted in red in Figure 2-2. Spot gaps occur along existing segments where the bike lane striping is intermittent and not continuous. Segment gaps occur between blocks.

Bicycle parking can be found in select locations throughout the city's downtown.

**REGIONAL ACTIVE TRANSPORTATION EFFORTS**

There are a number of regional bikeway corridors, as identified in the OCTA Districts 1 & 2 Bikeways Strategy, that run through Garden Grove (see Figure 2-33). Out of the eleven priority corridors identified, five of these fall within Garden Grove. If these corridors were to be implemented, the bikeways could provide vital connections for Garden Grove residents to major activity areas such as employment centers, transit stations, colleges, and universities.

**LOCAL ACTIVITY CENTERS**

The Active Streets Plan aims to connect people to activity centers, such as commercial corridors. Major commercial areas that people want to get to in Garden Grove include; Garden Grove Boulevard, Harbor Boulevard, (south of Garden Grove Boulevard), Brookhurst Street, Valley View Street, and Westminster Boulevard.

Table 2-2: Existing Bikeway Facilities

Facility Type	Miles
Class III Bicycle Routes	1.1
Class II Bicycle Lanes	19.3
Class I Shared-Use Path	0.9
<b>Total Mileage</b>	<b>21.3</b>

Figure 2-2: Network gaps along existing bikeways in Garden Grove

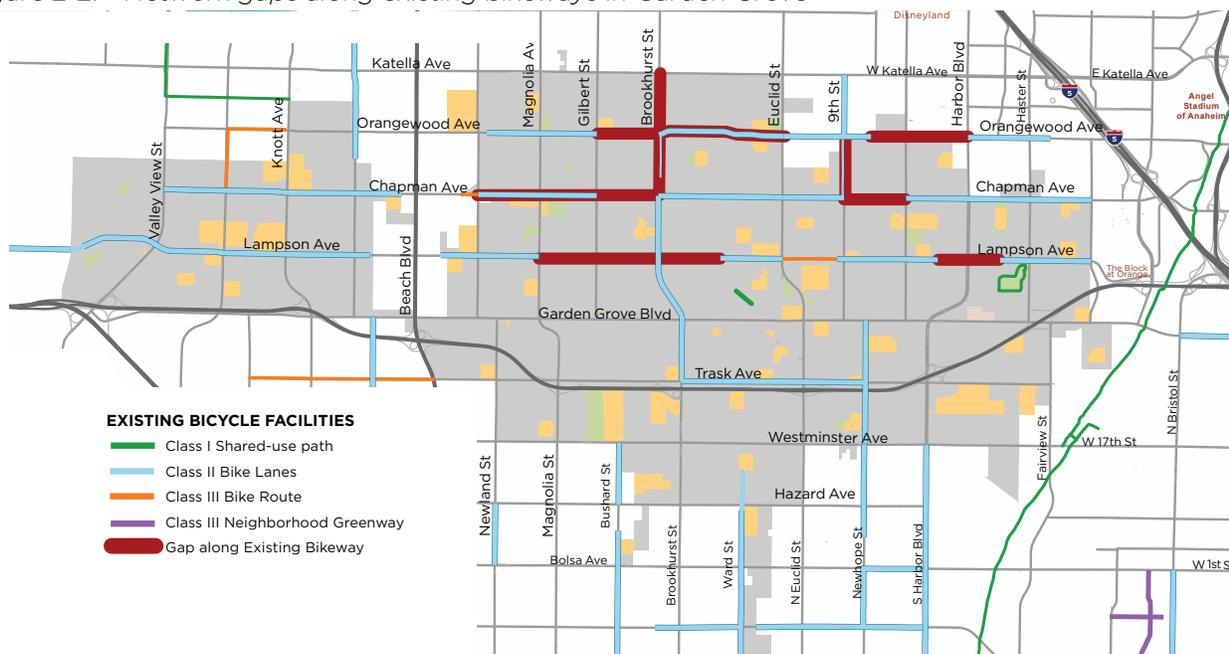
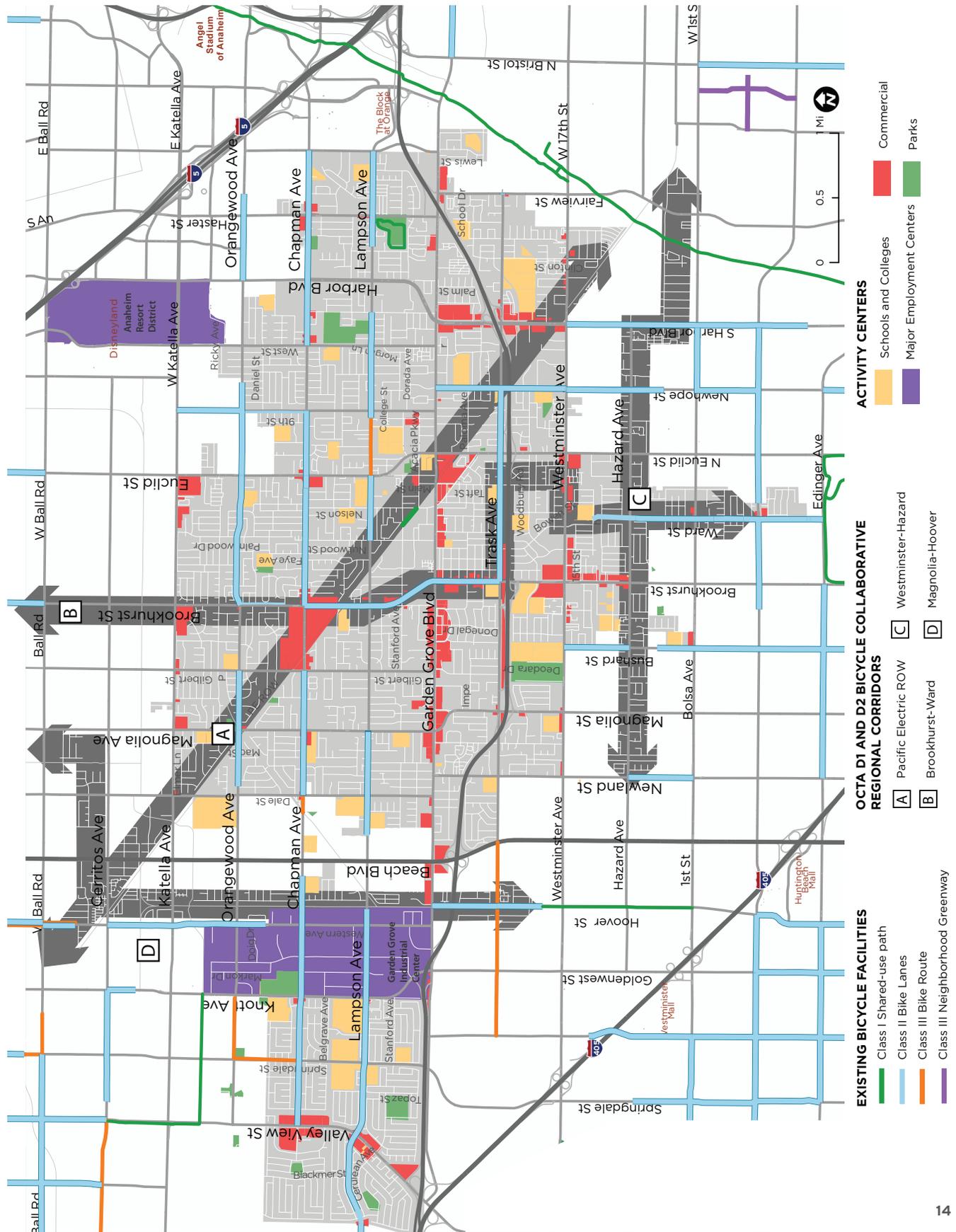




Figure 2-3: OCTA Districts 1 and 2 Bikeways Regional Bikeway Corridors and activity centers



**EXISTING PEDESTRIAN INFRASTRUCTURE**

Sidewalks are the most fundamental element of the walking network, they provide a place to interact as well as a means to access or connect to other transportation networks. The sidewalk network in Garden Grove is thorough, particularly along major roads. However, gaps in the City’s sidewalk network exist along local and residential streets. The City does not have a comprehensive digital inventory of sidewalk conditions. As pedestrian facilities are added, repaired, removed or planned for in the long-term network, keeping an inventory is essential.

The conditions of crosswalks vary throughout the City. The majority of signalized intersections have transverse crosswalk markings, which are a lower visibility design. Pedestrian crossing major signalized intersections often incur delays because most pedestrian signals are not on automatic recall. Pedestrian phases must be activated by pushing the crossing button.

**MULTI-MODAL CONNECTIVITY**

Transit locations close to Garden Grove include the Santa Ana and Angel Stadium of Anaheim Amtrak Station stops, and future transit coming to the

area includes the nearby Santa Ana Station Street Car (which will run northwest towards Downtown Garden Grove); as well as the Harbor Boulevard BRT, the new bus rapid transit service that will augment local bus service along Harbor Boulevard and Westminster Avenue/17th Street.

Bus routes are located on all major roads in Garden Grove, which characterize major roads in the city as transit corridors (see Figure 2-4). Stops throughout the City are identified in Fig 2-4 as small blue dots. Pedestrian and bicycle connections to/from transit stops are critical in efforts to develop a robust multi-modal network. OCTA buses have racks available for up to two bikes on the front of every bus, and riders are allowed to bring a folding bike onto the bus. The limited number of bike accommodation on outside bus racks does limit bicycle riders during peak hours; increasing space allocation for riders with bikes within busses is encouraged to aid multi-modal trips.



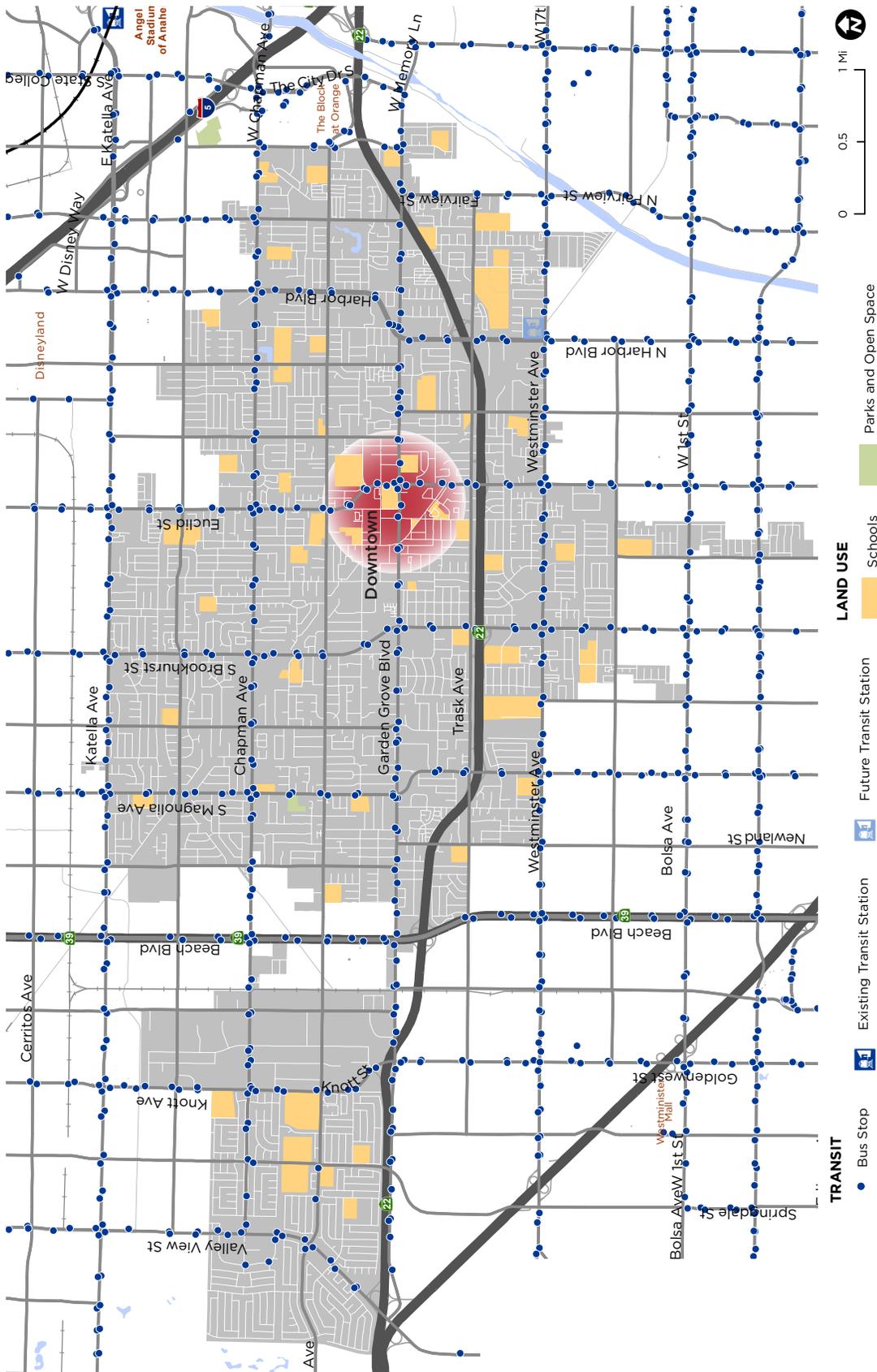
*People walking along Brookhurst Street, a major thoroughfare in Garden Grove*



*Woman crossing Bixby Avenue. This intersection uses transverse crosswalk striping.*



Figure 2-4: OCTA Bus Stop Locations (dots) in Garden Grove



## Data Collection

### BICYCLE AND PEDESTRIAN COLLISIONS

The Active Streets Master Plan reviewed the existing conditions of the bicycle network and identified safety concerns. Table 2-3 shows collisions involving a bicyclist or a pedestrian occurring within the City of Garden Grove between January 2009 and December 2014. In that time period, 752 collisions were reported in Garden Grove that involved a bicyclist or a pedestrian and 20 pedestrians and five bicyclists died as a result of the collision. In 2012, nearly twice as many people were killed in traffic collisions than in the previous year in Garden Grove, several of which involved pedestrians and bicyclists. You can see this spike in pedestrian and bicycle collisions in Table 2-3 and Figure 2-7.

Table 2-3: Pedestrian- and bicycle-involved collisions between 2009 and 2014

Time Period	Total Number of Bicycle Collisions	Bicycle Collision Percentage of Total Collisions	Total Number of Pedestrian Collisions	Pedestrian Collision Percentage of Total Collisions	Injuries	Fatalities
January 2009-December 2009	57	1.3	44	1.0	100	6
January 2010 - December 2010	77	1.8	47	1.1	123	3
January 2011 - December 2011	75	1.7	60	1.3	137	4
January 2012 - December 2012	98	2.3	60	1.3	158	6
January 2013 - December 2013	60	1.3	56	1.2	118	2
January 2014 - December 2014	68	1.5	50	1.1	118	4
<b>Total</b>	<b>435</b>		<b>317</b>		<b>754</b>	<b>25</b>

Statewide Integrated Traffic Records System (SWITRS), 2009-2014.

According to the Garden Grove Police Department (GGPD), several fatalities occurred because of distracted, speeding, or intoxicated drivers. In response to these collision rates, GGPD launched a Fatality Reduction Campaign that focuses on reaching out to diverse audiences through various media outlets, as well as through group presentations, neighborhood meetings, and safety equipment giveaways. The campaign was launched in 2013 to address the safety needs of all road users, and since then collisions have declined (see Table 2-3 and Figure 2-7).



Figure 2-5: Bicyclist-involved collisions aggregated to nearest intersection

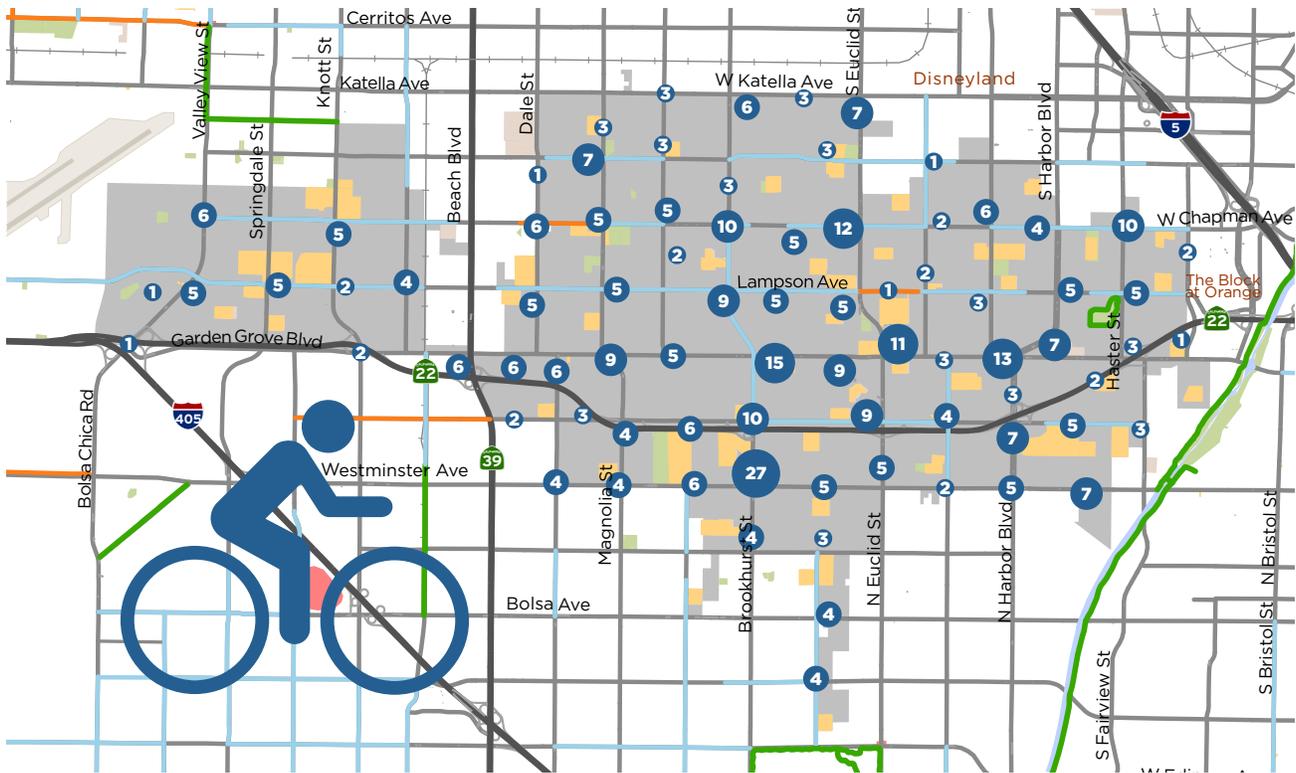


Figure 2-6: Pedestrian-involved collisions aggregated to nearest intersection

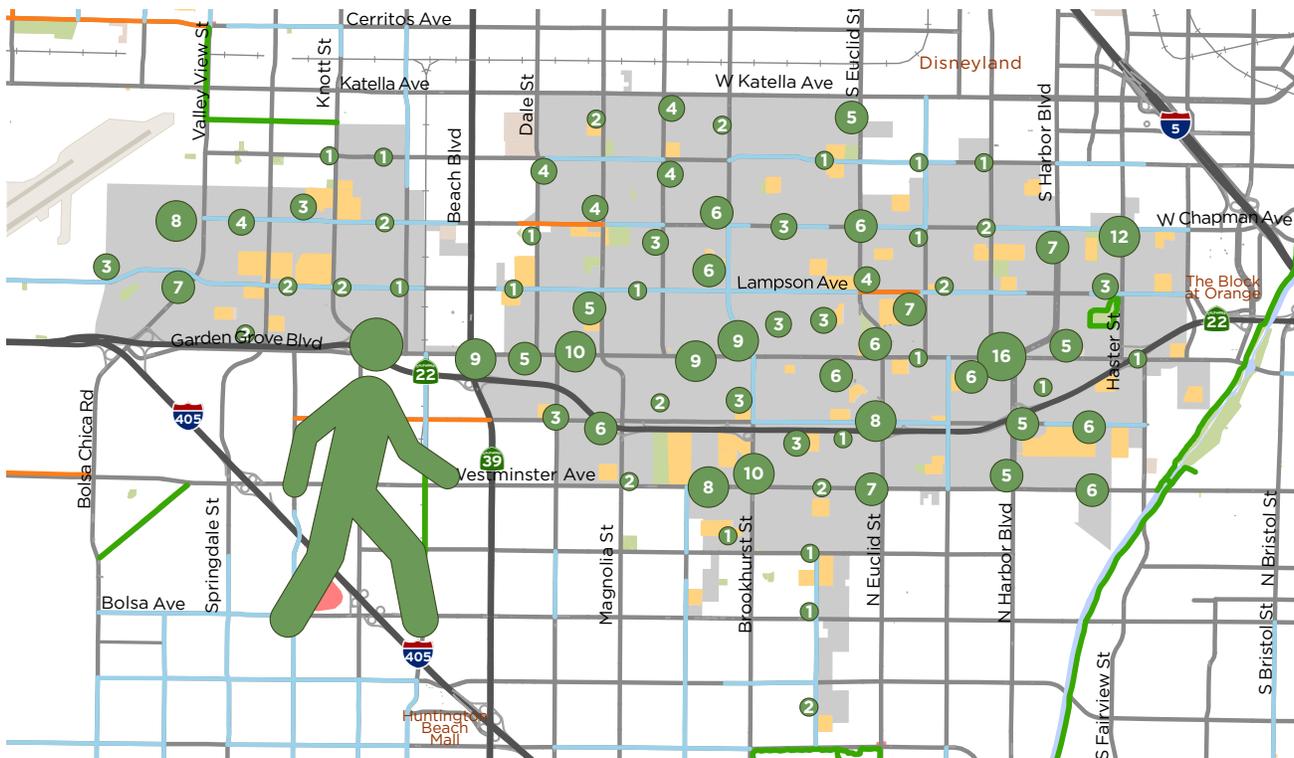


Figure 2-7: Number of collisions involving bicyclists or pedestrians



**754**  
**INJURIES**  
**FROM COLLISIONS**  
 (2009-2014)

**25**  
**FATALITIES**  
**FROM COLLISIONS**  
 (2009-2014)

By far, the most common types of collisions were “vehicle-pedestrian” and broadside collisions (see Figure 2-7 and Table 2-4). In broadside collisions, the auto and bicyclist/pedestrian are often traveling at 90 degree angles to each other. This type of collision typically occurs at intersections, driveways, or within parking lots, and often occurs when bicyclists are riding against the normal flow of traffic. Rear end collisions are generally caused by excessive speed and/or lack of awareness of vehicles or bicycles slowing or stopping. Sideswipes generally occur when a car or bicycle fails to yield while changing lanes.

Table 2-4: Number of collisions by type

Type of Collision	Number of Collisions
Broadside	256
Sideswipe	43
Head On	54
Rear End	25
Vehicle-Pedestrian	268
Other	69
Not Stated	43
<b>Total</b>	<b>749</b>

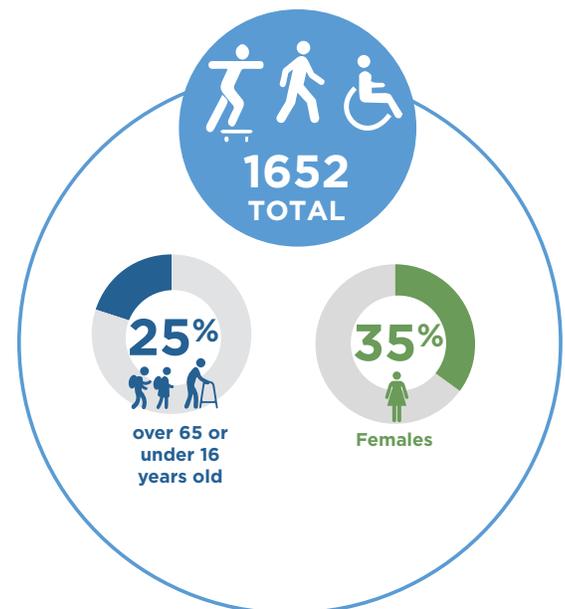
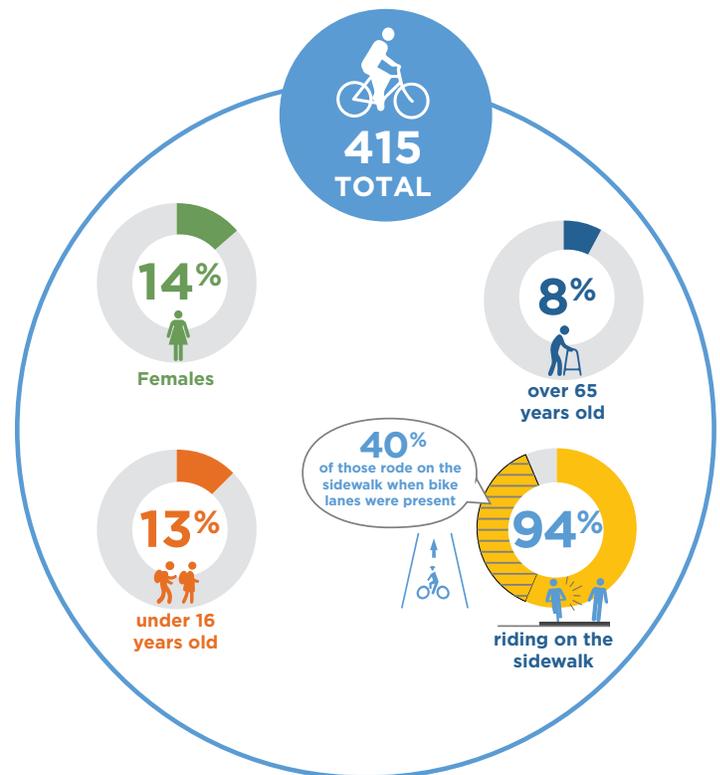


## BICYCLE AND PEDESTRIAN COUNTS

For the Bicycle and Pedestrian Master Plan, bicycle and pedestrian counts were conducted at nine locations across the city (see Figure 2-7 and Figure 2-8). Counts were held from 7-9AM and 4-6PM on Thursday September 17, 2015 and on Saturday September 19, 2015 from 11AM-1PM. The majority of the counts were done by members of the Garden Grove Active Streets Master Plan Team, though some volunteers were used. Counts were taken in 15-minute intervals. For bicycle counts, direction of travel, lack of helmet, wrong way riding, age, and sex was noted. For pedestrian counts, age, sex, direction of travel, use of mobility device, and whether the pedestrian was on a skateboard or scooter was marked.

Over 400 bicyclists were counted during the specific times. Fifty-seven bicyclists were female, 52 were under 16 years of age, and only 33 were over the age of 65. Of the bicyclists counted, 389 were traveling on the sidewalk, against the flow of traffic, or both. Over 150 of the persons riding on the sidewalk were traveling along a roadway with bicycle lanes present.

1,652 pedestrians, skateboarders, and persons using a scooter or mobility device were counted during the specified time periods. 330 (nearly 20 percent) of those counted were either under 16 or over 65 years of age. Only 35 percent of those counted were female.



*The infographics above depicts some of the demographic data collected during the bicycle and pedestrian counts.*

Figure 2-8: Bicyclist count location and numbers

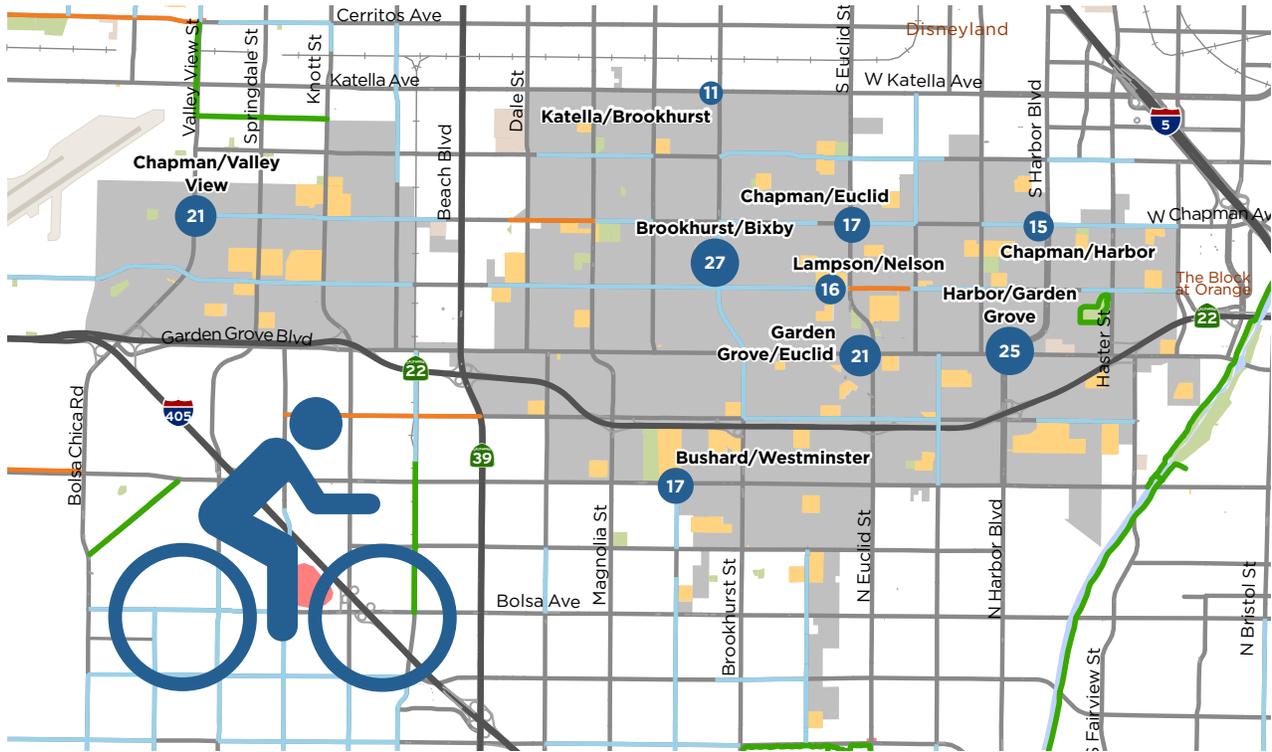


Figure 2-9: Pedestrian count location and numbers



## Opportunities and Constraints

### OVERVIEW

The City of Garden Grove has the foundation to become a renowned bicycle and pedestrian-friendly city. **The relatively mild climate year-round, off-road opportunity corridors such as the PE ROW trail, the concentration of commercial and workplace locations, and the well-connected street grid in the downtown area are all characteristics that will push Garden Grove towards its biking and walking goals.**

However, as indicated during public outreach, fieldwork, and in feedback from key stakeholders, biking and walking in Garden Grove does not occur without challenges. There are significant safety concerns, physical barriers, and gaps in network connectivity that must be addressed in order to reach the goals identified for this plan. Closing gaps in the existing active transportation network, as shown in Figure 2-2, will increase connectivity and allow for seamless travel by bicycle and on foot throughout Garden Grove and the surrounding region.

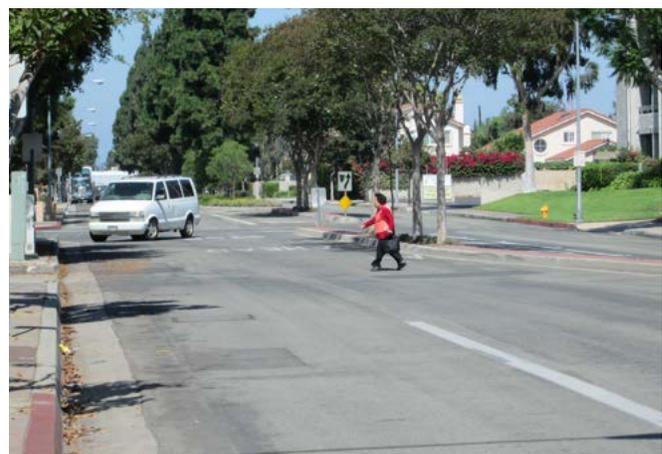
From the evaluation of the current active transportation network, the following key themes emerged:

- Enhance existing bicycle lanes
- Improve pedestrian crossings
- Improve cycling and pedestrian safety
- Leverage support and motivation from project champions
- Improve bikeability and walkability of the Pacific Electric ROW trail
- Consider broader impacts of active transportation

The following sections discuss the current bicycle and pedestrian network, as well as examples of many opportunities that exist as starting points for improvement and constraints that the city must address to become a more bicycle and walk-friendly city (see Figure 2-10).



*Overcoming network gaps, such as on Magolia Avenue at the PE ROW, are crucial to the success of the plan*



*Mid-block crossings are common due to long distances between marked crosswalks*

## CONSTRAINTS

The numbered photos below show examples of opportunities and constraints for bicycle and pedestrian facilities across Garden Grove. They reference locations mapped in Figure 2-10.

### PEDESTRIAN CONSTRAINTS



**Missing Sidewalks.** A lack of sidewalks presents issues for pedestrian access throughout the city, as seen at Dale Street and Garden Grove Boulevard.



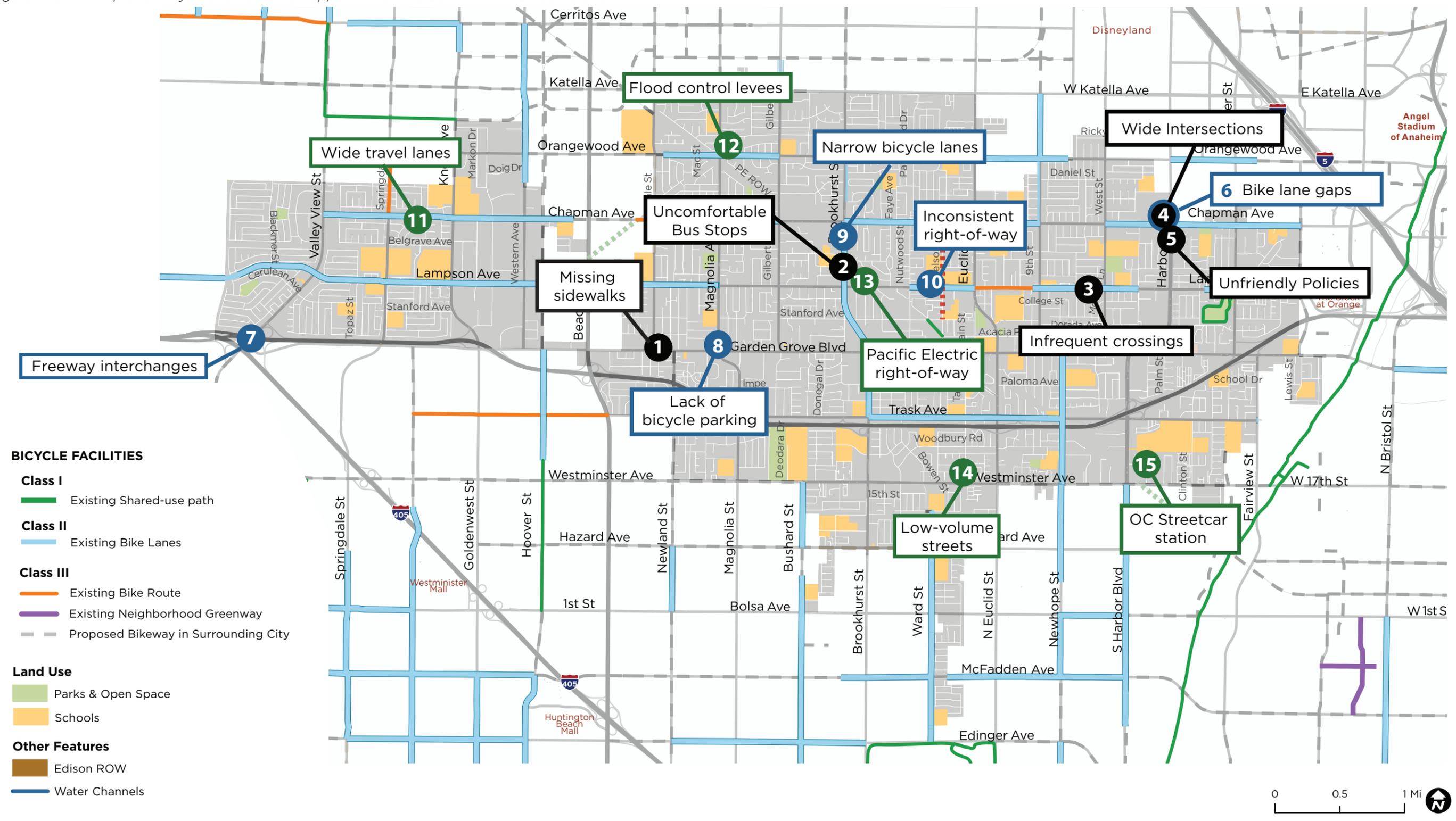
**Uncomfortable Bus Stops.** Bus stops lacking shade, like the one shown at Brookhurst Street and Bixby Avenue, or appropriate benches and seating are less desirable and can possibly deter from transit use in the area. Shade structures and updated furnishings should be incorporated.



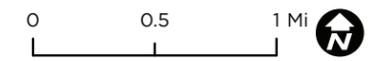
**Infrequent Marked Crosswalks.** This area of Lampson Avenue has a lack of marked crosswalks at local intersections. Along major corridors, high visibility crosswalks and warning signs and beacons to alert drivers of pedestrians can create a safer environment and reduce collisions.



Figure 2-10: Examples of Bicycle and Pedestrian Opportunities and Constraints in Garden Grove



- BICYCLE FACILITIES**
- Class I**
    - Existing Shared-use path
  - Class II**
    - Existing Bike Lanes
  - Class III**
    - Existing Bike Route
    - Existing Neighborhood Greenway
    - Proposed Bikeway in Surrounding City
- Land Use**
- Parks & Open Space
  - Schools
- Other Features**
- Edison ROW
  - Water Channels



● PEDESTRIAN CONSTRAINT    ● BIKE CONSTRAINT    ● OPPORTUNITY



*Fold Out for 11x17 Map*



4

**Wide Intersections.** The large intersection seen at Harbor Boulevard and Chapman Avenue presents an unpleasant travel path for both pedestrians and bicyclists. Decreasing street width can reduce the length of crossing.



5

**Non-Supportive Policies.** Policies that dissuade modes of transportation other than vehicles should be revised to incorporate multi-modal transportation throughout the City of Garden Grove.

## BICYCLE CONSTRAINTS



6

**Bicycle Lane Gaps.** Providing a continuous network of bike lanes or other separated bikeways throughout the city will encourage bicyclists to ride on the road and avoid potential conflicts with pedestrians on the sidewalk.



7

**Freeway Interchanges.** Areas like the one shown at SR-22 and Valley View Street create multiple conflict zones in on- and off-ramps to freeways.



8

**Lack of Bicycle Parking.** A major deterrent to bicycle transportation is a lack of end of trip parking facilities. Providing more bicycle racks and large capacity bicycle corrals for secure bicycle parking can motivate more people to switch to bicycle transport from car use. One example location in need of bicycle parking is the shopping center at Garden Grove Boulevard and Magnolia Avenue.



9

**Narrow Bicycle Lanes.** A narrow lane, like the one seen here on Brookhurst Street, creates an uncomfortable environment for bicyclists.



10

**Inconsistent Right-of-Way.** The crossing at Lampson Avenue and Nelson Street is an example of inconsistent right-of-way width and bicycle facilities.

## OPPORTUNITIES



11

**Wide Travel Lanes.** A wide lane like the one at Chapman Avenue and Springdale Street can be narrowed to create buffered bicycle lanes with barriers to create a safer biking environment.



12

**Flood Control Levees.** The creek at Magnolia Street and Orangewood Avenue creates an opportunity for shared-use paths along the levees and on similar flood control channels.



13

**Pacific Electric Right-of-Way.** The area along the PE ROW at Brookhurst Street could be transformed into a high quality shared-use path.



14

**Low Volume Streets.** The Taft undercrossing shown here could serve as a neighborhood greenway or "bicycle boulevard" due to its lack of heavy traffic.



15

**OC Streetcar Station.** The planned terminus of the OC Streetcar and multi-modal transportation hub will be located at the intersection of Westminster Avenue and Harbor Boulevard.





Table 2-5: List of opportunities and constraints along storm channels

Channel Name / Extents	Width of top of channel		Opportunities	Constraints
	North or West Side	South or East Side		
<b>Anaheim-Barber City Channel</b>				
SR-22 to Western Ave	25'	16'-20'	Western Ave has a center turn lane	
Western Ave to Lampson Ave	26'	21'	Lampson Ave has a center turn lane	UP Railroad crossing
Lampson Ave to Beach Blvd	25'-27'	16'		Beach Blvd
Beach Blvd to Chapman Ave	12'-20'	14'-17'	Chapman Ave has center turn lane	
Chapman Ave to Macduff St	< 5'	< 5'	Dale St has center turn lane	Trapezoidal channel behind residential houses, no existing channel bench
Macduff St to Gilbert St	< 5'	13'-14'		Magnolia St at Orangewood Ave intersection
Biscayne Ct to Brookhurst St	< 5'	10.5-12'		Brookhurst St crossing
Brookhurst St to Euclid St	<5'	12-13'	Connection to Louis Lake Intermediate School, Euclid has a center turn lane	
<b>Bolsa Chica Channel</b>				
Garden Grove Blvd to Lampson Ave	20-23	10'-25'	Lampson Ave has a center turn lane	
Lampson Ave to City of GG SO-1	< 5'	26-28'		
GG SO-1 to Santa Catalina Ave	< 5'	14-20'		Dead ends into golf course
City of GG SO-1				
Bolsa Chica Channel to Blackmer St	11-12'	6' Max		Narrow right-of-way
Blackmer St to Valley View St	9-11'	< 5'		Narrow right-of-way
Valley View St to Springdale St	12'-15'	< 5'		Narrow right-of-way
Springdale St to Lamplighter St	0-6'	14'16'	Connects to Pacifica High School and Enders Elementary	Narrow right-of-way, no entry on north side
Lamplighter to Knott	< 5'	10-17'		
<b>Westminster Channel/Morningside Drain</b>				
Bushard St to Kerry St	18-19'	12'-25'	Direct connection to Hill Elementary	
Kerry St to Brookhurst St	11-16'	16'-23		Brookhurst St crossing
Brookhurst St to Ward St	15-21' (51' area)	6'-11'	Morningside Elementary off of Ward St	
Ward St to Taft St (end of E-W)	16'-18'	< 5'		
Taft St to Westminster Ave (begin N-S)	16'-20'	< 5'	Existing crossing at Westminster Ave could be improved	
Westminster Ave to SR-22	< 5'	< 5'	Undercrossing at SR-22, opportunity to transition to a bicycle blvd	

East Garden Grove-Wintersburg Channel				
Westminster Ave to PE ROW	< 5'	10'-16'	Crossing Parking lot-like area at PE ROW	
PE ROW to Harbor Blvd	14'-16'	< 5'		Harbor Blvd crossing
Harbor to Trask Ave	12-15'	< 5'	Santiago High School, Trask Ave has center turn lane	
Trask Ave to Pearce St	12-14'	< 5'		
Pearce St to SR-22	15-16'	< 5'		SR-22 undercrossing
SR22- Garden Grove Blvd	12-17'	< 5'		Garden Grove Blvd crossing

Table 2-6: List of Opportunities and Constraints along PE ROW

	Width of ROW	Opportunities	Constraints
<b>PE Right-of-Way</b>			
Dale St to Orangewood Ave	97'-100'		
Orangewood Ave to Magnolia St	100'-192' (triangle)	Anaheim Channel crossing	Channel breaks across ROW
Magnolia St to Gilbert St	100'-80'	Gutosky Park	
Gilbert St to Chapman Ave	62'-100'		Cinema driveway in ROW
Chapman Ave to Brookhurst St	52'-92'-8'-100'	Chapman has planted median	Parking lot
Brookhurst St to Lampson Ave	100'	Signalized intersection at Brookhurst St, Connection to Brookhurst Elementary	
Lampson Ave to Stanford Ave	80'-97'	Lampson Ave has center turn lane, Playground	Vehicles parked in ROW at Nutwood St
Stanford Ave to Nelson St	82'	Existing 10' walking path and 12' bicycle path	
Nelson St to Euclid St			Development in previous ROW
Euclid St to Paloma Ave	90' Approx		Currently used as a plant nursery
Paloma Ave, east of Euclid St to Trask Ave	100'	Trask Ave has center turn lane	
Trask Ave to Newhope St	5-12' Path in 100' ROW		
Newhope St to Harbor Blvd	82'-100'	Connects to OCTA property	SR22 undercrossing





*Public input coupled with fieldwork and community outreach shaped the plan's network recommendations to reflect community desires and balance desirability with feasibility.*



### III. NEEDS ANALYSIS

---

*“There is no logic that can be superimposed on the city; people make it, and it is to them, not buildings, that we must fit our plans.”*  
- Jane Jacobs

A number of factors help the city understand why improvements are needed. **This chapter assesses the needs for walking and biking.** The assessment is based on insights gained from the public and key stakeholders, as well as GIS-based mapping analysis.

This chapter includes:

- Community-Identified Needs
- Demand Analysis
- Equity Analysis

## Community Identified Needs

### OVERVIEW

The community needs were identified by aggregating feedback received from the public on their views toward walking and biking conditions in Garden Grove. The public outreach process included comprehensive outreach that included six major components:

- Stakeholder Meetings
- Community Workshops
- Project Website and Social Media Presence
- Interactive Online Map (part of project website)
- Online Survey
- Previous community outreach through the 2015 *Community in Motion* plan

The results of each forum for public input are described in the following sections. The major themes and community priorities identified through these outreach processes include:

- Provide sustainable, alternative transportation options for the city
- Enhance the regional bikeway network. Create a bikeway to the beach and to the Santa Ana River Path
- Promote quality pedestrian facilities for transportation and recreation

### STAKEHOLDER MEETINGS COMMUNITY ADVISORY COMMITTEE

The project team hosted a total of three Community Advisory Committee (CAC) meetings. The CAC was established to provide detailed input and feedback on plan components. The Committee is composed

of individuals interested in active transportation, biking and trails and represented various groups including local residents, the Garden Grove Parent Teacher Association (PTA), high school students, city staff, and a planning commissioner.



### PUBLIC WORKSHOPS

#### PUBLIC WORKSHOP #1: OPEN STREETS EVENT

As part of the “Re:Imagine Garden Grove By Day and By Night” Open Streets event, the project team hosted a fun, interactive planning workshop on Historic Main Street for attendees to provide input on walking and biking conditions throughout Garden Grove. In total, the planning workshop attracted over 100 participants. The project team actively engaged 75 of these participants using large-format maps and boards to get their thoughts, concerns and dreams for biking and walking in Garden Grove. Their ideas were tallied and the top responses are noted as followed.

## FEEDBACK FROM WORKSHOP #1 OPEN STREETS EVENT

### TOP 5 MAIN MOTIVATION TO BICYCLE (VOTES)

1. Off-Street Trails (60)
2. On-Street Separated Bikeways (48)
3. Bicycle Safety Training & Fun Activities (29)
4. Slower or Less Traffic (29)
5. Neighborhood Bikeway (23)

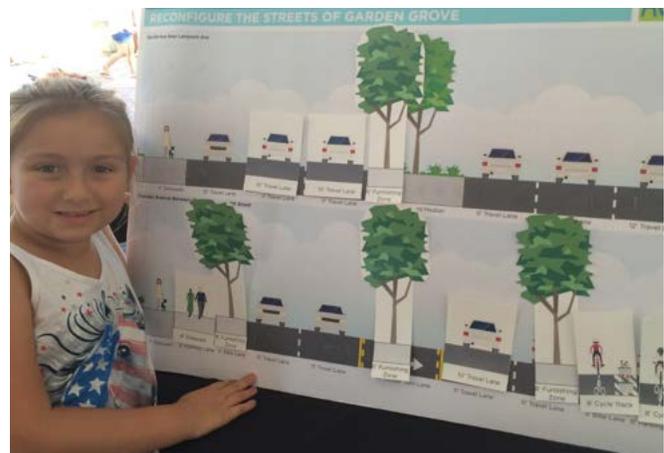
### TOP 5 MAIN MOTIVATION TO WALK (VOTES)

1. Shade Trees and Landscaping (62)
2. Safer Crossings (56)
3. Sidewalks & Path Improvements (56)
4. Better Lighting (35)
5. Benches, Drinking Fountains & Trash Cans (28)

### TOP 5 PREFERRED AMENITIES (VOTES)

1. Landscaping (21)
2. Lighting (13)
3. Playgrounds (12)
4. Fitness Equipment (11)
5. Art Installations (10)

In addition to the workshop booth, Alta Planning + Design installed a temporary pedestrian crossing and green sharedlane markings so that the public could test these treatments in a comfortable, car-free environment.



*Top and Middle: Residents share ideas with the project team at the stakeholder meeting and Open Streets event. Bottom: demonstration treatment installed during Open street event.*

**PUBLIC WORKSHOP #2: GARDEN GROVE DIAMOND JUBILEE CELEBRATION**

On June 18, 2016, The City of Garden Grove celebrated their 60th Anniversary – Diamond Jubilee Celebration. Following the release of the Draft Plan, a second community workshop was held at a booth at this event. Over 230 people participated in the Garden Grove Active Streets booth, which featured interactive display boards showing the project team’s bicycle and pedestrian recommendations.

Community members were encouraged to give feedback on bicycle and pedestrian recommendations by sharing their experiences with the current bicycle and pedestrian network, adding comments to the proposed recommendations, and showing support or providing criticism to the proposed priority projects.

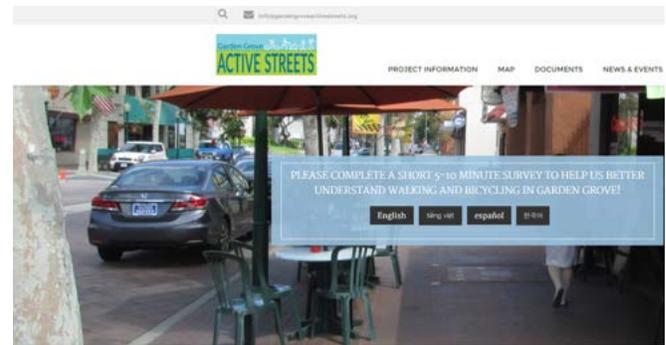


Community members provided input at Garden Grove’s 60th Anniversary Diamond Jubilee

**PROJECT WEBSITE AND SOCIAL MEDIA PRESENCE**

The project website ([www.gardengroveactivestreeets.org](http://www.gardengroveactivestreeets.org)) was an important tool for sharing information about the *Garden Grove Active Streets Master Plan* and providing a consistent source for project updates to the general public. This site also provided a direct link to the city’s existing Open Streets website ([www.ggopenstreets.com](http://www.ggopenstreets.com)) which captured the excitement of the Open Streets event and was utilized to share information as well as recruiting volunteers.

In addition to these sites, the project team spread word about the project and Open Streets event through other social media outlets such as Facebook, Twitter, and Instagram.



Snapshot of the Garden Grove Active Streets project website



Screenshot of the interactive Garden Grove Open Streets website



## ONLINE INTERACTIVE MAP

From September 28th through November 18th, 2015, residents, commuters, and visitors to Garden Grove were invited to suggest specific improvements for Garden Grove's bicycle and trail network using an online interactive mapping tool. **Over 220 suggestions were mapped** (see image below). Of these suggestions, participants identified over 37 gaps and barriers to biking or walking.

### GAPS AND BARRIERS

Of the identified barriers to biking, a common theme was to connect existing bikeways along the city's east-west corridors and to create new bikeways on north-south corridors.

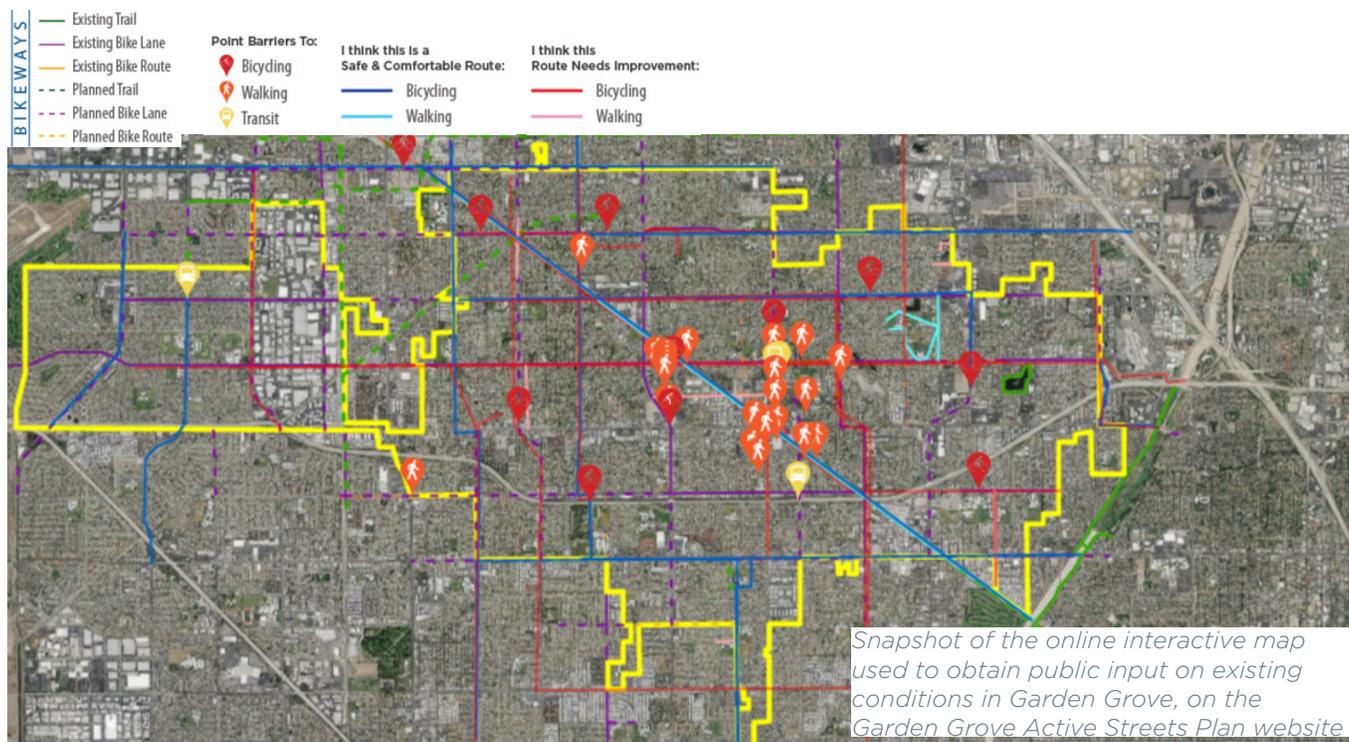
Barriers to walking were generally dispersed throughout Garden Grove, though one noticeable **cluster of barriers emerged at Brookhurst Street to the west, Euclid Street to the east, Garden Grove Freeway to the south and Lampson Avenue to the north**. The barriers identified here were too

narrow of a space for adequate pedestrian passing, lack of pedestrian lighting, lack of traffic calming elements and lack of safe pedestrian crosswalks.

### PRIORITY ROUTES

Participant feedback also indicated that the implementation of a multi-use path on the Pacific Electric Rail Line would be a great way to increase access throughout the city and to create a regional connection. Other priority routes for bicycle riding identified were Gilbert Street, Lampson Avenue, and Dale Avenue.

Detailed comments and suggestions can be found in Appendix B.



## ONLINE SURVEY

An online survey to gather information related to the *Garden Grove Active Streets Master Plan* was available from October 2015 through January 2016. The survey was available in English, Spanish, Korean, and Vietnamese. Garden Grove residents submitted a total of 200 completed surveys. A summary of the results are discussed below, and a sample of these results are shown in Figure 3-1.

### RESPONDENT CHARACTERISTICS

Of the 200 survey respondents:

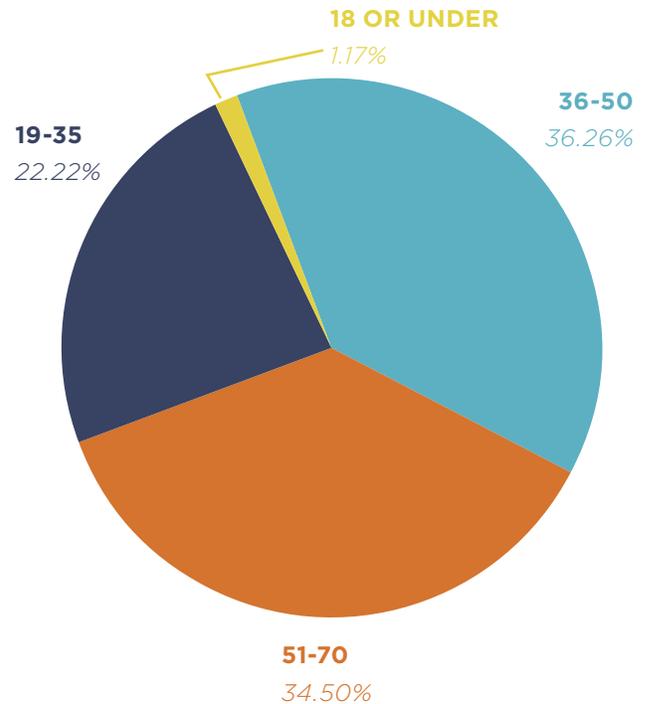
- 45 percent identify as male
- 54 percent identify as female
- 84 percent live in Garden Grove
- 30 percent work in Garden Grove

The 36-50 age group respondents made up the largest percentage of survey takers at 36 percent, followed closely by the age group of 51-70, at 35 percent of respondents. Twenty two percent of respondents were between the ages of 19 and 35 and six percent were over 70 years. Only one percent of survey takers were 18 or under.

### WALKING AND BIKING CONDITIONS AND PREFERENCES

The survey found that 41 percent of the 200 respondents consider walking conditions in Garden Grove as good and 36 percent defined them as fair. Only 16 percent consider walking conditions as poor. The survey also found that only 1 percent of respondents consider biking conditions in Garden Grove as excellent, while 45 percent and 36 percent describe them as fair and poor, respectively.

AGE OF SURVEY RESPONDENTS



WALKING CONDITIONS IN GARDEN GROVE

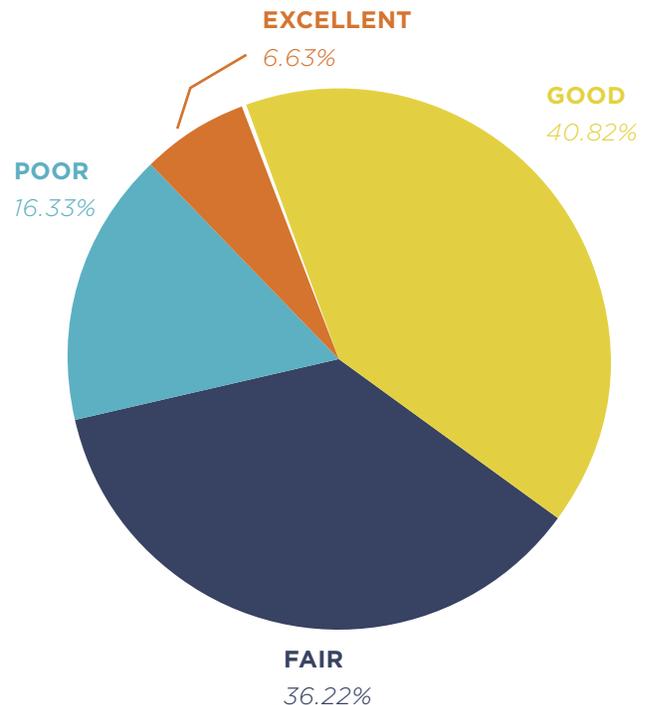
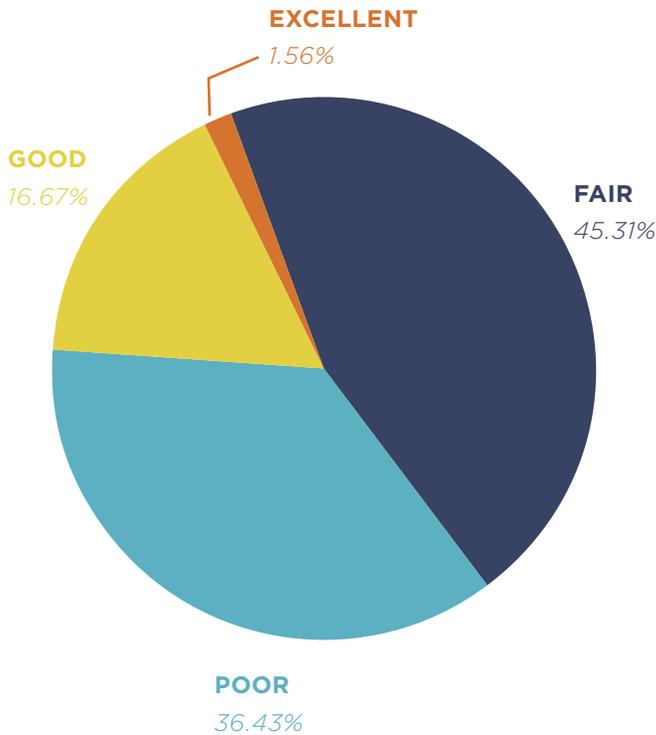


Figure 3-1: A sampling of survey results (continued on next page)



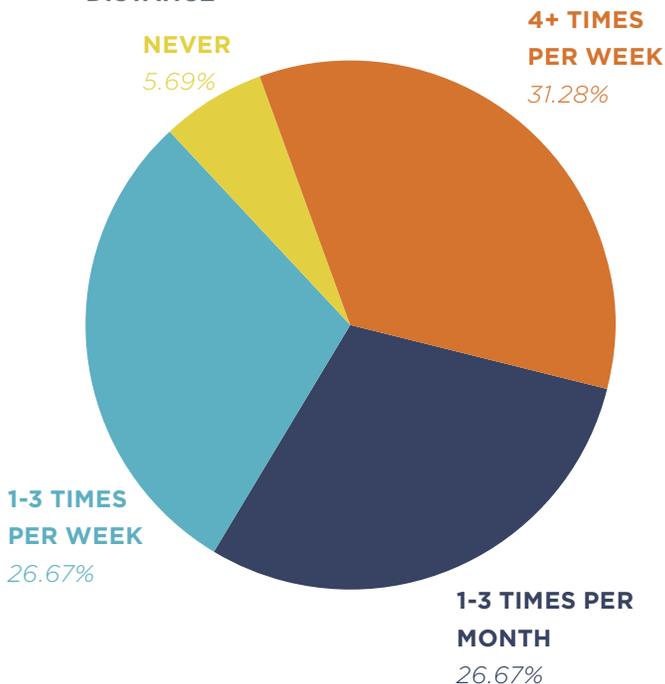
### BIKING CONDITIONS IN GARDEN GROVE



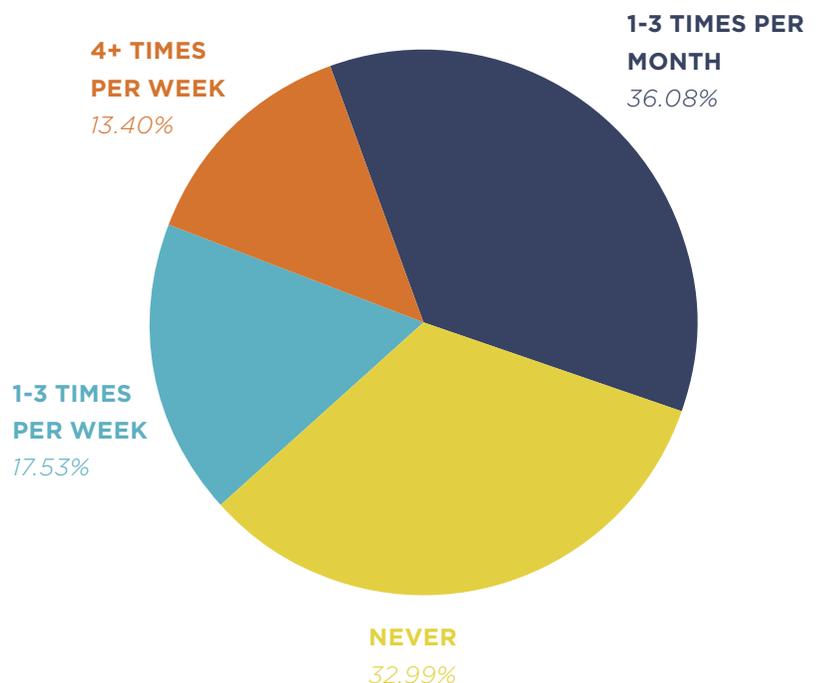
**Only 31 percent** of the 200 respondents walk for a significant distance four times or more per week, and 15 percent never do it. Twenty seven percent walk a significant distance one to three times per week and another 27 percent do it one to three times per month. Almost 33 percent of the 200 respondents never ride a bicycle, 36 percent do it one to three times per month, and 31 percent of the respondents ride their bicycle at least once a week. More than half of the respondents ride their bicycle with their children.

**When asked what destination** in Garden Grove respondents would like to get to by biking or walking, **the most common response was "No Particular Destination."** They want to do it for **fitness or leisure.** Shopping, park, swimming pool, recreation area, friends' houses, and unpaved, off-street paths/trails were other popular responses. The chart on the next page illustrates the percentage of respondents who chose each type of destination.

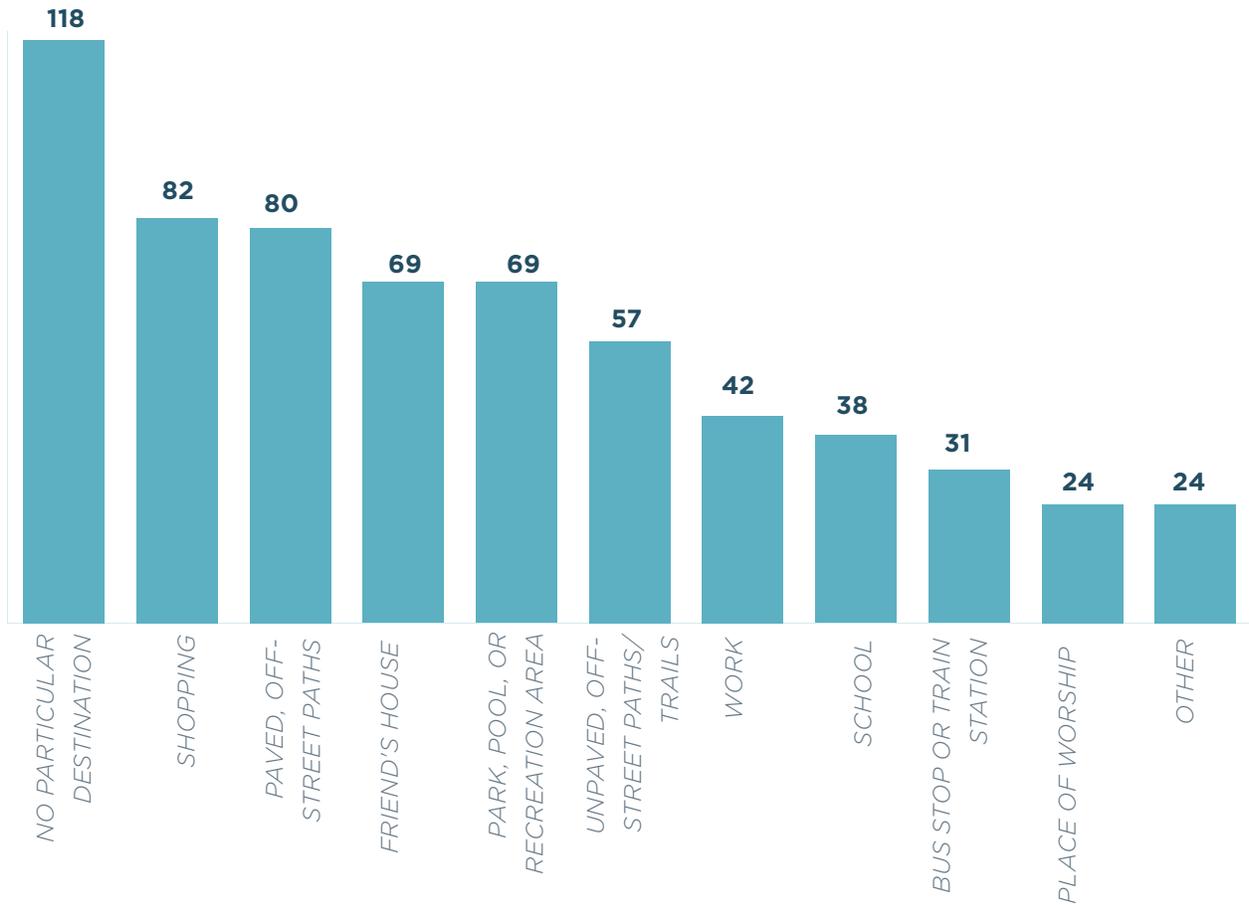
### FREQUENCY OF WALKING A SIGNIFICANT DISTANCE



### FREQUENCY OF BIKING



**PREFERRED DESTINATIONS BY BICYCLE OR WALKING** (NUMBERS INDICATE VOTES)



**PUBLIC COMMENT SECTION**

Respondents submitted 69 general comments and suggestions through the survey. The following provides highlights from those submissions.

“Our current street conditions were designed to accommodate traffic needs. What you’re doing is great to encourage walking and biking in our city, hence more community engagement, healthier bodies, healthier environment.”

“I love that the City of Garden Grove is taking an interest in creating a Bicycle Master Plan and that they are asking me what I think.”

“We need to be able to connect to other existing city bicycle paths. Having safe bicycle paths and other alternative transportation paths would help improve the quality of life in Garden Grove which is what our city lacks.”

“My children love to ride their bicycles and be outdoors, I am concerned for their safety whenever I take them out to ride. There is very limited accessibility to safe areas within the parks for them to ride (not on the grass) and for them to get to the park without being too close to traffic. I prefer driving over to Long Beach where they can ride safely, but I would prefer to be able to do this in the city we live in.”



## COMMUNITY IN MOTION PUBLIC INPUT THEMES

The *Community in Motion* study, part of Re:Imagine Garden Grove, involved using various public outreach methods to gather input on active transportation needs. These methods included small focus group, questionnaires, and other non-traditional methods such as a Participation Urban Assessment (PUA). The PUA enables participants to share and analyze their personal experiences; 149 people identified their most popular destinations and routes (Figure 3-2). As noted from the plan, these routes include:

### Existing

- Santa Ana River Trail
- San Gabriel River Trail
- Coyote Creek Trail
- Pacific Coast Highway Trail and Lanes

### Non-existing

- OCTA / PE ROW (selected across demographics and group types)
- Anaheim-Barber City Channel

### Local streets that are currently used, should be included, and/or completed

- Garden Grove Boulevard
- Harbor Boulevard
- Brookhurst Street
- Euclid Street
- Chapman Avenue
- Lampson Avenue
- Magnolia Street
- Haster Street
- Westminster Avenue

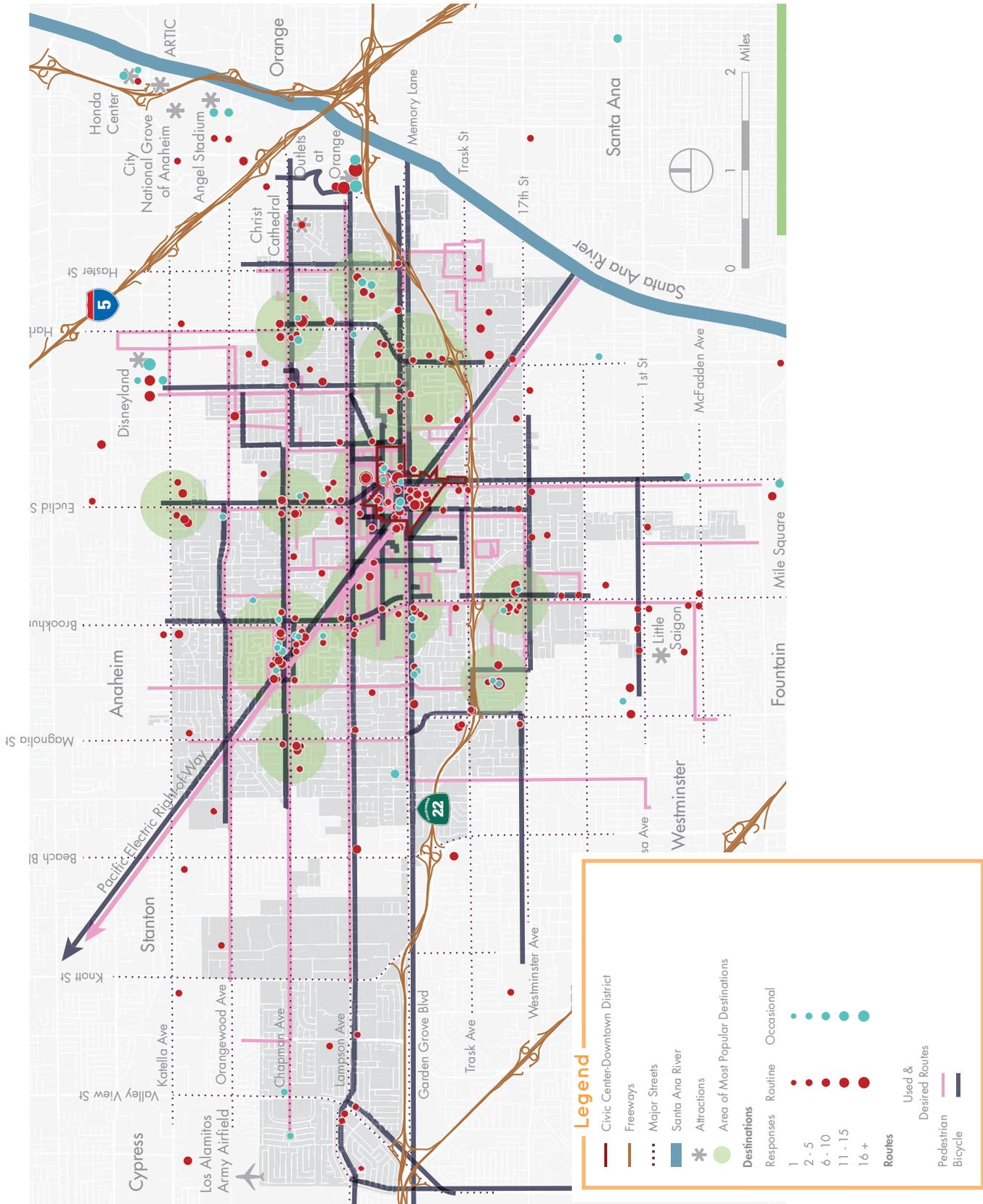
In general, the community would also like to see:

- Promenades incorporated into existing and future commercial developments
- Wider pedestrian paths and sidewalks
- Improved lighting for those using nonmotorized forms of transportation



*High school students participating in a mapping exercise for Community in Motion.*

Figure 3-2: Map of public participants' popular destinations and routes as identified in the Community in Motion Study.





# Live, Work, Play, Learn Analysis

## INTRODUCTION

The consultant team conducted a Live, Work, Play, Learn (LWPL) Analysis for the City of *Garden Grove Active Streets Master Plan*. LWPL identifies expected demand for bicycle and pedestrian facilities by overlaying the locations where people live, work, play, and go to school into a composite sketch of regional demand for biking and walking activity. When combined with the results of the “supply analysis” included within the overall bicycle suitability methodology, the composite results can be used to help identify areas in need of improvement and where there is high demand for bicycle and pedestrian facilities

This section summarizes the method and results of the LWPL Analysis for the project study area. Each analysis incorporates recent research on factors that impact bicycle and pedestrian comfort and safety, and was tailored to the City of Garden Grove using the data available from the City of Garden Grove and the U.S. Census.

## METHODOLOGY

### DATA SOURCES

The data inputs incorporated into the Live, Work, Play, Learn demand model can be found in Table 3-1, which displays each variable, its source, and notes on limitations of the available data and assumptions that were made.

### OVERVIEW

The Live, Work, Play, Learn Analysis is an objective, data-driven process to identify the demand for bicycle and pedestrian facilities. The demand potential was measured based on the proximity and density of trip generators (such as homes and workplaces) and trip attractors (such as shopping centers, parks, and trails) to establish potential for walking and biking trips. The resulting models represent “heat maps” that displays hot spots based on the Live, Work, Play, and Learn factors. The heat map shows a composite of all the factors.

Table 3-1: Sources of the Live, Work, Play, Learn Model Inputs

Model Input	Source	Notes
Total Population	2010 U.S. Census	Summarized by census block
Total Employment	2010 U.S. Census	Summarized by census block
School Location	City of Garden Grove	Includes elementary, middle, and high schools; Colleges and Universities
Existing bicycle, pedestrian, and trail facilities	City of Garden Grove	N/A
Commercial Destinations	2010 U.S. Census	Commercial destinations are approximated by service sector jobs (Retail trade; arts, entertainment, recreation; accommodation and food services; other services)

## DEMAND ANALYSIS

Demand analysis helps define citywide variation in bicycle and pedestrian demand. The analysis serves as the basis for understanding and visualizing suitability and is an integral part of the Garden Grove planning process.

### Demand analysis provides the following benefits

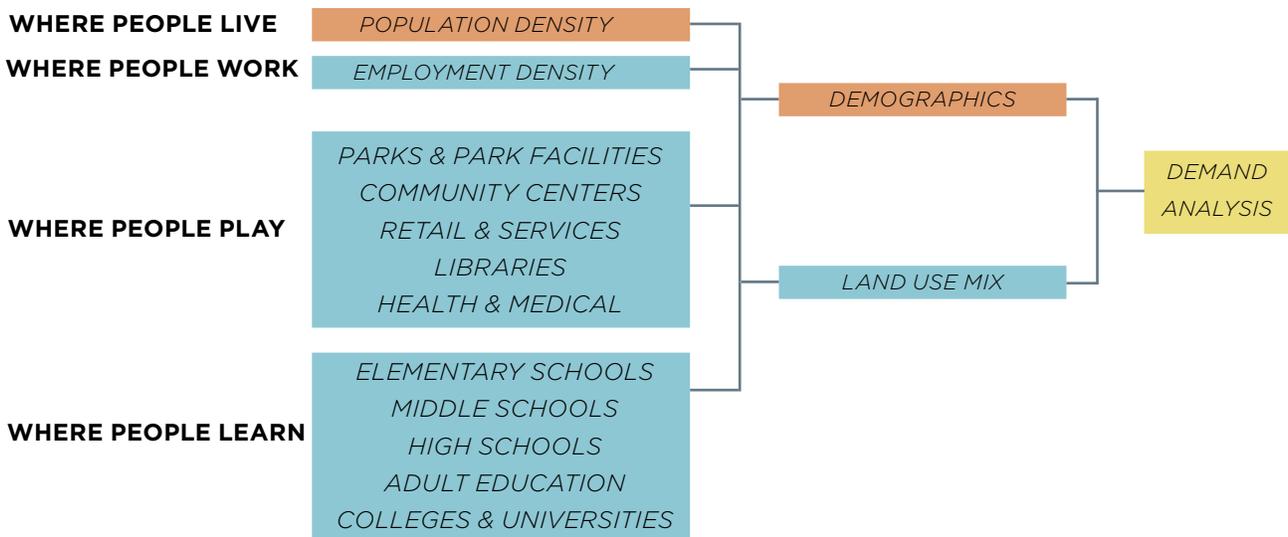
- Quantify factors that impact pedestrian activity, objectively identifying areas where pedestrians and bicyclists are most likely to want to be
- Provide for a geographically informed project list
- Guide community leaders and the public on one aspect of the project prioritization process

## BACKGROUND AND OVERVIEW OF PEDESTRIAN SUITABILITY INDEX (PSI)

Demand analysis has its basis in a technique devised by prominent landscape architect, Ian McHarg. His influential book *Design With Nature* (1969) accentuated the importance of considering the natural environment when introducing new development and infrastructure. McHarg was an early pioneer of GIS analysis and established innovative techniques for route planning using photographic map overlays. McHarg asserted that to find the most suitable route, one must determine the least social cost, meaning factors that would impact social values would have to be considered. Once identified, each factor was mapped on individual transparent sheets using three different color shades to represent the level of social cost. The sheets were overlaid into a single stack revealing the most suitable route location. McHarg’s photographic map overlay analysis paved the way for the foundation of modern day GIS models.

Figure 3-3: Demand model approach showing what factors were used to analyze demand

## DEMAND MODEL APPROACH





## SCALE OF ANALYSIS

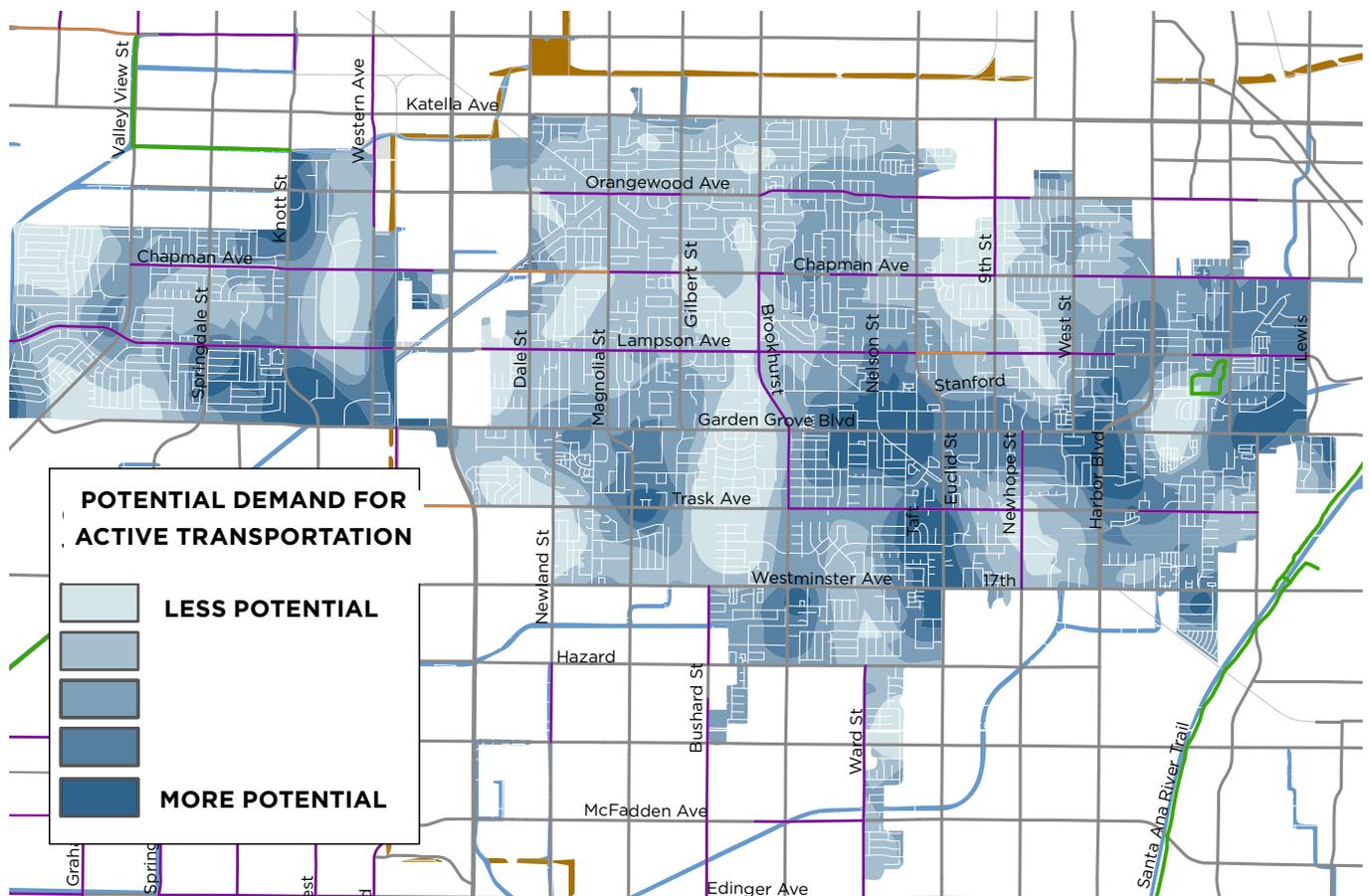
The demand model relies on spatial consistency to generate logical distance and density patterns. It is for this reason that all scores are aggregated to a central location at the census block level and then the census block corner. Census blocks closely represent the street network and therefore census block corners closely represent street corners, where foot and bicycle traffic is prevalent. This method is based on the Low-Stress Biking and Network Connectivity report (Mineta Transportation Institute, May 2012). The report discusses the benefits of using a smaller geographic setting for pedestrian and bicycle demand analyses rather than using more traditional traffic model features such as census block groups, census tracts,

or traffic analysis zones. Due to the low speed of pedestrian movement, a much smaller geographic unit of analysis is needed.

## SCORING METHOD

The demand model's scoring method is a function of density and proximity. Scores are a result of two complementing forces: **distance decay** – the effect of distance on spatial interactions yields lower scores for features farther away from other features; and **spatial density** – the effect of closely clustered features yields higher scores. Scores will increase in high feature density areas and if those features are close together. Scores will decrease in low feature density areas and if features are further apart.

Figure 3-4: Composite Demand Map



### COMPOSITE DEMAND ANALYSIS RESULTS

After independently processing the features, the composite model is created and grouped into five demand classes using breaks in the data values. Areas that yielded highest demand include the confluence of high employment, high bus ridership, retail land uses, Downtown, and multi-family housing. Areas largely dominated by single-family homes, in spite of representing potential trip generators, represent the lowest demand areas. Moderate demand is seen between high demand areas, representing movement between destinations in these areas.

Figure 3-3 displays the demand analysis for the Live, Work, Play, and Learn factors. The areas shaded more deeply in blue represent areas with the highest potential for supporting active transportation relative to other colors on the ramp. This composite demand map (Figure 3-4) reveals the **greatest demand exists around Downtown Garden Grove**. This area extends further south toward Westminster Avenue and further east toward Harbor Boulevard. Additional areas of demand are found near Garden Grove Boulevard and Orangewood Avenue.

Maps by individual category for each factor can be found in Appendix D.

### EQUITY ANALYSIS

This plan develops a connected bicycle and pedestrian network that serves all areas of Garden Grove, including areas that have a high density of historically underserved populations and relatively low levels of bicycle facilities. An equity analysis examined the existing distribution of bicycle facilities compared to the distribution of these populations.

For purposes of analysis, the following socio-economic indicators define underserved populations:

- Percentage of population that are people of color
- Percentage of households below 200 percent of poverty level (defined by the U.S. Census Bureau)
- Percentage of households within the census tract with no automobile available for daily use
- Population of people under 18 years of age
- Population of people over 64 years of age

The analysis used a threshold for each of the above indicators, so that those census tracts that had a greater value than the mean value for any given indicator was given a score of one. For example, if a census tract had an above average number of people of color and an above average number of people 65 years of age or older, the census tract was given a score of two. The high equity score has a maximum possible score of five and a low equity score has a minimum possible score of zero.

A series of maps by individual category for each factor can be found in Appendix D.

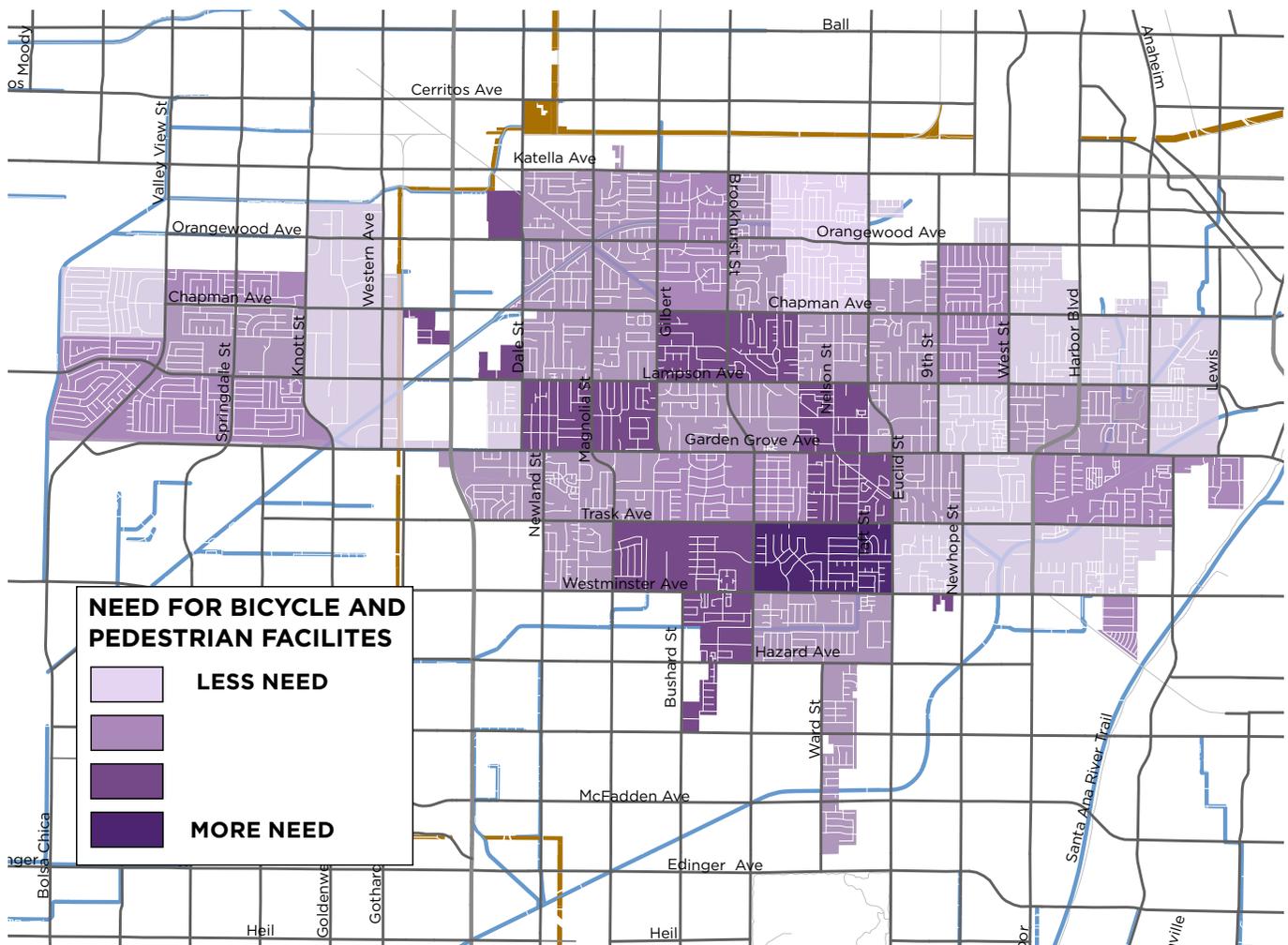


### EQUITY ANALYSIS RESULTS

The map on the following page (Figure 3-5) displays the equity analysis for the Live, Work, Play, and Learn factors. The areas shaded more deeply in purple represent areas with the highest level of need for bicycle and pedestrian facilities relative to other colors on the map. This composite equity map reveals that the **greatest concentration of need is the area enclosed by Westminster and Trask**

**Avenues and Brookhurst and Euclid Streets.** This location scored greater than the city average on all indicators. The least need is in the area around Orangewood Avenue and Nelson Street. This area scored lower than the city average on all indicators. In general, the furthest east and west extents of the city have lower levels of need than the central part of the city.

Figure 3-5: Composite Equity Map





*Though Garden Grove has an existing network of bicycle infrastructure, some cyclists don't currently feel comfortable riding on the street.*



## IV. POLICY RECOMMENDATIONS

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*"By far the greatest and most admirable form of wisdom is that needed to plan and beautify cities and human communities."  
- Socrates*

This chapter is the heart of the *Active Streets Plan*. **It outlines the specific policy recommendations towards making Garden Grove a more pedestrian and bicycle friendly community.** The recommended policies were developed with consideration for the needs identified in Chapter III and this plan's goals.

**The City of Garden Grove aims to increase the use of active transportation (e.g., walking, biking, and using other non-motorized devices) by residents and visitors of all ages and abilities.** A comprehensive evaluation of existing planning efforts, in addition to input received from stakeholders, guided the project team in crafting the vision related biking and walking that is noted herein this section.

Goals, objectives, and policies direct the way public improvements are made, where resources are allocated, and how programs are operated. They should support the city's vision and describe the most important aspects of the city's priorities.

This chapter includes the plan's

- Goals
- Objectives
- Policy recommendations

## Goals, Objectives, and Policies

The following goals, objectives, and policies are consistent with and support the *Garden Grove General Plan 2030*.



### MOBILITY & ACCESS

**Increase and improve pedestrian and bicycle access to employment centers, schools, transit, recreation facilities, and other community destinations across the City of Garden Grove for people of all ages and abilities.**

**Objective 1.A: Increase the mode share of pedestrian and bicycle travel to 15 percent for trips of one mile or less by 2020.**

- Policy 1.A.1: Accommodate the need for pedestrian and bicycle mobility, accessibility, and safety when planning, designing, and developing transportation improvements. Such accommodations could include:
  - » a. Reviewing capital improvement projects to make sure that needs of non-motorized travelers are considered in planning, programming, design, reconstruction, retrofit, maintenance, construction, operations, and project development activities and products,
  - » b. Creating and implementing an Americans with Disabilities Act (ADA) Transition Plan that includes actions such as retrofitting street corners, crossings, and transit stops that do not meet current accessibility standards.

**Objective 1.B: Eliminate barriers to pedestrian and bicycle travel.**

- Policy 1.B.1: Identify opportunities to improve or add pedestrian and bicycle crossings of State Route 22 (Garden Grove Freeway), State Route 39 (Beach Boulevard), and major arterials.

- Policy 1.B.2: Identify gaps in the pedestrian and bicycle facilities network and needed improvements to and within key activity centers and community areas, and define priorities for eliminating these gaps by making needed improvements.

**Objective 1.C: Work with transit providers to develop high quality pedestrian and bicycle accessible transit stops, stations, and lines.**

- Policy 1.C.1: Coordinate with OCTA to establish appropriate designs for transit stops and station accessways.

**Objective 1.D: Regularly evaluate pedestrian and bicycle activity levels, facilities, and programs.**

- Policy 1.D.1: Develop and implement an annual evaluation program to count non-motorized roadway users and survey the community on pedestrian and bicycle facilities and programs.



## GOAL 02

### SAFETY

**Improve safety for active transportation users through the design and maintenance of sidewalks, streets, intersections, and other roadway improvements such as signage, lighting, and landscaping; as well as best practice non-infrastructure programs to enhance and improve the overall safety of people walking and biking.**

#### **Objective 2.A: Eliminate fatalities and serious injuries in collisions involving walking and biking.**

- Policy 2.A.1: Annually review reported collisions involving people walking and people biking to inform ongoing planning efforts, track effectiveness of new projects, and prioritize improvements at locations throughout the city.
- Policy 2.A.2: Identify opportunities to reduce traffic exposure for people walking by reducing crossing distances and/or providing safe and convenient pedestrian facilities.
- Policy 2.A.3: Identify opportunities to reduce traffic exposure for people on bicycles by removing conflict zones, providing barriers between modes of roadway users, redesigning intersections to accommodate bicycle travel, and/or providing other dedicated facilities.

#### **Objective 2B: Work to improve walking and biking conditions at intersections with the highest rates of collisions.**

- Policy 2.B.1: Coordinate with Caltrans to provide median refuge islands along Beach Boulevard (State Route 39) and to enhance the pedestrian and bicycle crossings at State Route 22's on- and off-ramps.

## GOAL 03

### INFRASTRUCTURE AND SUPPORT FACILITIES

**Maintain and improve the quality, operation, and integrity of the pedestrian and bicycle network infrastructure that allows for convenient and direct connections throughout Garden Grove. Increase the number of high quality support facilities to complement the network, and create public pedestrian and bicycle environments that are attractive, functional, and accessible to all people.**

#### **Objective 3.A: Incorporate pedestrian and bicycle facilities and amenities into private and public development projects.**

- Policy 3.A.1: Support and encourage local efforts to require the construction of pedestrian and bicycle facilities and amenities, where warranted, as a condition of approval of new development and major redevelopment projects.
- Policy 3.A.2: Facilitate pedestrian and bicycle travel during development projects through public and private construction zones.
- Policy 3.A.3: Adopt, establish, and implement roadway and streetscape design guidelines that address topics such as bikeways, sidewalk zones, street corners, and street crossings, (e.g. National Association of City Transportation Officials (NACTO) Urban Street Design Guide).

#### **Objective 3.B: Adopt a citywide Complete Streets Policy that facilitates design and construction of streets that accommodate the needs of all people.**

- Policy 3.B.1: Provide citywide guidance that requires all roadway construction projects to include adequate facilities for people biking, walking and using wheelchairs unless the project has specific extenuating circumstances that prevent such facilities from installation.
- Policy 3.B.2: Facilitate the creation of street designs and public realm projects that enhance and beautify the surrounding areas, provide

welcoming spaces for people traveling on foot and on bicycle, and support sustainable development practices like native drought-tolerant plants, water infiltration, and context-sensitive designs.

**Objective 3.C: Provide maintained walkways and bikeways that are clean, safe, and attractive.**

- Policy 3.C.1: Provide routine maintenance of pedestrian and bicycle network facilities, as funding and priorities allow. Programs to support these maintenance efforts could include:
  - » a. Sidewalk repair programs, including incentives to property owners to improve adjoining sidewalks beyond any required maintenance,
  - » b. Bicycle rack installation programs, including city-funded installation of bicycle racks in commercial corridors, schools, and other public buildings and/or incentives to property owners to install bicycle parking on private property,
  - » c. A web-based or phone-based program that allows the general public to request maintenance and improvements for the public right of way, and
  - » d. “Adopt a Trail” programs that involve volunteers for trail clean-up and other maintenance.
- Policy 3.C.2 Work with property owners of vacant land adjacent to public walkways to identify and implement beautification opportunities on the vacant property, such as landscaping, fencing, and/or art installations.
- Policy 3.C.3: Develop, establish, and enforce policies that maintain safe, convenient travel by foot and bicycle. Programs to support these efforts could include:
  - » a. A set of standard plans and policies for private construction companies that maintain safe, convenient pedestrian and bicycle travel,

- » b. A program for city agencies and contractors to ensure the installation of proper temporary signage, detours, and closure notices that maintain the safety of the walking and biking public, and
- » c. An enforcement program for city construction inspectors to ensure construction companies comply citywide.



**NON-INFRASTRUCTURE PROGRAMS**

**Increase awareness of the value of pedestrian and bicycle travel for commute and non-commute trips through encouragement, education, enforcement, and evaluation programs that support walking and biking.**

**Objective 4.A: Establish and enhance safe routes to and from schools that will enable and encourage more students to walk or ride a bicycle or skateboard to/from school.**

- Policy 4.A.1: Identify and develop education and encouragement projects working with the school community through the Safe Routes to School program. This program could include:
  - » a. Identifying Capital Improvement Programs (CIPs), working with the school community,
  - » b. Applying for state and federal Safe Routes to School funding and other grants to construct capital improvements and implement educational and encouragement programs, and
  - » c. Developing and distributing maps that identify the most appropriate routes for students to walk or ride a bicycle to/from school.

**Objective 4.B: Establish and enhance a Safe Routes for Seniors program that will enable and encourage more elderly residents and visitors to walk and ride a bicycle to services, access**



### **transit, and complete other active trips safely and conveniently.**

- Policy 4.B.1: Work with the senior community to identify and address barriers to increased walking, biking, and transit use.
- Policy 4.B.2: Identify and develop education and encouragement programs working with seniors through the Safe Routes for Seniors program.

This program could include:

- » a. Identifying Capital Improvement Programs (CIPs) working with the senior community, prioritizing access to key senior origin and destination points, and
- » b. Developing senior pedestrian and bicycle mobility and safety trainings in conjunction with senior centers and senior organizations.

### **Objective 4.C: Introduce and promote education, encouragement, and outreach for pedestrian and bicycle programs.**

- Policy 4.C.1: Support programs that encourage and promote pedestrian and bicycle travel.

These programs could include:

- » a. Creation of a social marketing campaign to promote the benefits of active lifestyles, active transportation, walking, biking, and focusing on the role of walking or biking in promoting health and lowering obesity,
- » b. Development and implementation of effective safety programs for adults and youths to educate people driving, walking, and biking of their rights and responsibilities, and
- » c. Informing interested agencies and organizations about available education materials and assistance such as those programs administered by the National Safe Routes to School Partnership.

### **Objective 4.D: Establish a Safe Routes to Transit program that will facilitate walking and biking to transit.**

- Policy 4.D.1: Identify and implement Safe Routes to Transit projects.

### **Objective 4.E: Create a community-identified brand for the Pacific Electric Right-of-Way Trail.**

- Policy 4.E.1: Identify and implement a brand and marketing campaign/identity for the Pacific Electric Right-of-Way Trail.



## **EQUITY**

### **Improve accessibility for all people walking and biking through equity in public engagement, service delivery, and capital investments.**

#### **Objective 5.A: Assist neighborhoods that desire to improve pedestrian access to, from, and within their neighborhood.**

- Policy 5.A.1: Develop programs that empower and enable neighborhoods and groups of residents to identify, prioritize, and move forward with pedestrian or bicycle safety improvements in their area, including neighborhood traffic calming.

#### **Objective 5.B: Identify low-income and transit dependent communities that require pedestrian or bicycle access to, from, and within their neighborhood.**

- Policy 5.B.1: Implement pedestrian and bicycle projects that provide access to local services, schools, recreation centers, shopping, and transit identified in the Community in Motion study.
- Policy 5.B.2: Improve pedestrian and bicycle access to facilities that serve low-income and transit dependent community members.
- Policy 5.B.3: Improve pedestrian and bicycle connections between the eastern and western parts of the city.



## IMPLEMENTATION

**Implement the *Active Streets Master Plan* over the next 20 years.**

**Objective 6.A: Determine funding needs for expanding and improving pedestrian and bicycle facilities and programs, and seek funding for those needs.**

- Policy 6.A.1: Develop and update a 20-year Financial Plan on a five year basis.
- Policy 6.A.2: Apply for local, State, and Federal grants for major pedestrian and/or bicycle projects and programs, including the Active Transportation Program and Safe Routes to School.
- Policy 6.A.3: Develop requirements and incentives for private property owners to incorporate pedestrian- and bicycle-friendly features into new projects.
- Policy 6.A.4: Explore partnerships with private and public organizations (e.g., the Orange County Health Care Agency) to fund incentive programs and events that encourage walking and biking.

**Objective 6.B: Make every effort to consider pedestrian and bicycle projects into the City's Capital Improvement Program (CIP) that will create a more walkable and bikeable environment in Garden Grove.**

- Policy 6.B.1: Identify the projects that were reviewed and implemented in the CIP annual report.
- Policy 6.B.2: Prioritize the top ten projects in this plan for inclusion in the CIP.
- Policy 6.B.3: Identify dedicated pedestrian and bicycle project funding by 2021.

**Objective 6.C: Ensure pedestrian and bicycle transportation is coordinated within the city and externally.**

- Policy 6.C.1: Designate a City Active Transportation Coordinator responsible for coordinating pedestrian and bicycle transportation within the city and externally. The Active Transportation Coordinator will be a regular participant on technical review committees and attend meetings with decision-making bodies. They will also have the authority to comment on private and public development projects as it relates to implementation of the *Active Streets Master Plan's* visions, goals, objectives, and policies.

**Objective 6.D: Review the *Active Streets Master Plan* recommendations at regular intervals to ensure it reflects the most current priorities, needs, and opportunities.**

- Policy 6.D.1: Update the *Active Streets Master Plan* every five years to identify new facility improvements and programmatic opportunities as the pedestrian and bicycle networks develop, assess their feasibility, gauge public support, identify funding sources, and develop implementation strategies.





*Garden Grove residents and visitors experience riding on the pilot segment of the PE ROW Trail at the Garden Grove Open Streets event.*



## V. NETWORK RECOMMENDATIONS

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*Planning of the automobile city focuses on saving time. Planning for the accessible city, on the other hand, focuses on time well spent.*

*-- Robert Cervero, Chair of City & Regional Planning, UC Berkeley*

This chapter details the infrastructure improvements recommended to create a safe, accessible, and connected pedestrian and bicycle network in Garden Grove. **A diverse mix of facilities are recommended to create comprehensive network, including sidewalks, crossing improvements, on-road bicycle facilities, and shared-use paths.**

The recommendations directly reflect the information collected and presented in the *Existing Conditions* and *Needs Analysis* related to existing planning efforts, safety, public input, best practices, demand, equity, and the City of Garden Grove's high aspirations for becoming a premiere bike-friendly community.

This chapter contains:

- Bikeway Recommendations
- Pedestrian Recommendations

## Infrastructure Recommendations

Streets are an integral part of everyday life and public space. The term “Complete Streets” refers to designing streets for people of all ages and abilities using various travel modes such as walking, bicycling, transit, and driving. This chapter is organized into bicycle network recommendations and pedestrian recommendations.

### BIKEWAY NETWORK RECOMMENDATIONS

A variety of on and off-street bicycle facilities are recommended to accommodate 1) the range of abilities and comfort levels of bicyclists; 2) the range of conditions for bicycling on different roadway environments; and 3) local preferences identified through the public input process. The recommended bicycle network is made up of the following core types of facilities:

- Shared-use Paths
- Bicycle Lanes
- Buffered Bicycle Lanes / Separated Bikeway
- Signed Bicycle Routes
- Neighborhood Greenways

### PEDESTRIAN RECOMMENDATIONS

The pedestrian network should accommodate people with a variety of needs, abilities, and possible impairments. The recommendations in this chapter will help improve pedestrian access and comfort and fall into three categories:

- Crossings and intersections
- Traffic Signals and Warning Beacons



*Cyclists crossing the street in garden grove*



*Main Street in Downtown Garden Grove has a comfortable and inviting pedestrian environment*



## Bicycle Facility Types

The following bikeway recommendations include a number of treatments which are described below in greater detail. As shown in the description, Class III Bicycle Routes with signage and pavement markings or Class II Bicycle Lanes, could be implemented and in the future improved to a neighborhood greenway or Class IV Separated Bikeway, respectively.

### SHARED-USE PATH (CLASS I)

A shared use path allows for two-way, off-street bicycle use and also may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. In Garden Grove, opportunities for shared-use paths can be found along rail corridors, stormwater channels, utility corridors, and in parks where there are few conflicts with motorized vehicles. Path facilities can also include amenities such as lighting, signage, and fencing (where appropriate). Key features of shared use paths include:

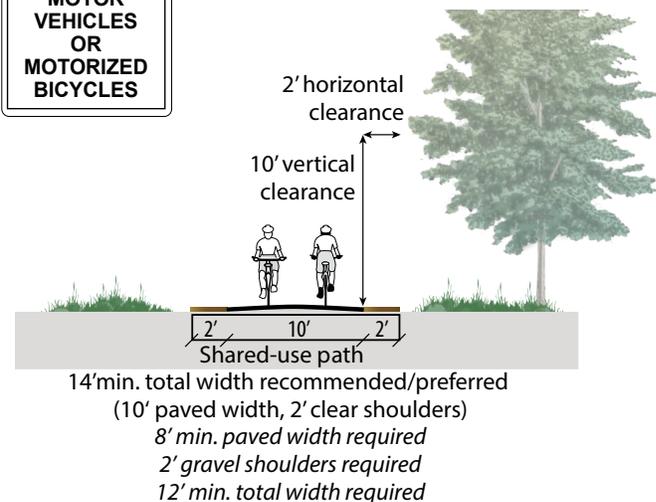
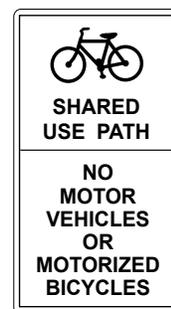
- Frequent access points from the local road network
- Directional signs to direct users to and from the path
- A limited number of at-grade crossings with streets or driveways
- Terminating the path where it is easily accessible to and from the street system
- Separate treads for pedestrians and bicyclists when heavy use is expected



Shared-use path in Garden Grove makes for more relaxed cycling

### CLASS I Shared-Use Path

Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized.



*Caltrans Class I Shared-use Path design guidelines*



Standard Class II bicycle lane



Class II buffered bicycle lane

**BICYCLE LANES (Class II)**

A bicycle lane is a portion of the roadway that has been designated by striping, signing, and pavement markings for the preferential and exclusive use of bicyclists. Bicycle lanes are always located on both sides of the road (except one way streets), and carry bicyclists in the same direction as adjacent motor vehicle traffic.

**BUFFERED BICYCLE LANES (Class II)**

Bicycle Lanes can be enhanced by adding buffer striping. Buffered bicycle lanes are bicycle lanes paired with a designated buffer space, separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.

Buffered bicycle lanes follow general guidance for buffered preferential vehicle lanes as per CA MUTCD guidelines.

Buffered bicycle lanes are designed to increase the space between the bicycle lane and the travel lane and/or parked cars, with a goal of providing more comfortable conditions for bicyclists. This treatment is appropriate for bicycle lanes on roadways with high motor vehicle traffic volumes and speed, adjacent to parking lanes, or a high volume of truck or oversized vehicle traffic.

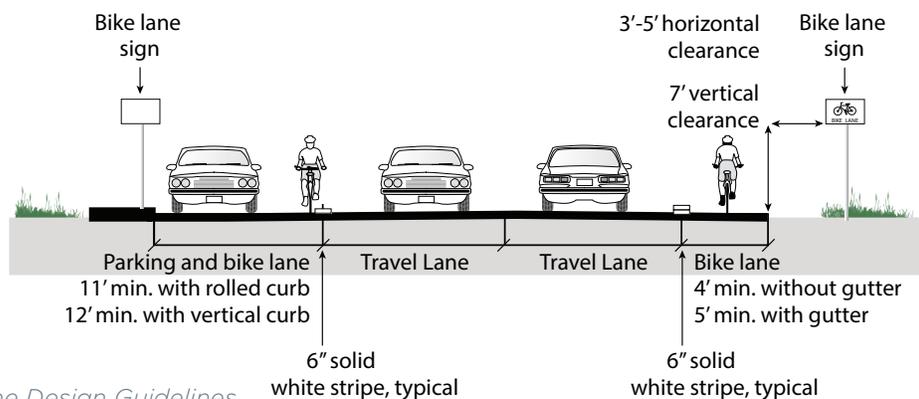
**BICYCLE ROUTES (Class III)**

Bicycle routes generally employ bikeway signage, and may also use pavement markings, to guide bicyclists to popular destinations on low-volume, bike-friendly roadways. Bicycle routes serve as an alternative to roads that are less comfortable for cycling due to higher motor vehicle volumes and/or speeds. They were chosen as part of the network because of the importance of overall system

**CLASS II**

**Bike Lane**

Provides a striped lane for one-way bike travel on a street or highway.





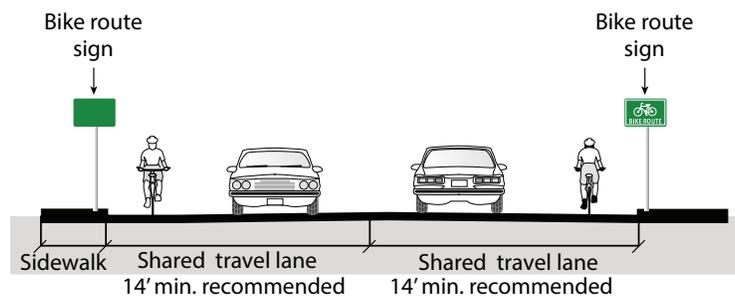
connectivity and connectivity to destinations such as parks, neighborhoods, and schools.

A shared lane marking (SLM), or "bicycles on pavement," can be used to encourage bicycle travel and proper positioning within a shared travel lane. Placed in a linear pattern along a corridor (typically every 100-250 feet), shared lane markings make motorists more aware of the potential presence of cyclists; direct cyclists to ride in the proper direction; and remind cyclists to ride further from parked cars to avoid "dooring" collisions. The Garden Grove Police Department

(GGPD) has expressed support for SLMs - claiming it is easier to enforce traffic laws when bicycle infrastructure is more visible (see Appendix F for more comments from GGPD) in addition to bike route signs. In constrained conditions, the SLMs are placed in the middle of the lane. On a wide outside lane, the SLMs can be used to promote bicycle travel to the right of motor vehicles. In all conditions, SLMs should be placed outside of the door zone of parked cars and used on roadways with speed limits of 35 mph or less (below 30 mph preferred).

### CLASS III Bike Route

Provides for shared use with pedestrian or motor vehicle traffic, typically on lower volume roadways.



Caltrans Class III Bicycle Route Design Guidelines

### NEIGHBORHOOD GREENWAYS (Class III)

Neighborhood greenways, are generally low-volume, low-speed neighborhood streets around core areas of the city modified to enhance bicyclist comfort and safety by using treatments such as signage, pavement markings, traffic calming and/or traffic reduction. Pedestrian and bicycle cut-throughs can also be integrated into the neighborhood greenway network to allow for continuous bicycle travel off of major corridors. These treatments allow through bicycle movements while discouraging motorized through-traffic.

Jurisdictions throughout the country use a wide variety of strategies to determine where specific treatments are applied. While no federal guidelines exist, several best practices have emerged. At a minimum, neighborhood greenways should include distinctive pavement markings and wayfinding signs.

Traffic conditions on neighborhood greenways should be monitored to provide guidance on when and where treatments should be implemented. When motor vehicle speeds and volumes or bicyclist delay exceed the preferred limits, additional treatments should be considered. Effective traffic calming measures to consider are curb extensions, chicanes, and lane narrowing.



Examples of neighborhood greenways, Berkeley



A separated bikeway provides a physical separation from motor vehicles.

**SEPARATED BIKEWAY (CLASS IV)**

A separated bikeway or cycle track is an exclusive bicycle facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bicycle lane. A separated bikeway is physically separated from motor traffic and distinct from the sidewalk. Separated bikeways have different forms but all share common elements—they provide space that is intended to be exclusively or primarily used by bicycles, and are separated from motor

vehicle travel lanes, parking lanes, and sidewalks. In situations where on-street parking is allowed, separated bikeways are located to the curb-side of the parking (in contrast to bicycle lanes).

Separated bikeways may be one-way or two-way, and may be at street level, intermediate level, or sidewalk level. If at sidewalk level a curb or median separates them from motor traffic, while different pavement color/texture separates the separated bikeway from the sidewalk. In the intermediate level a curb or median on both sides separates cyclists from motor traffic and from the sidewalk. If at street level, they can be separated from motor traffic by raised medians, on-street parking or bollards.

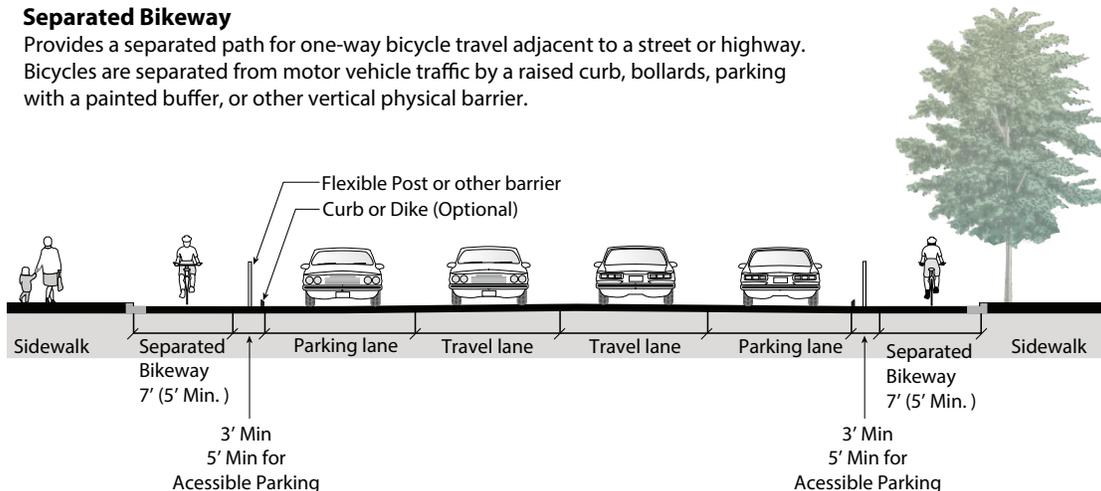
By separating bicyclists from motor traffic, separated bikeway can offer a higher level of comfort than bicycle lanes and are attractive to a wider spectrum of the public. Intersections and approaches must be carefully designed to promote safety and facilitate left-turns from the right side of the street.

In December 2015, Caltrans published a design information bulletin providing design guidance for separated bikeways. Incorporation into the Highway Design Manual is ongoing.

**CLASS IV**

**Separated Bikeway**

Provides a separated path for one-way bicycle travel adjacent to a street or highway. Bicycles are separated from motor vehicle traffic by a raised curb, bollards, parking with a painted buffer, or other vertical physical barrier.



Caltrans Class IV Separated Bikeway design adjacent to on-street parking. Additional design guidance provided in Caltrans Design Information Bulletin Number 89, December 30, 2015.

## INTERSECTION TREATMENTS

There are a variety of intersection treatments that can be applied to make a safer and more comfortable crossing environment for bicyclists. First, bicycle lanes should be extended up to and potentially through an intersection. At constrained intersections, green paint can be used to identify conflict areas where right-turning traffic needs to merge through a bicycle lane. As seen in the example below, green paint can also be used



*Bicycle-friendly intersection treatments including paint, bicycle signals, and bicycle boxes*

to delineate the preferred path of travel for the bicyclist through an intersection. Image on the upper right corner shows a bicycle box, which help bicyclists on a safe way to get ahead of traffic during the red signal phase.



## WAYFINDING

Successful wayfinding orients people to their surroundings and informs them on how to best navigate to their destination along preferred bicycle routes. Apart from serving as a guide to destinations, wayfinding increases users' comfort and accessibility to the bikeway network. It can offer a sense of safety – familiarizing users with the



*Wayfinding signage examples: Bicycle wayfinding is not only an important for navigating the bicycle network, but also as an encouragement tool that makes people aware of how easy it can be to bicycle to popular destinations.*

network and overcoming “barriers to entry” for people who are not frequent bicyclists.

Basic elements to include in wayfinding signs include destinations, distances, and “riding time”. Often the inclusion of riding times dispels common overestimations of time and distance thus encouraging walking or cycling instead of defaulting to the car. Signs should be placed at decision points (where the navigator must choose whether to continue their route or change direction) along bike routes and bicycle boulevards or neighborhood greenways.

**BICYCLE PARKING**

Bicycle parking can be categorized into short-term and long-term parking. Bicycle racks are the preferred device for short-term bike parking. Though they may have a variety of designs, racks must have two points of connection between the bicycle and rack. These racks serve people who leave their bicycles for relatively short periods of time - typically for shopping, errands, eating or recreation. Bicycle racks provide a high level of convenience and moderate level of security.

Long-term bike parking includes bike lockers and bike rooms and serve people who intend to leave their bicycles for longer periods of time. Long-term parking is typically found in public transit stations

and commercial buildings. These facilities provide a high level of security but are less convenient than bicycle racks.

For specific bicycle parking design specifications and placement recommendations, see the Association of Pedestrian and Bicycle Professionals (APBP) Essentials of Bike Parking: Selecting and Installing Bike Parking that Works (2015).

*APBP Essentials of Bike Parking: Selecting and Installing Bike Parking that Works (2015)*



*Short-term parking: Long Beach’s art racks are more noticeable than standard bike racks, and add a cultural element to bike parking*



## COMPLETE STREETS

A Complete Street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, freight, and motorists, appropriate to the function and context of the facility.

In addition to general purpose vehicular travel lanes and sidewalks, a Complete Street may include items such as bicycle lanes or shoulders, bus lanes, transit stops, crosswalks, median refuges, curb extensions, appropriate landscaping, and other features that add to the usability of the street.

### COMPLETE STREET STUDY CORRIDOR

Not all Complete Streets look or function alike. Complete Streets in Garden Grove will serve to balance land use, mobility, modal priority, relationships to other streets in the network and land limitations. As such, there is considerable flexibility in determining the appropriate amenities and cross sections.

In general, as speeds and volumes on a roadway increase, so does the need for separation of non-motorized users from motor vehicles. This plan has identified four Complete Street corridors to be further evaluated and studied: Garden Grove Boulevard, Westminster Avenue, Euclid Street (between Lampson and Trask Avenues) and Harbor Boulevard.



*A Complete Street in Boston, Massachusetts*



*Example of a typical Complete Streets corridor*

## Bikeway Network

Recommended facilities for bicyclists strive to create a safe and comfortable biking environment for users of all ages and abilities and reflect national best practices in considering conditions such as traffic volumes, traffic speeds, and available roadway rights-of-way.

Bikeway network development utilized a number of different analyses, described in the *Existing Conditions* section of this plan, and planning judgment to determine what project types are warranted along roadways throughout Garden Grove. The ultimate goal of the bikeway network is to provide connectivity to destinations such as retail centers, job centers, schools, and recreation opportunities for all residents.

Recommendations are considered planning-level, meaning that they should be used as a guide when implementing recommendations. In many cases, more detailed design studies will be required to examine specific site conditions and develop specific designs that reflect local conditions and constraints.

These maps in this plan reflect the long-term vision for the network—implementation will not happen overnight. However, the plan also contains an Implementation Chapter which provides a roadmap for executing recommendations in a logical manner.

Prior to implementing any infrastructure recommendations, current best practices should be reviewed to assure the most up-to-date design standards are used.

### NETWORK RECOMMENDATIONS

In total, 55.3 miles of new bikeway facilities, 9.3 miles of updated bikeway facilities, and 20.4 miles of study corridors are recommended to improve biking conditions across Garden Grove. Tables 5-1 and 5-2 on this page provide a summary of bicycle

facility improvements by linear miles shown on the map in Figure 5.1.

Table 5-3 provides additional details for the proposed Class I Path facilities. Tables 5-4 through 5-8 provide a summary by roadway segment for the proposed on-street bikeway facilities and study corridors. In addition to the location and length of new or updated facility the tables provide notes and a rationale if a proposed bikeway was identified in a previous plan.

Table 5-1: Study Corridor Summary

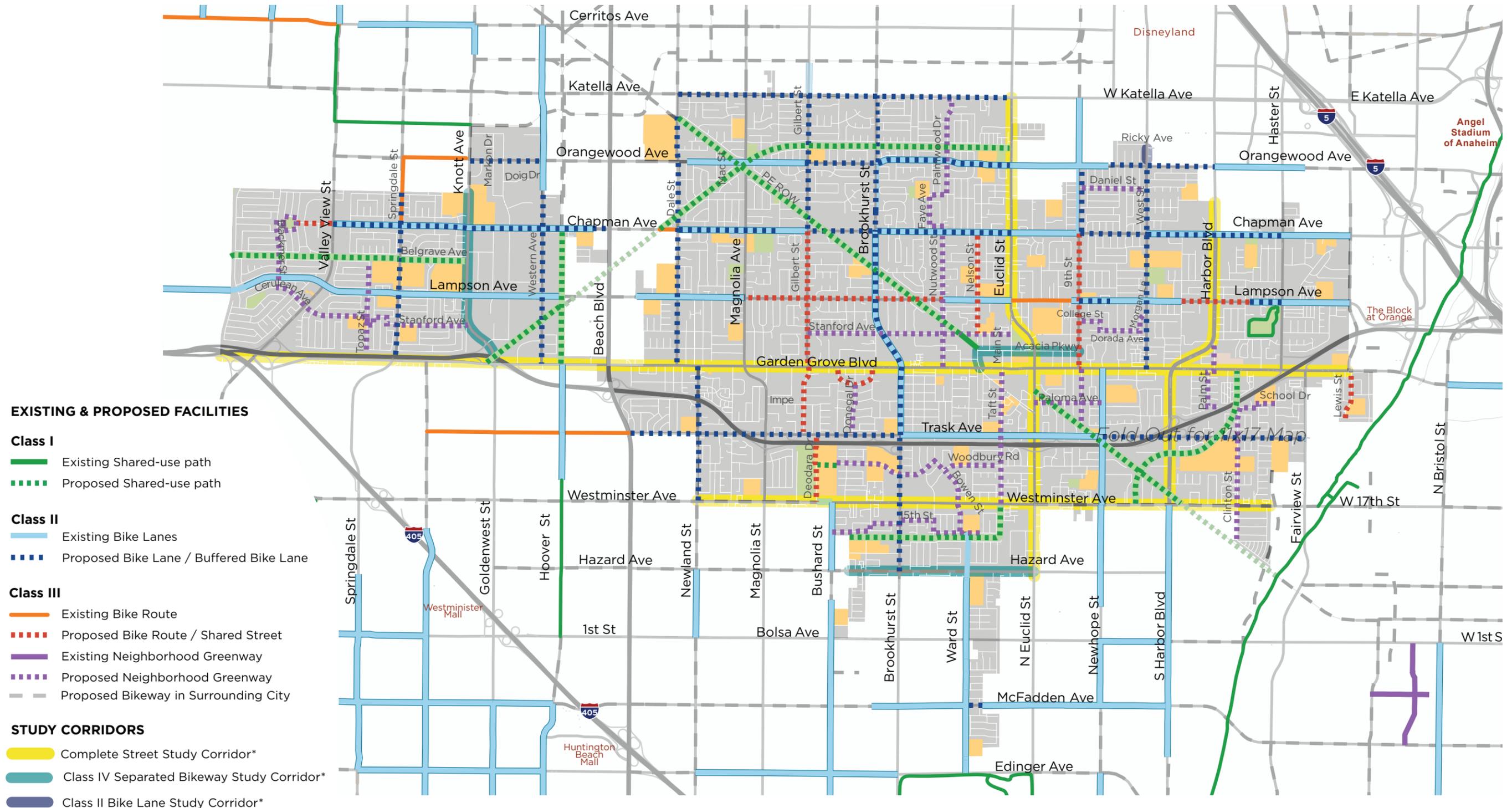
TYPE	MILES
Complete Street Study Corridor	16.2
Separated Bikeway Study Corridor	4.2
<b>TOTAL MILEAGE</b>	<b>20.4</b>

Table 5-2: Mileage Summary of Recommended Bikeway Facilities

Class	Facility Type	New Miles	Updated Miles
I	Shared-Use Path	14.7	
II	Bicycle Lane	20.3	5.8
III	Neighborhood Greenway	15.0	
III	Bicycle Route	5.3	3.5
<b>Total Mileage</b>		<b>55.3</b>	<b>9.3</b>



Figure 5-1: Proposed Bicycle Facilities for Garden Grove



## PROPOSED BIKE FACILITY NETWORK

Garden Grove Active Streets Master Plan



\* Additional study needed to determine feasibility and design.



*Fold Out for 11x17 Map*



## Pedestrian Recommendations

Most trips begin and end as walking trips even when a car, bicycle, bus, or train is involved. A high quality pedestrian network will support all aspects of the transportation system and enhance mobility in Garden Grove. Every street in the city should be designed for pedestrians.

Similar to bicyclists, pedestrians have a variety of characteristics and the transportation network should accommodate a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians' physical abilities, walking speed, and environmental perception. Children have low eye height and walk at slower speeds than adults. They also perceive the environment differently at various stages of their cognitive development. Older adults walk more slowly and may require assistive devices for walking stability, sight, and hearing.

The following section provides recommendations to improve pedestrian access and comfort based on the major barriers identified by the community. Pedestrian facilities fall under two main designations, linear facilities (sidewalks and paths) and intersections.

**Sidewalks are the most fundamental element of the pedestrian network and should provide the following tenets:**

- Accessibility for all users
- Continuity
- Street lighting
- Street tree shade
- Separation from traffic by landscaped park strips and/or parking
- Proper water drainage
- Social space for standing, sitting, and visiting

**Pedestrian-friendly intersections will include:**

- Areas for pedestrians to congregate
- Appropriate accessibility to (and maintenance of) all corner pedestrian features
- Corner and intersection design for pedestrian safety and comfort
- Minimization of pedestrian crossing distances
- Lighting that promotes visibility, legibility, and accessibility
- Transit stops where appropriate



*Providing safe connections to neighborhood amenities such as parks is important*



*Crossing guards at a crosswalk near a school*

## SIDEWALKS

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel separated from vehicle traffic. A variety of considerations are important in sidewalk design. Providing adequate and accessible facilities can lead to increased numbers of people walking, improved safety, and the creation of social space.

Sidewalks should be more than areas to travel; they should provide places for people to interact. There should be spaces for standing, visiting, and sitting. Sidewalks should contribute to the character of neighborhoods and business districts, strengthen their identity, and be an area where adults and children can safely participate in public life.

In downtown and commercial areas, they should provide for higher volumes and engagement at varying activity levels. In residential areas they should be designed for comfort, recreation and socialization.

Generally, Garden Grove has a comprehensive walking network but there are local streets where

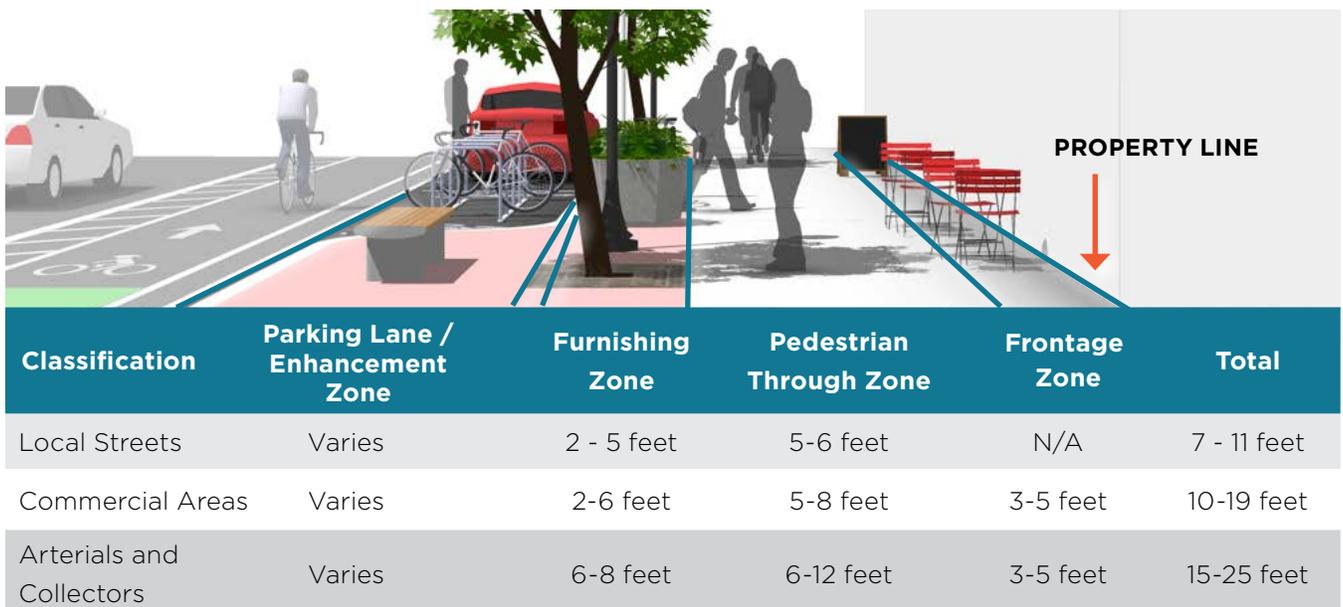
walking facilities are not available. The identification of gaps in the city’s sidewalk network is a fine-grained exercise. Sidewalks are missing on some corridors, such as Gilbert Street and Groveview Street. These sidewalks should be filled in as redevelopment allows.

### SIDEWALK WIDTH

The width and design of sidewalks will vary depending on street context, functional classification, and pedestrian demand. Below are preferred widths of each sidewalk zone according to general street type. Standardizing sidewalk guidelines for different areas of the city, dependent on the above listed factors, ensures a minimum level of quality for all sidewalks.

It is important to provide adequate width along a sidewalk corridor. Two people should be able to walk side-by-side and pass a third comfortably. In areas of high demand, sidewalks should contain adequate width to accommodate the high volumes and different walking speeds of pedestrians. The Americans with Disabilities Act requires a four-foot

Figure 5-2: Sidewalk Zones



clear width in the pedestrian zone plus five-foot passing areas every 200 feet.

### **SIDEWALK OBSTRUCTIONS**

Obstructions to pedestrian travel in the sidewalk corridor typically include driveway ramps, curb ramps, sign posts, utility and signal cabinets and poles, mailboxes, fire hydrants and street furniture. Obstructions such as utility boxes, pull boxes and traffic signal cabinetry should be placed in the furnishing or utility zone between the sidewalk and the roadway to create a buffer for increased pedestrian comfort.

### **LANDSCAPING AND STREET FURNITURE**

Landscaping, street trees, and street furniture can have a profound effect on improving the pedestrian feel of a corridor. The City should include the following in appropriate streetscape designs:

- Landscaping and street trees
- Planters
- Benches, tables, and chairs

Landscaping and tree maintenance enhances the pedestrian environment by creating a visual buffer from the roadway. Trees also offer welcome shade on warmer days.

Sidewalks can become inaccessible due to overgrown vegetation, so landscaping needs to be

designed and maintained to ensure compatibility with the use of pedestrian facilities. Curbs around landscaped areas should be flush with the adjacent sidewalk to prevent a trip hazard.

Landscaping can also include bioswales, which capture stormwater runoff at intersections, and share many of the benefits of curb extensions.

### **LIGHTING**

Pedestrian scale lighting improves visibility for both pedestrians and motorists - particularly at intersections and in areas where personal safety is a concern.

Pedestrian scale lighting is characterized by short light poles (around 15 feet high), close spacing, low levels of illumination (except at crossings), and the use of LED lamps to produce good color rendition, long service life and high energy efficiency. Lighting should be oriented downward to illuminate the pedestrian environment.

Both street and pedestrian lighting levels should be considered for the same street corridor, especially in areas with tree canopy. "Dark Sky" lighting should be pursued to reduce light pollution. Pedestrian scale lighting should be used in areas of high pedestrian activity and along pedestrian corridors connecting destinations, including transit hubs and access points, and multi-family neighborhoods.



*Street trees create shade and improve walking conditions in sunny Southern California communities*



*Pedestrian lighting improves visibility of pedestrians*

Pedestrian scale lighting fixtures should be consistent with surrounding architectural and streetscape design elements and can be used to incorporate local art, or other cultural or historical relevance.

**TRANSIT STOP AMENITIES**

At transit stops, a variety of streetscape elements can define the pedestrian realm, offer protection from moving vehicles, and enhance the walking experience. These elements include public kiosks and signage, lighting, seating, and shelters.

**Public Information Kiosks and Signage** at bus stops are an important element of good transit service. Signs serve as a source of information to patrons and operators regarding the location of the bus stop and are excellent marketing tools to promote transit use. Basic signs with a route maps and applicable ADA information should be provided at all stops.

**Lighting** is important for safety and security. A brightly lit bus stop makes it easier for the bus driver to observe waiting passengers and allows motorists to see pedestrians around the bus stop.

**Seating** provides comfort and convenience at bus stops and are usually installed on the basis of existing or projected ridership figures. Seats may be installed by themselves or as part of a shelter.

**Shelters** protect pedestrians from the sun and rain; increase comfort for patrons waiting for rides; and may encourage more people to ride transit.



*Transit stop with seating, shelter, and lighting*

**PARKLETS & STREETDECKS**

A parklet is an outdoor space typically the size of an on-street parking space. These mini-parks are often designed for passive recreation and may include planters, and benches. Additionally, parklets can be designed to include bicycle corrals, fitness equipment, chess boards and other activities. Streetdecks create usable commercial space from existing parking spaces and may include dining areas, café tables and chairs, umbrellas, and planters. Outreach to adjacent property owners and businesses is recommended when the removal of an on-street parking space is required for the parklet or streetdeck .

Parklets and streetdecks can enhance neighborhood vitality, especially in areas currently lacking public space or in locations where sidewalk space is constrained. The nature of a parklet will vary based on factors such as size, location, surrounding land uses and the duration of the installation. Parking availability should be considered when determining the overall benefit of parklet installation against parking loss. Parklets do not impede motor vehicle or bicycle travel because they are generally located adjacent to on-street parking.



*Parklet in Long Beach provides outside seating area*



## CROSSINGS AND INTERSECTIONS

Every intersection in Garden Grove should be designed for pedestrian safety and comfort, with pedestrian enhancements appropriate to traffic speed, traffic volume, pedestrian crossing distance, and other similar factors. This section describes the primary palette of options that should be considered for crossing and intersections improvements. As streets are repaved and reconstructed, pedestrian crossing ramps should be added.

### ACCESSIBLE CURB RAMPS

Curb ramps are the design elements that allow all users to make the transition from the street to the sidewalk. There are a number of factors to be considered in the design and placement of curb ramps at corners. Properly designed curb ramps ensure that the sidewalk is accessible from the roadway. A sidewalk without a curb ramp can be useless to someone in a wheelchair, forcing them back to a driveway and out into the street for access. A perpendicular ramp is aligned so that the ramp is perpendicular to the centerline of the roadway. This design directs pedestrians to travel perpendicular to traffic when they enter the street and crosswalk. Although diagonal curb ramps might save money, they create potential safety and mobility problems for pedestrians, including reduced maneuverability and increased interaction with turning vehicles, particularly in areas with high traffic volumes. Perpendicular is the preferred option. When reconstruction projects allow, additional improvements should be considered as part of those projects.

### CROSSWALKS

Crosswalks exist everywhere that sidewalks and streets intersect, and may be marked or unmarked. Marked crosswalks encourages pedestrians to cross at designated locations and indicates to motorists that they must yield for pedestrians. Installing marked crosswalks alone will not necessarily make

crossings safer, especially on multi-lane roadways. At mid-block locations, crosswalks can be marked where there is a demand for crossing and there are no nearby marked crosswalks.

### ENHANCED CROSSWALKS

Across California, neighborhoods have been installing stamped and painted designs to reinforce the historic and current populations in neighborhoods. While some crosswalks may have small patterns such as bricks, other cities have been creating much bolder artistic visions for crosswalks, which could help inform the possibilities of designs in Downtown Garden Grove. Modeled after New York City's Street Design Manual, the City of Santa Monica is currently developing a 'Creative Crosswalks' pilot program to install creative designs in crosswalks in their downtown. The City of Garden Grove could create guidelines on design features and request local artists to create site-specific designs which can be installed by either City staff or by contractors - giving Downtown Garden Grove a greater sense of place while also improving the safety of people walking.

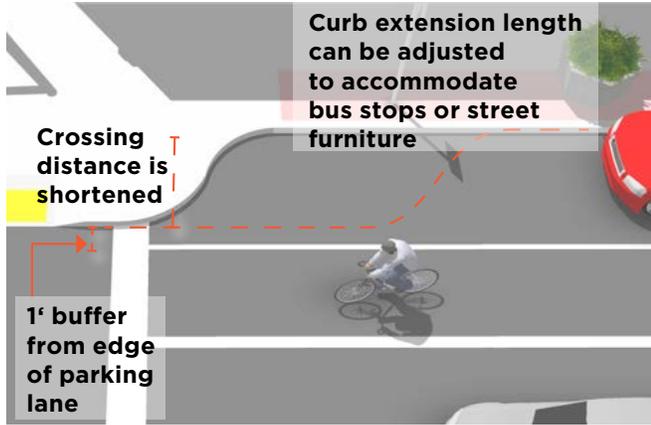
### CURB EXTENSIONS

Curb extensions, or bulbouts, shorten the crossing distance at intersections or midblock crossings, helping to minimize pedestrian exposure and increasing visibility for pedestrians and motorists.



*Miami, Florida's Wynwood Arts District hired artist Carlos Cruz-Diez to design a vibrant enhanced crosswalk*

Figure 5-3: Best Practice Design Guide for Curb Extensions



They are appropriate at crossings where it is desirable to shorten the crossing distance and there is a parking lane adjacent to the curb. Because they are generally located adjacent to on-street parking, they do not impede motor vehicle through travel.

Curb extensions are best suited where parking lanes already exist to eliminate the need to merge from the curb lane, and to create a suitable turn radius for larger vehicles. Curb extensions should be considered at all intersections marked by high pedestrian activity.

**MEDIAN REFUGE ISLANDS**

Refuge islands enable pedestrians to focus on one direction of vehicle traffic at a time when crossing.

Figure 5-4: Best Practice Design Guide for Median Refuge Islands



They are typically used to enhance marked crosswalks, especially on multi-lane roadways.

**RECTANGULAR RAPID FLASH BEACONS (RRFB)**

Rectangular Rapid Flash Beacons (RRFB) are a type of active warning beacon used at unsignalized crossings. They are designed to increase motor vehicle yielding compliance on multi-lane or high volume roadways. They are typically activated by pedestrians manually with a push button, or can be actuated automatically with passive detection systems.

Rectangular rapid flash beacons elicit the highest increase in compliance of all the warning beacon enhancement options. A study of the effectiveness of going from a no-beacon arrangement to a two-beacon RRFB installation increased yielding from 18 percent to 81 percent. A four-beacon arrangement raised compliance to 88%. Additional studies of long term installations show little to no decrease in yielding behavior over time.

**PEDESTRIAN HYBRID BEACON**

Pedestrian hybrid beacons provide a high level of comfort for crossing users through the use of a red-signal indication to stop conflicting motor vehicle traffic. Hybrid beacon installation faces



only cross motor vehicle traffic, stays dark when inactive, and uses a unique 'wig-wag' signal phase to indicate activation. Vehicles have the option to proceed after stopping during the final flashing red phase, which can reduce motor vehicle delay when compared to a full signal installation.

## TRAFFIC SIGNALS

Pedestrian signal indicators demonstrate to pedestrians when to cross at a signalized crosswalk. All traffic signals should be equipped with pedestrian signal indications except where pedestrian crossing is prohibited by signage.

Typical concerns that pedestrians experience at signalized crossings in Garden Grove include:

- Delays caused by long signal cycles
- Lack of understanding of WALK and flashing DON'T WALK indications
- Uncertainty about whether the button must be pressed to activate a pedestrian signal,
- Lack of confirmation that someone has already pressed a push button
- Conflicts with turning vehicles at intersections

### ACTUATED PEDESTRIAN SIGNAL

Manual activation of pedestrian signals is performed with a pedestrian push button. This requires the pedestrian to locate and press the push button to actuate the pedestrian signal phase. For this reason, push buttons should be easy to identify and access, and ideally, be user-responsive.

A favorable alternative to manual actuation is passive detection possible with a variety of automated detection equipment, including microwave and infrared detectors. The automatic detection allows the pedestrian to engage the signal without having to locate the push button. Passive detection can also contribute to the

efficiency of signal operations by allowing for walk time extensions, and/or not dedicating walk time in the absence of pedestrians.

### PEDESTRIAN RECALL

Pedestrian recall is a traffic signal controller setting that automatically provides a pedestrian walk phase during every cycle. Since pedestrian recall does not require detection or actuation, it eliminates the need for push buttons or other costly detection equipment.

This makes pedestrian crossings predictable, minimizes unnecessary pedestrian delay, and does not leave pedestrians wondering whether they have been detected or not. The most appropriate use of pedestrian recall is in locations and/or times of day with high pedestrian volumes.



*Activated pedestrian signals require pedestrians to push a button for signal recall*



*Pedestrian countdown provide timing information to pedestrians crossing the street*

**PEDESTRIAN COUNTDOWN TIMERS**

Pedestrian signal head that only display a flashing don't walk indication, can make it difficult for pedestrians to judge whether they have enough time to cross an intersection safely. Countdown indicators on pedestrian signals solve this by providing pedestrians with the exact amount of time they have to clear the intersection. The California MUTCD requires the use of countdown indicators for all signalized crossings with a change interval (flashing don't walk) greater than 7 seconds.

**LEADING PEDESTRIAN INTERVALS**

Leading Pedestrian Intervals (LPI) give pedestrians a WALK indication before vehicles are given a green light (typically three to seven seconds). The advantage of LPI is that it puts pedestrians in the crosswalk in advance of cars and makes them more visible to turning motorists. The LPI can be omitted if no pedestrians press the pushbutton.

**AUDIBLE PEDESTRIAN SIGNALS**

Audible pedestrian signals are designed to be accessible by individuals with visual disabilities. They provide audible tones or verbal messages to convey when it is appropriate to walk, when

they must wait, and feedback when the signal has been actuated via pushbutton. This eliminates the need for pedestrians to rely entirely on the audible cues provided by moving cars, which may can be deceiving depending on the complexity of traffic signal operations at the intersection.

**EXCLUSIVE PEDESTRIAN PHASES & SCRAMBLES**

Exclusive pedestrian phases allow pedestrians to cross the street in both directions simultaneously.

"Scrambles" permit pedestrians to cross all four legs of an intersection or to cross diagonally while all motor vehicle traffic is stopped. This benefits car traffic by reducing turning conflicts and allowing cars to clear intersections more efficiently during their signal phase.

Scrambles are not widely used in the U.S., but when used they are typically found at downtown intersections with high volumes of pedestrians relative to motor vehicles. While they provide the convenience of a diagonal crossing, they have also have disadvantages including longer pedestrian crossings times, complications to coordination with other nearby signals, and delay to pedestrians that only need to cross one leg of the intersection. Garden Grove has not implemented any scrambles to date. Euclid Street at Acacia Parkway could be a potential candidate for a scramble during peak pedestrian hours.



*Pedestrian scramble in Carlsbad, CA*



Table 5-3: Recommended Class I Shared-Use Paths

Location	Start	End	Length (miles)	Recommendation Details	Previous Plan	Rationale
Anaheim - Barber City Channel (North)	Euclid St	Chapman Ave	2.8	Multi-use Path	OCTA Commuter Bikeway Strategic Plan	0
Anaheim - Barber City Channel (South)	Union Pacific Railway	Garden Grove Blvd	2.8	Multi-use Path		
Bolsa Grande HS Connector Path	Deodara Dr	Woodbury Ave	0.2	Multi-use Path		
City of Garden Grove SO-1	Knott St	West City Limits	1.3	Multi-use Path		
Pacific Electric Right of Way 1	Nelson St	Dale St	2.8	Multi-use Path	OCTA D1 & D2	0
Pacific Electric Right of Way 2	Westminster Ave	Euclid St	1.4	Multi-use Path		
Union Pacific Railway	Chapman Ave	Garden Grove Blvd	0.7	Multi-use Path	OCTA D1 & D2	0
Westminster Channel	Westminster Ave	Kerry St	1.3	Multi-use Path		
Wintersburg Channel	Garden Grove Blvd	Westminster Ave	1.4	Multi-use Path		
		<b>Total</b>	<b>14.7</b>			

0 - Proposed facility same as previous plan

Table 5-4: Recommended Class II Bicycle Lane Facilities

Location	Start	End	New Miles	Updated (E) Miles	Recommendation Details	Garden Grove 2030 Bikeway Facility Map	Rationale
Brookhurst St	Katella Ave	Chapman Ave	1.0*		Create continuous bikeway by filling gaps where no striped bicycle lane exists. Existing NB bike lane from Orangewood Ave to Melody Park Dr.	E	0, 3
Brookhurst St	Chapman Ave	Trask Ave		1.6*	Existing bike lane to become a buffered bike lane.	E	0
Brookhurst St	Trask Ave	Hazard Ave	1.0		Stripe bike lane. Parking or lane removal may be needed.	P	0
Chapman Ave	Valley View St	Beach Blvd		2.0*	Existing bike lane to become a buffered bike lane.	E	0
Chapman Ave	Dale St	Magnolia St	0.5		Create continuous bikeway by filling gaps where no striped bicycle lane exists. EB from Dale to Lorna St, and MacMurray St to Magnolia Ave. WB to MacNab to MacMurray St.	E - Class III	1
Chapman Ave (EB)	Magnolia St	Loraleen St	0.25		Create continuous bikeway by filling gaps where no striped bicycle lane exists.	E	0, 3
Chapman Ave	Gilbert St	Brookhurst St	0.5		Stripe bike lane. Parking or lane removal may be needed.	E	0, 3
Chapman Ave	Brookhurst St	Euclid St	1.1		Create continuous bikeway by filling gaps where no striped bicycle lane exists. EB from Brookhaven to Melody Park and Nelson to Euclid. WB from Brookhurst to Brookhaven and Melody Park to Nutwood.	E	0, 3
Chapman Ave	9th St	West St	0.5		Stripe bike lane. Parking or lane removal may be needed.	P	0

The "Garden Grove 2030 Bikeway Facility Map" column indicates whether projects were identified in the City's General Plan, and if so, whether they were mapped as existing (E) or proposed (P) bikeways.

\* Early Action Project, see Chapter VII Implementation Plan for more information

0 - Proposed facility same as General Plan

1 - Reclassified from Class III bicycle route to Class II bicycle lane

2 - Reclassified to Class IV separated bicycle lanes

3 - General plan maps existing bike lanes not currently striped. Active Streets Plan adds Class II in compliance with the general plan.

4 - Removed Class II bicycle lane proposed by General Plan due to high traffic volumes and speed

5 - Reclassified as Complete Street Study

6 - Reclassified Class II bicycle lane to Class III bicycle route



Class II Facilities Continued

Location	Start	End	New Miles	Updated (E) Miles	Recommendation Details	Garden Grove 2030 Bikeway Facility Map	Rationale
Chapman Ave	West St	Haster St		1.0	Existing bike lane to become a buffered bike lane	E	0
Dale St	PE ROW	Garden Grove Blvd	1.8		Stripe bike lane. Parking or lane removal may be needed.	P	1
Gilbert St	Katella Ave	Chapman Ave	1.0*		Stripe bike lane through 4 to 3 Road Rebalancing.	P	1
Katella	Dale St	Euclid St	2.5		Stripe bike lane.	P	0
Lampson Ave	9th St	Glen St		0.2*	Existing bike lane to become a buffered bike lane	E	0
Lampson Ave	Oertly Dr	Haster St		0.2*	Existing bike lane to become a buffered bike lane	P	0
McFadden Ave	Ward St	City Limit	0.2		Stripe bike lane.		New
Newhope St	Garden Grove Blvd	Westminster Ave		1.0	Existing bike lane upgraded to match City of Santa Ana's buffered bike lanes with green conflict striping	E	0
Newland St	Garden Grove Blvd	Westminster Ave	1.0		Stripe bike lane through 4 to 3 Road Rebalancing.	P	0
Orangewood Ave	Knott Ave	Western Ave	0.5		Stripe bike lane.	P	0
Orangewood Ave	Yana Dr	Gilbert St		0.9	Existing bike lane to be improved with buffer and/or intersection treatments.	E	0
Orangewood Ave	Gilbert St	Brookhurst St	0.5		Stripe bike lane.	P	0

The "Garden Grove 2030 Bikeway Facility Map" column indicates whether projects were identified in the City's General Plan, and if so, whether they were mapped as existing (E) or proposed (P) bikeways.

\* Early Action Project, see Chapter VII Implementation Plan for more information

0 - Proposed facility same as General Plan

1 - Reclassified from Class III bicycle route to Class II bicycle lane

2 - Reclassified to Class IV separated bicycle lanes

3 - General plan maps existing bike lanes not currently striped. Active Streets Plan adds Class II in compliance with the general plan.

4 - Removed Class II bicycle lane proposed by General Plan due to high traffic volumes and speed

5 - Reclassified as Complete Street Study

6 - Reclassified Class II bicycle lane to Class III bicycle route

Class II Facilities Continued

Location	Start	End	New Miles	Updated (E) Miles	Recommendation Details	Garden Grove 2030 Bikeway Facility Map	Rationale
Orangewood Ave	Brookhurst St	Euclid St		0.5*	Existing bike lane to become a buffered bike lane.	E	0
Orangewood Ave	Harbor Blvd	Janette Ln	0.8		Stripe bike lane.	P	0
Springdale St	North City Limits	Garden Grove Freeway	1.2		Stripe bike lane. Parking or lane removal may be needed.	P	1
Trask Ave	Beach Blvd	Brookhurst St	2.0		Stripe bike lane. Parking or lane removal may be needed.	P	0
Trask Ave	Newhope St	Fairview St	1.5		Stripe bike lane. Parking or lane removal may be needed.	E	0, 3
West St	Orangewood Ave	Garden Grove Blvd	1.5*		Stripe bike lane through 4 to 3 Road Rebalancing.	P	1
West St	Ricky Ave	Orangewood	0.2		Bike Lane Study Corridor		New
Western Ave	North City Limits	Garden Grove Blvd	1.3		Stripe bike lane. Parking or lane removal may be needed.	P	0
9th Street (NB)	Orangewood Ave	Chapman Ave	0.5		Stripe NB bike lane.	P	0
		<b>Total</b>	<b>20.3</b>	<b>5.8</b>			

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\* Early Action Project, see Chapter VII Implementation Plan for more information

0 - Proposed facility same as General Plan

1 - Reclassified from Class III bicycle route to Class II bicycle lane

2 - Reclassified to Class IV separated bicycle lanes

3 - General plan maps existing bike lanes not currently striped. Active Streets Plan adds Class II in compliance with the general plan.

4 - Removed Class II bicycle lane proposed by General Plan due to high traffic volumes and speed

5 - Reclassified as Complete Street Study

6 - Reclassified Class II bicycle lane to Class III bicycle route



Table 5-5: Recommended Class III Neighborhood Greenway Facilities

Location	Start	End	New Miles	Neighborhood Greenway Name	Garden Grove 2030 Bikeway Facility Map	Rationale
College St	9th St	George St	0.2	9th-West Neighborhood Greenway		New
George St	College St	Dorada Ave	0.1	9th-West Neighborhood Greenway		New
Dorada Ave	George St	Morgan Ln	0.3	9th-West Neighborhood Greenway		New
Morgan Ln	Dorada Ave	West St	0.2	9th-West Neighborhood Greenway		New
Daniel Ave	9th St	West St	0.4	9th-West Neighborhood Greenway		New
Donegal Dr	Belfast Dr	Trask Ave	0.4	Belfast – Donegal Neighborhood Greenway		New
Clinton St	Gloria St	Morningside Ave	1.0	Clinton – Palm Neighborhood Greenway		New
Gloria St	Clinton St	Roxey Dr	0.1	Clinton – Palm Neighborhood Greenway		New
Palm St	Harbor Blvd	Flagstone Pl	0.6	Clinton – Palm Neighborhood Greenway		New
School Dr	Roxey Dr	Lilly St	0.1	Clinton – Palm Neighborhood Greenway		New
Faye Ave	Patricia Dr	Chapman Ave	0.5	Nutwood – Palmwood Neighborhood Greenway		New
Nutwood St	Chapman Ave	Garden Grove Blvd	1.0	Nutwood – Palmwood Neighborhood Greenway		New
Patricia Dr	Faye Ave	Palmwood Dr	0.1	Nutwood – Palmwood Neighborhood Greenway		New
Palmwood Dr	Patricia Dr	Katella Ave	0.8	Nutwood – Palmwood Neighborhood Greenway		New
Stanford Ave	Gilbert St	Main St	1.5	Nutwood – Palmwood Neighborhood Greenway		New
Paloma Ave	Euclid St	Newhope St	0.5	Paloma Neighborhood Greenway		New
Nina Pl	Garden Grove Blvd	PE ROW	0.4	Paloma Neighborhood Greenway		New
Bowen St	Traylor Way	Morningside Dr	0.6	South Garden Grove Neighborhood Greenway	P	0
Morningside Dr	Hope St	Lake St	0.4	South Garden Grove Neighborhood Greenway		New

The "Garden Grove 2030 Bikeway Facility Map" column indicates whether projects were identified in the City's General Plan, and if so, whether they were mapped as existing (E) or proposed (P) bikeways.

\* Early Action Project, see Chapter VII Implementation Plan for more information

0 - Proposed facility same as General Plan

1 - Reclassified from Class III bicycle route to Class II bicycle lane

2 - Reclassified from Class IV separated bicycle lanes

3 - General plan maps existing bike lanes not currently striped. Active Streets Plan adds Class II in compliance with the general plan.

4 - Removed Class II bicycle lane proposed by General Plan due to high traffic volumes and speed

5 - Reclassified as Complete Street Study

6 - Reclassified Class II bicycle lane to Class III bicycle route

Class III Neighborhood Greenway Facilities Continued

Location	Start	End	New Miles	Neighborhood Greenway Name	Garden Grove 2030 Bikeway Facility Map	Rationale
Oasis Ave	Bushard St	Kerry St	0.3	South Garden Grove Neighborhood Greenway		New
Kerry St	Reading Ave	Oasis Ave	0.1	South Garden Grove Neighborhood Greenway		New
Reading Ave	Kerry St	Brookhurst St	0.2	South Garden Grove Neighborhood Greenway		New
Taft St	Garden Grove Blvd	Westminster Ave	1.0	South Garden Grove Neighborhood Greenway	P	0
Traylor Way	Brookhurst St	Bowen St	0.3	South Garden Grove Neighborhood Greenway		New
Woodbury Ave	Erin St	Brookhurst St	0.5	South Garden Grove Neighborhood Greenway		New
Woodbury Rd	Bowen St	Taft St	0.4	South Garden Grove Neighborhood Greenway		New
15th Street	Brookhurst St	Hope St	0.3	South Garden Grove Neighborhood Greenway		New
Blackmer St	Chapman Ave	Cerulean Ave	0.5	West Garden Grove Neighborhood Greenway		New
Cerulean Ave	Blackmer St	Topaz St	0.7	West Garden Grove Neighborhood Greenway		New
Stanford Ave	Topaz St	Knott St	0.9	West Garden Grove Neighborhood Greenway		New
Topaz St	Huntly Ave	Anthony Ave	0.6	West Garden Grove Neighborhood Greenway		New
		<b>Total</b>	<b>15.0</b>			

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0 - Proposed facility same as General Plan

1 - Reclassified from Class III bicycle route to Class II bicycle lane

2 - Reclassified to Class IV separated bicycle lanes

3 - General plan maps existing bike lanes not currently striped. Active Streets Plan adds Class II in compliance with the general plan.

4 - Removed Class II bicycle lane proposed by General Plan due to high traffic volumes and speed

5 - Reclassified as Complete Street Study

6 - Reclassified Class II bicycle lane to Class III bicycle route



Table 5-6: Recommended Class III Route Facilities

Location	Start	End	New Miles	Updated (E) Miles	Recommendation Details	Garden Grove 2030 Bikeway Facility Map	Rationale
Deodara Dr	Trask Ave	Westminster Ave	0.5		Gilbert- Deodara Bicycle Route	P	0
Gilbert St	Chapman Ave	Trask Ave	1.5*		Gilbert- Deodara Bicycle Route	P	0
Lampson Ave	Buaro St	Volkwood St	0.5*		Bicycle Route	P	3
Chapman Ave	Valley View St	St Mark St	0.3		Stanford - Cerulean Bicycle Route		New
Nelson St	Chapman Ave	Stanford Ave	0.7		Bicycle Route / Shared Street	E	0
9th Street	Chapman Ave	Garden Grove Blvd	1.0		Bicycle Route	P	6
Belfast Dr	Garden Grove Blvd	Garden Grove Blvd	0.4		Belfast - Donegal Bicycle Route		New
Lampson Ave	Magnolia St	Nutwood St		1.5*	Existing Route - add striped curb extensions to narrow inconsistent ROW	P	3
Lampson Ave	Glen St	Oertly Dr		1.0*	Existing Route - add striped curb extensions to narrow inconsistent ROW	E	3
Orangewood Ave	Gilbert St	Brookhurst St		0.5	Existing Route - add wayfinding		New
Lampson Ave	Euclid St	9th St		0.5*	Existing Route - add striped curb extensions to narrow inconsistent ROW	E	0
Lewis St	Garden Grove Blvd	Marty Ln	0.4		Bicycle Route	P	0
		<b>Total</b>	<b>5.3</b>	<b>3.5</b>			

The "Garden Grove 2030 Bikeway Facility Map" column indicates whether projects were identified in the City's General Plan, and if so, whether they were mapped as existing (E) or proposed (P) bikeways.

\* Early Action Project, see Chapter VII Implementation Plan for more information

0 - Proposed facility same as General Plan

1 - Reclassified from Class III bicycle route to Class II bicycle lane

2 - Reclassified to Class IV separated bicycle lanes

3 - General plan maps existing bike lanes not currently striped. Active Streets Plan adds Class II in compliance with the general plan.

4 - Removed Class II bicycle lane proposed by General Plan due to high traffic volumes and speed

5 - Reclassified as Complete Street Study

6 - Reclassified Class II bicycle lane to Class III bicycle route

Table 5-7: Recommended Class IV Separated Bikeway Facilities

Location	Start	End	Length (miles)	Recommendation Details	Garden Grove 2030 Bikeway Facilities Map	Rationale
Acacia St	9th St	Nelson St	0.8	Separated Bike Lane Study		New
Hazard Ave	Euclid St	Christy St	1.4	Separated Bike Lane Study	P	2
Knott Ave	North City Limits	Garden Grove Blvd	1.8	Separated Bike Lane Study		New
Nelson St	PE ROW	Garden Grove Blvd	0.2	Separated Bike Lane Study		New
		<b>Total</b>	<b>4.2</b>			

Table 5-8: Recommended Complete Streets Studies

Location	Start	End	Length (miles)	Recommendation Details	Garden Grove 2030 Bikeway Facilities Map	Rationale
Euclid St	Lampson Ave	Trask Ave	1.1	Complete Street Study		New
Garden Grove Blvd	Lewis St	Valley View St	8.4	Complete Street Study		New
Harbor Blvd	North City Limits	Westminster Ave	2.4	Complete Street Study	P	5
Westminster Ave	East City Limits	Newland St	4.3	Complete Street Study		New
		<b>Total</b>	<b>16.2</b>			

The "Garden Grove 2030 Bikeway Facility Map" column indicates whether projects were identified in the City's General Plan, and if so, whether they were mapped as existing (E) or proposed (P) bikeways.

\* Early Action Project, see Chapter VII Implementation Plan for more information

0 - Proposed facility same as General Plan

1 - Reclassified from Class III bicycle route to Class II bicycle lane

2 - Reclassified to Class IV separated bicycle lanes

3 - General plan maps existing bike lanes not currently striped. Active Streets Plan adds Class II in compliance with the general plan.

4 - Removed Class II bicycle lane proposed by General Plan due to high traffic volumes and speed

5 - Reclassified as Complete Street Study

6 - Reclassified Class II bicycle lane to Class III bicycle route





*Garden Grove residents and visitors walked, bicycled, and played in the streets during Garden Grove's Open Streets program.*



## VI. PROGRAM RECOMMENDATIONS

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*We want to provide our residents with convenient and safe transportation choices that are good for the environment. Biking and walking are inexpensive, healthy alternatives to driving.*

*-- Lori Donchak, Chair of Orange County Transportation Authority*

This section details existing and proposed programs in Garden Grove and/or Orange County that help encourage bicycle, pedestrian, and transit use in the city. The first pages of this chapter summarize each existing and recommended program. Existing programs, marked with black dots (●), should be continued, and expanded upon when possible. Programs are categorized by the five “E’s” (i.e., education, encouragement, engineering, enforcement, and evaluation), explained in detail below.

More detail about the City’s role, partnerships, target audiences, and expected outcomes is listed in tables later in the section. These tables also prioritize programs by high-, medium-, and low-priority to help guide the City in program implementation.

This chapter includes:

- Existing and recommended program descriptions
- Recommendations for prioritizing programs

## Education

Education programs are important for teaching safety rules and laws as well as increasing awareness regarding biking opportunities and existing facilities. Education programs may need to be designed to reach different types of audiences or groups at varying levels of knowledge and there may be many different audiences such as pre-school age children, elementary school students, teenage and college students, workers and commuters, families, retirees, the elderly, new immigrants, and non-English speakers.

### ADULT BICYCLE SKILLS CLASSES

Most people biking do not receive training on safe biking practices, the rules of the road, and bicycle handling skills. Bicycle skills classes can address this education gap; this plan recommends the City support such classes. The League of American Bicyclists offers classes taught by certified instructors. Information can be found at: [www.bikeleague.org/](http://www.bikeleague.org/)

### BICYCLE-RELATED TICKET DIVERSION CLASS

Diversion classes are offered to bicycle riders who have been cited for certain traffic violations, such as running a stoplight. This type of program was favored by members of the public, and is a good

way to educate bicycle riders about rights and responsibilities.

California Assembly Bill 209, signed by Governor Brown on September 21, 2015, allows for such programs for violations not committed by a driver of a motor vehicle. This plan recommends the City consider offering bicycle rider diversion classes.

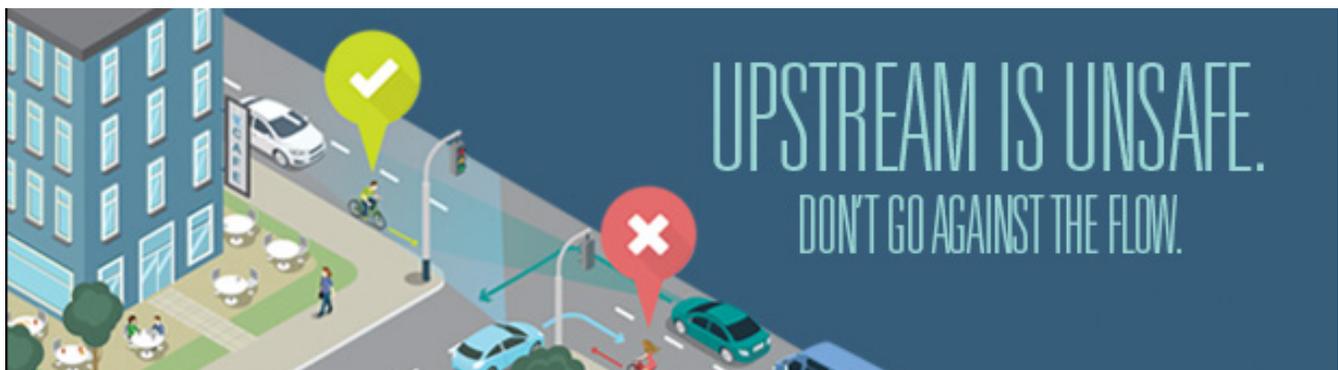
Similar programs exist throughout California and examples can be found by visiting:

[www.marinbike.org/Campaigns/ShareTheRoad/Index.shtml#StreetSkills](http://www.marinbike.org/Campaigns/ShareTheRoad/Index.shtml#StreetSkills)

[www.cityoflivermore.net/citygov/police/traffic/bikesafety/diversion.htm](http://www.cityoflivermore.net/citygov/police/traffic/bikesafety/diversion.htm)

### ● NEIGHBORHOOD TRAFFIC UNIT

The Neighborhood Traffic Unit (NTU) is a program through the Garden Grove Police Department. 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. In an effort to accomplish their mission, the NTU enforces traffic laws and educates the community about various traffic-related topics, in an effort to accomplish their mission. Traffic issues at schools are a priority for the NTU, who conducted several school safety presentations





during 2014. The group teaches students about impaired driving and bicycle and pedestrian safety.

### ● OCTA "HOW TO RIDE THE BUS" PROGRAM

OCTA offers a free program for kids and teens on "How to Ride the Bus" for both schools and youth organizations. A professional from OCTA will come to their location to teach youth groups and teens how to travel by bus. At the end of the presentation, participants receive a one-day bus passes so they can try the bus first-hand with a friend or parent.

### ● OCTA WRONG WAY RIDING CAMPAIGN

OCTA launched a Wrong Way Riding Campaign to educate cyclists to the dangers of riding against the flow of traffic. YouTube videos and infographics were created to show persons on bicycles why riding against the flow of traffic is so dangerous.

## PUBLIC AWARENESS CAMPAIGN

On a citywide scale, Garden Grove could expand the OCTA Wrong Way Riding Campaign to a public awareness media campaign. StreetSmarts, for example, was developed by the City of San Jose, uses print media, radio spots and television spots to educate people about safe driving, biking, skateboarding, and walking behavior. More information about StreetSmarts can be found at [www.getstreetsmarts.org](http://www.getstreetsmarts.org).

Local resources for conducting a StreetSmarts campaign can be maximized by assembling a group of local experts, law enforcement officers, business owners, civic leaders, and dedicated community volunteers. These allies could assist with a successful safety campaign goals based on the local concerns and issues. It may be necessary to develop creative strategies for successful media placement in order to achieve campaign goals.

This plan recommends the City consider implementation of a public awareness program such as StreetSmarts.

## STUDENT BICYCLE TRAFFIC SAFETY EDUCATION

Student education programs are an essential component of bicycle education. Students are taught traffic safety skills that help them understand basic traffic laws and safety rules. Garden Grove currently does not have a formal Safe Routes to School program, but its implementation could help to improve easy and safe access to schools.

Bicycle education curriculum typically includes two parts: knowledge and skills. Knowledge lessons are typically in-class, while skills are practiced on a bicycle. Lessons can include helmet and bicycle fit, hand signals, and riding safely with traffic.

Student bicycle traffic safety education can benefit Garden Grove by:

- Improving safety by teaching children about lifelong safety skills
- Create awareness with students and parents
- Encourage families to consider biking to school on a more frequent basis

This plan recommends the Garden Grove Unified School District implement a pilot education program and to expand it to include all city schools over time.

## Encouragement

Everyone from young children to elderly residents can be encouraged to increase their rates of biking and walking or to try biking and walking instead of driving for short trips.

## REGIONAL/COUNTY PROGRAMS

### ● DUMP THE PUMP WEEK

Every June, OCTA joins the national Dump the Pump Week to encourage Orange County residents to leave their cars at home and use public transportation while commuting or running errands. As an added incentive, participants could submit photos of themselves riding the bus to enter to win prizes such as bus passes, Disneyland tickets, Los Angeles Angels tickets, Knott's Berry Farm tickets, and/or a shopping spree.



*OCTA Dump the Pump promotion*

### ● OCTA ACCESS PROGRAM

OCTA provides ACCESS bus service for senior citizens and people with disabilities. ACCESS is a shared-ride service for people who are unable to use the regular, fixed-route bus service because of functional limitations caused by a disability. These passengers must be certified by OCTA to use the ACCESS system by meeting the Americans with Disabilities Act (ADA) eligibility criteria. OCTA's Ridematch program helps registered users find a carpool partner to ride with, based on both the commuters schedules. OCTA also has vanpool services. Commuters can form groups and can apply for the vanpool service through OCTA. Commuters obtain subsidies from OCTA or their employers.

### ● OCTA RIDESHARE WEEK

OCTA hosts several ridesharing events each year in an effort to bring higher visibility to ridesharing and to gain support for these initiatives from Orange County residents. In 2014, an entire week was dedicated to ridesharing where nearly 2,500 people pledged to "not drive alone." As an added incentive, prizes were given out to random participants including an Apple iPad, Target gift cards, bicycle lights, and Metrolink tickets.

### ● OCTA TRANSIT APPS

While OCTA does not endorse, guarantee, sell or license mobile applications, several third-party developers have created apps using OCTA's open data and are featured on the OCTA website ([octa.gov](http://octa.gov)). Apps create a convenient way for people to access transit alerts, directions to destinations via walking, and rerouting information for drivers.

### ● OCTA YOUTH PASSES

OCTA offers discounted bus passes for kids ages 6-18 to allow them to get around the county in a clean and safe way. 3-day passes are \$40 a month for unlimited use on all fixed-route buses. During the summer months (June - August), a 30-Day Summer Youth Bus Pass is only \$20.

## CITY/LOCAL PROGRAMS

### BICYCLE FRIENDLY COMMUNITY

The League of American Bicyclists (LAB) recognizes communities that improve biking conditions through education, encouragement, enforcement, and evaluation programs. Communities can achieve diamond, platinum, gold, silver, or bronze status, or an honorary mention. Bicycle friendliness can indicate that a community is healthy and vibrant. Like good schools and attractive downtowns, bicycle friendliness can



increase property values, spur business growth, and increase tourism.

This plan recommends the City pursue Bicycle Friendly Community status after implementation of the priority projects identified in this plan. This plan is a valuable resource for completing the LAB application efficiently. More information and application steps: [www.bikeleague.org/community](http://www.bikeleague.org/community)

## BICYCLE FRIENDLY BUSINESS DISTRICTS

Bicycle Friendly Business Districts (BFBDs) provide end-of-trip bicycle infrastructure such as water bottle filling stations and bicycle parking in localized retail areas of a community. Providing infrastructure encourages the local community to buy local more often. This would help address the lack of bicycle parking, particularly in the downtown area, identified as a community need in the Existing Conditions chapter.

The City of Long Beach began a BFBD program by adding bicycle racks and corrals, bicycle lanes, and signage along major corridors. Participating bicycle friendly businesses receive a listing and map location on the Bike Long Beach website, as well as additional exposure through the website's Bike Saturdays discount program which offers bicycle riders a discount or deal every Saturday at more than 150 businesses within the six districts. More information can be found at [www.bikelongbeach.org/bike-friendly-businesses](http://www.bikelongbeach.org/bike-friendly-businesses)

It is recommended the City declare a BFBD, provide additional end-of-trip facilities within the Business District, and encourage shop owners to offer discounts to patrons who arrive by bicycle.

### ● BIKE TO WORK WEEK

May is National Bike to Work month and OCTA helped encourage cycling by promoting some new events such as Explore Jeffrey Open Space Trail,

the Huntington Beach Bike Festival, and a Bike Rally. Participants could pledge to bike to work for the month and receive a coupon from a local bicycle shop, as well as be entered to win a raffle for a new bicycle.

Though Bike to Work Week exists on the county level, this plan recommends that the City of Garden Grove host citywide Bike to Work Week activities.

## EMPLOYER-BASED ENCOURAGEMENT PROGRAMS

Though the City cannot host these programs, it can work with or provide information to employers about commuting by bicycle. Popular employer-based encouragement programs include hosting a bicycle user group to share information about how to bicycle to work and to connect experienced bicycle riders with novice bicycle riders. Employers can host bicycle classes and participate in Bike Week.

This plan recommends the City collaborate with employers to implement bicycle-related programs.

## GARDEN GROVE ACTIVE STREETS USER MAP

The most recent bikeways map for Garden Grove is from 2008 and was developed as a part of its General Plan. As a part of this plan development process, an updated bikeways map will be released.

### ● OPEN STREETS EVENTS

The Re:Imagine Garden Grove campaign has brought two open streets events through Downtown Garden Grove, with a third event planned for March 2017. The last event, held in October 2015, activated one mile of car-free streets and included a nighttime component which includes live music, dancing in the streets, a pop-up arcade, art workshops, outdoor dining, and more. Thousands of people participated in the event.

## SCHOOL PROGRAMS

All school programs can be implemented in conjunction with a Safe Routes to School program.

### ● BACK-TO-SCHOOL MARKETING

Families set transportation habits during the first few weeks of the school year and are often not aware of the multiple transportation options and routes available to them. Many families will often develop the habit of driving to school using the same congested route as everyone else.

Back-to-school encouragement marketing can promote bus, carpool, walking, and biking to school. The marketing campaign can include suggested route maps, safety education materials, volunteer opportunities, event calendars, and traffic safety enforcement notices. It can also include an illustrative guide that includes the Suggested Walking and Biking to School maps.

The event's objectives are to:

- Encourage families to plan out their routes at the beginning of the school year to consider alternatives to driving alone as a family.
- Encourage families to try walking, biking, and carpooling to school as well as participating in community activities and events that promote walking and biking to school.

This plan recommends expanding back-to-school marketing to include all Garden Grove schools over time.

### BICYCLE TRAINS

Bicycle Trains are an organized group of students who bicycle to school under the supervision of a parent/adult volunteer. Parent champions take turns biking along a set route to and from school, collecting children from designated “train stops” along the way.

Schools and parent champions can encourage parents to form Bicycle Trains at back-to-school orientation or other fall events. The School District can provide safety vests to indicate the leader(s). Incentives for the parent volunteers can include coffee at the school or gift cards for local shops.

Bicycle trains benefit the Garden Grove community by:

- Improving safety - Children are more visible biking in groups, when accompanied by an adult
- Saving parents' money by not using a car
- Saving parents' time when they are not leading the train
- Reducing traffic congestion around the school

This plan recommends the City and School District work with schools and parent champions to develop a bicycle train program.

Example outreach materials:

- Sonoma Safe Routes to School's Bicycle Train Guide for Volunteers: <http://sonomasaferroutes.org/resources/bike-train-guide-for-volunteers.pdf/view>
- Marin County Safe Routes to Schools' SchoolPool Marin materials: [www.schoolpoolmarin.org/](http://www.schoolpoolmarin.org/)

### GOLDEN SNEAKER CONTEST

In the Golden Sneaker Contest, classrooms compete to see which class has the highest rate of students walking, biking, or carpooling to and from school. The class tracks how many students commute by these modes and calculates the percent of total trips by each mode. The winner of the contest receives a “golden sneaker” trophy, along with other incentive prizes.

A Golden Sneaker Contest can be expanded from classroom competitions to intra-school



competitions or district-wide competitions. Some schools hold celebrations for winning classrooms.

Participation in the Golden Sneaker Contest can benefit the Garden Grove community by:

- Increasing awareness of walking and biking to school
- Increasing the number of students who walk or bicycle to school

This plan recommends the School District work with the schools and parent champions to hold the Golden Sneaker Contest.

## MONTHLY WALK AND ROLL DAYS

Walk and Roll to School Days are events to encourage students to try walking or biking to school. The most popular events of this type are International Walk to School Day (held in early October) and Bike to School Day (held in early May). Many communities have expanded on this once a year event and hold monthly or weekly events such as Walk and Roll the First Friday (of every month) or Walk and Roll Wednesdays (held every Wednesday).

Holding weekly or monthly Walk and Roll to School Day promotes regular use of active transportation and helps establish good habits. Volunteers can set up a welcome table for people walking and biking. The welcome table could provide refreshments, incentive prizes, and an interactive poster letting students document their mode to school. Walking School Buses, Bicycle Trains, and Golden Sneaker Contests can be organized and promoted on these days.

Participation in monthly Walk and Roll Days can benefit the Garden Grove community by:

- Building community
- Saving parents' money by not using a car
- Reducing traffic congestion around the school

This plan recommends that the Garden Grove Unified School District, schools, PTAs, and parent champions work together to promote Walk and Bike to School days to be held on a monthly or weekly basis.

## STUDENT INCENTIVE PROGRAMS

Contests and incentive programs reward students by tracking the number of times they walk, bicycle, carpool, or take transit to school. Contests can be individual, classroom, school-wide, or interschool competitions, and can be integrated with other programs like Walk 'n' Roll to School Days. Types of incentive programs are listed below:

- Pollution Punch Card is a year-round program designed to encourage students and families to consider their options for getting to school. Every time a student walks, bicycles, carpools, or takes transit a school representative records the activity. After a certain number of points are reached, the student received a prize or incentive.
- Walk or Bike across California/America is a year-round program designed to encourage walking and biking by tracking the miles they travel throughout the year. Students are taught how to track their mileage and will also learn about places along their way.

Participation in incentive programs can benefit the Garden Grove community by:

- Increasing awareness of walking and biking to school
- Increasing the number of students who walk or bicycle to school

This plan recommends the School District work with the schools and parent champions to sponsor a number of incentive programs.

## SUGGESTED WALKING AND BIKING ROUTES TO SCHOOL MAPS

Suggested Walking and Biking Routes to School Maps can help parents overcome fears related to traffic and/or lack of knowledge of family friendly routes to school. These types of maps show stop signs, traffic signals, crosswalks, paths, overcrossings, crossing guard locations, and similar elements that can help parents make decisions about choosing the route that best fits their family’s walking and biking needs.

This plan recommends Garden Grove partner with the School District and OCTA, that already provides Bikeways Maps, to create Walking and Biking Routes to School Maps.

### Enforcement

Enforcement programs enforce legal and respectful use of the transportation network. These programs will help educate motorists, bicycle riders, and pedestrians about the rules and responsibilities of the road.

## GARDEN GROVE POLICE DEPARTMENT PROGRAMS

### SUCCESS STORY: FATALITY REDUCTION CAMPAIGN

As part of the Garden Grove Police Department’s Fatality Reduction Campaign, GGPD has started cracking down on drivers who do not yield to pedestrians in crosswalks. According to the news segment featured on the program website ([www.ci.garden-grove.ca.us/police/2013FatalityReduction](http://www.ci.garden-grove.ca.us/police/2013FatalityReduction)), over 70 drivers received citations for crosswalk violations in the three hours of enforcement conducted for the video. As shown in Chapter II Figure 2-7, collisions have decreased since 2012 after this campaign was launched in 2013.

## BICYCLE HELMET AND LIGHT GIVEAWAYS

The California Office of Traffic Safety (OTS) grant program can fund bicycle helmets or lights for giveaways to children at schools or children observed biking without wearing helmets or residents riding without lights. Bicycle lights are required for nighttime riding in California (CVC21201) and can help increase the safety of a person riding a bicycle. Typically this type of program is conducted in partnership with the Police Department.

This plan recommends the City seek an OTS grant and conduct helmet and light giveaways for children and residents who do not own bicycle lights.

## NATIONAL PROGRAMS

### ● NATIONAL BIKE REGISTRY & BICYCLE LICENSES

The National Bike Registry helps identify and return stolen bicycles (and scooters) to their rightful owners. Citizens of the City of Garden Grove can obtain a bicycle license by registering their bicycles with the National Bike Registry. Upon registration, owners receive a Certificate of Registration and a tamper-resistant NBR label to identify their bicycle. In the event registered bicycles are stolen and recovered, bicycles can be returned to their owners regardless of where in the nation it was recovered.

### Engineering

Engineering programs create safe and convenient places to walk and ride. Survey after survey shows that the physical environment is a key determinant in whether people will get on a bicycle and ride, or choose to walk to destinations. These programs improve the physical walking and biking environment.



## ● NEIGHBORHOOD TRAFFIC MANAGEMENT

This City program allows for traffic control devices to be installed in neighborhoods to prevent regional cut-through traffic such as traffic circles, neighborhood entrance treatments, curb extensions, diverters, and speed humps. Neighborhoods must request treatments to be installed (with at least 80 percent of residents showing their support) and the City will determine the best treatments needed.

## ● NEIGHBORHOOD TRAFFIC SAFETY PROGRAM

The Neighborhood Traffic Safety Program is a three phase program that identifies and contacts offending drivers, addresses neighborhood traffic concerns by taking minor measures such as the installation of signs, striping, and/or pavement marking and addresses longer-term traffic concerns with more restrictive physical measures.

The City has also adopted the program with the goals of:

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

## Evaluation

Evaluation programs help the City measure how well it is meeting the goals of this plan and the General Plan, and evaluation is a key component of any engineering or programmatic investment. It is also a useful way to communicate success with elected officials as well as local residents.

### ANNUAL COLLISION DATA REVIEW

Reviewing bicycle rider-involved collisions and near-misses on an annual basis can help the City identify challenging intersections or corridors. This review should include an assessment of the existing infrastructure to determine whether improvements can be made to reduce the number of collisions in the community.

This plan recommends the City and Police Department review bicycle-involved collision data on an annual basis to identify needed improvements.

### PARENT SURVEYS

The National Center for Safe Routes to School provides a standard parent survey, collecting information on modes of travel, interest in walking or biking to school, and challenges to walking and biking to school. The information gathered from the parent surveys can help Garden Grove and the School District provide programs that are attractive to parents. Parent surveys can also help measure parent attitudes and changes in attitude towards walking and biking to school.

It is recommended that the City and School District work together to conduct parent surveys every two to three years.

## STUDENT WALKING AND BIKING COUNTS

Student hand tallies are one way to count the number of students who walk, bicycle, take transit or carpool to school. The National Center for Safe Routes to School provides the standard tally form online at [www.saferoutesinfo.org/program-tools/evaluation-student-class-travel-tally](http://www.saferoutesinfo.org/program-tools/evaluation-student-class-travel-tally).

It is recommended the Unified School District conduct student tallies on a biannual basis.

## Program Prioritization

Table 6-1 summarizes key information for each of the existing and recommended programs. The table contains brief information about expected outcomes, likely partners, and prioritization. The column for priority weighs factors such as costs, potential impacts and outcomes, feasibility, and whether the program is already in place.



Table 6-1: Programs Prioritization

Program	City Role	Likely Partners	Target Audiences	Expected Outcomes							Priority
				Increased Biking	Increased Walking	Increased Biking Safety Behavior	Increased Walking Safety Behavior	Increased Driving Safety Behavior	Economic / Cultural Benefits	Enhanced Sense of Community	
<b>Education</b>											
<b>County / Regional Programs</b>											
<b>Public awareness campaign</b>	Lead/Partner	OCTA, Advocates	All road users, may be more targeted for specific campaigns	✓	✓	✓	✓	✓	✓	✓	●●●
● <b>OCTA Wrong Way Riding campaign</b>	Partner	OCTA	Current and potential bicyclists			✓		✓			●●
● <b>OCTA "How to Ride the Bus"</b>	Partner	OCTA, School District	Current and potential youth public transportation users							✓	●
<b>City / Local Programs</b>											
<b>Adult bicycle skills classes</b>	Partner	League of American Bicyclists, OCTA, Advocates	Current and potential adult bicyclists	✓		✓				✓	●●●
<b>Bicycle-related ticket diversion class</b>	Lead/Partner	GGPD, OCTA	Bicyclists, especially those who commit offenses known to endanger other road users (e.g. running stoplights)			✓			✓		●●
● <b>Neighborhood Traffic Unit</b>	Lead	GGPD	All road users	✓	✓			✓	✓		●●
<b>School Programs</b>											
<b>Student bicycle traffic safety</b>	Lead	School District, After School Programs, GGPD, Bike Organizations	Elementary, middle, and high school students	✓		✓				✓	●●●
<b>Encouragement</b>											
<b>County / Regional Programs</b>											
● <b>OCTA mobile apps</b>	Partner	OCTA	All users of the road, especially pedestrians and transit users				✓		✓		●●
● <b>Dump the Pump Week</b>	Lead/Partner	OCTA, Advocates	Private vehicle users, transit users					✓	✓	✓	●
● <b>OCTA Access</b>	Partner	OCTA	Senior citizens and people with disabilities						✓		●

● Existing program, to be continued

**Lead** = City instigates and carries out

**Lead/Partner** = City instigates but partners help out with doing a lot of the work

**Partner** = someone else instigates and the City helps in a lesser, supporting role

✓ Outcome of program

●●● High Priority

●● Medium Priority

● Low Priority

Table 6-1 continued

Program	City Role	Likely Partners	Target Audiences	Expected Outcomes							Priority
				Increased Biking	Increased Walking	Increased Biking Safety Behavior	Increased Walking Safety Behavior	Increased Driving Safety Behavior	Economic / Cultural Benefits	Enhanced Sense of Community	
● OCTA Rideshare Week	Lead/Partner	OCTA, Businesses, Schools, Advocates	Private vehicle users					✓	✓		●
● OCTA youth passes	Lead/Partner	OCTA	Youth transit riders		✓				✓		●
<b>City / Local Programs</b>											
Garden Grove active transportation user map	Lead		Current and potential bicyclists, visitors	✓		✓			✓		●●●
● Open Streets events	Lead/Partner	GGPD, GG Health Department, Community Orgs like CARS, Volunteers	General public	✓	✓	✓	✓		✓	✓	●●●
Bicycle-Friendly Business District	Lead / Partner	Business groups, Advocates	Current and potential bicyclists, local businesses	✓					✓	✓	●●
Bicycle-Friendly Community	Lead/Partner	League of American Bicyclists	Current and potential bicyclists	✓		✓			✓	✓	●●
● Bike-to-Work Week	Lead / Partner	OCTA, Employers, Advocates	Current and potential bicyclists	✓		✓				✓	●●
Employer-based encouragement programs	Partner	Employers	Current and potential bicyclists, pedestrians, and transit users	✓	✓	✓	✓		✓	✓	●●
<b>School Programs</b>											
Back-to-school encouragement marketing	Lead/Partner	School District, OCTA, PTA groups	Elementary, middle, and high school students; parents of students	✓	✓	✓	✓	✓	✓	✓	●●●
Golden Sneaker Contest	Lead	School District, PTA groups	Elementary, middle, and high school students	✓	✓	✓	✓			✓	●●●
Monthly Walk and Roll Day	Lead/Partner	School District, OCTA, PTA groups	Elementary, middle, and high school students	✓	✓	✓	✓		✓	✓	●●●
Student incentives	Lead/Partner	School District, OCTA, PTA groups	Elementary, middle, and high school students	✓	✓	✓	✓			✓	●●●

● Existing program, to be continued

**Lead** = City instigates and carries out

**Lead/Partner** = City instigates but partners help out with doing a lot of the work

**Partner** = someone else instigates and the City helps in a lesser, supporting role

✓ Outcome of program

●●● High Priority

●● Medium Priority

● Low Priority



Table 6-1 continued

Program	City Role	Likely Partners	Target Audiences	Expected Outcomes							Priority
				Increased Biking	Increased Walking	Increased Biking Safety Behavior	Increased Walking Safety Behavior	Increased Driving Safety Behavior	Economic / Cultural Benefits	Enhanced Sense of Community	
<b>Suggested walking and biking routes to school maps</b>	Lead/Partner	School District, OCTA	Elementary, middle, and high school students; parents of students	✓	✓	✓	✓				●●●
<b>Bicycle trains</b>	Lead/Partner	School District, OCTA, PTA groups	Elementary and middle school students	✓		✓				✓	●●
<b>Enforcement</b>											
<b>GGPD Programs</b>											
● <b>Fatality Reduction campaign</b>	Lead	GGPD	All users of the road				✓	✓			●●●
<b>Bicycle helmet and light giveaways</b>	Lead/Partner	GGPD, School District	Current and potential bicyclists	✓		✓				✓	●●
<b>National Programs</b>											
● <b>National Bike Registry / bike licenses</b>	Lead/Partner	GGPD, National Bike Registry	Current and potential bicyclists			✓					●●
<b>Engineering</b>											
<b>City / Local Programs</b>											
● <b>Neighborhood Traffic Management</b>	Lead/Partner	Neighborhood councils / committees, Advocates	All users of the road			✓	✓	✓	✓	✓	●●●
● <b>Neighborhood Traffic Safety</b>	Lead		All users of the road			✓	✓	✓	✓		●●
<b>Evaluation</b>											
<b>City / Local Programs</b>											
<b>Annual collision data review</b>	Lead	GGPD, Advocates	<b>All road users</b>	✓	✓	✓	✓		✓		●●●
<b>School Programs</b>											
<b>Student walking and biking counts</b>	Lead	School District, Safe Routes to School	<b>Students, advocates, City staff (analysts)</b>			✓	✓		✓		●●●
<b>Parent surveys</b>	Lead	School District, Safe Routes to School	<b>Parents of students</b>			✓	✓				●●

● Existing program, to be continued

**Lead** = City instigates and carries out

**Lead/Partner** = City instigates but partners help out with doing a lot of the work

**Partner** = someone else instigates and the City helps in a lesser, supporting role

✓ Outcome of program

●●● High Priority

●● Medium Priority

● Low Priority



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*A team of volunteers help install temporary crosswalks and shared bicycle routes in preparation for an Open Streets event.*



## VII. IMPLEMENTATION PLAN

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*It requires really hard work to get beyond the dashboard view of our streets...The new blueprint is not anti-car. It is pro-choice.*

*-- Janette Sadik-Khan, Former NYC DOT Commissioner*

The long-term vision for active transportation in Garden Grove has been set. Now the City must begin to implement the vision - *but where do we start?*

The following section answers this question and **presents the project prioritization strategy and project cost estimates**. Also, **select top-priority projects are discussed in more detail**.

The City should use this section as a guide for achieving the vision and goals established in the beginning of the plan. As a general strategy, the City should regularly evaluate how well recommendations are being met and whether these recommendations still meet the needs of Garden Grove's residents and visitors. The plan's goals also serve with specific benchmarks defined for infrastructure and non-infrastructure improvements. Implementation progress should be regularly tracked on at least an annual basis. An annual "State of Active Transportation" report is a good means of accomplishing this in a format that can be easily shared with the public to inform them on plan progress. In addition, best practices in bicycle and pedestrian accommodation is a rapidly-evolving field, the recommendations in this plan should be re-evaluated at least every five years to ensure that these still constitute best-practices and still reflect Garden Grove's long-term vision for creating and maintaining active streets.

This chapter contains:

- Bikeway Prioritization
- Project Cost Estimates
- Pedestrian Priorities

## Bikeways Project Prioritization

The intent of evaluating projects is to create a prioritized list of projects for implementation. As projects are implemented, lower ranked projects move up the list. The project list and individual projects included in this plan are flexible concepts that serve as a guideline. The high-priority project list, and perhaps the overall project list, may change over time as a result of changing biking and walking patterns, land use patterns, implementation constraints and opportunities and the development of other transportation improvements.

### PRIORITIZATION METHODOLOGY

Project prioritization was developed through feedback the project team received from City staff and the Community Advisory Committee as well as input from the community. Outreach at public events, like Garden Grove's 60th Anniversary Diamond Jubilee, support the results of the prioritization process. More information regarding community input and outreach events can be found in Appendix B.

Prioritization looked at a number of factors such as retail and job centers, schools and recreation opportunities, and collisions to determine the need, feasibility, and benefit of implementing recommendations. The project team developed prioritization criteria and collectively determined the importance of each consideration by assigning each category an appropriate weight. The criteria can be seen in Table 7-1.

The top priority projects found in the following tables and figures are the most important projects to be implemented over the next five years. The bicycle network is classified into three categories - Early Action Projects, Study Corridors, and Network Build out. Detailed results of the prioritization of all proposed bikeways can be found in Appendix E.



*At Garden Grove's 60th Anniversary Diamond Jubilee, the community was asked to rank network recommendations. Results were then used to help prioritize routes.*



Table 7-1: Criteria for Project Prioritization

Criteria	Description	Max Score
<b>Community Support</b>	The Project or area is directly identified for improvement during the community input phase (20 pts) or... The project or area is indirectly identified for improvement during the community input phase (10 pts)	<b>20</b>
<b>Proximity to school</b>	The project directly connects to a school (20 pts) or... The project connects to an existing facility that connects to school (10 pts) or... The project does not connects to a school (0 pts)	<b>20</b>
<b>Proximity to Retail</b>	The project directly connects to retail/commercial land-use (15 pts) or... The project connects to an existing facility that connects to retail/commercial land-use (7 pts) or... The project does not connect to retail/commercial land-use (0 pts)	<b>15</b>
<b>Proximity to Recreation</b>	The project directly connects to a recreational opportunity (15 pts) or... Project connects to an existing facility that connects a recreational opportunity (7 pts) or... Project does not connects to a recreational opportunity (0 pts)	<b>15</b>
<b>Safety</b>	The project addresses a location with a history of bicycle- and pedestrian-involved collisions (10 pts) or... The project is parallel to a corridor with a history of bike/ped collisions (5 pts)	<b>10</b>
<b>Demand</b>	Projects in locations that fall within areas of estimated high demand will be awarded 10 points	<b>10</b>
<b>Access to Open Space</b>	The Project creates new open space providing ecological, environmental and aesthetic benefits (Score / No Score)	<b>10</b>
<b>TOTAL POSSIBLE SCORE</b>		<b>100</b>

## BICYCLE PRIORITIZATION RESULTS

Implementation of the bicycle network is classified into three Tiers.

Tier 1 projects are the Early Action Projects (EAP). The EAPs were identified as an easy first step to improve and expand the existing bicycle network. The EAPs were selected through community input and professional evaluation early in the planning process. Garden Grove applied for and was awarded construction funding through the 2016 OCTA Bicycle Corridor Improvement Program (BCIP). This successful grant application shows the commitment of the City to seek funding to implement the recommendations identified in the Active Streets Plan. Table 7-2 provides a list of the Tier 1 corridors.

Tier 2 projects are the top 10 corridors based on the evaluation criteria. Table 7-3 provides a list of the 23 Tier 2 corridors. Tier 3 projects are the remaining corridors in the bicycle network.

Study corridors that require additional design and/or environmental evaluation are identified in Table 7-4. Studies can be conducted at any time and allow the City to develop design recommendations to assess feasibility of proposed facilities.

Figure 7-1 shows the 3 project Tiers and Study Corridors. Tables containing all routes ranked by priority and class can be found in Appendix E.

Table 7-2: Tier 1: Early Action Bikeway Projects

Corridor	From	To	Recommendations	Miles
Brookhurst St	Katella Ave	Chapman Ave	Class II bicycle lane	1.0
Brookhurst St	Chapman Ave	Trask Ave	Class II buffered bicycle lane	1.6
Chapman Ave	Valley View St	Beach Blvd	Class II buffered bicycle lane	2.0
Gilbert St	Katella Ave	Chapman Ave	Class II bicycle lane	1.0
Gilbert St	Chapman Ave	Trask Ave	Class III bicycle route	1.5
Lampson Ave	Oertly Dr	Haster St	Class II buffered bicycle lane	0.2
Lampson Ave	9th St	Glen St	Class II buffered bicycle lane	0.2
Lampson Ave	Volkwood St	Buaro St	Class III bicycle route	0.5
Lampson Ave	Magnolia St	Nutwood St	Class III bicycle route	1.5
Lampson Ave	Glen St	Oertly Dr	Class III bicycle route	1.0
West St	Orangewood Ave	Garden Grove Blvd	Class II bicycle lane	1.5
			<b>Total</b>	<b>12.8</b>



Figure 7-1: Bicycle Network Phasing

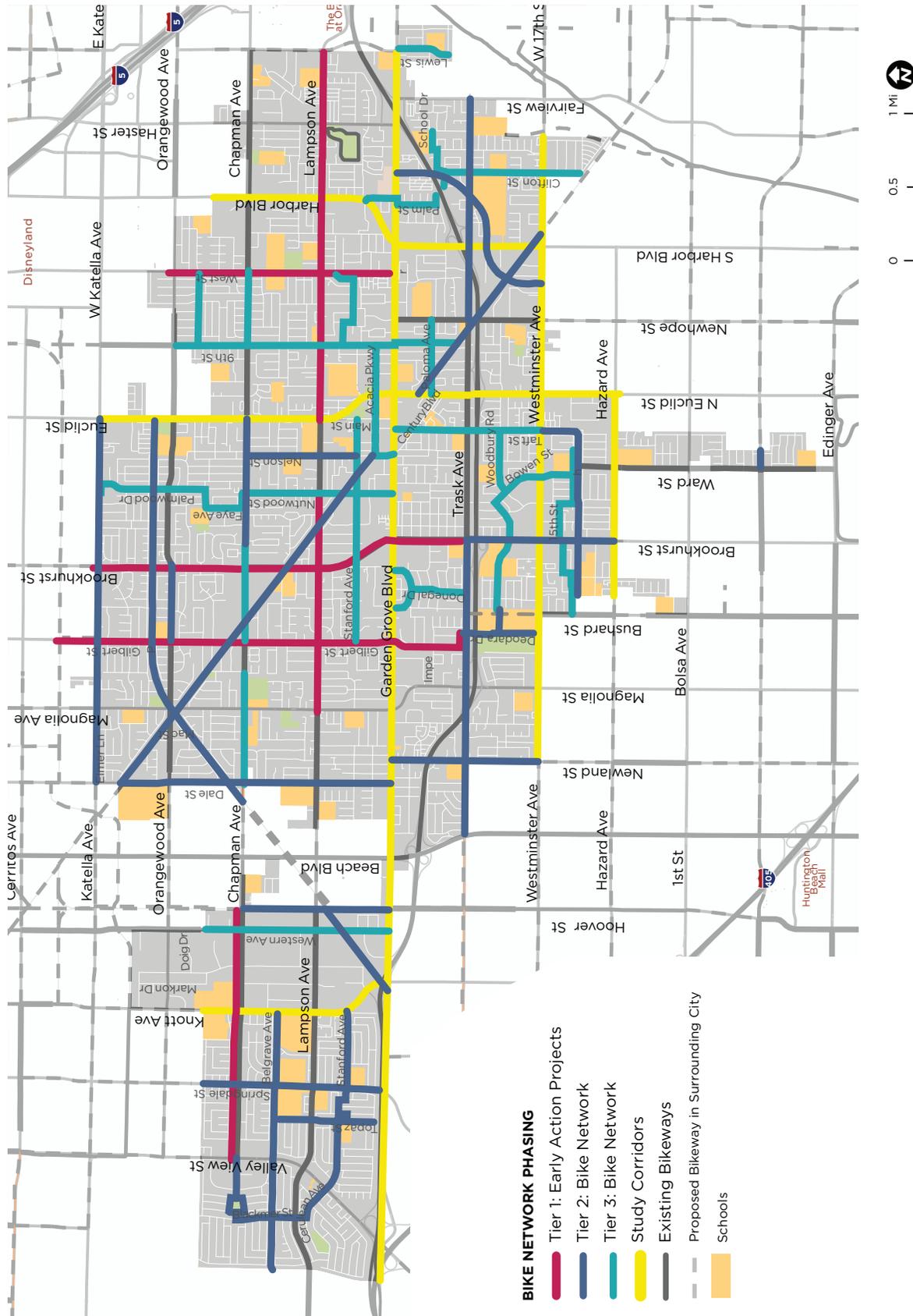


Table 7-3: Tier 2: Bicycle Facility Projects

Rank*	Corridor	From	To	Bike Facility	Miles
1	Anaheim – Barber City Channel (North)	Euclid St	Chapman Ave	Class I	2.8
1	City of Garden Grove SO-1	Knott St	West City Limits	Class I	1.3
1	Pacific Electric Right of Way 1	Nelson St	Dale St	Class I	2.8
2	Bolsa Grande HS Connector Path	Deodara Dr	Woodbury Ave	Class I	0.2
2	Deodara Dr	Trask Ave	Westminster Ave	Class III Bike Route	0.5
3	Pacific Electric Right of Way 2	Westminster Ave	Euclid St	Class I	1.4
3	Westminster Channel	Westminster Ave	Kerry St	Class I	1.3
3	Wintersburg Channel	Garden Grove Blvd	Westminster Ave	Class I	1.4
4	Dale St	PE ROW	Garden Grove Blvd	Class II	1.8
5	McFadden Ave	Ward St	City Limit	Class II	0.2
6	Katella	Dale St	Euclid St	Class II	2.5
6	West Garden Grove Neighborhood Greenway Blackmer St (Chapman Ave to Cerulean Ave), Cerulean Ave (Topaz to Blackmer St), Standord Ave (Knott St to Topaz St), Topaz St (Huntly to Anthony Ave)	Chapman Ave	Knott St	Class III Neighborhood Greenway	2.7
6	West Garden Grove Neighborhood Greenway	St. Mark St	Valley View Ave	Class III Bike Route	0.3
7	Union Pacific Railway	City limits	Garden Grove Blvd	Class I	0.7
8	Brookhurst St	Trask Ave	Hazard Ave	Class II	1.0
8	Newland St	Garden Grove Blvd	Westminster Ave	Class II	1.0
8	Springdale St	North City Limits	Garden Grove Freeway	Class II	1.2
8	Trask Ave	Beach Blvd	Brookhurst St	Class II	2.0
8	Trask Ave	Newhope St	Fairview St	Class II	1.5
9	Chapman Ave	Brookhurst St	Euclid St	Class II	1.1
9	Orangewood Ave	Gilbert St	Brookhurst St	Class II	0.5
10	Anaheim – Barber City Channel (South)	Union Pacific Railway	Garden Grove Blvd	Class I	2.8
10	Nelson St	Chapman Ave	Stanford Ave	Class III Bike Route	0.7
<b>Total Miles</b>					<b>31.6</b>

\*Projects with the same rank number received the same prioritization score (see Appendix E).



Table 7-4: Study Corridors shown in priority ranking

Corridor	From	To	Recommendations	Miles
Garden Grove Blvd	Lewis St	Valley View St	Complete Street Study	8.4
Westminster Ave	East City Limits	Newland St	Complete Street Study	4.3
Euclid St	Lampson Ave	Trask Ave	Complete Street Study	1.1
Acacia St	9th St	Nelson St	Separated Bicycle Lane Study	0.8
Hazard Ave	Euclid St	Christy St	Separated Bicycle Lane Study	1.4
Knott St	North City Limits	Garden Grove Blvd	Separated Bicycle Lane Study	1.8
Harbor Blvd	North City Limits	Westminster Ave	Complete Street Study	2.4
Nelson St	PE ROW	Garden Grove Blvd	Separated Bicycle Lane Study	0.2
West St	Ricky Ave	Orangewood	Class II Bicycle Lane Study	0.2
			<b>Total</b>	<b>20.6</b>

## Project Cost Estimates

### COST ESTIMATE METHODOLOGY

A summary of potential costs for the recommended bikeway network is presented in Table 7-5. Bikeway network costs were estimated by applying distance-based cost factors (by mile) to projects in each proposed facility class. The combined cost for the proposed bikeways within the City of Garden Grove is estimated \$18.2 million. Cost estimates for study corridors and upgrades to existing bikeways (e.g. wayfinding signage and buffers) were not included in this estimate.

It is important to note the following general assumptions about the cost estimates. First, all cost estimates are conceptual, since there is no feasibility or preliminary design completed, and second, the design and administration costs included in these estimates may not be sufficient to fund environmental clearance studies. Costs do not include environmental remediation or right-of-way acquisition. Finally, costs estimates are a moving target over time as construction costs escalate quickly, and as such, the costs presented should be considered as rough order of magnitude only.

Table 7-6 presents the planning level cost assumptions used to determine project cost estimates for new bikeways. Unit costs are typical or average costs informed by Alta Planning + Design’s experience working with California communities. While they reflect typical costs, unit costs do not consider project-specific factors such as intensive grading, landscaping, or other location-specific factors that may increase actual costs. For some segments, project costs may be significantly greater. The cost estimates do not include updates to existing bikeways or study corridors.

A detailed list of funding sources can be found in Appendix C.

Table 7-5: Unit Cost Assumptions

Item	Unit	Costs
Class I Shared-Use Path	MI	\$900,000
Class II Bicycle Lanes (two sides)	MI	\$85,000
Class II Bicycle Lanes through 4- to 3- lane road rebalancing	MI	\$200,000
Class III Bicycle Route with Signs	MI	\$30,000
Class III Neighborhood Greenway	MI	\$180,000
Class IV Separated Bikeway (two sides)	MI	\$300,000

Table 7-6: Estimated Cost Summary by Project Type (New Bikeways)

Project type	Costs
Class I Shared-Use Path	\$13,185,000
Class II Bicycle Lanes	\$1,471,050
Class II Bicycle Lanes through 4- to 3- lane road rebalancing	\$700,000
Class III Bicycle Route With Shared-Lane Markings	\$159,000
Class III Neighborhood Greenway	\$2,700,000
<b>Total</b>	<b>\$18,215,050</b>

### BEST FUNDING SOURCES

#### GRANTS

- Active Transportation Program (ATP)
- SCAG Sustainability Program
- Bicycle Corridor Improvement Program (BCIP)

#### APPLICATION SCHEDULE

- April - June
- September - November
- May - June



## On-Street Bikeway Implementation Strategies

The following section provides an overview of selected strategies that can be employed to update urban roadways to improve existing bikeways and create new bicycle lanes.

### DEMONSTRATION & PILOT PROJECTS

Temporary demonstration and pilot projects are one way to implement projects while testing the impacts to the transportation system. These projects enable the City to test the efficacy of particular treatments and applications on a temporary basis, often at a relatively modest cost due to the short-term materials used. The temporary projects are monitored to understand benefits and trade-offs. Additionally, they can be adjusted before converting a project to a permanent improvement.

Short-term demonstration projects, sometimes called tactical urbanism or temporary installations, are installed for one or two days in order to quickly evaluate a project and to gather feedback from the public. Demonstration projects usually use cones, spray chalk, and other temporary materials that can be easily transported to the site and moved during the demonstration, if needed.

Longer-term pilot projects can be installed for up to two years prior to long-term implementation. This allows for extensive data collection and public input, especially for contentious projects. Materials such as paint and flexible delineators are often used during pilot projects then upgraded to higher-quality treatments such as thermoplastic, cement, and bollards for long-term implementation.

#### PILOT PROJECT FOR GARDEN GROVE

Possible pilot projects identified include:

- **Green conflict striping**
  - » Suggested location: intersection of Brookhurst Street and Westminster Avenue

- **Green shared lane markings**

- » Suggested location: Lampson Avenue bicycle route and Gilbert Street south of Chapman

### IMPROVE EXISTING BICYCLE LANES THROUGH LANE NARROWING

Lane narrowing utilizes roadway space that exceeds minimum standards to provide the needed space for bicycle lanes. Many roadways have existing travel lanes that are wider than those prescribed in local and national roadway design standards, or which are not marked. Most standards allow for the use of 11 foot and 10 foot wide travel lanes to improve existing bicycle lanes.

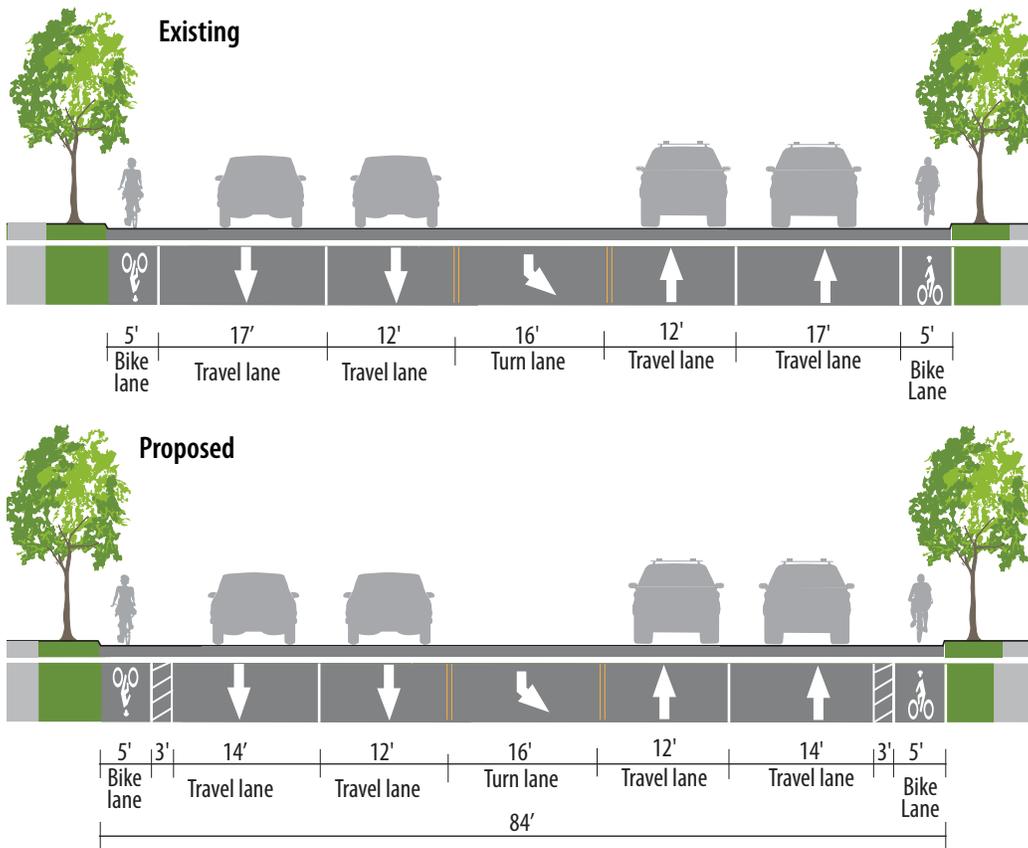
Both Brookhurst Street and Chapman Street have a posted speed limit of 45 mph with existing but discontinuous bicycle lanes. There is an opportunity to add a 3 foot buffer to the wide outside vehicle lane. Adding a buffer will create more comfortable condition for bicyclists and help to reduce incidence of sidewalk-bicycle riding. Figure 7-22 shows an example of how the Chapman Avenue bicycle lanes could be improved by striping a buffer.

### TRAFFIC CALMING ALONG BICYCLE ROUTES AND NEIGHBORHOOD GREENWAYS

Traffic calming can slow and deter motorists from driving on a street that has been prioritized for biking and walking. There is a large suite of physical design measures that can be placed on roads to slow traffic and improve safety. Two traffic calming measures that could be easily implemented in Garden Grove are narrowing travel lanes through striping improvements and installing neighborhood traffic circles.

Lampson Avenue is the only continuous east/west corridor central in Garden Grove that is not a truck route. The width of the ROW through the Lampson corridor varies widely and has intermittent bicycle lanes. Where the ROW widens, narrowing travel lanes through striping and installing curb extensions at selected intersections will help slow speeding vehicles.

Figure 7-2: Typical cross section along Chapman Avenue between Valley View and the city limit shows an example of adding a buffer to an existing bicycle lane by narrowing a wide outside travel lane.



Examples of traffic calming through painted shoulder markings (left) or painted center median (right)





## ROAD REBALANCING

Streets with excess vehicle capacity provide opportunities for bicycle lane retrofit projects. The repurposing of a single travel lane will generally provide sufficient space for bicycle lanes on both sides of a street.

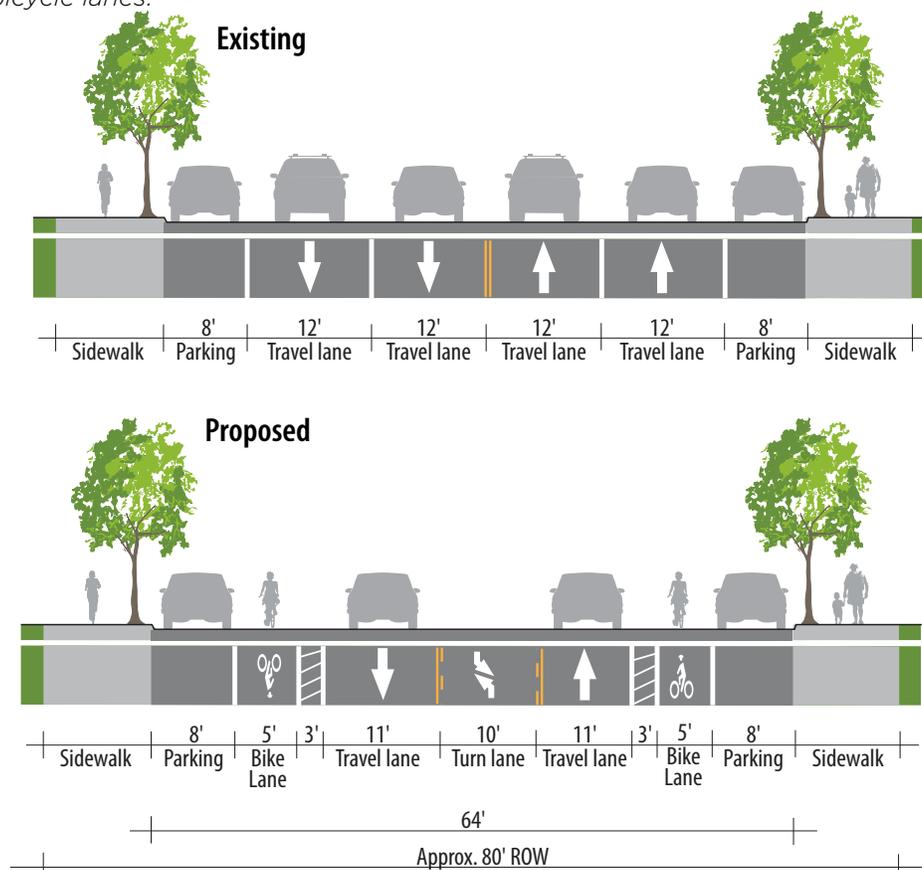
Four potential road rebalancing candidates have been identified on Gilbert Street, West Street, Hazard Avenue and Newland Street. Land use analysis and preliminary traffic engineering evaluation of the existing average daily traffic (ADT) and planned ADT buildouts (per the Garden Grove 2030 General Plan) indicates that these four corridors are good candidates for roadway rebalancing. A buffered bicycle lane could be added to the roads through rebalancing four lanes to three lanes. Figure 7-33 shows an example cross section on West Street.

The Federal Highway Administration (FHWA) advises roadways with ADT of 20,000 or less make good candidates for road rebalancing studies. Additional research and case studies can be found at [http://safety.fhwa.dot.gov/road\\_diets/info\\_guide/ch3.cfm](http://safety.fhwa.dot.gov/road_diets/info_guide/ch3.cfm).

## PARKING REDUCTION

Bicycle lanes can replace one or more on-street parking lanes on streets where excess parking exists and/or the importance of bicycle lanes outweighs parking needs. For example, parking may be needed on only one side of a street. Eliminating or reducing on-street parking also improves sight distance for bicyclists in bicycle lanes and for motorists on approaching side streets and driveways.

Figure 7-3: Typical cross section along West Street shows an example of 4 to 3 lane road rebalancing to add buffered bicycle lanes.



# Pedestrian Priorities

## PEDESTRIAN PRIORITIES

A suite of pedestrian infrastructure recommendations was presented in Chapter V. Table 7-7 provides the five most important priorities to improve the pedestrian environment in Garden Grove.

Improvements should focus on closing sidewalk gaps in school zones, improving crossings through shortening crossing distances, and improving pedestrian signal timing. Furthermore, improving lighting and creating shade through street tree planting were identified by the community as the two main factors that would make it easier and more desirable to walk in Garden Grove.

Table 7-7: Pedestrian Priorities

Pedestrian Priorities	
1	Sidewalk gap closure in school zones
2	Improve uncontrolled crossings
3	Improve pedestrian signal timing
4	Improve pedestrian lighting
5	Plant shade trees



A creative crosswalk in Long Beach, CA provides more visibility and enjoyability for pedestrians



A midblock crossing in West Hollywood, CA features a high-visibility crosswalks, bollards, and flashing beacons for a safe, convenient walking environment



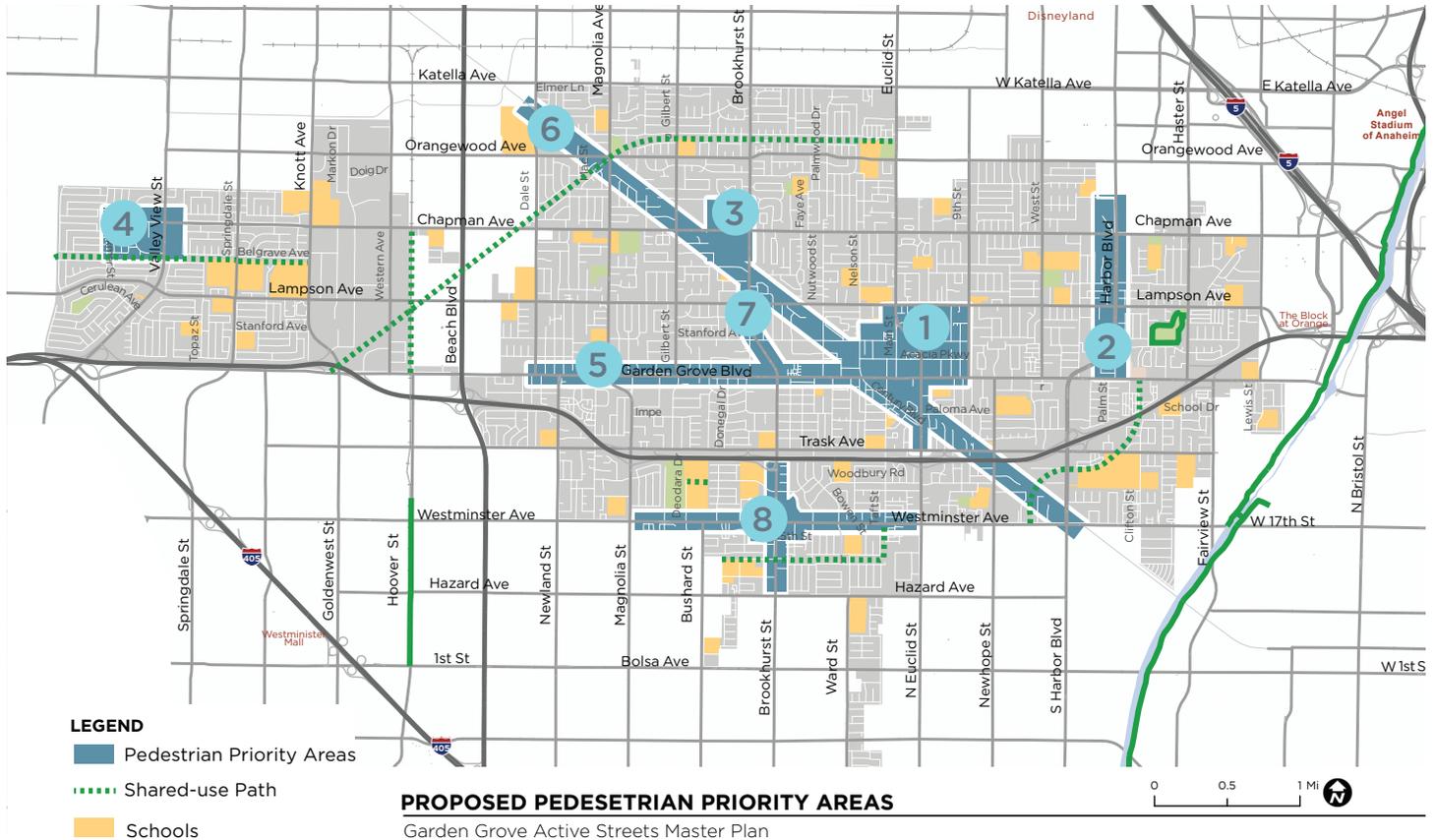
Pedestrian countdown signals provide timing information to pedestrians crossing the street and communicate pedestrian right of way to drivers



Street trees provide shade for a more comfortable walking experience



Figure 7-4: Pedestrian Priority Areas



## PEDESTRIAN PRIORITY AREAS

This plan has identified eight priority areas and corridors for infrastructure improvements (see Table 7-8 and Figure 7-4). The areas were selected because they have high pedestrian activity, such as around civic or commercial areas and have a history of pedestrian involved collisions. The two priority corridors were selected because they have been identified in previous plans as future corridors for active transportation use.

Table 7-8: Pedestrian Priority Areas

Area	
1	Downtown and Garden Grove High School
2	Harbor Boulevard - Resort District
3	Brookhurst and Chapman Shopping Centers
4	Chapman and Valley View
Corridor	
5	Garden Grove Boulevard
6	Pacific Electric Right-of-Way
7	Garden Grove Boulevard / Brookhurst Street / PE ROW Triangle
8	Westminster / Brookhurst Corridor

## Priority Project Details

As a part of this planning effort, the project team developed project cutsheets for selected projects within Garden Grove. The cutsheets can be utilized for a variety of uses, such as to convey what improvements will potentially look like to residents and stakeholders, as well as assist in applying for grant money to fund implementation.

### **PE ROW URBAN GREENWAY**

One of the top priority projects is to develop an urban greenway with a shared-use path along the Pacific Electric Right-of-Way (PE ROW). The next chapter provides details for coordination, phasing and concept designs for the PE ROW Trail.

### **EARLY ACTION PROJECTS**

Implementation details including cross sections, detailed segment improvement descriptions, and costs, were developed for the Early Action Projects as part of the OCTA BCIP grant application. This information can be found in Appendix G. A cutsheet was developed for the West Street Road Rebalancing project.

### **NEIGHBORHOOD GREENWAYS**

Throughout the public outreach process, residents in Garden Grove were supportive of creating neighborhood greenways to help create safe routes to school. Quiet, residential streets provide low-stress, convenient routes for neighborhood travel on foot and by bicycle. A cut sheet to implement the Westside Neighborhood Greenway was developed because it was ranked as the top priority neighborhood greenway.

### **STUDIES**

Cutsheets were developed for the Garden Grove Boulevard Complete Street Study, Downtown Active Transportation Improvement Plan, and Safe Routes to School Plan. These projects are key to developing a robust active transportation network in Garden Grove. Additional outreach, planning and design work is needed to assess feasibility of active transportation improvements and to conduct further environmental evaluation.

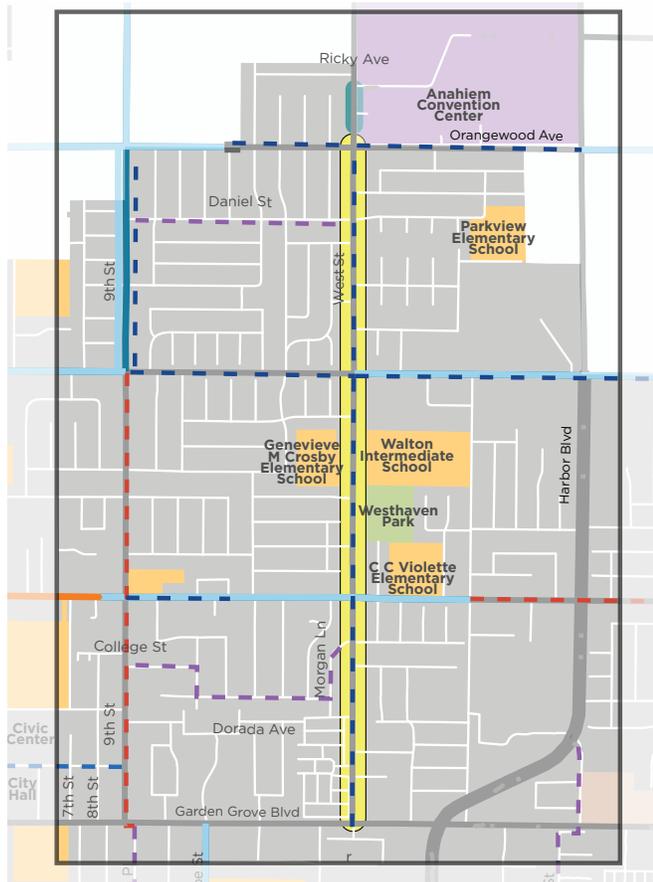


# WEST STREET ROAD REBALANCING

## GOALS MET



## PROJECT SITE



## PROJECT DESCRIPTION

### CONTEXT

West Street is a north/south corridor on the east side of the city. Within the project area West Street between Orangewood Avenue and Garden Grove Boulevard is approximately 64 feet wide and has 2 driving lanes in each direction, with no median, no bicycle lanes, and parking on both sides. The current average daily traffic (ADT) volumes are 12,900 cars and the 2030 General Plan build out volumes do not exceed 20,000 cars. Though the street currently has no bicycle facilities, it does have continuous sidewalks but limited pedestrian crossings. Primarily lined with single family homes, West Street will benefit from traffic calming and safety improvements. to provide safe, pleasant, and convenient travel for all modes.

### IMPROVEMENTS

Buffered bicycle lanes will be installed to West Street through rebalancing four vehicle lanes to three vehicle lanes. Through restriping, West Street will be rebalanced by converting a four-lane undivided road (two lanes in each direction) into three lanes (one lane in each direction with a center turn lane). Excess space is used for the creation of a Class II bicycle lane. The project will include:

- Traffic striping plans, specifications and estimates (PS&E)
- Street resurfacing
- Traffic signing and striping
- Traffic signal upgrades

### BENEFITS

Benefits of the West Street Road Diet study will include:

- Reduced crossing distance for pedestrians
- New bicycle lanes, creating a north/south bikeway

# WEST STREET ROAD REBALANCING

- Left turn lanes for drivers
- Reduced vehicle speeds and improved traffic flow
- Safer connections for the nearby Crosby Elementary School and Westhaven Park

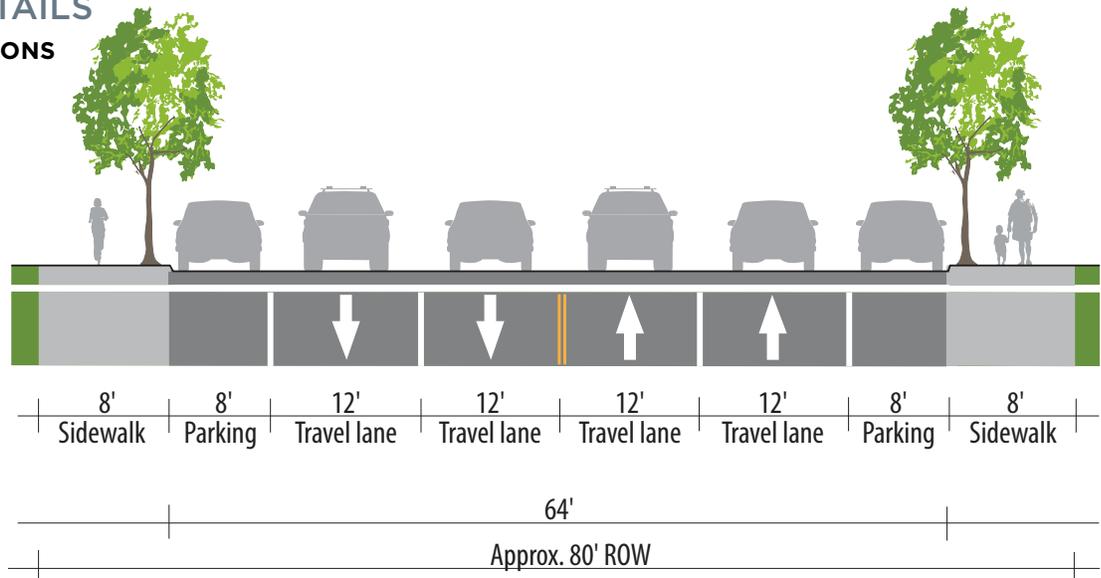
**ESTIMATED COST**  
\$650,000



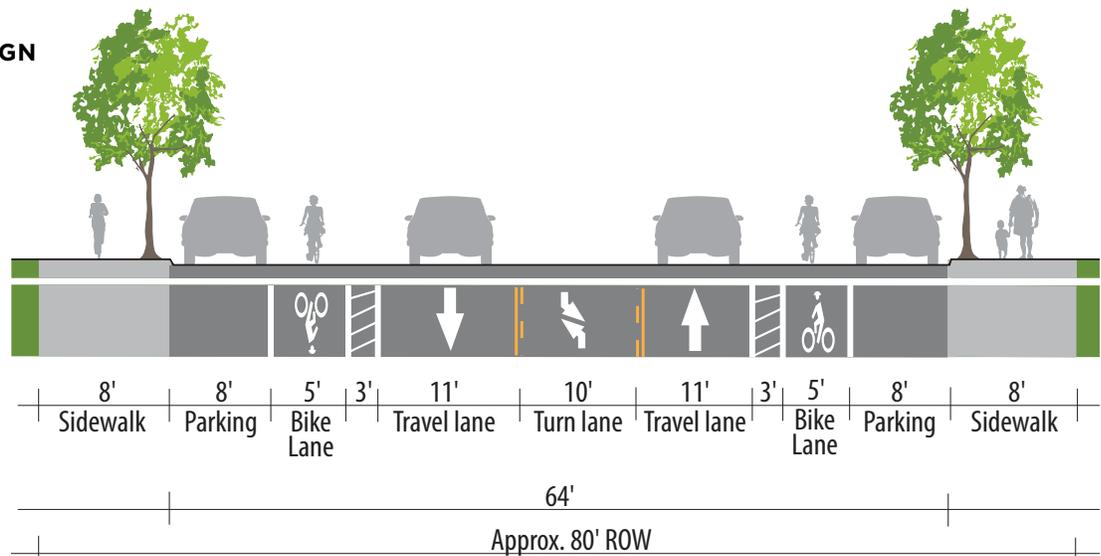
Above: West Street's width, low traffic volumes and mostly residential use makes it ideal for pedestrian and bicycle improvements

## PROJECT DETAILS

### EXISTING CONDITIONS



### PROPOSED DESIGN





# WESTSIDE NEIGHBORHOOD GREENWAY

## GOALS MET



## PROJECT SITE: WESTSIDE NEIGHBORHOOD GREENWAY



## PROJECT DESCRIPTION

### CONTEXT

Quiet, residential streets throughout Garden Grove already provide low-stress, convenient routes for neighborhood travel on foot and by bicycle. While conventional Class II bicycle lanes on busier streets provide connections for skilled cyclists, quieter neighborhood streets can provide alternative routes, especially those who would like to travel at a more leisurely pace with limited vehicle traffic. Neighborhood Greenways, like Cerulean Avenue or Blackmer Street (see map above) can connect residents to public parks, schools, and local destinations.

### IMPROVEMENTS

Neighborhood Greenway Networks can be a combination of a variety of traffic facilities.

This includes traffic calming measures like curb extensions and chicanes, which can discourage motor vehicle traffic on neighborhood streets. This can improve the safety and peacefulness of streets for residents, while accommodating walking and biking. Cities like Berkeley, California and Portland, Oregon have created extensive networks of neighborhood greenways and provide simple signage to facilitate easy access for bicycle traffic to use the network and avoid busier arterials.



*A neighborhood greenway in Santa Monica, California with a roundabout to calm traffic*

# WESTSIDE NEIGHBORHOOD GREENWAY

## BENEFITS

Neighborhood Greenways can provide networks of low-stress bicycle facilities with minimal costs, and help to beautify neighborhoods. Specific benefits include:

- Reduced cut-through vehicular traffic
- Opportunities to add landscaping to streets
- Improved safety for residents, pedestrians, and bicyclists
- Low-cost, high reward

## ESTIMATED COST

\$550,000

## EXAMPLES



Above: Custom signage for a neighborhood greenway in Berkeley, CA

Left: A neighborhood greenway, traffic circle, and signage in Berkeley, CA creates safer and more convenient environments for biking and walking

Right: Long Beach's custom signage. A neighborhood greenway, traffic circle, and signage in Long Beach, CA. Yield signs and traffic circles caution drivers to slow down, pedestrian crossing signage creates a safer walking environment, and bicycle signage and pavement markings make a safer and more convenient bicycle environment





# GARDEN GROVE BLVD COMPLETE STREET STUDY

## GOALS MET



## PROJECT DESCRIPTION

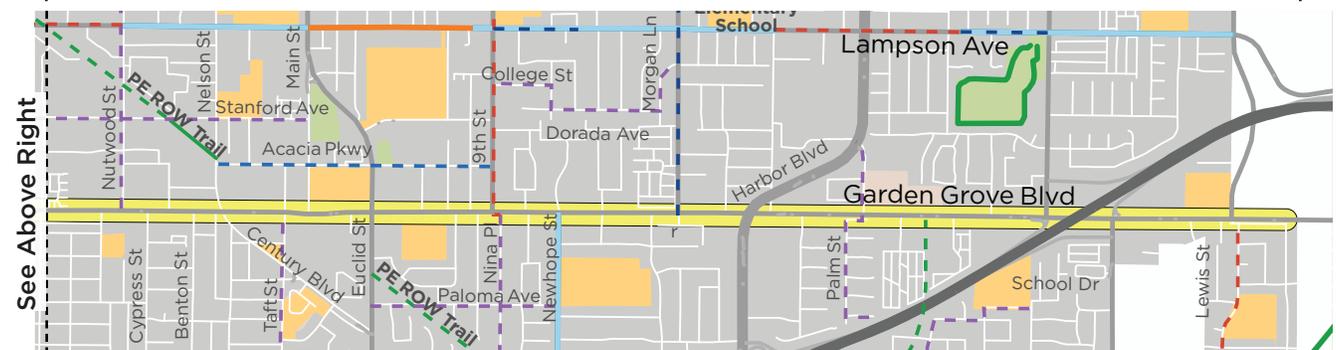
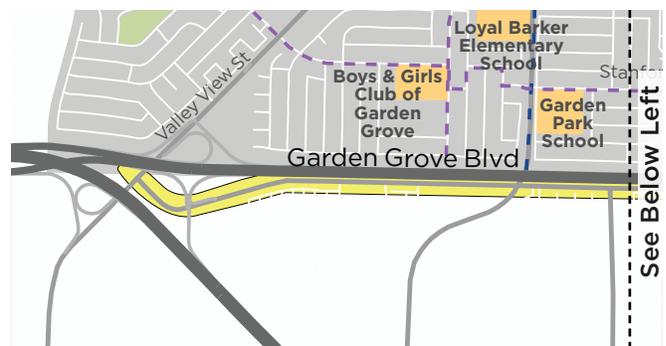
### CONTEXT

Garden Grove Boulevard is a key east/west connection running the entire length of the city. Approximately 100 feet wide, Garden Grove Boulevard has ample room for safe, pleasant, and convenient travel options for all. The street currently has no bicycle facilities, limited pedestrian crossings, and the segment between Goldenwest Street and Valley View Street do not have continuous sidewalks on both sides of the street. Primarily lined with commercial buildings and zoned to allow mixed use development, this corridor is used by many residents and visitors. When people live close to retail, there is a greater demand for walking and biking, so the corridor will benefit from enhanced bicycle and pedestrian facilities.

## PROJECT SITE

- Class I**
  - Existing Shared-use path
  - - - Proposed Shared-use path
- Class II**
  - Existing Bike Lanes
  - - - Proposed Bike Lane / Buffered Bike Lane
- Class III**
  - Existing Bike Route
  - - - Proposed Bike Route / Shared Street
  - - - Proposed Neighborhood Greenway
- Study Corridors
- \* Intersection Improvements

- LAND USE**
- Schools



# GARDEN GROVE BLVD COMPLETE STREET STUDY

## IMPROVEMENTS

The goal of the complete streets study is to develop a community-supported vision for Garden Grove Boulevard and bring the corridor planning up to a level to determine California Environmental Quality Act (CEQA) evaluation and funding for design and construction. The study will include; outreach, traffic analysis, preliminary design to allow for CEQA determination and cost estimates.

## BENEFITS

The Complete Street Study will allow Garden Grove to compare the potential benefits and costs of reconfiguring a street that can accommodate the

needs of all users of the road. Additional benefits include:

- Evaluation of economic and safety impacts
- Understanding of traffic impacts
- When implemented, complete streets can increase the economic vitality of corridors and reduce public health costs associated with traffic injuries / fatalities, and sedentary lifestyles

## ESTIMATED COST

\$300,000 - \$450,000 based on level of public engagement activities, traffic analysis and modeling and CEQA effort.



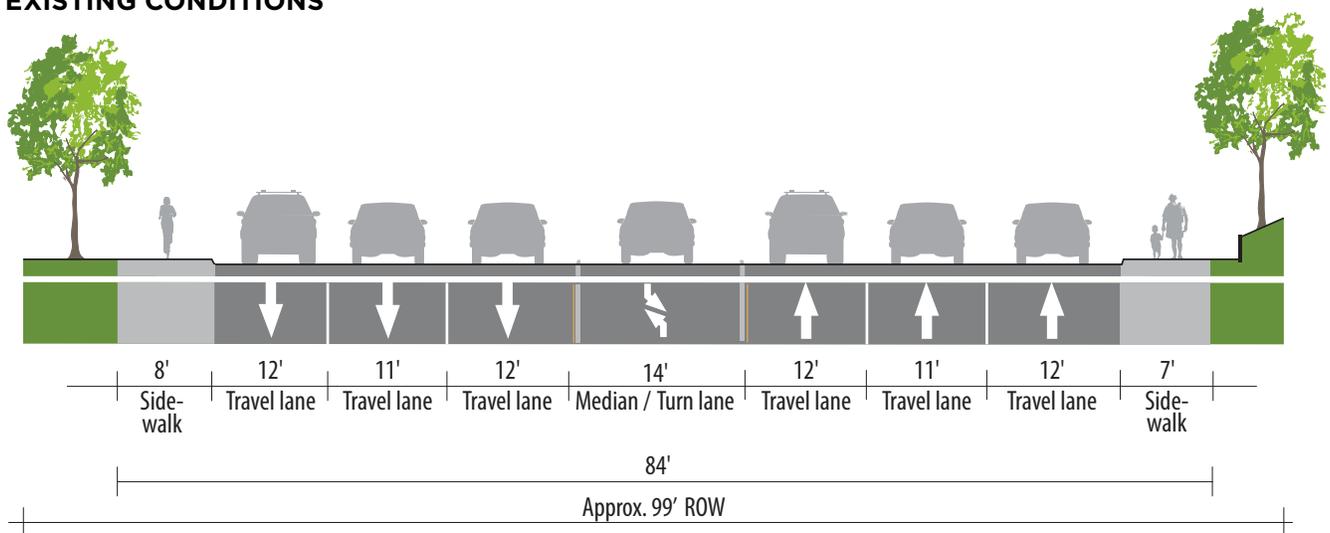
*Garden Grove Boulevard*



# GARDEN GROVE BLVD COMPLETE STREET STUDY

## PROJECT DETAILS

### EXISTING CONDITIONS

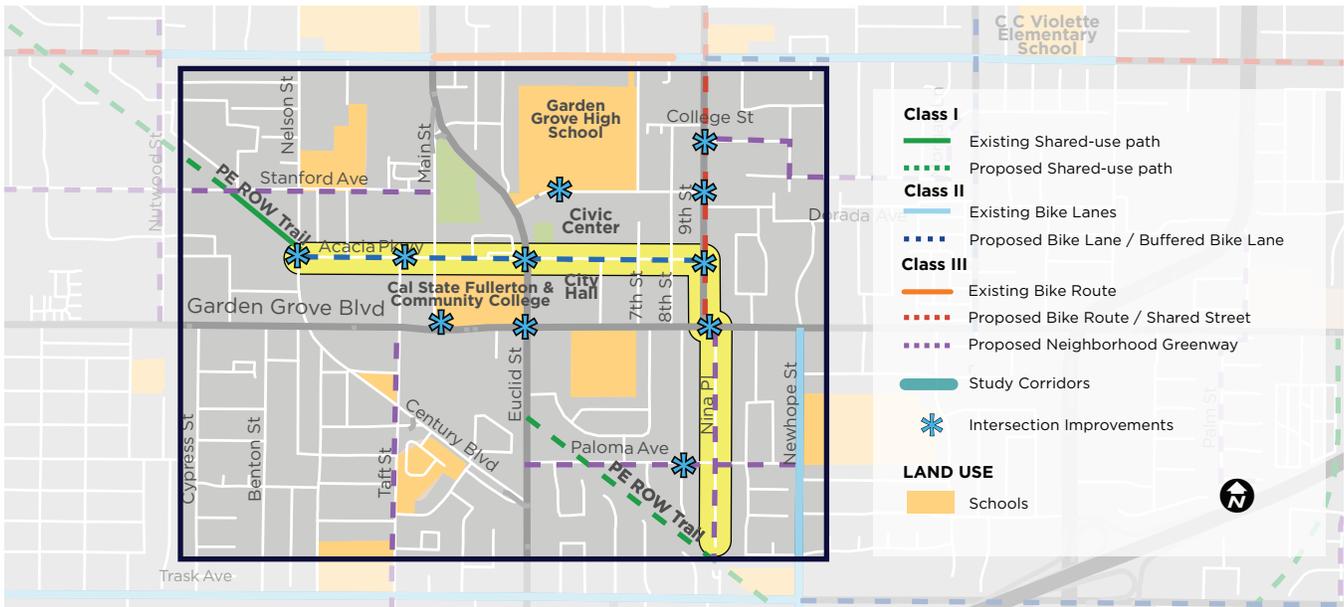


# DOWNTOWN ACTIVE TRANSPORTATION CONNECTIONS

## GOALS MET



## PROJECT SITE



## PROJECT DESCRIPTION

### CONTEXT

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. There are intermittent bicycle lanes along Lampson Avenue in downtown, but other connections are lacking.

### IMPROVEMENTS

The Downtown Active Transportation Connections will create bicycle and pedestrian connections to and from downtown Garden Grove. This project will help identify locations that could be improved based on economic and safety factors. It will also allow staff to identify a variety of designs and interventions that can be used throughout the project area.

This project includes:

- Outreach
- Traffic analysis
- Identification of areas for improvement
- Set up project for design, construction, and funding

# DOWNTOWN ACTIVE TRANSPORTATION CONNECTIONS

Possible future interventions include:

- Class IV separated bicycle lanes on Acacia Parkway
- Class III neighborhood greenway on 9th and Nina
- Creative placemaking (e.g. painted intersections)
- Pedestrian safety improvements (e.g. bulb outs)

## BENEFITS

Improvements to active transportation connections throughout downtown Garden Grove will help improve the safety of people who are walking and biking – including individuals walking to and from their motor vehicles. Additional benefits will include:

- Bicycle/pedestrian access to schools and universities, local businesses, and Civic Center
- Improved regional bicycle and pedestrian connections
- Reduced traffic-related injuries
- Strengthened economy
- Sense of place and community

## ESTIMATED COST

\$200,000



*Left: The intersection of 7th & H Streets in Washington DC has been adorned with art symbolizing the Chinese Lunar Calendar and other art. This intersection also included designs in the diagonal crosswalks, which can improve traffic flow and pedestrian safety through as scramble crossing. (source: <https://frenchtwistdc.com/2016/06/29/barnesdancedc/>)*

*Right: Downtown Garden Grove already contains some key features that make good environments for walking and biking, but will benefit from additional improvements.*



# SAFE ROUTES TO SCHOOL PLAN

## GOALS MET



## PROJECT DESCRIPTION

### CONTEXT

Garden Grove Unified School District educates nearly 48,000 students across Garden Grove and surrounding cities. There are 66 schools over a 28 square miles area. Schools can be the ‘centers’ of neighborhoods and complement the work of the other policies throughout this plan. Continued community engagement of students, parents, and faculty can also provide a key component to help inform and improve any planning efforts for the city. proposed.

### IMPROVEMENTS

The creation and implementation of a Safe Routes to School (SRTS) program can provide Garden Grove with many ways to improve the safety and convenience of walking and biking for all. SRTS program components include:

- Walk audits / surveys to identify areas for improvement
- Infrastructure improvements
- Education and encouragement programs

### BENEFITS

Benefits of a Safe Routes to School program include:

- Improved safety of students
- Reduced traffic-related injuries
- Reduced pollution and congestion, leading to increased public health
- Equitable safety benefits across all neighborhoods

### ESTIMATED COST

\$200,000 - \$600,000 based upon the number of schools involved and the level of engineering recommendations provided.



The goal of a Safe Routes to School program is to educate and encourage students to walk and bike to school (picture from LAUSD Walk to School day).



Fun events help educate student pedestrians and bicyclists while encouraging them to use these commute modes to school.



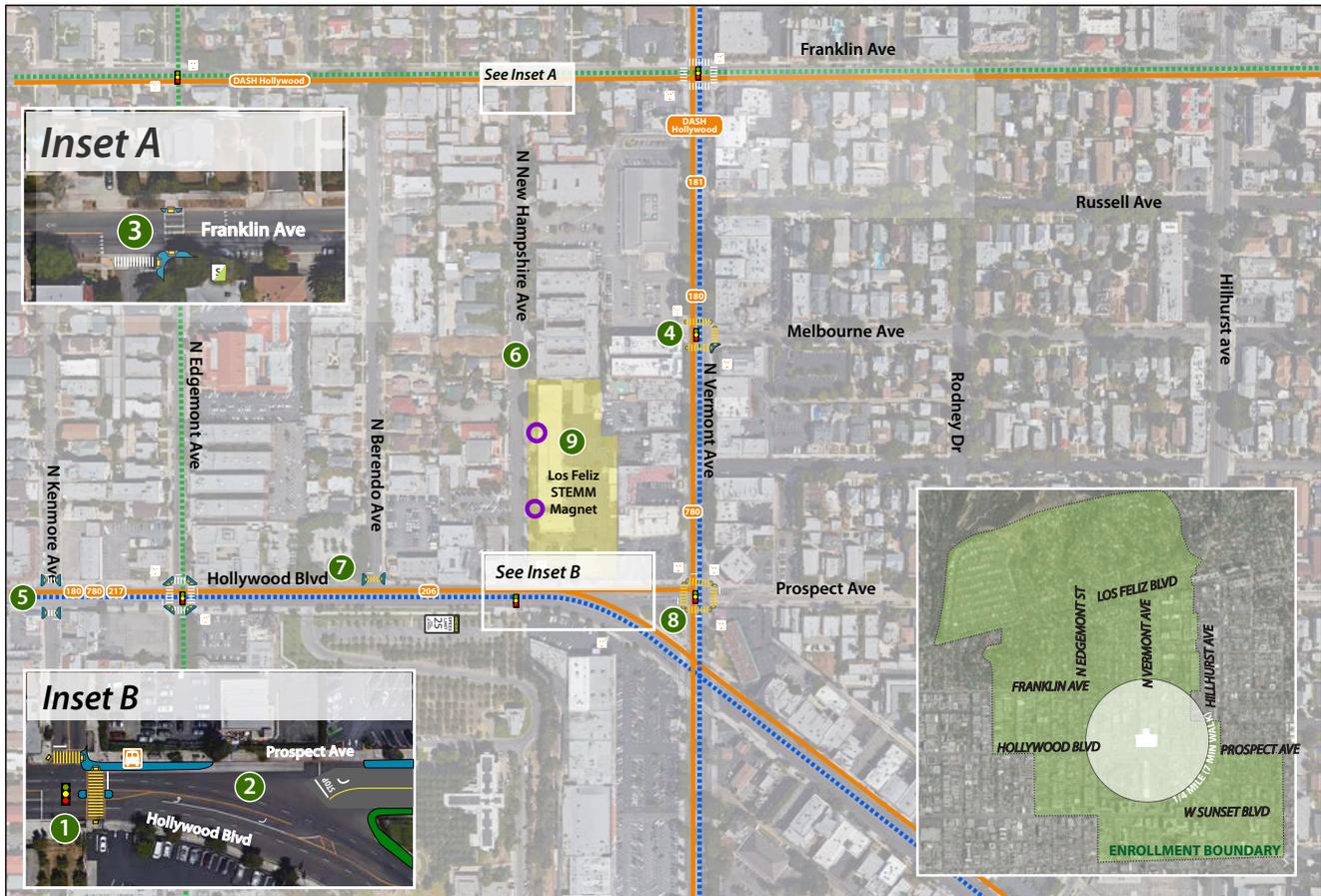
Tracking students' commute mode to school helps reward this behavior and encourages other students to participate.



# SAFE ROUTES TO SCHOOL PLAN

## EXAMPLE SCHOOL AUDIT

**Los Feliz STEMM Magnet** - 1740 N New Hampshire Ave, Los Angeles



	<b>Existing Conditions</b>	School Entrance	<b>Recommended Improvements</b>	No U-Turn Sign	High-Visibility School Crosswalk (new, refreshed, or upgraded)
	Transit Routes	Existing Bike Lane	New Landscaping	New School Speed Limit Assembly C and Speed Feedback Signage	High-Visibility Crosswalk (new, refreshed, or upgraded)
	Transit Stops	Existing Traffic Signal	New / Upgraded Curb Ramp with Detectable Warning Surface	Proposed Bike Lane	Proposed Neighborhood Friendly Street

Above: an example school audit from the Los Angeles Safe Routes to School program showing existing conditions and recommendations for improving pedestrian and bicycle safety near schools.

Right: Physical improvements, such as these high-visibility continental crosswalks in front of a high school in Los Angeles, CA, improve safety for all users of the road.





*The PE ROW Trail will be a catalytic project creating an active transportation, recreational and ecological spine through the heart of Garden Grove.*



## VIII. PE ROW TRAIL AND BIKEWAY IDENTITY

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*"Saving old railroad corridors as trails is not only good recreation policy, it is good railroad policy. They [abandoned rail corridors] may be appropriate for rail use in the future. If they are destroyed now, we will never be able to reassemble them again. "*

*-DREW LEWIS, former Secretary of Transportation and a former Chief Executive Officer for Union Pacific Railroad*

Development of an urban greenway along the Pacific Electric Right-of-Way **(PE ROW) will be catalytic project in Garden Grove, creating a diagonal active transportation, recreational and ecological spine through the heart of the city.**

In keeping with the City of Garden Grove's goal of becoming a community that is healthy, engaged, economically vibrant, family-oriented, and safe, the bikeway and trails vision seeks to keep this identity throughout with attention to the character of individual neighborhoods.

Building from the "Gardens and Groves" identity developed through previous plans and supported by the community, the overall theme of the trails and bikeways system will seek to develop a natural atmosphere that plays off the rich history of agriculture in the city as well as create green spaces which are so desired and needed.

## Pacific Electric Right-of-Way

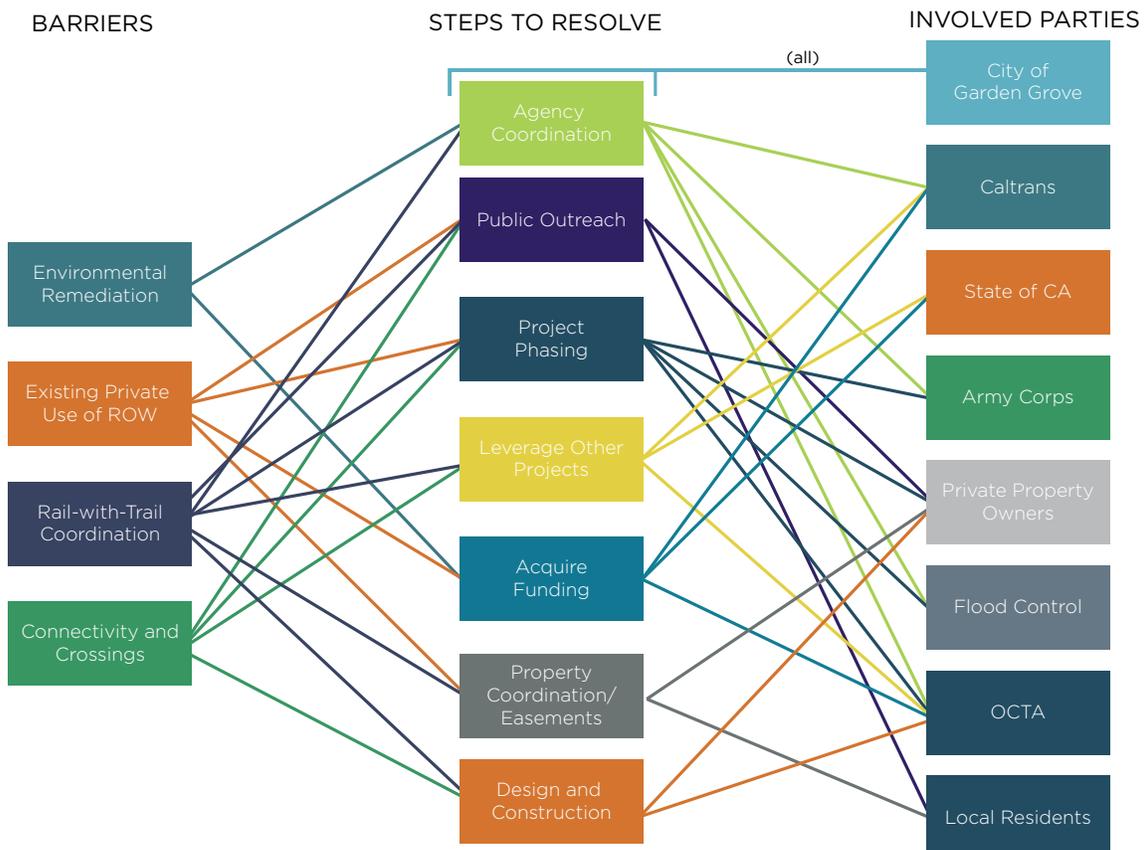
Rail service along the PE ROW has been discontinued since 1950. Development of an urban greenway along this 100 foot wide corridor will be catalytic project in Garden Grove, creating a diagonal active transportation, recreational and ecological spine through the heart of the city. The City installed a pilot trail segment of the PE ROW trail between Nelson and Nutwood Streets and is actively pursuing funding for remediation which is the next step of trail development in this corridor.



*The PE ROW presents a great opportunity to develop a pedestrian and bicycle corridor. Currently, it is not open to public access, even though is used by community members. It is barren and does not offer comfortable conditions for walking and biking.*

Figure 8-1 reflects the complexity needed to implement the PE ROW trail. The key barriers to overcome include environmental remediation, existing private uses of the ROW such as parking lots and local business uses, rail-with-trail coordination and connectivity and major road crossings.

Figure 8-1: Implementation network graph





## URBAN GREENWAY OPPORTUNITIES

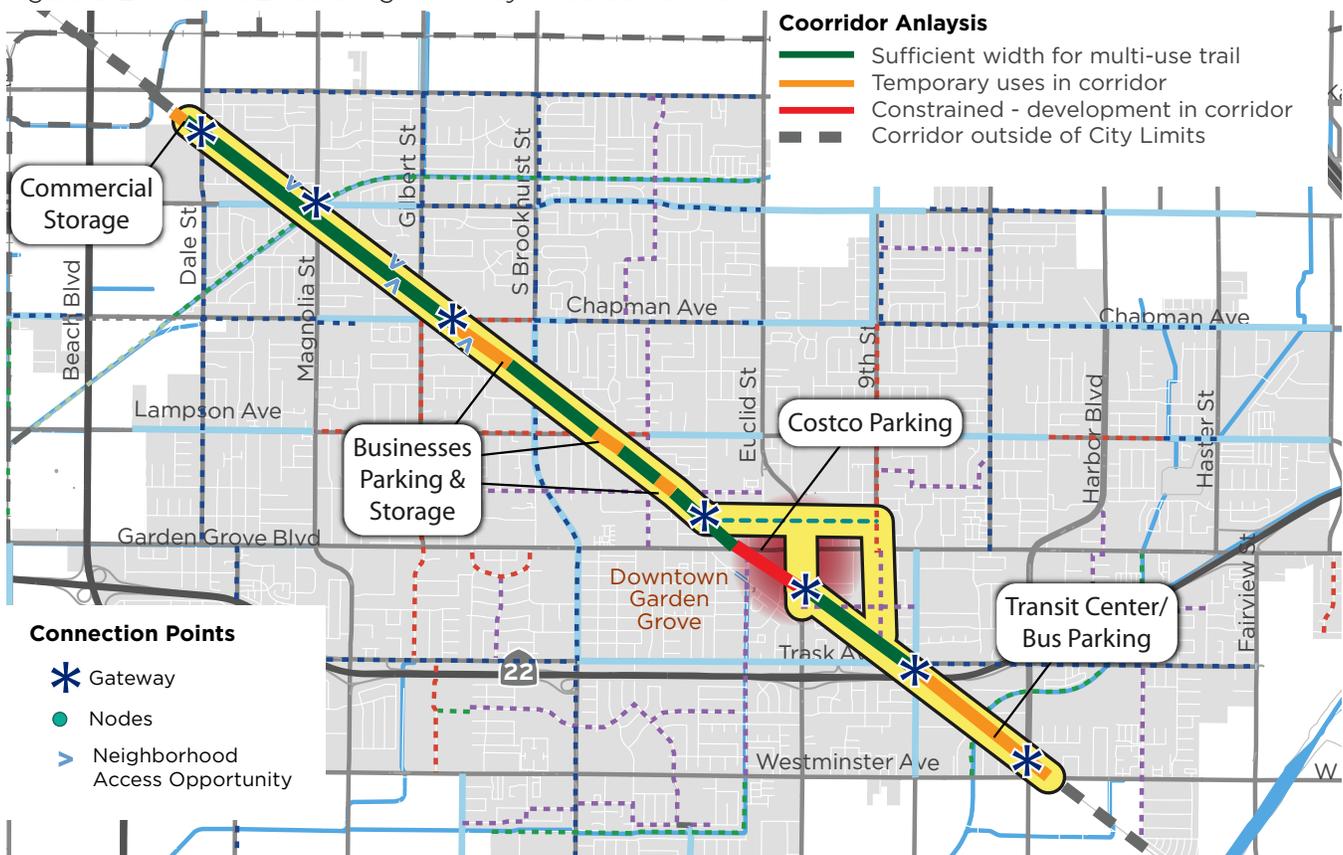
Figure 8-2 provides an overview of the physical opportunities and constraints along the PE ROW in Garden Grove. The width of the corridor presents the biggest opportunity; 100 feet provides plenty of space to accommodate an urban greenway, along with a future commuter rail line. The greenway can help achieve the City's goals, which extend beyond transportation, including creating new parks, restoring open space to improve ecological function and water quality, and creating cleaner air through trees and other vegetation. The largest physical constraint is the retail development (Costco) in downtown. The plan proposes two alignments around this parcel through Downtown. A separated bikeway along Acacia Parkway brings trail users through the downtown activity centers including historic Main Street and the Civic area and connects to a bicycle route on 9th Street and connects to a bicycle route on 9th Street

and neighborhood greenway along Nina Place. Euclid Street provides a more direct connection for pedestrians. A longer-term alignment should be explored on Garden Grove Boulevard when it is transformed into a complete street with high quality bicycling and pedestrian accommodations.

## GATEWAYS AND ACCESS POINTS

Creating welcoming gateways and access points provide opportunities for trail amenities such as wayfinding, public art, public gardens, and more. A gateway is the most developed access point and should be placed at major road crossings. Nodes are located at minor road crossings and at intersections along the on-street portion through downtown. At minimum, wayfinding signs should be placed at nodes. Neighborhood access points provide local connections to parks and schools along the corridor.

Figure 8-2: Pacific Electric Right-of-Way in Garden Grove



## RAILS-WITH-TRAILS DESIGN GUIDELINES

Plans for a regional light-rail line along the PE ROW exist. This section explains the underlying railroad operating and engineering principles that influence the formulation of rails-with-trail (RWT) guidelines.

For safety reasons, and the convenience of the operators, the general public is typically excluded from rail rights-of-way through physical barriers, such as fencing, or legally through trespass laws and right-of-way signing. In RWT situations, public access to the right-of-way is allowed with the development of special design features and management and operational practices to maintain a safe operating environment. Each segment of these shared corridors must be planned and designed in detail to anticipate the specific operational and safety requirements of each situation encountered. The following design guidelines will define considerations that will help avoid exposing users, owners and operator of the railroad to risks that can reasonably be avoided.

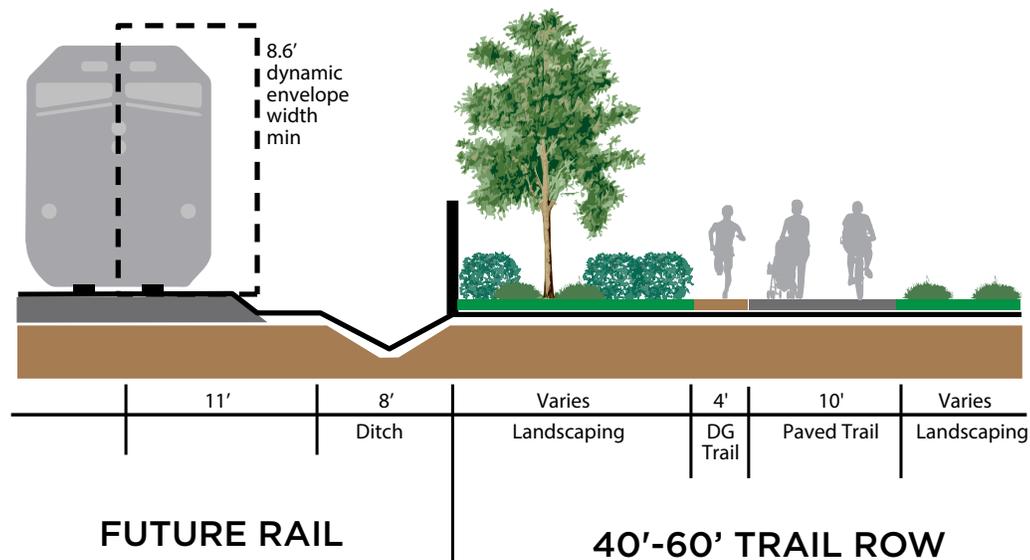
Although rails-with-trails currently are operating along train corridors of varying types, speeds, and frequencies, there simply is no consensus on an

appropriate setback recommendations. In 2002, Alta Planning + Design, produced a study for the Federal Highway Administration (FHWA) titled: “Rails-with-Trails: Lessons Learned.” The study recommended that analysis of technical factors relating to the setback distance be incorporated into a rail with trail feasibility study, and that the feasibility study be flexible rather than prescriptive. The term “setback” refers to the distance between the paved edge of an RWT and the centerline of the closest active railroad track. The setback distance should be determined on a case-by-case basis after engineering analysis and liability assumption discussions, because every case is different.

### SETBACK

The minimum distance between the operating railroad and obstructions such as utility and signal poles, bridges, retaining wall structures and fences, is governed by the dynamic envelope of rail operations and measured in feet from the centerline of the track. These dimensions are recognized nationally to provide consistent clearances and to

Figure 8-3: Desirable PE ROW Trail cross section



facilitate safe operation of trains throughout the interconnected rail network. The FHWA report found that the range of minimum setback between edge of trail and track centerline in RWTs varies from less than seven feet to as high as 100 feet. The average setback was almost 33 feet from the centerline of the nearest track to the edge of trail. A comparison of RWT setback distances to train speed and frequency reveals little correlation; over half (33 of 61) of the existing RWTs have 25 feet or less separation, even alongside high-speed trains. Many of the trails with little separation have been established for many years. The trail managers for these well-established trails report few problems. However, interviews with train engineers in several areas indicate that they observe trespassing in areas with little setback and no physical barrier.

There is no consensus on either appropriate setback requirements or a method of determining the requirement. Some trail planners consider it analogous use the AASHTO Bike Guide for guidance: bicycle lanes are set back five to seven feet from the centerline of the outside travel lane of even the busiest roadway. Others use their state public utilities commission's minimum setback standards (also known as 'clearance standards') for adjacent walkways (for railroad switchmen).



The appropriate distance must be determined on a case-by-case basis because of the lack of consensus on acceptable setback distances.

Trail planners should incorporate into the feasibility study an analysis of technical factors, including:

- type, speed, and frequency of trains in the corridor,
- separation technique,
- topography,
- sight distance,
- maintenance requirements, and
- historical problems.

## SEPARATION

To provide separation and discourage trespassing and undesired informal paths from forming, trails within the right-of-way may require fencing. The desirable PE ROW cross-section (Figure 8-3) shows the generally accepted practice for aligning trails within active rail corridors and includes accommodation for maintenance access and drainage of the right-of-way. Variance from the standard to accommodate narrow right-of-way or obstructions will require the development of special designs and approval by the owner(s) and operator, and may require approval by regulatory agencies.

*This segment of the Springwater-OMSI Trail on the Willamette River in Portland, OR is a rail with trail. The trail parallels a track used for daily freight and occasional excursion train traffic.*

## CONNECTIVITY

### TRAIL ACCESS AND CROSSINGS

Providing a seamless experience for people traveling along the PE ROW Trail can be challenging due to the number of major road crossings. It is important to provide a crossing as close to the path as possible rather than trying to detour people walking or biking to a more distant location where there is an existing signalized intersection.

At-grade roadway crossings can create potential conflicts between path users and motorists, however, well-designed crossings can mitigate many operational issues and provide a higher degree of safety and comfort for path users. In most cases, at-grade path crossings can be properly designed to provide a reasonable degree of safety and can meet existing traffic and safety standards. Figure 8-4 shows a matrix that provides guidance for selecting crossing facilities based on roadway speed and number of lanes of traffic.

Crossings for paths that cater to bicyclists can require additional considerations due to the higher travel speed of bicyclists versus pedestrians. An example of a mid-block trail crossing is shown in Figure 8-5. The crossing at Gilbert Street shows a proposed road rebalancing to include a buffered Class II bicycle lane. A two-stage midblock pedestrian refuge island helps align the diagonal geometry and allows trail users to cross one lane of traffic at a time.

A crossing beacon such as a Rectangular Rapid Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (HAWK) is recommended (for more information on crossing beacons see Chapter V Pedestrian Recommendations). Figure 8-6 shows a photograph of the current condition of the PE ROW at Gilbert Street (top) as well as a photo simulation of a proposed trail concept (bottom). Figure 8-7 shows a crosssection of Gilbert Street's existing condition and proposed rebalancing.

Figure 8-4: Unsignalized Crossing Guidance

CROSSING CONTEXTUAL GUIDANCE At unsignalized locations		Local Streets 15-25 mph			Collector Streets 25-30 mph			Arterial Streets 30-45 mph						
		2 lane	3 lane	2 lane	2 lane with median refuge	3 lane	2 lane	2 lane with median refuge	3 lane	4 lane	4 lane with median refuge	5 lane	6 lane	6 lane with median refuge
1	Crosswalk Only (high visibility)	✓	✓	EJ	EJ	X	EJ	EJ	X	X	X	X	X	X
2	Crosswalk with warning signage and yield lines	EJ	✓	✓	✓	✓	EJ	EJ	EJ	X	X	X	X	X
3	Active Warning Beacon (RRFB)	X	EJ	✓	✓	✓	✓	✓	✓	X	✓	X	X	X
4	Hybrid Beacon	X	X	EJ	EJ	EJ	EJ	✓	✓	✓	✓	✓	✓	✓
5	Full Traffic Signal	X	X	EJ	EJ	EJ	EJ	EJ	EJ	✓	✓	✓	✓	✓
6	Grade separation	X	X	EJ	EJ	EJ	X	EJ	EJ	✓	✓	✓	✓	✓

LEGEND	
Most Desirable	✓
Engineering Judgement	EJ
Not Recommended	X

Figure 8-5: Proposed Concept of PE ROW Trail alignment and crossing at Gilbert Street.



Figure 8-6: Existing condition and conceptual rendering of the PE ROW Trail crossing at Gilbert Street

EXISTING CONDITION

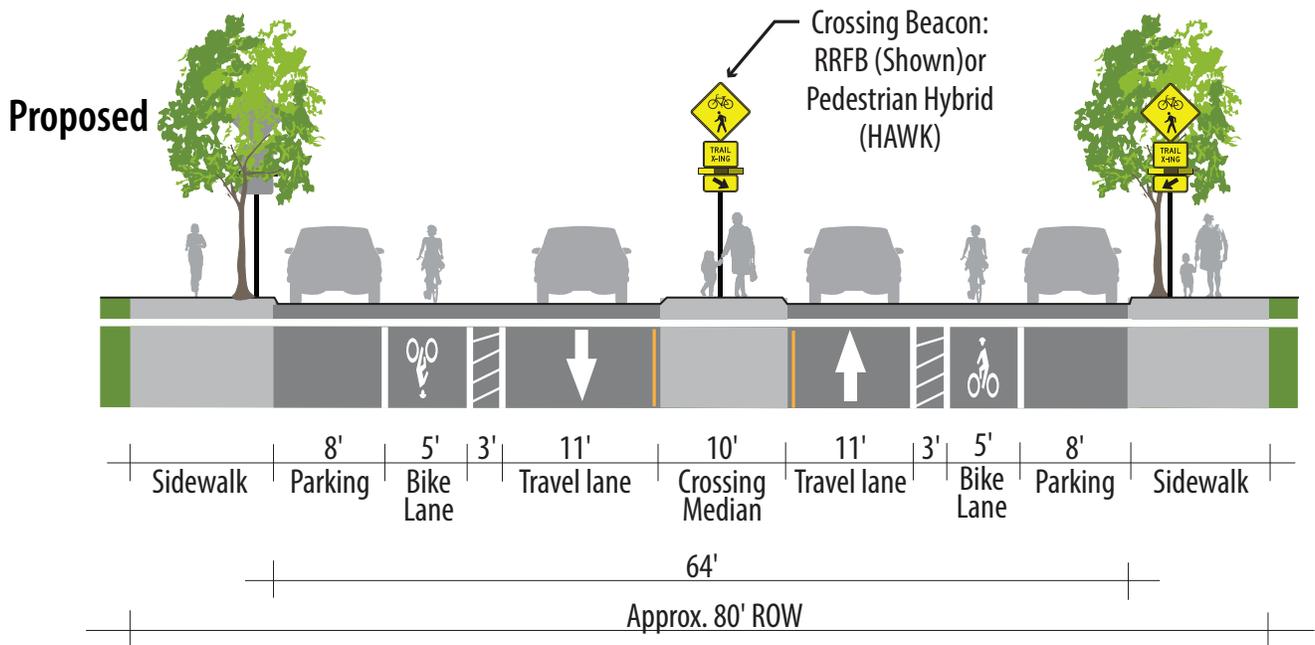
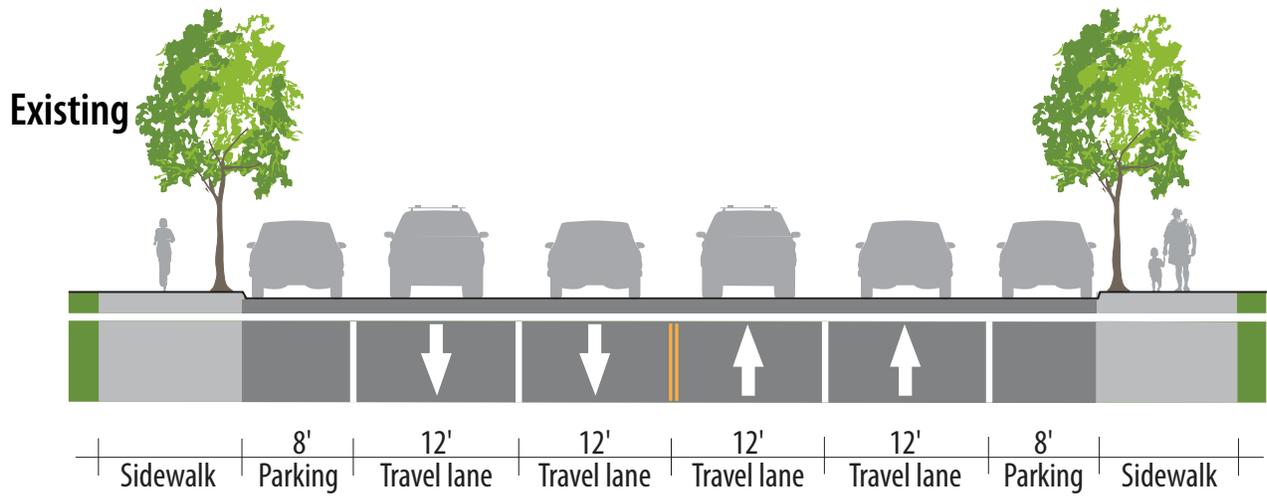


CONCEPTUAL RENDERING





Figure 8-7: Road rebalancing on Gilbert Street would improve the crossing for trail users by reducing the number of lanes of traffic and providing a refuge median. The sections below show the existing and proposed section view of Gilbert Street at the PE ROW Trail mid-block crossing.



## Gardens and Groves Identity

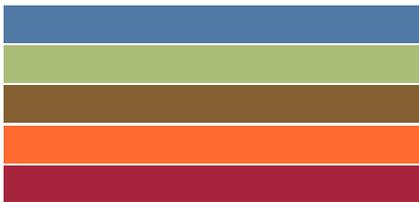
Two themes to articulate the Gardens and Groves identity have been developed based on public outreach development during the Garden Groves Open Streets Event.

The two themes are **natural** and **vivid**. These themes serve as options for the City to finalize an identity for the trail and bikeway system.



### NATURAL

The Natural theme of the Gardens and Groves identity would provide an identity deeply rooted in agricultural history and native planting with a color palette and material choices reflecting this. Amenity choices would seek to maintain a naturalistic environment using boulders, wood and metal, for example.



### VIVID

The Vivid theme would provide a more vibrant color palette, exploring the rich cultural variety within the community. The colors and amenities would reflect the lively communities within the city, drawing attention to the space not just as a trail but linear park for community involvement and interaction.



*Natural planting Imagery*



*Vibrant Colors at the Garden Grove Strawberry Festival*

## LOGO DESIGN OPTIONS

A logo is used for identification via the use of a mark or icon. It is intended to become familiar and provide a cue of the trail and bikeway network. Three concepts have been developed, each concept provides two options, an abstracted, lower level and detailed higher level concept. The logo could be used on trail and bikeway wayfinding signs, maps, and other collateral to bring awareness and promote the active transportation network.

### CONCEPT 1

ABSTRACT CONCEPT



REFINED CONCEPT



Concept 1 depicts a standard trail design without any notice of what type of users would be on the trail. This is best for a trail system that includes mixture of multi-use, bicycle only, pedestrian only trails.

### CONCEPT 2

ABSTRACT CONCEPT



REFINED CONCEPT



Concept 2 is derived from the Iconic Pacific Electric Rail logo. The logo provides a straightforward design contained in a circle for use as a medallion.



### CONCEPT 3

ABSTRACT CONCEPT



REFINED CONCEPT



Concept 3 showcases the spectrum of active transportation users. This logo would easily accommodate a trail or local identification plaque below.

## TRAIL/COMMUNITY IDENTIFICATION

To assist with future trail branding development, a trail name or community name plaque may be incorporated into the sign design.

*\*All logo concepts are shown in grayscale. Once a color palette is chosen, full color logos can be developed.*

## Trail Amenities

Amenities enhance the trail experience, reinforce the Gardens and Groves identity, encourage trail usage and make trails more comfortable for the user. Basic amenities include: drinking fountains, seating, trash receptacles, bicycle parking, fencing and gates. Enhanced amenities include: gateway and entrances, trail and bikeway wayfinding signs, shade structures, play structures, and art installations or creative applications to reinforce a “sense of place”.

Trail elements should be constructed of durable, low maintenance materials when possible and design of amenities should reflect the context of the Identity chosen. Amenities and trail support features should be placed a minimum of two feet from the edge of the trail.

### SHADE STRUCTURES



### PLAY STRUCTURES



### SEATING



Amenities that conform to the natural style of the "Gardens and Groves" theme exhibit the qualities seen in nature, wood, natural or decomposed granite paths, boulders, and metal. Those that conform to the vivid style of the "Gardens and Groves" theme exhibit more lively qualities as compared to the natural style. Quirky public art, bright colors and modern style furnishings create an emphasis on a more vibrant environment.

### PUBLIC ART



### SIGNS



### OTHER

Additional amenities on trails and bikeways should include:

- Trash, recycling and dog waste receptacles
- Water fountains
- Fencing and gates
- Secure bicycle parking
- Lighting

# GARDEN GROVE ACTIVE STREETS MASTER PLAN

*Transforming Transportation for a Healthy and Vibrant Future*



# APPENDICES

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*"This is the vision—to create a changed transportation system that offers not only choices among travel modes for specific trips, but more importantly presents these options so that they are real choices that meet the needs of individuals and society as a whole. Making this vision a reality must begin now. "*

*- USDOT FEDERAL HIGHWAY ADMINISTRATION, The National Bicycling and Walking Study, 1994*

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## Appendix A - Existing Plans & Policy Review

### INTRODUCTION

This section provides a summary of bicycle and pedestrian planning-related efforts in Garden Grove, California, as well as relevant regional, state, and federal plans. The nine plans are listed in **Table A-1** and reviewed below.

### SUMMARY OF RELEVANT PLANNING EFFORTS

*Table A-1: Relevant Bicycle and Pedestrian Planning Documents Reviewed*

Plan	Agency	Year
Harbor Corridor Specific Plan	City of Garden Grove	1985
City of Garden Grove General Plan 2030	City of Garden Grove	2008
OCTA Commuter Bikeways Strategic Plan	Orange County Transportation Authority (OCTA)	2009
Outlook 2035: Long Range Transportation Plan	Orange County Transportation Authority (OCTA)	2010
Nonmotorized Metrolink Accessibility Strategy	Orange County Transportation Authority (OCTA)	2013
SCAG Regional Transportation Plan/ Sustainable Communities Strategy	Southern California Association of Governments (SCAG)	2012
OCTA Districts 1 and 2 Bikeways Strategy	Orange County Transportation Authority (OCTA)	2013
OCTA Streetcar	Orange County Transportation Authority (OCTA)	2015

## CITY OF GARDEN GROVE GENERAL PLAN 2030 (2008)

The Garden Grove General Plan was updated in 2008 as the City's main policy document to assist and guide local decision makers in planning the future of the City. The City is currently in the process of updating their General Plan. There are four Elements in the General Plan 2030 that provide guidance on bicycle and pedestrian planning in the City. These include: Circulation, Parks, Recreation, and Open Space, Community Design, and Land Use Elements.

### *Circulation Element*

The Circulation Element states that it aims to identify and establish the City's policies governing the multi-modal transportation system, including bicycle and pedestrian paths. The Element includes the OCTA Transit Vision and Go Local Project, which is a partnership between the Cities of Garden Grove and Santa Ana to expand the multi-modal transportation network by accommodating streetcars, bus rapid transit, automobiles, bicycles, and pedestrians. The Element also includes the Master Plan of Bikeway Facilities, as seen in **Figure A-1**, which includes a combination of the following three types of facilities:

- **Class I multi-use path:** a facility that is physically separated from a roadway and designated primarily for the use of bicycles.
- **Class II bicycle lane facility:** a facility that features a striped lane on the paved area of a road for preferential use by bicycles.
- **Class III bicycle route:** a facility typically identified by green and white "Bike Route" guide signage only.

The Circulation Element notes that several Class II and III bikeway segments have been developed in Garden Grove. In total, there is one half-mile of Class III facilities, 22.75 miles of Class II facilities, and one half-mile of Class I facilities in the city. It is important to note that the Element states that there is no existing bicycle parking facilities identified in the city.

The Master Plan of Bikeway Facilities identifies several priority bikeway project in the city, including a 1 mile Class I bikeway project along a north-south Union Pacific rail corridor near Stanton and a total of 11.75 miles of Class II projects.



Figure A-1: Garden Grove Master Plan of Bikeway Facilities



The Circulation Element also includes a section on pedestrian facilities, which include sidewalks and trails for both transportation and recreation purposes. The Circulation Element states that currently there is no sanctioned walking or hiking trail system in the City of Garden Grove and that the city is not included in the County Master Plan of Riding and Hiking Trails. However, in the County Master Plan of Arterial Highways, which includes the majority of arterial highways in Garden Grove, all facilities must provide sidewalks as a mean of pedestrian transportation and parkways.

The Circulation Element includes goals, policies, and implementation programs that emphasize a multi-modal transportation system, including an attention on bikeways and pedestrian facilities and access. Goals that pertain to bicycles and pedestrians include increasing awareness of alternative forms of transportation, with attention on bicycle and pedestrian access throughout the City of Garden Grove, and the creation of a safe, appealing and comprehensive bicycle network for transportation and recreation opportunities. **Table A-2** outlines select policies and implementation programs listed to carry out these goals.

Table A-2: Circulation Element Policies and Implementation Programs Relevant to Bicycles and Pedestrians

Policy	Text
<b>Policy CIR-5.3 Alternative Transportation</b>	Provide appropriate bicycle access throughout the City of Garden Grove.
<b>Policy CIR-5.4 Alternative Transportation</b>	Provide appropriate pedestrian access throughout the City of Garden Grove.
<b>Policy CIR-6.1 Bikeways</b>	Continue to implement an updated Master Plan of Bikeways and its amendments.
<b>Policy CIR-6.2 Bikeways</b>	Continue to maintain roadways and remove barriers on streets with bikeway facilities.
<b>Policy CIR-6.3 Bikeways</b>	Encourage existing major traffic generators, and new major traffic generators to incorporate facilities, such as bicycle racks and showers, into the development.
<b>Policy CIR-6.4 Bikeways</b>	Continue to pursue and monitor funding sources for bikeway facilities.
<b>Policy CIR-6.5 Bikeways</b>	Sponsor bicycle safety and education programs
Implementation Programs	
<ul style="list-style-type: none"> <li>• <b>CIR-IMP-5B Alternative Transportation</b> Encourage the creation of programs such as Transportation Systems Management (TSM), public transit, carpools/ vanpools, ride-match, bicycling, and other alternatives to the energy-inefficient use of vehicles.</li> <li>• <b>CIR-IMP-6A Bikeways</b> Encourage the Public Works Department to consider bikeways in their prioritization of re-paving, and street sweeping.</li> <li>• <b>CIR-IMP-6B Bikeways</b> Consider amending the City’s Zoning Code to require major traffic generators to include bikeway facilities.</li> <li>• <b>CIR-IMP-6C Bikeways</b> Provide incentives to developers who incorporate bikeways into developments.</li> <li>• <b>CIR-IMP-6D</b> Update the existing Master Plan of Bikeways to comply with Caltrans standards in order to qualify for funding of new bikeway facilities.</li> <li>• <b>CIR-IMP-6E</b> Consider implementing the Safe Routes to schools program to qualify for funding</li> <li>• <b>CIR-IMP-6F</b> Maintain awareness of Orange County Transit Authority (OCTA) grants opportunities.</li> <li>• <b>CIR-IMP-6G</b> Encourage bicycle safety awareness classes at community centers or parks where facilities are currently located.</li> <li>• <b>CIR-IMP-6H</b> Encourage the placement of signage that educates and informs automobiles and bicyclists that use the facility.</li> </ul>	

**Parks, Recreation, and Open Space Element**

The Parks, Recreation, and Open Space Element highlight bikeways and pedestrian trails as important recreation components for the City of Garden Grove. The Element aims to also provide guidance to develop future bikeways, promote bikeway connections, and encourage multi-use trails (see **Figure A-2**).

Goals that pertain to bicycles and pedestrians include the encouragement of pedestrian-oriented trails to connect users to destinations throughout the city and the provision of a comprehensive bicycle network. **Table A-3** outlines select policies and implementation programs listed to carry out these goals.

Figure A-2 Rendering of Multi-use path in the City of Garden Grove



Table A-3: Parks, Recreation, and Open Space Element Policies and Implementation Programs Relevant to Bicycles and Pedestrians

Policy	Text
<b>Policy PRK-6.1 Pedestrian Trails</b>	Encourage pedestrian-oriented trails and amenities within and linkage to parks, new development and redevelopment projects, and commercial centers
<b>Policy PRK-6.2 Pedestrian Trails</b>	Encourage the planning and development for on- and off-street pedestrian trails throughout the community by the Community Services Department.
<b>Policy PRK-6.3 Pedestrian Trails</b>	Explore public and private funding sources to provide additional pedestrian facilities within the City.
<b>Policy PRK-7.1 Bikeways</b>	Continue to implement an updated Master Plan of Bikeways and its amendments.
<b>Policy PRK-7.2 Bikeways</b>	Coordinate with the Traffic Engineer/ Public Works Department to link bikeways to create a larger connected network.
<b>Policy PRK-7.3 Bikeways</b>	Continue to work with OCTA to lease or purchase the right-of-way and create a bike trail through this area.
<b>Policy PRK-7.4 Bikeways</b>	Encourage existing major traffic generators, and new major traffic generators to incorporate innovative solution for safe bicycle crossings, and include bicycle facilities, such as bicycle racks and showers, into the development.
<b>Policy PRK-7.5 Bikeways</b>	Continue to pursue and monitor funding sources for bikeway facilities.
<b>Policy PRK-7.6 Bikeways</b>	Sponsor bicycle safety and education programs.
<b>Implementation Programs</b>	
<ul style="list-style-type: none"> <li>• <b>PRK-IMP-6A Pedestrian Trails</b> Work with adjacent property owners to create an interconnected trail that extends along the public right-of-way. A path will benefit business by increasing exposure and access, and benefit the community through encouraging fitness, improved access, and a connected community.</li> <li>• <b>PRK-IMP-6B Pedestrian Trails</b> Coordinate with OCTA to provide trails within the right-of-way.</li> </ul>	

- **PRK-IMP-6C** Design pedestrian trails/paths with multiple access points to maximize accessibility and minimize concentrating access.
- **PRK-IMP-6D** Seek to create links between trails or new urban trails along the public right-of-way. Coordinate with City departments to create a method for modifying existing corridors to incorporate pedestrian trails along roadways.
- **PRK-IMP-6E** Create design standards for trail development that includes distance markers (1/4, 1/2, and 1 mile), standardized signage, identifiable logo, street furniture, drinking fountain, and identifiable plant palette.
- **PRK-IMP-7A** Encourage the Public Works Department to consider bikeways in their prioritization of re-paving, and street sweeping.
- **PRK-IMP-7B** Provide incentives to developers who incorporate bikeways into developments.
- **PRK-IMP-7C** Update the existing Master Plan of Bikeways to comply with Caltrans standards in order to qualify for funding of new bikeway facilities.
- **PRK-IMP-7E** Promote the Public Works program for the Safe Routes to schools to qualify for funding.
- **PRK-IMP-7F** Maintain awareness of Orange County Transit Authority (OCTA) grant opportunities.
- **PRK-IMP-7G** Encourage bicycle safety awareness classes at community centers or parks where facilities are currently located.
- **PRK-IMP-7H** Encourage the placement of signage that educates and informs automobiles and bicyclists that use the facility.

**Community Design Element**

The Community Design Element addresses goals that pertain to physical design opportunities in the City of Garden Grove, most notably, provisions to enhance pedestrian access, amenities and experience. In addition, bike trails are referenced in goals to create linkages amongst districts in the city. Relevant goals include creating comfortable and safe corridors that accommodate all modes of transportation, and creating activity nodes that include pedestrian amenities. **Table A-4** outlines select policies and implementation programs listed to carry out the aforementioned goal.

*Table A-4: Community Design Element Policies and Implementation Programs Relevant to Bicycles and Pedestrians*

Policy	Text
<b>Policy CD-4.2 Paths and Corridors</b>	Develop a comprehensive or a series of focused streetscape programs to retrofit/redevelop primary and secondary corridors with appropriate design features, including sidewalks, paving patterns, street trees, parkways, , median planting, lighting, benches, trash receptacles, etc.
<b>Policy CD-7.3 Districts</b>	Promote linkages between separate districts through bike trails, pedestrian paths, common medians or parkway landscaping in connecting streets, and other physical improvements as necessary.
<b>Implementation Programs</b>	
<ul style="list-style-type: none"> <li>• <b>CD-IMP-4B Paths and Corridors</b> Review and update all street standards to support design features that will create an attractive and safe environment for pedestrians, transit users, and bicyclists.</li> <li>• <b>CD-IMP-7D Districts</b> Establish minimum standards for pedestrian-oriented circulation in the International West, Brookhurst Triangle/Garden Grove Boulevard, Civic Center, and other pedestrian-oriented districts.</li> </ul>	



**Land Use Element**

The Land Use Element includes goals, policies, and implementation programs that directly relate to bicycle and pedestrian planning. Relevant goals include using the right-of-way under the jurisdiction of OCTA for alternative transportation systems, recreation, and parklands, and encouraging mixed-use, pedestrian-friendly streetscapes. **Table A-5** outlines select policies and implementation programs listed to carry out the aforementioned goal.

*Table A-5: Land Use Element Policies and Implementation Programs Relevant to Bicycles and Pedestrians*

Policy	Text
<b>Policy LU-1.4</b>	Encourage active and inviting pedestrian-friendly street environments that include a variety of uses within commercial and mixed use areas.
<b>Policy LU-1.5</b>	Mixed Use should be designed to: <ul style="list-style-type: none"> <li>• Create a pleasant walking environment to encourage pedestrian activity.</li> <li>• Create lively streetscapes, interesting urban spaces, and attractive landscaping.</li> <li>• Provide convenient shopping opportunities for residents close to their residence.</li> <li>• Integrate with surrounding uses to become a part of the neighborhood rather than an isolated project.</li> <li>• Use architectural elements or themes from the surrounding area, as appropriate.</li> </ul> Provide appropriate transition between land use designations to minimize neighbor compatibility conflicts.
<b>Policy LU-1.6</b>	Encourage workplace development in close proximity to residences in areas designated as Mixed Use.
<b>Policy LU-8.1</b>	Work with OCTA to ensure the proper maintenance of the right-of-way until beneficial interim uses are developed on the right-of-way.
<b>Policy LU-8.2</b>	Prepare a plan for the first phase of use of the OCTA right-of-way that lies between Chapman Avenue to the north and Garden Grove Boulevard to the south.
<b>Implementation Programs</b>	
<ul style="list-style-type: none"> <li>• <b>LU-IMP-1B</b> Amend the Zoning Code to implement mixed use zoning districts that provide development standards for mixed use development, which should address minimum density and intensity requirements; allowable uses; horizontal and/or vertical mix of uses, building heights; and parking standards.</li> <li>• <b>LU-IMP-1C</b> Evaluate mixed use projects to ensure that there is an adequate mix of uses on the site and in the area.</li> <li>• <b>LU-IMP-8A</b> Enter into a cooperative agreement with OCTA and the City of Santa Ana to develop a “Go Local” transit extension from Harbor and Westminster Boulevards in Garden Grove to the Santa Ana Regional Transportation Center.</li> <li>• <b>LU-IMP-8B</b> Work with OCTA and the City of Santa Ana to include a bikeway and pedestrian trail in the “Go Local” transit extension plan between Garden Grove and the Santa Ana Regional Transportation Center.</li> <li>• <b>LU-IMP-8D</b> Work with residents, property owners and neighborhood associations to determine their preference for use of the OCTA right-of-way. Potential uses include: 1) a linear park developed and maintained with joint City/neighborhood responsibility; 2) landscaped park space for the use of multi-family developments; 3) one segment of a landscaped recreational trail incorporating pedestrian and bicycle paths with marked lanes</li> </ul>	

through paved areas – the trail to be developed and maintained by the City; 4) children’s play area adjacent to the shopping center parking for use of shopper’s families – to be developed and maintained by shopping center proprietors; 5) extension of parking, storage, and service areas available to adjoining commercial and industrial facilities – such extensions to be developed and maintained by the industrial and commercial occupants; and 6) other beneficial uses supported by the community. The potential uses may be explored in combination with one another to provide multiple benefits to the community.

## Specific Plans

The City of Garden Grove has one Specific Plan that intends to constitute the primary zoning provisions for defined areas of the city. Each guides development with the overall goal of ensuring that development projects meet the goals and objectives of the entire district. The following outlines content of the City of Garden Grove’s Specific Plans that pertains to bicycle and pedestrian planning.

### Harbor Corridor Specific Plan (1985)

The Harbor Corridor Specific Plan does not directly reference bicycles or pedestrians, but does provide design guidance and regulations that are associated as pedestrian-friendly. Examples include development standards that emphasize urban character and regulations for a mixed-use district.

### Mixed Use Zoning

A key focus of the General Plan 2030 is to expand areas that will allow the development of mixed use zones. Mixed Use zones provide opportunities to blend residential, commercial, industrial, and/or civic/institutional uses as integrated developments or single-use structures. One intent of Mixed Use zoning is to facilitate a more pedestrian-oriented environment with facilities that encourage walking, interacting, and more. This can be accomplished through Civic Center (CC) zones and Neighborhood Mixed Use (NMU) zones; see more details about these zones in Table A-6.

#### *Civic Center Zones*

Civic Center zones are pedestrian-oriented districts in which developments are linked via local streets and pedestrian ways to create easy access to complementary uses, and to provide a center in the community where people can engage in civic, business, educational, and recreational activities near their homes. The Civic Center, such as downtown Garden Grove, should be more than just another shopping center – it should be a place that is the heart and soul of the community where people can meet in public gathering spaces.

#### *Neighborhood Mixed Use*

Neighborhood Mixed Use (NMU) zones are intended to enhance, revitalize, and provide opportunities for new development in neighborhood commercial centers. This zone allows for retail and service commercial businesses and moderate-density residential uses.



## Municipal Code

This section presents sections in the Garden Grove Municipal Code that are relevant to bicycling and walking. Relevant ordinances are shown in Table A-6.

**Table A-6: Bicycle- and Pedestrian-Related Municipal Code Ordinances**

Section	Regulation
<b>Title 9, Chapter 8 Peace, Safety and Morals</b>	
<b>8.40.090 Public Skate Park Facilities</b>	Any person who rides a skateboard or BMX <i>bicycle</i> or uses in-line skates at a public skate park facility shall wear a helmet, elbow pads, and knee pads at all times while utilizing the facility.
<b>Title 9, Chapter 9: Mixed Use Regulations and Development Standards</b>	
<b>9.16.040.160 Parking-Special Requirements</b>	E. Bicycles. All nonresidential buildings and places of assembly shall provide adequate locking facilities for bicycle parking at any location convenient to the facility for which they are designated.
<b>9.16.040.190 Loading Areas</b>	4. Loading areas shall not interfere with parking or with vehicle and <i>pedestrian</i> access.
<b>9.18.010.020 Mixed Use Zones Establishment and Intent</b>	Standards requiring enhanced building design; trees; landscaping; amenity areas for pedestrian activity, including plazas, walkways, and allowed outdoor dining; and creative use of open spaces contribute to an exciting pedestrian experience. Pedestrian orientation is emphasized in site and building design through active street frontages, well-scaled and designed buildings, and engaging outdoor spaces
<b>9.18.090.030 Civic Center Zone Development Standards</b>	C. Storefronts and Commercial Uses Required at Ground Floors. Storefronts provide a means for commercial uses to orient display toward and access directly from public sidewalks. By providing visibility into these commercial spaces, pedestrian interest is enhanced to contribute to the pedestrian experience and encourage high pedestrian volumes. Storefronts and associated ground floor commercial space shall be required for certain properties with lot lines along Garden Grove Boulevard, Acacia Parkway, Main Street, and Euclid Street
<b>9.18.090.060 Additional Regulations Specific to the CC-3 Zone</b>	A. It is the City's intent to create a Civic Center district that consists of a several distinct neighborhoods connected to the Civic Core and public park areas by a series of pedestrian pathways, thereby enhancing district cohesion and allowing people to easily walk to uses throughout the Civic Center district, as defined in the General Plan. While public sidewalks provide the primary means of pedestrian mobility within the district, additional connections can be provided via pathways, paseos, trails, and walkways that traverse private properties.
<b>9.18.090.070 Neighborhood Mixed Use Zone (NMU) Development Standards</b>	C. Pedestrian-Oriented Plaza Requirement. Each project in the NMU zone shall provide a pedestrian plaza. The purpose of the pedestrian-oriented plaza is to provide a place for passive recreation, public gathering, landscape amenities, display of public art, and similar uses that enhance the appearance and function of development and integrate multiple uses on a site. For a building that is constructed with orientation toward the street, the pedestrian-oriented plaza shall be in the form of a boulevard garden plaza along the front. For other development approaches and types, the plaza shall be a pedestrian plaza that provides enhanced pedestrian circulation and connects the various uses/buildings

Section	Regulation
	on the site. In particular, for sites at Brookhurst Street and Chapman Avenue, efforts shall be made to physically and/or visually connect pedestrian pathways to uses across the street from each other.
<b>9.18.140 Parking Requirements</b>	<i>Bicycle</i> Parking. For all new developments where parking is not provided in the form of individual garages, secure and convenient <i>bicycle</i> parking shall be provided at a rate of one <i>bicycle</i> space for every 10 required parking spaces. (2814, 2012)
<b>Title 10, Chapter 10: Vehicles and Traffic</b>	
<b>10.68.030 Pedestrian Indications at Signalized Intersections</b>	<p>A. The City Traffic Engineer is directed to install and maintain pedestrian traffic signal indications at those signalized intersections where the City Traffic Engineer has determined that there is a particular hazard to pedestrians crossing the roadway.</p> <p>B. Pedestrians shall obey the indication of traffic signals installed for pedestrian’s use only and shall not proceed on the vehicular traffic signal indication at any location where pedestrian traffic signals are in place. (2804 § 1, 2011; 1572 § 1, 1977; prior code § 3143)</p>
<b>10.68.020 Use of Certain Crosswalks Prohibited</b>	<p>A. The City Traffic Engineer may place signs at or adjacent to an intersection in respect to any unpainted crosswalk directing that pedestrians shall not cross in the crosswalk so indicated.</p> <p>B. Whenever authorized signs are erected prohibiting the use of certain crosswalks, no pedestrian shall disobey the directions of any such signs. (2804 § 1, 2011; 1572 § 1, 1977; prior code § 3142)</p>
<b>Title 10, Chapter 16: Enforcement and Obedience</b>	
<b>10.16.050 Application to Bicycle or Animal Riders</b>	Every person riding a bicycle, or riding, or driving an animal upon a highway shall be granted all of the rights and shall be subject to all of the duties applicable to the drive of a vehicle by this Title, except those provisions by their very nature can have no application (Ordinance 2804 § 1, 2011; Prior Code § 3111).
<b>10.16.140 Obstructions within Parkway</b>	Whenever the City Traffic Engineer determines that any fence, hedge, shrubbery, tree, or other object within the parkway obstructs the view of any traffic upon the roadways, or is an undue obstruction to pedestrians attempting to walk within the parkway at locations where no sidewalks exist, he shall cause the obstruction to be removed or altered in such a manner as to permanently eliminate the problem (Ordinance 2804 § 1, 2011; Ordinance 1572 § 1 (part), 1977; Prior Code § 3169).
<b>Title 10, Chapter 28: Miscellaneous Regulations</b>	
<b>10.28.060 Freeway Use Restrictions</b>	No person shall drive or operate any bicycle, motor-driven cycle, or any vehicle that is not drawn by a motor vehicle upon any street established as a freeway, as defined by State law, nor shall any pedestrian walk across or along any such street so designated and described except in space set aside for the use of pedestrians, provided official signs are in place giving notice of such restrictions (Ordinance 2804 § 1, 2011; Prior Code § 3138).



Section	Regulation
<b>Title 11, Chapter 04: Streets and Sidewalks</b>	
<b>11.04.290 Traffic Crossings- Barriers</b>	<p>A. No person shall make any excavation in any street or sidewalk, without maintaining safe crossings for vehicle traffic at all street intersections and safe crossings for pedestrians where necessary.</p> <p>B. If any excavation is made across any street or alley at least one safe crossing shall be maintained at all times for vehicles and pedestrians, unless permission to close such street or alley is first obtained from the City Engineer.</p>
<b>11.04.350 Vehicle and Pedestrian Traffic</b>	<p>After operation referred to in Sections 11.04.320 through 11.04.340 on all streets or portions thereof having an improved surface, including sidewalks, the top surface of the backfill shall be covered with not less than one (1) inch nor more than two (2) inches of premixed bituminous material satisfactory to the City and shall conform closely enough to the level of the adjoining surface and shall be compacted so that it is hard enough and smooth enough to be safe for pedestrian travel over it as well as for vehicular traffic to pass safely over it at a legal rate of speed. The permittee shall maintain the surface of the backfill safe for pedestrian and vehicular traffic until the excavation has been resurfaced. If it is impracticable to maintain the surface of the backfill in safe condition for pedestrian travel or vehicular traffic, then the permittee shall maintain barriers and traffic control consistent with the requirements of the Department of Public Works, around it until the excavation has been resurfaced.</p> <p>(Ordinance 2804 § 2, 2011; Prior Code § 7110.16(d)).</p>
<b>Title 11, Chapter 36: Benches and Shelters</b>	
<b>11.36.110 Location</b>	<p>A bench or shelter shall be placed to allow on the sidewalk an unobstructed pedestrian travel-way or thirty-six (36) inches, minimum, four (4) feet preferred</p>

## ORANGE COUNTY TRANSPORTATION AUTHORITY OC STREETCAR

The OC Streetcar is Orange County’s first streetcar that aims to increase transportation options and provide greater access along its 4.15 mile route (in each direction). It is an effort led by OCTA and funded by Measure M program funds. The OC Streetcar is expected to have:

- 18 OCTA bus connections
- 6-7 fleet size
- 12 stations
- 150 streetcar capacity
- 10-15 minute frequency
- 67 daily trains at the Santa Ana Regional Transit Center

The Santa Ana Regional Transit Center, a multimodal transit hub, will be located in Garden Grove, at Harbor Boulevard and Westminster Avenue, connecting the city with Downtown Santa Ana (see **Figure A-3**). The OC Streetcar is expected to connect employment, restaurants and retail centers in the County, as well as serve as a last mile connection between Metrolink trains and other transportation modes at Santa Ana Regional Transportation Center. Bicycles will be allowed on the streetcar, which reinforces the OC Streetcar’s multimodal connection goal.

The project was approved in May 2015 to enter into the Project Development phase under the Federal Transportation Authority’s New Starts Program. The Design and Engineering phase will begin in summer 2016 - fall 2017 and the Construction phase will begin fall 2017 to fall 2019. Lastly, the Testing and Operation phase is expected to begin late 2019.





## OCTA COMMUTER BIKEWAYS STRATEGIC PLAN (2009)

OCTA developed the Commuter Bikeways Strategic Plan (CBSP), which outlines OCTA's roles in bikeways planning. These include:

- Suggesting regional priorities for optimal use by local jurisdictions
- Assisting in coordinating plans between jurisdictions
- Providing planning and design guidelines; and
- Participating in outreach efforts to encourage bicycle commuting

## OCTA DISTRICTS 1 AND 2 BIKEWAYS STRATEGY (2013)

The Regional Bikeways Planning effort led by OCTA expands upon the 2009 OCTA Commuter Bikeways Strategy Report. The Regional Bikeway Planning process has been ongoing since 2011, addressing four different subareas of Orange County. West/ Central Orange County, or Supervisorial Districts 1 and 2 (which includes Garden Grove), was completed in 2013.

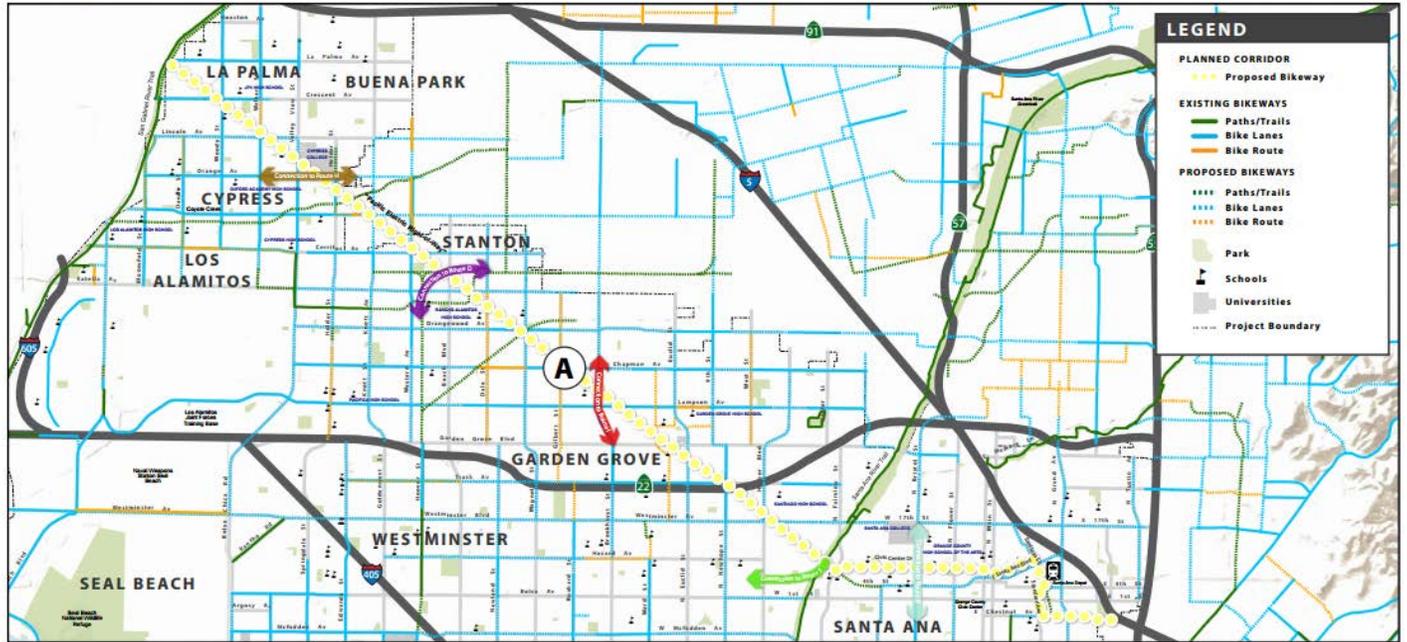
The purpose of the Bikeways Strategy is to identify regional bikeway corridors that connect to major activity centers including employment areas, transit stations, colleges and universities. The regional bikeway corridors identified in the report are based on consensus-building and facilitation efforts. Secondly, the Bikeways Strategy provides feasibility studies and design recommendations to the local jurisdictions.

A total of eleven regional bikeway corridors were identified, five of which are partially within Garden Grove. The corridors include key connections to existing regional bikeway routes, as well as to major destinations within the districts. The corridors in Garden Grove are discussed below and accompanied by alignment maps.

### ***Corridor A: Pacific Electric ROW***

This diagonal corridor primarily runs southeast from La Palma to Santa Ana within the OCTA-owned Pacific Electric ROW, a total of 15.6 miles. It is composed of a combination of off-street paths and on-street bikeway segments that links Coyote Creek Trail with the Santa Ana River Trail. Due to the diagonal alignment, the Pacific Electric ROW corridors links to several other regional corridors (see **Figure A-4**).

Figure A-4: Corridor A: Pacific Electric ROW



**Corridor A  
Bikeway Improvement Details**

4.5 miles of new bike lanes  
11.1 miles of new trails  
**= 15.6 miles of bikeway**

  
**23**  
Schools + Universities  
within 1/4-mile Served

  
**18**  
Parks within 1/4-mile  
Served

  
**104k**  
People within 1/4-mile  
Served (approx.)

  
**15.6 miles**  
Of Bikeway  
Improvements

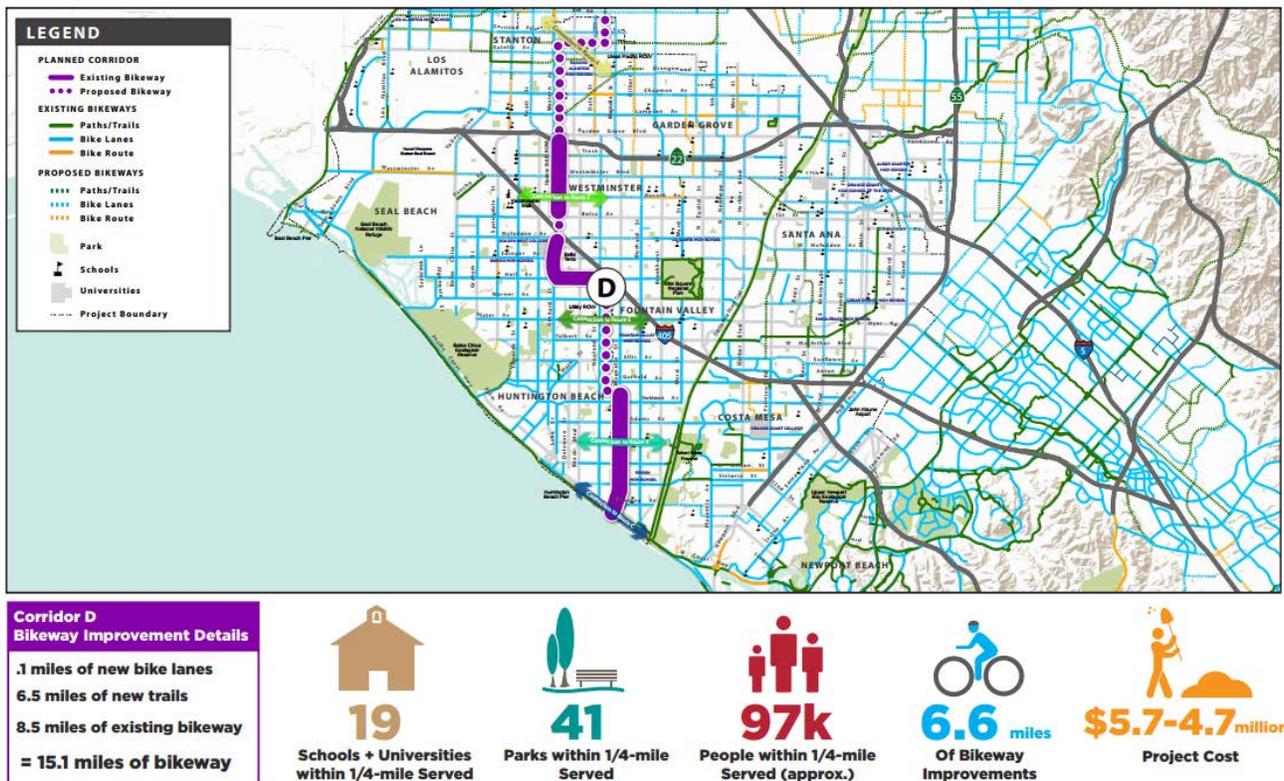
  
**\$32-26 million**  
Project Cost



### Corridor D: Magnolia-Hoover

This corridor runs north-south through the center of the study area, utilizing both roadways and off-street paths. The corridor connects with several other routes, including the Pacific Electric Right-of-Way, Westminster-Hazard, Slater-Segerstrom, Bristol-Bear, Indianapolis-Fairview, and Pacific Coast Highway corridors. The existing Hoover Street trail would be used to cross under the SR-22 freeway, and the railroad right-of-way is identified as a strategy to cross under the I-405 freeway (see **Figure A-5**).

Figure A-5: Corridor D: Magnolia-Hoover



**Corridor F: Westminster-Hazard**

This east-west corridor passes through the cities of Seal Beach, Westminster, and Fountain Valley, with a small segment in western Santa Ana that links to the Pacific Electric Right-of-Way corridor. Most of the corridor enhancements are new Class II on-street bike lanes, primarily along Westminster Boulevard and Hazard Avenue. This route connects with the Seal Beach-Orange Avenue, Knott-Springdale, Magnolia-Hoover, Brookhurst-Ward, and Pacific Electric ROW corridors (see Figure A-6).

Figure A-6: Corridor F: Westminster-Hazard



**Corridor F  
Bikeway Improvement Details**

7.9 miles of new bike lanes  
 2.2 miles of new trails  
 1.3 miles of existing bikeway  
**= 11.4 miles of bikeway**

  
**15**  
 Schools + Universities  
 within 1/4-mile Served

  
**14**  
 Parks within 1/4-mile  
 Served

  
**59k**  
 People within 1/4-mile  
 Served (approx.)

  
**10.1 miles**  
 Of Bikeway  
 Improvements

  
**\$7.4-6.0 million**  
 Project Cost



### Corridor G: Knott-Springdale

The proposed Knott-Springdale corridor runs north and south between the Pacific Electric ROW (Corridor A) and Slater Avenue (Corridor E). Additional corridor connections could be made to the proposed Westminster-Hazard corridor. This corridor consists mostly of Class II on-street bike lanes (see **Figure A-7**).

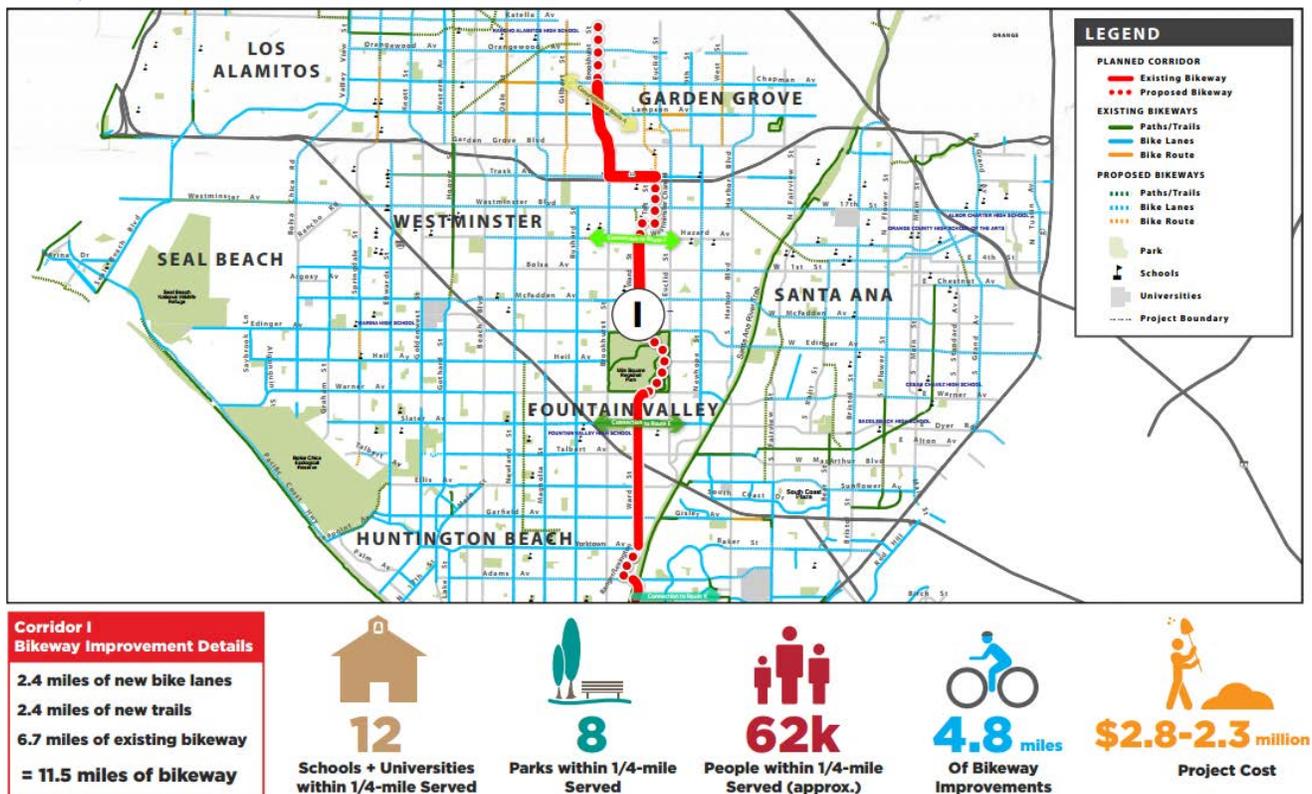
Figure A-7: Corridor G: Knott-Springdale



### Corridor I: Brookhurst-Ward

The Brookhurst-Ward corridor runs primarily north-south from Katella Avenue to the Santa Ana River Trail at Adams Avenue, via Mile Square Regional Park. The route traverses Garden Grove, Westminster, Fountain Valley, and Huntington Beach, ending just inside Costa Mesa at Fairview Park. The Brookhurst-Ward corridor connects with the Pacific Electric ROW, Westminster-Hazard, Slater-Seegerstrom, and Indianapolis-Fairview corridors; the northern end links to District 4's Brookhurst-Gilbert Corridor. Most of the improvements are Class II on-street bike lanes, with a small segment of off-street trail (see **Figure A-8**).

Figure A-8: Corridor I: Brookhurst-Ward





## OUTLOOK 2035: OCTA LONG RANGE TRANSPORTATION PLAN (2014)

The 2014 Long-Range Transportation Plan (LRTP), shown in Figure A-9 is OCTA's vision of how people, goods, and services will use the transportation system for work, commerce, school, and recreational travel. The LRTP is updated every four years, with the most recent update in 2014. The LRTP is reflective of the projects and services identified as part of Orange County's voter-approved sales tax for transportation, Measure M2.

Goals and objectives have been developed that address travel needs and challenges associated with providing a balanced transportation system that meets the future needs of the residents, workers, and visitors. The goals of the LRTP are to:

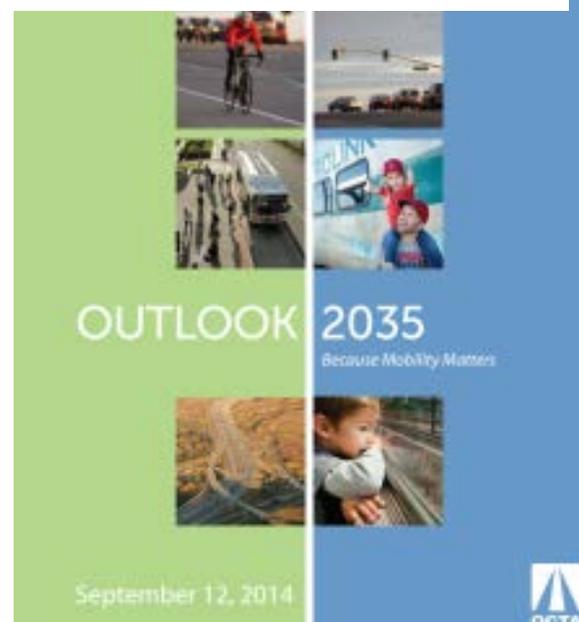
- Deliver on commitments of Measure M2 projects and to ensure consistency with M2020 Plan.
- Improve transportation system performance to reduce delay from congestion, increase facility speeds and increase transit ridership.
- Expand transportation system choices by investing in new facilities, expanding transit services and improving multimodal integration.
- Support sustainability through investment in infrastructure maintenance, reinforcement of the Orange County Sustainable Communities Strategy (SCS), implementation of environmental strategies and assurance of a financially sustainable transportation system.

OCTA's ongoing role in regional bikeways planning includes the following:

- Promoting the consideration of bicyclists within environmental and planning documents prepared by local agencies
- Maintaining the countywide bicycle transportation plan
- Encouraging local agencies to coordinate their bikeways planning efforts with the CBSP
- Working with local agencies to submit projects for state, federal and local funding opportunities as these become available

The LRTP highlights OCTA's role in the Regional Bikeways Strategy, stating that OCTA will continue to facilitate planning of the regional bikeways network, coordinate both internal and external agencies, and address regional priorities. To date, a Bikeways Strategy has been completed for the 1<sup>st</sup>, 2<sup>nd</sup>, 4<sup>th</sup> and 5<sup>th</sup> supervisorial Districts in Orange County, with 3<sup>rd</sup> expected in 2015. The Plan highlights the 66-mile bicycle loop, which will close gaps that currently exist between the Santa Ana River Trail, the San Gabriel River/Coyote Creek, and the Pacific Coast Highway.

**Figure A-9: Outlook 2035: Long Range Transportation Plan (2014)**



## **NONMOTORIZED METROLINK ACCESSIBILITY STRATEGY (2013)**

OCTA developed the Metrolink Station Nonmotorized Accessibility Strategy in 2013 to identify needs and opportunities for improvements that enhance non-motorized transportation (walking and biking) access to and from Orange County's Metrolink stations. The Accessibility Strategy builds upon other efforts by OCTA and local cities to expand transportation choices. The Accessibility Strategy will serve as a reference for local cities to improve safety, address existing barriers and increase the number of Metrolink riders who walk or bicycle to/from the stations through changes to the physical environment.

Although Metrolink does not directly connect to Garden Grove, the nearest station in Anaheim is about five miles away, or a 30 minute bike ride. Additionally, Garden Grove, in partnership with the City of Santa Ana, is in the final planning phases of a street car system which would extend the reach of Metrolink by providing direct connections from the Anaheim Station to the Santa Ana Regional Transit Center with several stops in Garden Grove.

## **SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (SCAG)**

### **SCAG REGIONAL TRANSPORTATION PLAN/ SUSTAINABLE COMMUNITIES STRATEGY (2012)**

The Regional Transportation Plan (RTP) has the primary goal of increasing mobility for the region's residents and visitors. The Sustainable Communities Strategy (SCS), part of the RTP, demonstrates the region's ability to attain and exceed the GHG emission-reduction targets set forth by the ARB. The 2012-2035 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act. Its emphasis on transit and active transportation will allow residents to lead a healthier, more active lifestyle.

The RTP/SCS contains a host of improvements to the region's multimodal transportation system, including increasing bikeways from 4,315 miles to 10,122 miles, bringing a significant amount of sidewalks into compliance with the Americans with Disabilities Act (ADA), safety improvements, and various other strategies. Figure 2 8 shows proposed bikeways in the SCAG planning region.

The following are policies and goals related to preparation of the Garden Grover Bicycle and Pedestrian Plan includes:

- Policy 4: Transportation demand management (TDM) and non-motorized transportation will be focus areas, subject to Policy 1
- Goal: Encourage land use and growth patterns that facilitate transit and non-motorized transportation
- The entire RTP/SCS can be found at: <http://rtpscsc.scag.ca.gov/Pages/default.aspx>

SCAG is currently in the process of developing the 2016 RTP SCS, specifically, updating planning assumptions, conducting transportation financial analysis, and developing land use/transportation scenarios development, among others. The draft is expected to be released in Fall 2015 for public comment.



## STATE OF CALIFORNIA CALIFORNIA GREEN BUILDING CODE (2011)

The California Green Code includes standards for bicycle parking requirements for new development. The California Green Code requirements are presented in **Table A-7**.

*Table A-7 California Green Code Bicycle Parking Requirements*

Category	Description
Bicycle Parking and Changing Rooms	Comply with sections 5.106.4.1 and 5.106.4.2; or meet local ordinance or the University of California Policy on Sustainable Practices, whichever is stricter.
Short-Term Bicycle Parking	If the project is expected to generate visitor traffic, provide permanently anchored bicycle racks within 100 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.
Long-Term Bicycle Parking	For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of motorized vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include: <ul style="list-style-type: none"> <li>• Covered, lockable enclosures with permanently anchored racks for bicycles</li> <li>• Lockable bicycle rooms with permanently anchored racks</li> <li>• Lockable, permanently anchored bicycle lockers</li> </ul>

### **AB 1358 - CALIFORNIA COMPLETE STREETS ACT OF 2008**

The 2008 California Complete Streets Act requires that municipalities, “upon any substantive revision of the circulation element of the general plan, modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, people bicycling, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan.”

For more information: [opr.ca.gov/docs/Update\\_GP\\_Guidelines\\_Complete\\_Streets.pdf](http://opr.ca.gov/docs/Update_GP_Guidelines_Complete_Streets.pdf)

### **CALTRANS DEPUTY DIRECTIVE DD-64-R1 - COMPLETE STREETS-INTEGRATING THE TRANSPORTATION SYSTEM (2008)**

Following passage of the State’s Complete Streets Act, Caltrans adopted its own Complete Streets policy, which requires Caltrans to provide “for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State Highway System.” The Caltrans policy is supported by Federal law requiring safe accommodation for all users and State law that Caltrans provide an integrated multi-modal system. It also helps local governments meet their requirement under State law (AB 1358) to include Complete Streets in their general plans.

State and federal laws require the Department and local agencies to promote and facilitate increased bicycling and walking. The California Vehicle Code (CVC) (Sections 21200-21212) and the Streets and Highways Code (Sections 890-894.2) identify the rights of people bicycling and walking and establish legislative intent that people of all ages using all types of mobility devices are able to travel on roads. People bicycling and walking and other non-motorized travelers are permitted on all State facilities, unless expressly prohibited (CVC, section 21960). Therefore, the Department and local agencies have the duty to provide for the safety and mobility needs of all who have legal access to the transportation system.

Department manuals and guidance outline statutory requirements, planning policy, and project delivery procedures to facilitate multimodal travel, which includes connectivity to public transit for people bicycling and walking. In many instances, roads designed to Department standards provide basic access for bicycling and walking. This directive does not supersede existing laws. To ensure successful implementation of “complete streets,” manuals, guidance, and training will be updated and developed.

More information can be found at: [http://www.dot.ca.gov/hq/tpp/offices/ocp/complete\\_streets.html](http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html)

#### **COMMUNITY IN MOTION (2015)**

The Spring 2015 606 Studio Team of the Department of Landscape Architecture at California State Polytechnic University, Pomona released their vision for a new Garden Grove. Through a partnership with the City of Garden Grove and public outreach consisting of crowdsourcing, public workshops, and focus group meetings, the Plan developed three main focus areas of revitalization: the city’s non-motorized mobility network, the open space network, and the Civic Center/Downtown District. The ultimate vision for the city the Plan has is for a common identity/brand of “gardens and groves” while a non-motorized mobility network connects Downtown to city parks and regional facilities.



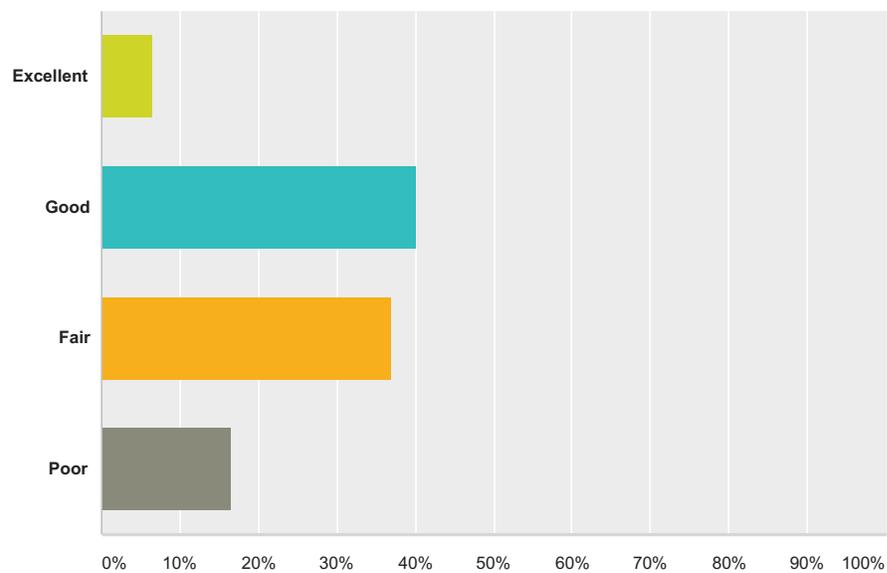
## Appendix B - Detailed Outreach Results

### SURVEY MONKEY ACTIVE STREETS SURVEY

#### QUESTION 1 RESULTS

#### Q1 How would you rate overall walking conditions in Garden Grove?

Answered: 200 Skipped: 4

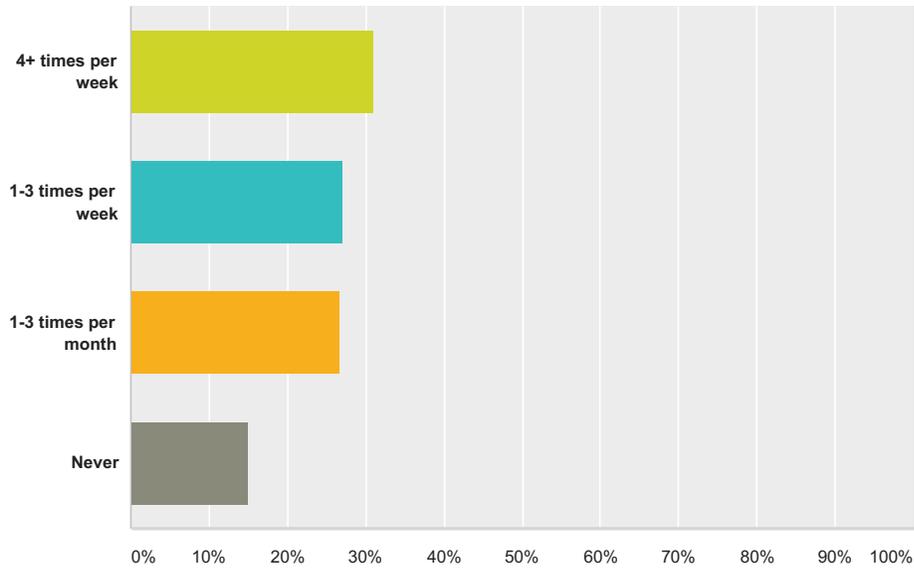


Answer Choices	Responses
Excellent	6.50% 13
Good	40.00% 80
Fair	37.00% 74
Poor	16.50% 33
<b>Total</b>	<b>200</b>

QUESTION 2 RESULTS

**Q2 How often do you walk for a significant distance, i.e., more than 5 minutes for a single trip? (Check one)**

Answered: 199 Skipped: 5



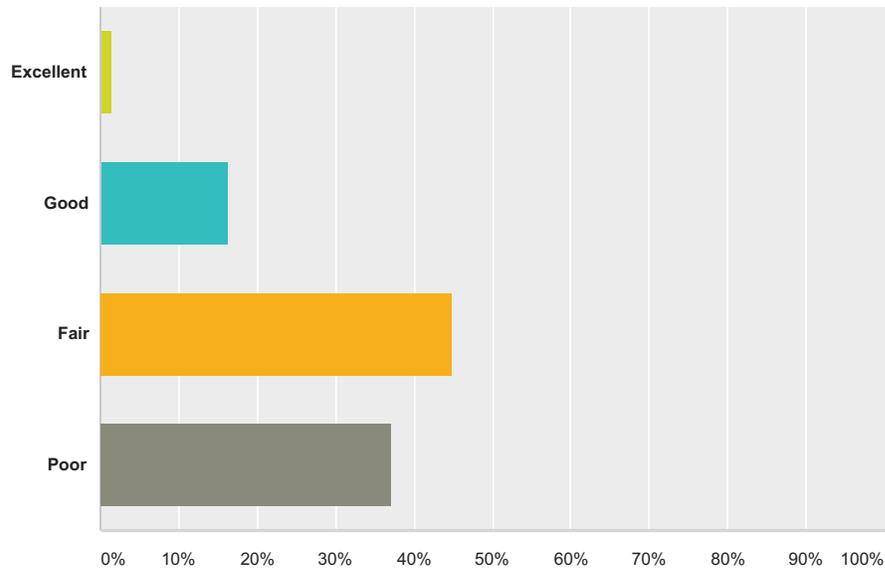
Answer Choices	Responses	Count
4+ times per week	31.16%	62
1-3 times per week	27.14%	54
1-3 times per month	26.63%	53
Never	15.08%	30
<b>Total</b>		<b>199</b>



QUESTION 3 RESULTS

### Q3 How would you rate overall bicycling conditions in Garden Grove?

Answered: 196 Skipped: 8

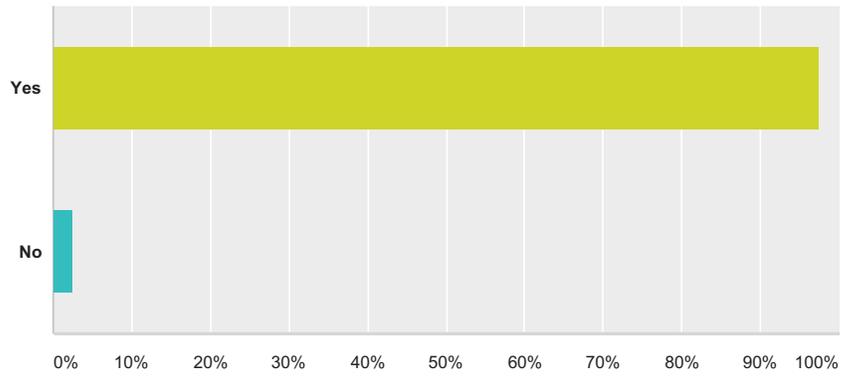


Answer Choices	Responses
Excellent	1.53% 3
Good	16.33% 32
Fair	44.90% 88
Poor	37.24% 73
<b>Total</b>	<b>196</b>

QUESTION 4 RESULTS

### Q4 Do you know how to ride a bike?

Answered: 197 Skipped: 7



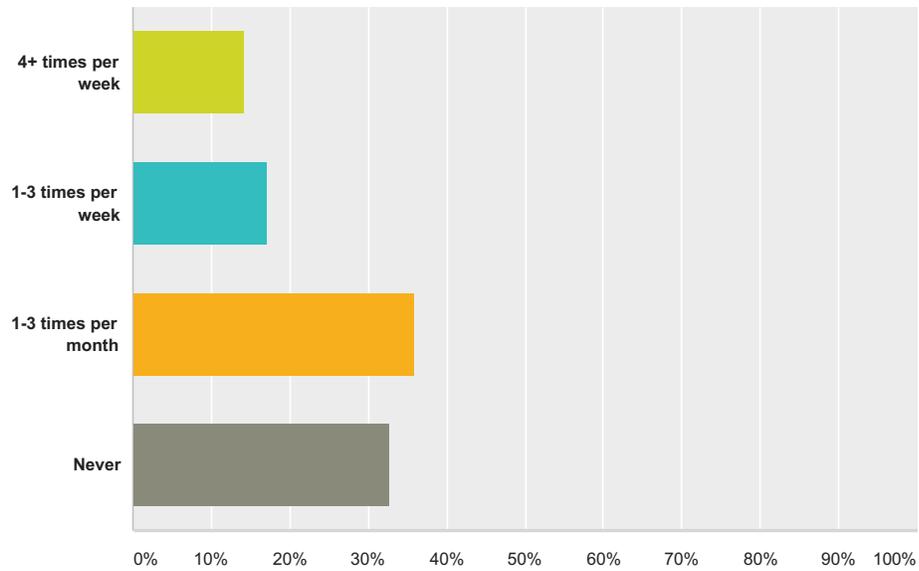
Answer Choices	Responses	
Yes	97.46%	192
No	2.54%	5
<b>Total</b>		<b>197</b>



QUESTION 5 RESULTS

### Q5 How often do you ride a bicycle for any purpose?

Answered: 198 Skipped: 6

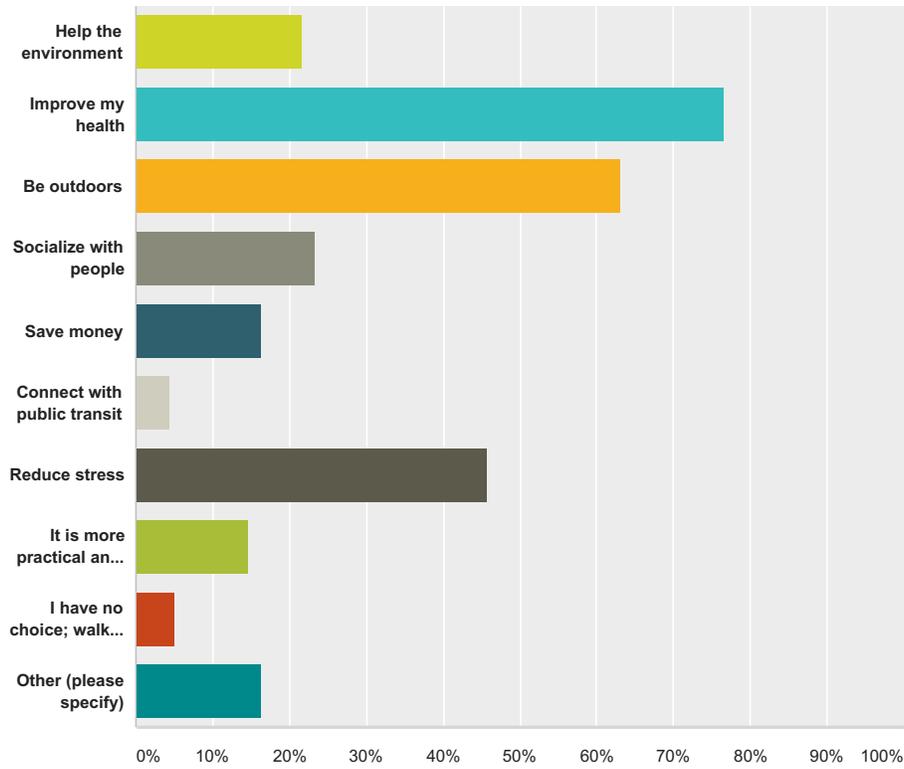


Answer Choices	Responses	
4+ times per week	14.14%	28
1-3 times per week	17.17%	34
1-3 times per month	35.86%	71
Never	32.83%	65
<b>Total</b>		<b>198</b>

QUESTION 6 RESULTS

### Q6 Why do you walk or ride a bicycle? (Select your top 3)

Answered: 179 Skipped: 25



Answer Choices	Responses
Help the environment	21.79% 39
Improve my health	76.54% 137
Be outdoors	63.13% 113
Socialize with people	23.46% 42
Save money	16.20% 29
Connect with public transit	4.47% 8
Reduce stress	45.81% 82
It is more practical and convenient than other modes of travel	14.53% 26
I have no choice; walking or bicycling is my only or primary form of transportation or recreation	5.03% 9
Other (please specify)	16.20% 29
<b>Total Respondents: 179</b>	



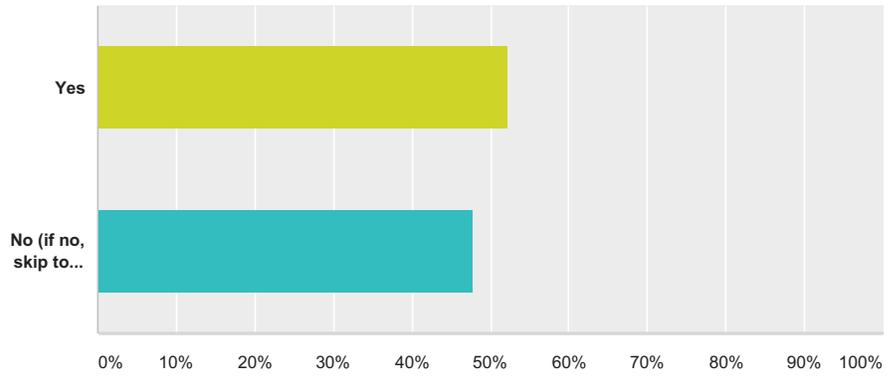
QUESTION 6 RESULTS - A SAMPLE OF "OTHER" RESPONSES

Other (please specify)	Date
family bike rides	12/7/2015 6:09 PM
I love riding a bike	12/6/2015 8:17 PM
exercise	11/28/2015 11:25 PM
I love to walk with my children.	11/21/2015 3:36 AM
I live close to where I work.	11/19/2015 11:51 AM
I use a wheel chair	11/18/2015 11:05 PM
Workout	11/18/2015 3:17 PM
Fun	11/17/2015 8:31 PM
Walk my dogs	11/17/2015 12:15 PM
Walk our dogs.	11/17/2015 10:32 AM
Exercise	11/17/2015 10:02 AM
So I don't drink and drive.	11/17/2015 10:00 AM
preventing drinking and driving	11/5/2015 11:04 AM
I do not ride due to how unsafe the roads are in G.G. If I felt safe I would ride for exercise.	11/5/2015 7:30 AM
walk my dog	11/4/2015 4:04 PM
I'm 75 years old & I don't have a bike.	10/31/2015 4:17 PM
I walk to get to things for which driving is not an option, or from my car to my destination if I must park a ways away from it.	10/30/2015 7:32 PM
I don't ride in the streets it is too dangerous. I ride at the gym.	10/30/2015 11:37 AM
I use to ride to work, but it became too dangerous.	10/30/2015 9:24 AM
commute to work	10/30/2015 7:45 AM
Unable to walk or bicycle any distance due to health and age.	10/30/2015 7:38 AM
Walk the dog.	10/29/2015 7:17 PM
It's a fun activity to do with my family	10/25/2015 7:04 AM
Good Training, in the army, so its like marching	10/24/2015 1:18 PM
You really see the city on a bike. You notice things that would overlooked if you were driving.	10/23/2015 10:18 AM
To give my dog some exercise	10/23/2015 9:39 AM
Go to store	10/10/2015 5:31 PM
Spend time teaching my kids to be active	10/10/2015 3:39 PM
Convenience in parking downtown also (car show and farmers market)	10/9/2015 9:17 PM

QUESTION 7 RESULTS

### Q7 Do you have children?

Answered: 182 Skipped: 22



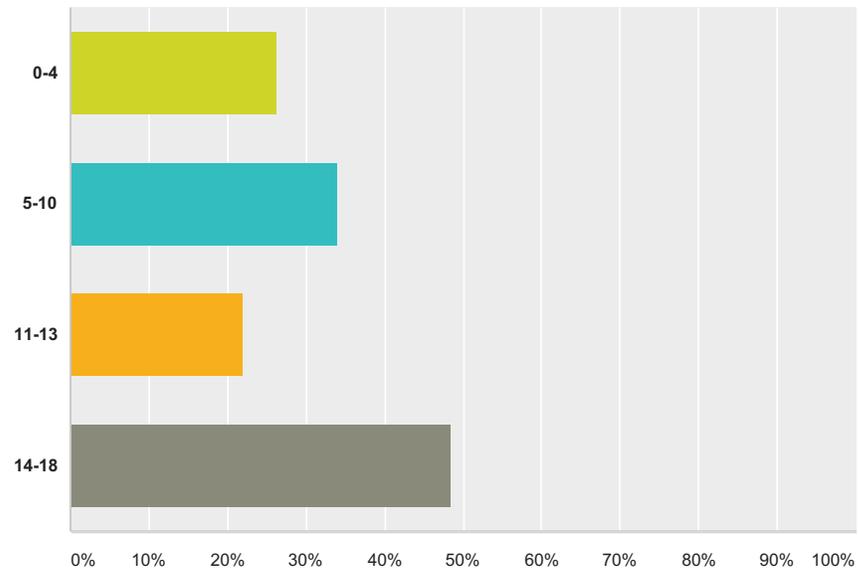
Answer Choices	Responses	
Yes	52.20%	95
No (if no, skip to question # 13)	47.80%	87
<b>Total</b>		<b>182</b>



QUESTION 8 RESULTS

### Q8 How old are your children? (Select all that apply if you have more than one child)

Answered: 91 Skipped: 113

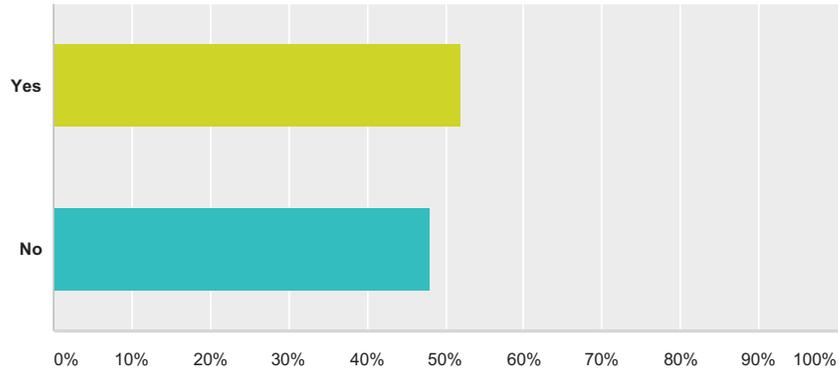


Answer Choices	Responses
0-4	26.37% 24
5-10	34.07% 31
11-13	21.98% 20
14-18	48.35% 44
<b>Total Respondents: 91</b>	

QUESTION 9 RESULTS

### Q9 Do you ride your bike with your children?

Answered: 102 Skipped: 102



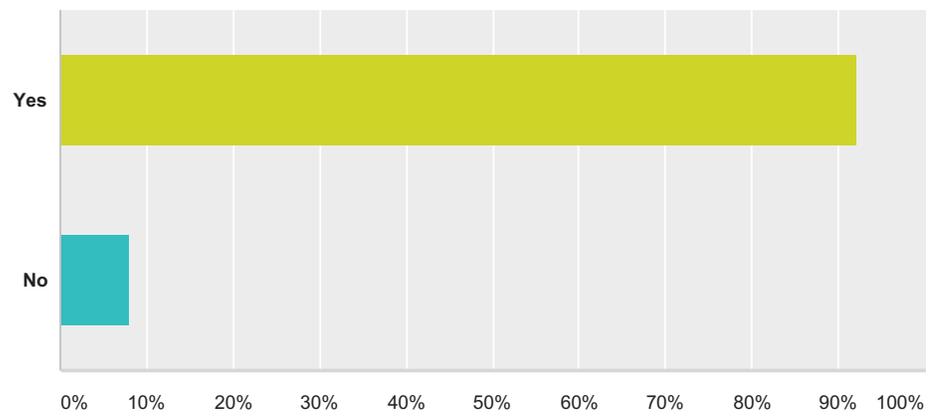
Answer Choices	Responses	Count
Yes	51.96%	53
No	48.04%	49
<b>Total</b>		<b>102</b>



QUESTION 10 RESULTS

### Q10 Do your children know how to ride a bike?

Answered: 101 Skipped: 103

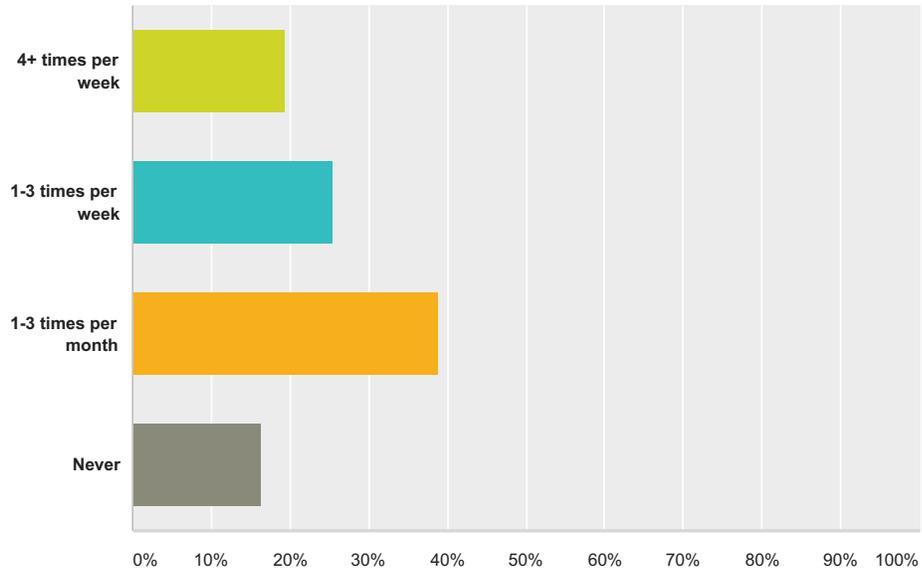


Answer Choices	Responses
Yes	92.08%
No	7.92%
<b>Total</b>	

QUESTION 11 RESULTS

### Q11 How often do your children ride their bike?

Answered: 98 Skipped: 106



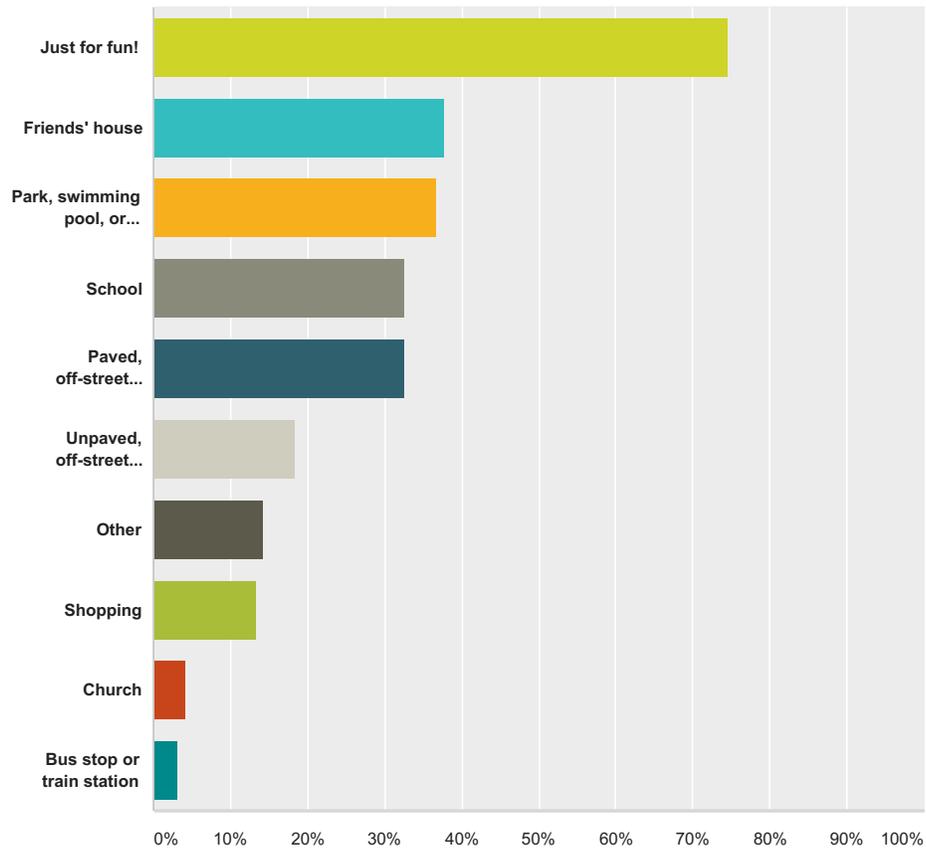
Answer Choices	Responses	Count
4+ times per week	19.39%	19
1-3 times per week	25.51%	25
1-3 times per month	38.78%	38
Never	16.33%	16
<b>Total</b>		<b>98</b>



QUESTION 12 RESULTS

### Q12 Where would your children ride their bicycles to? (Select all that apply)

Answered: 98 Skipped: 106

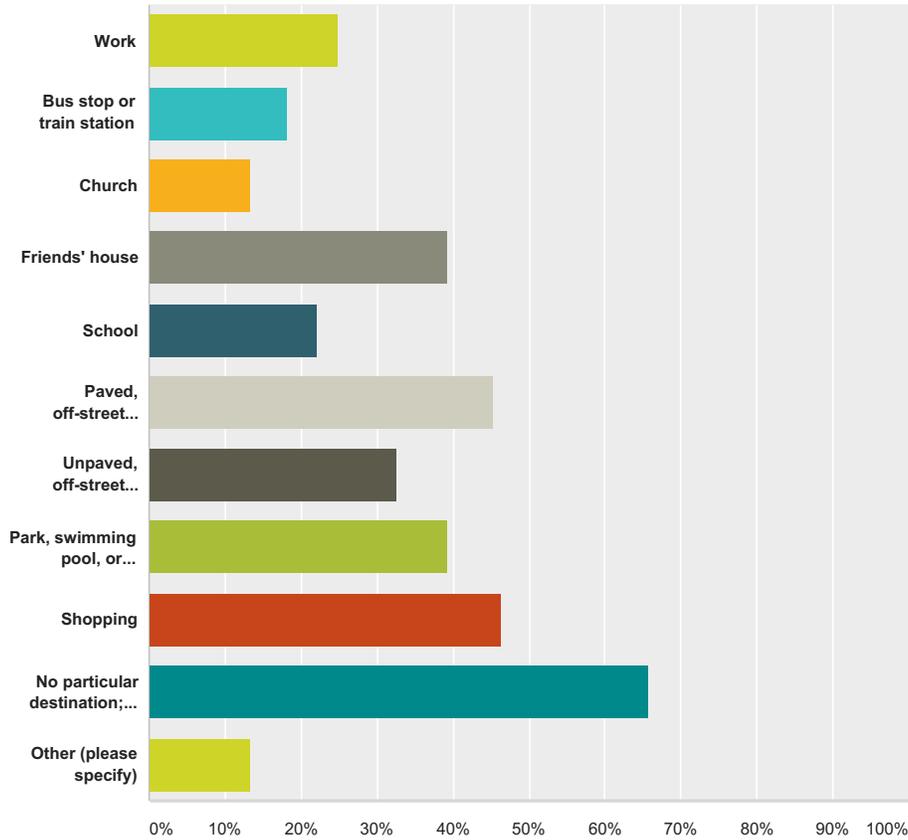


Answer Choices	Responses
Just for fun!	74.49% 73
Friends' house	37.76% 37
Park, swimming pool, or recreation area	36.73% 36
School	32.65% 32
Paved, off-street paths	32.65% 32
Unpaved, off-street paths/ trails	18.37% 18
Other	14.29% 14
Shopping	13.27% 13
Church	4.08% 4
Bus stop or train station	3.06% 3
<b>Total Respondents: 98</b>	

QUESTION 13 RESULTS

**Q13 To which destinations do you or would you like to walk or ride a bicycle in Garden Grove? (Select all that apply)**

Answered: 181 Skipped: 23



Answer Choices	Responses
Work	24.86% 45
Bus stop or train station	18.23% 33
Church	13.26% 24
Friends' house	39.23% 71
School	22.10% 40
Paved, off-street paths	45.30% 82
Unpaved, off-street paths/trails	32.60% 59
Park, swimming pool, or recreation area	39.23% 71
Shopping	46.41% 84
No particular destination; walking for fitness or leisure	65.75% 119
Other (please specify)	13.26% 24
<b>Total Respondents: 181</b>	



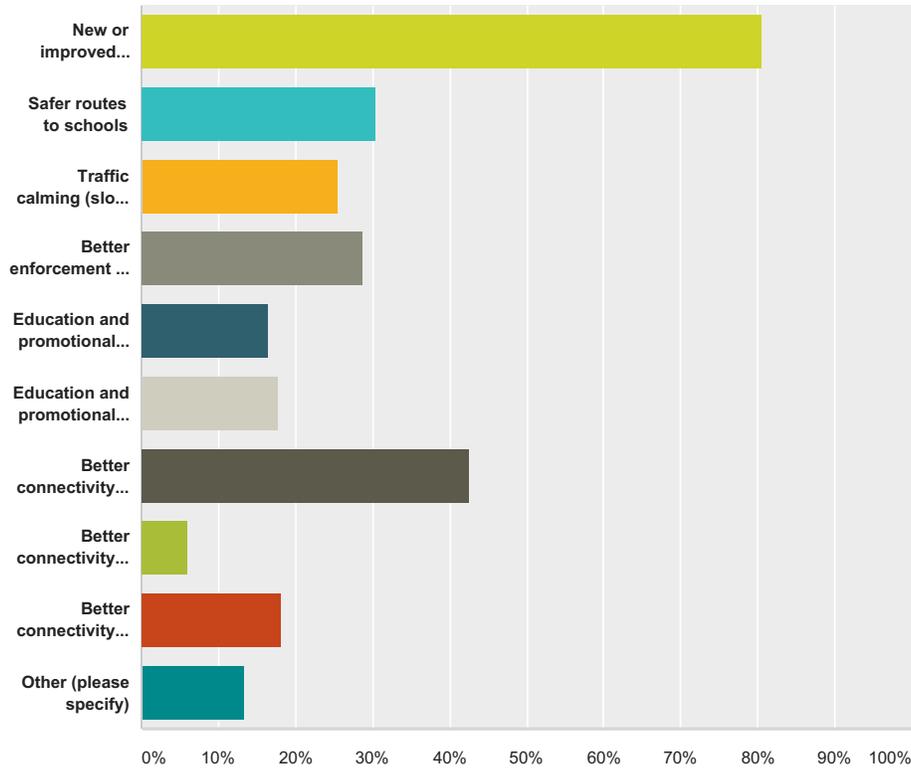
QUESTION 13 RESULTS - SAMPLE OF "OTHER" RESPONSES

	Other (please specify)	Date
	Santa Ana River Trail	11/19/2015 6:48 PM
	We should be able to bike EVERYWHERE!	11/19/2015 2:05 PM
	in the neighborhood	11/19/2015 1:54 PM
	Library	11/18/2015 1:20 PM
	Downtown main st or the block, downtown disney	11/17/2015 9:03 PM
	To main st	11/17/2015 8:49 PM
	Restaurants	11/17/2015 5:39 PM
	Eating	11/17/2015 12:57 PM
	local business and entertainment	11/17/2015 10:21 AM
	bars and restaurants	11/5/2015 11:04 AM
	Post office	11/4/2015 4:32 PM
	To eat and get small groceries	11/3/2015 12:17 PM
	Pass through GG on the way to Seal Beach, Long Beach, etc. Have noted that Class 1 and 2 bikeways are very limited in your city.	11/2/2015 11:52 AM
	Don't have a bike.	10/31/2015 4:17 PM
	I would like to ride my bike when I want to without fear of traffic or having the bike stolen when I get to the destination. Include also cafes and restaurant destinations!	10/31/2015 7:48 AM
	If an off-street trail were pretty, I *might* sometimes walk there, but mostly I don't walk for pleasure.	10/30/2015 7:32 PM
	Restaurants on Main Street	10/30/2015 6:55 PM
	We need shaded parks with canopy of trees away from cars etc.	10/30/2015 11:37 AM
	None	10/30/2015 7:38 AM
	Main Street to attend the Farmer's Market and/or to eat breakfast	10/25/2015 7:04 AM
	To restaurants and stores within 3 miles from home. They have to feel safe though.	10/23/2015 10:18 AM
	Santa Ana River Bed Bike Trail	10/23/2015 10:03 AM
	everywhere	10/23/2015 9:54 AM
	Main St. activities.	10/9/2015 9:17 PM

QUESTION 14 RESULTS

**Q14 If you were to prioritize improvements to walking and bicycling in Garden Grove, which would be your top three? (check up to three)**

Answered: 181 Skipped: 23



Answer Choices	Responses
New or improved sidewalks, crossings, bicycle lanes, and off-street shared-use paths	80.66% 146
Safer routes to schools	30.39% 55
Traffic calming (slower speeds)	25.41% 46
Better enforcement of traffic violations for people driving	28.73% 52
Education and promotional programs for people driving	16.57% 30
Education and promotional programs for people walking and bicycling	17.68% 32
Better connectivity to parks and recreation	42.54% 77
Better connectivity to religious and civic institutions	6.08% 11
Better connectivity to public transit	18.23% 33
Other (please specify)	13.26% 24
<b>Total Respondents: 181</b>	



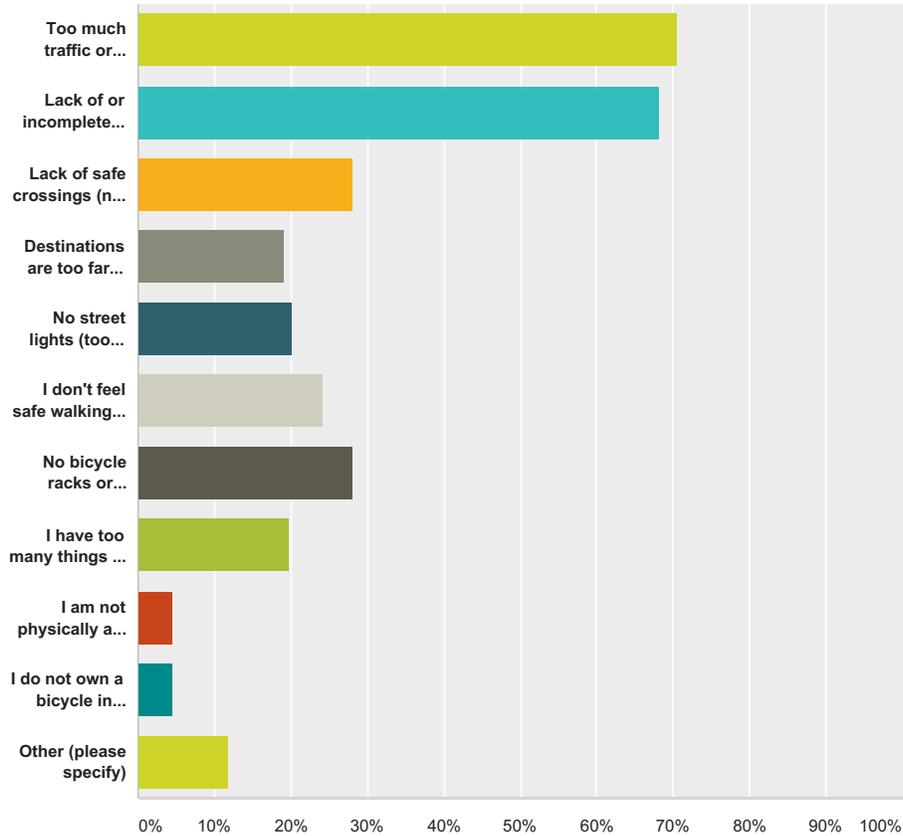
QUESTION 14 RESULTS - SAMPLE OF "OTHER" RESPONSES

	Other (please specify)	Date
	less traffic congestion (Euclid) would make me feel safer	11/21/2015 6:59 PM
	Garden Grove is the only city in OC that lacks class 1 bike lanes. Please put a bike path on the Pacific Electric Right of Way	11/19/2015 6:48 PM
	Enforcement for people walking or biking. Stop the jay walkers.	11/19/2015 2:29 PM
	If we start with the downtown area, we should add two more lights. put an intersection at McDonalds on GG Blvd and one at Costco side street/ between homed opt parking lot and main street parking.	11/19/2015 11:51 AM
	Bike rt., make sure there is enough room for both car and bike route	11/18/2015 11:05 PM
	Use the old train tracks like they do in Irvine.	11/18/2015 11:12 AM
	I want Garden Grove to live up to its name and have beautiful gardens and reflect property values and not only focus on tourism	11/17/2015 9:03 PM
	Walking paths to walk our dogs and/or walk/jog for health	11/17/2015 5:17 PM
	No Improvements please, they are a waste of money	11/17/2015 2:58 PM
	Add more restaurants, etc at convenient areas to ride, walk	11/17/2015 12:57 PM
	WIDER, WELL-PAVED AND CONTINUALLY MAINTAINED SIDEWALKS	11/17/2015 11:20 AM
	Slow Lanes for bicycles, tricycles, scooters, mopeds, GEMs, golf carts ONLY!	11/17/2015 10:36 AM
	Better connectivity to entertainment and businesses.	11/17/2015 10:01 AM
	safe enclosed bike lanes	11/5/2015 4:58 PM
	Protected Bike Lanes	11/4/2015 11:54 PM
	Often children from the schools ride on the sidewalk, it is not wide enough for them to pass walkers safely. I see the bikers riding on the side walk and the walkers moving toward the traffic onto the dirt path where the poles are. It is not safe for any of the children.	11/4/2015 6:50 PM
	Improved cycling lanes and sharrows	11/3/2015 2:43 PM
	I want to say ALL OF THE ABOVE	10/31/2015 7:48 AM
	Establish bike routes to major city hubs (main street, western GG blvd, the Block) on smaller streets that are safer to ride on, and publish a map.	10/30/2015 8:59 AM
	City Council Commitment to walking/biking issues	10/30/2015 7:45 AM
	none needed	10/28/2015 4:19 PM
	Be the first Slow Lane city, bike/trike/moped/golf cart, ONLY on pertinent boulevard slow lanes. Horses would be great, too. Kidding. Maybe.	10/23/2015 9:59 AM
	Complete Pac Electric trail and add sharrows and bike lane connections	10/23/2015 9:54 AM
	How about increasing the bike path that was started?	10/9/2015 9:17 PM

QUESTION 15 RESULTS

### Q15 What prevents you from walking or riding your bicycle more often? (Check all that apply)

Answered: 177 Skipped: 27



Answer Choices	Responses
Too much traffic or dangerous behavior by people driving (e.g., speeding, not yielding, etc.)	70.62% 125
Lack of or incomplete sidewalks, bicycle lanes, or off-street trails	68.36% 121
Lack of safe crossings (no marked crosswalks or traffic signals)	28.25% 50
Destinations are too far away	19.21% 34
No street lights (too dark)	20.34% 36
I don't feel safe walking or bicycling (crime, personal safety)	24.29% 43
No bicycle racks or insufficient bicycle parking at my destinations	28.25% 50
I have too many things to carry or I don't have enough time	19.77% 35
I am not physically able to walk or ride a bicycle	4.52% 8
I do not own a bicycle in working condition	4.52% 8
Other (please specify)	11.86% 21
<b>Total Respondents: 177</b>	



QUESTION 15 RESULTS - SAMPLE OF "OTHER" RESPONSES

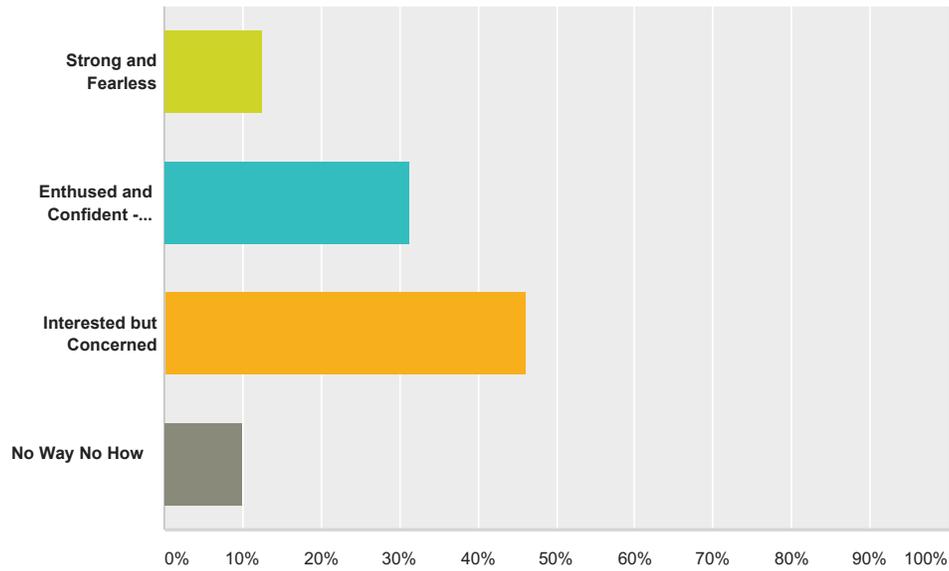
Other (please specify)	11.86%	21
<b>Total Respondents: 177</b>		

	Other (please specify)	Date
	No class 1 bike lanes in GG	11/19/2015 6:48 PM
	bike theft, I don't trust my bike anywhere..	11/19/2015 11:51 AM
	curb cuts	11/18/2015 11:05 PM
	Sidewalk conditions	11/18/2015 3:17 PM
	Main streets are not wide enough.	11/18/2015 11:12 AM
	nothing	11/17/2015 2:58 PM
	I don't know how to ride a bike and have no one to teach me	11/17/2015 11:20 AM
	work hours	11/5/2015 12:03 PM
	im lazy	11/4/2015 7:15 PM
	safety is the biggest concern I have for my children and self. I would like to see bike lanes that were separate from the cars by a physical divider. I would like to know that there is a unbroken route to ride where we can all feel safe. I would downsize to one vehicle if we could safely get around on bike.	11/4/2015 6:50 PM
	Nothing prevents me.	11/4/2015 4:04 PM
	Well defined on street bike lanes that are well signed...and barricaded where necessary on high traffic streets for added safety.	11/2/2015 11:52 AM
	I'm lazy. I used to bike a long time ago, but now I'd simply rather not. And I don't walk all that much other than to get from place to place for the same reason.	10/30/2015 7:32 PM
	Riding in the bike lanes is too dangerous. Too many have been hit.	10/30/2015 7:42 AM
	nothing	10/28/2015 4:19 PM
	If we were not cited for riding on a sidewalk, when there is no bike lane, I would ride more places. Sadly, Euclid is the most common route I would take and it is too scary to ride in the street.	10/23/2015 10:18 AM
	Nothing prevents me personally ... I love to be on a bike.	10/23/2015 9:59 AM
	Nothing prevents me now. But other riders probably would not ride streets like I do	10/23/2015 9:54 AM
	Recent Knee operation	10/10/2015 4:41 PM
	They're ok	10/10/2015 4:38 PM
	Not enough police presence at parks where transients spend their afternoons	10/10/2015 3:39 PM

QUESTION 16 RESULTS

**Q16 Please tell us what type of bicycle rider you consider yourself (Please choose one. Click the button, not the photo. Clicking the photo may cause the survey to close.)**

Answered: 169 Skipped: 35



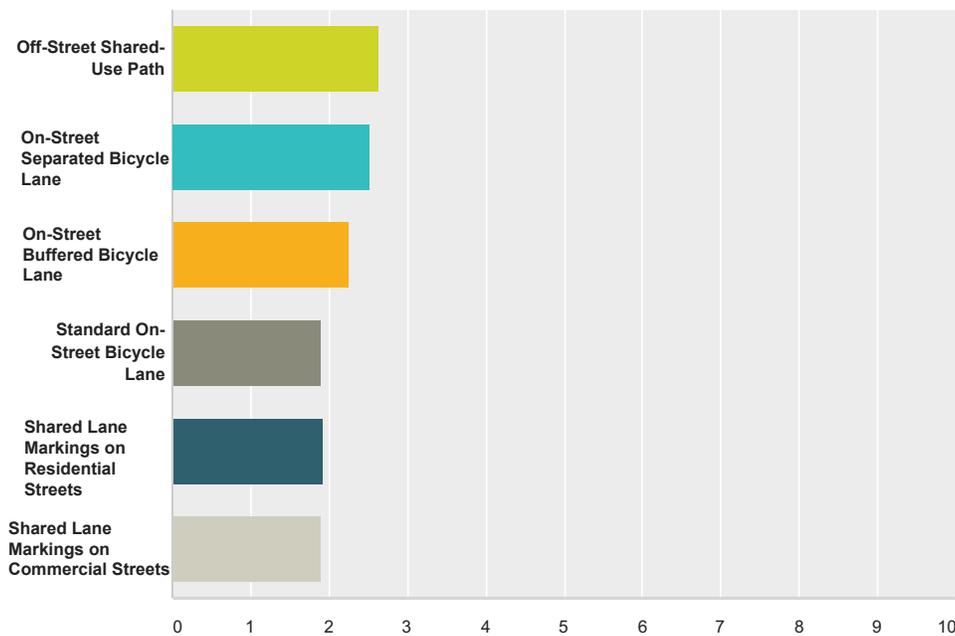
Answer Choices	Responses
	<b>12.43%</b> 21
Enthused and Confident - Currently rides but prefers to ride on bike paths, bike lanes, or on low speed streets. This person is moderately to somewhat comfortable in traffic.	<b>31.36%</b> 53
	<b>46.15%</b> 78
	<b>10.06%</b> 17
<b>Total</b>	<b>169</b>



QUESTION 17 RESULTS

### Q17 Please rate the following bicycle facilities by their potential to encourage you to ride a bicycle more often.

Answered: 173 Skipped: 31

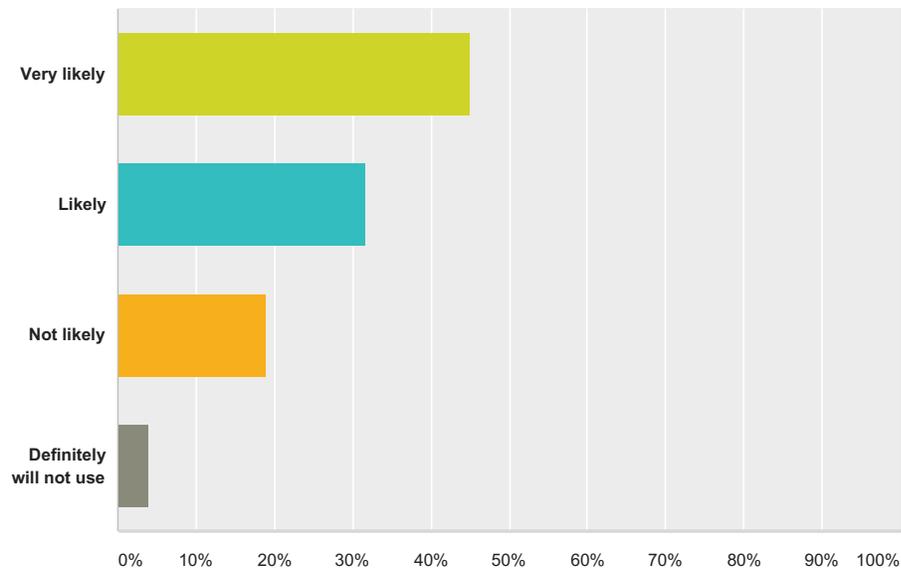


	Not interested	Small impact	Love It!	Total	Weighted Average
 Off-street share-use path	9.36% 16	18.13% 31	72.51% 124	171	2.63
 On-street separated bike lane	15.85% 26	16.46% 27	67.68% 111	164	2.52
 On-street buffered bike lane	16.46% 27	42.07% 69	41.46% 68	164	2.25
 Standard on-street bike lane	38.27% 62	34.57% 56	27.16% 44	162	1.89
 Shared-lane markings on residential streets	37.42% 61	31.90% 52	30.67% 50	163	1.93
 Shared-lane markings on commercial streets	37.80% 62	34.15% 56	28.05% 46	164	1.90

QUESTION 18 RESULTS

**Q18 How likely would you be to use a future completed trail/shared-use pedestrian and bicycle path along the vacant Pacific Electric Right-of-Way? The trail currently is only one block long between Stanford and Nelson Streets/**

Answered: 173 Skipped: 31



Answer Choices	Responses
Very likely	45.09% 78
Likely	31.79% 55
Not likely	19.08% 33
Definitely will not use	4.05% 7
<b>Total</b>	<b>173</b>



QUESTION 19 RESULTS

### Q19 Do you have any other comments, questions, or concerns related to the future of bicycling and walking in Garden Grove?

Answered: 71 Skipped: 133

Responses	Date
I live in Garden Grove, I work and go to school in Costa Mesa, and I play in Santa Ana and Long Beach. I usually drive because I am deterred by the lack of connectivity of bike lanes between cities. It's difficult to map out a safe route that will be reliable and make me feel comfortable being in traffic. I hope it will be possible in the future for Orange County residents to commute and travel between cities without worrying about drivers who do not consider the needs and safety of cyclists.	2/16/2016 11:06 AM
need good access from the Santa Ana River Trail to Harbor. 17th street and Harbor Blvd have no bike lanes and very heavy car traffic.	2/12/2016 10:22 AM
needs to be encouraged. fuel costs, traffic, clean air should be stressed. save the earth and your sanity.	1/9/2016 1:00 PM
Thank you for trying to improve the situation!! We would love to take more bike riding trips with our kids.	12/7/2015 6:12 PM
I don't feel safe riding my bike on the streets. Asian driver's need to learn how to drive before they get their licenses.	11/28/2015 11:30 PM
THE CITY NEEDS MORE SIDEWALKS, BIKE LANES, AND TO UPDATE TRAFFIC SIGNALS.	11/20/2015 9:19 PM
We are so frustrated where we live that busy streets don't have sidewalks (ie Gilbert, Lampson, Stanford) so it is dangerous with cars driving by at 45+ mph. I ride my bike to work and have to choose streets carefully because of the lack of bike lanes. I noticed in Anaheim on Gilbert Street they added a bike lane (not a bike route). I would ride more in the city but there is a real lack of dedicated lanes without cars parked. I am glad they are finally looking into improving the walking and biking in the city.	11/20/2015 8:47 PM
I do not live in Garden Grove but work in the city. I would not ride a bike on the street due to many drivers being unaware of their surroundings. Many do not follow standard driving rules either; I would be afraid if I were to ride on the street in the city.	11/20/2015 7:08 PM
There's more to garden Grove than bicycles that needs fixing.	11/20/2015 7:28 AM
Extend the PacificElectric ROW bike path from Cypress to Santa Ana	11/19/2015 6:52 PM
We need more small businesses to attract people and give them reasons to shop and socialize.	11/19/2015 5:08 PM
Yay for bikes!	11/19/2015 2:06 PM
better?safer public bike racks or easier permit process for private racks. Slower traffic, more retail in a small area not just more people in a small area.	11/19/2015 11:57 AM
Make the red car right away a green belt with light rail and bike/walking path. If not light rail then bus way. I use a wheel chair.	11/18/2015 11:30 PM
People are not obeying speed limits! This causes me to walk less.	11/18/2015 1:22 PM
Let's continue to improve the community aspect of Garden Grove!	11/18/2015 11:53 AM
Until Garden Grove Police start doing a better job	11/18/2015 2:49 AM
The Nelson St trail is a joke and waste of resources. Short, dry, ugly, univiting location.	11/17/2015 9:06 PM
No	11/17/2015 8:33 PM
Need safer bike routes in the city. I walk but my husband bikes and the route we take has no bike lanes at all	11/17/2015 8:17 PM
k	11/17/2015 7:31 PM
I'm so excited that this is something the city of Garden Grove is looking to improve. I usually drive out of the city to go hiking on trails which usually means that afterwards I end up eating dinner at restaurants in other cities. It would be nice to buy dinner in GG since I can help provide tax dollars to the city I live in.	11/17/2015 5:22 PM
Cars should take priority. This is a misuse of funds. Fix the pot holes in the street. Bike lanes provide false security.	11/17/2015 3:02 PM

QUESTION 19 RESULTS CONTINUED

	Many streets do not have sidewalks at all in residential areas where people frequently speed. Please add sidewalks to all communities.	11/17/2015 1:28 PM
	Lots of trash around everywhere..homeless are scary. Needs to be safer in GG to walk and ride.	11/17/2015 12:52 PM
	We have to accept that the days of cycling safely on the streets of Garden Grove are over and cycle lanes do not make it any safer. Those that want to cycle safely need to go to the river banks or beachside promenades. Those that have to cycle just need to be very careful. Better enforcement of drivers texting would help tremendously. It's sad but that's the truth.	11/17/2015 12:26 PM
	Have more law enforcement regulating car drivers.	11/17/2015 12:18 PM
	The Pacific Electric ROW should be used for its original purpose, a rail line (or BRT line to make it more affordable). Southern California NEEDS reliable and frequent public transit options to have truly "active streets" of walking and bicycling. Also, the picture you used for standard on-street bicycle lanes show why those do not work. There are tire tracks clearly intruding on the bike lane, which is evidence of the well-known fact that drivers (a group which includes myself, to be clear) do not respect the boundaries of standard bike lanes. The only way to truly increase bicycling is with physically separated bike lanes that are adjacent to streets (aka cycletracks). Lastly, all the infrastructure improvements in the world won't help if people don't know how to ride a bicycle. The city (ideally in collaboration with other stakeholders) needs to offer free comprehensive bicycle riding lessons.	11/17/2015 11:26 AM
	None. Took the survey thinking "Motorcycle" as "Bike". My bad.	11/17/2015 11:12 AM
	Routes should be more visible.	11/17/2015 11:02 AM
	Thank you for moving forward with this vital need! We must have Slow Lanes that are just for slow modes of transportation. If you build them, they will come. More people will use them when going around town. Imagine if people could use golf carts. Everyone would over cars. Tax credits would also be an incentive. When Harbor was shut down for Great Wolf stuff, people used the slow lane and traffic was amazingly slower. Informal experiment but I can tell you what I saw was that t would work. Make the slow lanes exactly that - SLOW and no cars allowed. Be the first city to do so.Be the model for others.	11/17/2015 10:42 AM
	I'm a leisure rider around my neighborhood, but a road cyclists when ever I get the chance. Getting to trails around west garden grove is hard when you don't have enough bike lanes. People want to push me off the road.	11/17/2015 10:28 AM
	Love the idea of Bike friendly city. Would also ask that water absorbent paving be used (if adopted) to rule water run-off & restore water sheds.	11/17/2015 10:05 AM
	No	11/17/2015 10:05 AM
	no	11/17/2015 9:59 AM
	street lights in neighborhoods	11/17/2015 9:58 AM
	All of orang county needs a plan so people are safe and comfortable to walk and ride. also maybe a local free trolley and or better public transportation	11/5/2015 5:02 PM
	Cars and bikes do not share the road. We need to have separate paths for safety.	11/5/2015 7:33 AM
	Please make it safe for students, I have 4 children ages 11-20 who would be riding everyday along with my husband and self if it was safer. I physical division is the best solution to protect bicyclist, however even a wider shared sidewalk near enders elementary would be great!	11/4/2015 6:56 PM
	No	11/4/2015 4:06 PM
	I hope this actually makes a difference in the future of bicycle safety and accessibility.	11/3/2015 2:26 PM
	Those damn Asian drivers...	11/3/2015 12:50 PM
	We need to be able to connect to other existing city bike paths. Having safe bicycle paths and other alternative transportation paths would help improve the quality of life in Garden Grove which is what our city lacks. Our geographic location centered around other major cities and parks makes it our responsibility to interlink with our neighbors and attractions	11/3/2015 12:27 PM
	I would use the Right of Way path as long as it felt safe. The area currently feels too hidden and abandoned. Perhaps with more activity promoting & beautification features (landscaping, stationary exercise equipment, adequate lighting, small playground spaces, drinking fountains, trees, etc.) it would feel more like a public space rather than a place where transients could be camping.	11/3/2015 11:00 AM
	Great idea. A bike lane on the P E right of way would be perfect.	11/2/2015 2:30 PM
	Have wondered why there is no apparent interest in developing the Pacific Electric...and other rail spurs into bike hike and jog paths. This seems an Ideal way for people to access schools, shopping areas, etc.	11/2/2015 12:03 PM



QUESTION 19 RESULTS CONTINUED

	I ride Garden Grove Blvd and Lampson Ave between GG Blvd and SB Blvd. They are some of the worst streets for bicyclist. High speed traffic and not enough space for bikes.	11/2/2015 10:42 AM
	NOPE	10/31/2015 4:21 PM
	You need to also bring neighboring communities into the dialogue on active streets. Bike paths can't begin and end in Garden Grove. Too many of us work in other parts of the region and would love to have better connectivity! And INCREASE buses and access to transit. For example, I'd love to ride my bike to a bus stop and then go to a transit station and lock my bike safely to go to LA when I have meetings (once a week). Today, there is not enough buses or bike infrastructure to allow me to do it safely or efficiently.	10/31/2015 7:51 AM
	I walk a lot in central GG and I have little to no difficulty with streets and traffic. One has to be sensible, watchful, and careful.	10/30/2015 7:35 PM
	I'm not a member of your main target audience, I suspect. I'm happy you are doing things for the benefit of those who are.	10/30/2015 7:34 PM
	I live at Brookhurst and Chapman, and if the paved bike lane extended all the way to Brookhurst I would definitely use it to ride or walk to Main Street	10/30/2015 7:00 PM
	Need tree lined paths away from road pollution.	10/30/2015 11:41 AM
	I live near Edgar and Westgrove parks. I would like to see walking paths in these parks, allowing space for sports activities. The paths could also be used by kids on bikes, riding toys, etc.	10/30/2015 9:47 AM
	I am glad the city is taking an interest in this issue. My wife and I just bought bicycles, and we usually strap them on the car and go to LB, HB or the riverbed to ride because there is no safe or interesting routes in GG.	10/30/2015 9:02 AM
	The only reason I do not commute to work by bike one or two days a week is because of unsafe biking conditions (no bike lanes). Garden Grove is generally unsafe for biking.	10/30/2015 7:49 AM
	We need more bike paths not in the street in West Garden Grove. It is not safe to ride in the bike lanes here.	10/30/2015 7:47 AM
	I am concerned about impacting vehicle traffic when adding bike lanes. I am also concerned about distracted drivers both on the bike and in a motor vehicle.	10/30/2015 7:18 AM
	Do not take any space from cars. There is too much traffic and not enough people will want to share the road. Cars first,	10/28/2015 4:23 PM
	My family and I will occasionally ride our bikes on the Pacific Electric Right-of-Way trail between Stanford and Nelson Streets. We love it and hope that in the future it can become longer.	10/25/2015 7:08 AM
	its just dangerous	10/24/2015 1:20 PM
	let's finish the P&E right away	10/23/2015 8:33 PM
	Our current street conditions were designed to accommodate traffic needs. What you're doing is great to encourage walking and bicycling in or city, hence more community engagement, healthier bodies, healthier environment.	10/23/2015 11:32 AM
	The proposed PE path needs to extend quite a distance to be viable. It needs to have "Destinations" along it. It needs lighting at night (solar). It needs trashcans. The city streets in general feel unsafe as we have to share narrow lanes of traffic and we have a lot of first-generation drivers. Bikes are not allowed in our parks, a shame. Really need to promote the new report vandalism / graffiti / abandoned junk app to city walkers and riders. They have the best opportunity to safely report issues that blight the city. It's safest for them as they are not driving a vehicle and can get a good photo or record the location easiest. Also, stress the no texting while in an intersection to people. We have zombies walking across streets, staring at their phones, ignoring traffic. Too many kids and adults are doing this. We need a good PSA in every GG school and perhaps on channel 3 GGTV. Perhaps a program that encourages restaurants and stores to add bike racks for customers, like a discount or free beverage for riding or walking to the destination. Main Street could benefit for sure. Another big collection of GG restaurants is at Chapman & Brookhurst in the Newberry Shopping Center. This should be a PE right of way path destination that encourages ridership.	10/23/2015 10:37 AM
	As I said before, be the first, to designate Slow Lane City, a term I coined, for bikes, trikes, seniors and their scooters, mopeds, golf carts (why are golf carts not even allowed? crazy) so people, if you build this mode, will come. I noticed that when Harbor slow lane was blocked off for the cheshire cat sidewalks, traffic slowed down and it was a mini open streets and it worked. Be the FIRST Slow Lane City!	10/23/2015 10:12 AM
	I love that the City of Garden Grove is taking an interest in creating a Bicycle Master Plan and that they are asking me what I think.	10/23/2015 10:06 AM
	Use the panic rightaway	10/10/2015 5:33 PM
	Not really	10/10/2015 4:55 PM

QUESTION 19 RESULTS CONTINUED

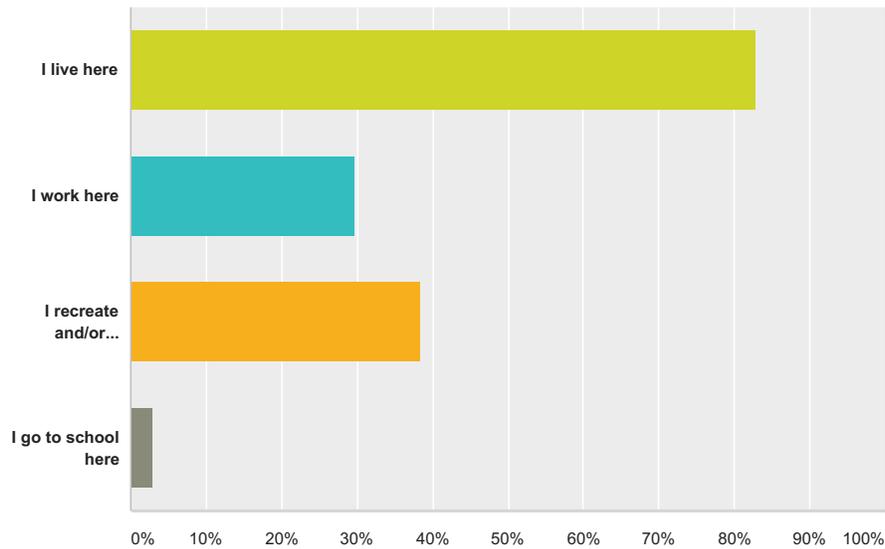
	Not really	10/10/2015 4:55 PM
	My children love to ride their bicycles and be outdoors, I am concerned for their safety whenever I take them out to ride. There is very limited accessibility to safe areas within the parks for them to ride (not on the grass) and for them to get to the park without being too close to traffic. I prefer driving over to Long Beach where they can ride safely, but I would prefer to be able to this in the city we live in.	10/10/2015 3:45 PM
	PLEASE finish the bike path (Pacific Electric)	10/9/2015 9:21 PM



QUESTION 20 RESULTS

### Q20 How are you connected with Garden Grove?

Answered: 169 Skipped: 35



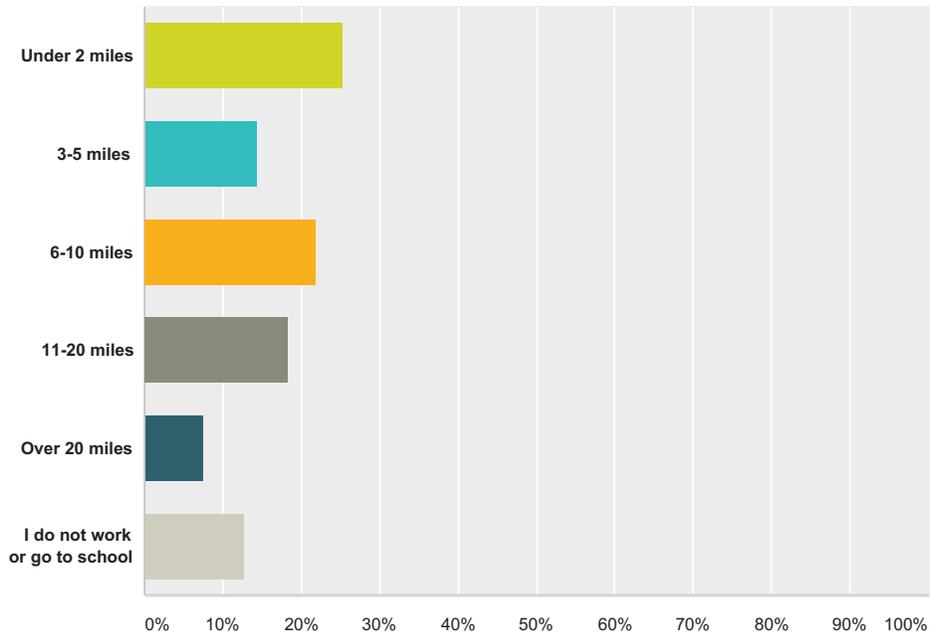
Answer Choices	Responses
I live here	82.84% 140
I work here	29.59% 50
I recreate and/or socialize here	38.46% 65
I go to school here	2.96% 5
<b>Total Respondents: 169</b>	

Other (please specify)	Date
I grew up in Garden Grove but now live in LA. It is still near and dear to my heart.	1/5/2016 10:35 PM
My parents live near by.	11/19/2015 2:23 PM
I host business events here	11/17/2015 9:07 PM
I'm a board member for the women's division of the chamber of commerce	11/17/2015 1:44 PM
Since the 30's "out of town" in what became GG. Since Sept,1860 in Anaheim.	11/17/2015 10:49 AM
my kids are in school here as well	11/17/2015 10:30 AM
My kids go to school here	11/17/2015 10:14 AM
My child will go to school in this community one day.	11/3/2015 9:21 PM
I travel through GG about once a wk to connect with other friends who cycle. Used to live and attend High School in GG.	11/2/2015 12:07 PM
I sometimes shop in GG and also ride with other bikers as a group to go to the beach.	11/2/2015 10:43 AM
Neighborhood Improvement Commissioner	10/23/2015 10:39 AM
Family in GG since the 30's, in Anaheim since 1870's ... long time!	10/23/2015 10:14 AM
Grew up here	10/10/2015 5:14 PM

QUESTION 21 RESULTS

**Q21 How far is your work/school from where you live or from the nearest mass transit system from where you live?**

Answered: 174 Skipped: 30



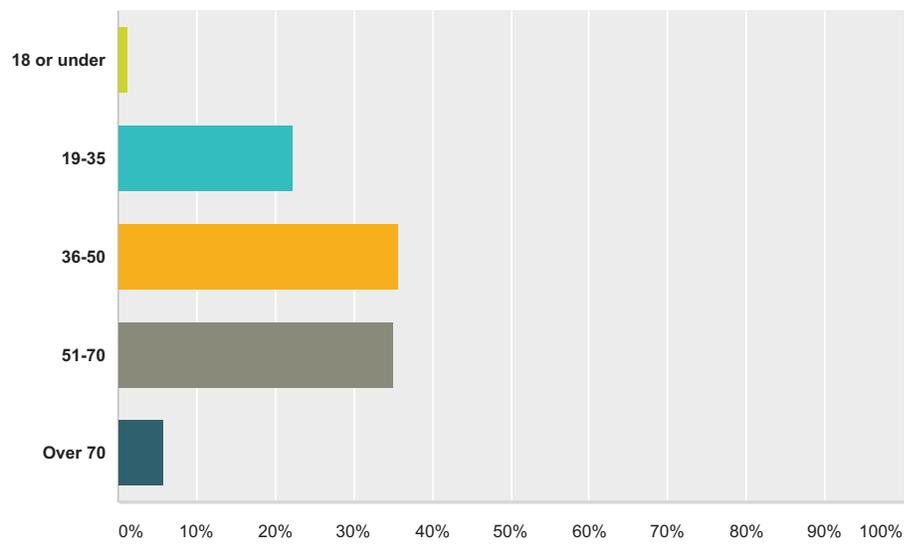
Answer Choices	Responses
Under 2 miles	25.29% 44
3-5 miles	14.37% 25
6-10 miles	21.84% 38
11-20 miles	18.39% 32
Over 20 miles	7.47% 13
I do not work or go to school	12.64% 22
<b>Total</b>	<b>174</b>



QUESTION 22 RESULTS

### Q22 What is your age group?

Answered: 174 Skipped: 30

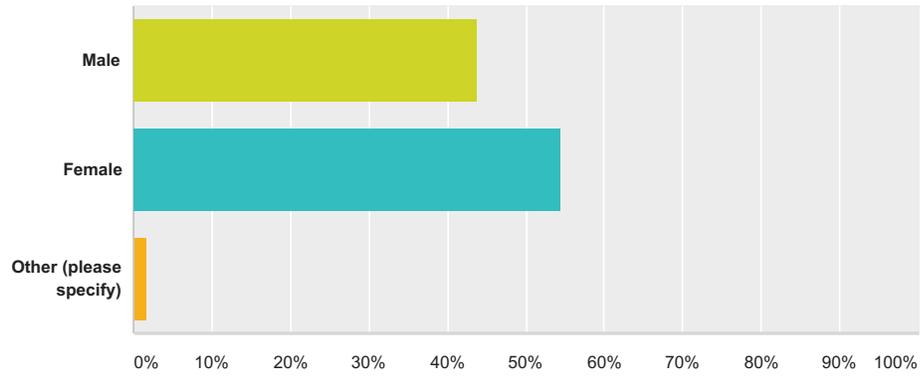


Answer Choices	Responses
18 or under	1.15% 2
19-35	22.41% 39
36-50	35.63% 62
51-70	35.06% 61
Over 70	5.75% 10
<b>Total</b>	<b>174</b>

QUESTION 23 RESULTS

### Q23 What is the gender you identify with?

Answered: 171 Skipped: 33



Answer Choices	Responses
Male	43.86% 75
Female	54.39% 93
Other (please specify)	1.75% 3
<b>Total</b>	<b>171</b>

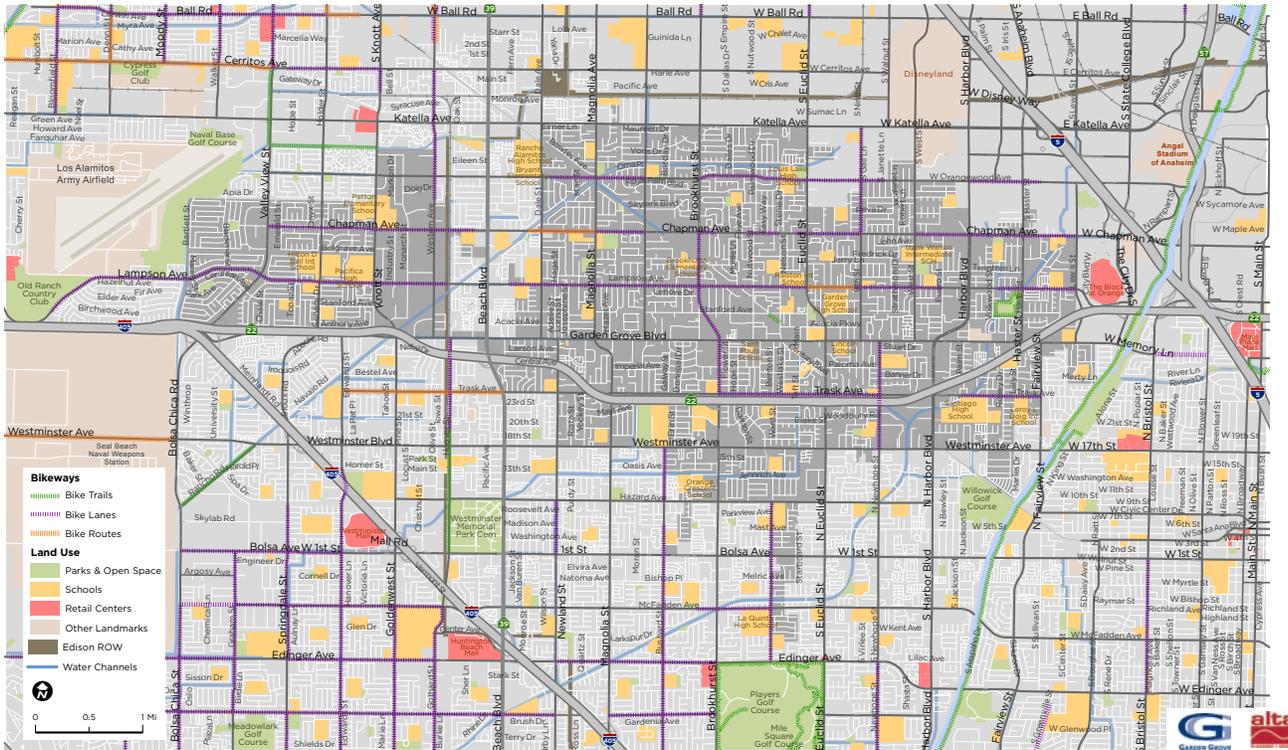
Other (please specify)	Date
fluid	11/17/2015 11:27 AM
I'm Male and this is a lame question.	11/17/2015 11:13 AM
na	11/5/2015 5:02 PM



# GARDEN GROVE OPEN STREETS OUTREACH BOARDS

Where do you walk and ride your bike?

TELL US YOUR MOST AND LEAST FAVORITE PLACES TO WALK & RIDE YOUR BIKE





# What motivates you to walk?

## WHAT WOULD MAKE YOU WALK MORE?

Garden Grove   
**ACTIVE STREETS**



### Safer Crossings

Sidewalk extensions, more visible crosswalks, crossing islands, and other improvements can make it safer to cross major streets.



### Better Lighting

Highly visible street lighting along sidewalks helps make walking at night safer and more comfortable.



### Slower/Less Traffic

Signs, physical roadway treatments, enforcement, and marketing campaigns can all help reduce the amount and speed of car traffic.



### Improved Access To Transit

Bus stop shelters with shade and benches, as well as bus arrival information, make a transit trip more convenient.



### Sidewalks & Path Improvements

Continuous sidewalks along all streets and wide paths on major routes provide safe and comfortable space for pedestrians.



### Benches and Drinking Fountains & Trash Cans

Resting places along popular walking routes make trips easier for seniors and others, and trash cans help keep the city clean.



### Better Destination Signs

Signs at lower heights with smaller pedestrian-friendly text help people walking to find popular destinations.



### Shade Trees and Landscaping

Mature trees provide needed shade to people walking, and other landscaping such as plants and flowers contribute to a more pleasant community.

**PLACE A STICKER TO VOTE FOR YOUR 3 FAVORITES!**



# What motivates you to bike?

## WHAT WOULD MAKE YOU BICYCLE MORE?

Garden Grove   
**ACTIVE STREETS**



### Off-Street Trails

Off-street Trails or shared-use paths are paved rights-of-way for the exclusive use of people riding bikes, walking, skateboarding, rollerblading for fitness, fun and getting around. Trails are physically separated from car traffic, and are generally constructed in corridors not served by the street network such as along river channels or abandoned rail corridors.



### On-Street Separated Bikeways

Separated bikeways are set apart from vehicular traffic in the street through a variety of means, such as curbs, planted medians or bollards which provide protection from vehicles. The bikeways may even be raised or two-way. These types of bikeways are appealing to bicyclists who are skeptical of riding in the road because they are separated from cars.



### Neighborhood Bikeway

Neighborhood Bikeways are local roads that have slow vehicle speeds and are comfortable for riding your bike. A neighborhood bikeway might include destinations signs, pavement markings, and traffic calming features that facilitate safe and convenient bicycle travel, slow vehicle speeds, and minimize vehicular traffic volumes.



### Bicycle Safety Training & Fun Activities

Bicycle safety & skills classes can help make new or returning bicycle riders comfortable on the street. Fun activities such as group rides, bike festivals, and open street events are a great way to show how easy and enjoyable bicycle riding can be.



### Slower or Less Traffic

Fast and heavy automobile traffic are often a barrier to people who would like to ride a bicycle. Physical improvements to streets, changes to traffic signals, increased enforcement of laws, and marketing campaigns can all help slow traffic and reduce the number of cars on streets where it is desired.



### Better Destination Signs

Signs designed specifically for reading while riding a bicycle can be installed along popular bicycling routes and inform people about important locations such as parks, schools, shopping centers, government offices, and other nearby bikeways or parking facilities.

**PLACE A STICKER TO VOTE FOR YOUR 2 FAVORITES!**



## GARDEN GROVE OPEN STREETS OUTREACH RESULTS

Table B-1: Garden Grove Open Streets Event Results

Reason	# of Votes	Comments / Concerns
<b>What motivates you to bike?</b>		
Off-Street Trails	60	Look at the trails in Eagle Mountain City, Utah
On-Street Separated Bikeways	48	Bikes should be allowed to go through drive-thrus
Neighborhood Bikeway	23	
Bicycle Safety Training & Fun Activities	29	
Slower or Less Traffic	29	
Better Destination Signs	7	
<b>What motivates you to walk?</b>		
Safer Crossings	56	Better signal timing; takes too long to get the "walk" signal
Better Lighting	35	
Slower/ Less Traffic	22	ADA Access
Improved Access to Transit	12	
Sidewalks & Path Improvements	56	
Benches and Drinking Fountains & Trash Cans	28	
Better Destination	11	
Shade Tress and Landscaping	62	
<b>Where do you park your bike?</b>		
On Street Bike Corals	1	
Secure Bike Lockers	2	
Sidewalk Bike Racks	3	
Parking & Repair Stations	10	
<b>What amenities would you like?</b>		
Maps & Wayfinding	9	
Gateways	9	
Lighting	13	
Furniture & Drinking Fountains	9	Restrooms
Bike Parking	5	
Playgrounds	12	Look at Saratoga Springs, Utah City Park playground
Fitness Equipment	11	
Art Installations	10	
Interpretive Signage	6	
Landscaping	21	Duck ponds



Reason	# of Votes	Comments / Concerns
<b>How do you envision the trail?</b>		
Gardens and Groves	13	
Historic Red Car	5	
Civic Garden Grove	1	
Active Streets Theme	4	
Vivid	12	
Natural	15	

## GARDEN GROVE DIAMOND JUBILEE COMMUNITY PRIORITIZATION RESULTS

To identify priorities for the community, staff set up a table at the Garden Grove 60th Anniversary Diamond Jubilee. During the event, community members were asked to rank the recommended network projects and provide feedback on the Plan. When comparing the rankings of all participants, it is clear that Garden Grove Boulevard, Harbor Boulevard, and the Pacific Electric Right of Way Trail were highly ranked by many people. This list of community priorities can provide City staff with guidance on which projects to prioritize for immediate next steps, and shows that there is already a large demand for these projects, which could help expedite the community planning process.

Table B-2: Garden Grove Open Streets Event Results

PROJECT	NUMBER OF VOTES
Garden Grove Blvd Complete Streets Study	36
Harbor Blvd Complete Streets Study	25
PE ROW Trail	22
Lampson St Bikeway Improvements	19
Neighborhood Greenway / SRTS	15
Brookhurst St buffered bike lane	11
Anaheim Barber Channel shared-use path	7
Gilbert St bike lane / bike route	7
West St buffered bike lanes	6
PE ROW DT Connection	5
Westminster pedestrian enhancements	5
Hazard Ave separated bikeway	3

## Appendix C - Funding Sources

A variety of options exist to further plan, design, and construct bicycle transportation projects, including funding from federal, state, regional, local, and private sources. This section provides information on potential funding sources to support agency efforts to find outside funding sources to implement bicycle improvements.

### FEDERAL SOURCES

#### **FIXING AMERICA'S SURFACE TRANSPORTATION ACT (FAST ACT)**

The FAST Act, which replaced Moving Ahead for Progress in the 21st Century Act (MAP-21) in 2015, provides long-term funding certainty for surface transportation projects, meaning States and local governments can move forward with critical transportation projects with the confidence that they will have a Federal partner over the long term (at least five years).

The law makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects and providing new safety tools. It also allows local entities that are direct recipients of Federal dollars to use a design publication that is different than one used by their State DOT.

More information: [www.transportation.gov/fastact](http://www.transportation.gov/fastact).

#### **MAP-21 - SURFACE TRANSPORTATION PROGRAM**

A wide variety of bicycle and pedestrian improvements are eligible, including on-street bicycle transportation facilities, off-street trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities.

More information: [www.fhwa.dot.gov/map21/factsheets/stp.cfm](http://www.fhwa.dot.gov/map21/factsheets/stp.cfm)

#### **MAP-21 - CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM (CMAQ)**

The amount of CMAQ funds depends on the state's population share and on the degree of air pollution. Recent revisions were made to bring CMAQ in line with the new MAP-21 legislation. There is a broader emphasis on projects that are proven to reduce PM-2.5. Eligible projects include: "Constructing bicycle and pedestrian facilities (paths, bicycle racks, support facilities, etc.) that are not exclusively recreational and reduce vehicle trips; (and) non-construction outreach related to safe bicycle use." Studies that are part of the project development pipeline (e.g., preliminary engineering) are eligible for funding. "An assessment of the project's expected emission reduction benefits should be completed prior to project selection."

More information: [www.fhwa.dot.gov/environment/air\\_quality/cmaq/](http://www.fhwa.dot.gov/environment/air_quality/cmaq/)



## **BUS AND BUS FACILITIES PROGRAM: STATE OF GOOD REPAIR**

Can be used for projects to provide access for bicycles to public transportation facilities, to provide shelters and parking facilities for bicycles in or around public transportation facilities, or to install equipment for transporting bicycles on public transportation vehicles.

More information: [www.fta.dot.gov/grants/13094\\_3557.html](http://www.fta.dot.gov/grants/13094_3557.html)

## **SURFACE TRANSPORTATION BLOCK GRANT (STBGP)**

The FAST Act expanded the existing Surface Transportation Program (STP) into the Surface Transportation Block Grant Program (STBGP) which places more decision-making power in the hands of state and local governments. The FAST Act simplifies the list of uses eligible for program funds and increases the ways that funds can be used for local roads and rural minor collectors. The Transportation Alternatives Program (TAP) is a set-aside program of this block grant. The new program requires 55 percent of program funds be distributed within each state on the basis of population, compared to 50 percent under STP.

In California, STBGP is allocated through the Regional Surface Transportation Program (RSTP). The TAP program is allocated through the Active Transportation Program (ATP).

More information: [www.dot.ca.gov/hq/transprog/federal/rstp/Official\\_RSTP\\_Web\\_Page.htm](http://www.dot.ca.gov/hq/transprog/federal/rstp/Official_RSTP_Web_Page.htm)

## **NEW OPPORTUNITIES FOR BICYCLE AND PEDESTRIAN INFRASTRUCTURE FINANCING ACT**

A proposed bill in Congress to set aside one percent of TIFIA's \$1 billion for bicycle and pedestrian infrastructure projects, such as the conversion of abandoned rail corridors for trails, bicycle signals, and path lighting. For these projects, TIFIA's minimum project cost would be \$2 million. Eligible costs include: planning & feasibility studies, construction, and land acquisition. The bill reserves 25 percent of project funding for low-income communities.

More information: [www.congress.gov/bill/113th-congress/house-bill/3978](http://www.congress.gov/bill/113th-congress/house-bill/3978)

## **HIGHWAY SAFETY IMPROVEMENT PROGRAM**

The FAST Act eliminates the ability of states to shift funds designated for infrastructure safety programs to behavioral or educational activities, ensuring resources remain in construction-related programs. It also designates several new safety improvements eligible for funding including vehicle-to-infrastructure communication and roadway improvements that provide separation between pedestrians and motor vehicles.

With regards to unpaved roads, the FAST Act allows states to “opt out” of collecting safety inventory data for unpaved/gravel roads if certain conditions are met, as long as the states continue to collect data related to serious crashes and fatalities. It also requires that U.S. DOT to review data and report to Congress on best practices for roadway infrastructure improvements that enhance commercial motor vehicle safety.

HSIP is a data-driven funding program, and eligible projects must be identified through analysis of crash experience, crash potential, crash rate, or other similar metrics. Infrastructure and non-infrastructure projects are eligible for HSIP funds. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for active transportation users in school zones are examples of eligible projects. All HSIP projects must be consistent with the state's Strategic Highway Safety Plan. In California, HSIP is administered by Caltrans.

More information: [dot.ca.gov/hq/LocalPrograms/hsip.html](http://dot.ca.gov/hq/LocalPrograms/hsip.html)

### **PARTNERSHIP FOR SUSTAINABLE COMMUNITIES**

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to “improve access to affordable housing, provide more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure - “Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.” The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including the TIGER grants). The San Gabriel Valley Council of Governments and Caltrans should track Partnership communications and be prepared to respond proactively to announcements of new grant programs.

More information: [www.epa.gov/smartgrowth/partnership/](http://www.epa.gov/smartgrowth/partnership/)

### **RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM**

The Rivers, Trails and Conservation Assistance Program (RTCA) is the community assistance arm of the National Park Service. RTCA provides technical assistance to communities in order to preserve open space and develop trails. The assistance that RTCA provides is not for infrastructure, but rather building plans, engaging public participation, and identifying other sources of funding for conversation and outdoor recreation projects.

More information: [www.nps.gov/pwro/rtca/who-we-are.htm](http://www.nps.gov/pwro/rtca/who-we-are.htm)

### **COMMUNITY DEVELOPMENT BLOCK GRANTS**

The Community Development Block Grants (CDBG) program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal CDBG grantees may “use Community Development Block Grant funds for activities that include (but are not limited to): acquiring real property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grant funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs.” Trails and greenway projects that enhance accessibility are the best fit for this funding source.

More information: [www.hud.gov/cdbg](http://www.hud.gov/cdbg)



## **COMMUNITY TRANSFORMATION GRANTS**

Community Transformation Grants administered through the Centers for Disease Control (CDC) support community-level efforts to reduce chronic diseases such as heart disease, cancer, stroke, and diabetes. Active transportation infrastructure and programs that promote healthy lifestyles are a good fit for this program, particularly if such improvements benefit groups experiencing the greatest burden of chronic disease.

More information: [www.cdc.gov/communitytransformation/](http://www.cdc.gov/communitytransformation/)

## **NATIONAL SCENIC BYWAYS PROGRAM**

The Federal Highway Administration (FHWA), part of the USDOT manages the National Scenic Byways Grant Program, which recognizes roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities by providing grants that support projects that manage and protect these roads and improve visitor facilities.

More information: [www.fhwa.dot.gov/discretionary/2012nsbp.cfm](http://www.fhwa.dot.gov/discretionary/2012nsbp.cfm)

## **TRANSPORTATION INVESTMENTS GENERATING ECONOMIC RECOVERY (TIGER) PROGRAM**

Can be used for innovative, multimodal and multi-jurisdictional transportation projects that promise significant economic and environmental benefits to an entire metropolitan area, a region, or the nation. These include bicycle and pedestrian projects. Project minimum is \$10 million.

More information: [www.transportation.gov/tiger](http://www.transportation.gov/tiger)

## **U.S. ENVIRONMENTAL PROTECTION AGENCY - BROWNFIELDS PROGRAM**

Assessment grants provide funding for a grant recipient to inventory, characterize, assess, and conduct planning and community involvement related to brownfields sites. Revolving Loan Fund (RLF) grants provide funding for a grant recipient to capitalize a revolving loan fund and to provide sub-grants to carry out cleanup activities at brownfield sites.

More information: [www.epa.gov/brownfields/types-brownfields-grant-funding](http://www.epa.gov/brownfields/types-brownfields-grant-funding)

## **STATE SOURCES**

### **ACTIVE TRANSPORTATION PROGRAM**

With the consolidation of federal funding sources in MAP-21 and again under the FAST Act, the California State Legislature has consolidated a number of state-funded programs centered on active transportation into a single program. The resulting Active Transportation Program (ATP) consolidated the federal programs, Bicycle Transportation Account, the Safe Routes to Schools Program, and the Recreational Trails Program. The ATP's authorizing legislation (signed into law by the Governor on September 26, 2013) also includes placeholder language to allow the ATP to receive funding from the newly established Cap-and-Trade Program in the future. The Statewide Competitive ATP has \$180 million available statewide for the 2014/2015 and 2015/2016 fiscal cycles. The Regional Competitive ATP will have additional funding

available for the SCAG region in the 2014/2015 and 2015/2016 fiscal cycles. The California Transportation Commission writes guidelines and allocates funds for the ATP, while the ATP will be administered by the Caltrans Division of Local Assistance. Goals of the ATP are currently defined as the following:

- Increasing the proportion of trips accomplished by biking and walking;
- Increasing safety and mobility for active transportation users;
- Advancing active transportation efforts of regional agencies to achieve the greenhouse gas reduction goals;
- Enhancing public health;
- Ensuring that disadvantaged communities fully share in the benefit of the program; and,
- Providing a broad spectrum of projects to benefit many types of active transportation users.

More information: [www.dot.ca.gov/hq/LocalPrograms/atp/index.html](http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html)

### **STATE TRANSPORTATION IMPROVEMENT PROGRAM (STIP)**

Funds new construction projects that add capacity to the transportation network. STIP consists of two components, Caltrans' Interregional Transportation Improvement Program (ITIP) and regional transportation planning agencies' Regional Transportation Improvement Program (RTIP). STIP funding is a mix of state, federal, and local taxes and fees. Bicycle and pedestrian projects may be programmed under ITIP and RTIP.

More information: [www.catc.ca.gov/programs/stip.htm](http://www.catc.ca.gov/programs/stip.htm)

### **CALTRANS PLANNING GRANTS**

Caltrans also administers the Transportation Planning Grant Program that funds projects to improve mobility and lead to the planning, programming, and implementation of transportation improvement projects. Most recently, Caltrans awarded \$10.0 million in grant funding to 70 applicants, in two sub-categories: Environmental Justice grants and Community Based Transportation Plan grants.

More information: [www.dot.ca.gov/hq/tpp/grants.html](http://www.dot.ca.gov/hq/tpp/grants.html)

### **ENVIRONMENTAL JUSTICE GRANT PROGRAM**

The Environmental Justice (EJ) Grant Program promotes the involvement of low-income, minority communities, and Native American tribal governments in the planning for transportation projects. EJ grants have a clear focus on transportation and community development issues to prevent or mitigate disproportionate, negative impacts while improving mobility, access, safety, and opportunities for affordable housing and economic development. Grants are available to cities, counties, transit districts, and tribal governments.

More information: [www.dot.ca.gov/hq/tpp/offices/ocp/completed\\_projects\\_ej.html](http://www.dot.ca.gov/hq/tpp/offices/ocp/completed_projects_ej.html)



## **COMMUNITY BASED TRANSPORTATION PLANNING GRANT PROGRAM**

The Community Based Transportation Planning (CBTP) grant program promotes transportation and land use planning projects that encourage community involvement and partnership. These grants include community and key stakeholder input, collaboration, and consensus building through an active public engagement process. CBTP grants support livable and sustainable community concepts with a transportation or mobility objective to promote community identity and quality of life.

More information: [www.dot.ca.gov/hq/tp/tp/offices/ocp/completed\\_projects\\_cbtp.html](http://www.dot.ca.gov/hq/tp/tp/offices/ocp/completed_projects_cbtp.html)

## **PETROLEUM VIOLATION ESCROW ACCOUNT**

In the late 1970s, a series of federal court decisions against selected United States oil companies ordered refunds to the states for price overcharges on crude oil and refined petroleum products during a period of price control regulations. To qualify for Petroleum Violation Escrow Account (PVEA) funding, a project must save or reduce energy and provide a direct public benefit within a reasonable time frame. In California, Caltrans Division of Local Assistance administers funds for transportation-related PVEA projects. PVEA funds do not require a match and can be used as match for additional federal funds.

More information: [www.dot.ca.gov/hq/LocalPrograms/lam/prog\\_g/g22state.pdf](http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g22state.pdf)

## **OFFICE OF TRAFFIC SAFETY (OTS) GRANTS**

The Office of Traffic Safety (OTS) distributes grants statewide to establish new traffic safety programs or fund ongoing safety programs. OTS grants are supported by federal funding under the National Highway Safety Act and MAP-21. Grants are used to establish new traffic safety programs, expand ongoing programs or address deficiencies in current programs. Bicycle safety is included in the list of traffic safety priority areas. Eligible grantees are governmental agencies, state colleges, state universities, local town and county government agencies, school districts, fire departments, and public emergency services providers. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction. Grants are awarded on a competitive basis, and priority is given to agencies with the greatest need. Evaluation criteria to assess need include potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants. The California application deadline is January of each year. There is no maximum cap to the amount requested; however, all items in the proposal must be justified to meet the objectives of the proposal.

More information: [www.ots.ca.gov/Grants/Apply/default.asp](http://www.ots.ca.gov/Grants/Apply/default.asp)

## **ENVIRONMENTAL ENHANCEMENT AND MITIGATION FUNDS**

The Environmental Enhancement Mitigation Program (EEMP) provides grant opportunities for projects that indirectly mitigate environmental impacts of new transportation facilities. Projects should fall into one of the following three categories: highway landscaping and urban forestry, resource lands projects, or roadside recreation facilities. Funds are available for land acquisition and construction. The local Caltrans district must support the project. The average award amount is \$250,000.

More information: [www.dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm](http://www.dot.ca.gov/hq/LocalPrograms/EEM/homepage.htm)

## LAND AND WATER CONSERVATION FUND

The Land and Water Conservation Fund is a federal program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. The fund is administered by the California State Parks Department. Cities, counties, and districts authorized to acquire and develop park and recreation space are eligible for grant funding. While non-profits are ineligible, they are allowed to apply in partnerships with eligible agencies. Applicants must fund the project entirely and will be reimbursed for half of the cost. Up to \$2.0 million was available in California in the 2012 round of grant funding.

More Information: [www.parks.ca.gov/?Page\\_id=21360](http://www.parks.ca.gov/?Page_id=21360)

## CALIFORNIA STRATEGIC GROWTH COUNCIL

The Strategic Growth Council is a state agency that manages the Sustainable Communities Planning Grant and Incentives Program, as well as the Affordable Housing and Sustainable Communities (AHSC) program. The first program provides grants for development and implementation of plans that lead to significant reductions in greenhouse gas emissions, improve air and water quality, promote public health, promote equity, increase housing affordability, increase infill and compact development, revitalize urban and community centers, protect natural resources and agricultural lands, reduce automobile usage and fuel consumption, improve infrastructure systems, promote water conservation, promote energy efficiency and conservation, and strengthen the economy. The second program provides funding for land use, housing, transportation, and land preservation projects to support infill and compact development that reduces greenhouse gas emissions.

More information: [sgc.ca.gov/m\\_grants.php](http://sgc.ca.gov/m_grants.php)

## REGIONAL & LOCAL SOURCES

### CLEAN AIR FUND (AB 434/2766 - VEHICLE REGISTRATION FEE SURCHARGE)

Administered by SCAQMD. Local jurisdictions and transit agencies can apply. Funds can be used for projects that encourage biking, walking, and/or use of public transit. For bicycle-related projects, eligible uses include: designing, developing and/or installing bikeways or establishing new bicycle corridors; making bicycle facility enhancements/improvements by installing bicycle lockers, bus bicycle racks; providing assistance with bicycle loan programs (motorized and standard) for police officers, community members and the general public. Matching requirement: 10-15 percent.

More information at: [www.aqmd.gov/home/programs/local-government/local-government-detail?title=ab2766-motor-vehicle-subvention-program](http://www.aqmd.gov/home/programs/local-government/local-government-detail?title=ab2766-motor-vehicle-subvention-program)

### MEASURE R SALES TAX REVENUE LOCAL RETURN

Fifteen percent of the Measure R county sales tax is designated for use by local cities and the County of Los Angeles for transportation purposes, including bicycle-related uses such as infrastructure, signage, bicycle sharing, and education efforts.



Guidelines for the Local Return program can be found at: [ebb.metro.net/projects\\_studies/local\\_return/images/measure-r-Local-Return-Guidelines.pdf](http://ebb.metro.net/projects_studies/local_return/images/measure-r-Local-Return-Guidelines.pdf)

### **SCAG SUSTAINABILITY PROGRAM**

SCAG provides financial and technical assistance to member agencies for integrated land use and transportation planning. The 2013-2014 Sustainability Program emphasized:

- Projects that make measurable progress toward implementation
- Assistance to communities for updating General Plans
- Inter-jurisdictional and multi-stakeholder partnerships
- Outreach and education to the community and stakeholders on sustainable development
- Past Compass Blueprint partner jurisdictions may propose work that will move their plans closer to implementation.

More information at: [sustain.scag.ca.gov/Pages/default.aspx](http://sustain.scag.ca.gov/Pages/default.aspx)

### **BICYCLE CORRIDOR IMPROVEMENT PROGRAM CALL FOR PROJECTS (BCIP)**

The Bicycle Corridor Improvement Program (BCIP) is funded using the federal Congestion Mitigation and Air Quality Improvement Program (CMAQ) authorized under Moving Ahead for Progress in the 21st Century (MAP-21) and the Fixing America's Surface Transportation (FAST). The CMAQ program provides funding through annual appropriations to Orange County to be used for transportation-related projects that reduce congestion and improve air quality. The Orange County Transportation Authority (OCTA) is responsible for selecting regionally significant projects for Orange County and working with the California Department of Transportation (Caltrans) in administering selected projects.

The goals of the BCIP are to:

- Increase the number of biking and walking trips
- Provide regional linkages to key destinations
- Close bikeways corridor gaps
- Promote mobility options by increasing safety
- Implement projects with community support
- Improve air quality across Orange County

More information at: [www.octa.net/Projects-and-Programs/Plans-and-Studies/Funding-Programs/Call-for-Projects/BCIP-Call-For-Projects/](http://www.octa.net/Projects-and-Programs/Plans-and-Studies/Funding-Programs/Call-for-Projects/BCIP-Call-For-Projects/)

## **ARTERIAL PAVEMENT MANAGEMENT PROGRAM (APM)**

The Arterial Pavement Management (APM) Program has been developed to address pavement maintenance for the 35 cities in Orange County. Eligible projects are pavement preservation/preventative maintenance, rehabilitation, and reconstruction. These funds can be used for bike lanes (striping and signage only, must be on an adopted plan) and construction or modification of curb ramps within the limits of the project as necessary to satisfy ADA requirements. Sidewalks mandated for ADA improvements can potentially be partially funded as well.

More information here: [www.octa.net/Projects-and-Programs/Plans-and-Studies/Funding-Programs/Call-for-Projects/APM-Call-For-Projects/](http://www.octa.net/Projects-and-Programs/Plans-and-Studies/Funding-Programs/Call-for-Projects/APM-Call-For-Projects/)

## **DEVELOPER IMPACT FEES**

As a condition for development approval, municipalities can require developers to provide specific infrastructure improvements, which can include bikeway projects. These projects have commonly provided Class II bicycle facilities for portions of on-street, previously-planned routes, and sidewalks. They can also be used to provide bicycle parking, shower and locker facilities, signal modifications, transit stop modifications, and stormwater modifications. The type of facility that should be required to be built by developers should reflect the greatest need for the particular project and its local area. Legal challenges to these types of fees have resulted in the requirement to illustrate a clear nexus between the particular project and the mandated improvement and cost.

## **ROADWAY CONSTRUCTION, REPAIR, AND UPGRADE**

Planned resurfacing and road diets are one means of combining motor vehicle, transit, bicycle, and pedestrian projects into one, multimodal construction project. To ensure that planned roadway construction projects considers ways to combine multiple multimodal projects, it is important adopt a complete streets policy that includes a review all facility types during the each phase of the project. This policy and review process should follow California's 2008 Complete Streets Act and Caltrans' 2014 Deputy Directive 64-R2 which require that the needs of all roadway users be considered during "all phases of state highway projects, from planning to construction to maintenance and repair."

More information: [www.dot.ca.gov/hq/tpp/offices/ocp/complete\\_streets.html](http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html)

## **UTILITY PROJECTS**

By monitoring the capital improvement plans of local utility companies, it may be possible to coordinate upcoming utility projects with the installation of motor vehicle, transit, bicycle, and pedestrian infrastructure within the same area or corridor. Often times, utility companies will mobilize the same type of forces required to construct transportation projects, resulting in the potential for a significant cost savings. These types of joint projects require a great deal of coordination, a careful delineation of scope items and some type of agreement or memorandum of understanding, which may need to be approved by multiple governing bodies.



## **CABLE INSTALLATION PROJECTS**

Cable television and telephone companies sometimes need new cable routes within public right-of-way. Recently, this has most commonly occurred during expansion of fiber optic networks. Since these projects require a significant amount of advance planning and disruption of travel lanes, it may be possible to request reimbursement for affected bicycle and pedestrian facilities to mitigate construction impacts. In cases where cable routes cross undeveloped areas, it may be possible to provide for new transportation facilities following completion of the cable trenching.

## **PRIVATE SOURCES**

### **PEOPLEFORBIKES COMMUNITY GRANT PROGRAM**

PeopleForBikes is a coalition of bicycle suppliers and retailers that has awarded \$2.9 million in community grants and leveraged an additional \$670 million since its inception in 1999. The community grant program funds bicycle paths and rail trails, as well as mountain bicycle trails, bicycle parks, BMX facilities, and large-scale bicycle advocacy initiatives. Spring 2015 grant awards ranged between \$800 and \$10,000 and contributed to greenway and other infrastructure projects, as well as bicycle parking and bicycle-related programming.

More information: [www.peopleforbikes.org/pages/community-grants](http://www.peopleforbikes.org/pages/community-grants)

### **THE ROBERT WOOD JOHNSON FOUNDATION**

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972, and today, it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- To assure that all Americans have access to basic health care at a reasonable cost
- To improve care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

More information: [www.rwjf.org/applications/](http://www.rwjf.org/applications/)

### **THE WAL-MART FOUNDATION**

The Wal-Mart Foundation offers a Local, State, and National Giving Program. The Local Giving Program awards grants of \$250 to \$5,000 through local Wal-Mart and Sam's Club Stores. Application opportunities are announced annually in February with a final deadline for applications in December. The State Giving Program provides grants of \$25,000 to \$250,000 to 501c3 nonprofits working within one of five focus areas: Hunger Relief & Nutrition, Education, Environmental Sustainability, Women's Economic Empowerment, or Workforce Development. The program has two application cycles per year: January through March and June through August. The Wal-Mart Foundation's National Giving Program awards grants of \$250,000 and more, but does not accept unsolicited applications.

More information: <http://foundation.walmart.com/apply-for-grants>

### **THE KODAK AMERICAN GREENWAYS PROGRAM**

The Conservation Fund's American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design, and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and building trails. Grants cannot be used for academic research, institutional support, lobbying, or political activities.

More information: [www.conservationfund.org](http://www.conservationfund.org)

### **COMMUNITY ACTION FOR A RENEWED ENVIRONMENT (CARE)**

CARE is a competitive grant program that offers an innovative way for a community to organize and take action to reduce toxic pollution in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them. By providing financial and technical assistance, EPA helps CARE communities get on the path to a renewed environment. Transportation and "smart-growth" types of projects are eligible. Grants range between \$90,000 and \$275,000.

More information: [www.epa.gov/care/](http://www.epa.gov/care/)

### **CORPORATE DONATIONS**

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Employers recognize that creating places to bicycle and walk is one way to build community and attract a quality work force. Bicycling and outdoor recreation businesses often support local projects and programs. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented. Such donations can improve capital budgets and/or projects.

### **THE KNIGHT CITIES CHALLENGE**

From a pool of \$5 million, The Knights Cities Challenge looks to award grant at the city, neighborhood, and block level that attract and keep talented employees in a city, ideas that attempt to improve economic prospects for individuals, and ideas that encourage civic involvement. The grant program is funded by the Knight Foundation and the funds are distributed over an 18 month period.

### **PLAN4HEALTH COALITIONS**

The American Planning Association (APA) and the American Public Health Association (APHA) received funding from the Centers for Disease Control and Prevention (CDC) to build local capacity in addressing population health goals and promoting the inclusion of health in non-traditional sectors such as transportation. Each proposal must address inactivity, unhealthy diets, and/or health equity. Awards will average \$150,000, and no more than two awards will be granted in a single state.



## **OTHER SOURCES**

Volunteer programs may be developed to substantially reduce the cost of implementing some routes, particularly shared-use paths. For example, a local college design class may use such a shared-use route as a student project, working with a local landscape architectural or engineering firm. Work parties could be formed to help clear the right of way for the route. A local construction company may donate or discount services beyond what the volunteers can do. And a challenge grant program with local businesses may be a good source of local funding, in which the businesses (or residents) can “adopt” a route or segment of one to help construct and maintain it.

## Appendix D - Live, Work, Play Analysis

### DEMAND ANALYSIS

Demand analysis helps define citywide variation in bicycle and pedestrian demand. The analysis serves as the basis for understanding and visualizing suitability and is an integral part of the Garden Grove planning process.

#### DEMAND ANALYSIS PROVIDES THE FOLLOWING BENEFITS

- Quantify factors that impact pedestrian activity, objectively identifying areas where pedestrians and bicyclists are most likely to want to be
- Provide for a geographically informed project list
- Guide community leaders and the public on one aspect of the project prioritization process

#### *Background and Overview of PSI*

Demand analysis has its basis in a technique devised by prominent landscape architect, Ian McHarg. His influential book *Design With Nature* (1969) accentuated the importance of considering the natural environment when introducing new development and infrastructure. McHarg was an early pioneer of GIS analysis and established innovative techniques for route planning using photographic map overlays. McHarg asserted that in order to find the most suitable route, one must determine the least social cost, meaning factors that would impact social values would have to be considered. Once identified, each factor was mapped on individual transparent sheets using three different color shades to represent the level of social cost. The sheets were overlaid into a single stack revealing the most suitable route location. McHarg's photographic map overlay analysis paved the way for the foundation of modern day GIS models.

Models serve as an effective means to understand how factors in a complex system interact by providing a simplified version of the system for study. However, by definition, models are representations of reality and are constrained by the quality of available data and the complexity of the system under consideration.

PSI provides a general understanding of expected activity in the pedestrian environment by combining categories representative of where **people live, work, play, access public transit and go to school** into a composite sketch of citywide demand.

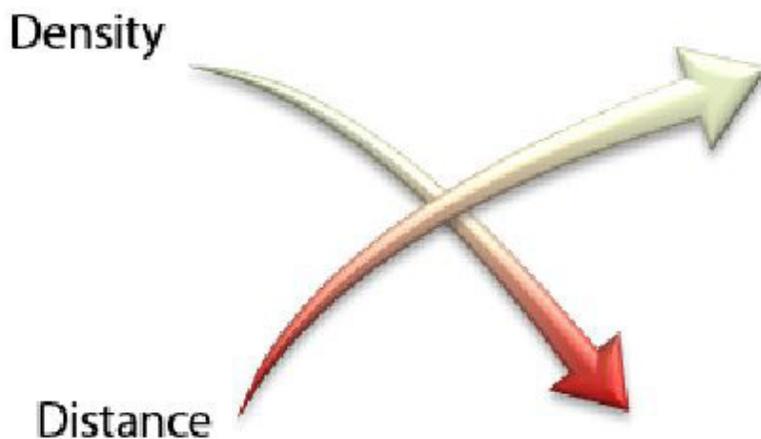
The demand analysis relies on spatial consistency in order to generate logical distance and density patterns. It is for this reason that all scores are aggregated to a central location at the census block level, the census block corner, referred to as "PSI Point". Census block corners closely represent street corners, where foot traffic is prevalent. This method is based on the "Low-Stress Bicycling and Network Connectivity" report (Mineta Transportation Institute, May 2012). The report discusses the benefits of using a smaller geographic setting for pedestrian and bicycle demand analyses rather than using more traditional traffic model features such as traffic analysis zones (TAZs). Due to the low speed of pedestrian movement, a much smaller geographic unit of analysis is needed.



## UTILIZATION OF PSI – DEMAND ANALYSIS

### DEMAND ANALYSIS SCORING METHOD

Generally speaking, the scoring method is a function of density and proximity. Scores reflect relative impact on biking and walking to and from census block corners that are located adjacent to the features used in the analysis. As such, scores are represented as density patterns of census block corners within a quarter mile of each other. Subsequently, the scores are effectively a result of two complimenting forces: distance decay – the effect of distance on spatial interactions yields lower scores for features over quarter mile away from other features; and spatial density – the effect of closely clustered features yields higher scores. Scores will increase in high feature density areas and if those features are close together. Scores will decrease in low feature density areas and if features are further apart. In essence, the score is the intersection of distance and density.



Categories are scored on a scale of one to five based on density and proximity and then assigned weighted multipliers to reflect the relative influence categories have on bicycling and pedestrian activity. The feature weighting method is discussed in the following section.

Because empirical work has shown that some demographic and land use characteristics are more correlated with bicycling

and pedestrian activity than others, the features are weighted for the analysis. For Garden Grove, feature weights were reviewed and adjusted based upon local knowledge. Feature weights are used in calculating both the composite demand and supply scores.

The purpose of the demand analysis is to identify areas where pedestrians are likely to be to justify improvement projects, if warranted by the relative quality of the existing conditions. The figures below illustrate and describe how the weighted features contribute to the variation in overall demand.

### DEMAND - WHERE PEOPLE LIVE

Where people live includes 2010 census block level population density information. These locations represent potential trip origin locations. More trips can be made in areas with higher population density if conditions are right.

This category is a function of the number of residents per PSI Point within a 1/4 mile of each other. As for all maps, the areas shaded more deeply in blue represent higher demand areas relative to other colors on the ramp.

### **DEMAND - WHERE PEOPLE WORK**

Where people work mainly represents trip ends, for people working in Garden Grove regardless of residency. Its basis is 2010 total employment by census block. Depending on the type of job, this category can represent both trip attractors (i.e., retail stores or cafes) and trip generators (i.e., office parks and office buildings) in terms of base employment population. It is therefore also used in the where people play category by overlaying with specific job types, such as retail.

This category accounts for the number of employees per PSI Point within a quarter mile of each other.

### **DEMAND - WHERE PEOPLE PLAY AND SHOP**

Where people play is represented by parks and trails. Though not exhaustive, these locations provide a clear picture of expected recreation activity. Retail employment is used as a proxy for the activity likely to arise from shopping.

This category accounts for the number of retail employees, parks and trails per PSI Point within a quarter mile of each other.

### **DEMAND - WHERE PEOPLE ACCESS TRANSIT**

Where people access transit is represented by stops along expected bus lines in Garden Grove. This category accounts for the number of bus stops within a quarter mile of each other.

### **DEMAND - WHERE PEOPLE LEARN**

Where people learn is an important category in the city due to the vulnerability of school aged children. This category accounts for the number of schools within a quarter mile of each other.

### **DEMAND - COMPOSITE MODEL**

After independently processing the features, the composite model is created and grouped into four demand classes using breaks in the data values. Areas that yielded highest demand include the confluence of high employment, high bus ridership, retail land uses, Downtown, and multi-family housing. Areas largely dominated by single-family homes, in spite of representing potential trip generators, represent the lowest demand areas. Moderate demand is seen between high demand areas, representing movement between destinations in these areas.

#### *Findings:*

- The greatest demand exists in Downtown Garden Grove; this area extends further south toward Westminster Avenue and further east toward Harbor Boulevard.
- Additional areas of demand are found near Garden Grove Boulevard and Knott Street, Knott Street and Orangewood Avenue, and on the east edge of the city



# DEMAND ANALYSIS INPUT MAPS

Figure D-1: Where People Live

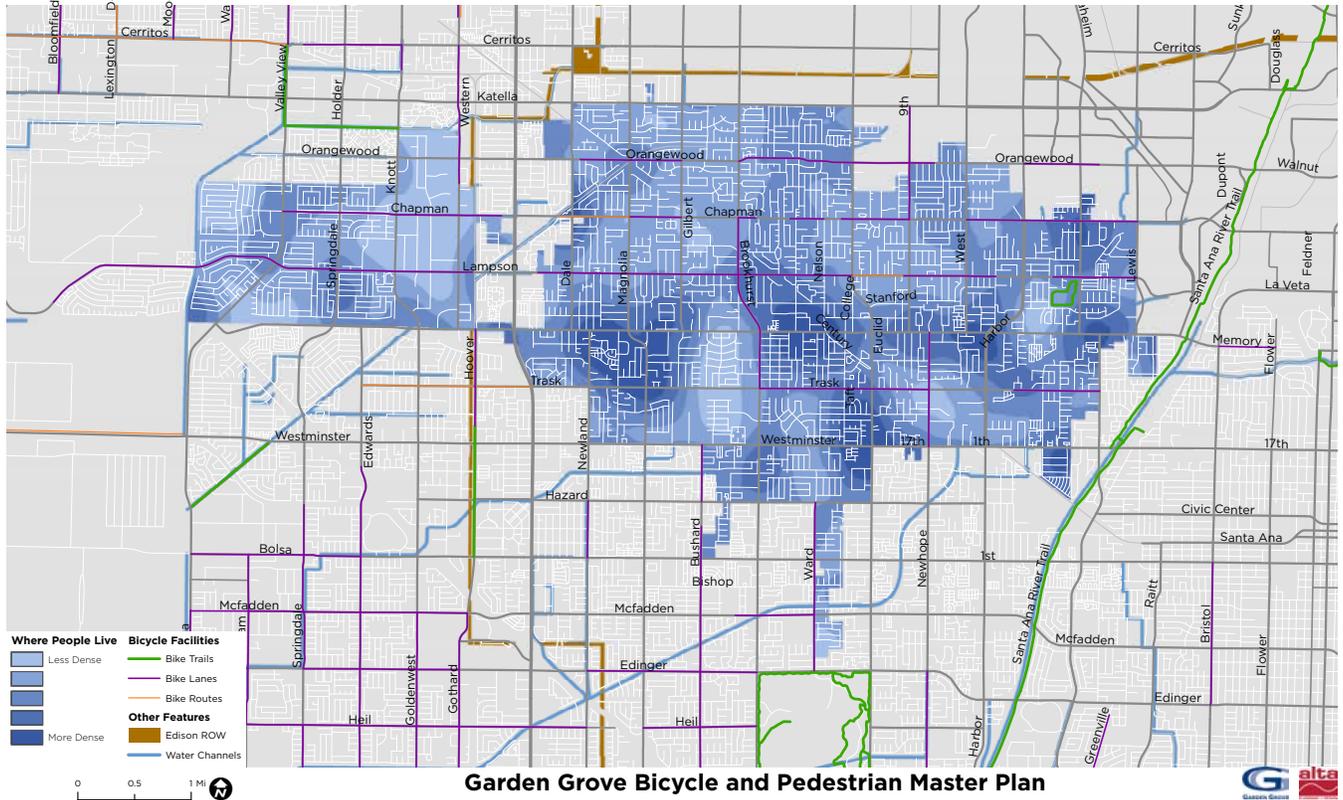


Figure D-2: Where People Work

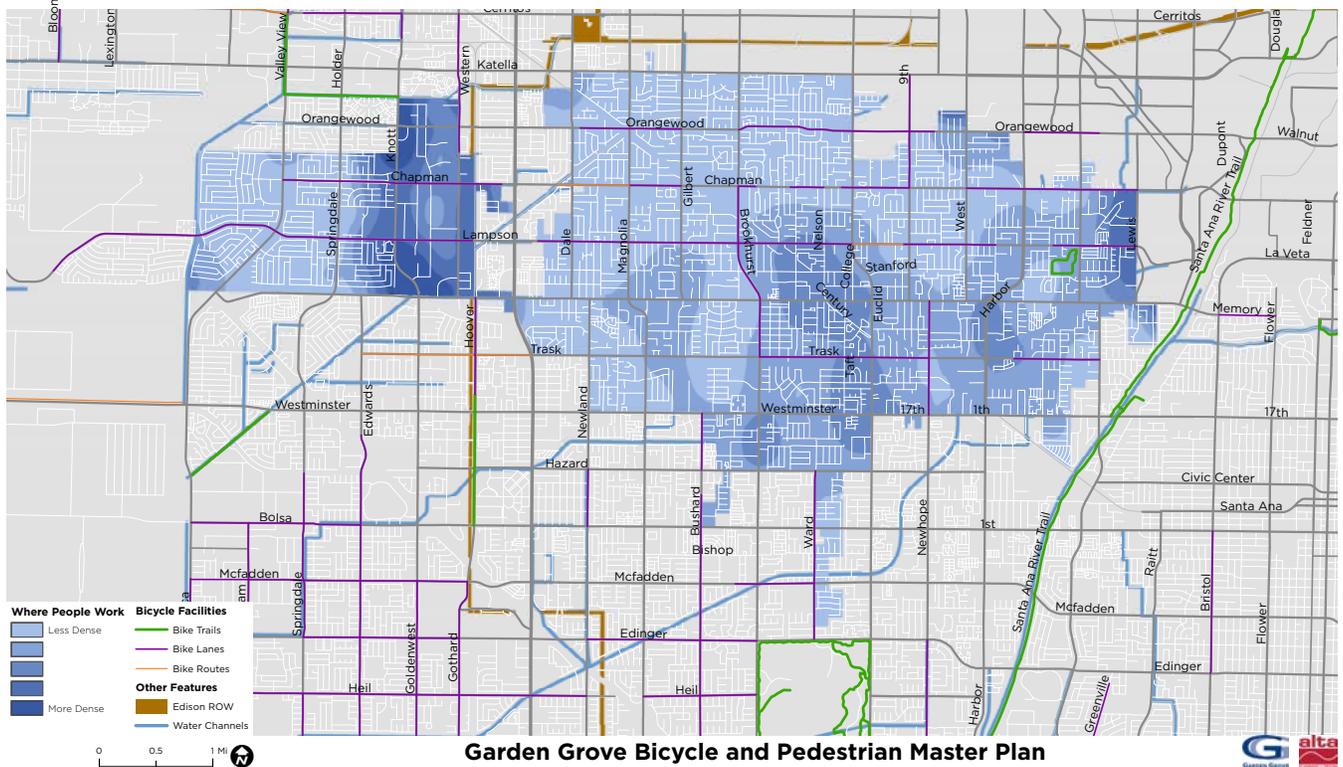


Figure D-3: Where People go to School

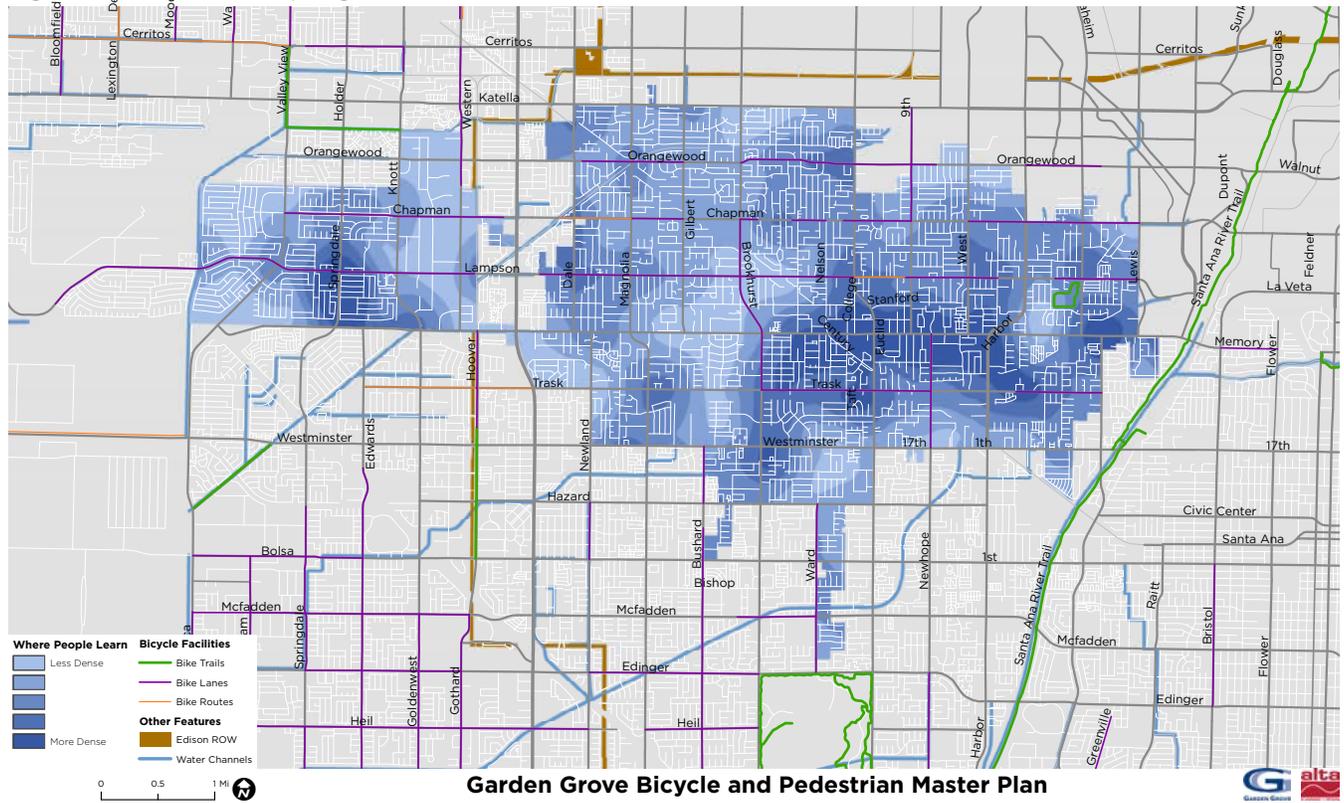


Figure D-4: Where People Access Transit

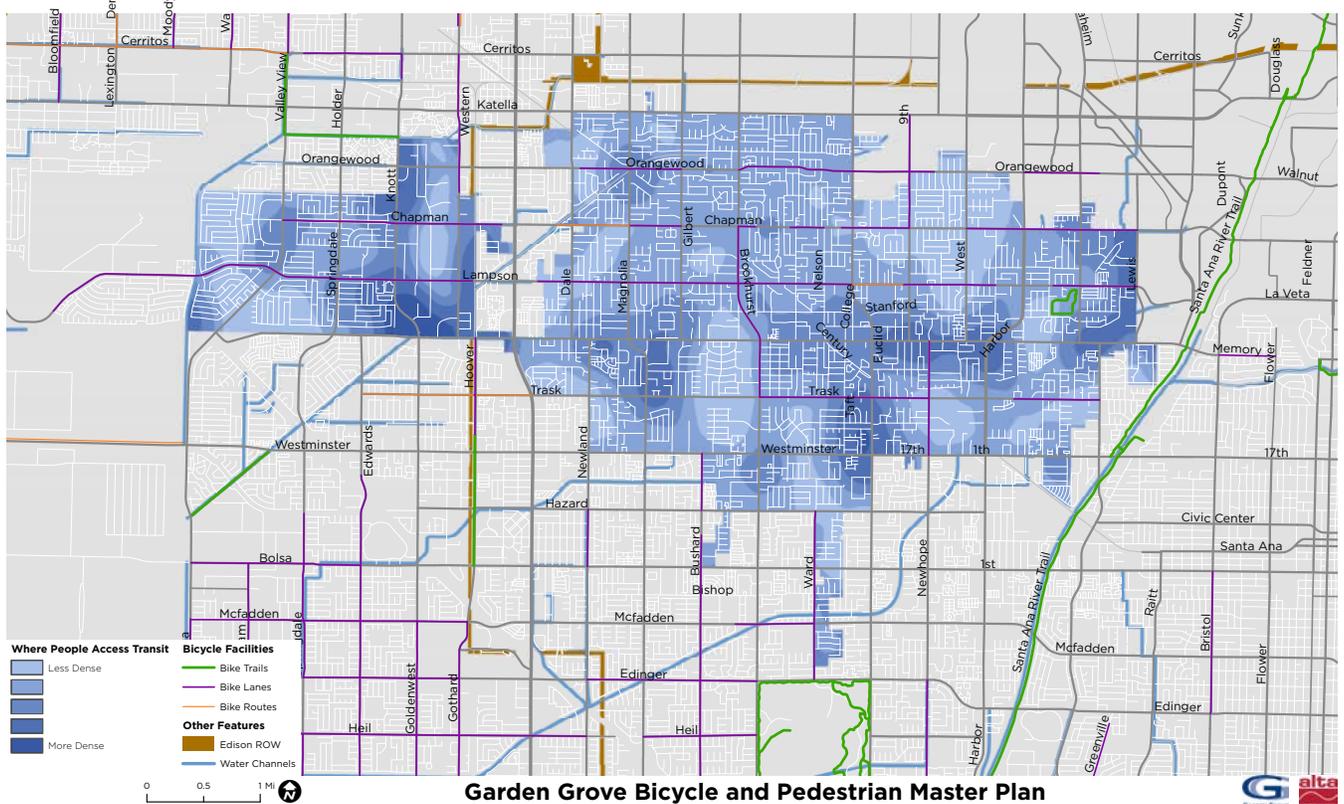




Figure D-5: Where People Play

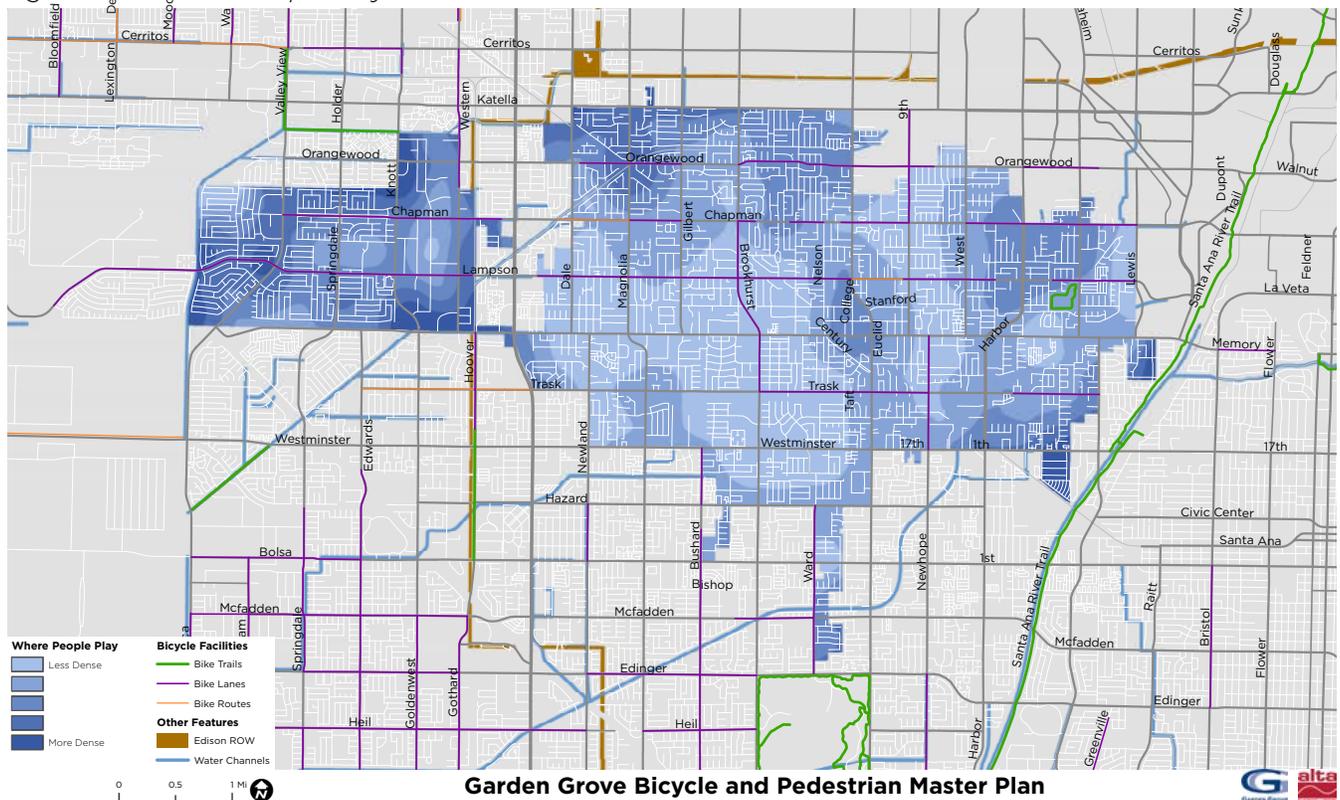
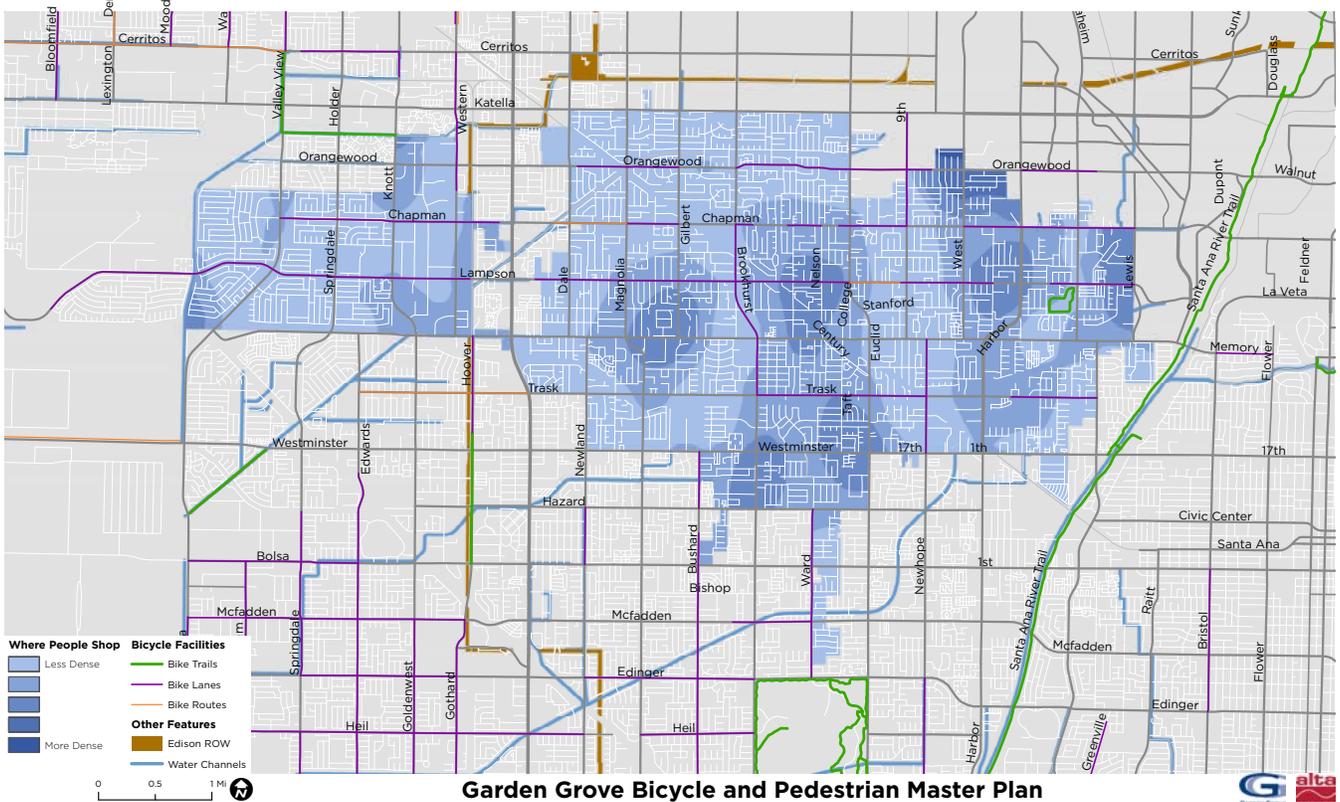


Figure D-6: Where People Shop



## EQUITY ANALYSIS

This plan develops a connected bicycle and pedestrian network that serves all areas of Garden Grove, including areas that have a high density of historically underserved populations and relatively low levels of bicycle facilities. An equity analysis examined the existing distribution of bicycle facilities compared to the distribution of these populations.

For purposes of analysis, the following socio-economic indicators define underserved populations, as shown on Maps D-7 to D-10:

- Percentage of population that are people of color
- Percentage of households below 200% of poverty level (defined by the U.S. Census Bureau)
- Percentage of households within the census tract with no automobile available for daily use
- Population of people under 18 years of age
- Population of people over 64 years of age

The analysis used a threshold for each of the above indicators, so that those census tracts that had a greater value than the mean value for any given indicator was given a score of one. For example, if a census tract had an above average number of people of color and an above average number of people 65 years of age or older, the census tract was given a score of two. The high equity score has a maximum possible score of five and a low equity score has a minimum possible score of zero.

### *Findings:*

- The greatest location of need is in the area between Westminster and Trask and between Brockhurst and Euclid; this location was greater than the city average on all indicators
- The least need is in the area between Chapman and Katella west of College. This area scored lower than the city average on all indicators
- In general, the furthest east and west extents of the city have lower levels of need than those in the central area



# EQUITY ANALYSIS INPUT MAPS

Figure D-7: Percent of Population that are People of Color

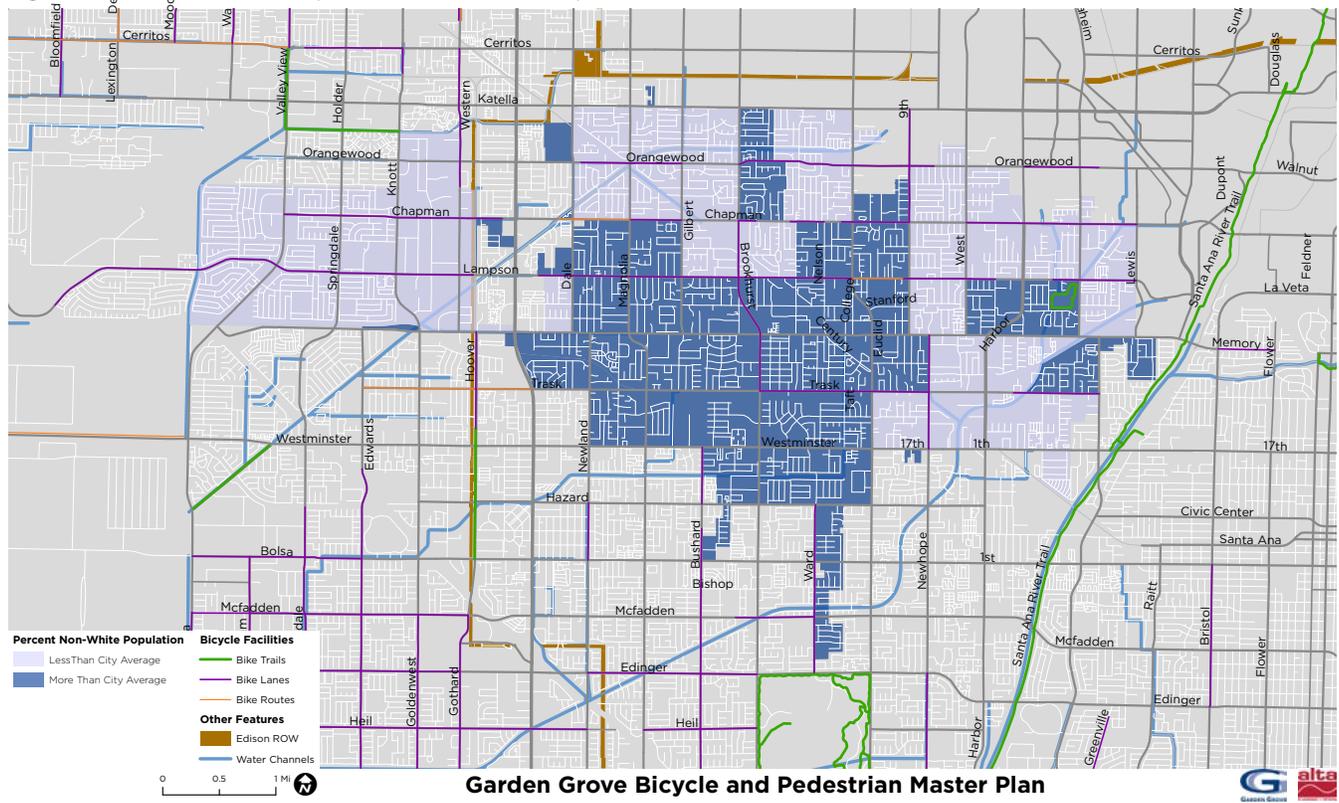


Figure D-8: Percent of Population Aged 18 and Under

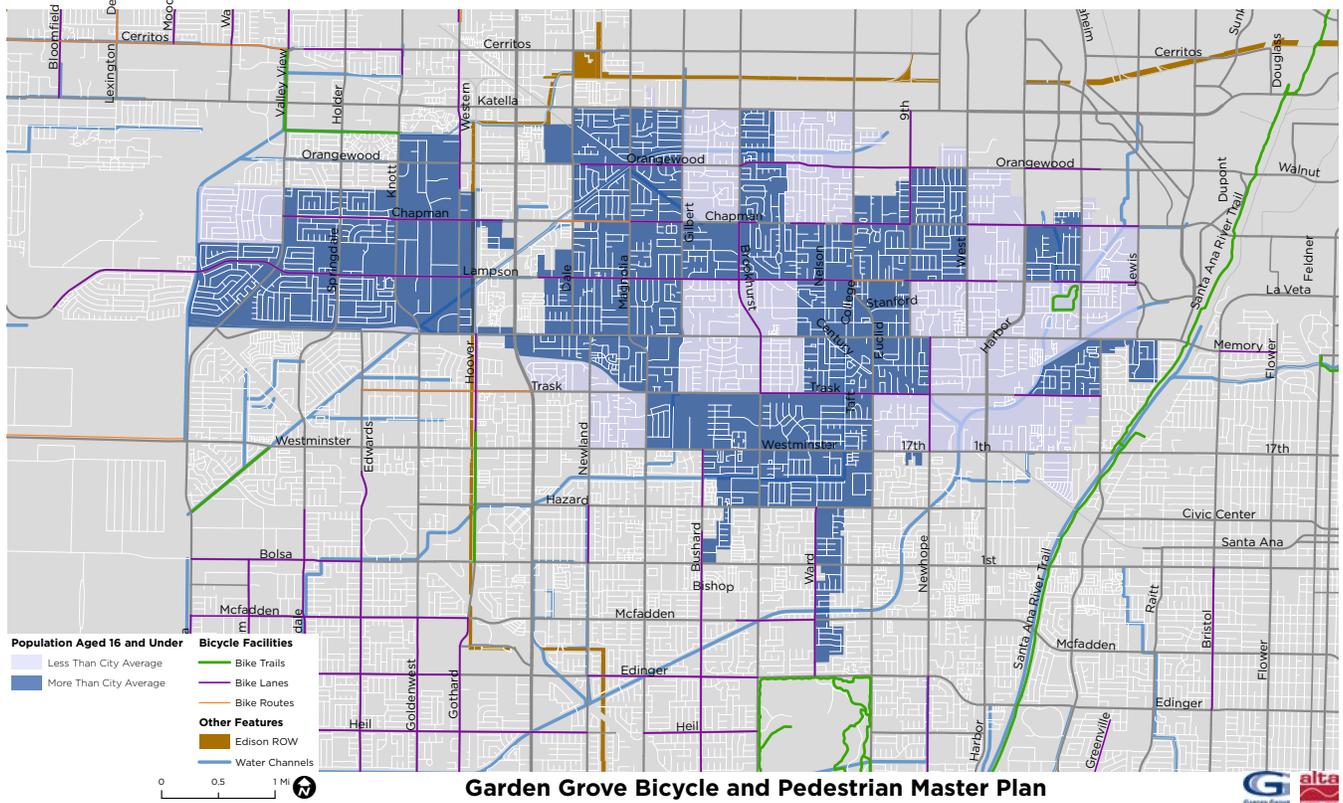


Figure D-9: Percent of Population Aged 64 and Older

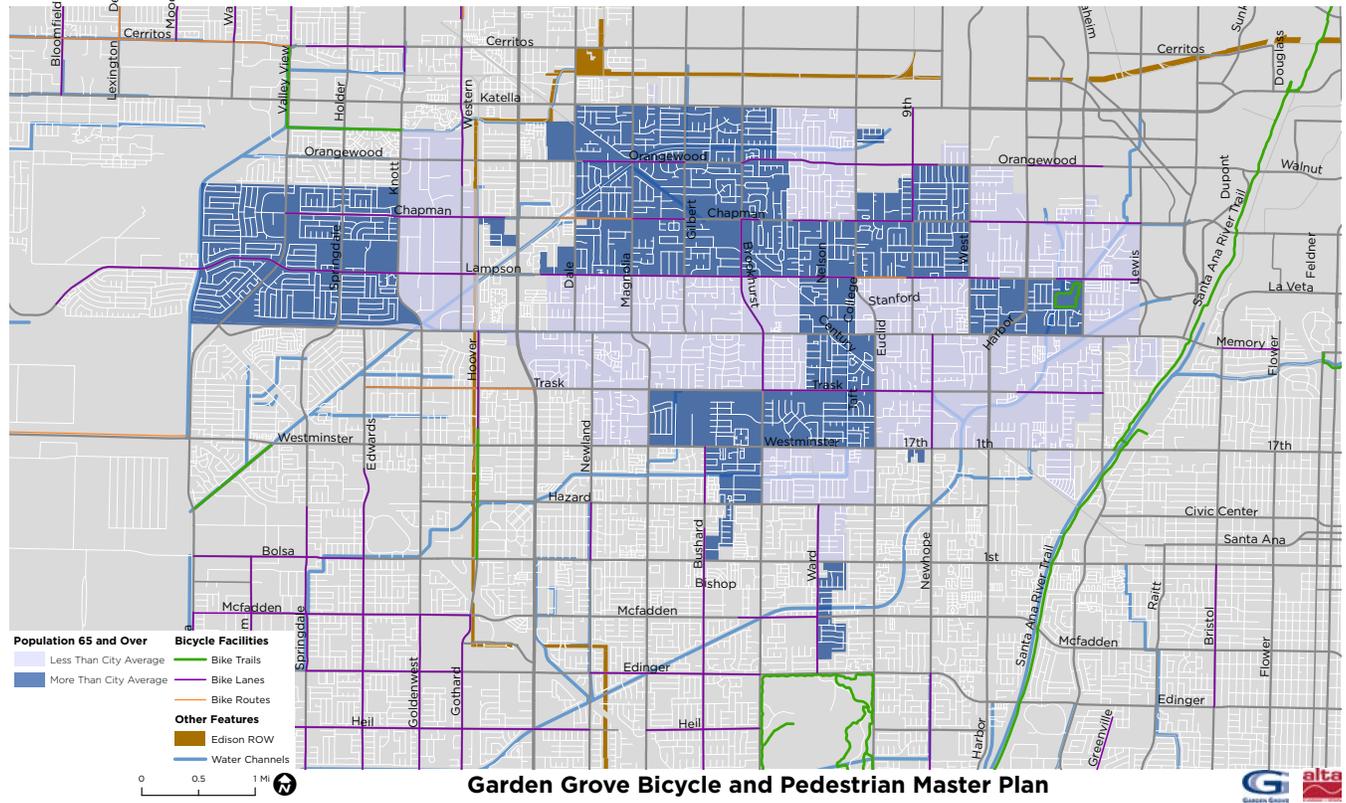


Figure D-10: Percent of Population Below Poverty Level

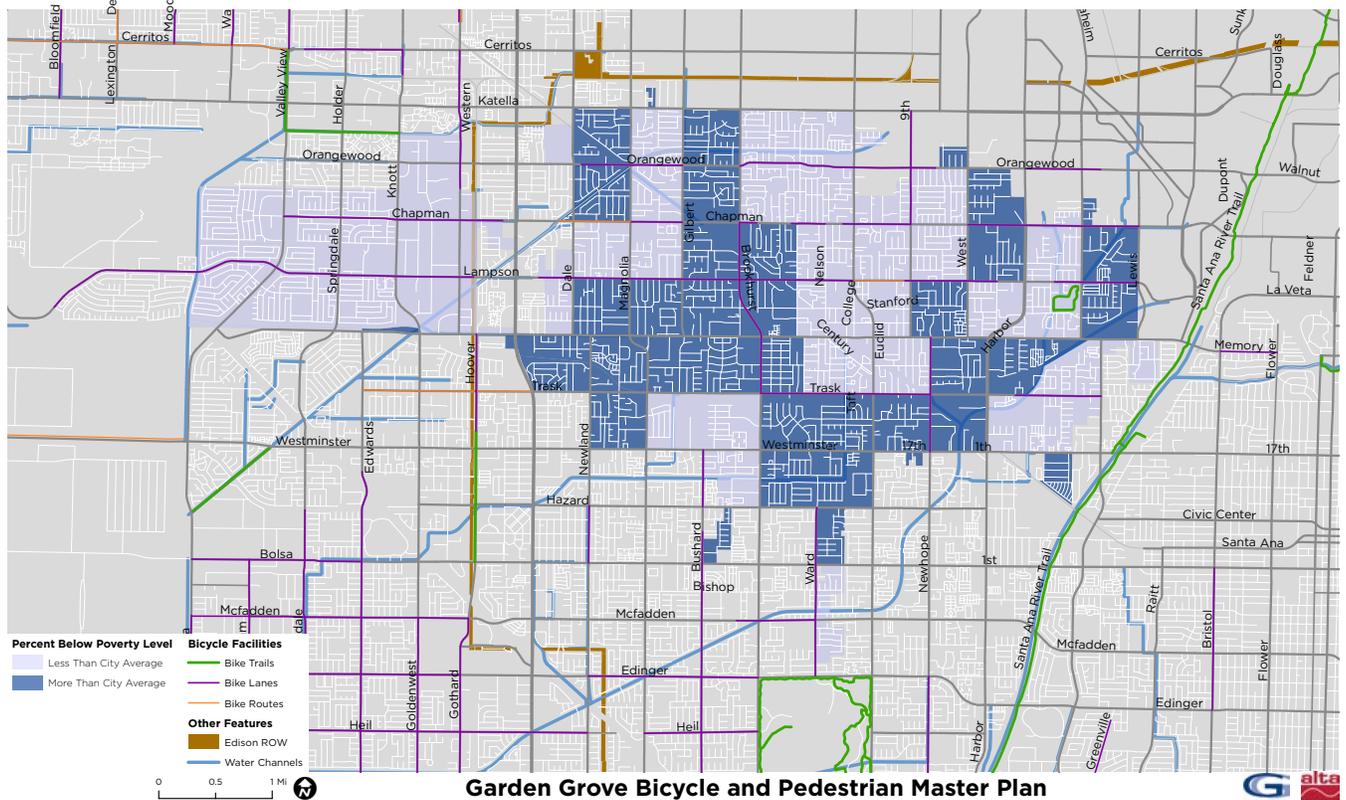
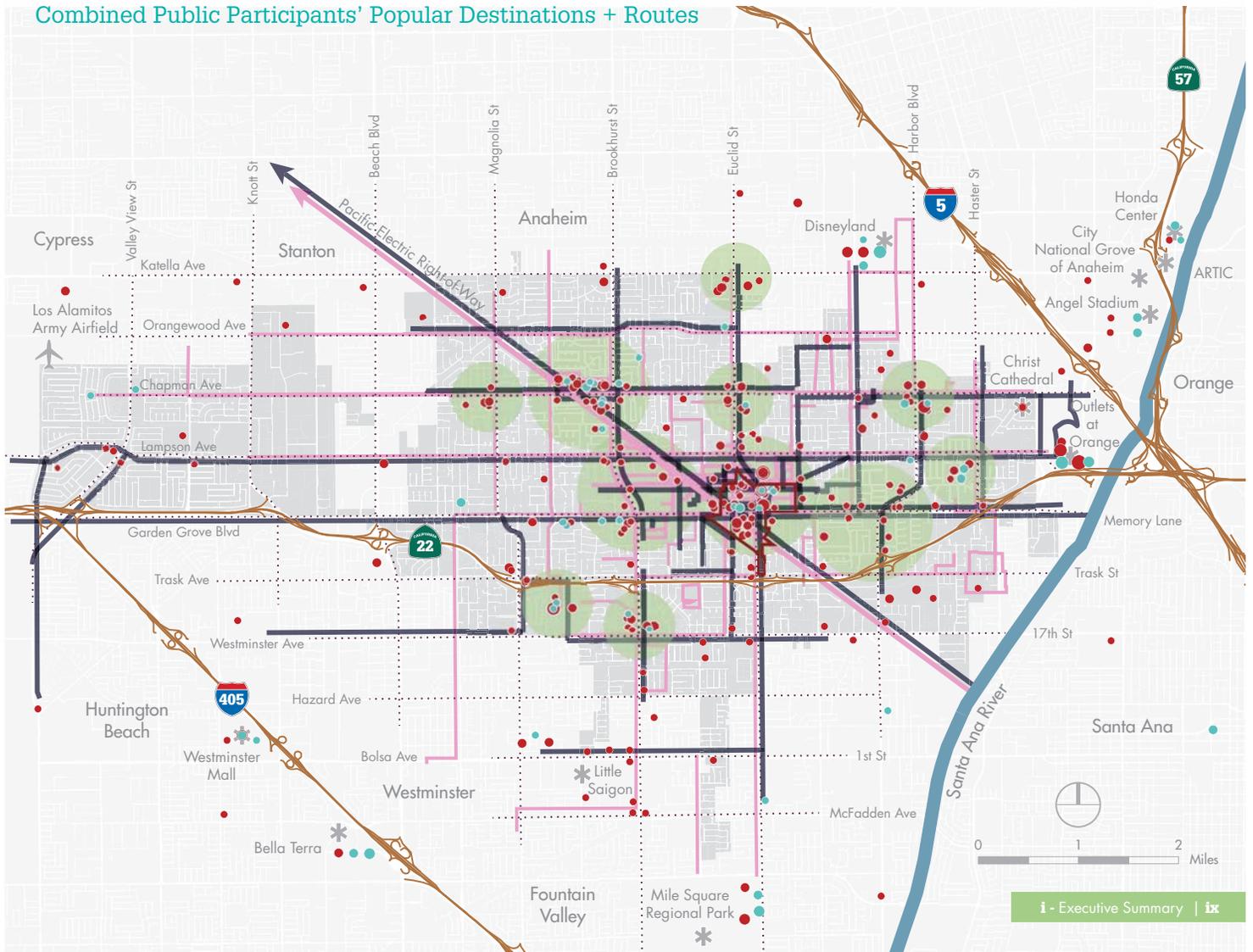




Figure D-11: LA 606 Studio Study Map - Public Participants' Popular Destinations and Routes

### Combined Public Participants' Popular Destinations + Routes



## Appendix E - Prioritization Results

The following tables (Table E-1 to Table E-7) include projects' prioritization scores and ranking number.

Table E-1. Prioritized Ranking for Proposed New Bikeway Facilities

ID	Rank	Location	Start	End	Bike Facility	Length (miles)	Total Score	Cost
1	1	Anaheim – Barber City Channel (North)	Euclid St	Chapman Ave	Class I	2.8	95	\$2,520,000
2	1	City of Garden Grove SO-1	Knott St	West City Limits	Class I	1.3	95	\$1,170,000
3	1	Pacific Electric Right of Way 1	Nelson St	Dale St	Class I	2.8	95	\$2,520,000
4	2	Deodara Dr	Trask Ave	Westminster Ave	Class III Bicycle Route	0.5	90	\$15,000
5	2	Bolsa Grande HS Connector Path	Deodara Dr	Woodbury Ave	Class I	0.2	90	\$135,000
6	3	Pacific Electric Right of Way 2	Westminster Ave	Euclid St	Class I	1.4	87	\$1,260,000
7	3	Westminster Channel	Westminster Ave	Kerry St	Class I	1.3	87	\$1,170,000
8	3	Wintersburg Channel	Garden Grove Blvd	Westminster Ave	Class I	1.4	87	\$1,260,000
9	4	Dale St	PE ROW	Garden Grove Blvd	Class II	1.8	83	\$153,000
10	5	McFadden Ave	Ward St	City Limit	Class II	0.2	82	\$17,000
11	6	West Garden Grove Neighborhood Greenway	Chapman Ave	Knott St	Class III Neighborhood Greenway Blackmer St from Chapman to Cerulean Ave, Cerulean Ave from Blackmer to Topaz St, Stanford Ave from Topaz St to Knott Ave, Topaz St from Huntly Ave to Anthony Ave.	2.7	80	\$486,000
12	6	Chapman Ave	St. Mark St`	Valley View Ave	Class III Bicycle Route	0.3	80	\$9,000
13	6	Katella	Dale St	Euclid St	Class II	2.5	80	\$210,800
14	7	Union Pacific Railway	City limits	Garden Grove Blvd	Class I	0.7	77	\$630,000
15	8	Newland St	Garden Grove Blvd	Westminster Ave	Class II through 4 to 3 Road Rebalancing.	1.0	75	\$200,000
16	8	Brookhurst St	Trask Ave	Hazard Ave	Class II	1.0	75	\$85,000
17	8	Springdale St	North City Limits	Garden Grove Freeway	Class II	1.2	75	\$102,000
18	8	Trask Ave	Beach Blvd	Brookhurst St	Class II	2.0	75	\$170,000
19	8	Trask Ave	Newhope St	Fairview St	Class II	1.5	75	\$127,500
20	9	Chapman Ave	Brookhurst St	Euclid St	Class II	1.1	72	\$93,500
21	9	Orangewood Ave	Gilbert St	Brookhurst St	Class II	0.5	72	\$42,500
22	10	Nelson St	Chapman Ave	Stanford Ave	Class III Bicycle Route	0.7	67	\$21,000
23	10	Anaheim – Barber City Channel (South)	Union Pacific Railway	Garden Grove Blvd	Class I	2.8	67	\$2,520,000
24	11	9th Street	Chapman Ave	Garden Grove Blvd	Class III Bicycle Route	1.0	65	\$30,000
25	11	South Garden Grove Neighborhood Greenway	Erin St	Bushard St	Class III Neighborhood Greenway. Woodbury Ave from Erin to Brookhurst St, Traylor Way from Brookhurst to Bowen St, Bowen St from Traylor Way to Morningside Dr, Woodbury Rd from Bowen St to Taft St, Morningside Dr from Lake St to Hope St, Hope St from Morningside to 15th St, 15th St from Hope St to Brookhurst St, Brookhurst St from 15th St to Reading Ave, Reading Ave from Brookhurst St to Kerry St, Kerry St from Reading Ave to Oasis Ave, Oasis Ave from Kerry St to Bushard St.	4.0	65	\$720,000



*Prioritized Ranking for Proposed New Bikeway Facilities continued*

ID	Rank	Location	Start	End	Bike Facility	Length (miles)	Total Score	Cost
27	13	Chapman Ave	Dale St	Magnolia St	Class II	0.5	63	\$42,500
28	14	Orangewood Ave	Knott Ave	Western Ave	Class II	0.5	62	\$42,500
29	14	Chapman Ave	Gilbert St	Brookhurst St	Class II	0.5	62	\$42,500
30	14	Chapman Ave	9 <sup>th</sup> St	West St	Class II	0.5	62	\$42,500
31	15	Chapman Ave (EB)	Magnolia St	Loraleen St	Class II	0.3	60	\$21,250
32	16	Clinton – Palm Neighborhood Greenway	Harbor Blvd	Morningside Ave	Class III Neighborhood Greenway. Palm St from Harbor Blvd to Flagston Pl, Clinton St from Gloria St to Morningside Ave, Gloria St from Clinton St to Roxey Dr, School Dr from Roxey to Lilly St.	1.8	55	\$324,000
33	16	Nutwood – Palmwood Neighborhood Greenway	Katella Ave	Garden Grove Blvd	Class III Neighborhood Greenway Palmwood Dr from Katella Ave to Patricia Dr, Patricia Ave from Palmwood Dr to Faye Ave, Faye Ave from Patricia Dr to Stanley Ln, Stanley Ln from Faye to Nutwood, Nutwood St from Chapman Ave to Garden Grove Blvd.	3.8	55	\$684,000
34	18	Orangewood Ave	Harbor Blvd	Janette Ln	Class II	0.8	47	\$68,000
35	18	9th Street (NB)	Orangewood Ave	Chapman Ave	Class II	0.5	47	\$42,500
36	19	Paloma Ave	Newhope St	Euclid St	Class III Neighborhood Greenway	0.5	45	\$90,000
37	20	Lewis St	Garden Grove Blvd	Marty Ln	Class III Bicycle Route	0.4	35	\$10,500
38	21	Nina Pl	Garden Grove Blvd	PE ROW	Class III Neighborhood Greenway	0.4	27	\$72,000
39	22	Belfast Dr	Garden Grove Blvd	Garden Grove Blvd	Class III Bicycle Route	0.4	25	\$12,000
40	22	Donegal Dr	Belfast Dr	Trask Ave	Class III Neighborhood Greenway	0.4	25	\$72,000
41	23	9th-West Neighborhood Greenway	9th St	West St	College St from 9th St to George St, George St from College St to Dorado Ave, Dorado Ave from George St to Morgan Ln, Morgan Ln from Dorada Ave to West St. Neighborhood Greenway	1.2	20	\$216,000

Table E-2. Prioritized Ranking for Proposed Class I Bikeway Projects

Rank	Location	Start	End	Recommendation Notes	Length (miles)	Total Score
1	Anaheim – Barber City Channel (North)	Euclid St	Chapman Ave	Multi-use Path	2.8	95
1	City of Garden Grove SO-1	Knott St	West City Limits	Multi-use Path	1.3	95
1	Pacific Electric Right of Way 1	Nelson St	Dale St	Multi-use Path	2.8	95
2	Bolsa Grande HS Connector Path	Deodara Dr	Woodbury Ave	Multi-use Path	0.2	90
3	Pacific Electric Right of Way 2	Westminster Ave	Euclid St	Multi-use Path	1.4	87
3	Westminster Channel	Westminster Ave	Kerry St	Multi-use Path	1.3	87
3	Wintersburg Channel	Garden Grove Blvd	Westminster Ave	Multi-use Path	1.4	87
4	Union Pacific Railway	City limits	Garden Grove Blvd	Multi-use Path	0.7	77
5	Anaheim – Barber City Channel (South)	Union Pacific Railway	Garden Grove Blvd	Multi-use Path	2.8	67

Table E-3. Prioritized Ranking for Proposed Class II Bikeway Projects

Rank	Location	Start	End	Recommendation Notes	Length (miles)	Total Score
1	Dale St	PE ROW	Garden Grove Blvd	Stripe bike lane. Parking or lane removal may be needed.	1.8	83
2	McFadden Ave	Ward St	City Limit	Stripe bike lane.	0.2	82
3	Katella	Dale St	Euclid St	Stripe bike lane.	2.5	80
4	Newland St	Garden Grove Blvd	Westminster Ave	Stripe bike lane through 4 to 3 Road Rebalancing.	1.0	75
4	Brookhurst St	Trask Ave	Hazard Ave	Stripe bike lane. Parking or lane removal may be needed.	1.0	75
4	Springdale St	North City Limits	Garden Grove Freeway	Stripe bike lane. Parking or lane removal may be needed.	1.2	75
4	Trask Ave	Beach Blvd	Brookhurst St	Stripe bike lane. Parking or lane removal may be needed.	2.0	75
4	Trask Ave	Newhope St	Fairview St	Stripe bike lane. Parking or lane removal may be needed.	1.5	75
5	Orangewood Ave	Gilbert St	Brookhurst St	Stripe bike lane.	0.5	72
6	Western Ave	North City Limits	Garden Grove Blvd	Stripe bike lane. Parking or lane removal may be needed.	1.3	64
7	Orangewood Ave	Knott Ave	Western Ave	Stripe bike lane.	0.5	62
7	Chapman Ave	Gilbert St	Brookhurst St	Stripe bike lane. Parking or lane removal may be needed.	0.5	62
7	Chapman Ave	9 <sup>th</sup> St	West St	Stripe bike lane. Parking or lane removal may be needed.	0.5	62
8	West St	Ricky Ave	Orangewood	Bike Lane Study Corridor	0.2	54
9	Orangewood Ave	Harbor Blvd	Janette Ln	Stripe bike lane.	0.8	47
9	9th Street (NB)	Orangewood Ave	Chapman Ave	Stripe NB bike lane.	0.5	47



Table E-4. Prioritized Ranking for Proposed Class III Bike Route Projects

Rank	Location	Start	End	Recommendation Notes	Length (miles)	Total Score
1	Deodara Dr	Trask Ave	Westminster Ave	Gilbert- Deodara Bicycle Route	0.5	90
2	West Garden Grove Neighborhood Greenway	St. Mark St`	Valley View Ave	Chapman Ave Bike Route	0.3	80
3	Nelson St	Chapman Ave	Stanford Ave	Bicycle Route / Shared Street	0.7	67
4	9th Street	Chapman Ave	Garden Grove Blvd	Bicycle Route	1.0	65
5	Lewis St	Garden Grove Blvd	Marty Ln	Bicycle Route	0.4	35
6	Belfast Dr	Garden Grove Blvd	Garden Grove Blvd	Belfast – Donegal Bicycle Route	0.4	25
7	9th-West Neighborhood Greenway	9th St	West St	College St from 9th St to George St, George St from College St to Dorado Ave, Dorado Ave from George St to Morgan Ln, Morgan Ln from Dorada Ave to West St. Bicycle Route.	1.2	20

Table E-5. Prioritized Ranking for Proposed Class III Neighborhood Greenway Projects

Rank	Location	Start	End	Recommendation Notes	Length (miles)	Total Score
1	West Garden Grove Neighborhood Greenway	Chapman Ave	Knott St	Blackmer St from Chapman to Cerulean Ave, Cerulean Ave from Blackmer to Topaz St, Stanford Ave from Topaz St to Knott Ave, Topaz St from Huntly Ave to Anthony Ave. Neighborhood greenway improvements.	2.7	80
2	South Garden Grove Neighborhood Greenway	Erin St	Bushard St	Woodbury Ave from Erin to Brookhurst St, Traylor Way from Brookhurst to Bowen St, Bowen St from Traylor Way to Morningside Dr, Woodbury Rd from Bowen St to Taft St, Morningside Dr from Lake St to Hope St, Hope St from Morningside to 15th St, 15th St from Hope St to Brookhurst St, Brookhurst St from 15th St to Reading Ave, Reading Ave from Brookhurst St to Kerry St, Kerry St from Reading Ave to Oasis Ave, Oasis Ave from Kerry St to Bushard St. Neighborhood Greenway Improvements.	4.0	65
3	Clinton – Palm Neighborhood Greenway	Harbor Blvd	Morningside Ave	Palm St from Harbor Blvd to Flagston Pl, Clinton St from Gloria St to Morningside Ave, Gloria St from Clinton St to Roxey Dr, School Dr from Roxey to Lilly St. Neighborhood Greenway Improvements	1.8	55

Prioritized Ranking for Proposed Class III Neighborhood Greenway Projects continued

Rank	Location	Start	End	Recommendation Notes	Length (miles)	Total Score
3	Nutwood – Palmwood Neighborhood Greenway	Katella Ave	Garden Grove Blvd	Palmwood Dr from Katella Ave to Patricia Dr, Patricia Ave from Palmwood Dr to Faye Ave, Faye Ave from Patricia Dr to Stanley Ln, Stanley Ln from Faye to Nutwood, Nutwood St from Chapman Ave to Garden Grove Blvd. Neighborhood Greenway Improvements.	3.8	55
4	Paloma Ave	Newhope St	Euclid St	Paloma Neighborhood Greenway	0.5	45
5	Nina Pl	Garden Grove Blvd	PE ROW		0.4	27
6	Donegal Dr	Belfast Dr	Trask Ave	Belfast – Donegal Neighborhood Greenway	0.4	25

Table E-6. Prioritized Ranking for Proposed Class IV Bikeway Projects

Rank	Location	Start	End	Recommendation Notes	Length (miles)	Total Score
1	Acacia St	9th St	Nelson St	Separated Bike Lane Study	0.8	90
2	Hazard Ave	Euclid St	Christy St	4 to 3 Road Rebalancing Study	1.4	75
3	Nelson St	PE ROW	Garden Grove Blvd		0.2	62
4	Knott Ave	North City Limits	Garden Grove Blvd		1.8	75

Table E-7. Prioritized Ranking for Proposed Complete Streets Studies

Rank	Location	Start	End	Recommendation Notes	Length (miles)	Total Score
1	Euclid St	Lampson Ave	Trask Ave	Complete Street Study	1.1	90
1	Garden Grove Blvd	Lewis St	Valley View St	Complete Street Study	8.4	90
1	Westminster Ave	East City Limits	Newland St	From bike lane to Complete Street Study	4.3	90
2	Harbor Blvd	North City Limits	Westminster Ave	Complete Street Study	2.4	72



## Appendix F - Garden Grove Police Department Comments

### POLICE COMMENTS ON DRAFT “ACTIVE STREETS PLAN”, JULY 25, 2016

*OFFICERS FROM THE TRAFFIC UNIT, PAUL ASHBY AND ROYCE WIMMER*

The Officers and Senior Planner, Erin Webb, had a lively discussion about bicycling in Garden Grove and their ideas for what could help. The discussion had two main topics: 1. Safety Improvements including Signage and Lighting; and 2. Education and Outreach.

#### **SAFETY IMPROVEMENTS**

##### *Signage*

- Try the green conflict striping at intersections and the on-pavement bike symbol as a “test”.
- The intersection of Brookhurst and Westminster is the worst, so throw the Green paint down there and see if it helps.
- Officer Wimmer was a big fan of the Green paint with white line and bicycle on the pavement. Also thought Green at the intersections was really good.
- Signage in the street is best. Roadside signs are secondary. Both types of sign would be the ultimate best.
- It will take some time for drivers to get used to the bike lanes and bicyclists but with the street painting it will take less time.
- The color of the roadside signs is important. Not purple. The color needs to be more noticeable like red or yellow or white. These colors are more “authoritative”.
- Little Saigon may be a problem for signage in English as people cannot read such signs. May need signs in more than one language.

##### *Lighting*

- Better lighting would be a big help. It is important for bicyclists to be seen.
- Officers from the traffic unit know where the street lights are needed.
- Crime would also go down if there were more streetlights.
- People need to have lights on their bicycles too, both a rear tail light and a front light.
- Daytime bicycling is very different from nighttime bicycling. Fatalities occur at night.
- 10 to 20 percent of accidents are reported. Meaning 80 to 90% of accidents are undocumented.

## EDUCATION AND OUTREACH

- Education and Outreach happens on both sides: the Police side and the City side (Channel 3). Public Information includes education outreach and videos.
- Education is very important. Could use posters and other print, media messaging such as “Ride with Traffic”.
- The GGUSD (School District) hears complaints from parents etc. that are different from the complaints the Police hear. The School District hears complaints about people parked in the red zones. The Police hear more about traffic violations, people riding on the wrong side of the street, or pulling out at stop signs.
- The most complaints come from Jordan Intermediate School and Cook Elementary



## Appendix G - Letters of Support

- Caltrans District 12 Letter of Support
- City of Anaheim Letter of Support for West Street Road Rebalancing Project

**DEPARTMENT OF TRANSPORTATION**

DISTRICT 12

3347 MICHELSON DRIVE, SUITE 100

IRVINE, CA 92612-8894

PHONE (949) 724-2731

FAX (949) 724-2592

TTY 711

[www.dot.ca.gov](http://www.dot.ca.gov)

*Serious drought.  
Help save water!*

July 29, 2016

Ms. Erin Webb  
City of Garden Grove  
11222 Acacia Parkway  
Garden Grove, CA 92840

Dear Ms. Webb:

The California Department of Transportation (Caltrans) appreciates the opportunity to review the Draft Active Streets Master Plan for City of Garden Grove. The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Active Streets Master Plan is an effort by the City of Garden Grove to promote walking, bicycling, transit use, and other active modes as safe and attractive transportation choices. The goal of the Plan is to promote healthy sustainable living in Garden Grove, and help residents make better connections to their daily destinations by providing safe access to local parks, schools, workplaces, shopping, and dining, as well as to destinations in other Orange County communities. Caltrans is a commenting agency at this time on this project and has the following comments:

- Caltrans is supportive of plans and policies that aim to improve active transportation options and provide increased accessibility to and from State Highway System. The goals, objectives and policies of the Draft Active Streets Master Plan, particularly those applicable to Caltrans, are integral to the continued implementation of active transportation facilities in Orange County. In particular, Caltrans supports Policy 1.B.1 of the plan, which proposes to identify opportunities to improve or add pedestrian and bicycle crossings at State Route 22, State Route 39 and major arterials. We look forward to coordinating with the City to enhance multimodal accessibility.
- In addition, Caltrans is in favor of each of the proposed bike facility improvements detailed in the plan, including the proposed connections to regional facilities. Caltrans supports the Rails-with-Trail guidelines included in the plan, which will accommodate for a Class I facility along the Pacific Electric Right of Way and for a future regional light-rail line. Caltrans would like to further discuss potential improvement opportunities when appropriate.

*"Provide a safe, sustainable, integrated and efficient transportation system  
to enhance California's economy and livability"*



City of Anaheim  
**DEPARTMENT OF PUBLIC WORKS**

November 10, 2016

Mr. Dai Vu  
City of Garden Grove  
Acting City Traffic Engineer  
11222 Acacia Parkway  
Garden Grove, CA 92840

200 S. Anaheim Blvd., Suite 276  
Anaheim, California 92805

TEL (714) 765-5176  
FAX (714) 765-5225

[www.anaheim.net](http://www.anaheim.net)

**SUBJECT: SUPPORT FOR THE PROPOSED MPAH AMENDMENT FOR  
WEST STREET**

Dear Mr. Vu:

The City of Anaheim Department of Public Works is pleased to support the City of Garden Grove's request for approval from the Orange County Transportation Authority (OCTA) for an amendment to the Master Plan of Arterial Highways. This amendment would reclassify West Street between Garden Grove Boulevard and Orangewood Street from a Secondary Undivided (4-lane) to a Divided Collector (3-lane).

We appreciate your modification to reclassify West Street from Garden Grove Boulevard to Orangewood Avenue (originally to Ricky Avenue) based on our concerns for the portion of West Street from Orangewood Avenue to Ricky Street and maintaining clear access to the Anaheim Convention Center (ACC). The bus and truck traffic traveling to the ACC is routed to come from Katella to the north onto West Street and then turns left onto Transit Plaza, and therefore bicycle access onto Ricky must be carefully considered. West Street south of Transit Plaza serves existing residential neighborhoods in both cities. Anaheim looks forward to working with Garden Grove to find ways to serve multi-modal needs for the Convention Center and points north.

We understand that Alta Planning + Design is just finishing the first bicycle and pedestrian master plan for Garden Grove, the Garden Grove Active Streets Plan. The Active Streets Plan has developed a comprehensive pedestrian and bicycling network to provide safe and comfortable access. The proposed network includes buffered bike lanes on West Street. Our staff and OCTA has reviewed the existing and future baseline traffic volumes and determined that the reclassification of West Street to a Divided Collector (3-lane) is feasible during the event periods through our traffic models.

## Appendix H - BCIP Grant Application



## CITY OF GARDEN GROVE

May 9, 2016

Louis Zhao  
Senior Transportation Funding Analysis  
Orange County Transportation Authority  
550 S. Main Street  
Orange, CA 92863-1584

Bao Nguyen  
Mayor

Steven R. Jones  
Mayor Pro Tem

Christopher V. Phan  
Council Member

Phat Bui  
Council Member

Kris Beard  
Council Member

Dear Mr. Zhao,

Garden Grove is pleased to submit this application for BCIP funds as a way to continue the City's active pursuit of bicycling and pedestrian improvements for our community. The City of Garden Grove is requesting \$1,201,978 from the Bicycle Corridor Improvement Project to improve the on-street bicycle infrastructure by 75 percent and to create a more consistent network by creating 14.85 miles of comfortable bikeways.

These bikeway improvements are a major step in accomplishing the goal from the City of Garden Grove's Draft Active Streets Plan of a safe, comfortable, network of bikeways that will encourage more people to ride bikes.

The City of Garden Grove is engaged in promoting active transportation by holding "Open Streets" events in the last two years with a third planned for 2016, creating the first Draft Active Streets Plan, and working towards the development of a Class I Bike Trail on the Pacific Electric Right-of-Way. Analysis and data collection shows that Garden Grove has significant gaps in the City's bikeway network, narrow bike lanes on high speed roads, and high bicycle and pedestrian collision rates. We are anxious to complete the much needed bicycle network improvements in the Bicycle Corridor Improvement Project and are committed to providing a 12% local match to the BCIP grant funds.

The bikeway improvements were chosen as a feasible way to make a connected network for bicyclists in Garden Grove and increase regional connectivity. OCTA has provided preliminary support for the road rebalancing projects proposed in the application and we look forward to further collaboration with them. The City of Garden Grove is aiming to be a gracious community where biking and walking are easy, inviting ways for people of all ages to get around. Thank you for your consideration of our request.

Sincerely,

Erin Webb  
Senior Planner  
Community & Economic Development Department  
City of Garden Grove  
(714) 741-5313

### ATTACHMENTS

11222 Acacia Parkway • P.O.Box 3070 • Garden Grove, CA 92842  
[www.ci.garden-grove.ca.us](http://www.ci.garden-grove.ca.us)



# CITY OF GARDEN GROVE BICYCLE CORRIDOR IMPROVEMENTS

## BCIP 2016 GRANT APPLICATION

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**ATTACHMENT B**

**Bicycle Corridor Improvement Program (BCIP) Application Form**

**PART ONE: GENERAL PROJECT INFORMATION**  
**Applications are due no later than May 9, 2016 at 4:00 PM**

PROJECT TITLE: City of Garden Grove, Bicycle Corridor Improvements  
 AGENCY: City of Garden Grove  
 MAILING ADDRESS: 11222 Acacia Parkway, Garden Grove, CA 92840

Phases of work this application is applying for:

TIER 1 PROJECT COMPONENTS	
<input checked="" type="checkbox"/>	Final Design
<input type="checkbox"/>	Right-of-Way
<input checked="" type="checkbox"/>	Construction
BCIP/CMAQ FUNDS REQUESTED	\$ 1,113,978
LOCAL MATCH	\$ 151,905
TOTAL TIER 1 PROJECT COST	\$ 1,265,883

TIER 2 PROJECT COMPONENTS	
<input checked="" type="checkbox"/>	Environmental
<input checked="" type="checkbox"/>	Preliminary Engineering
BCIP/CMAQ FUNDS REQUESTED	\$ 88,000
LOCAL MATCH	\$ 12,000
TOTAL TIER 2 PROJECT COST	\$ 100,000

TOTAL TIER 1 PROJECT COST	\$ 1,265,883
TOTAL TIER 2 PROJECT COST	\$ 100,000
TOTAL BCIP PROJECT COST	\$ 1,365,883

Project is a stand alone project.  
 Project is part of a larger project.  
 Total Project Cost (if part of a larger project; round dollars to nearest thousands)

AGENCY CONTACT (Name, title, agency, address, phone, email)  
 Name / Title: Erin Webb  
 Agency: City of Garden Grove  
 Mailing: 11222 Acacia Parkway  
 Address: Garden Grove, CA 92840  
 Phone: 714-741-5313  
 Email: [erinw@ci.garden-grove.ca.us](mailto:erinw@ci.garden-grove.ca.us)

PARTNER(S) (Name, title, agency, address, phone, email)  
 Name / Title:  
 Agency:  
 Address:  
 Phone:  
 Email:

PROPOSED SCHEDULE:	
	<u>Date</u>
Draft Environmental Document	<u>October 2016 - April 2017</u>
Final Environmental Document	<u>October 2016 - April 2017</u>
Start Design / Engineering	<u>May 2017</u>
Complete Design / Engineering	<u>February 2018</u>
Start Right-of-Way Acquisition	<u>n/a</u>
Right-of-Way Certification	<u>n/a</u>
Submit Request for Authorization (E-76) for Construction	<u>February 2018</u>
Ready to Advertise	<u>November 2018</u>
Award Construction	<u>December 2018</u>
Project Completion (open for use)	<u>June 2019</u>
Start Close Out Phase	<u>July 2019</u>
End Close Out Phase	<u>October 2019</u>



## **PART ONE: GENERAL PROJECT INFORMATION (cont.)**

### SCOPE AND LOCATION OF PROPOSED PROJECT

Describe the project's scope, location, limits of work, size, etc. (*Do not* include the justification or benefits).

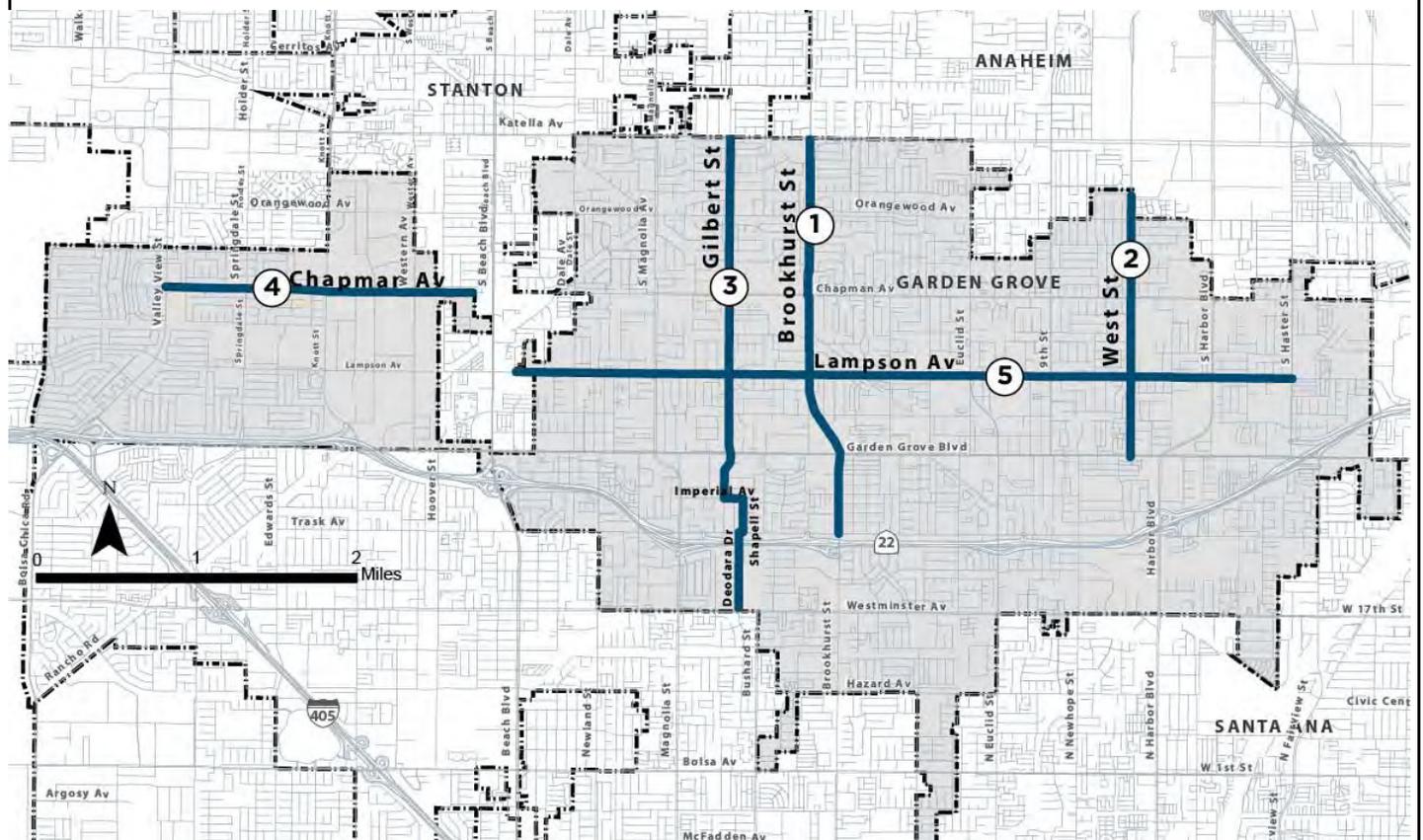
The City of Garden Grove's Bicycle Corridor Improvements Project will design and construct 6.5 miles of new bikeways and improve 8.35 miles of existing, but underutilized bikeways. Bicycle facility improvements include creating new bike lanes through road rebalancing (2.7 mi on West Street and Gilbert Street), striping buffers to existing bike lanes (5 mi on Brookhurst Street, Chapman Avenue and Lampson Avenue), striping bike lane network gaps (0.6 mi on Brookhurst Street), improving and creating bicycle routes (6.5 mi on Lampson Avenue, Gilbert Avenue, Imperial Avenue, Shapeel Street and Dodara Drive) and provide bicycle wayfinding signs along all the proposed corridors (14.85 mi). The City has selected a network of 5 high priority corridors identified in the City of Garden Grove 2016 Draft Active Streets Plan as follows and shown in Figure 1 below. Maps of the project extents and improvement types can be found in Exhibit D.

#### **North-South Corridors**

- 1.) Brookhurst Street between Katella Avenue and Trask Avenue
- 2.) West Street between City limit and Garden Grove Boulevard
- 3.) Gilbert Street Corridor between Katella Avenue and Westminster Avenue

#### **East-West Corridors**

- 4.) Chapman Avenue between Valley View and City Limit
- 5.) Lampson Avenue between City Limit and Haster Street



PURPOSE, NEED, BENEFITS, AND FUNDING JUSTIFICATION OF PROPOSED PROJECT

Provide the purpose, need, benefits, and funding justification for the proposed project.

Garden Grove is dedicated to improving active transportation. The City’s 2016 Draft Active Streets plan has conducted a thorough analysis of existing bicycle and pedestrian conditions identifying challenges and proposed improvements. Today, Garden Grove’s on-street bike network is hindered by gaps in network connectivity, narrow bike lanes along streets with high speeds and a high bicycle collision history. The purpose of this project is to expand and improve the City’s on-street bike infrastructure by 75 percent creating a continuous and comfortable bike network that makes key connections to schools, parks, major activity centers and regional bikeway corridors.

There is a significant need to improve bicycle and pedestrian safety in Garden Grove. Between 2009 and 2014 twenty five pedestrians and seven bicyclists died as a result of a collision with a motor vehicle. Of the 840 injury collisions that occurred within one mile of the study area, 15 percent occurred along the corridors identified in this application. In addition to the direct injury and crash reduction benefits, providing safe and convenient bikeways for the City’s residents to make biking part of their daily routine will help to increase physical fitness, reduce obesity that leads to serious health problems and provide mental heal benefits. The City is seeking funds for five corridors with a goal of improving safety on a network of streets to allow for city-wide travel by bike.

Riding a bicycle on a sidewalk is a very common and dangerous activity in Garden Grove. During bicycle counts conducted in September 2015, 95% of all bicyclists riding in the City were riding on the sidewalks. Furthermore, approximately 40% of bicyclists rode on the sidewalk in locations where a bike lane was present. This was particularly common on two streets focused on in the proposed project, Brookhurst Street and Chapman Avenue. Both Brookhurst Street and Chapman Streets have a posted speed limit of 45 mph with existing but discontinuous bike lanes. There is an opportunity to add a 3 foot buffer to the wide outside vehicle lane along both of these segments. By adding a buffer and closing gaps in the bike lane along these corridors the incidence of sidewalk-bicycle riding will be reduced creating safer, more comfortable conditions for bicyclists and pedestrians.

Creating new bike lanes on West Street and Gilbert Street will also provide a dedicated space for bicycles on the street and help to reduce collisions and sidewalk riding. These bike lanes will be a result of road rebalancing, or a road diet which has proven safety and operational benefits to all modes of transportation. It is intended to calm traffic leading to fewer and less severe collisions and a better environment for bicycling and walking.

In order to make Garden Grove a community where bicycling and walking are an inviting, safe, and attractive transportation choice for people of all ages and abilities, the barriers of bikeway gaps, narrow bike lanes on high speed roads and high collision rates must be overcome. The proposed project aims to create a more consistent and comfortable on-street bicycle network, reduce the occurrence and severity of vehicle-bicycle collisions, increase wayfinding and ease of navigation, and encourage more bicycling in the City of Garden Grove.

PROJECT IS ON PUBLIC RIGHT-OF-WAY

If yes, list corridor. If no, list corridor, property owner, and status of right-of-way agreement?

Yes Yes, the project improvements occur within the exiting curbs which is within the City road right-of-way  
 No (explain): \_\_\_\_\_

MAINTENANCE:

The project must be maintained in a functional and operational manner as its intended purpose for the expected life cycle for the type of project. If it is not maintained in such a manner, reimbursement of all or a portion of the BCIP funds may be required. With the exception of funds required for establishing landscaping, maintenance costs are ineligible for CMAQ funds and must be funded locally.)

Who will maintain? City of Garden Grove

What is the source of maintenance funds? Public Works operational Budget, Garden Grove General Fund

If project is within Caltrans Right-of-Way application, must be signed by Deputy District Director, Maintenance

DDD Maintenance Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_



**PART TWO: FUNDING - REVISED MAY 3, 2016**

<b>TIER 1 PROJECT COMPONENT COSTS</b>						
<b>FINAL DESIGN</b>	Fiscal Year	BCIP Request	Match (12% or more)	Total	Percent Match	
	Final Design	17/18	\$ 115,239	\$ 15,714	\$ 130,953	12.0%
	<b>TOTAL FINAL DESIGN</b>	17/18	\$ 115,239	\$ 15,714	\$ 130,953	12.0%
<b>RIGHT-OF-WAY PHASE (ACQUISITION):</b>	Fiscal Year	BCIP Request	Match (12% or more)	Total	Percent Match	
	Capital	FY	\$ -	\$ -	\$ -	0.0%
	Support Costs	FY	\$ -	\$ -	\$ -	0.0%
	<b>TOTAL RIGHT-OF-WAY</b>	FY	\$ -	\$ -	\$ -	0.0%
<b>CONSTRUCTION PHASE:</b>	Fiscal Year	BCIP Request	Match (12% or more)	Total	Percent Match	
	Construction Contract Items	17/18	\$ 845,087	\$ 115,239	\$ 960,326	12.0%
	Contingencies	17/18	\$ 76,826	\$ 10,476	\$ 87,302	12.0%
	Construction Engineering	17/18	\$ 76,826	\$ 10,476	\$ 87,302	12.0%
	<b>TOTAL CONSTRUCTION</b>	17/18	\$ 998,739	\$ 136,191	\$ 1,134,930	12.0%
<b>TOTAL</b>		\$ 1,113,978	\$ 151,905	\$ 1,265,883	12.0%	

<b>TIER 2 PROJECT COMPONENT COSTS</b>						
<b>ENVIRONMENTAL</b>	Fiscal Year	BCIP Request	Match (12% or more)	Total	Percent Match	
	Final Design	16/17	\$ 52,800	\$ 7,200	\$ 60,000	12.0%
	<b>TOTAL ENVIRONMENTAL</b>	16/17	\$ 52,800	\$ 7,200	\$ 60,000	12.0%
<b>PRELIMINARY ENGINEERING</b>	Fiscal Year	BCIP Request	Match (12% or more)	Total	Percent Match	
	Preliminary Engineering	16/17	\$ 35,200	\$ 4,800	\$ 40,000	12.0%
	<b>TOTAL PRELIMINARY ENGINEERING</b>	16/17	\$ 35,200	\$ 4,800	\$ 40,000	12.0%
<b>TOTAL</b>		\$ 88,000	\$ 12,000	\$ 100,000	12.0%	

<b>TOTAL PROJECT COMPONENT COSTS</b>					
		BCIP Request	Match (12% or more)	Total	Percent Match
<b>TOTAL</b>		\$ 1,201,978	\$ 163,905	\$ 1,365,883	12.0%

<b>ELIGIBLE SOURCE(S) OF MATCH</b> (spell out; no acronyms)	
<b>TIER 1 ELIGIBLE SOURCE(S) OF MATCH</b>	
Final Design	AQMD Rideshare Funds
Right-of-Way	n/a
Construction	AQMD Rideshare Funds and Public Work Capital Improvement Project (CIP) Funds
<b>TIER 2 ELIGIBLE SOURCE(S) OF MATCH</b>	
Environmental	AQMD Rideshare Funds
Preliminary Engineering	AQMD Rideshare Funds

Federal transportation funds may not be eligible source of match.

**PART TWO: FUNDING (continued)**

<b>ITEM ESTIMATE - DIRECT ITEM COSTS</b>					
Item #	Description	Unit	Quantity	Unit Price	Amount
<b>Brookhurst Street</b>					
1	Wayfinding Sign	EA	27	\$300.00	\$ 8,100
2	Bike Lane (DT39)	LF	33,300	\$1.00	\$ 33,300
3	Buffer Stripe (6" White)	LF	2,900	\$1.50	\$ 4,350
4	Bike Symbol With Arrow	EA	70	\$35.00	\$ 2,450
5	Intersection Striping Improvement	EA	5	\$3,000.00	\$ 15,000
<b>West Street</b>					
6	Wayfinding Sign	EA	12	\$300.00	\$ 3,600
7	Two-Way Left (DT32) with arrows	LF	8,700	\$3.50	\$ 30,450
8	Bike Lane (DT39)	LF	34,800	\$1.00	\$ 34,800
9	Buffer Stripe (6" White)	LF	696	\$1.50	\$ 1,044
10	Bike Symbol With Arrow	EA	20	\$35.00	\$ 700
11	Intersection Video Detection	EA	4	\$30,000.00	\$ 120,000
12	Intersection Video Detection -Reprogram Existing	EA	1	\$250.00	\$ 250
13	Cold Mill (CM2)	SF	544,000	\$0.40	\$ 217,600
<b>Gilbert Street</b>					
14	Wayfinding Sign	EA	50	\$300.00	\$ 15,000
15	Two-Way Left (DT32)	LF	10,600	\$3.00	\$ 31,800
15	Bike Lane (DT39)	LF	21,200	\$1.00	\$ 21,200
16	Buffer Stripe (6" White)	LF	424	\$1.50	\$ 636
17	Bike Symbol With Arrow	EA	12	\$35.00	\$ 420
18	Intersection Video Detection	EA	3	\$30,000.00	\$ 90,000
18	Intersection Video Detection -Reprogram Existing	EA	1	\$250.00	\$ 250
19	Cold Mill (CM2)	SF	344,500	\$0.40	\$ 137,800
<b>Chapman Avenue</b>					
20	Wayfinding Sign	EA	22	\$300.00	\$ 6,600
21	Bike Lane (DT39)	LF	21,800	\$1.00	\$ 21,800
22	Buffer Stripe (6" White)	LF	872	\$1.50	\$ 1,308
23	Bike Symbol With Arrow	EA	44	\$35.00	\$ 1,540
24	Conflict Zone Striping	EA	16	\$2,000.00	\$ 32,000
<b>Lampson Avenue</b>					
25	Wayfinding Sign	EA	60	\$300.00	\$ 18,000
26	Share the Road Sign	EA	22	\$200.00	\$ 4,400
27	Bike Lane (DT39)	LF	900	\$1.00	\$ 900
28	Buffer Stripe (6" White)	LF	11,724	\$1.50	\$ 17,586
29	Bike Symbol With Arrow	EA	4	\$35.00	\$ 140
				<b>Subtotal TIER 1</b>	<b>\$ 873,024</b>
30	Mobilization & Demobilization @ 5%	LS	1	\$	\$ 43,651
31	Traffic Control @ 5%	LS	1	\$	\$ 43,651
32	Construction Contingency @10%	LS	1	\$	\$ 87,302
33	Construction Engineering @ 10%	LS	1	\$	\$ 87,302
	Final Design (PS&E)				\$ 130,953
				<b>TOTAL TIER 1</b>	<b>\$ 1,265,883</b>
33	Preliminary Design (PS&E)	LS	1	\$	\$ 40,000
34	Traffic Study	LS	1	\$	\$ 60,000
				<b>TOTAL TIER 2</b>	<b>\$ 100,000</b>
<b>TOTAL DIRECT COST</b>					<b>\$1,265,883</b>
<b>TOTAL INDIRECT COST</b>					<b>\$100,000</b>
<b>TOTAL PROJECT COST</b>					<b>\$1,365,883</b>

\*See Eligible Expenditures under the BCIP Program Guidelines and Procedures



## **PART THREE: EVALUATION CRITERIA**

### **PASS/FAIL CRITERIA**

Use a separate sheet of paper if necessary. If any of the criteria below are not met, the proposal will not be ranked or evaluated. A "no" answer to any of the following questions immediately disqualifies the proposal. A "yes" still requires supporting evidence in order for the project to be considered for funding.

#### **1 State and Federal Compliance**

- a. Is the project consistent with CMAQ, federal, state, regional or local requirements, guidelines and policies? (CMAQ requirements can be found here: [http://www.dot.ca.gov/hq/transprog/federal/cmaq/Official\\_CMAQ\\_Web\\_Page.htm](http://www.dot.ca.gov/hq/transprog/federal/cmaq/Official_CMAQ_Web_Page.htm))

Yes  No

- b. Is the project, as proposed, in compliance with the Americans with Disabilities Act? What evidence is there to support this claim?

Yes  No  Not Applicable

The project is in compliance with the Americans with Disabilities Act and will not be making any changes outside of the existing edge-of- pavement to edge-of- pavement.

- c. Is this project in compliance with Buy America requirements?

Yes  No  Not Applicable

#### **2 Financial Viability and Technical Capacity**

- a. Is the project financially viable? (The local agency must have the ability to meet financial processing requirements, must have a sufficient level of funding to provide cash flow for the project, and provide adequate personnel to manage and administer the project. Please describe any evidence supporting this conclusion. The governing body is required to submit a resolution to this effect along with the application.)

Yes  No

The City will be budgeting \$163,905 in matching fund in the FY16-17 Capital Improvement Plan (CIP). The City will provide in-kind staff time to administer and manage the project.

#### **3 Air Quality**

Does the project provide an air quality benefit? (CMAQ projects must have a measureable and quantifiable air quality improvement. Please provide the improvements to the following air quality resources using the Southern California Air Quality Resources Board's (SCAQMD) South Coast Methods software. Results must be attached as part of the application package. The SCAQMD South Coast Methods software can be found here: <http://www.arb.ca.gov/planning/tsaq/eval/eval.htm>.)

Yes  No

#### **AIR QUALITY DATA**

The following material is provided by the Southern California Air Quality Management District (SCAQMD).

Local agencies will need the following materials to complete this requirement:

1. South Coast Methods Program
2. South Coast Emissions Factors Tables

The software, instructions, and data tables can be found here: <http://www.arb.ca.gov/planning/tsaq/eval/eval.htm>.

The data tables can be found here: <http://www.arb.ca.gov/planning/tsaq/eval/evaltables.pdf>

**PART THREE: EVALUATION CRITERIA (continued)**

**WEIGHTED CRITERIA**

**1 Matching Funds (15 points)**

Minimum match of 12-13% (0 pts); 14-15% (1 pt); 16-17% (2 pts); 18-19% (3 pts); 20-21% (4 pts); 22-23% (5 pts); 24-25% (6 pts); 26-27% (7 pts); 28-29% (8 pts); 30-31% (9 pts); 32-33% (10 pts); 34-35% (11 pts); 36-37% (12 pts); 38-39% (13 pts); 40-41% (14 pts); 42% match or more receives 15 points.

What is the percent match being provided? 12% \_\_\_\_\_ pts

**2 Coordination (15 points)**

a. List the plans that include the project. (examples: OCTA Commuter Bikeways Strategic Plan (CBSP), Safe Routes to Schools Plans, Local City Plan, etc.) 1 point per plan (10 points maximum). \_\_\_\_\_ pts.

The proposed improvements included in this grant application are identified in the following plans 1.) 2009 OCTA Commuter Bikeways Strategic Plan, 2.) Districts 1 and 2 Bikeway Strategy, OCTA, 2013 (Brookhurst), 3.) City of Garden Grove General Plan 2030, 4.) Garden Grove Active Streets Plan, Draft 2016, 5.) Re:Imagine Garden Grove, 2015.

The project also supports the goals and policies in the following two regional planning documents; 6.) Outlook 2035: OCTA Long Range Transportation Plan (2014) and 7.) SCAG Regional Transportation Plan/Sustainable Communities Strategy (2012).

b. Is the project prioritized as part of a multi-jurisdictional collaborative strategy or similar effort? List below. (5 \_\_\_\_\_ pts.

Yes, the improvements for Brookhurst Street proposed in this grant application will improve the Brookhurst-Ward corridor which was identified in the Districts 1 and 2 Bikeway Strategy (OCTA, 2013) as a regionally significant bikeway. This project will create new bike lanes north of Chapman to the northern City Limit as well as improve the exiting bike lanes along Brookhurst Street by adding a 3 foot buffer.

In addition, the improvements on Brookhurst Street, Chapman Avenue, and Lampson Avenue connect to the Pacific Electric ROW corridor which was identified as the highest priority corridor in the OCTA D1 & D2 plan.

**3 Connectivity, Relationships, and Priority (20 points)**

For **bicycle facility** projects, item 3a will be completed by OCTA. Use the box provided in 3b to describe the direct relationship to streets, bicycle facilities, pedestrian facilities, transit systems, employment centers, and activity centers. A Geographic Information Systems (GIS) Shape File, detailed map, and exact location must be provided.

a. Bikeway Priority Index Ranking  
The Bikeway Priority Index Ranking (BPIR) generates a score for each project. Points will be assigned by score. 0-99 (0 pts); 100-199 (1 pts); 200-299 (2 pts); 300-399 (3 pts); 400-499 (4 pts); 500-599 (5 pts); 600-699 (6 pts); 700-799 (7 pts); 800-899 (8 pts); 900-999 (9 pts); 1,000 + (10 pts). \_\_\_\_\_ pts.

**BPIR SCORE**  (to be filled in by OCTA)



- b. List the project's direct relationships to streets, bicycle facilities, pedestrian facilities, transit systems, employment centers and activity centers. Also include additional important information not noted in this application. (10 points)

The corridor improvements contained in this application go beyond connecting destinations along a specific corridor because they will improve the network of bicycle access throughout Garden Grove. Within a one mile buffer, the corridor improvements will create connections to major activity centers including: more than 70 educational institutions, schools and colleges; 11 public parks; regional employment centers, including the Anaheim Resort District; and multiple employment and commercial areas.

The project also connects to regionally significant planned bikeways and existing bikeways in Garden Grove. The Brookhurst corridor is a component of an OCTA identified regional corridor, Brookhurst-Ward and three of this grant application corridors make a direct connection to the Pacific Electric ROW regional bikeway corridor. Furthermore, the improvements would be a comprehensive improvement for City's bikeway network since they will connect with 80 percent of the existing bicycling facilities. Table 3.1 lists the destinations and regional bikeways that make direct connections along the corridor improvements. See Exhibit D for a map of the Draft Active Streets Plan Proposed Bikeways as well as a map of the connections to existing activity centers.

**Table 3.1. Destinations Directly Served by Improved Corridors**

Destination	Description	Project Corridor
<b>Educational Institutions</b>		
Brookhurst Elementary School	Elementary School	Brookhurst
Sunnyside Elementary School	Elementary School	Brookhurst
Genevieve M. Crosby Elementary School	Elementary School	West
Walton Intermediate School	Intermediate School	West
Gilbert Elementary School	Elementary School	Gilbert
Bolsa Grande High School	High School	Gilbert
Wakeham Elementary School	Elementary School	Chapman
Patton Elementary School	Elementary School	Chapman
Alamitos-Lawrence Intermediate School	Intermediate School	Lampson
Ernest O. Lawrence Elementary School	Elementary School	Lampson
Dr. Walter C. Ralston Intermediate School	Intermediate School	Lampson
Garden Grove High School	High School	Lampson
Violette Elementary School	Elementary School	Lampson
<b>Employment Centers</b>		
Anaheim Resort District	Regional Employment Center	West
Garden Grove Industrial Complex	Regional Employment Center	Chapman
Office Max	Local Employment Center	Chapman
The Home Depot	Local Employment Center	Chapman
Garden Grove Unified School District	Local Employment Center	Lampson
<b>Parks and Open Spaces</b>		
Garden Grove Park	City Park	Gilbert
Westhaven Park	City Park	West
Twin Lakes Recreation Park	City Park	Lampson
<b>Commercial Areas</b>		
Garden Grove Promenade Shopping Center	Shopping Center	Brookhurst / Gilbert
Pavilion Plaza Shopping Center	Shopping Center	Brookhurst / Gilbert
Eastgate Plaza Shopping Center	Shopping Center	Chapman
<b>Regional Bikeways</b>		
Pacific Electric ROW Corridor	OCTA Regional Bikeway	Brookhurst / Gilbert / Lampson
Brookhurst-Ward Corridor	OCTA Regional Bikeway	Brookhurst / Lampson

**4 Project Readiness (20 points total)**

If item is not complete, mark "N/A" under Document Type and Date Approved/Completed.

a. Is preliminary engineering complete\*? (5)

b. Is the signed CEQA documentation complete? (5)

c. Is the signed NEPA documentation complete? (5)

d. Is ROW possession complete? (5)

\* Complete PE = 30% or more engineering drawings

Document Type	Date Approved/Completed
n/a	n/a
n/a	n/a
n/a	n/a
City right-of-way	Completed

\_\_\_\_\_ pts.

\_\_\_\_\_ pts.

\_\_\_\_\_ pts.

\_\_\_\_\_ pts.

**5 Cost-benefit (10 points total)**

Fill out the cost-benefit from the Caltrans Active Transportation Program Benefit Cost Tool. Back-up must be provided as part of the applicatoin. Scoring will be ranked once all project applications have been received. A link to the tool can be found here: <http://www.dot.ca.gov/hq/tpp/offices/eab/atp.html>

Projects will be ranked by tiers. Tier 1 (10 points). Tier 2 (8 points). Tier 3 (6 points). Tier 4 (4 points), Tier 5 (2 points), Tier 6 (0 points)

COST	972.5
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\_\_\_\_\_

Total Points Page 6 \_\_\_\_\_ pts.



## **PART THREE: EVALUATION CRITERIA (continued)**

### **WEIGHTED CRITERIA (CONTINUED)**

#### **6 Safety Enhancements (15 points maximum)**

- a. Provide the number of pedestrian and bicycle injuries and fatalities within one mile of the proposed project area in the last five years. Map and details of accidents are required. Transportation Mapping Injury and Mapping System (TIMS), Statewide Integrated Traffic Record System (SWITRS), and/or local law enforcement reports are acceptable databases for supporting documentation. (5 points maximum)

\_\_\_\_\_ pts.

According to the Transportation Mapping Injury and Mapping System (TIMS), from 2009 to 2013 there were 840 bicycle and pedestrian injuries within one mile of the proposed project area, which includes almost entirely the city of Garden Grove. Of the 840 injury collisions, roughly 15 percent (122 collisions) occurred on the corridors proposed for bicycle infrastructure improvements. Table 6.1 lists the total number of bicyclist or pedestrian-involved collisions per project corridor and only accounts for collisions where the corridor to improve was registered as the Primary Road of collision in TIMS.

**Table 6.1.** Bicycle and Pedestrian Related Collisions per Corridor

<b>Corridor</b>	<b>Collisions</b>
Brookhurst Street	54
Chapman Avenue	12
Gilbert Street	10
Lampson Avenue	35
West Street	11
<b>Total</b>	<b>122</b>

Twenty five pedestrians and seven bicyclists died as a result of the collisions (4 percent of the bicyclist or pedestrian-involved collisions). Table 6.2 summarizes the collisions by severity. Maps of the locations of bicycle and pedestrian collisions occurring between 2009 and 2013 can be found in Exhibit I.

**Table 6.2.** Distribution of Bicycle and Pedestrian Related Collisions per Severity

<b>Collision Severity</b>	<b>Bicycle Rider</b>	<b>Pedestrian</b>	<b>Total</b>	<b>Total (%)</b>
<b>Fatal</b>	7	28	35	4
<b>Severe Injury</b>	21	45	66	8
<b>Visible Injury</b>	228	159	387	46
<b>Complaint of Pain</b>	209	143	352	42
<b>Total</b>	<b>465</b>	<b>375</b>	<b>840</b>	<b>100</b>

Finally, according to the Orange County Transportation Authority Districts 1 and 2 Bikeways Strategy, from 2007 to 2011 the Brookhurst-Ward Corridor had the second highest number of bicycle collisions per mile in Orange County's Districts 1 and 2, averaging 0.7 collisions per month and 6.3 collisions per mile. Further evaluation of Brookhurst Street for the Active Streets Plan indicates that from 2012 to 2013 the average number of collisions per month increased from 0.7 collisions to almost one collision per month.

b. Does the project also service pedestrians? Examples include multi-use facilities or Class I Bikeways facilities. If yes, please describe. (5 points maximum) \_\_\_\_\_ pts.

All improvements included in the proposed project will service pedestrians. In a bicycle count conducted in Garden Grove in September 2015, 94% of bicyclists were traveling on sidewalks, which endangers pedestrians on these same sidewalks. Improved and new bicycle infrastructure, such as bike lanes and buffered bike lanes, will encourage bicyclists to ride on the street rather than the sidewalk, making walking safer and more comfortable for pedestrians. Additionally, road rebalancing will calm traffic speeds, making conditions safer for both cyclists and pedestrians. The addition of a center turn lane will provide a center refuge for pedestrians crossing the street and the addition of a bike lane will increase the buffer between pedestrians and moving vehicles.

c. List and describe the improvements that will be made to increase bicycle safety and reduce bicycle related accidents at and around the project area. Eligible improvements include but are not limited to: bicycle boxes, bicycle parking, bicycle detection at signals. (1 point for each safety improvement and amenity - 5 points maximum)

1 **Class II Bike Lanes-** Bicycle lanes provide a dedicated space on the road for bicyclists to ride. Bicycle lanes help bicyclists practice legal behavior by riding safely and predictably reducing behaviors that lead to collisions. \_\_\_\_\_ pts.

2 **Class II Buffered Bike Lanes-** Buffered bike lanes provide greater shy distance between vehicles and bicyclists and provide space for bicyclists to pass another bicyclist without encroaching into the adjacent motor vehicle lane increasing safety and comfort. They encourage bicycling by contributing to the perception of safety and appeal to a wider cross-section of bicycle-users (NACTO Urban Bikeway Design Guide, 2014). Furthermore, narrowing wide outside travel lanes will reduce vehicle speeds reducing crash severity. \_\_\_\_\_ pts.

3 **Class II Bike Route Signs and Striping-** Signage and striping makes cyclists and drivers aware of a designated bike route, leading to increased visibility of people riding bikes, ease of navigation for cyclists and increased caution for drivers. \_\_\_\_\_ pts.

4 **Through bike lanes at intersections-**Through bike lanes in intersections are intended to reduce the risk of crashes and increase bicyclist comfort. They enable bicyclists to correctly position themselves to the left of right turn lanes, reducing conflicts between turning drivers and bicycle through traffic. \_\_\_\_\_ pts.

5 **Four-to-three Road Rebalancing (Road Diet)-** Road rebalancing has proven safety benefits including a 19 to 47 percent reduction in overall crashes on previously four-lane undivided roadways (FHWA, Road Diet Informational Guide, 2014). Road rebalancing will provide dedicated bike lanes, improving bicycle safety and a center turn lane which provides the opportunity for a pedestrian refuge island for crossings. \_\_\_\_\_ pts.



**7 Public Participation and Agency Support (5 points maximum)**

a. Describe the public participation process and dates of public meetings. How did the agency consider comments and responses from meetings when designing the project? (2 points maximum)

The bicycle corridors selected for improvement for this application are the outcome of extensive outreach effort by the City during the development of the Draft Garden Grove Active Streets Master Plan. The public outreach included comprehensive gathering of community input through six major components:

- Interactive Online Map (September 28th - November 18th, 2015)
- Online Survey (October, 2015 – January, 2016)
- Public Workshop at the 2015 Open Street Event
- Project Website and Social Media Presence (September 28th - November 18th, 2015)
- Stakeholder Meetings (November 2015, March 2016)
- Re:Imagine Garden Grove Mind Mixer and numbers small group meetings (2014-2015)

In general, the major themes and community priorities identified through these outreach processes include:

- Improve safety for pedestrians and bicyclists
- Improve existing bikeways, the majority of community members identified thier reason for not biking was the feeling of unsafe road conditions.
- Provide sustainable, alternative transportation options for the City and region

Taking into consideration these priorities, the City identified corridors with existing but not continuous bikeways as well as new north-south corridor to key destinations. The proposed infrastructure improvements in these corridors will increase connectivity and allow for safety and comfortable travel by bicycle and on foot throughout Garden Grove and the surrounding region.

More specifically, the online interactive map invited community members to suggest specific improvements for Garden Grove's bicycle and trail network using an online interactive mapping tool. Over 220 citywide suggestions were mapped by residents, commuters, and visitors, and 15 percent of the suggestions, were identified on the five corridors in this grant application. Each corridor received between 3 and 10 comments for public support.

Finally, during the Re:Imagine Garden Grove planning process, which involved using various public outreach methods to gather input on active transportation needs, the community identified Brookhurst Street, Chapman Avenue and Lampson Avenue as local streets that need improvements or completed bikeways to serve the needs of all users.

b. Provide a list of organizations and agencies that have or will provide letters of support for the project. Letters should be attached to the application or may be sent directly to OCTA. (1 point for each public organization or agency letter - 3 points maximum)

<b>List of Supporting Organizations and Agencies</b>		
1	Garden Grove City Council	_____ pts.
2	Garden Grove Unified School District	_____ pts.
3	Alliance for a Healthy Orange County	_____ pts.
4	Orange County Supervisor Andrew Do, First District	_____ pts.
5		_____ pts.

Total Points Page 6 \_\_\_\_\_ pts.  
 Total Points Page 7 \_\_\_\_\_ pts.  
**Total Points:** \_\_\_\_\_ pts.

## **PART FOUR: BCIP AGENCY RESOLUTION**

***SAMPLE AGENCY RESOLUTION REQUESTING FUNDS FOR APPROVED PROJECT  
RESOLUTION MUST BE RECEIVED BY OCTA NO LATER THAN THE JUNE 30, 2016.***

RESOLUTION NO. \_\_\_\_\_

A RESOLUTION OF THE CITY COUNCIL/BOARD OF DIRECTORS OF THE CITY/COUNTY OF \_\_\_\_\_ AUTHORIZING APPLICATION FOR FUNDS FOR THE BICYCLE CORRIDOR IMPROVEMENT PROGRAM FUNDED WITH CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM FUNDING UNDER THE MOVING AHEAD FOR PROGRESS IN THE 21ST CENTURY AND FIXING AMERICAS SURFACE TRANSPORTATION FEDERAL TRANSPORTATION ACT FOR *(NAME OF PROPOSAL)* PROJECT.

WHEREAS, the United State Congress enacted the Moving Ahead for Progress in the 21st Century (MAP-21) Federal Transportation Act on July 6, 2012 and Fixing America's Surface Transportation (FAST) Federal Transportation Act on December 4, 2015, which makes Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds available to the Orange County Transportation Authority (OCTA); and

WHEREAS, OCTA has established the procedures and criteria for reviewing proposals; and

WHEREAS, *(ADMINISTERING AGENCY)* possesses authority to nominate bicycle projects funded using Congestion Mitigation and Air Quality Improvement Program funding and to finance, acquire, and construct the proposed project; and

WHEREAS, by formal action the *(GOVERNING BODY)* authorizes the nomination of *(NAME OF PROPOSAL)*, including all understanding and assurances contained therein, and authorizes the person identified as the official representative of the *(ADMINISTERING AGENCY)* to act in connection with the nomination and to provide such additional information as may be required; and

WHEREAS, the *(ADMINISTERING AGENCY)* will maintain and operate the property acquired, developed, rehabilitated, or restored for the life of the resultant facility(ies) or activity; and

WHEREAS, with the approval of the California Department of Transportation (Caltrans) and/or OCTA, the *(ADMINISTERING AGENCY)* or its successors in interest in the property may transfer the responsibility to maintain and operate the property; and

WHEREAS, the *(ADMINISTERING AGENCY)* will give Caltrans and/or OCTA's representatives access to and the right to examine all records, books, papers or documents related to the bicycle project; and

WHEREAS, the *(ADMINISTERING AGENCY)* will cause project work to commence within six months following notification from the State or OCTA that funds have been authorized to proceed by the Federal Highway Administration or Federal Transit Administration and that the project will be carried to completion with reasonable diligence; and

WHEREAS, the *(ADMINISTERING AGENCY)* commits *(MATCH DOLLAR VALUE)* of *(MATCHING FUND SOURCE)* and will provide *(PERCENT LOCAL AGENCY MATCH)* of the total project cost as match to the requested *(REQUESTED CMAQ DOLLAR VALUE)* in OCTA CMAQ funds for a total project cost estimated to be *(TOTAL PROJECT COST)*.

WHEREAS, the *(ADMINISTERING AGENCY)* will comply where applicable with provisions of the California Environmental Quality Act, the National Environmental Policy Act, the American with Disabilities Act, Federal Title VI, Buy America provision, and any other federal, state, and/or local laws, rules and/or regulations; and

WHEREAS, the *(ADMINISTERING AGENCY)*'s *(GOVERNING BODY)* authorize the execution of any necessary cooperative agreements between the *(ADMINISTERING AGENCY)* and OCTA to facilitate the delivery of the project; and



**PART FOUR: BCIP AGENCY RESOLUTION (continued)**

***SAMPLE AGENCY RESOLUTION REQUESTING FUNDS FOR APPROVED PROJECT***

WHEREAS, (ADMINISTERING AGENCY) will amend the agency Capital Improvement Program (CIP) to include the project if selected for funding; and

NOW, THEREFORE, BE IT RESOLVED that the City/County of \_\_\_\_\_, hereby authorizes (NAME OF AGENCY REPRESENTATIVE) as the official representative of the (ADMINISTERING AGENCY) to apply for the Congestion Mitigation and Air Quality funding under the Moving Ahead for Progress in the 21st Century Federal Transportation Act and Fixing Americas Surface Transportation Act for (NAME OF PROPOSAL).

BE IT FURTHER RESOLVED, that the City/County of \_\_\_\_\_ agrees to fund its share of the project costs and any additional costs over the identified programmed amount.

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Mayor

Printed (Name and Title) \_\_\_\_\_

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Clerk Recorder

Printed (Name and Title) \_\_\_\_\_

**PART FIVE: ASSURANCES**

*This page must be signed in order for the project to be considered for funding.*

(APPLICANT AGENCY) possesses legal authority to nominate this bicycle project and to finance, acquire, and construct the proposed project; and by formal action (e.g., a resolution) the Implementing Agency's governing body authorizes the nomination of the bicycle project, including all understanding and assurances contained therein, and authorizes the person identified as the official representative of the Implementing Agency to act in connection with the nomination and to provide such additional information as may be required.

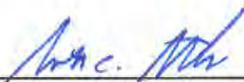
(APPLICANT AGENCY) will maintain and operate the property acquired, developed, rehabilitated, or restored for the life of the resultant facility(ies) or activity. With the approval of the OCTA, California Department of Transportation, the Implementing Agency or its successors in interest in the property may transfer the responsibility to maintain and operate the property.

(APPLICANT AGENCY) will give the OCTA or California Department of Transportation's representative access to and the right to examine all records, books, papers, or documents related to the transportation enhancement activity.

(APPLICANT AGENCY) will comply where applicable with provisions of the California Environmental Quality Act, the National Environmental Policy Act, the Americans with Disabilities Act, Buy America provision, the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, CTC Guidelines, if applicable, FHWA Congestion Mitigation and Air Quality Guidance, Caltrans Local Assistance Procedures Manual, if applicable, any other federal, state, and/or local laws, rules and/or regulations.

If Congestion Mitigation and Air Quality funds or projects are used for other than the intended purposes as defined by federal or state guidelines, the implementing agency may be required to remit all state and federal funds back to the OCTA.

I certify that the information contained in this Bicycle Corridor Improvement Program application, including required attachments, is accurate and that I have read and understand the important information and agree to the assurances on this form.

Signed   
(Administering Agency Representative)

Date 5/5/16

Printed (Name and Title) Scott C. Stiles, City Manager

Administering Agency City of Garden Grove



**PART SIX: COOPERATIVE AGREEMENT CONCURRENCE**

*This page must be signed in order for the project to be considered for funding.*

Project Implementing Agency has reviewed the attached draft Bicycle Corridor Improvement Program cooperative agreement template and has determined that the cooperative agreement is:

- Sufficient and meets the expectations of the Project Implementing Agency. No further changes necessary.
- Sufficient, with the suggested modifications:

Please list and explain:

Bicycle Corridor Improvement Program cooperative agreement will be finalized and executed between Project Implementing Agency and OCTA if the project is selected for funding.

I certify that the information contained in this Bicycle Corridor Improvement Program application, including required attachments, is accurate and that I have read and understood the important information and agree to the assurances on this form.

Signed Scott C. Stiles Date 5/5/16  
 (Administering Agency Representative)

Printed (Name and Title) Scott C. Stiles, City Mgr.

Administering Agency City of Garden Grove

## CHECK LIST AND EVALUATION CRITERIA

### Check list of Application Items (check all items included in this package)

- Application (Part 1 - 3)
- Cover Letter
- Table of Contents
- Unbound, original single sided copy
- 5 Copies
- PART 1 - General Project Information
- PART 2 - Funding
- PART 3 - Evaluation Criteria
- Draft Resolution (PART 4)
- Signed Final Resolution (when available)
- Assurances (PART 5)
- Cooperative Agreement Concurrence (PART 6)
- Environmental Documentation
- Project Site Photos
- Design / Concept Drawing
- Project Maps
- GIS Map and Shape File
- Project Site Maps
- Right of Way
- Right of Way Map
- Right of Way Certification (if applicable)
- Caltrans Active Transportation Program Cost Benefit Analysis Tool
- TIMS, SWITRS, or Other Injury/Fatalities Map and Data
- Air Quality Calculations

### Evaluation Criteria and Point Distribution

Weighted Criteria	Points	Percentage
Matching Funds	15	15%
Coordination	15	15%
Connectivity, Relationships and Priority	20	20%
Project Readiness	20	20%
Cost Benefit	10	10%
Safety Enhancements	15	15%
Public Participation and Agency Support	5	5%
<b>Total</b>	<b>100</b>	<b>100%</b>

#### Pass/Fail Criteria

- State and Federal Compliance
  - Financial Viability
  - Air Quality
-



## EXHIBIT A: ENVIRONMENTAL DOCUMENTATION

- OCTA has provided preliminary support for the road rebalancing projects on West Street and Gilbert Street
- Traffic studies will be accomplished through project grant

## EXHIBIT B: PHOTOS OF PROJECT SITE

### 1.) BROOKHURST STREET



**Stripe Bicycle Lanes.** Brookhurst Street looking north from Chapman Avenue.



**Add Buffer to Existing Bicycle Lanes.** A typical photo of the existing narrow bike lanes on Brookhurst, south of Chapman.

## 2.) WEST STREET



**Road Rebalancing.** West Street, looking north along Westhaven Park just north of Lampson Avenue.



**Road Rebalancing.** West Street, looking south along residential neighborhood, north of Chapman Avenue.

3.) GILBERT STREET



**Road Rebalancing.** Gilbert Street looking north from Shannon Avenue.



**Bike Route.** Gilbert Street looking north from Imperial Avenue.



**Bike Route.** Imperial Avenue looking east toward Shapell Street.

B: PROJECT PHOTOS



**Bike Route.** Shapnell Street looking south toward Trask Avenue.



**Bike Route.** Crosswalk to existing SR-22 pedestrian under-crossing (on left).



**Bike Route.** Deodara Drive looking south along Bolsa Grand High School (left) and Garden Grove Park (right).

4.) CHAPMAN AVENUE



**Add Buffer to Existing Bicycle Lanes.** Wide outside travel lane at Chapman Avenue near Springdale Avenue can be narrowed to create buffered bicycle lanes.



**Add Buffer to Existing Bicycle Lanes.** Looking west along Chapman at Chapman Sports Park.

## 5.) LAMPSON AVENUE



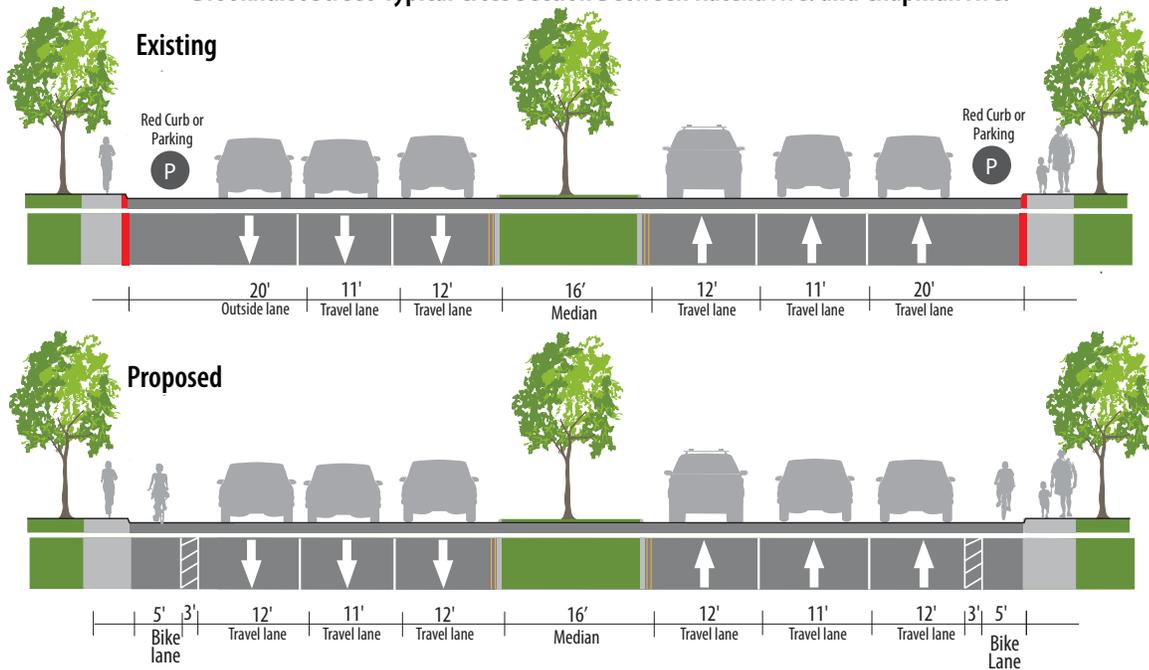
**Narrow Travel Lanes.** The crossing at Lampson and Nelson is an example of where the right-of-way is wide and there is an opportunity to narrow the travel lanes with striping to calm traffic and improve the bicycle route.

# EXHIBIT C: PROJECT CONCEPT DESIGN

## 1.) BROOKHURST STREET

Location	Start	End	Existing	Proposed	Length (mi)	Notes
<b>Brookhurst Street: Create a continuous north-south bikeway by improving existing bike lanes with buffers, striping new bike lanes to fill gaps, improving bikeway striping at intersections and providing wayfinding signs.</b>						
Brookhurst St	Katella Ave	Aldgate Ave	n/a	Bike Lane	0.14	Narrow travel lanes to 11' add 5' bike lane
Brookhurst St (SB)	Aldgate Ave	Orangewood Ave	n/a	Buffered Bike Lane	0.35	Change parking restriction and add buffered bike lane
Brookhurst St (NB)	Aldgate Ave	Orangewood Ave	n/a	Bike Lane	0.35	Narrow lanes, add bike lane
Brookhurst St (SB)	Orangewood Ave	Melody Park Dr.	n/a	Buffered Bike Lane	0.35	Change parking restriction and add buffered bike lane
Brookhurst St (NB)	Orangewood Ave	Melody Park Dr.	Bike Lane	Buffered Bike Lane	0.35	Narrow outside travel lane and stripe 3' buffer to existing bike lane
Brookhurst St	Melody Park Dr.	Chapman Ave	n/a	Bike Lane	0.15	Narrow travel lanes to 11' add 5' bike lane
Brookhurst St	Chapman Ave	Trask Ave	Bike lane	Buffered Bike Lane	1.55	Narrow travel lanes and stripe 3' buffer to existing bike lane

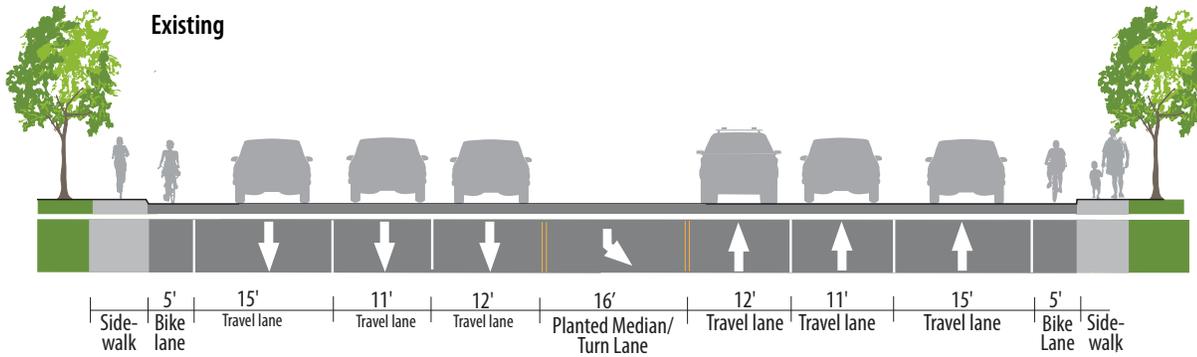
**Brookhurst Street Typical Cross Section Between Katella Ave. and Chapman Ave.**



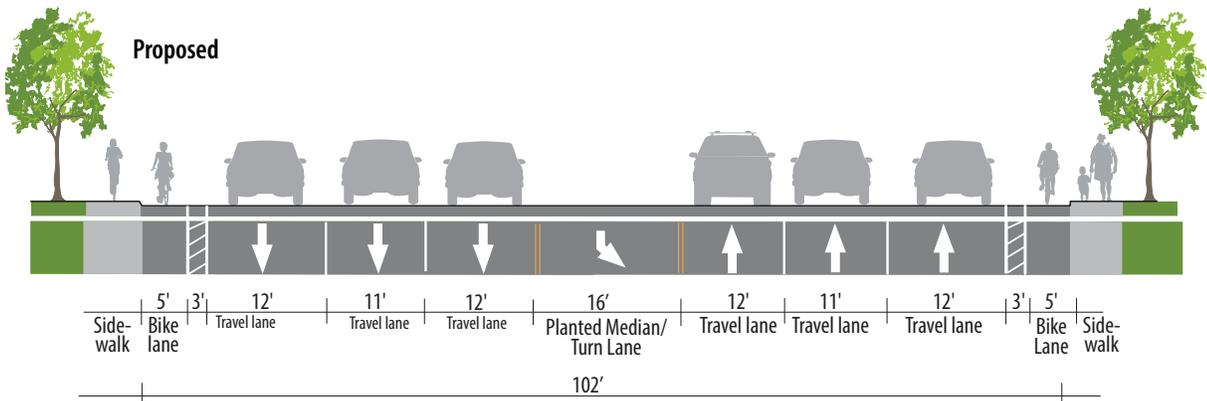


### Brookhurst Street Typical Cross Section Between Chapman Ave. and Trask Ave.

Existing



Proposed

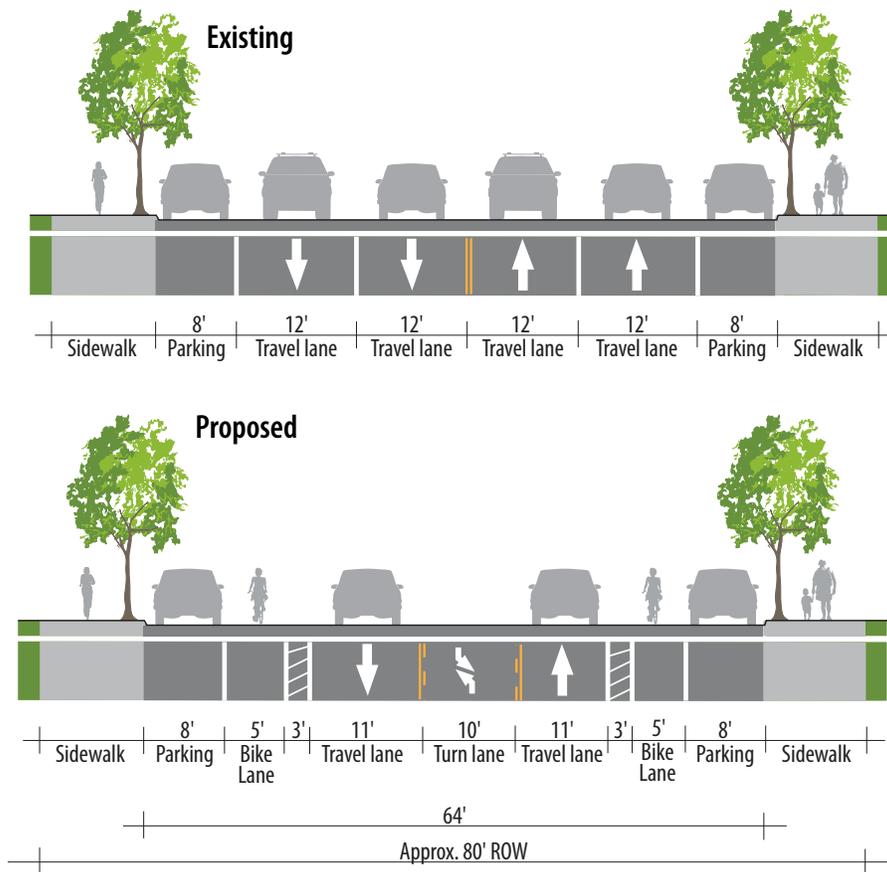


Example photo of proposed buffered bike lane

2.) WEST STREET

Location	Start	End	Existing	Proposed	Length (miles)	Notes
<b>West Street: Add bike lanes though 3 to 4 lane road rebalancing. Install bicycle wayfinding signs.</b>						
West St	W. Convention Way	Garden Grove Blvd	n/a	Buffered Bike Lanes	1.7	4 to 3 road rebalancing

West Street Typical Cross Section - Road Rebalancing

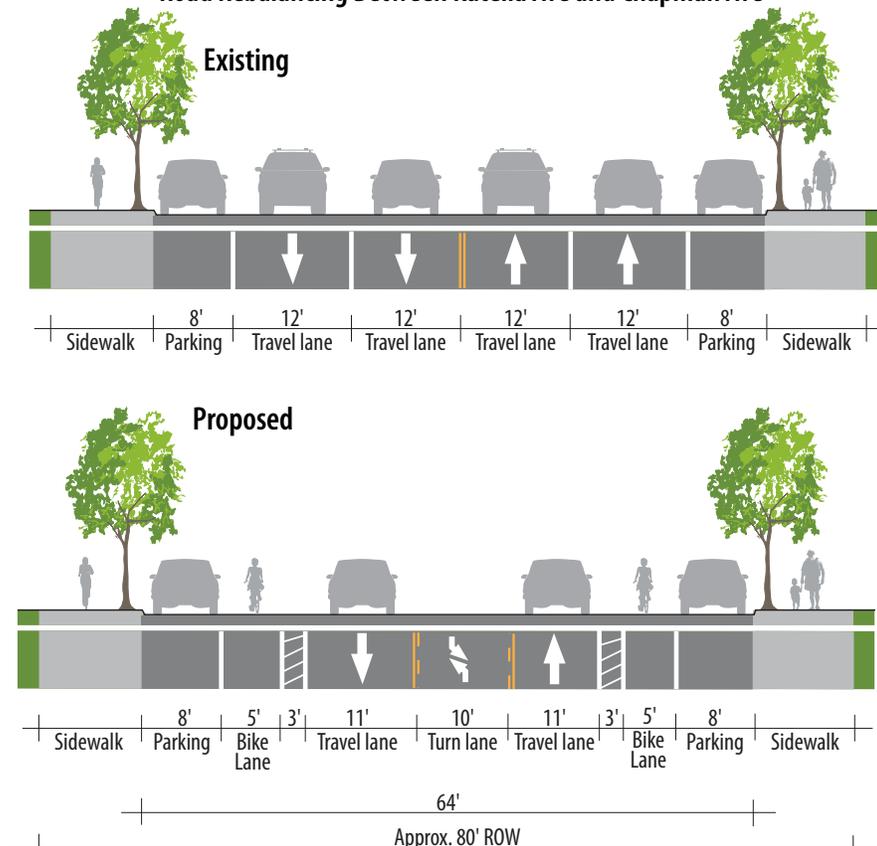




### 3.) GILBERT STREET

Location	Start	End	Existing	Proposed	Length (miles)	Notes
<b>Gilbert Street: Add bike lane through 3 to 4 lane road rebalancing between Katella and Chapman Avenue. Signed bike route from Chapman to Westminster via neighborhood streets. Install bicycle wayfinding signs.</b>						
Gilbert St	Katella Ave	Chapman Ave	n/a	Buffered Bike Lanes	1.0	4 to 3 road rebalancing
Gilbert St	Chapman Ave	Imperial Ave	n/a	Bike Route	1.3	Share the road signs and bicycle wayfinding
Imperial Ave	Gilbert St	Shapell St	n/a	Bike Route	0.12	Share the road signs and bicycle wayfinding
Shapell St	Imperial	SR-22 Pedestrian Undercrossing	n/a	Bike Route	0.28	Share the road signs and bicycle wayfinding
Deodara Dr	SR-22 Pedestrian Undercrossing	Westminster Blvd	n/a	Bike Route	0.40	Share the road signs and bicycle wayfinding

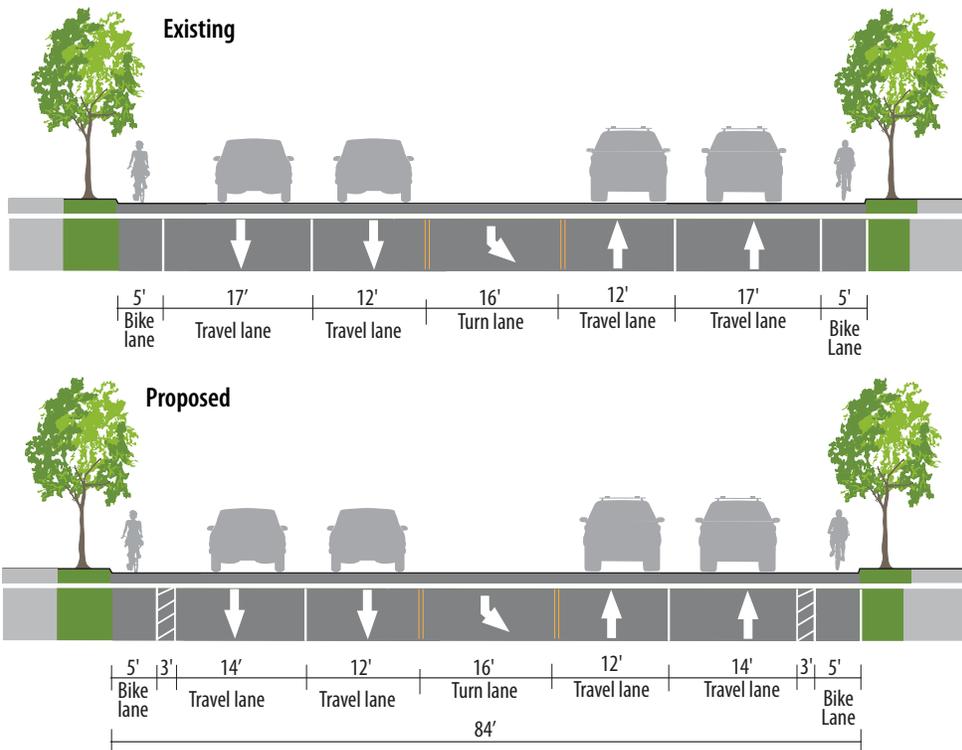
**Gilbert Street Typical Cross Section  
Road Rebalancing Between Katella Ave and Chapman Ave**



4.) CHAPMAN AVENUE

Location	Start	End	Existing	Proposed	Length (mi)	Notes
<b>Chapman Avenue: Improve existing bike lanes with buffers and wayfinding signs.</b>						
Chapman Ave	Valley View St	Beach Blvd	Bike Lane	Buffered Bike Lane	2	Narrow lanes and stripe 3' buffer

Chapman Avenue Typical Cross Section Between Valley View and City Limit.



Example photo of proposed buffered bike lane

### 5.) LAMPSON AVENUE

Location	Start	End	Existing	Proposed	Length (miles)	Notes
<b>Lampson Avenue:</b> Lampson is the only continuous east-west corridor centrally located in Garden Grove that is not a truck route, making it a great candidate for additional bikeway improvements. The right-of-way (ROW) through the corridor varies widely and has intermittent bike lanes. Where the ROW widens, narrowing travel lanes through striping will help slow speeding vehicles. Additional improvements can be achieved through improving existing bike lanes with buffers, improving bikeway striping at intersections, and providing wayfinding signs.						
Lampson Avenue	Westcliff Dr	Magnolia St	Bike Lane	Buffer Bike Lane	0.87	Narrow outside lane, stripe buffer
Lampson Avenue	Magnolia St	Nelson St	Bike Route	Lane narrowing with striped buffer	1.7	Narrow vehicle travel lane for traffic calming
Lampson Avenue	Nelson St	Euclid St	Bike Lane	Wayfinding	0.3	New wayfinding signs
Lampson Avenue	Euclid St	9th St	Bike Route	Lane narrowing with striped buffer	0.5	Narrow vehicle travel lane for traffic calming
Lampson Avenue	9th St	Glen St	Bike Lane	Buffered bike lane	0.22	Add buffer to existing lane
Lampson Avenue	Glen St	Buaro St	Bike Lane	Bike lane	0.53	Intersection improvements
Lampson Avenue	Buaro St	Oertly Dr	Bike Route	Wayfinding	0.53	New wayfinding signs
Lampson Avenue	Oertly Dr	Haster	Bike lane	Buffered bike lane	0.23	Narrow outside travel lane and stripe 3' buffer



Examples of lane narrowing through painted shoulder markings (left) or painted center median (right) <http://www.fhwa.dot.gov/publications/research/safety/08067/>

### BICYCLE WAYFINDING



Examples of bicycle wayfinding signs which are proposed to be installed along all five project corridors.

### INTERSECTION AND CONFLICT ZONE IMPROVEMENTS



Through bicycle lane striping is proposed to improve intersections.

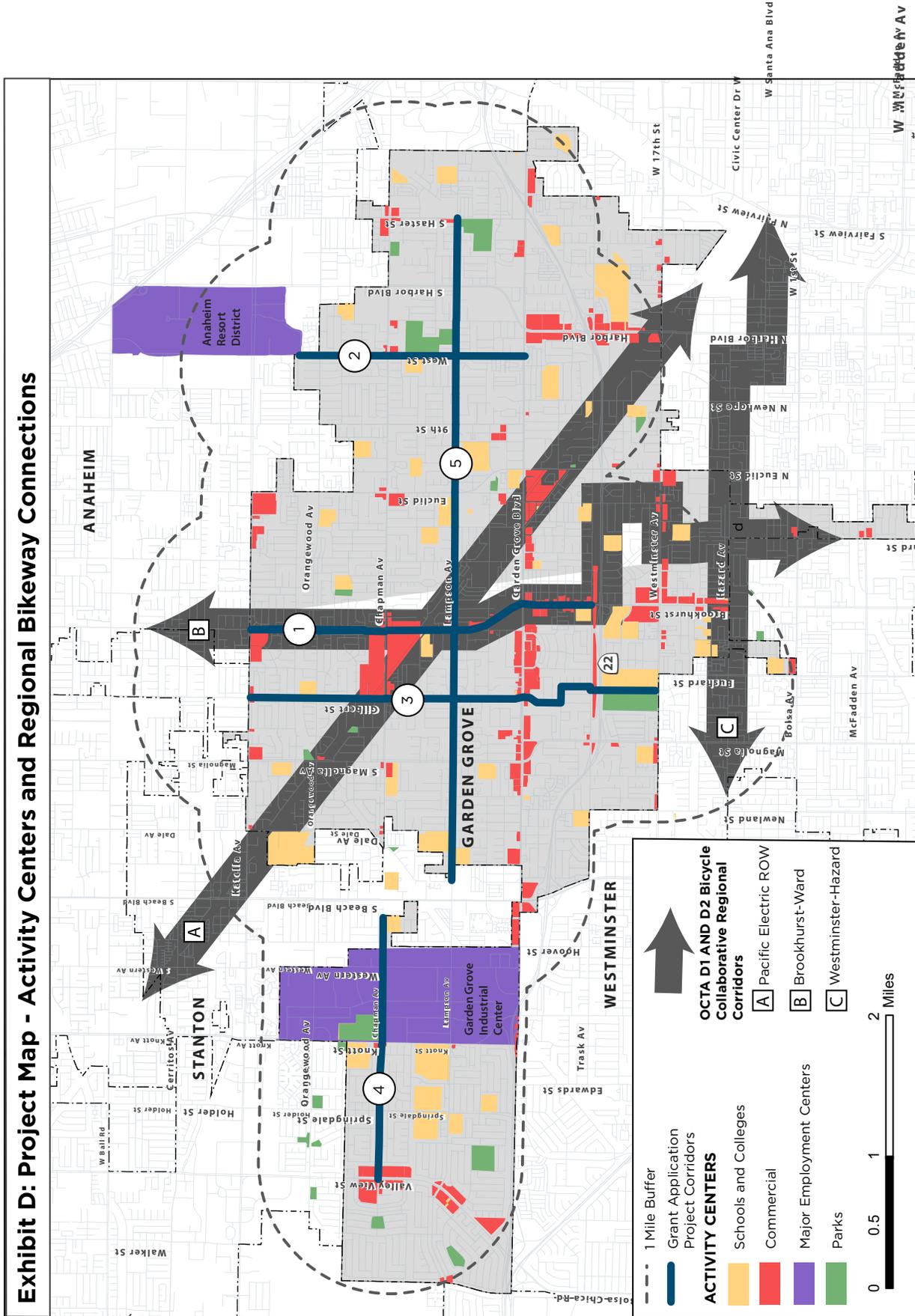


Conflict striping is proposed.



## EXHIBIT D: PROJECT MAPS

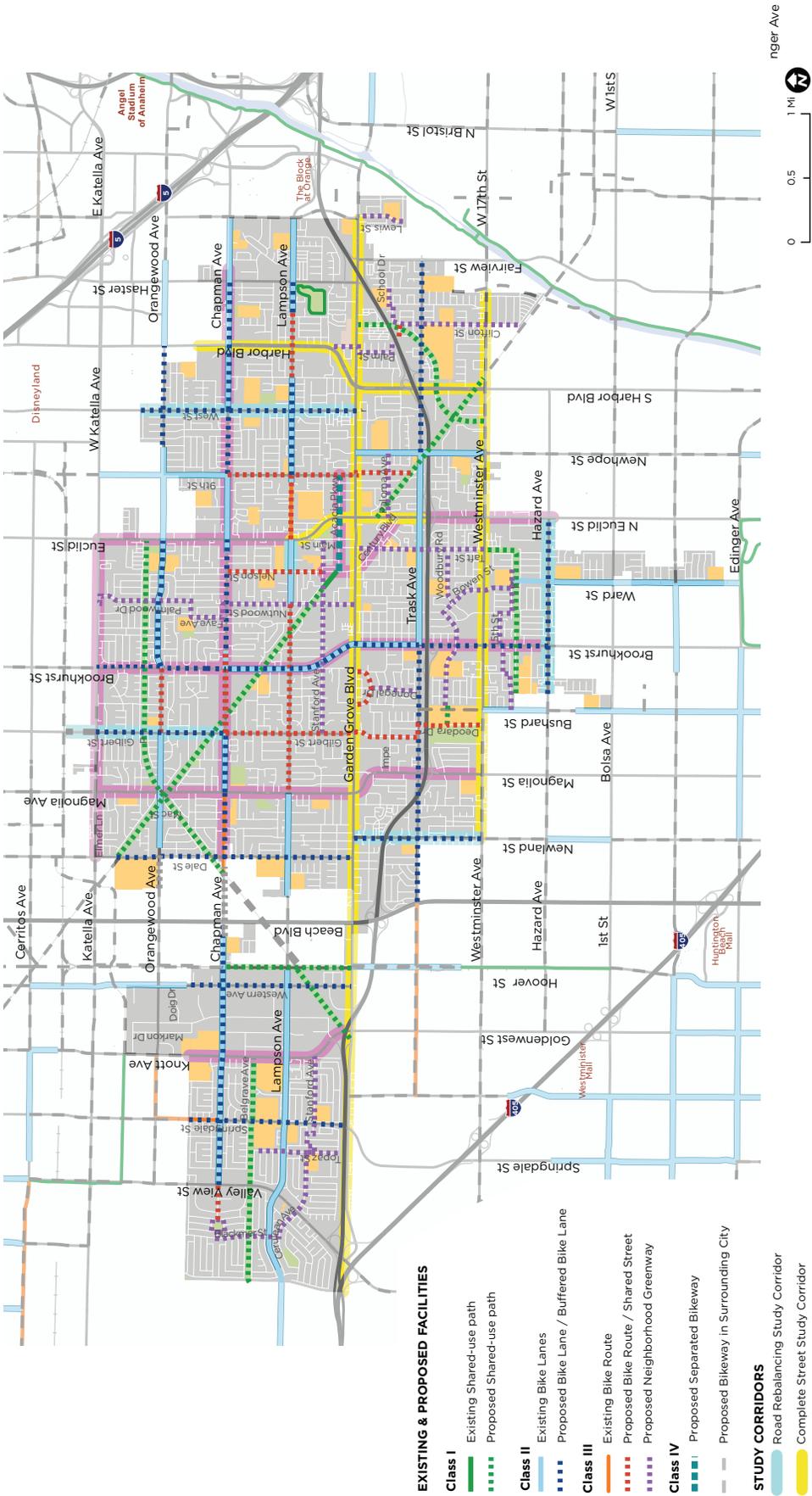
- Garden Grove Activity Centers and Regional Bike Corridors
- 2016 Draft Garden Grove Active Streets Plan Proposed Bike Facility Improvements
- Project Extents and Improvement Types
- 1. Brookhurst Street
- 3. Gilbert Street
- 2. West Street
- 4. Chapman Avenue
- 5. Lampson Avenue



Source: OCTA, 2013. The City of Orange Grove



**Exhibit D: Project Map - Draft Garden Grove Active Streets Proposed Bikeways Map**



**EXISTING & PROPOSED FACILITIES**

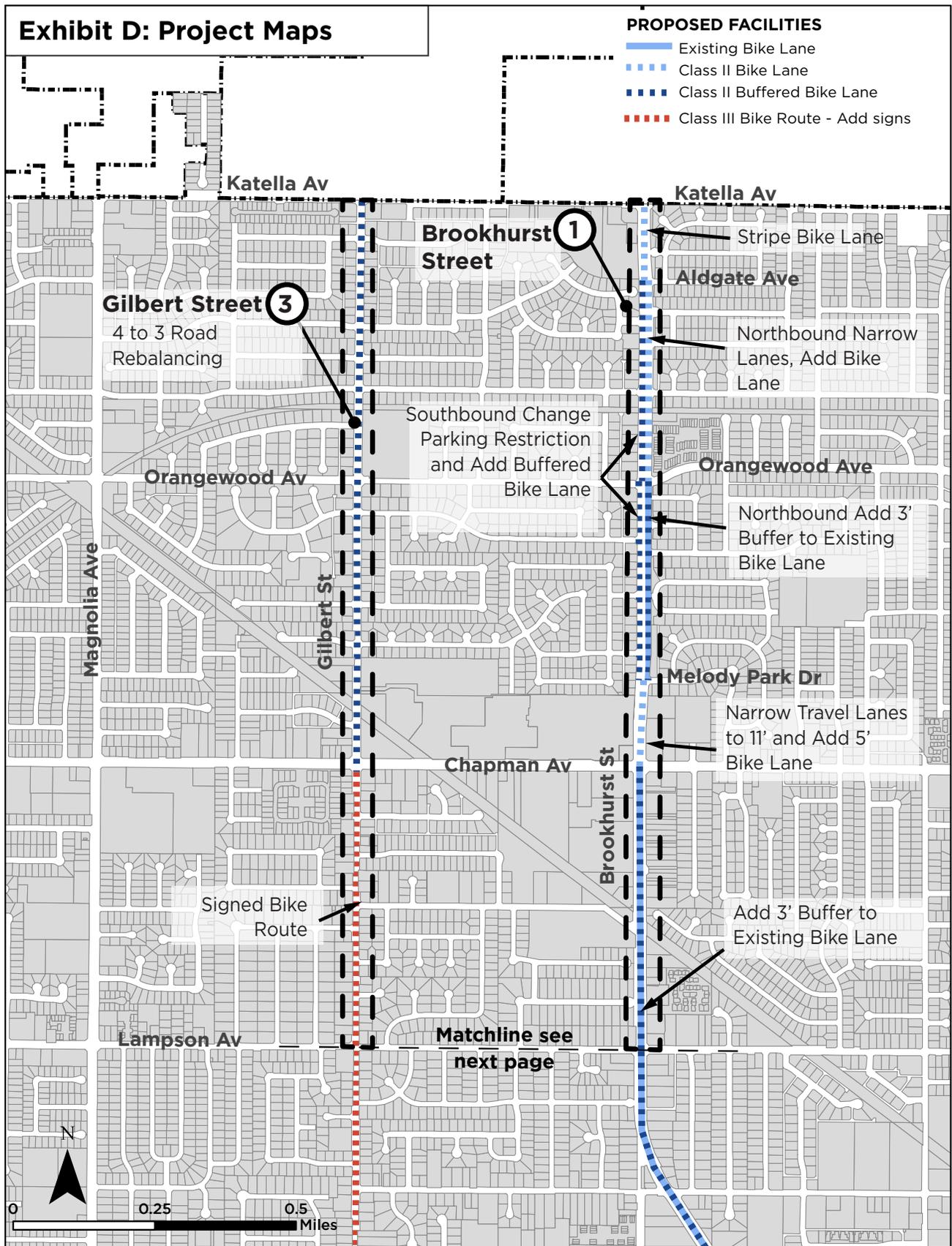
- Class I**
    - Existing Shared-use path
    - Proposed Shared-use path
  - Class II**
    - Existing Bike Lanes
    - Proposed Bike Lane / Buffered Bike Lane
  - Class III**
    - Existing Bike Route
    - Proposed Bike Route / Shared Street
    - Proposed Neighborhood Greenway
  - Class IV**
    - Proposed Separated Bikeway
    - Proposed Bikeway in Surrounding City
- STUDY CORRIDORS**
- Road Rebalancing Study Corridor
  - Complete Street Study Corridor
  - Class IV Separated Bikeway Study Corridor
  - Shared-use Trail Corridor
- LAND USE**
- Schools

**DRAFT-PROPOSED BIKE FACILITY IMPROVEMENTS**

Garden Grove Active Streets Master Plan  
FOR REVIEW ONLY - APRIL 2016

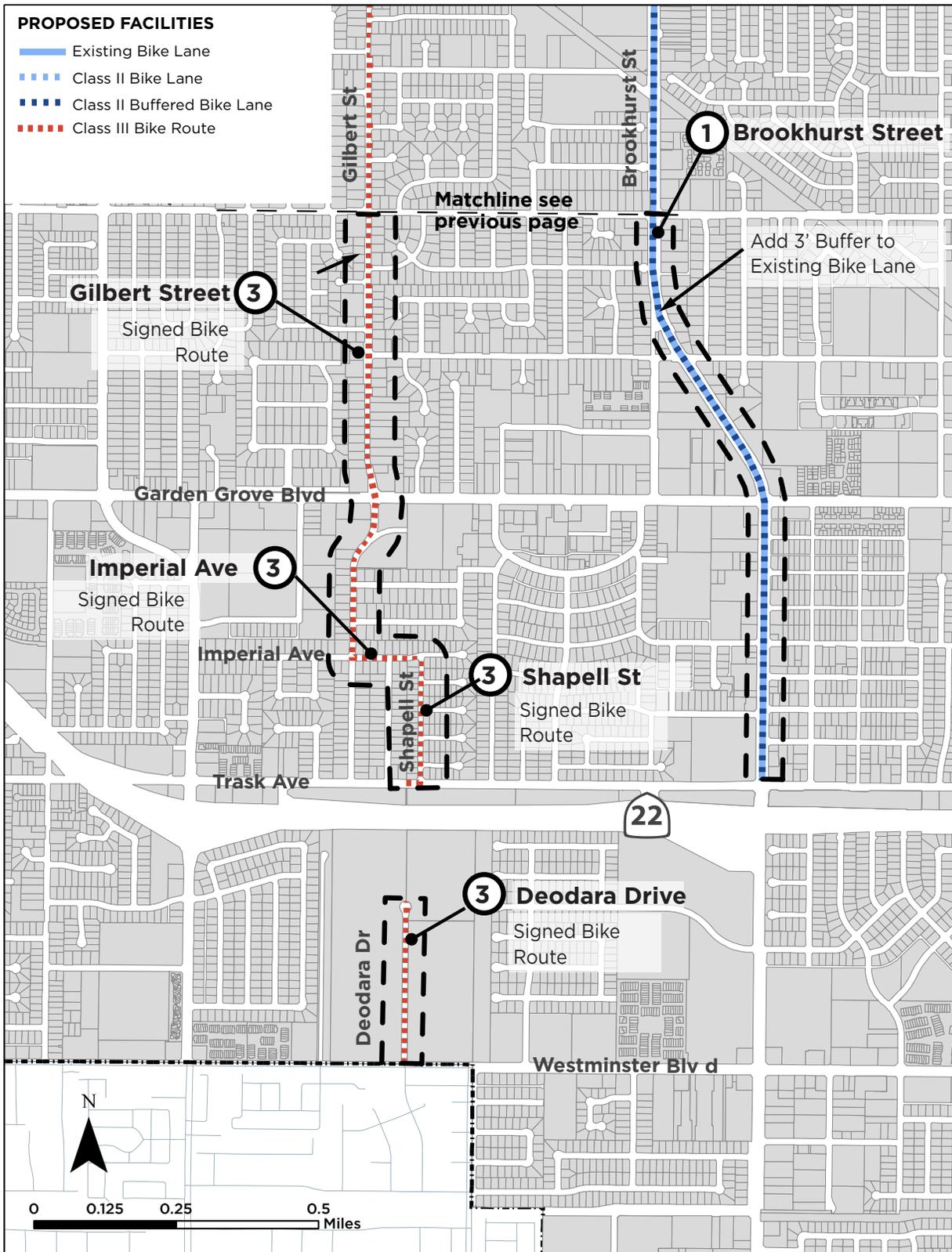


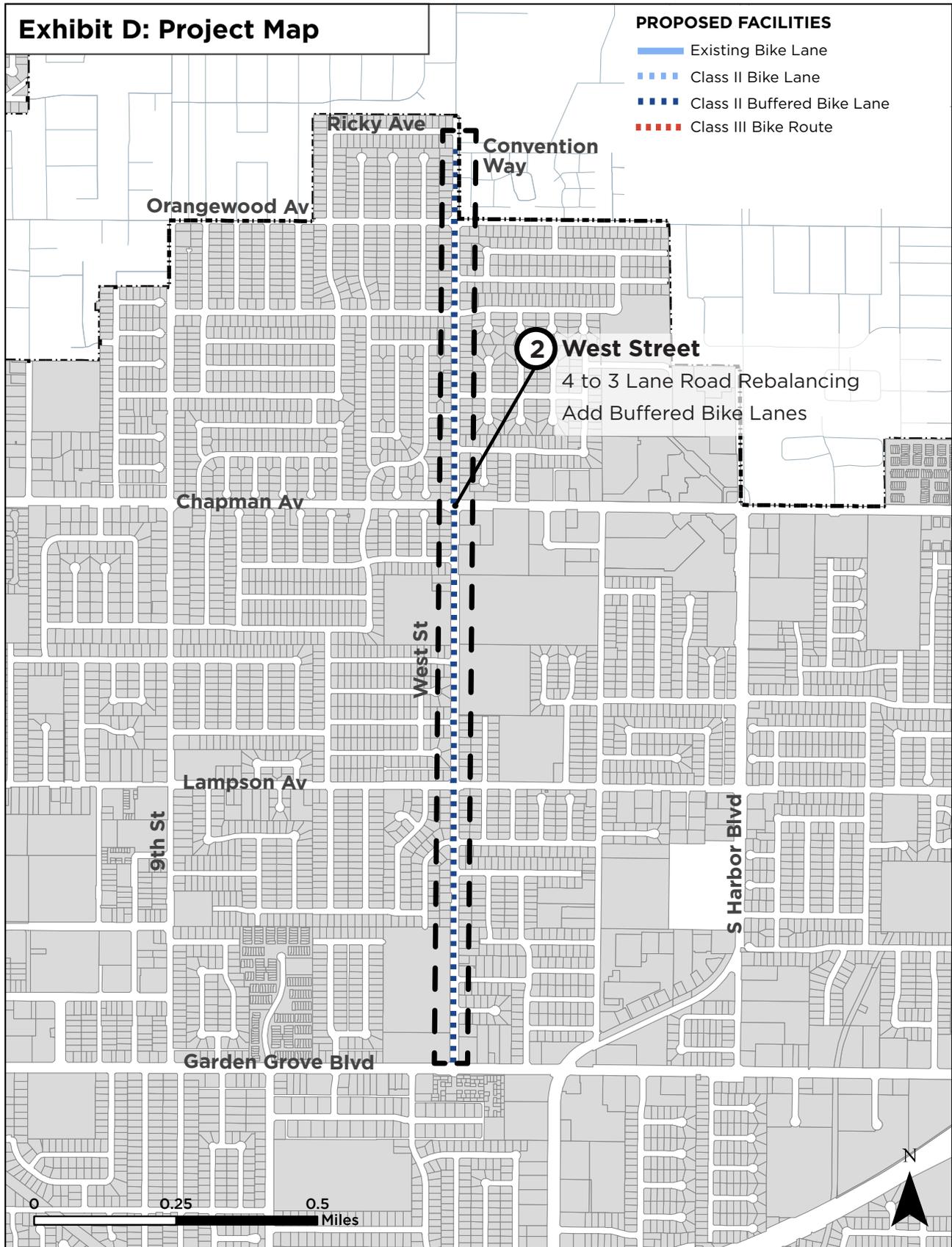
### Exhibit D: Project Maps





## Exhibit D: Project Maps



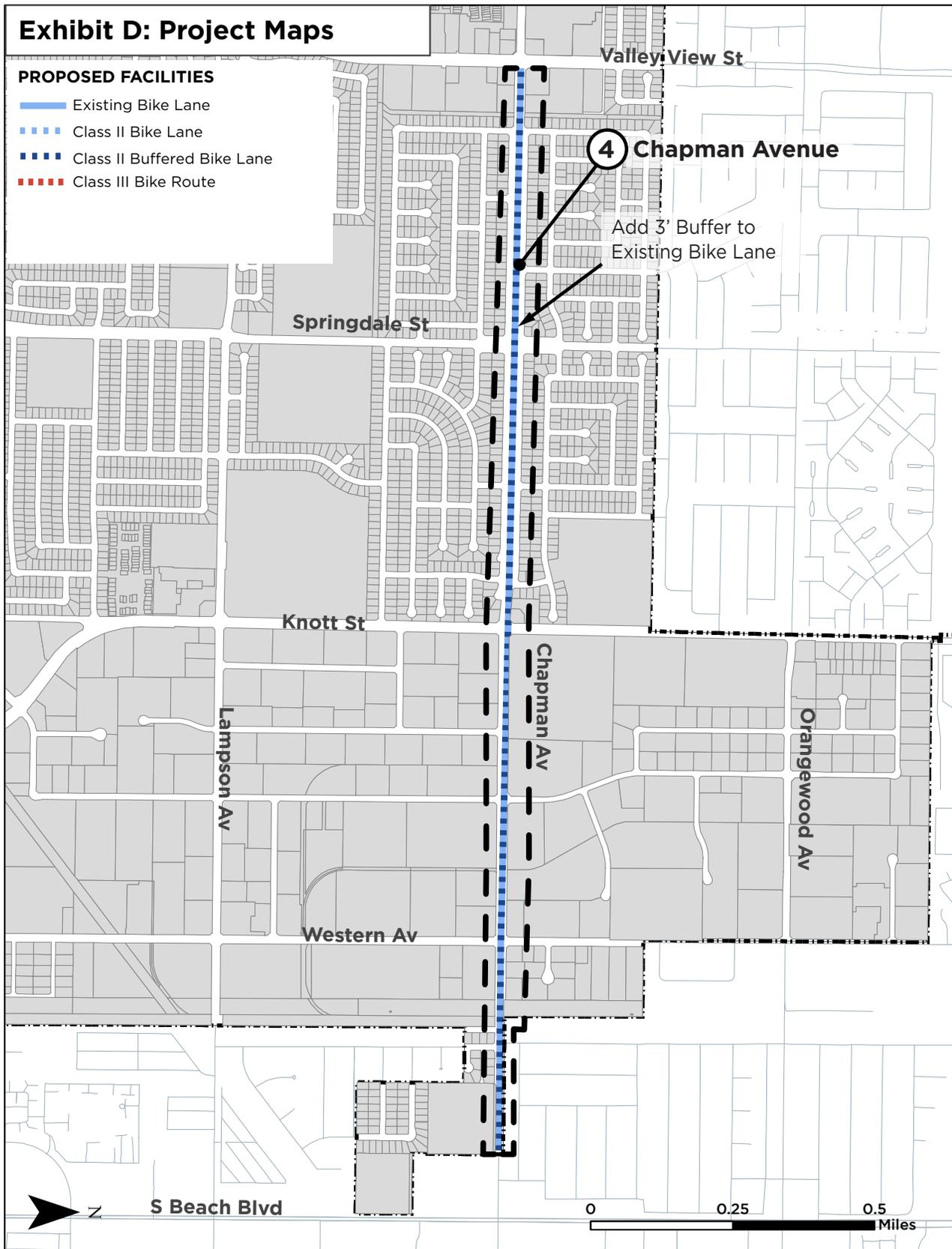


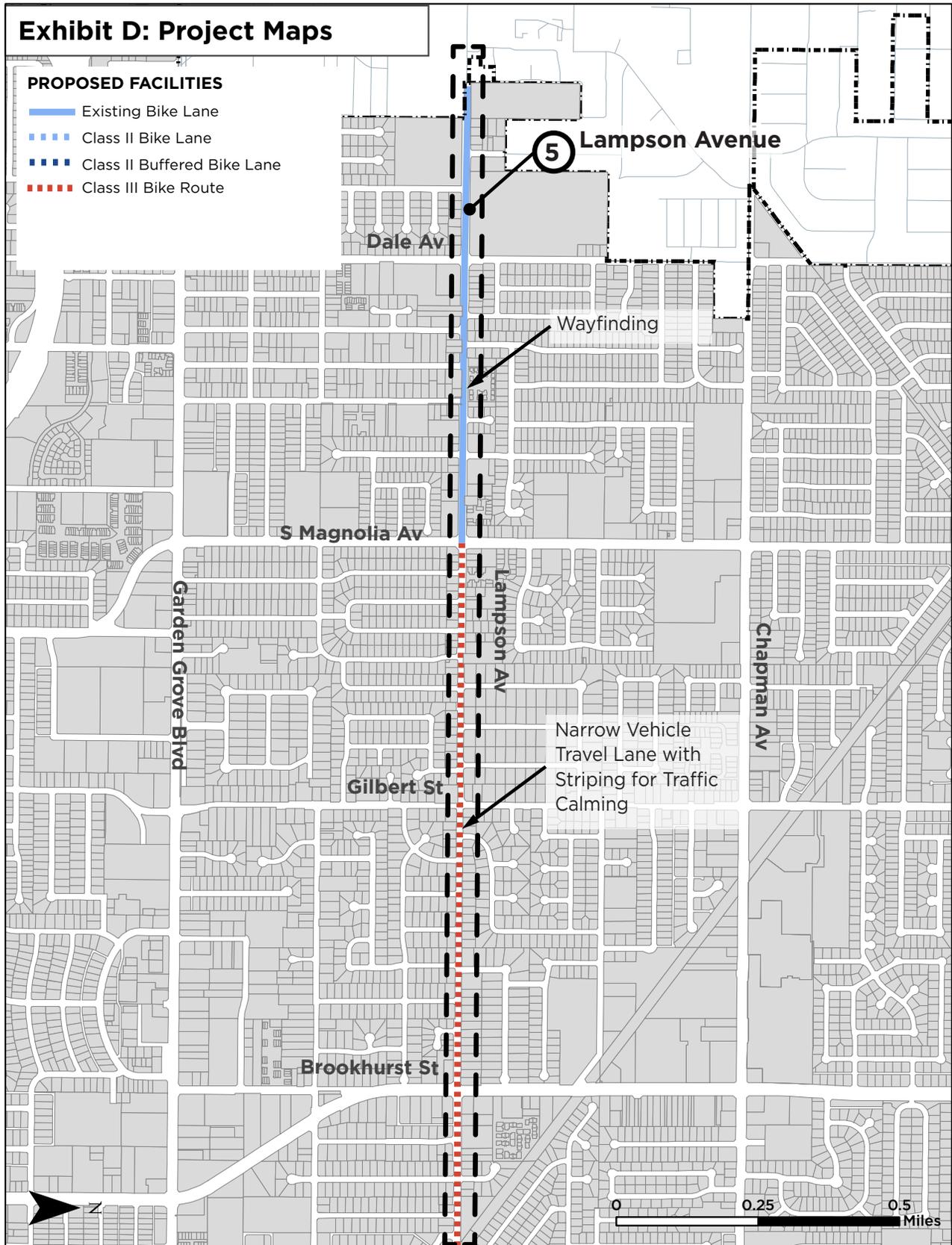


## Exhibit D: Project Maps

### PROPOSED FACILITIES

-  Existing Bike Lane
-  Class II Bike Lane
-  Class II Buffered Bike Lane
-  Class III Bike Route





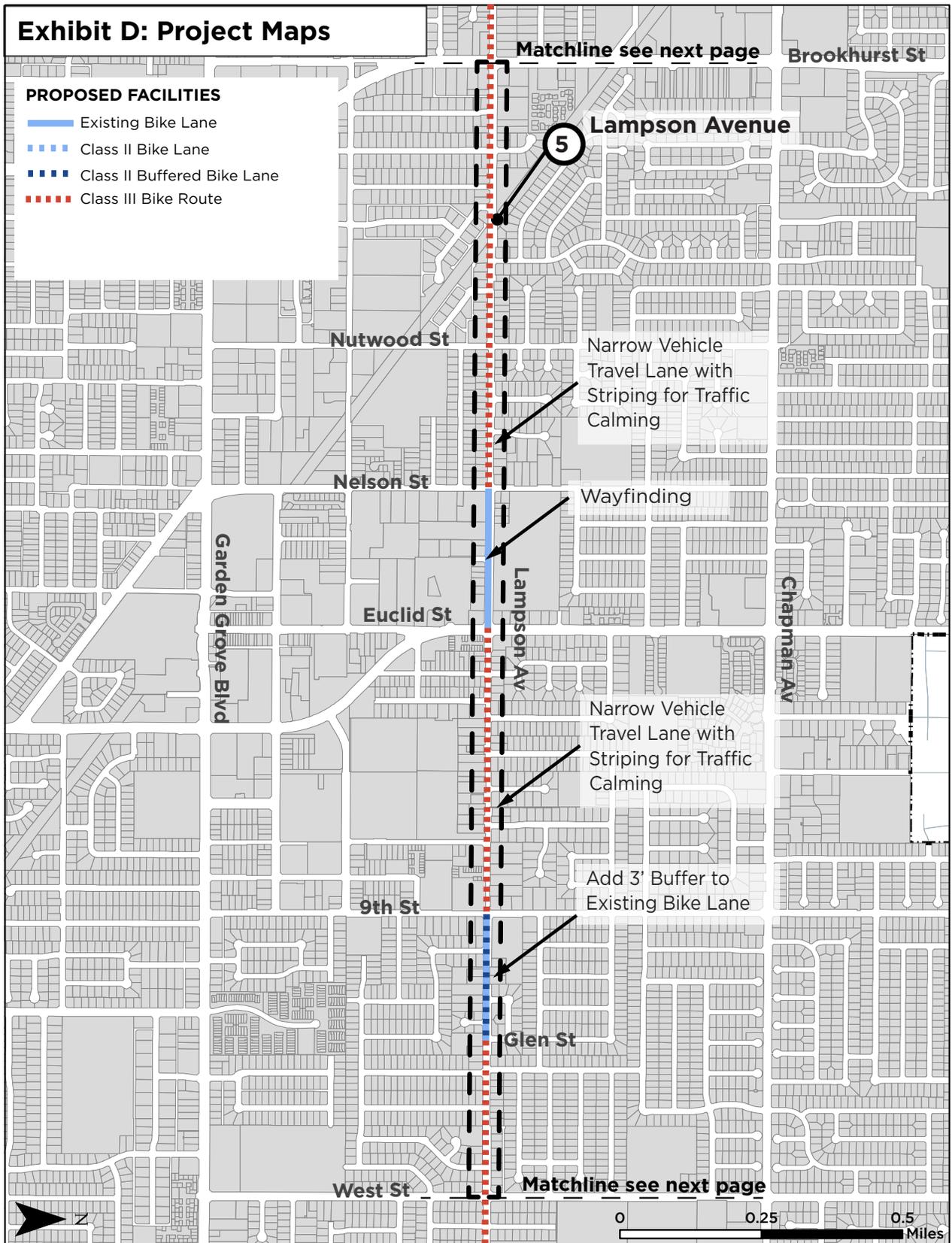
City of Garden Grove Bicycle Corridor Improvements\ 39



# Exhibit D: Project Maps

## PROPOSED FACILITIES

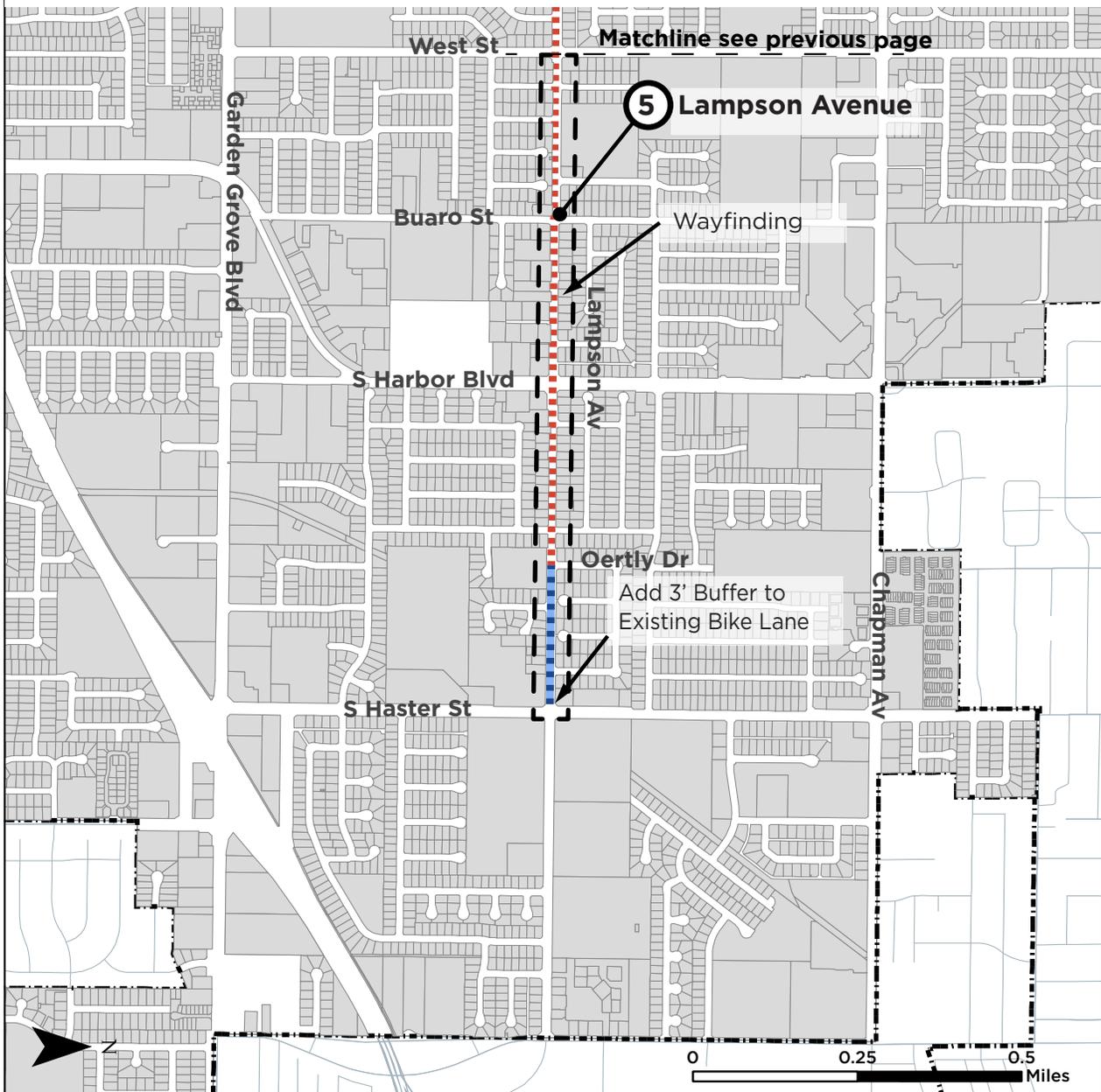
- Existing Bike Lane
- Class II Bike Lane
- Class II Buffered Bike Lane
- Class III Bike Route



## Exhibit D: Project Maps

### PROPOSED FACILITIES

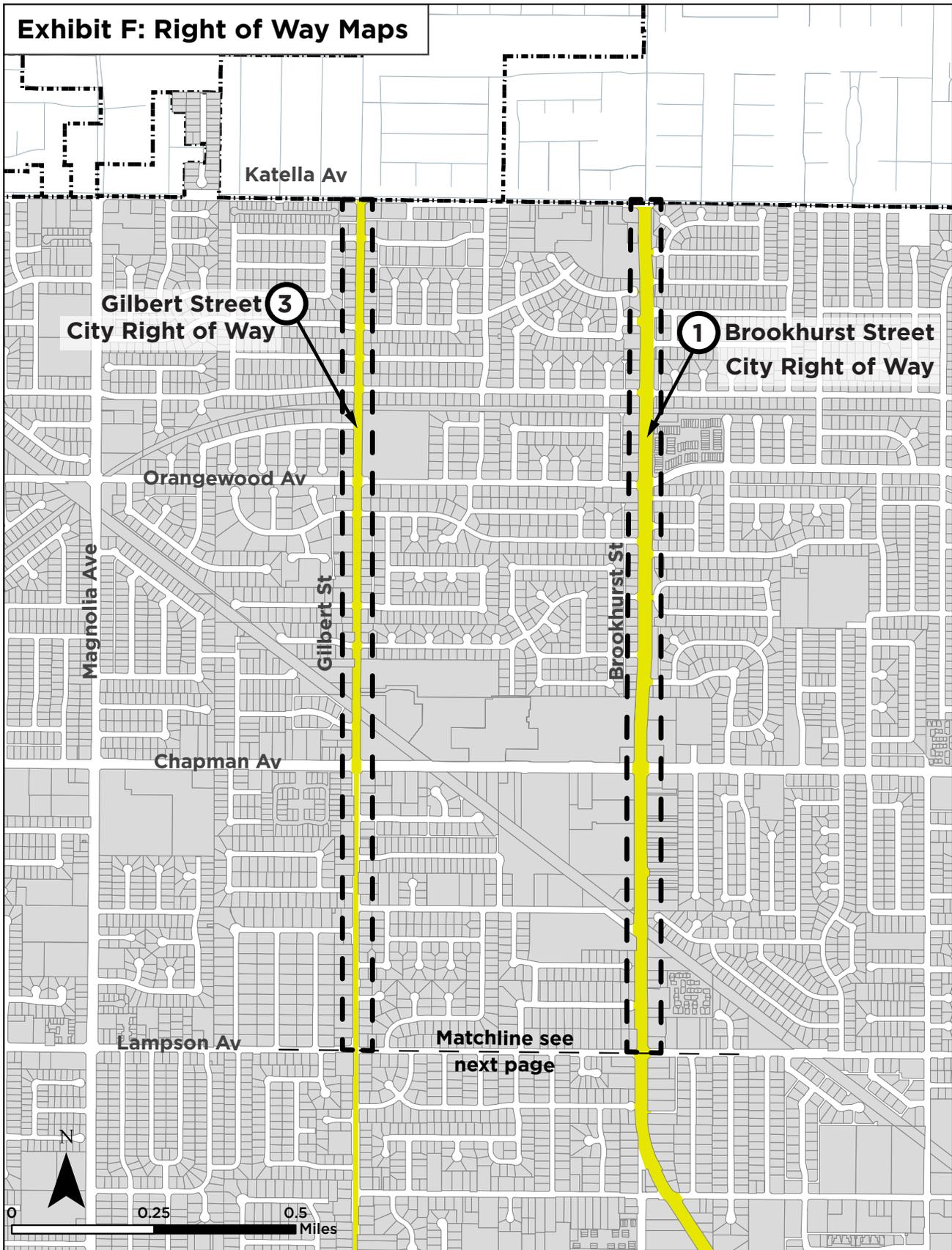
-  Existing Bike Lane add Wayfinding
-  Class II Bike Lane
-  Class II Buffered Bike Lane
-  Class III Bike Route





## EXHIBIT E: PROJECT COMPLETION SCHEDULE

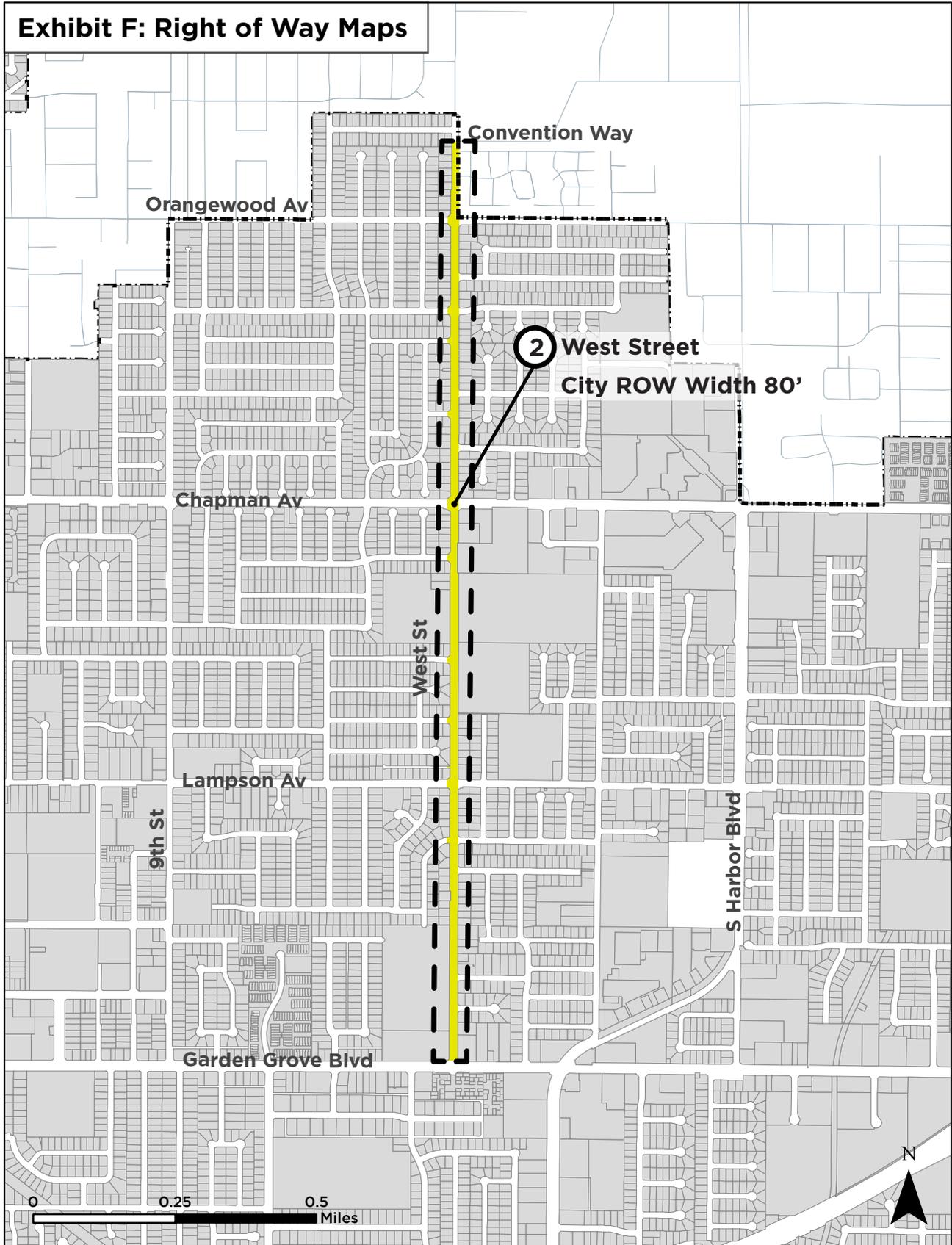
	FY 16/17												FY 17/18												FY 18/19											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Draft Environmental																																				
Final Environmental																																				
Submit Request for Authorization for Design Anticipated Authorization (E-76)																																				
Start Design/Engineering																																				
Complete Design/Engineering Authorization (E-76) for Construction																																				
Anticipated Authorization (E-76)																																				
Ready to advertise																																				
Award Construction																																				
Project Completion (open for use)																																				
Start Close Out Phase																																				
End Close Out Phase																																				





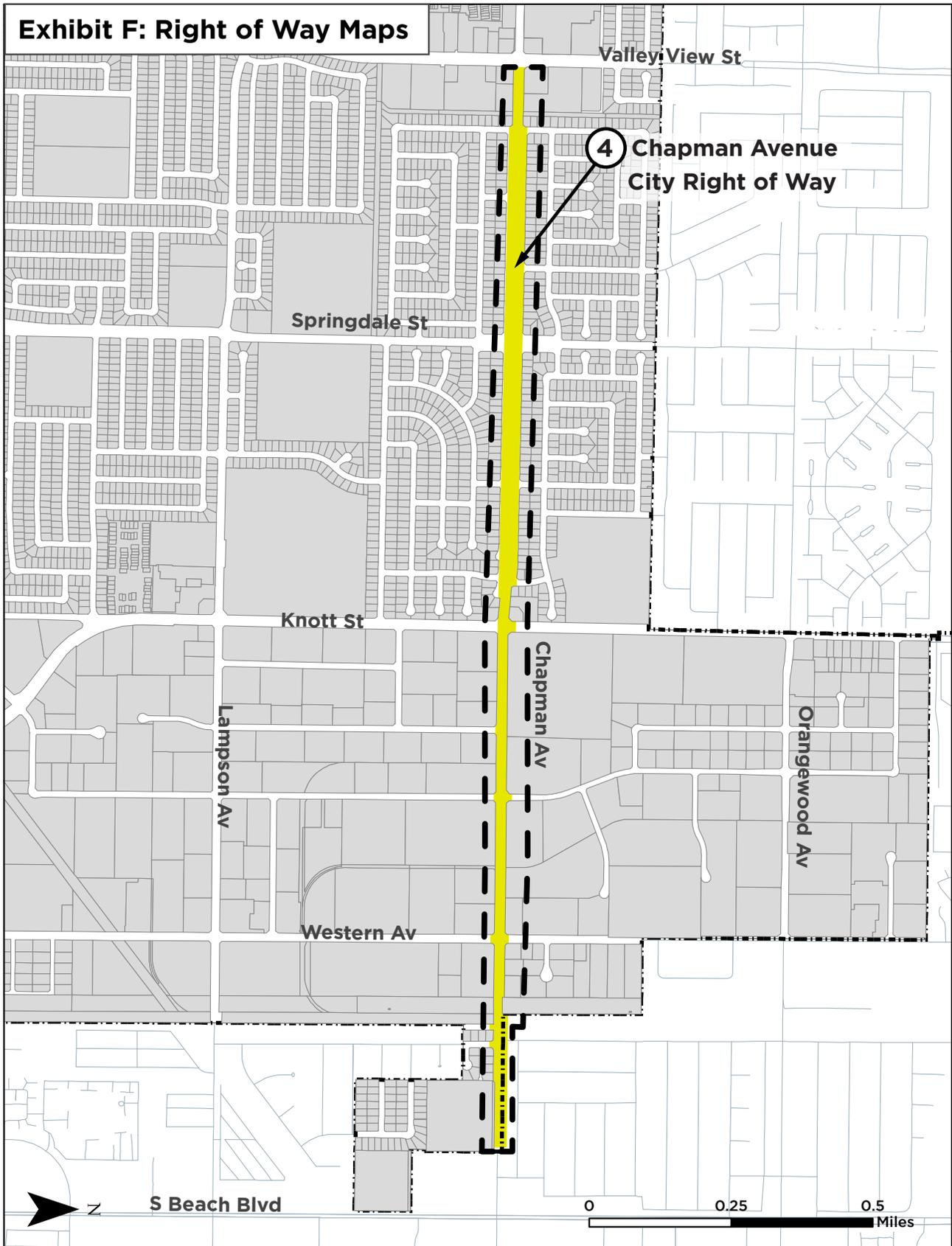
## Exhibit F: Right of Way Maps





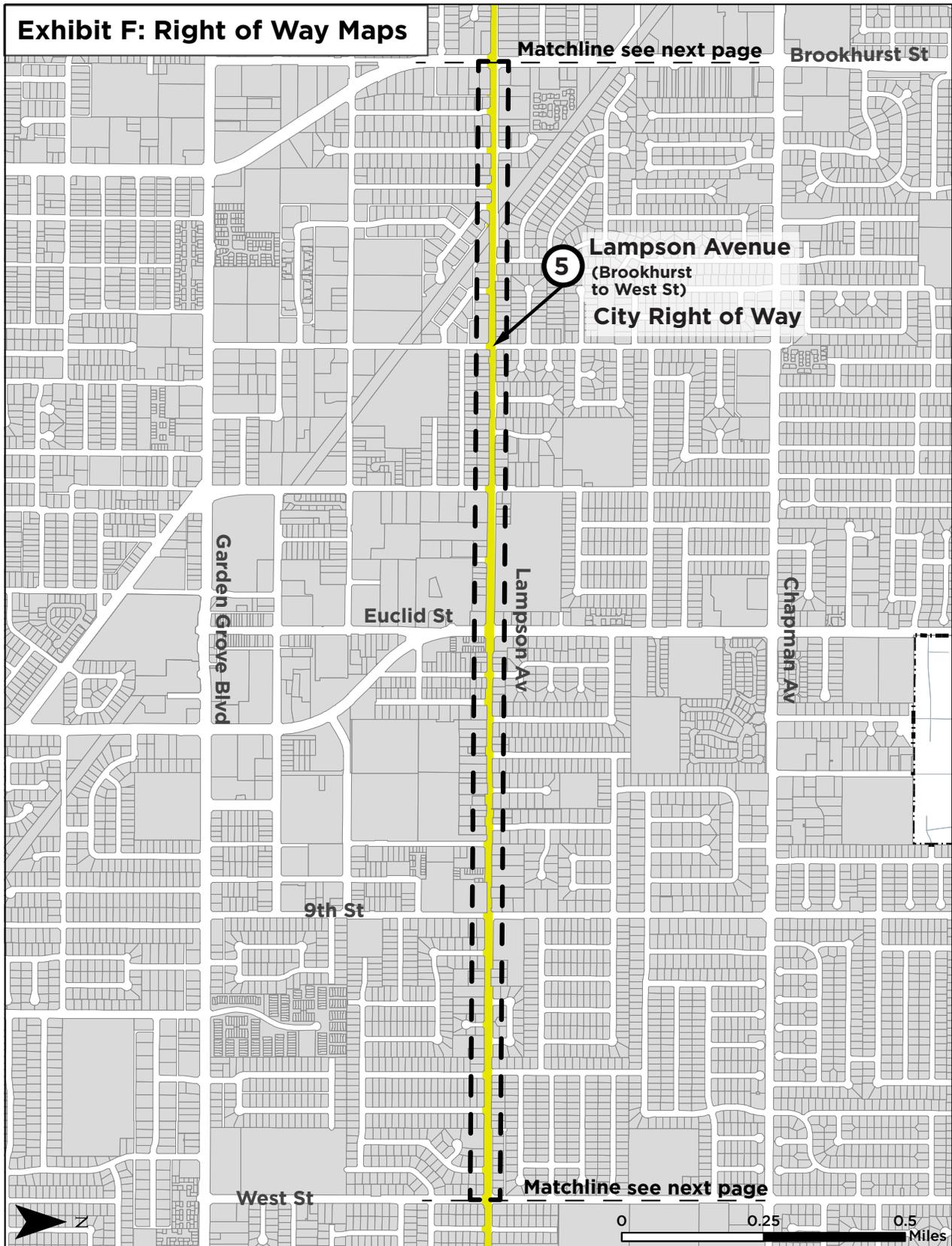


### Exhibit F: Right of Way Maps

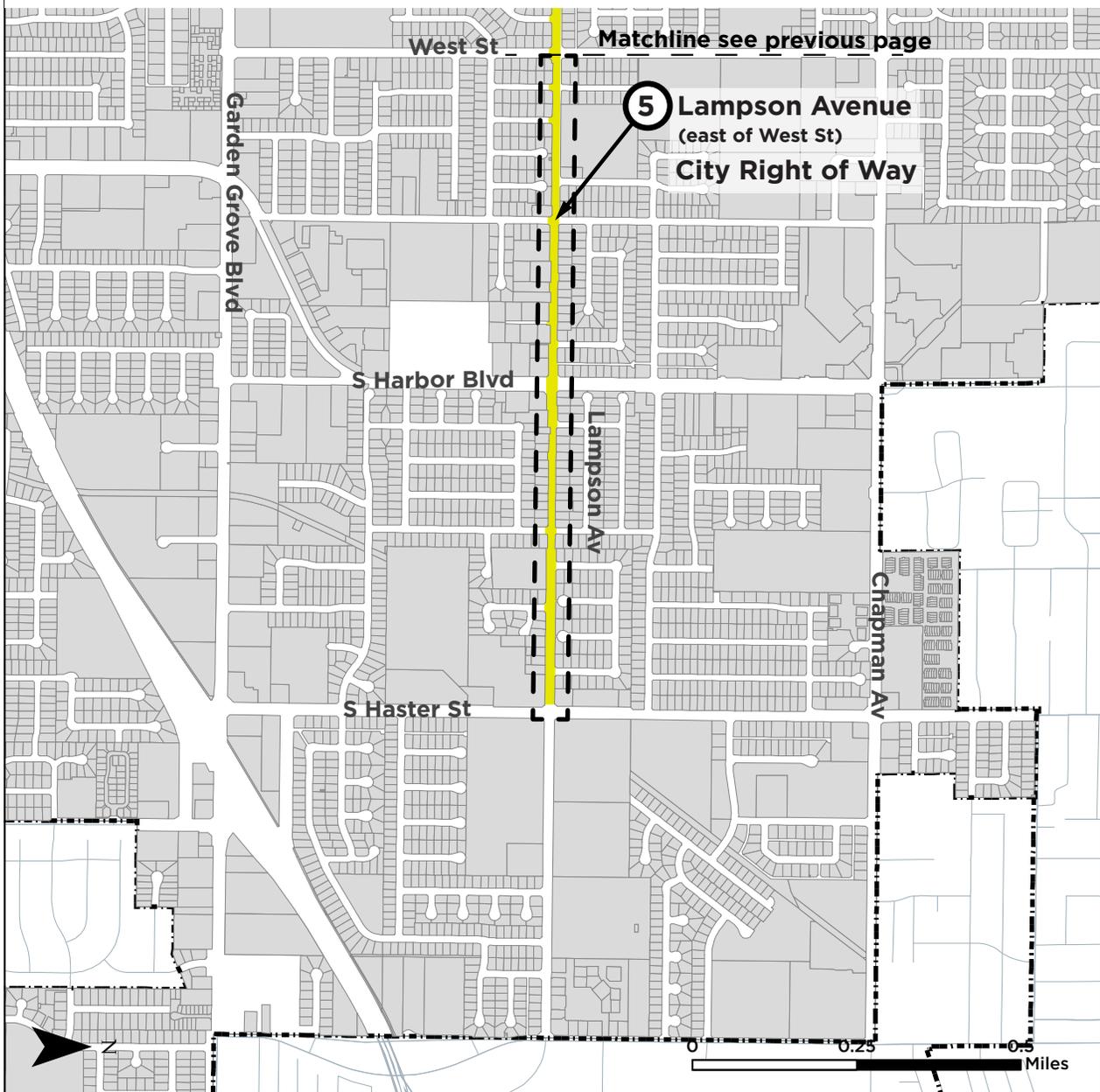




City of Garden Grove Bicycle Corridor Improvements\ 47



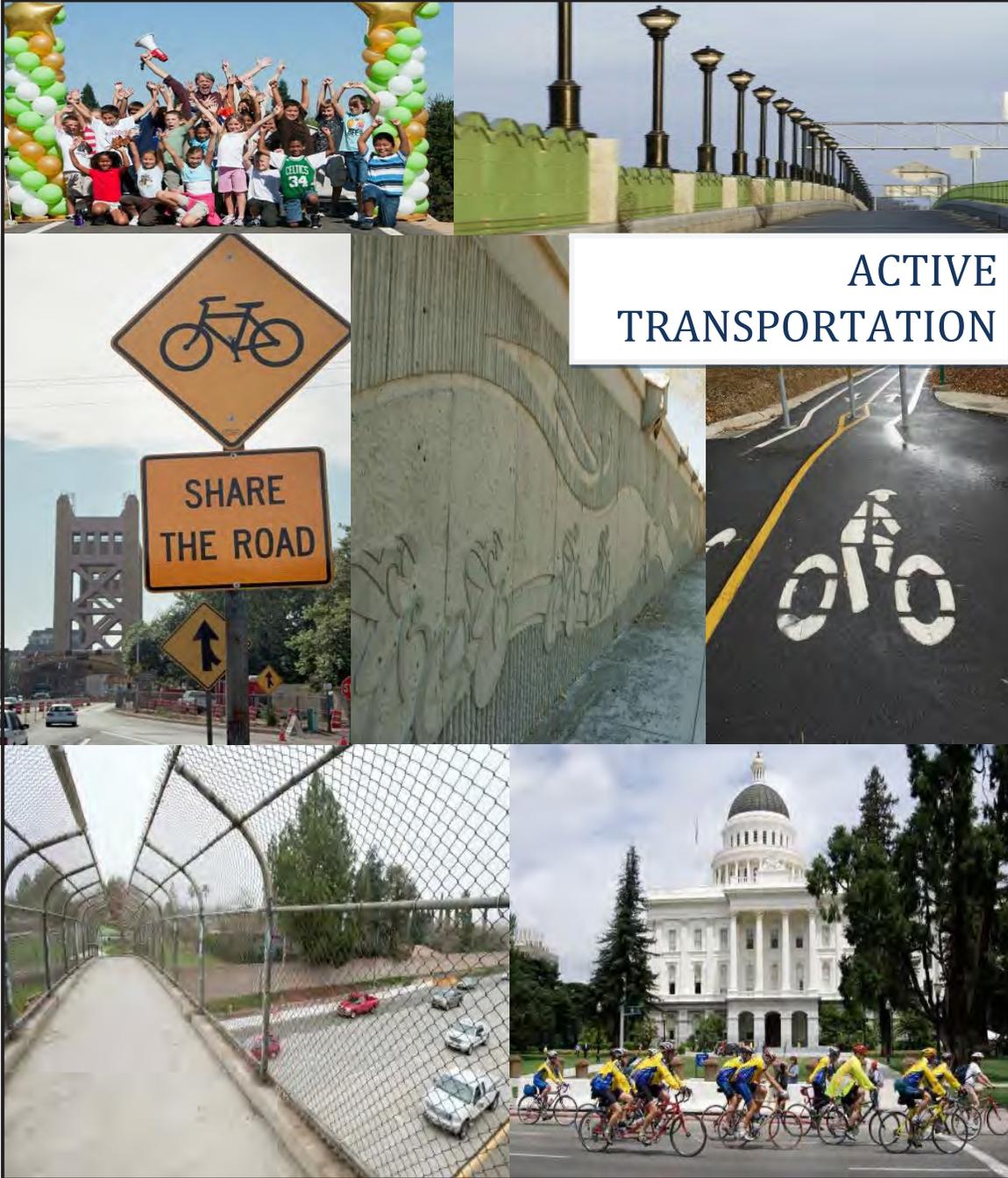
### Exhibit F: Right of Way Maps





## ROW LEASE AGREEMENT: N/A

- Not applicable, project improvements occur within City owned right-of-way



## ACTIVE TRANSPORTATION

**BENEFIT-COST ANALYSIS TOOL** Version 1.0



**INFRASTRUCTURE**

**Project Name:** City of Garden Grove Bicycle Corridor Improvement Project  
**Project Location:** Garden Grove, California

**Bike Projects (Daily Person Trips for All Users) (Box 1A)**

Existing	Without Project	24,400	With Project	44,300
Forecast (1 Yr after completion)	Without Project	24,400	With Project	44,300
<b>Commuters</b>				
Existing Trips	Without Project	6,600	With Project	15,800
New Daily Trips (estimate)	Without Project	2,700	With Project	12,900
(1 YR after completion) (actual)	Without Project	2,700	With Project	12,900

**Project Information- Non SR2S Infrastructure**

Bike Class Type	Bike Class II
Average Annual Daily Traffic (AADT)	90,271

**Project Costs (Box 1D)**

Non-SR2S Infrastructure Project Cost	\$1,365,883
SR2S Infrastructure Project Cost	

**ATP Requested Funds (Box 1E)**

Non-SR2S Infrastructure	\$1,201,978
SR2S Infrastructure	

**CRASH DATA (Box 1F)**

Last 5 Yrs		Annual Average
Fatal Crashes	35	7
Injury Crashes	805	161
PDO		0

**Pedestrian Projects (Daily Person Trips for All Users) (Box 1B)**

Existing	Without Project	8,700	With Project	12,400
Forecast (1 YR after project completion)	Without Project	8,700	With Project	12,400
Existing step counts (600 steps=0.3mi=1 trip)	Without Project		With Project	
Existing miles walked	Without Project		With Project	

**SAFETY COUNTERMEASURES (Improvements) (Box 1G)**

Intersection	Signalized	Pedestrian countdown signal heads	Y or N (Capitalized)
Intersection	Signalized	Pedestrian crossing	N
Intersection	Signalized	Advance stop bar before crosswalk	N
Intersection	Signalized	Install overpass/underpass	N
Intersection	Signalized	Raised medians/refuge islands	N
Intersection	Signalized	Pedestrian crossing (new signs and markings only)	N
Intersection	Signalized	Pedestrian crossing (safety features/curb extensions)	N
Intersection	Signalized	Pedestrian signals	N
Roadways	Other	Bike lanes	Y
Roadways	Other	Sidewalk/pathway (to avoid walking along roadway)	N
Roadways	Other	Pedestrian crossing (with enhanced safety features)	N
Roadways	Other	Pedestrian crossing	N
<b>Other reduction factor countermeasures</b>			Y

**Safe Routes to School (SR2S) (Box 1C)**

Number of student enrollment	Total
Approximate no. of students living along school route proposed for improvement	
Percentage of students that currently walk or bike to school	
Projected percentage of students that will walk or bike to school after the project	

NON-INFRASTRUCTURE

Project Name: \_\_\_\_\_  
 Project Location: \_\_\_\_\_

**Outreach ( SR2S)- (Box 2A)**

Participants (School Enrollment)	
Current Active Trans Walker/Bicyclist Users	0
Percentage of Current Active Trans Walkers/Bicyclists	
Project Cost	
ATP Requested Funds	
Duration of Outreach (months)	
Outreach to new users	0

**Outreach (Non SR2S)- (Box 2B)**

Participants	
Current Active Trans Walker/Bicyclist Users	0
Percentage of Current Active Trans Walkers/Bicyclists	
Project Cost	
ATP Requested Funds	
Duration of Outreach (months)	
Outreach to new users	0

**Perception (must be marked with an "x")- (Box 2C)**

Outreach is Hands-on (self-efficacy)	
Overcome Barriers (e.g., dist, time, etc.)	
Eliminates Hazards/Threats (speed, crime, etc.)	
Connected or Addresses Connectivity Challenges	
Creating Value in Using Active Transportation	

**Promotional Effort (must be marked with an "x")- (Box 2D)**

Effort Targets 5 E's or 5 P's	
Knowledgeable Staff/Educator	
Partnership/Volunteers	
Creates Community Ownership/Relationship	
Part of Bigger Effort (e.g., political support)	

**Age (must be marked with an "x")- (Box 2E)**

Younger than 10	
10-12	
13-24	
25-55	
55+	

**Duration (must be marked with an "x")- (Box 2F)**

One Day	
One Month	
One Year	
Multiple Years	
Continuous Effort	

**Projected New Active Trans Riders**

Longitudinal New Users: 0

**Projected New Active Trans Riders**

Longitudinal New Users: 0

**CRASH DATA - (Box 2G)**

	Last 5 Yrs	Annual
Fatal Crashes		0
Injury Crashes		0
PDO		0

**Assumption:** Benefits only accrue for five years, unless the project is ongoing.



H: ATP COST-BENEFIT RESULTS

Non Infrastructure- All

Projected New ATP Users 0

Annual Mobility Benefits \$0

Did not quantify mobility benefits.

Annual Health Benefits \$0

Annual Recreational Benefits \$0

Did not quantify recreational benefits.

Annual Safety Benefits \$0

Safety benefits are assumed to be a reduction in Other Reduction Factor Countermeasures.

Fuel saved	\$0
Emissions Saved	\$0
Fuel and Emissions Saved	\$0

**Underlying assumptions for calculations:**

- 1 mile driven is ~ 0.05 gal ~ 1 lb of CO2 based on US average 20mpg.  
Source: Active Transportation for America: The Case for Increased Federal Investment in Bicycling and Walking. Rails to Trails Conservancy, page 22.  
<http://www.railstotrails.org/resourcehandler.ashx?id=2948>
- 2) Assume users divert 1040 miles ( 4 miles (bike 3 mi, walk .6 mi) \* 5days \*52 weeks)
- 3) Gasoline price per gallon is \$3.41 (incl. tax)
- 4) Carbon price is \$25 per ton (updated \$2014 value)
- 5) 2,000 lbs = 1 ton

ESTIMATED SAFETY BENEFITS FROM POTENTIAL CRASH REDUCTION

Countermeasures	OTHER REDUCTION FACTOR
Crash Reduction Factors (CRFs)	10%
Service Life	5
1st year	\$0

	Fatal	Injury	PDO	Total
Frequency	0	0	0	0
Cost/crash	\$3,750,837	\$80,000	\$6,924	

**SAFE ROUTES TO SCHOOL**

**Infrastructure**

**Before Project**

No. of students enrollment	0
Approximate no. of students living along school route proposed for improvement	0
Percent that currently walks/bikes to school	0%
Number of students that walk/bike to school	0

**After Project**

No. of students enrollment	0
Approximate no. of students living along school route proposed for improvement	0
Projected percentage of students that will walk or bike because of the project	0%
Number of students that will walk/bike to school after the project	0

ATP Shift	0
Fuels Saved	\$0.00
Emissions Saved	\$0.00

Annual Mobility Benefits	\$0
Annual Health Benefits	\$0
Annual Safety Benefits	\$6,302,511
Fuel and Emissions Saved	\$0
Recreational Benefits	\$0

**Assumptions:**

- 1) 180 school days
- 2) 2 miles distance to school = 1 hour walk
- 3) Takes 1 hour back and forth to school grounds, used distance of 1 mile (composite for bike and walk)
- 4) Approximate no. of students living along school route proposed for improvement- we used this number for before and after to get an actual increase number of ATP users or corresponding percentage.
- 5) We used the value of time for adults for SR2S since we did not quantify parents' time, and the community in general. Value of time for adults \$13.03 vs. \$5.42 for kids.
- 6) Safety benefits are assumed to be the same as non-SRTS infrastructure projects.

Did not quantify recreational benefits for SR2S Infrastructure projects.



H: ATP COST-BENEFIT RESULTS

**20 Year Invest Summary Analysis**

Total Costs	\$1,365,883.00
Net Present Cost	\$1,313,349.04
Total Benefits	\$1,697,108,813.07
Net Present Benefit	\$1,123,960,401.66
Benefit-Cost Ratio	855.80

*20 Year Itemized Savings*

Mobility	\$461,244,175.06
Health	\$41,960,980.73
Recreational	\$875,994,591.95
Gas & Emissions	\$11,640,168.28
Safety	\$306,268,897.06

Funds Requested	\$1,201,978.00
Net Present Cost of Funds Requested	\$1,155,748.08
Benefit Cost Ratio	972.5

**ESTIMATED DAILY MOBILITY BENEFITS FROM THE PROJECT**

<b>Current Walk Counts</b>	
Total miles walked	0.00
Total person Trips walked	8,700.00
Total Steps walked	0.00

<b>After the Project is Completed</b>	
Total miles walked	0.00
Total person trips walked	12,400.00
Total Steps walked	0.00

Converted miles walked to trips	0
Difference of person trips walked	3,700
Converted steps walked to trips	0

<b>Current Bike Counts</b>	
Existing Commuters	6,600
New Commuters	2,700

<b>Benefits, 2014 values</b>	
Annual Mobility Benefit (Walking)	\$786,250
Annual Mobility Benefit (Biking)	\$18,197,046.50

<b>Total Annual Mobility Benefits</b>	\$18,983,297
---------------------------------------	--------------

**Project Types**  
 For M values:  
 20.38 min/trip OFF STREET Bike Class I  
 18.02 min/trip ON STREET w/o parking benefit Bike Class II  
 15.83 min/trip ON STREET w/ parking benefit Bike Class III  
 \$13.03 Value of Time  
 600 steps=0.3mi=1 trip

\$1 Value of Total Pedestrian Environmental Impacts per trip

Sources:  
 NCHRP 552 Methodology (Biking)  
 Heuman (2006) as reported by UK Dept of Transport and Guidance (walking)



**YEARLY ESTIMATED HEALTH BENEFITS FROM THE PROJECT**

**INFRASTRUCTURE**

<b>Cycling:</b>		
New Cyclists	9950	
Value of Health (ave.annual)	\$146	GDP Deflator
		2006 0.9429
		2014 1.0781
Annual Health Benefits	\$1,456,222	
<b>Walking:</b>		
New Walkers	1850	
Value of Health	\$146	
Annual Health Benefits	\$270,755	
<b>Total Annual Health Benefits</b>	<b>\$1,726,976</b>	

Source: NCHRP 552- Guidelines for Analysis of Investments in Bicycle Facilities, Appendix G.  
 (Estimated annual per capita cost savings of direct and/indirect of physical activity)

**YEARLY ESTIMATED GAS AND EMISSION SAVINGS FROM THE PROJECT**

**INFRASTRUCTURE**

New Pedestrians	1,850
New Bicyclists	9,950
Avoided VMT due to Walking	117,938
Avoided VMT due to Biking	2,499,938
Fuel Saved	\$446,348
Emissions Saved	\$32,723
Fuel and Emissions saved	\$479,071

**Underlying assumptions for calculations:**

- 1) Bike miles traveled= 1.5 mi, walk miles traveled= .3 (CHTS)
- 2) Assume 50% of new walkers and cyclists choose not to drive their cars
- 3) 1 mile driven is ~ 0.05 gal ~ 1 lb of CO2 based on US average 20mpg.  
Source: Active Transportation for America: The Case for Increased Federal Investment in Bicycling and Walking. Rails to Trails Conservancy, page 22.  
<http://www.railstotrails.org/resourcehandler.ashx?id=2948>
- 4) Gasoline price per gallon is \$3.41 (incl. tax)
- 5) Carbon price is \$25 per ton
- 6) 250 working days
- 7) 2,000 lbs = 1 ton



**YEARLY ESTIMATED RECREATIONAL BENEFITS FROM THE PROJECT**

<b>Biking</b>		
New Recreational Users	12,900	\$10 per trip
New Commuters	2,700	
Existing Recreational Users	15,800	\$4 per trip
Value of Spending Recreational Time for New Recreational Users	#####	
Value of Spending Recreational Time for Existing Recreational Users	\$7,836,800	
Potential number of recreational time outdoors	124	
Annual Biking Recreational Benefits	#####	

Sources: NCHRP 552 for New Users and Commuters, TAG (January 2010 UK's Department of Transport Guidance on the Appraisal of Walking and Cycling Schemes) for Existing Users, World Health Organization's HEAT for cycling (124 days- the observed number of days cycled in Stockholm)

<b>Walking</b>		
Total Recreational pedestrians	555	15%- See Misc. Tab
Value of Spending Recreational time for all pedestrians	\$202,575	\$1 per trip
Potential number of recreational time outdoors	365	
Annual Walking Recreational Benefits	\$202,575	

Sources: Pedestrian and Bicycle Information Center. TAG (January 2010 UK's Department of Transport Guidance on the Appraisal of Walking and Cycling Schemes) for Existing Users.

Total Annual Recreational Benefits	#####
------------------------------------	-------





H: ATP COST-BENEFIT RESULTS

SUMMARY OF QUANTIFIABLE BENEFITS AND COSTS

Year	Mobility Benefits	Health Benefits	Recreational Benefits	Safety Benefits	Gas & Emission Benefits	Total Benefits	Present Value Benefits	Total Project Cost	Present Value Cost	Discount Rate	Net Present Value	BCA Ratio	Funds Requested	PV of Funds Requested
<b>PROJECT OPEN</b>														
1	\$19,983,297	\$1,726,976	\$36,053,063	\$12,605,023	\$479,071	\$69,847,429	\$67,160,989	\$1,365,883	\$1,313,349	4.00%	\$1,122,847,052.62	855.81	1,201,978	1,155,748
2	\$19,362,962	\$1,761,516	\$36,774,124	\$12,857,123	\$488,653	\$71,244,378	\$65,869,432	\$0	\$0					
3	\$19,750,222	\$1,796,746	\$37,509,606	\$13,114,266	\$498,426	\$72,669,265	\$64,602,712	\$0	\$0					
4	\$20,145,226	\$1,832,681	\$38,259,798	\$13,376,551	\$508,394	\$74,122,650	\$63,360,352	\$0	\$0					
5	\$20,548,131	\$1,869,335	\$39,024,994	\$13,644,082	\$518,562	\$75,605,103	\$62,141,884	\$0	\$0					
6	\$20,959,093	\$1,906,721	\$39,805,494	\$13,916,964	\$528,933	\$77,117,206	\$60,946,848	\$0	\$0					
7	\$21,378,275	\$1,944,856	\$40,601,604	\$14,195,303	\$539,512	\$78,659,550	\$59,774,793	\$0	\$0					
8	\$21,805,841	\$1,983,753	\$41,413,636	\$14,479,209	\$550,302	\$80,232,741	\$58,625,728	\$0	\$0					
9	\$22,241,957	\$2,023,428	\$42,241,909	\$14,768,793	\$561,308	\$81,837,395	\$57,497,869	\$0	\$0					
10	\$22,686,797	\$2,063,896	\$43,086,747	\$15,064,169	\$572,534	\$83,474,143	\$56,392,140	\$0	\$0					
11	\$23,140,533	\$2,105,174	\$43,946,482	\$15,365,452	\$583,985	\$85,143,626	\$55,307,676	\$0	\$0					
12	\$23,603,343	\$2,147,278	\$44,827,452	\$15,672,761	\$595,665	\$86,846,499	\$54,244,067	\$0	\$0					
13	\$24,075,410	\$2,190,223	\$45,724,001	\$15,986,217	\$607,578	\$88,583,429	\$53,200,912	\$0	\$0					
14	\$24,556,918	\$2,234,028	\$46,638,481	\$16,305,941	\$619,730	\$90,355,097	\$52,177,817	\$0	\$0					
15	\$25,048,057	\$2,278,708	\$47,571,250	\$16,632,060	\$632,124	\$92,162,199	\$51,174,398	\$0	\$0					
16	\$25,548,018	\$2,324,283	\$48,522,675	\$16,964,701	\$644,767	\$94,005,443	\$50,190,275	\$0	\$0					
17	\$26,059,998	\$2,370,768	\$49,493,129	\$17,303,995	\$657,662	\$95,885,552	\$49,225,077	\$0	\$0					
18	\$26,581,198	\$2,418,184	\$50,482,991	\$17,650,075	\$670,815	\$97,803,263	\$48,278,441	\$0	\$0					
19	\$27,112,822	\$2,466,547	\$51,492,651	\$18,003,076	\$684,232	\$99,759,328	\$47,350,009	\$0	\$0					
20	\$27,655,078	\$2,515,878	\$52,522,504	\$18,363,138	\$697,916	\$101,754,515	\$46,439,432	\$0	\$0					
<b>Sum</b>													<b>Sum Funds Requested</b>	<b>Sum PV Funds Requested</b>
													\$1,201,978	\$1,155,748



H: ATP COST-BENEFIT RESULTS

**PARAMETERS**

Mobility Parameters	
CA Statewide Hourly Wage (2014)	\$26.07
Value of Time (VOT)- adult	\$13.03
Value of Time (VOT)- child	\$5.42
Bike Path (Class I)	20.38 min/trip
Bike Lane (Class II)	18.02 min/trip
Bike Route (Class III)	15.83 min/trip

Health Parameters	
Cycling	\$146 annual\$/person
Walking	\$146 annual\$/person

Accident Cost Parameters	
Cost of a Fatality (K)	\$4,130,347 \$/crash
Cost of an Injury	\$81,393 \$/crash
Cost of Property Damage (PDO)	\$7,624 \$/crash

Source: Appendix D, Local Roadway Safety: A manual for CA's Local Road Owners Caltrans. April 2013.

Recreational Values Parameters	
Biking	
New Users	\$10 per trip
Existing Users	\$4 per trip
Walking	
All Users	\$1 per trip

VMT Reduction	
Price of gasoline (per gallon incl. tax)	\$3.41
Price of CO2 (per ton)-adj to 2014\$	\$25
Price of CO2 (per lb)	\$0.01
Working days	250

Average fuel price (November 2013-November 2014) based on EIA's Table 9.4: Retail Motor Gasoline and On-Highway Diesel Fuel Prices [http://www.eia.gov/totalenergy/data/monthly/pdf/sec9\\_6.pdf](http://www.eia.gov/totalenergy/data/monthly/pdf/sec9_6.pdf)

Interagency Working Group on Social Cost of Carbon, United States Government, Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, February 2010.

2%	Average CA Annual Growth of Population (1955-2011)
4%	Discount Rate used (same as Cal B/C Model)

H: ATP COST-BENEFIT RESULTS

Reasons for Bicycling	Percent
Recreation	33
Exercise or health	28
Personal errands	17
Visit a friend or relative	8
Commuting to/from work	7
Commuting to/from school	4

Reasons for Walking	Percent
Exercise or health	39
Personal errands	17
Recreation	15
Walk the dog	7
Visit a friend or relative	7
Commuting to/from work	5
Commuting to/from school	3
Required for my job	2

Source: The 2012 National Survey of Pedestrian and Bicyclist Attitudes and Behaviors, Highlights Report. Pedestrian & Bicycle Information Center.

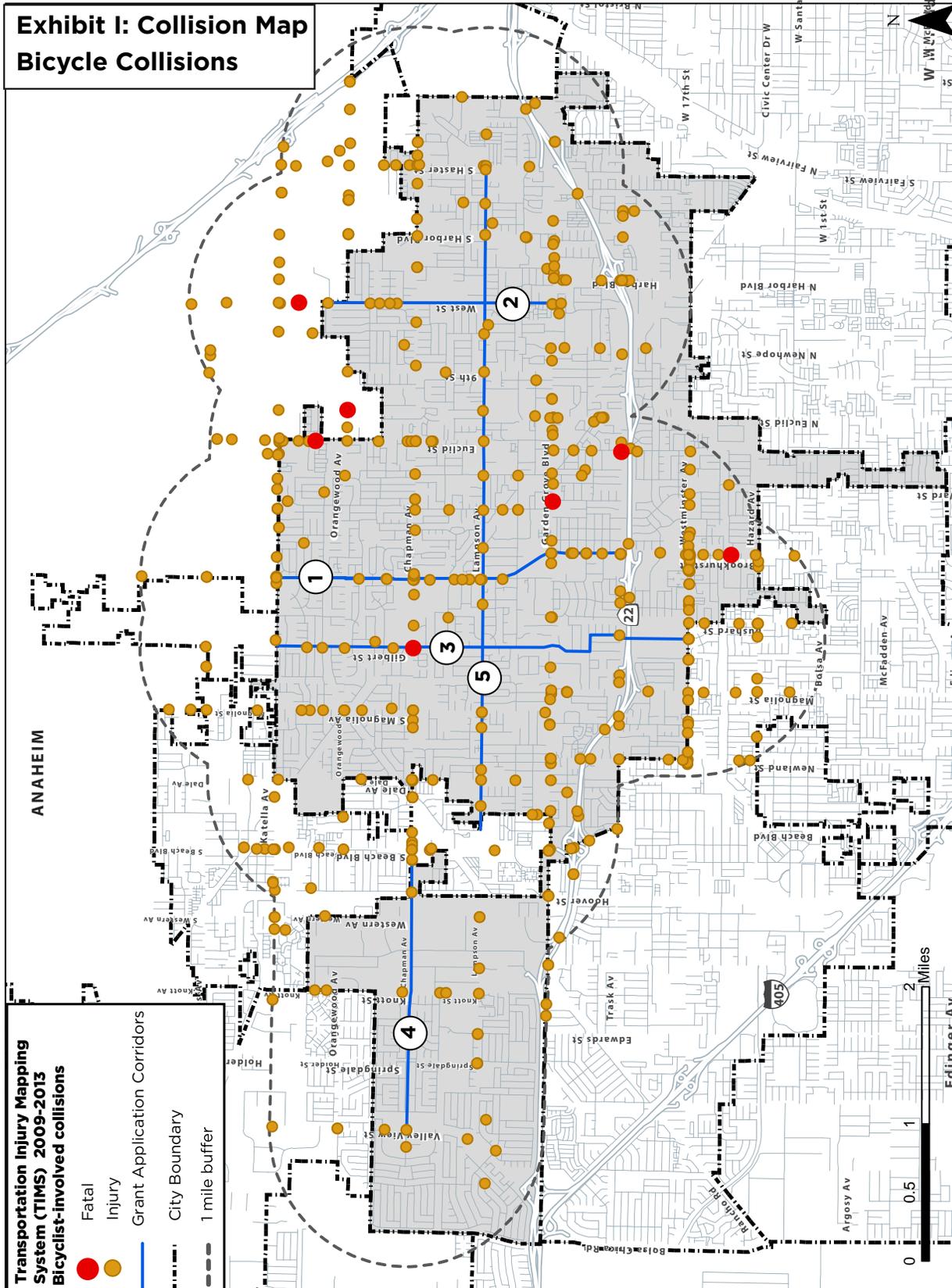
Study/Agency	Per Capita Cost Savings (\$)
Washington DOH	19
Garrett et al.	57
South Carolina DOH	78
Georgia Department of Human Resources	79
Colditz	91
Minnesota DOH	>100
Gorcz et al.	172
Pronk et al.	176
Praet	330
Michigan Fitness Foundation	1175

Source: NCHRP 552, Guidelines for Analysis of Investments in Bicycle Facilities, Appendix G.

Note: An annual per-capita cost savings from physical activity of \$128 was determined by taking the median value of ten noted studies above for year 20065. The updated 2014\$ value is \$13.03.

Fiscal Year	Chained GDP Price Index
2006	0.9429
2007	0.9684
2008	0.9884
2009	1.0000
2010	1.0087
2011	1.0284
2012	1.0464
2013	1.0622
2014 (est.)	1.0781
2015 (est.)	1.0966
2016 (est.)	1.1170
2017 (est.)	1.1391
2018 (est.)	1.1619
2019 (est.)	1.1852

Source: Office of Management Budget, Budget of the United States Government, Fiscal Year 2015 Table 10.1- Gross Domestic Product and Deflators in the Historical Tables: 1940-2019. <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/hist.pdf> page 217-218.







## BICYCLE FACILITIES

**County:** Orange County

**Federal Number:**

**Approval Date:** 05/05/16

**Caltrans DIST-EA:** District 12

**Short Description:** Citywide Bicycle Infrastructure Improvements

**Project Scope:** Class II; 3.2 miles

**Project Sponsor:** City of Garden Grove

**Private Agency:** Yes

**CMAQ Funding:** \$1,201,978      **Annual Auto Trips Reduced:** 146,730

**Local Match:** \$163,905      **Annual Auto VMT Reduced:** 308,133

**Capital Recovery Factor:** 0.08

**Project Analysis Period:** 15 years

**Days (D):** 365 days of use/year

**Average Daily Traffic (ADT):** 30,000 trips per day

**Adjustment (A) on ADT:** 0.0104

**Credit (C) for  
Activity Centers near project:** 0.0030

<i>EMISSION FACTORS:</i>	<b>Auto Trip End Factor</b>	<b>Auto VMT Factor</b>
<b>ROG :</b>	0.738 <i>grams per trip</i>	0.200 <i>grams per mile</i>
<b>NOx :</b>	0.315	0.220
<b>PM10 :</b>	0.017	0.221

<i>EMISSION REDUCTIONS:</i>	<b>Pounds per Year</b>	<b>Kilograms per Day</b>
<b>ROG:</b>	374	0
<b>NOx:</b>	251	0
<b>PM10:</b>	155	0
<b>Total:</b>	<u>781</u>	<u>0</u>

**COST-EFFECTIVENESS OF:**

<b>CMAQ Funds:</b>	\$128.94 per pound	\$257,881 per ton
<b>All Funding Sources:</b>	\$146.52 per pound	\$293,046 per ton

## LETTERS OF SUPPORT

- 1. Garden Grove City Council member Steve Jones
- 2. Garden Grove Unified School District
- 3. Alliance for a Healthy Orange County
- 4. Orange County Supervisor Andrew Do, First District



## CITY OF GARDEN GROVE

May 6, 2016

Louis Zhao  
Senior Transportation Funding Analysis  
Orange County Transportation Authority  
550 S. Main Street  
Orange, CA 92863-1584

Bao Nguyen  
Steven R. Jones  
Christopher V. Phan  
Phat Bui  
Kris Beard

**RE: Letter of Support for City of Garden Grove Bicycle Corridor Improvement Project**

Dear BCIP Grant Review Committee

On behalf of the City of Garden Grove, I am pleased to support the Bicycle Corridor improvement Program (BCIP) funding request for the City of Garden Grove's Bicycle Corridor Improvement Project. The City Council has made a priority of improving Garden Grove to be a more walkable and more bike-friendly community.

The City of Garden Gove's Bicycle Corridor Improvement Project will improve the on-street bicycle infrastructure by 75 percent and create a more consistent and comfortable on-street bicycle network by improving 14.85 miles of bikeways.

The project will help to solve some of the greatest challenges to biking in the City today including; gaps in network connectivity (where there are no on-street bike facilities), narrow bike lanes along streets with high speeds and a high bicycle collision history. Adding buffers to existing bike lanes, striping new bike lanes through rebalancing roadways, improving bike routes and adding bicycle wayfinding signs will help to overcome these challenges and encourage more people to ride bikes in Garden Grove.

We believe the project will greatly improve local and regional bikeway connectivity and provide increased safety, mobility, and transportation options for a wide range of cyclists.

I appreciate the opportunity to express my support for this project, and look forward to seeing the completion of a much needed bicycle network improvements that will help fulfill both the *City of Garden Grove's Draft Active Streets Plan* and the *OCTA Commuter Bikeways Strategic Plan*. I fully support Garden Grove's efforts towards increased regional connectivity, and respectfully request a favorable consideration of the Garden Grove's Bicycle Corridor Improvement Project for a BCIP grant.

Sincerely,

Steve Jones  
Council Member



## GARDEN GROVE UNIFIED SCHOOL DISTRICT

10331 Stanford Avenue · Garden Grove, California 92840-6353  
Phone: (714) 663-6000 · Fax: (714) 663-6100

### BOARD OF EDUCATION

George West, Ed.D.,  
President

Teri Rocco,  
Vice President

Bob Harden

Lan Quoc Nguyen

Linda Reed

### SUPERINTENDENT

Gabriela Mafi, Ed.D.

May 4, 2016

Louis Zhao  
Senior Transportation Funding Analysis  
Orange County Transportation Authority  
550 S. Main Street  
Orange, CA 92863-1584

### RE: Letter of Support for City of Garden Grove Bicycle Corridor Improvement Project

Dear BCIP Grant Review Committee:

Garden Grove Unified School District is pleased to support the Bicycle Corridor Improvement Program (BCIP) funding request for the City of Garden Grove's Bicycle Corridor Improvement Project. We strongly support this grant application because Garden Grove Unified School District recognizes the importance and benefits of enhancing safety and access for pedestrians and cyclists.

The City of Garden Grove's Bicycle Corridor Improvement Project will improve the on-street bicycle infrastructure by 75 percent and create a more consistent and comfortable on-street bicycle network by improving 14.85 miles of bikeways.

The project will help to solve some of the greatest challenges to biking in the City today including; gaps in network connectivity (where there are no on-street bike facilities), narrow bike lanes along streets with high speeds and a high bicycle collision history. Adding buffers to existing bike lanes, striping new bike lanes through rebalancing roadways, improving bike routes and adding bicycle way finding signs will help to overcome these challenges and encourage more people to ride bikes in Garden Grove. We believe the project will greatly improve local and regional bikeway connectivity and provide increased safety, mobility, and transportation options for a wide range of cyclists.

I appreciate the opportunity to express my support for this project, and look forward to seeing the completion of a much needed bicycle network improvements that will help fulfill both the *City of Garden Groves Draft Active Streets Plan* and the *OCTA Commuter Bikeways Strategic Plan*. I fully support Garden Grove's efforts towards increased regional connectivity, and respectfully request a favorable consideration of the Garden Grove's Bicycle Corridor Improvement Project for a BCIP grant.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rick Nakano'.

Rick Nakano  
Assistant Superintendent, Business Services



May 03, 2016

Louis Zhao  
Senior Transportation Funding Analysis  
Orange County Transportation Authority  
550 S. Main Street  
Orange, CA 92863-1584

**RE: Letter of Support for City of Garden Grove Bicycle Corridor Improvement Project**

Dear BCIP Grant Review Committee,

The Alliance for a Healthy Orange County is pleased to support the Bicycle Corridor improvement Program (BCIP) funding request for the City of Garden Grove's Bicycle Corridor Improvement Project.

The Alliance is a countywide collaborative of cities, healthcare organizations, community-based organizations, and universities dedicated to enhancing health outcomes and reducing health disparities in Orange County. Achieving that goal requires cross-generational community engagement with a broad spectrum of specialists in physical safety, nutrition, education, spirituality, and physical activity. The importance and benefits of enhancing safety and access for pedestrians and cyclists is consistent with our mission.

The City of Garden Grove's Bicycle Corridor Improvement Project will improve the on-street bicycle infrastructure by 75 percent and create a more consistent and comfortable on-street bicycle network by improving 14.85 miles of bikeways. The project will help to solve some of the greatest challenges to biking in the City today including gaps in network connectivity (where there are no on-street bike facilities), narrow bike lanes along streets with high vehicle speeds, and a high bicycle collision history. Adding buffers to existing bike lanes, striping new bike lanes through rebalancing roadways, improving bike routes and adding bicycle wayfinding signs will help to overcome these challenges and encourage more people of all ages to lead active lifestyles in Garden Grove. We believe the project will greatly improve local and regional bikeway connectivity and provide increased safety, mobility, and transportation options for a wide range of cyclists.

The Alliance fully supports this project and looks forward to implementation of both the *City of Garden Grove's Draft Active Streets Plan* and *OCTA Commuter Bikeways Strategic Plan*. We respectfully request funding of this important project.

Sincerely,

Barry Ross, Chair  
Alliance for a Healthy Orange County



**ANDREW DO**

SUPERVISOR, FIRST DISTRICT

ORANGE COUNTY BOARD OF SUPERVISORS  
333 W. SANTA ANA BLVD., P.O. BOX 687, SANTA ANA, CALIFORNIA 92702-0687  
PHONE (714) 834-3110 FAX (714) 834-5754 andrew.do@ocgov.com

May 5, 2016

Louis Zhao  
Senior Transportation Funding Analysis  
Orange County Transportation Authority  
550 S. Main Street  
Orange, CA 92863-1584

**RE: Letter of Support for City of Garden Grove Bicycle Corridor Improvement Project**

Dear BCIP Grant Review Committee:

As Garden Grove's representative on the Orange County Board of Supervisors, I am writing to offer my support for the City of Garden Grove's request for funding under the Bicycle Corridor Improvement Program.

Pedestrians and cyclists in Garden Grove will benefit from the proposed improvements designed to enhance safety and reduce congestion.

Under the city's proposal, Garden Grove promises to improve the on-street bicycle infrastructure by 75 percent and create a more consistent and comfortable on-street bicycle network by improving 14.85 miles of bikeways.

If awarded funding, the City of Garden Grove has committed to solving gaps in network connectivity and, widening narrow bike lanes on streets with a high rate of bicycle collisions. Additionally, the City of Garden Grove intends to expand buffers to existing bike lanes, improve bike routes and enhance bicycle wayfinding signs.

The project, as proposed, stands to greatly improve local and regional bikeway connectivity and enhance safety for pedestrians and cyclists in the City of Garden Grove.

If you have any questions regarding this matter, please do not hesitate to contact my office at 714-834-3110.

Sincerely,

A handwritten signature in blue ink that reads "Andrew Do".

ANDREW DO  
Orange County Supervisor, First District

