

**Meeting Date:** 8/16/2016

**Report Type:** Staff/Discussion

**Report ID:** 2016-00822

**Title:** Approval of 2016 Bicycle Master Plan (K15120004)

**Location:** Citywide

**Recommendation:** Pass a Resolution: 1) approving the Bicycle Master Plan as the City's guide for development of the bikeway network, support facilities, and programs; and 2) directing staff to amend the appropriate local and regional plans to reflect the recommendations of the Bicycle Master Plan.

**Contact:** Jennifer Donlon Wyant, Active Transportation Program Specialist, (916) 808-5913; Hector Barron, City Traffic Engineer, (916) 808-2669, Department of Public Works

**Presenter:** Jennifer Donlon Wyant, Active Transportation Program Specialist, (916) 808-5913, Department of Public Works

**Department:** Public Works Department

**Division:** Transportation Division

**Dept ID:** 15001911

**Attachments:**

1-Description/Analysis

2-Background

3-Resolution

4-Exhibit A - Summary Report

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**City Attorney Review**

Approved as to Form

Gerald Hicks

8/10/2016 9:54:54 AM

**Approvals/Acknowledgements**

Department Director or Designee: Jerry Way - 8/1/2016 6:46:33 AM

## Description/Analysis

**Issue:** The 2010 City of Sacramento Bikeway Master Plan is a policy document that guides the development of bikeways. The current Plan is out of date thereby reducing the City's competitiveness for funding; it does not include equity as a consideration for bikeway implementation; and it does not include current bikeway types and designs. This recommendation is made to establish a common vision for the citywide bikeway network.

The 2010 City of Sacramento Bikeways Master Plan is amended and restated as the 2016 Bicycle Master Plan.

**Policy Considerations:** The following Sacramento 2035 General Plan policies support the recommendation:

M 1.1.1 Right-of-Ways – The City shall preserve and manage rights-of-way consistent with: the circulation diagram, the City Street Design Standards, the goal to provide Complete Streets as described in Goal M 4.2, and the modal priorities for each street segment and intersection established in Policy M4.4.1: Roadway Network Development, Street Typology System.

M 1.2.1 Multimodal Choices - The City shall develop an integrated, multimodal transportation system that improves the attractiveness of walking, bicycling, and riding transit over time to increase travel choices and aid in achieving a more balanced transportation system and reducing air pollution and greenhouse gas emissions.

M 1.2.4 Multimodal Access - The City shall facilitate the provision of multimodal access to activity centers such as commercial centers and corridors, employment centers, transit stops/stations, airports, schools, parks, recreation areas, medical centers, and tourist attractions.

M 1.3.2 Eliminate Gaps - The City shall eliminate “gaps” in roadways, bikeways, and pedestrian networks. To this end:

- a. The City shall construct new multi-modal crossings of the Sacramento and American Rivers.
- b. The City shall plan and pursue funding to construct grade-separated crossings of freeways, rail lines, canals, creeks, and other barriers to improve connectivity.
- c. The City shall construct new bikeways and pedestrian paths in existing neighborhoods to improve connectivity.

M 1.3.3 Improve Transit Access - The City shall support the Sacramento Regional Transit District (RT) in addressing identified gaps in public transit networks by working with RT to appropriately locate passenger facilities and stations, pedestrian walkways and bicycle

access to transit stations and stops, and public rights of way as necessary for transit- only lanes, transit stops, and transit vehicle stations and layover.

M 3.1.1 Transit for All - The City shall support a well-designed transit system that provides accessibility and mobility for all Sacramento residents, workers and visitors. The City shall enhance bicycle and pedestrian access to stations.

M 4.1.2 Balancing Community, Social, Environmental, and Economic Goals - The City shall evaluate and strive to address community, environmental, and citywide economic development goals when adding or modifying streets, roads, bridges, and other public rights-of-way.

M 4.1.3 Community Outreach - The City shall conduct public outreach to community organizations and members of the general public in corridor planning early in the project development process to identify feasible opportunities to provide community benefits and to lessen any potential impacts of modifications to local streets and roadways.

M 4.2.1 Accommodate All Users - The City shall ensure that all new roadway projects and any reconstruction projects designate sufficient travel space for all users including bicyclists, pedestrians, transit riders, and motorists except where pedestrians and bicyclists are prohibited by law from using a given facility.

M 4.2.2 Pedestrian and Bicycle-Friendly Streets - In areas with high levels of pedestrian activity (e.g., employment centers, residential areas, mixed-use areas, schools), the City shall ensure that all street projects support pedestrian and bicycle travel. Improvements may include narrow lanes, target speeds less than 35 miles per hour, sidewalk widths consistent with the Pedestrian Master Plan, street trees, high-visibility pedestrian crossings, and bikeways (e.g. Class II and Class III bike lanes, bicycle boulevards, separated bicycle lanes and/or parallel multi- use pathways).

M 4.2.4 Pedestrian and Bicycle Facilities on Bridges - The City shall identify existing and new bridges that can be built, widened, or restriped to add pedestrian and/or bicycle facilities.

M 4.2.5 Multi-Modal Corridors - Consistent with the Roadway Network and Street Typologies established in this General Plan, the City shall designate multi- modal corridors in the Central City, within and between urban centers, along major transit lines, and/or along commercial corridors appropriate for comprehensive multimodal corridor planning and targeted investment in transit, bikeway, and pedestrian path improvements if discretionary funds become available.

M 4.2.6 Identify and Fill Gaps in Complete Streets - The City shall identify streets that can be made “complete” either through a reduction in the number or width of travel lanes or through two-way conversions, with consideration for emergency vehicle operations. The City shall consider including new bikeways, sidewalks, on-street parking, and exclusive

transit lanes on these streets by re-arranging and/or re-allocating how the available space within the public right of way issued. All new street configurations shall provide for adequate emergency vehicle operation.

M 5.1.1 – Bicycle Master Plan - The City shall maintain and implement a Bicycle Master Plan that carries out the goals and policies of the General Plan All new development shall be consistent with the applicable provisions of the Bicycle Master Plan.

M 5.1.2 Appropriate Bikeway Facilities - The City shall provide bikeway facilities that are appropriate to the street classifications and type, number of lanes, traffic volume, and speed on all rights-of-way.

M 5.1.3 Continuous Bikeway Network - The City shall provide a continuous bikeway network consisting of bike- friendly facilities connecting residential neighborhoods with key destinations and activity centers (e.g., transit facilities, shopping areas, education institutions, employment centers).

M 5.1.5 Motorists, Bicyclists, and Pedestrian Conflicts - The City shall develop safe and convenient bikeways, streets, roadways, and intersections that reduce conflicts between bicyclists and motor vehicles on streets, between bicyclists and pedestrians on multi-use trails and sidewalks, and between all users at intersections.

M 5.1.9 Conversion of Underused Facilities - The City shall convert underused rights-of-way, including drainage canals, freeway easements, railroad corridors, and underutilized travel and parking lanes to bikeways bicycle and/or pedestrian facilities where possible and appropriate.

M 5.1.10 Bike Safety for Children - The City shall support infrastructure improvements and programs that encourage children to bike safely to school.

M 5.1.11 Bike Facilities in New Development - The City shall require that major new development projects (e.g., employment centers, educational institutions, recreational and retail destinations, and commercial centers) provide bicycle parking (i.e., short-term bicycle parking for visitors and long-term bicycle parking for residents or employees), personal lockers, showers, and other bicycle-support facilities.

M 5.1.12 Bicycle Parking at Transit Facilities - The City shall coordinate with transit operators to provide for secure short and long-term bicycle parking at all light rail stations, bus rapid transit stations, and major bus transfer stations.

M. 5.1.13 Public Information and Education - The City shall promote bicycling through public information and education, including the publication of literature concerning bicycle safety and the health and environmental benefit of bicycling.

M 5.1.14 Encourage Bicycle Use - The City shall encourage bicycle use in all neighborhoods, especially where short trips are most common.

**Economic Impacts:** None

**Environmental Considerations:**

**California Environmental Quality Act (CEQA):** The 2016 Bicycle Master Plan infrastructure recommendations include minor changes to the on-street network and no changes to the trail network from the 2010 Bikeway Master Plan. This 2016 Bicycle Master Plan is consistent with the 2035 General Plan and any impacts from this Plan's recommendations have been addressed in the 2010 Bikeway Master Plan Environmental Impact Report (EIR) which can be found here:

[http://www.cityofsacramento.org/Community-](http://www.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports)

[Development/Planning/Environmental/Impact-Reports](http://www.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports) . The on-street bikeways not identified in the 2010 Bikeway Master Plan are covered by CEQA Guidelines Article 19 Categorical Exemptions Section 15304 which exempts "creation of bike lanes on existing rights-of-way."

**Sustainability Considerations:** The recommended action supports the Climate Action Plan goal to create a connected multi-modal transportation network that increases the use of sustainable modes of transportation (e.g., walking, biking, transit) and reduces dependence on automobiles.

**Other:** None.

**Committee/Commission Action:** None.

**Rationale for Recommendation:** This 2016 Bicycle Master Plan will make the City of Sacramento more competitive for infrastructure and non-infrastructure grants available through SACOG and Caltrans. This 2016 Bicycle Master Plan included broad outreach to gather input to ensure projects are implemented in an equitable manner. Finally, this 2016 Bicycle Master Plan includes a framework bikeway facility selection, including the latest bikeway types and designs.

Implementation of the recommendations will create a better balance for all modes of travel; improve bicyclist safety; and facilitate increased numbers of people who bicycle.

**Financial Considerations:** Approval of this recommendation does not obligate funding for the improvements. Upon approval of the recommendation Federal, State, and local funding will be sought to implement the plan over time. No General Funds are involved with this recommendation.

**Local Business Enterprise (LBE) Preference Program:** This recommendation does not involve the procurement of goods or services.

## Background

The 2016 Bicycle Master Plan (Plan) is a policy document that will guide the development of bikeways, support facilities such as bike parking, and programs such as education and encouragement. The Plan purpose is to set forth bicycle related investments, policies, programs and strategies to establish a complete bikeway network and programs. The recommendations provided in the Plan will encourage more bicycling, thereby contributing to the City meeting its General Plan emission targets.

The current 2010 Bikeways Master Plan was first developed in 1995 and has received numerous updates since then including a major update and Environmental Impact Report in 2004 that was adopted with Council Resolution 2004-791. The 2010 Bikeways Master Plan was adopted with Council Resolution 2011-131 on March 8, 2011. This 2016 Bicycle Master Plan aims to establish a framework for an improved bicycling environment throughout the City by:

- Engaging underrepresented neighborhoods to inform investments in infrastructure and programs
- Evaluating equity related to bicycle infrastructure investment and bicyclist age and abilities
- Identifying best practice bikeway designs that can be used to connect and expand the City's low-stress bikeway network

Engagement of underrepresented neighborhoods included:

- Two stakeholder meetings
- Multiple traveling workshops to the following neighborhoods:
  - Natomas
  - Del Paso Heights
  - Oak Park
  - Fruitridge
  - Meadowview/Valley Hi
- Presentations to 10 neighborhood and community based associations

The equity analysis included a review of neighborhoods where residents live 200 percent below the poverty line; environmental and social economic disparities exist as determined through CalEnviroScreen 2.0 (a screening methodology that can be used to help identify California communities that are disproportionately burdened by multiple

sources of pollution); high levels of bicycling to work exist; high numbers of households without vehicles exist; and high numbers of bicyclist involved collisions have occurred.

The Plan also includes descriptions of the current bikeway types as well as a facilities selection guide that will be the starting point to help identify which bikeway type is appropriate for which type of roadway, giving staff a framework to implement low stress bikeways that are comfortable for the greatest number of residents.

In addition to the bikeway network, this Plan includes recommendation to develop Bicycle Parking Design Guidelines; update the Street Design Standards to include consideration for bike lanes on residential streets at parks and schools; and develop bikeway specific wayfinding guidelines and implement as funding allows.

The recommendations presented are informed by input from the community and the City team.

## **RESOLUTION NO.**

Adopted by the Sacramento City Council

### **Approval of 2016 Bikeway Master Plan (K15120004)**

#### **BACKGROUND**

- A. The Bikeway Master Plan was originally adopted by Resolution 2004-791 on October 5, 2004;
- B. The 2004 Bikeway Master Plan received numerous updates and is now the 2010 Bikeway Master Plan adopted by Resolution 2011-131 on March 8, 2011;
- C. The 2016 Bicycle Master Plan amendment was initiated in order to update the vision for development of the city's bikeway network and maintain competitiveness for funding;
- D. Extensive outreach to underrepresented neighborhoods, community based organizations, and stakeholders was conducted;
- E. The project team conducted an equity analysis to determine areas of poverty, socioeconomic disparities, high levels of bicycling, high levels of households without vehicles, and high numbers of collisions;
- F. The Plan includes descriptions of current bikeway types and designs;
- G. The Plan includes recommendations for a network of bikeways throughout the City and recommends improvements to bike parking, Street Design Standards, and bikeway wayfinding.

#### **BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:**

- Section 1. The 2016 Bicycle Master Plan is approved as the City's guide for development of the bikeway network, support facilities and programs; and
- Section 2. Staff is directed to amend the appropriate local and regional plans to reflect the recommendations of the Bicycle Master Plan

**Table of Contents:**

Exhibit A. 2016 Bicycle Master Plan

City of  
Sacramento

# BICYCLE MASTER PLAN



July 2016

**BICYCLE**  
MASTER PLAN



Sacramento Bicycle Master Plan

Photographs provided by Fehr & Peers, Dave Cassel  
Design and Layout by Fehr & Peers

1001 K Street, 3rd Floor  
Sacramento, CA 95814

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# ACKNOWLEDGEMENTS

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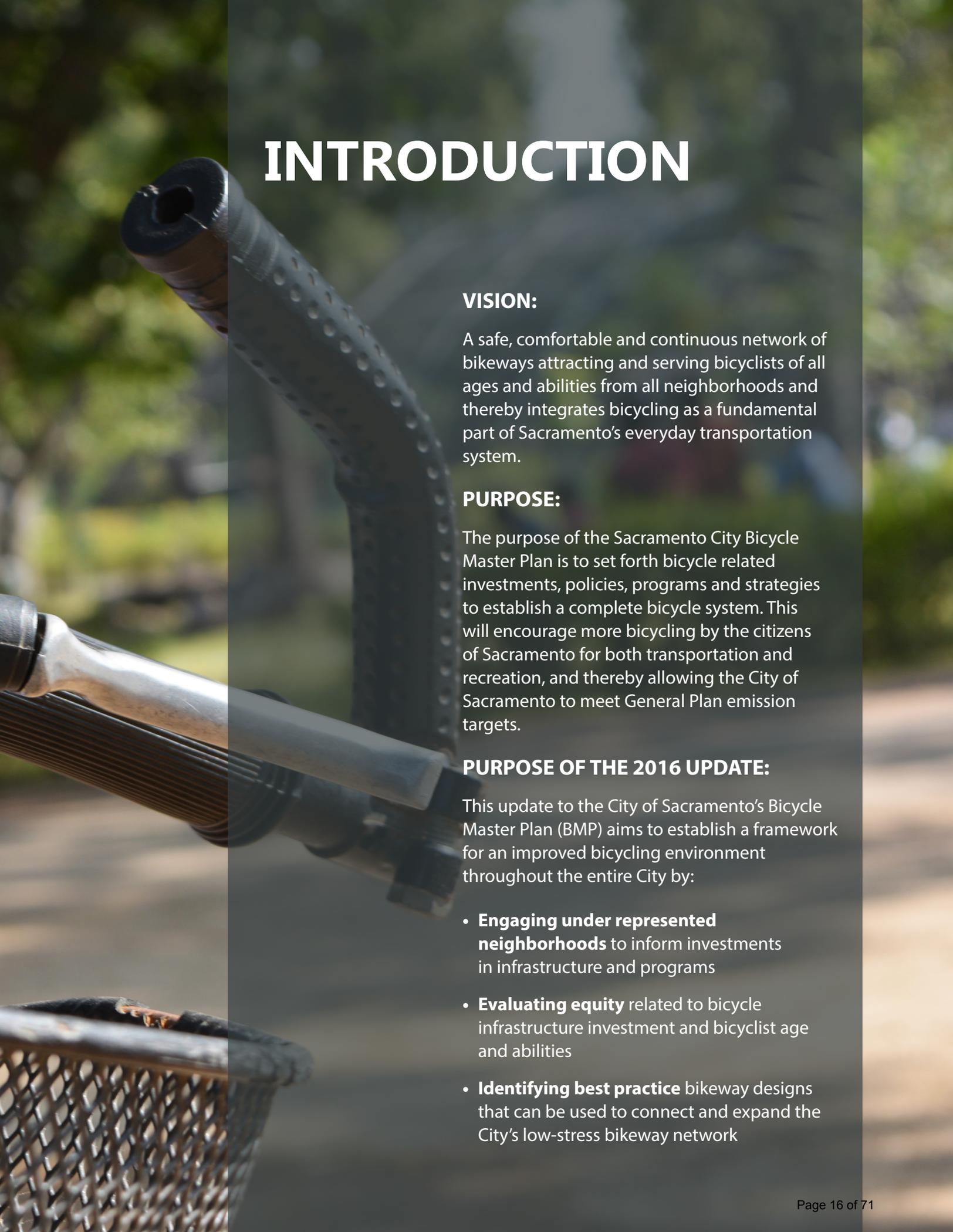
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## **APPENDIX**

- Appendix A: Relationship to Other Plans
- Appendix B: Community Outreach Report





# INTRODUCTION

## VISION:

A safe, comfortable and continuous network of bikeways attracting and serving bicyclists of all ages and abilities from all neighborhoods and thereby integrates bicycling as a fundamental part of Sacramento's everyday transportation system.

## PURPOSE:

The purpose of the Sacramento City Bicycle Master Plan is to set forth bicycle related investments, policies, programs and strategies to establish a complete bicycle system. This will encourage more bicycling by the citizens of Sacramento for both transportation and recreation, and thereby allowing the City of Sacramento to meet General Plan emission targets.

## PURPOSE OF THE 2016 UPDATE:

This update to the City of Sacramento's Bicycle Master Plan (BMP) aims to establish a framework for an improved bicycling environment throughout the entire City by:

- **Engaging under represented neighborhoods** to inform investments in infrastructure and programs
- **Evaluating equity** related to bicycle infrastructure investment and bicyclist age and abilities
- **Identifying best practice** bikeway designs that can be used to connect and expand the City's low-stress bikeway network

## GOALS OF THE BICYCLE MASTER PLAN

**The 2035 General Plan** establishes an overarching goal of making Sacramento the most livable city in America. Sacramento's Climate Action Plan commits the City to substantially increasing its bicycling mode share to help reduce vehicle miles traveled and climate change.

In addition to the goals contained in the 2035 Sacramento General Plan and Climate Action Plan, this plan adds the following goals to the policy framework of the City. The Sacramento City-County Bicycle Advisory Committee approved a resolution promoting the following goals based on the City's overall vision on May 10th, 2016.

**Goal: Increase Ridership**

7% bicycle mode share for community by 2020

**Goal: Increase Safety**

Zero bicyclist fatalities by 2020

**Goal: Increase Connectivity**

Double the percentage of residents that can conveniently reach a continuous low-traffic-stress bikeway network\*

**Goal: Increase Equity**

Equitable investments in bicycling facilities and programs for all neighborhoods by 2020

*\*Note – A "low-traffic-stress" bikeway network provides a bicycling option for people of all ages and abilities throughout Sacramento; "low-traffic-stress" is defined in Mekuria et al., 2012. Low-stress bicycling and network connectivity. Report 11-10, Mineta Transportation Institute, San Jose.*

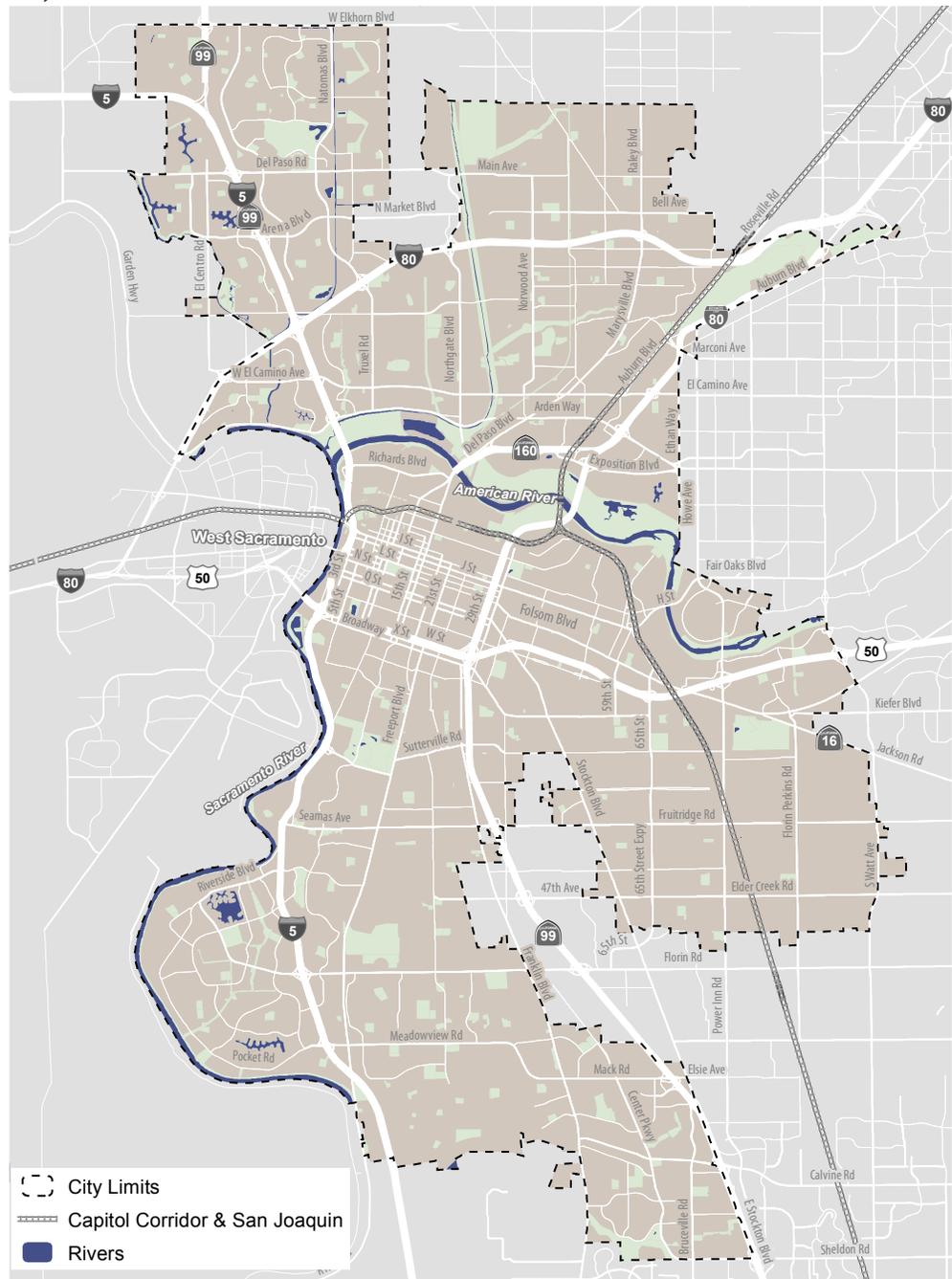
# OVERVIEW OF SACRAMENTO

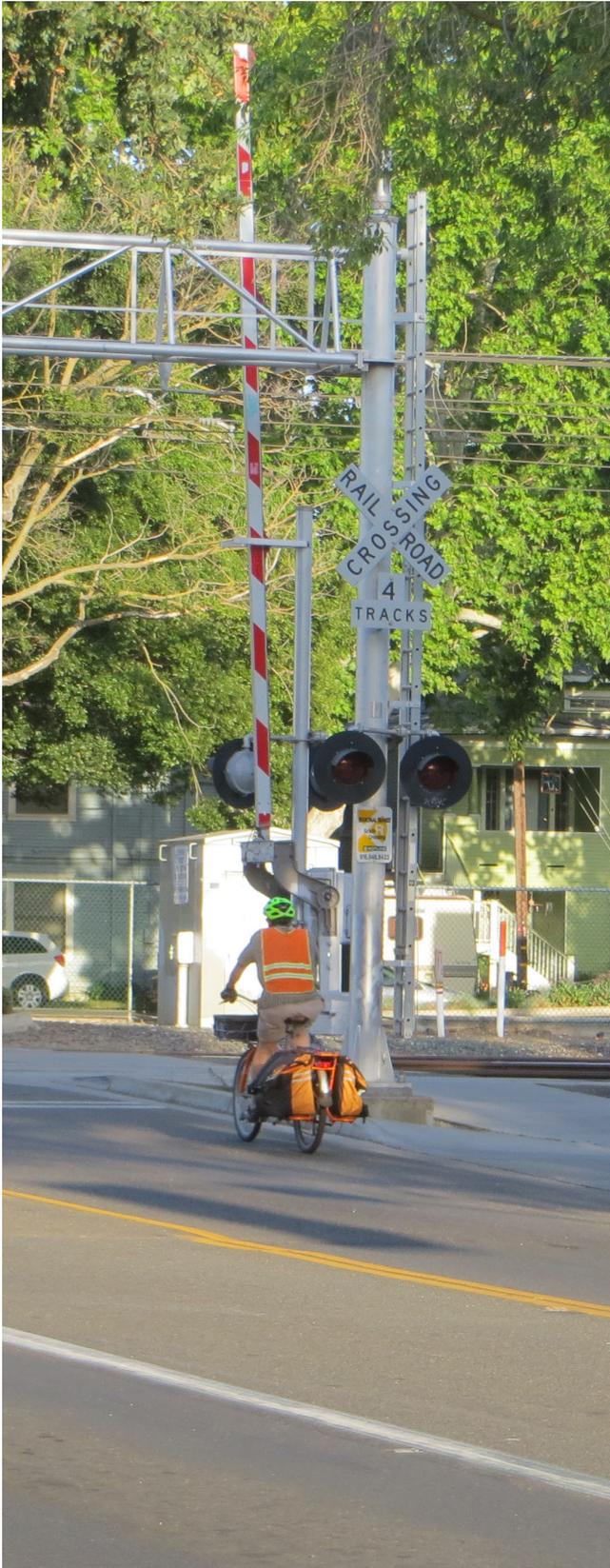
The City of Sacramento stretches across 100 square miles in the heart of the California Central Valley. Home to over 485,000 residents, California's capital city is a major activity hub for the metropolitan region and Northern California alike.

The City is strongly defined by its two rivers and their associated parkways – the Sacramento and the American. While the rivers serve as local and regional amenities, they also physically divide the City, forming barriers to travel between adjacent neighborhoods. Today, local river crossing opportunities are limited, with just seven local bridges across the American River and two local river crossings connecting Sacramento with neighboring Yolo County across the Sacramento River.

Beyond the City's natural features, manmade features heavily shape the Sacramento landscape. Several freeways traverse the City, including Interstate 5,

City Overview





Interstate 80, Highway 50, State Route 160, and State Route 99. Major arterials distribute automobile traffic to and from the local freeway network, including Folsom Boulevard, Arden Way, Truxel Road, Fruitridge Road, and Florin Road. These high-capacity corridors provide convenient access for people traveling by car, but simultaneously pose challenges for bicyclists attempting to travel throughout the City.

Similarly, the City's extensive railroad network creates distinct edges throughout Sacramento. This network is utilized for both freight and passenger transportation purposes, including the Sacramento Regional Transit light rail network, which carries 50,000 passengers per week throughout the region. Roadway and bicycle networks are often interrupted by lengthy stretches of railroad track, making safe crossing opportunities few and far between.

Despite these barriers, the flat topography and temperate year-round climate provide ideal conditions for bicycling as a primary mode of transportation in Sacramento. Over the years, the City has facilitated bicycle travel through the provision of a variety of bicycle facilities, ranging from on-street neighborhood bicycle routes to the renowned American River Bike Trail. With this foundation in place, the City is positioned to stitch together these individual components into a cohesive, complete bicycle network.

# BICYCLE FRIENDLY COMMUNITY STATUS

Since 2006, the City of Sacramento has been recognized as a Bicycle Friendly Community by the League of American Bicyclists. In 2011, the City's recognition level was upgraded to "Silver" largely based on the growing public support for bicycling in the region and the integration of complete streets improvement standards.

A number of projects over the past decade have focused on improving bicycle access to the downtown business district, including road diets to add bicycle lanes on H Street, J Street, Folsom Boulevard, Freepoint Boulevard.

The evaluations for bicycle friendly communities are based on a combination of qualitative metrics and quantitative self-reported data. A selection committee assesses each application based on the unique context of each community under consideration. The criteria are based on five categories known as the Five E's, which include Engineering, Education, Encouragement, Enforcement, and Evaluation & Planning. In addition, the evaluations include key outcomes related to ridership, crashes, and fatalities that can be measured and tracked over time.

## Bicycle Friendly Community Report Card



# SACRAMENTO, CA

**TOTAL POPULATION**  
475,536

**TOTAL AREA (sq. miles)**  
100

**POPULATION DENSITY**  
4755

**# OF LOCAL BICYCLE FRIENDLY BUSINESSES** 1

**# OF LOCAL BICYCLE FRIENDLY UNIVERSITIES** 0

### 10 BUILDING BLOCKS OF A BICYCLE FRIENDLY COMMUNITY

	Average Gold	Sacramento
Arterial and Major Collector Streets with Bike Lanes	65%	70%
Total Bicycle Network Mileage to Total Road Network Mileage	43%	22%
Public Education Outreach	VERY GOOD	SOME
Share of Transportation Budget Spent on Bicycling	14%	7.7%
Bike Month and Bike to Work Events	VERY GOOD	VERY GOOD
Active Bicycle Advocacy Group	YES	YES
Active Bicycle Advisory Committee	YES	MONTHLY
Bicycle-Friendly Laws & Ordinances	VERY GOOD	GOOD
Bike Plan is Current and is Being Implemented	YES	YES
Bike Program Staff to Population	1 PER 32K	1 PER 327,956

### CATEGORY SCORES

<b>ENGINEERING</b> <i>Bicycle network and connectivity</i>	4 / 10
<b>EDUCATION</b> <i>Motorist awareness and bicycling skills</i>	3 / 10
<b>ENCOURAGEMENT</b> <i>Mainstreaming bicycling culture</i>	4 / 10
<b>ENFORCEMENT</b> <i>Promoting safety and protecting bicyclists' rights</i>	4 / 10
<b>EVALUATION &amp; PLANNING</b> <i>Setting targets and having a plan</i>	2 / 10

### KEY OUTCOMES

	Average Gold	Sacramento
<b>RIDERSHIP</b> <i>Percentage of Commuters who bike</i>	5.5%	2.3%
<b>SAFETY MEASURES CRASHES</b> <i>Crashes per 10k bicycle commuters</i>	100	453
<b>SAFETY MEASURES FATALITIES</b> <i>Fatalities per 10k bicycle commuters</i>	0.6	5.7

## KEY STEPS TO GOLD

- » Increase staff time and resources spent on improving bicycling conditions in Sacramento. Current reported FTE points to a lack of staff capacity compared to other Bicycle Friendly Communities.
- » Develop a comprehensive traffic safety program, such as Vision Zero, to reduce the number of bicyclist crashes and deaths. A comprehensive program should include infrastructure changes, such as traffic calming, in addition to education efforts.
- » Launch a bike share system that is open to the public. Bike sharing is a convenient, cost effective, and healthy way of encouraging locals and visitors to make short trips by bike and to bridge the "last mile" between public transit and destinations.
- » Consider offering a 'Ciclovía' or Open Streets event, closing off

a major corridor to auto traffic and offering the space to cyclists and pedestrians. This event can be a great place to engage people about improvements they would like in their community and barriers to biking more often than they experience.

- » You reported a higher percentage of roads over 35 mph than other applicable communities. Consider ways to decrease speed limits in urban areas and redesign those streets to increase compliance with the new speed limits.
- » Expand youth education programs. Bicycle-safety education should be a routine part of education, for students of all ages. Neighborhoods surrounding schools should be particularly safe and convenient for biking and walking.

LEARN MORE » [WWW.BIKELEAGUE.ORG/COMMUNITIES](http://WWW.BIKELEAGUE.ORG/COMMUNITIES)

SUPPORTED BY **TREK**

During the most recent renewal in February of 2016, the City of Sacramento maintained its “Silver” Bicycle Friendly Community designation. Generally, in the Five E’s categories, scoring remained stagnant with a slight drop in the Evaluation & Planning Criteria. In the key outcomes evaluation, the percentage of commuters who bike has remained relatively constant since 2011 at about 2.5 percent. Prior to 2011,

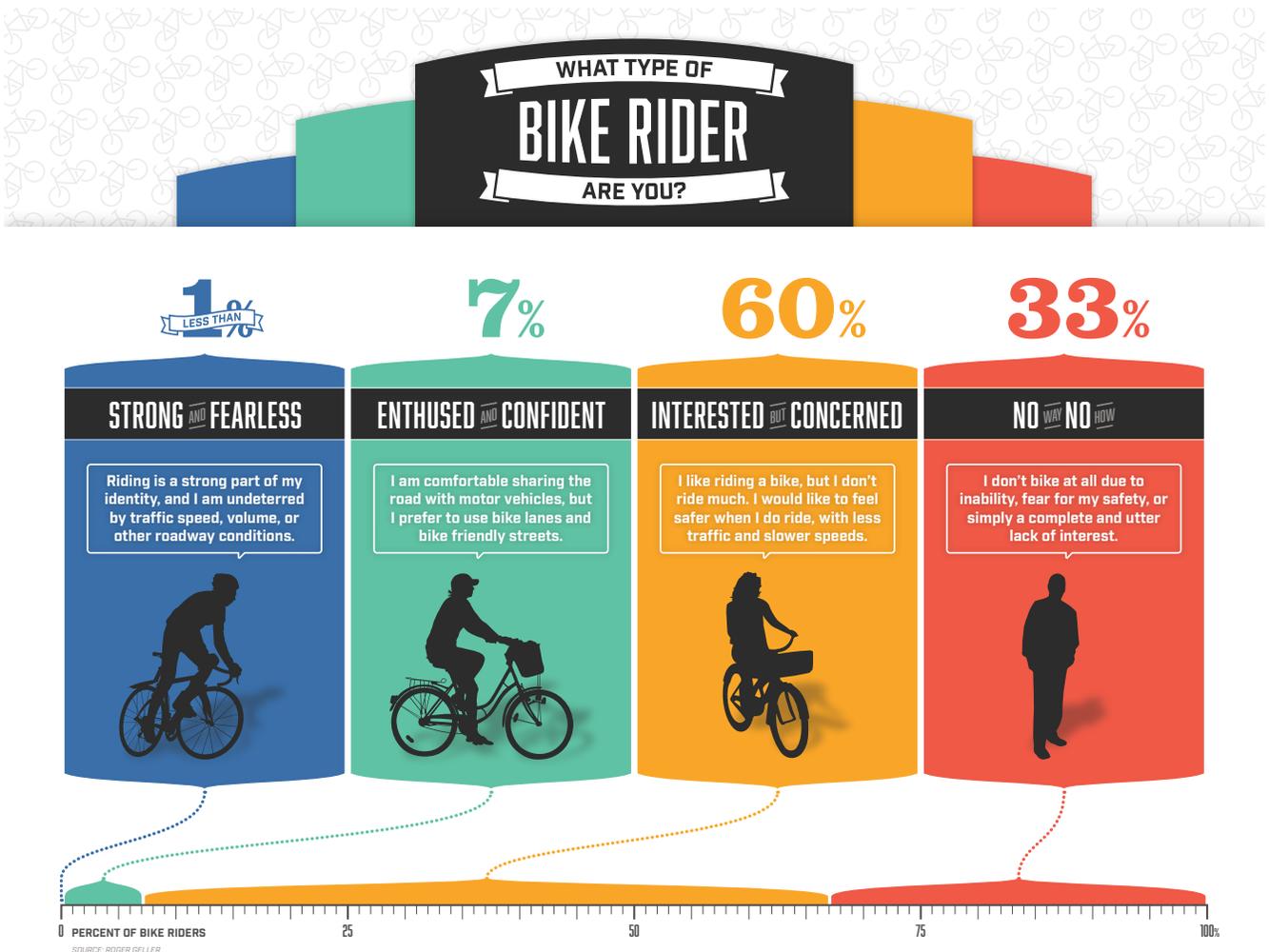
the growth of ridership in Sacramento was one of its key strengths. Unfortunately, the crashes and fatalities per 10,000 bicycle commuters has greatly increased over the last four years. The frequency of crashes has nearly doubled from 265 to 453 between 2011 and 2015. During the same time period, the fatality rate has tripled from 1.89 to 5.7 fatalities per 10,000 bicycle commuters.

The League recommended

several measures for improving bicycle-friendliness in Sacramento:

- Increase staff time and resources spent on improving bicycling conditions.
- Develop a comprehensive traffic safety program, such as Vision Zero.
- Launch a bike share system that is open to the public to encourage short trips by bike and bridge the “last mile” to transit.
- Consider offering a “Ciclovía” or Open Streets event to engage the community regarding enhancements and removing barriers to bicycling.
- Consider ways to decrease speed limits in urban areas and redesign those streets to increase compliance with the new limits.
- Expand youth education programs.

## LOW-STRESS BICYCLING NETWORK



To see major increases in ridership, the City would need to invest in bikeways that are more comfortable for a broader spectrum of riders.

Level of Traffic Stress (LTS) is a way to evaluate the stress a bike rider will experience when riding on a road based on factors such as speed of traffic, number of traffic lanes, and presence and quality of bike lanes.

The chart on the previous page shows that “Interested but Concerned” bicyclists comprise the majority of adults. The Low-Stress Cycling and Network Connectivity methodology concludes that “Interested but Concerned” bicyclists will not tolerate a bikeway that is high stress (LTS 3 and 4). Therefore, significantly increasing bicycle mode share will require well-connected bikeways that are considered lower stress.

For the purposes of this plan, bikeways that could be considered lower-stress include:

- Bike paths
- Protected/Separated bikeways (with vertical barrier)
- Buffered bike lanes on streets with a posted travel speed of up to 45 miles per hour

- Bike lanes on streets with a posted travel speed of up to 35 miles per hour
- Shared streets (or bike routes) with a posted travel speed of up to 25 miles per hour





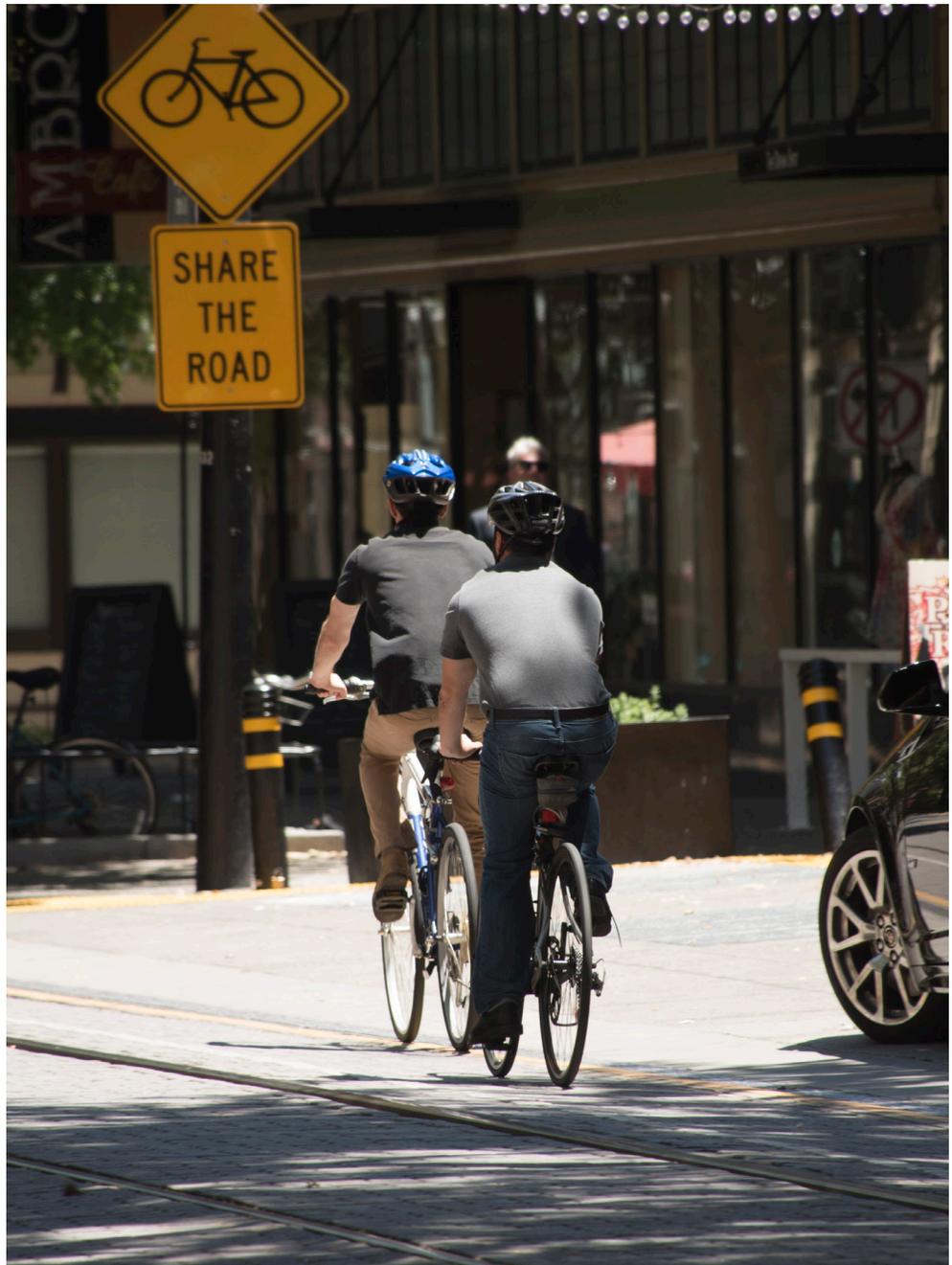


# EXISTING CONDITIONS

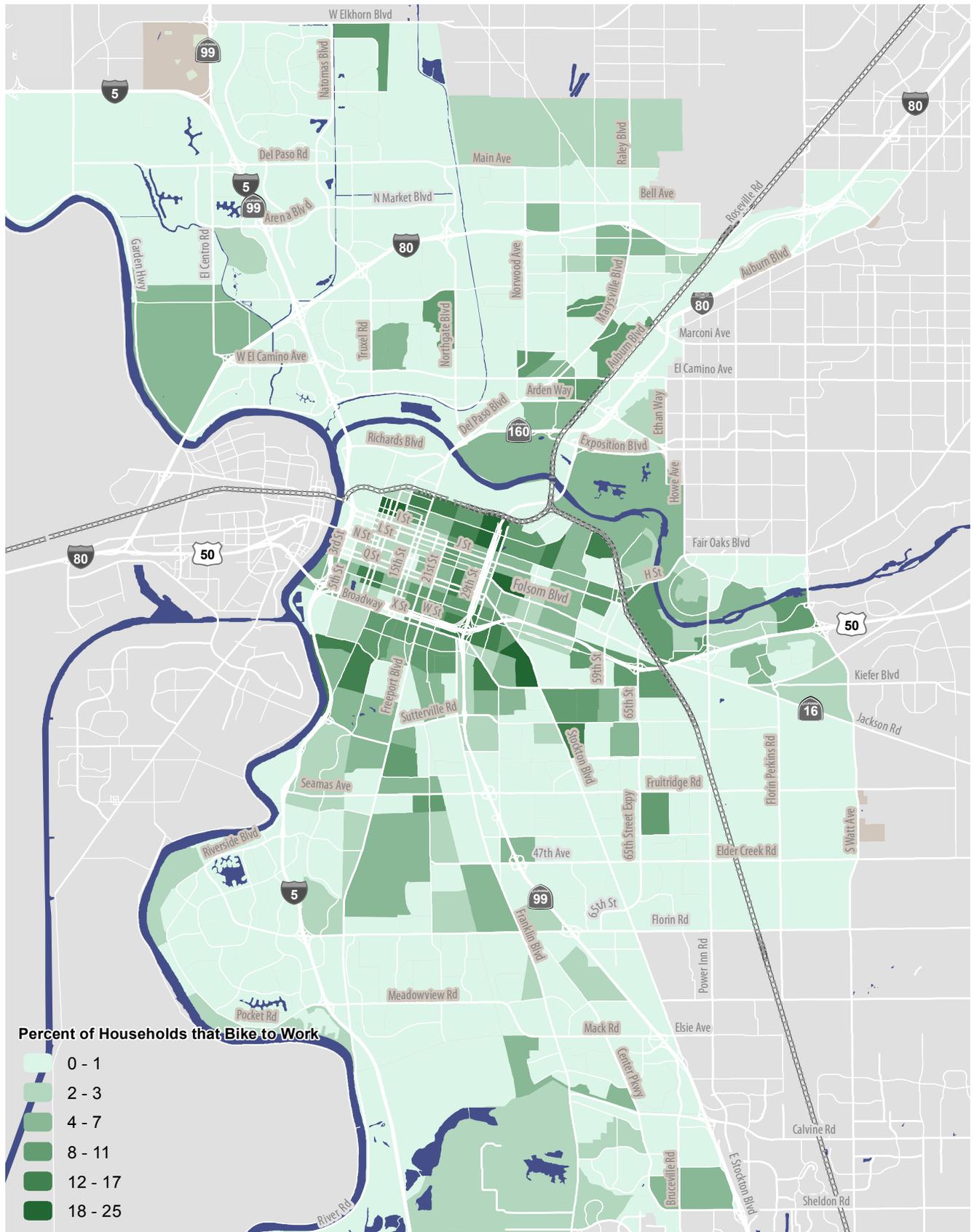
The City of Sacramento's bikeway network is anchored by the river trails along the American and Sacramento Rivers. The Central City is characterized by a robust street grid that supports multiple modes of transportation surrounded by tree lined suburbs with neighborhood bike routes. Historic highways radiate out from the Central City connecting neighborhoods with on-street bike lanes that are evolving to better serve the City's residents. Eclectic bike parking that celebrates the arts culture of Sacramento can be found along many of its active commercial corridors. The City is implementing its first protected bikeway along North 12th Street continuing its goal of becoming a city that celebrates active transportation.

## BICYCLE MODE SHARE

According to SACOG's Metropolitan Transportation Plan / Sustainable Community Strategy (Adopted February 18, 2016) bicycle mode share across the Sacramento Region has steadily grown over that last decade. As the largest urbanized area and job center, the City of Sacramento's bicycle commute mode share of 2.5 percent is above the regional average. By analyzing the American Communities Survey (ACS) commute data for the City of Sacramento we observe that some neighborhoods have a bicycle commute mode share above 20 percent, and the Central City averages approximately eight percent. However, this map also highlights many of the areas of the City that fall below the regional average with a mode share less than one percent. Increases in Educational and Encouragement programs, Enforcement and Engineering infrastructure can help the City reach its bicycle commute mode share goals.



# Percent of Households that Bike to Work



Source: American Communitites Survey

EXISTING CONDITIONS

# CONNECTIONS TO TRANSIT

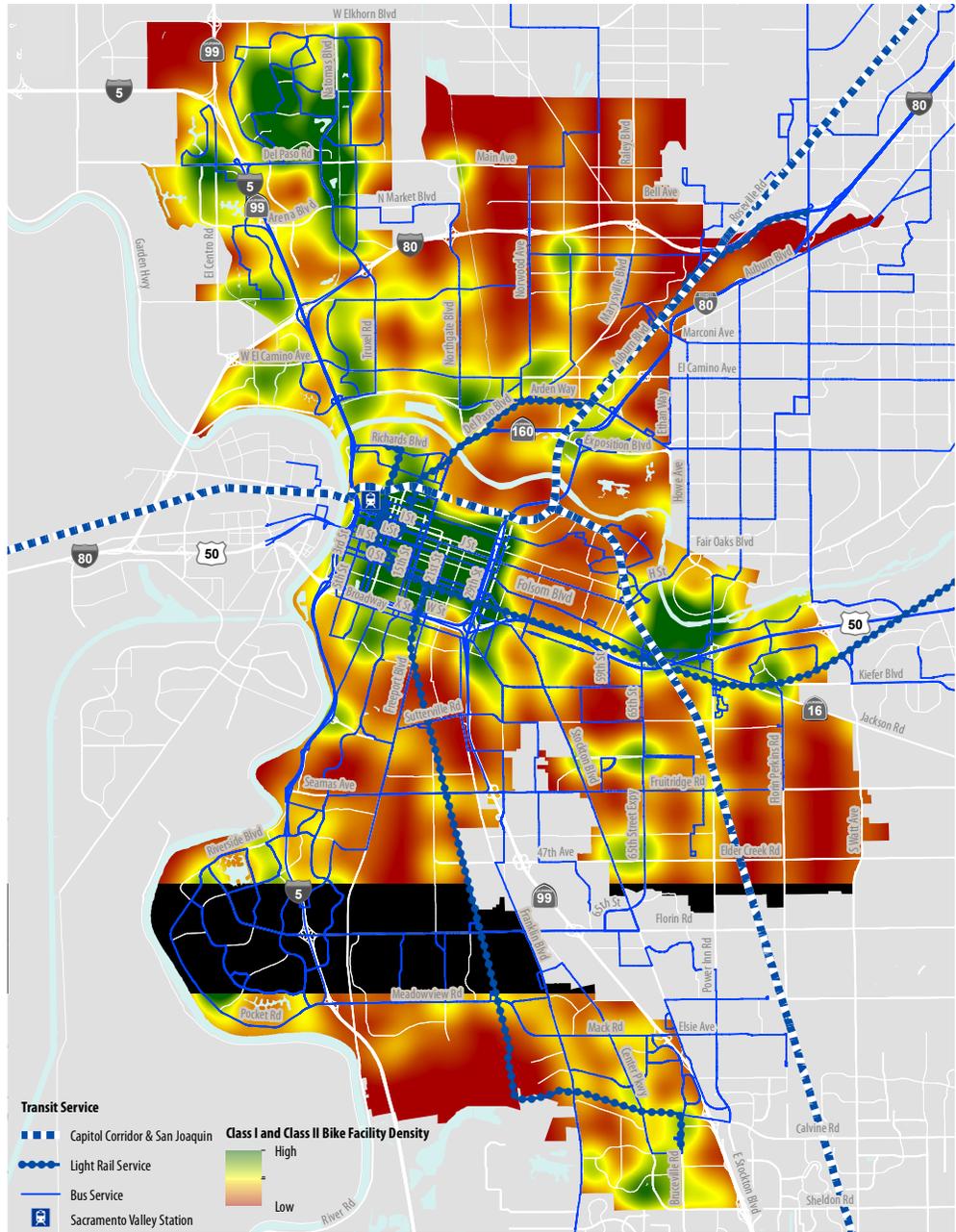
## Sacramento Regional Transit District



As the primary transit service provider for the Sacramento metropolitan area, the Sacramento Regional Transit District (RT) operates 69 bus routes, one general public dial-a-ride service, and 38.6 miles of light rail throughout a 418 square-mile service area. Buses and light rail operate 365 days a year using 76 light rail vehicles, 199 buses, and 27 shuttle vans.

RT facilitates bicycling by providing bike racks on buses, allowing bikes on trains, and providing bike parking at light rail stations. Every bus is equipped with a bike carrier serving passengers on a first-come, first-serve basis. In March 2015, RT installed new three-position bike racks on most of their buses for additional carrying capacity. Bikes are allowed on the light rail trains during all hours

Existing Transit Facilities



of operation. On multi-car trains, four bikes are allowed per car – two in the front and two in the back. On the last daily bus or train on each route, there is no limit on the number of bikes that can board. Over 150 weatherproof bike lockers are located at 19 light rail stations. Additionally, many light rail stations have bike racks.

The Existing Transit Facilities map highlights where existing bikeway infrastructure exists near transit lines.



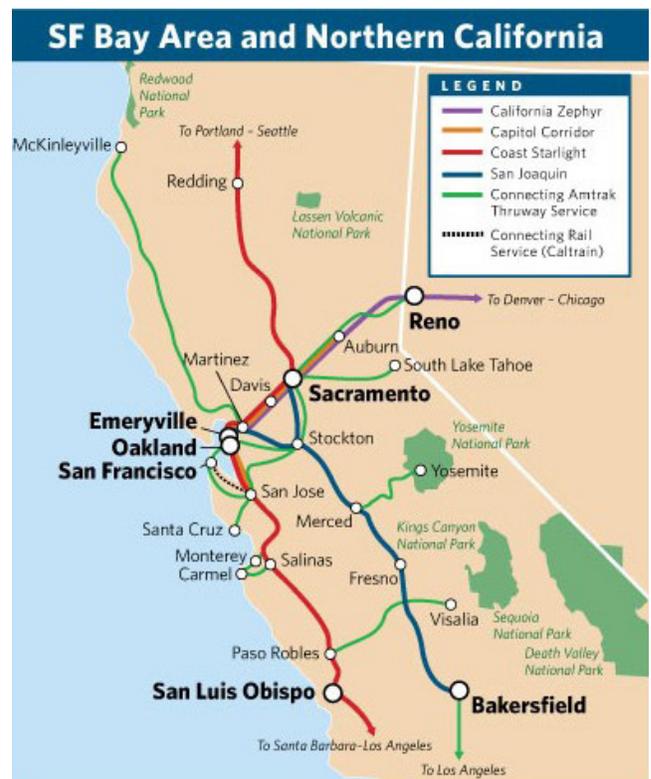
### Inter-City Rail Service

Inter-city rail service is available on two commuter rail lines and two transcontinental rail lines that serve Sacramento.

The most popular inter-city rail line serving Sacramento is the Capitol Corridor, which provides up to 32 daily trains between Sacramento, the Bay Area, and San Jose.

The second inter-city rail line is the San Joaquin line, which provides 12 daily trains between Stockton and Bakersfield. Two of these trains continue to Sacramento.

Both the Capitol Corridor and the San Joaquin lines allow walk-on bicycle storage. Recently, Capitol Corridor JPA doubled on-board bicycle storage capacity.



EXISTING CONDITIONS

## Other Transit Services



### North Natomas Flyer

Operated by the North Natomas Transportation Management Association, the Natomas Flyer provides four shuttle routes throughout the North Natomas area. Each of these routes provide a trip to Downtown Sacramento. Each of the 32 foot buses have capacity for 30 passengers and three bicycles.



### Sacramento State Hornet Express

Operated by California State University Sacramento during spring and fall semesters, the Hornet Express Shuttle provides three shuttle routes in and around the California State University Sacramento campus in East Sacramento. Hornet Express Shuttle service is intended for students attending the University. Each of the buses have carriers with capacity for two bicycles.



### UC Davis Shuttles

Operated by UC Davis Health System, the UC Davis Medical Center is served by four regular shuttle routes and one express route. Additionally, the system includes a route connecting to the main University of California Davis campus. Service is intended for persons affiliated with University of California. Most of the buses have carriers with capacity for two bicycles.

### Buses From Outside of Sacramento City Limits

The following list of transit agencies provide at least one route to downtown Sacramento. Each of these vehicles are equipped to transport bicycles either on a bicycle carrier or within the luggage compartment:

**Amador Transit:** Serving Amador County (Plymouth, Jackson, Sutter Creek, Lone), each shuttle is equipped with a carrier for two bikes.

**El Dorado Transit:** Serving El Dorado County (Placerville, Shingle Springs) each bus is equipped with a bicycle carrier

**e-tran:** Serving the City of Elk Grove, each bus is equipped with a carrier for two bikes.

**Fairfield and Suisun Transit/Solano Express:** Serving Fairfield and Suisun City, buses have carriers for two bicycles plus additional storage space in the luggage compartment.

**Roseville Transit:** Serving the City of Roseville, each bus is equipped with a bicycle carrier.

**San Joaquin RTD:** Serving San Joaquin County (Stockton and Lodi), bicycles are allowed in the luggage compartment.

**South County Transit:** Serving Galt and South Sacramento County, bicycles either on a bicycle carrier or within the luggage compartment.

**Yolobus:** Serving Yolo County (Davis, Woodland, and West Sacramento), downtown Sacramento, and Sacramento International Airport, all buses are equipped with bicycle carriers for three bicycles.

**Yuba-Sutter Transit:** Serving Yuba County (Yuba City and Marysville), all buses are equipped with bicycle carriers for two bicycles.

## PROGRAMS

The City of Sacramento has many programs that focus on increasing ridership, making biking safer, and integrating biking into everyday life.

### Education

#### Bicycle Education in Schools

Elementary schools are eligible to participate in the Captain Jerry Program, offered by the City of Sacramento Department of Public Works. Aimed at providing learning basic traffic safety along with the fun of bicycling, the program makes an interactive presentation to an assembly of the students. The program visits ten schools per year. Bicycle safety topics include bicycling to prevent falling, riding on the right side of the road, using hand signals,

and the use of bicycle helmets.

Safetyville USA in Sacramento educates children on life saving skills, health and fitness, and roadway safety.

North Natomas Transportation Management Association (NNTMA) has a fleet of bicycles they provide to classes participating in their bicycle rodeos within the North Natomas neighborhood. They provide Project Ride Smart as a 5th grade driver's education program – for bikes. This

comprehensive bicycle safety program teaches traffic principles and on-bike handling skills. The 10 hour course culminates with street rides where students apply what they learned to their local neighborhood streets – giving them the knowledge and experience to travel safely to and from school. Project Ride Smart is taught by certified bike instructors.

**Adult bicycle education** is offered through Smart Cycling Sacramento taught by instructors certified by

the League of American Bicyclists. Students are able to earn their Traffic Skills 101 Certificate and become more prepared to ride in an urban environment.

#### Police Department Grant Programs

The Sacramento Police Department obtains funding for safety in schools as well. The most recent program, School Traffic Safety, funds a police officer to provide enforcement and traffic safety education at over 100 schools in Sacramento. Over 1,000 bicycle helmets were purchased to be given away to children at the many planned school bicycle safety events. These events include bicycle safety rodeos, Teen Impact classes, and traffic safety pamphlets.



## Enforcement

### Traffic Law Enforcement

Funding for law enforcement in Sacramento has experienced program cuts due to budget constraints. Between 2007 and 2012 there was a 19 percent reduction of sworn officers and 45 percent reduction in civilian staff. As a result of these cuts, several programs, including routine traffic enforcement were eliminated. In the interim, some funding for traffic enforcement was secured through grants aimed at DUI and distracted driver enforcement. Funding for overall traffic enforcement is being gradually restored as the economy continues to recover.

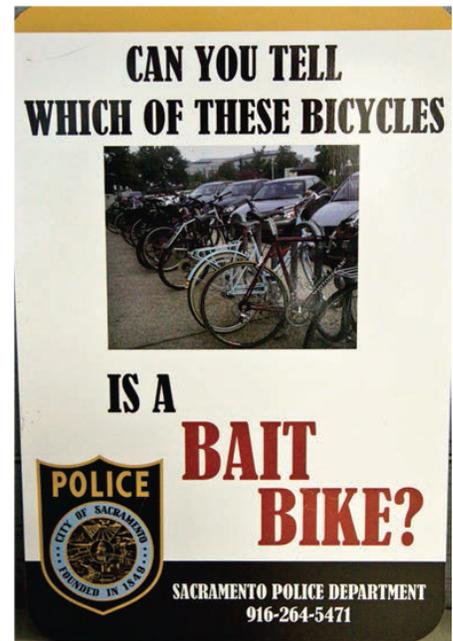
### Bicycle Theft Prevention and Recovery

In response to an increase in bicycle thefts in recent years, the Sacramento Police Department partnered with various neighborhoods to conduct a bait bike program. These bait bikes have been successful in reducing bicycle theft. Each bait bicycle is equipped with an Electronic Tracking System monitoring device, and when moved, sends a signal to police dispatch that the object is moving. Officers use equipment that tracks the bicycle's location. When

the lock is cut and the bike starts to move, officers respond and generally make an arrest. The program also includes posting of signs as the prevention piece of the program as illustrated to the right. More funding of this program could help reduce bicycle theft.

The Sacramento Police Department has also taken steps toward bicycle recovery through "Ride On!" an online bicycle registration program. By registering in the program, a recovered bicycle that is in the registry can be returned to its rightful owner. An added benefit, bicycle registration aids

in identifying the bicycle owner in case of a crash, since many bicyclists, especially children, don't carry identification. In 2013, 741 bicycles were brought in as either evidence, found property or put in safe keeping. During the year, 362 bicycles were returned to their owners, and 199 were sent to auction. Higher recovery rates could be seen with more use of the "Ride On!" program.



**RIDE ON!**

REGISTER. LOCK. REPORT.

**Why Register?**

- **Bicycle Identification** - If your bike is stolen and is registered with the City of Sacramento, the police department can easily search registration records because your registered bicycle is cross-referenced by name as well as by serial number and registration number.
- **Recovered Bikes Returned to Owners** - A registered bike greatly increases the likelihood it will be returned to its owner.
- **Rider Identification** - Bicycle registration aids in identifying the bicycle owner in case of a crash. Many bicyclists don't carry identification. This is especially true for children.

**Login**

Email Address

Password

**Sign In**

- Sign up for an account  
- I forgot my password

For more information please visit the Sacramento Area Bicycle Advocates online and learn [how to better protect your bicycle from theft.](#)

## Encouragement

### May is Bike Month

First sponsored by the Sacramento Area Council of Governments in 2006, May is Bike Month is a bicycle promotional campaign that takes place every year during the Month of May. The focus of the campaign is to promote bicycle use as a mode of transportation whether for running errands, commuting, riding recreationally, or working. The campaign encourages people to get out of their cars and on their bikes year-round, but with and emphasis every May so that as more people become energized and comfortable on their bicycles they will be more likely to replace a car trip with a bicycle trip year round. Of the many activities that take place during the month of May is the voluntary logging of miles by people who sign into the web page. Since 2014, during the month of May the total number of miles has approached the 2 million mile goal. May is Bike Month is expected to continue for the foreseeable future, with the result of increasing bicycle ridership.

### Bicycle Trip Guide

The Sacramento Area Council of Governments published a bicycle trip guide for the Sacramento Region. This 28 page pamphlet discusses topics such as how to get started bicycling, ways to dress for bicycling and for work, equipment needed, tips on riding in the street, secure parking and locking, trip route planning tips, access to bike maps, information on transit services, other rideshare information.

### Bike Access and Repair

The Sacramento Bicycle Kitchen is a community-centered bicycle cooperative serving the residents of Sacramento. The organization was formed in order to promote cycling as a low-cost, alternative form of transportation; enable self-sufficiency through knowledge of bicycle maintenance; and promote bicycle safety through education and classes.

North Natomas Transportation Management Association hosts bike clinics and the Bike Doc (mobile bike repair) about twice monthly. The Bike Doc program repairs North Natomas bicycles, for free, at school-based events.

Hard-working, professional Bike Doc mechanics are dedicated to ensuring students and their families have safe and rideable bikes by fixing flats, aligning brakes and doing repairs as needed at local school events throughout the spring season. Bike Doc events at school sites also offer low cost helmet sales, where new, quality helmets are provided for the subsidized rate of \$5.

In 2017, NNTMA will have their 5th annual 50 Bikes for 50 Kids. The event is centered on rewarding the excellent young individuals found in our community

while encouraging the community to learn more about bicycles. This event demonstrates the strength of a unified community, from the 232 volunteers who donated 914 hours of their time to the scores of businesses who sponsored the event.

Cycles 4 Hope was founded to serve people in need in the greater Sacramento California region. Their goal is increase the transportation options and increase opportunity to people in need through the donation of recycled bicycles.



## Evaluation

### CycleSac

SACOG developed the CycleSac smartphone application to crowdsource the desirability of bicycle routes in the region and collect data about where people are, or are not, riding bikes. This information can be leveraged by planners for more informed decisions regarding infrastructure investments to meet demands and help keep riders safe.

CycleSac collects data on existing cyclist travel

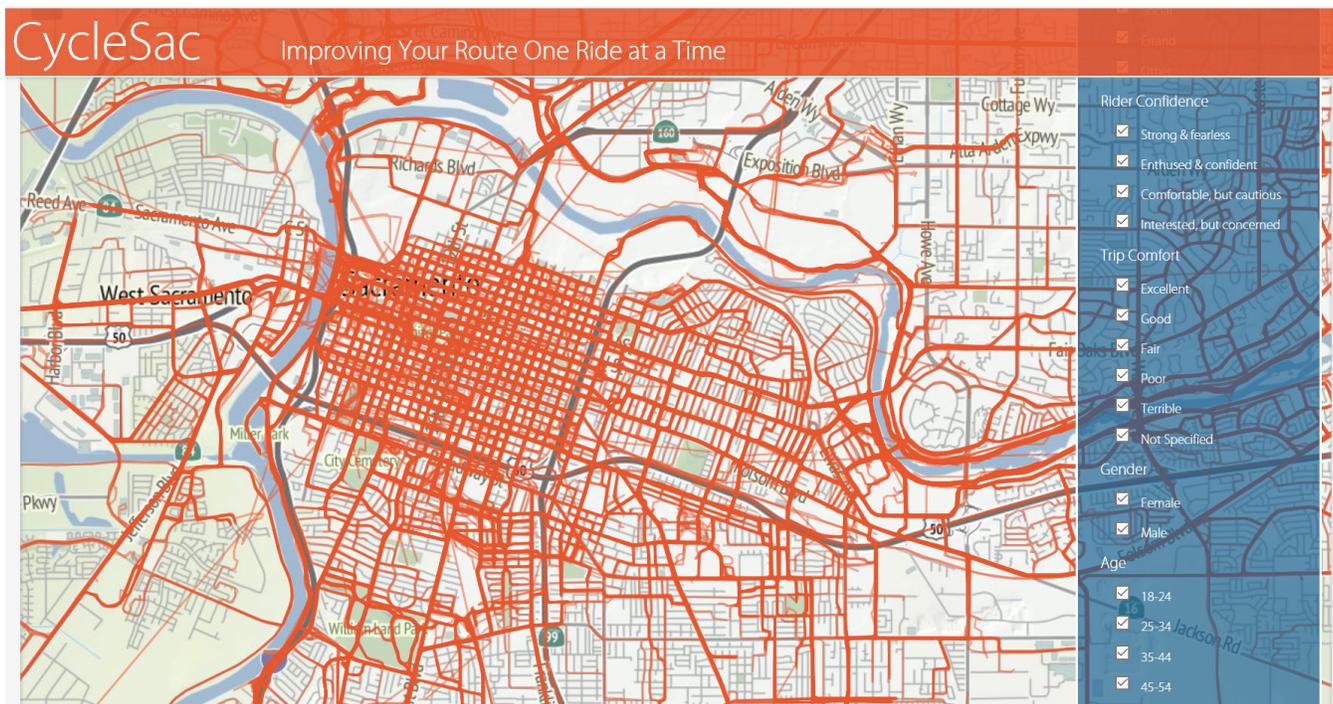
patterns from users in all six counties and documents current constraints, issues, and opportunities in the area. This tool is not a comprehensive analytical tool, but a snapshot to understand the routes taken by proactive bicycle riders.

The Sacramento Area Bicycle Advocates (SABA) provides volunteer bike counting services for many of the planning projects throughout the Sacramento Region.

### Sacramento 311 Call Center

Sacramento City 311 is an easy to remember phone number available within the City limits that residents, businesses, and visitors can use to request service, report problems, or get information from local government. Among many of the topics available,

bicyclists can call in service requests for potholes, problematic traffic signals, fallen tree limbs and flooded streets. The call center is also available for answers to commonly asked questions and requests for new facilities, such as bike parking. The 311 system is also available through an online portal and as a smartphone application.



## Engineering

### Bikeway Network

The City's Public Works Department plans, seeks funding for, and implements paths and on-street bikeways. Project identification is done through area studies and citywide planning efforts (such as this Plan). When possible, projects are implemented through roadway resurfacing programs or in coordination with other projects already underway. Otherwise the City seeks funding through regional or state funding opportunities.

### Bike Parking

No bikeway network is complete without a safe and secure place to lock your bicycle. Bicycle parking in the City is installed one of three ways:

1. City installation as part of the Public Bicycle Rack Program
2. Installation on public and private property with new development projects
3. Installation on public and private property at existing buildings by property/building owner

The City's Public Bicycle Rack Program will install bicycle racks such as those on the sidewalk or in bike corrals (grouped bike parking on-street) for no cost at locations that meet certain criteria.

### Wayfinding

Most wayfinding signage within the City is concentrated in Downtown and Midtown Sacramento. Wayfinding signage in this area is intended for use by pedestrians, bicyclists, and automobiles, directing travelers to local recreational, historic, and civic destinations, as well as major transportation routes. Some wayfinding signage is also provided along the American River Parkway. Outside of these areas, wayfinding signage within the City is sporadic.

In early 2016, as part of the Grid 3.0 planning effort, the City launched an update to the existing signage within Downtown and Midtown. In addition to wayfinding signage directed at vehicles and pedestrians,

Grid 3.0 also includes a strategy to supplement the wayfinding program with signage directed specifically at those traveling by bicycle. This signage would be installed along key bicycle routes within the Central City, directing bicyclists to key districts and destinations along these routes. This system will limit redundancy with existing and planned vehicular and pedestrian wayfinding signage since these signs are visible to those traveling by bicycle, and the program will therefore be concentrated along routes with lower amounts of motor vehicle traffic. This approach will limit "sign saturation" and result in a higher focus on bicycle signage near gateways to/from the Central City. Implementation of this program will take place in phases, with installation of signage along corridors with future bicycle improvement projects occurring after improvements are constructed.

### Bike Share

In 2013, SMAQMD completed a Bike Share Business Plan, which evaluated the feasibility of a regional bike share system and identified preliminary station locations in Sacramento, West Sacramento, and Davis. Recently, SACOG has been identified as the responsible agency for furthering planning and procurement efforts for the regional bike share system. Tentatively, SACOG expects to implement pilot bike share stations in downtown Sacramento in late 2016.

## EXISTING BIKEWAYS

### Existing On-Street Bikeway Mileage

Sacramento has 316 miles of on-street bikeways. Approximately 254 miles of on-street bikeways are striped bike lanes, while the remaining 62 miles are bike routes. The current bikeway plan proposes an additional 148 miles, totaling 464 miles of on-street bikeways.

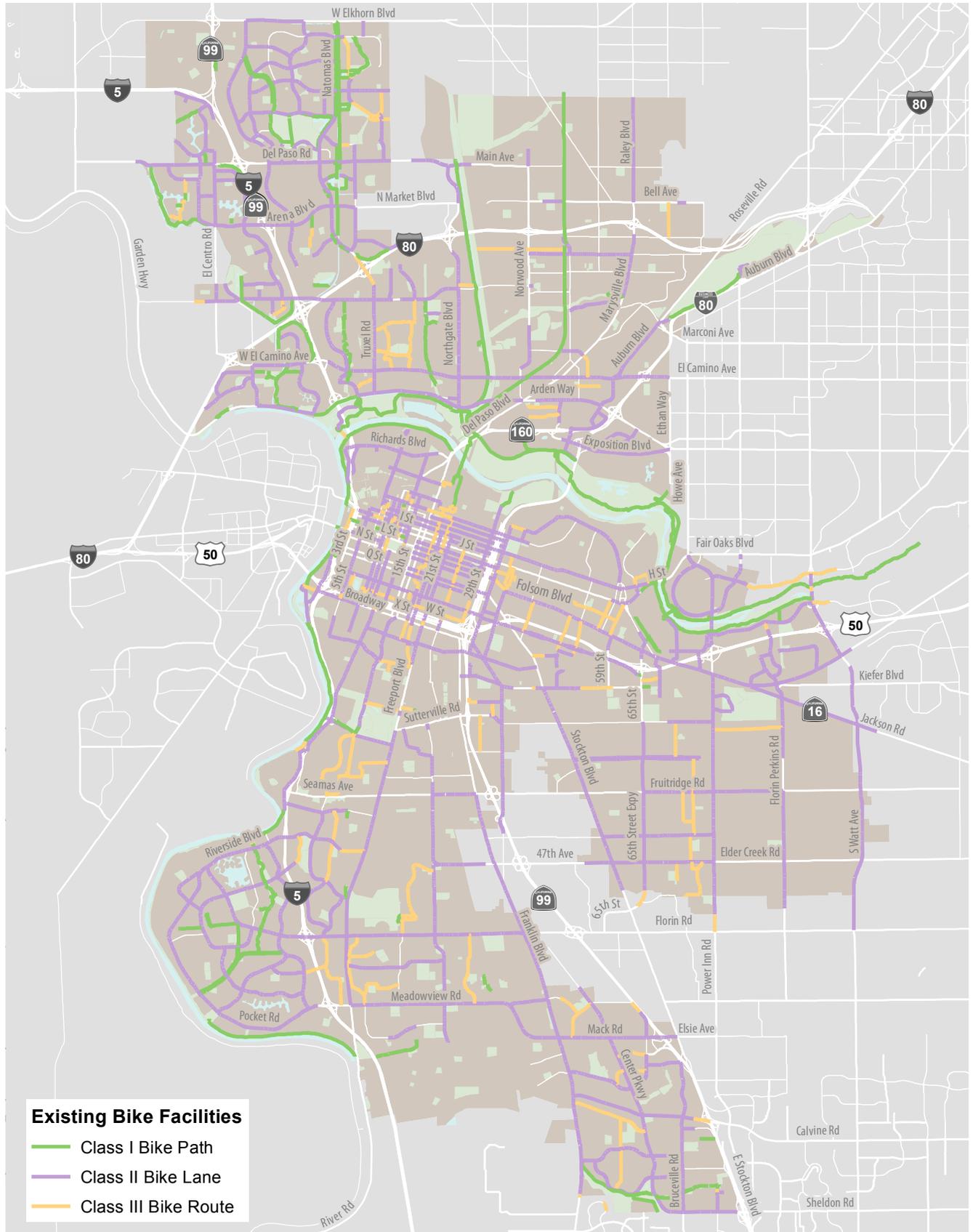


### Existing Off-Street Bikeway Mileage

Sacramento has 88 miles of off-street bikeways. Approximately 79 miles of off-street bikeways are bike paths. The current bikeway plan calls for an additional 120 miles, totaling 208 miles of off-street bikeways.



# Existing Bikeways



EXISTING CONDITIONS

# BIKE PARKING

The City of Sacramento offers both free and low-cost options for people who bicycle to work, visit, or live downtown. Bicycle racks are located throughout the City and are free to use. Bicycle lockers and bicycle enclosure spaces are also available in select City of Sacramento garages at low monthly rates. Through the City of Sacramento Bicycle Rack Program, local businesses may qualify for a free bicycle rack installation to provide bicycle parking to customers.

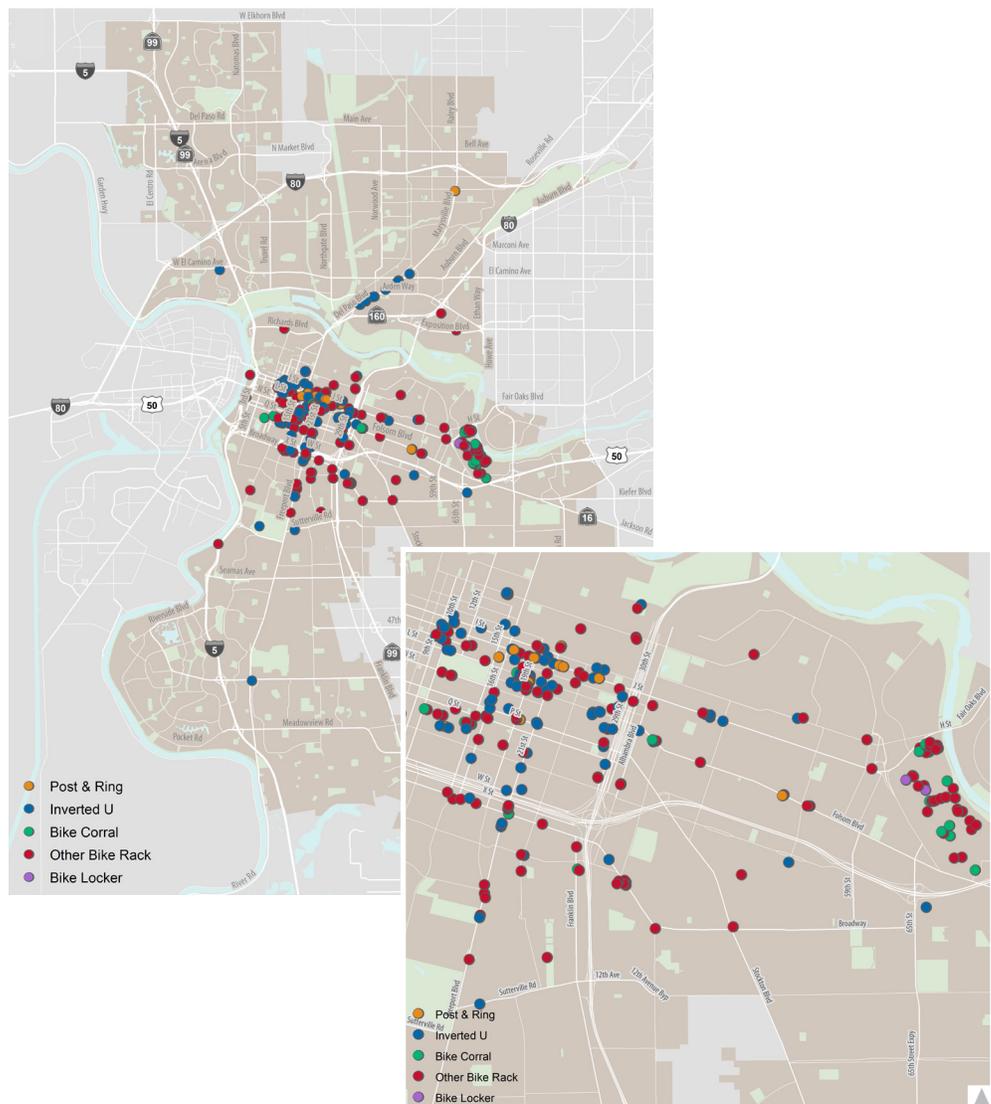
The City of Sacramento Public Works Department will install bicycle racks in the public right-of-way for businesses that have a need for bicycle parking. The installation of bicycle racks nearby business has several important benefits:

- Increases overall parking capacity
- Encourages more trips by bicycle
- Maintains a more orderly streetscape and prevents bikes from blocking the sidewalk

## Existing Inventory

As part of this BMP update, the City conducted the first-ever detailed inventory of all publicly accessible bicycle parking located in the City of Sacramento. The effort provided valuable data for planning purposes to better understand the voids in the existing bike parking inventory.

### Existing Bicycle Parking Locations



## Bicycle Parking Types

- **Bike Corral**



- **Post and Ring**



- **Inverted U**



- **Other Bike Rack**



- **Bike Locker**



## Needs Assessment

The City has collected and will continue to collect bicycle parking needs through a second online tool, which is shown below.

EXISTING CONDITIONS



A photograph of a person riding a bicycle in traffic. The person is wearing a grey jacket, blue jeans, and a patterned backpack. They are riding a bicycle with a red rear light. In the foreground, there is a white van and a silver SUV. The background shows other cars and trees. The text "EQUITY ANALYSIS" is overlaid on the image.

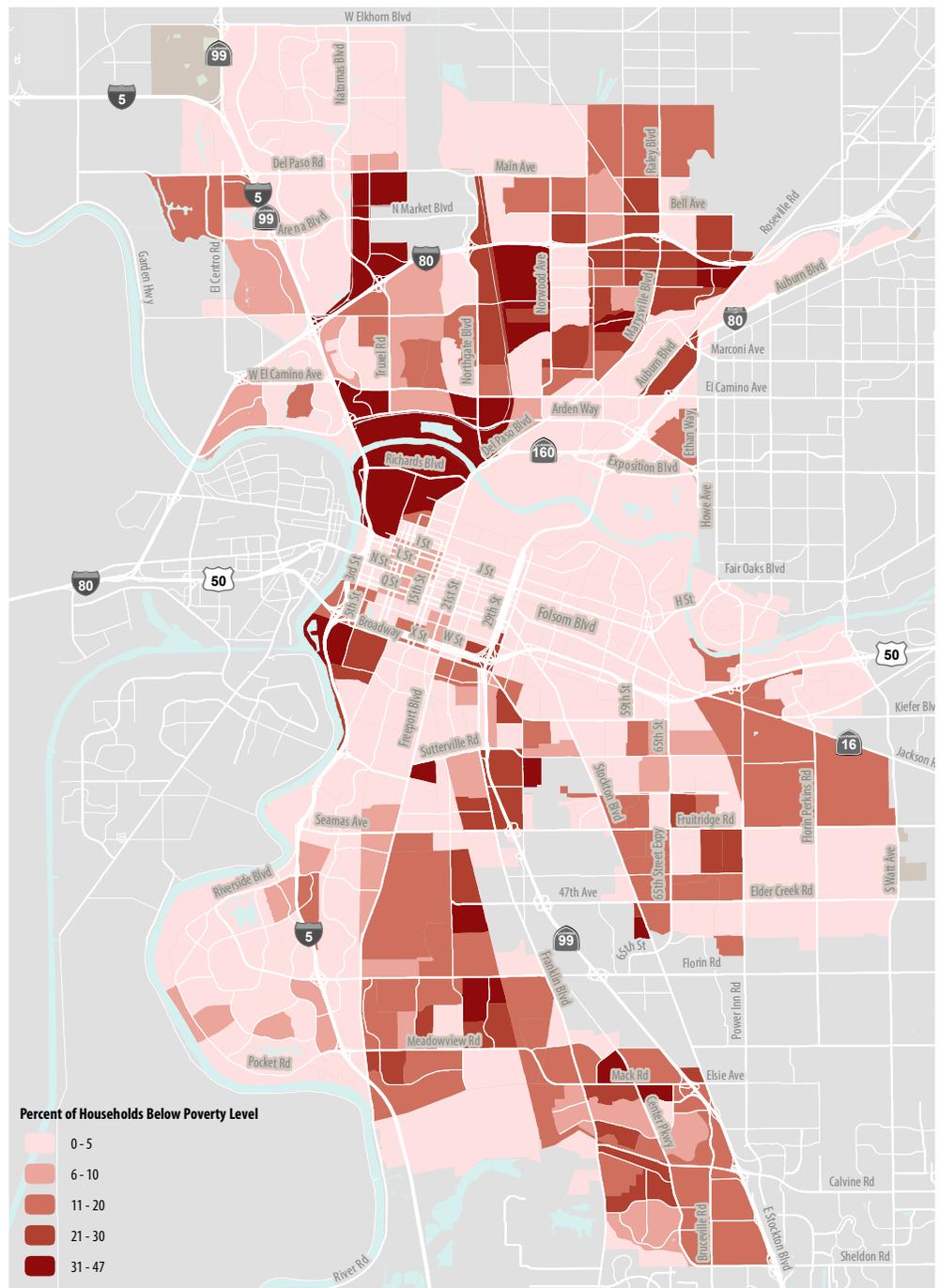
# EQUITY ANALYSIS

Based on feedback received during the Grid 3.0 process and advice from the Sacramento City/County Bicycle Advisory Committee (SACBAC), the BMP update includes an equity analysis of the existing bicycle infrastructure across the City. The equity analysis was conducted to further understand the existing socio-economic conditions within the City to help prioritize planned bicycle facilities and improve bicycle accessibility for all Sacramentans.

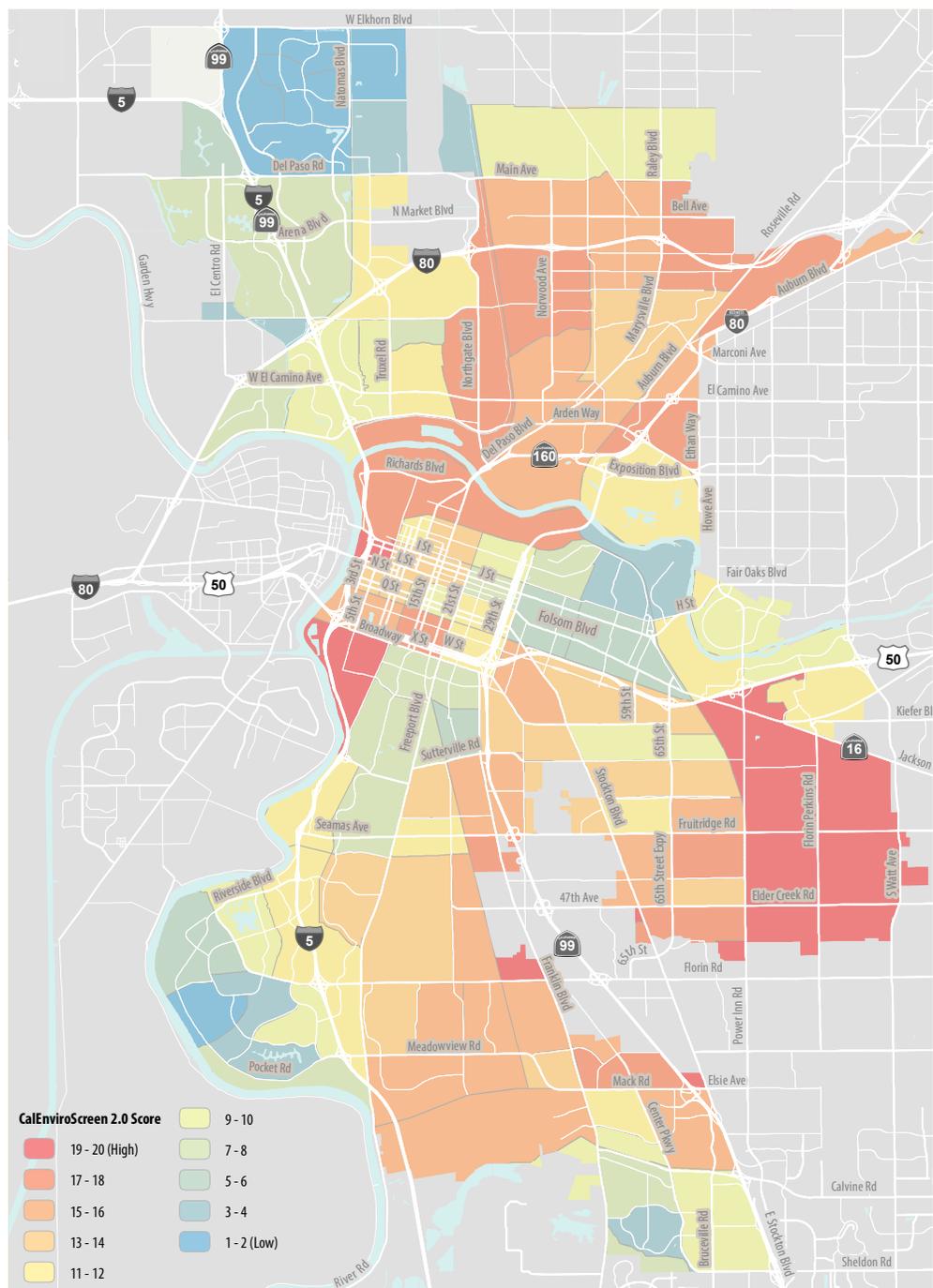
Using GIS analysis tools paired with demographic data, an equity analysis composite index map was developed to help guide improvement recommendations in historically disadvantaged and underserved areas of the City. The following metrics were identified for use in a City-wide equity analysis composite index score:

**Below Poverty Neighborhoods:**

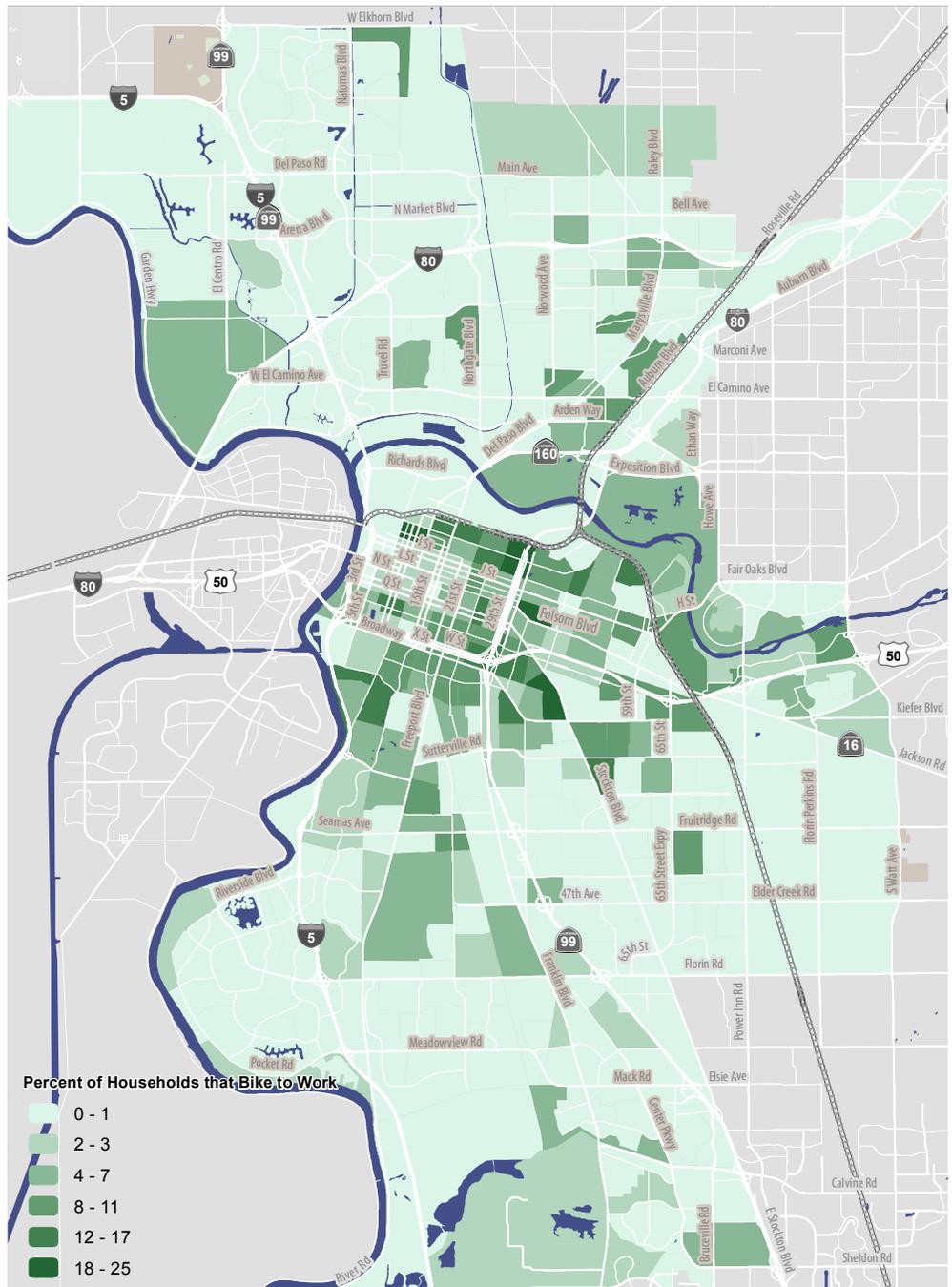
Households 200 percent below the poverty line were mapped for the City of Sacramento at the census tract level to identify lower income neighborhoods. ACS (American Community Survey) 5-year composite household data from 2008 to 2013 was used. This analysis revealed areas along Richards Boulevard, Meadowview Road, and Mack Road have over 30 percent of households below the 200 percent poverty line.



**CalEnviroScreen2.0:** The CalEnviroScreen2.0 score was developed by the California Environmental Protection Agency to help disadvantaged communities for cap-and-trade funding. It provides statewide scoring metrics at a census tract level, including environmental and social economic disparities ranging from drinking water contaminants to air pollution. The CalEnviroScreen2.0 score was mapped at the census tract level for the City of Sacramento. The results show that the highest disparities are located south of Broadway along the Sacramento River, neighborhoods around Florin Perkins Road, and northern Sacramento near Del Paso Boulevard. (CALEPA, latest update, August 2014).

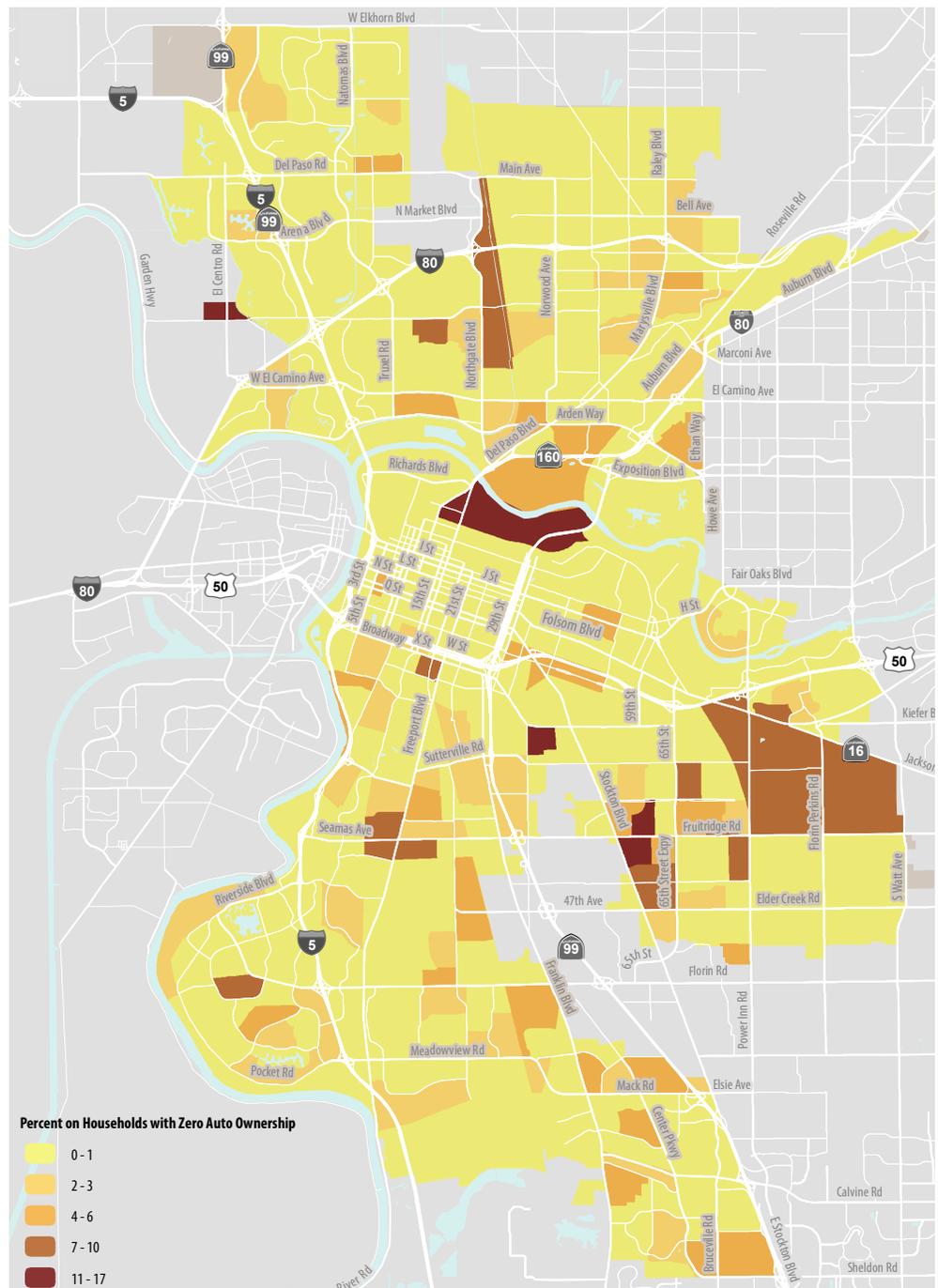


**Bike to Work:** Percentage of households that bicycle to work (ACS 5-year composite 2013 data) was mapped at a census tract level to help identify where people are already bicycling within the City and where to prioritize new or enhanced facilities. Neighborhoods along Stockton Boulevard and Freeport Boulevard and within East Sacramento and Midtown all show high ridership in ranges above 20 percent of households bicycling to work.



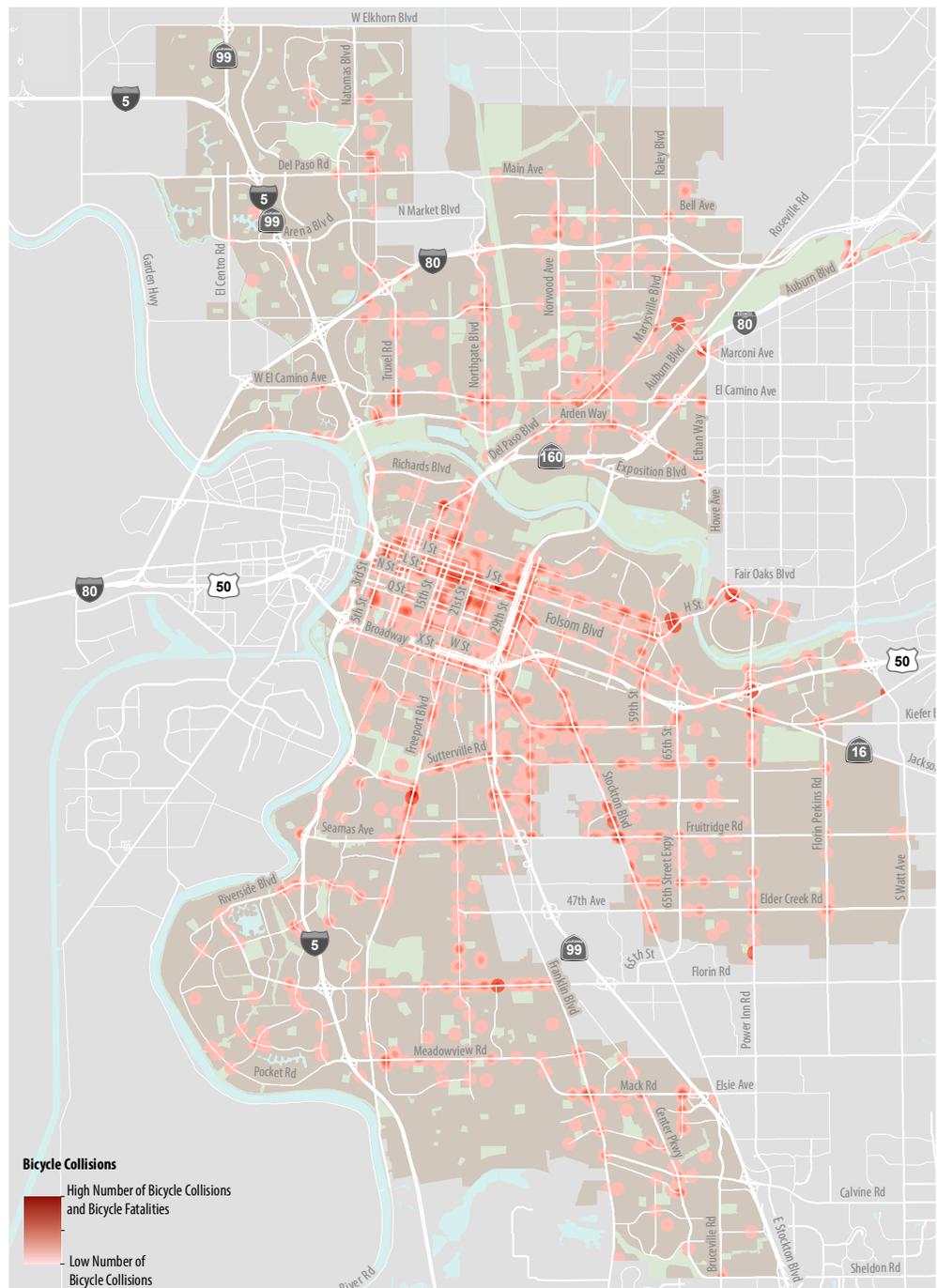
**Non-Auto Ownership:**

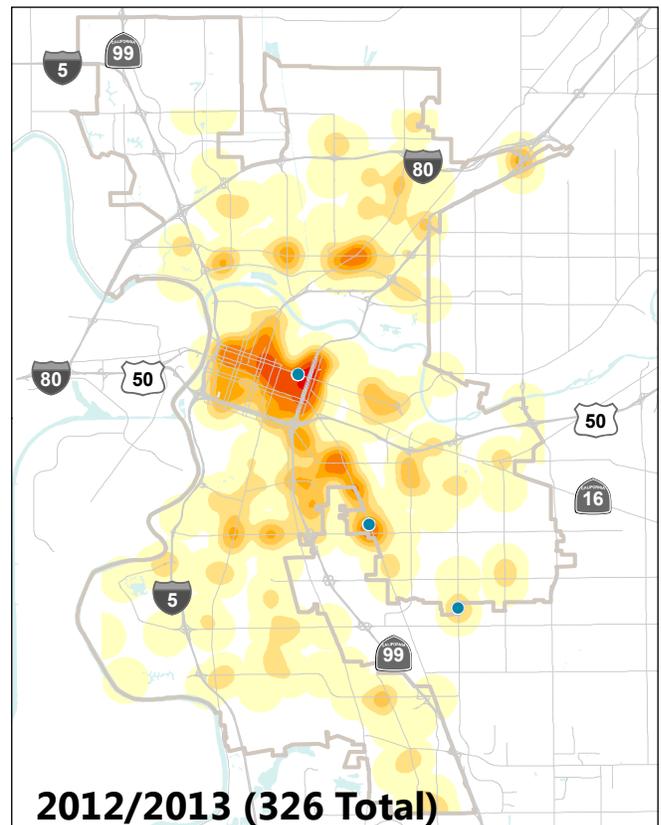
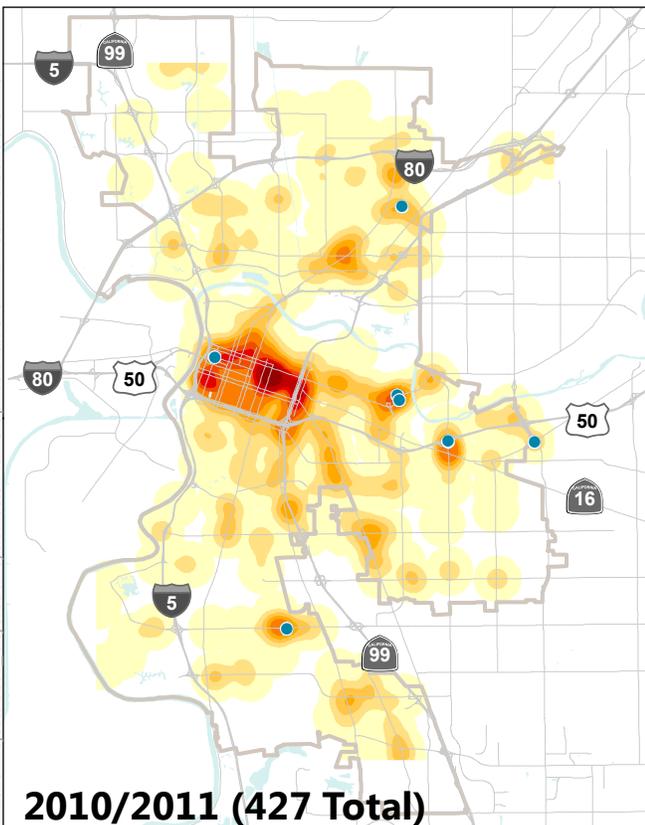
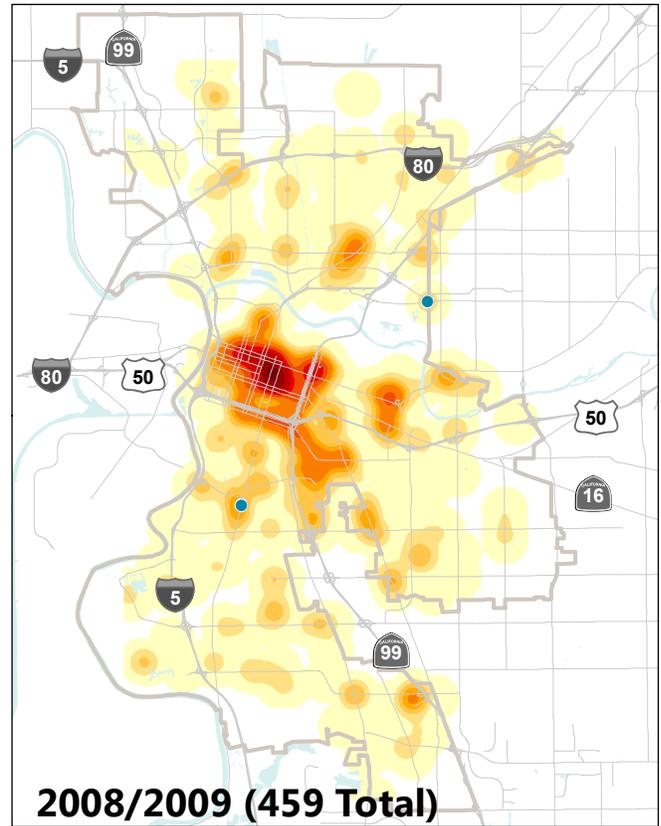
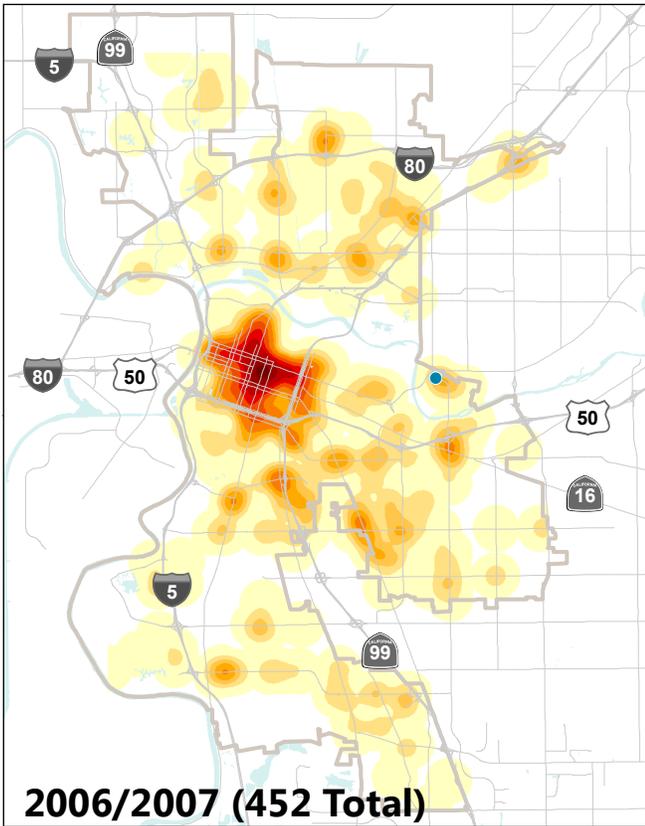
Non-auto ownership was mapped at the census tract level to identify areas with higher levels of people who ride for utilitarian trips (i.e., non-recreational riders). For example, neighborhoods along Stockton Boulevard south of Fruitridge Road show about 10 percent of households with non-auto ownership. (ACS 5-year composite 2013 data).



**Collisions:** Bicycle collision data from the past seven years reported from the California Highway Patrol (Statewide Integrated Traffic Records System (SWITRS) Bicycle Collision Data 2006-2013) reveals trends and patterns regarding bicyclist safety. A City-wide collision density map was created based on high-frequency collision locations. An additional emphasis was added to areas that had bicycle collisions involving fatalities. The analysis shows high concentrations of collisions and fatalities within the Downtown and Midtown areas, as well as along many of the major arterials in neighborhoods surrounding the urban core.

Between 2006 and 2013, the frequency of collisions decreased in the Downtown and Midtown areas. The analysis does not show the same decrease in the neighborhoods outside of the core. Most of the recent cycling fatalities have occurred along the major roadways of these surrounding areas.

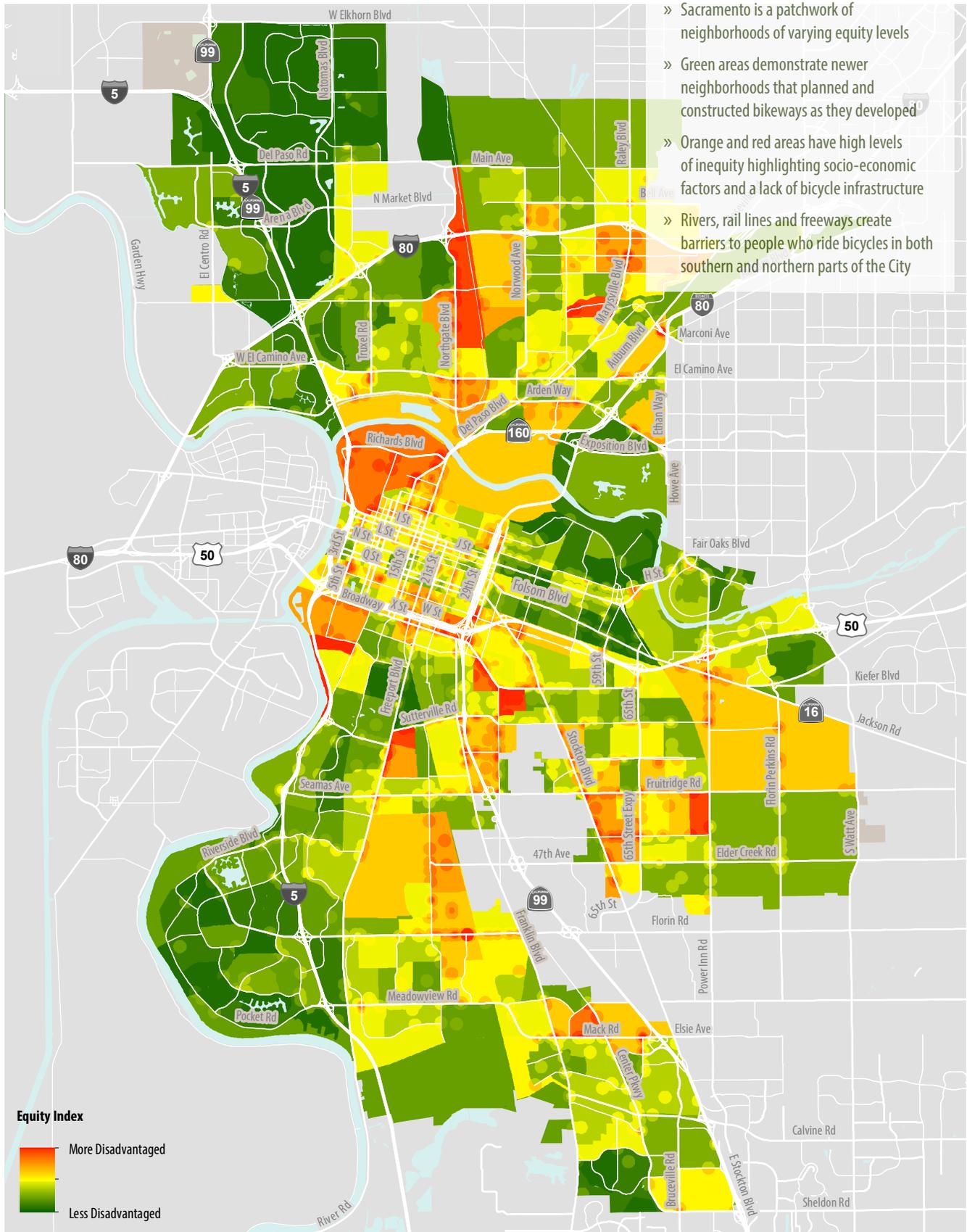




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## Equity Analysis Composite Index

## Key Findings



# LAND USES THAT ATTRACT BICYCLE RIDERS

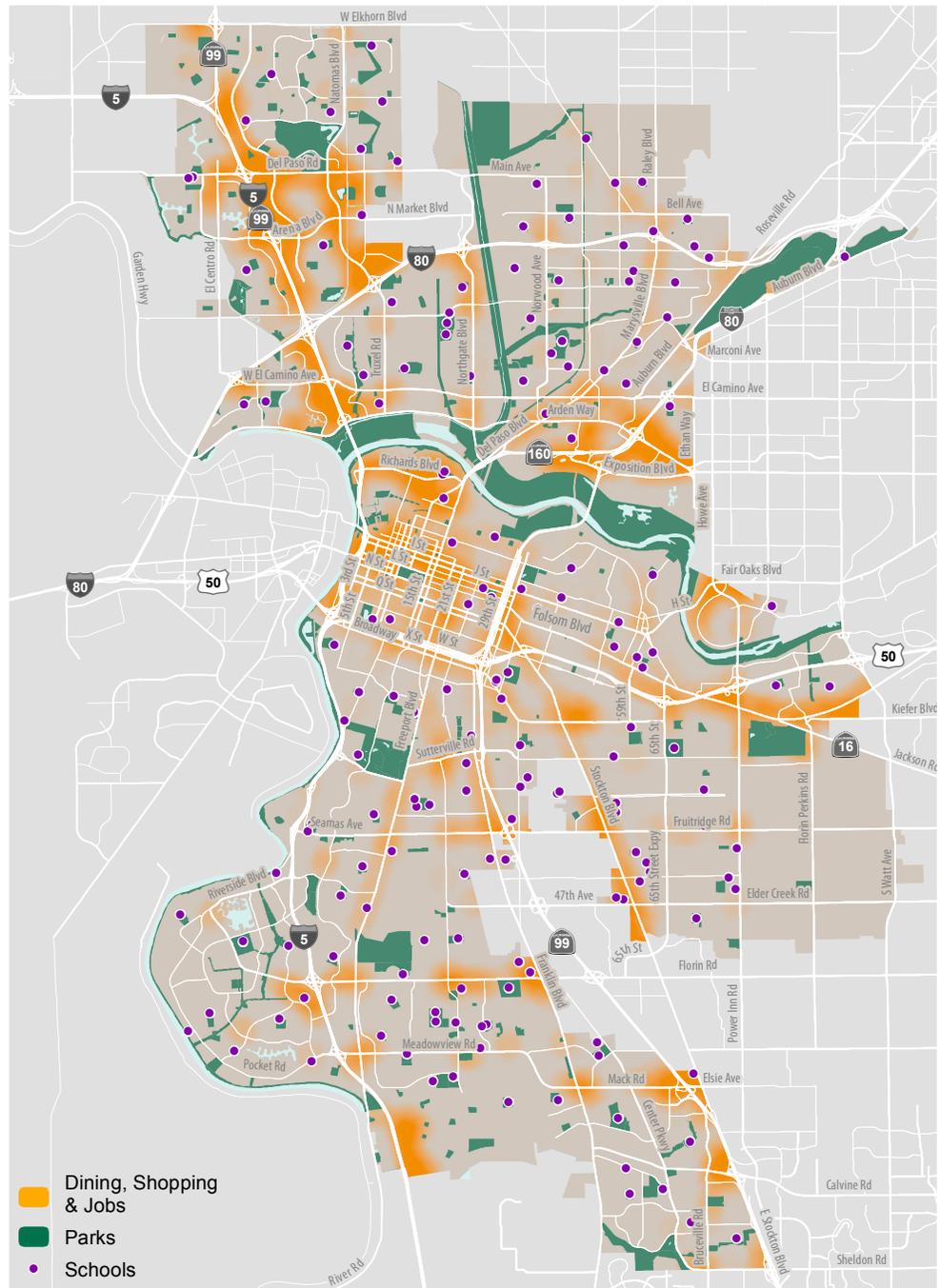
In addition to the equity analysis, an understanding of the land uses and destinations that encourage bicycling is required to identify areas with latent demand for bicycling. While the City has recently promoted mixed use development, most of the City historically developed around more traditional land use patterns; dividing commercial and residential uses.

Creating low stress bicycle connections from residential neighborhoods to employment centers and retail corridors is essential to increasing ridership and safety. These employment centers and retail corridors provide access to jobs, restaurants, bars, and music venues, which attract riders day and night.

A complete bicycle network suggests less stressful routes to schools. Elementary and high schools are broadly distributed in every Sacramento neighborhood and major education destinations such as Sacramento City College and Sacramento State (CSUS) draw riders from across the region.

Neighborhood, city, and regional parks also serve as major attractors of bicycle activity. Connections to the American River Parkway and an expansion of the Sacramento River Parkway should be considered as backbone improvements for a City-wide low stress bicycle network. Every neighborhood park should be accessible via low stress bikeways to allow access ballparks, playgrounds, community gardens, and gathering spaces.

Trip Destinations and Attractors



I participated in  
#SacBikePlan!





# COMMUNITY OUTREACH

Preparation of the Bicycle Master Plan included an outreach program that informed and engaged the community, including an extensive outreach effort to under represented communities that evaluated equitable distribution of facilities throughout the City. Community members participated in the process through stakeholder meetings, a series of traveling workshops, presentations to community-based organizations, and an online tool to map bicycle parking facilities. The workshop formats, presentations, and information gathering were designed around the Five E's, including Education, Encouragement, Engineering, Evaluation, and Enforcement.

### Stakeholder Meeting #1

On January 12, 2016, the BMP project team held a stakeholder meeting to provide information about the current BMP, identify tasks for the 2016 update, discuss community outreach efforts, review and comment on proposed improvements, and identify gaps in the City's current Bicycle Master Plan. After discussing the project and community outreach process, stakeholders were invited to review maps of the existing and proposed bikeways within the City limits and provide feedback on difficult intersections, gaps in the bicycle network, and unsafe bike routes.

### Traveling Workshops

To engage the public and receive valuable input from community members, the project team coordinated and facilitated a series of traveling workshops at well attended community events and popular community destinations from January through March 2016. The workshops took place throughout five identified under represented communities in Sacramento:

#### *District 1: Natomas*

- North Natomas Food Truck Mania at the North Natomas Library (February 18, 2016)
- Pop up Workshop at the South Natomas Community Center (March 16, 2016)

#### *District 2: Del Paso Heights*

- Health and Wellness Expo at Grant Union High School (January 23, 2016)
- Pop up Workshop at the Mutual Assistance Network (February 12, 2016)

#### *District 5: Oak Park*

- Chinese New Year Celebration at Hiram Johnson High School (January 30, 2016)
- First Friday in Oak Park at Broadway Coffee (March 4, 2016)

#### *District 6: Fruitridge*

- Lunar New Year Festival in Little Saigon (February 6, 2016)
- Mega Friday Basketball at West Campus High School (February 12, 2016)

#### *District 8: Meadowview / Valley Hi*

- Meadowview Road and 24th Street Streetscape Project Community Open House at the Pannell Community Center (February 25, 2016)
- Meadowview Neighborhood Association Meeting at the Pannell Community Center (March 16, 2016)

Project team members provided information about the BMP to community members, and gathered feedback from participants of all ages through several different interactive activities. The activities and their objectives included:

- Map Exercise: A map of Sacramento showing currently proposed bicycle improvements was displayed. Community members placed different colored dots on the map to indicate a gap in the bicycle network, a difficult intersection, an unsafe bicycle route, a need for bicycle parking, or another barrier to bicycling.

- Survey: A short two-question survey asked participants where they currently ride their bicycle and where they would like to ride their bicycle.
- Alternate Commute Exercise: Community members could use an online map application to identify how long their commute to work or school is by car, and compare it to commuting by bicycle. The differences in distance and time demonstrated whether or not the person could take their trip by bike instead of by car.
- Key Improvements Exercise: Participants were prompted to answer the question, "I would ride my bike more often if..." on post-it notes. These answers were placed on a board with other participant responses.

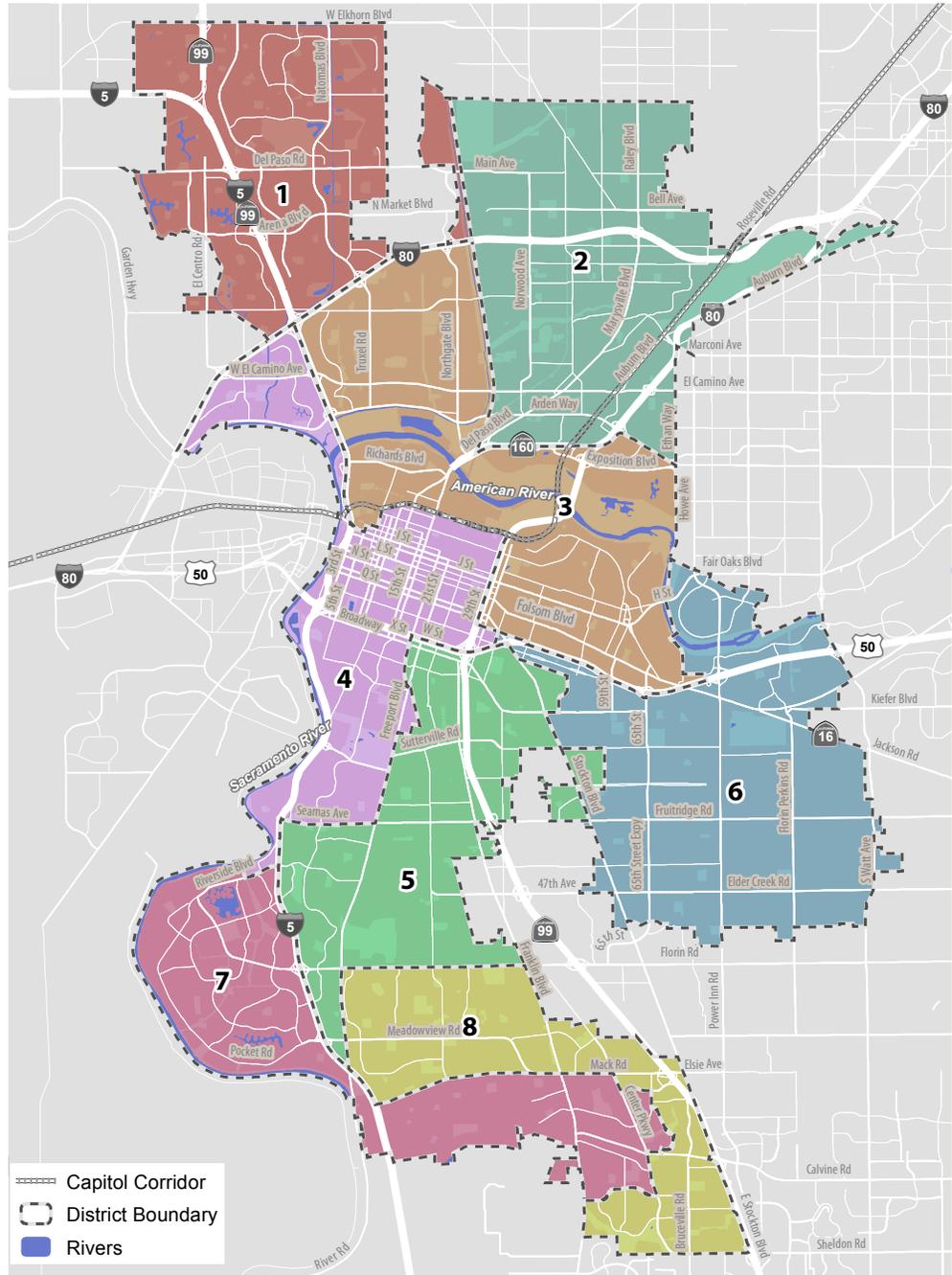
**Presentations to Community-Based Organizations**

Several community-based organizations reached out to the project team and requested that individual presentations be made to their groups. The project team presented information about the project, answered questions, and provided surveys to 10 community groups from January through March 2016.

**Stakeholder Meeting #2**

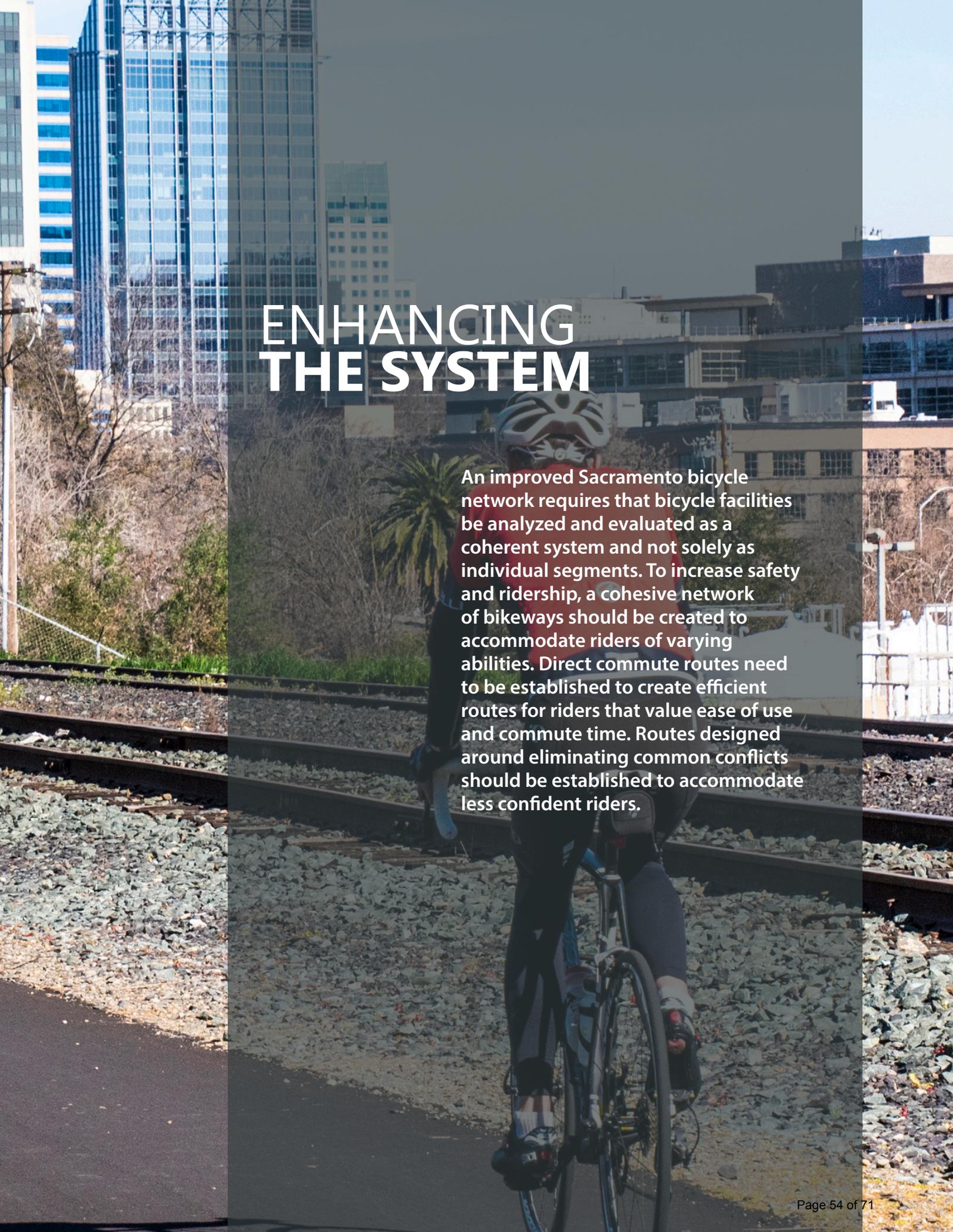
The final outreach component of the BMP's community engagement program was a second stakeholder meeting held on May 2, 2016. The purpose of this meeting was to provide an update on the project and its next steps, review the data collected from the bike parking inventory online tool, present results from the equity analysis performed, review ways to improve bicycling conditions, review feedback received from the community, and receive final feedback from stakeholders.

Districts of Sacramento





X  
9

A cyclist wearing a white helmet and dark clothing is riding a bicycle on a paved path. The path is adjacent to several sets of railroad tracks. In the background, there are several tall, modern buildings with glass facades, suggesting an urban environment. The scene is captured from a rear perspective of the cyclist.

# ENHANCING THE SYSTEM

An improved Sacramento bicycle network requires that bicycle facilities be analyzed and evaluated as a coherent system and not solely as individual segments. To increase safety and ridership, a cohesive network of bikeways should be created to accommodate riders of varying abilities. Direct commute routes need to be established to create efficient routes for riders that value ease of use and commute time. Routes designed around eliminating common conflicts should be established to accommodate less confident riders.

**Off-street bikeways:**

Off-street bikeways are paved bike paths (also known as Class I bikeways) for the use of bicycle riders and pedestrians while prohibiting motorized vehicles. Off-street bikeways include some wide sidewalks where the bicyclists and pedestrians share the sidewalk. Off-street bikeways may include overcrossing structures, as shown to the right, to facilitate the crossing of certain barriers such as freeways, large arterial roadways, railroad tracks, and rivers.

Bike paths along the American and Sacramento Rivers are a key element and backbone for the region's bicycle networks.

The lack of motor vehicles on bike paths appeal to the widest audience.

**On-Street Bikeways**

On-street bikeways consist of a combination of signage and street markings to indicate a bike lane or a bike route. These bikeways are intended to provide accessibility to destinations to the same degree as is provided to motorized modes of transportation. The most common on-street bikeway is a bike lane (also known as a Class II bikeway),

which is a dedicated space on the roadway for bicyclists to travel in the same direction as the adjacent travel lanes.

Bike lanes can be enhanced by increasing the separation from the traveled lane or parking lane with a painted buffer. Buffered bike lanes can be a cost effective way to increase rider safety. The buffered bike lane also provides space for riders to pass another bicyclist without having to encroach into the adjacent lane. Most commonly buffers are added to the left of the bike lane to create separation between automobiles moving at high speeds. By adding the buffer to the right of bike lane, the rider will be encouraged to ride outside of the door zone in areas with high turnover on-street parking. Finally, the painted buffer provides greater space for people who ride bikes without making the bike lane appear too wide and be mistaken for an automobile lane.

The second most common on-street bikeway is a bike route, also known as a Class III bikeway. It is a roadway that is shared among bicyclists and vehicles with a roadside sign indicating that it is a bike route. Many bike



*Grade Separated Crossing for an Off-Street Bikeway*

routes also add a shared lane marking (sharrow) on the pavement. Bike routes are most applicable on low volume, low speed roadways.

Bike routes can also be further enhanced to create bicycle boulevards. Bike boulevards connect key destinations along corridors that have managed low traffic volume and speeds, intersection priority, and signing and marking treatments that distinguish it from other streets. M Street through East Sacramento connecting the urban core to Sacramento State (CSUS) and the American River Parkway is an example of a fledgling bicycle boulevard in Sacramento.

The newest type of bikeway being implemented is the separated bikeway or cycle track referred to by Caltrans as a Class IV bikeway. A separated bikeway is an exclusive facility for bicycle riders that is located within

or directly adjacent to the roadway. The key feature of a separated bikeway is a vertical element that provides further separation from motor vehicle traffic. Pedestrians are prohibited in a separated bikeway and require a parallel sidewalk or path. Separated bikeways can be one-way on each side of the roadway similar to a bike lane, or can be two-way. Common vertical elements used for separation can be a vertical curb, painted buffer with flexible post, parked cars, landscape area, or fixed barrier. Sacramento is developing the first major separated bikeway on North 12th Street in the River District.

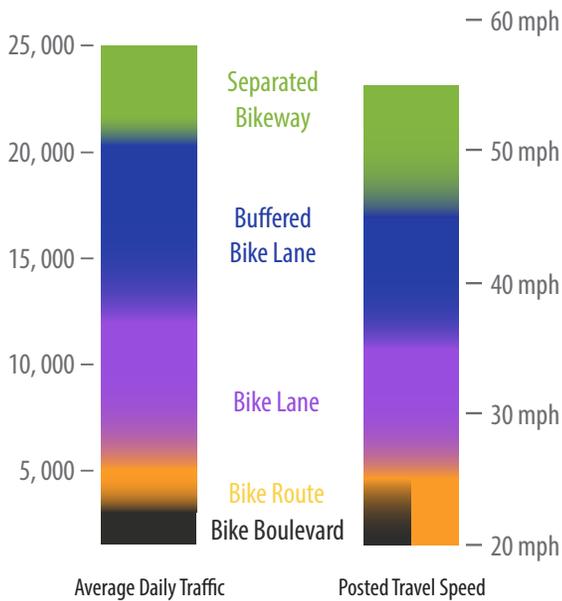


Separated Bikeway or Cycle Track



Buffered Bike Lane

### Bikeway Facility Selection Guidelines



Bike Route

#### Facility Selection

A street's vehicle volume and speed can have an impact on bicyclists' comfort and decision to use a route or choose to bicycle at all. Identifying the appropriate bikeway facility type can be a challenge.

The Bikeway Facility Selection Guidelines shown above is a starting point to help identify which bikeway type is appropriate

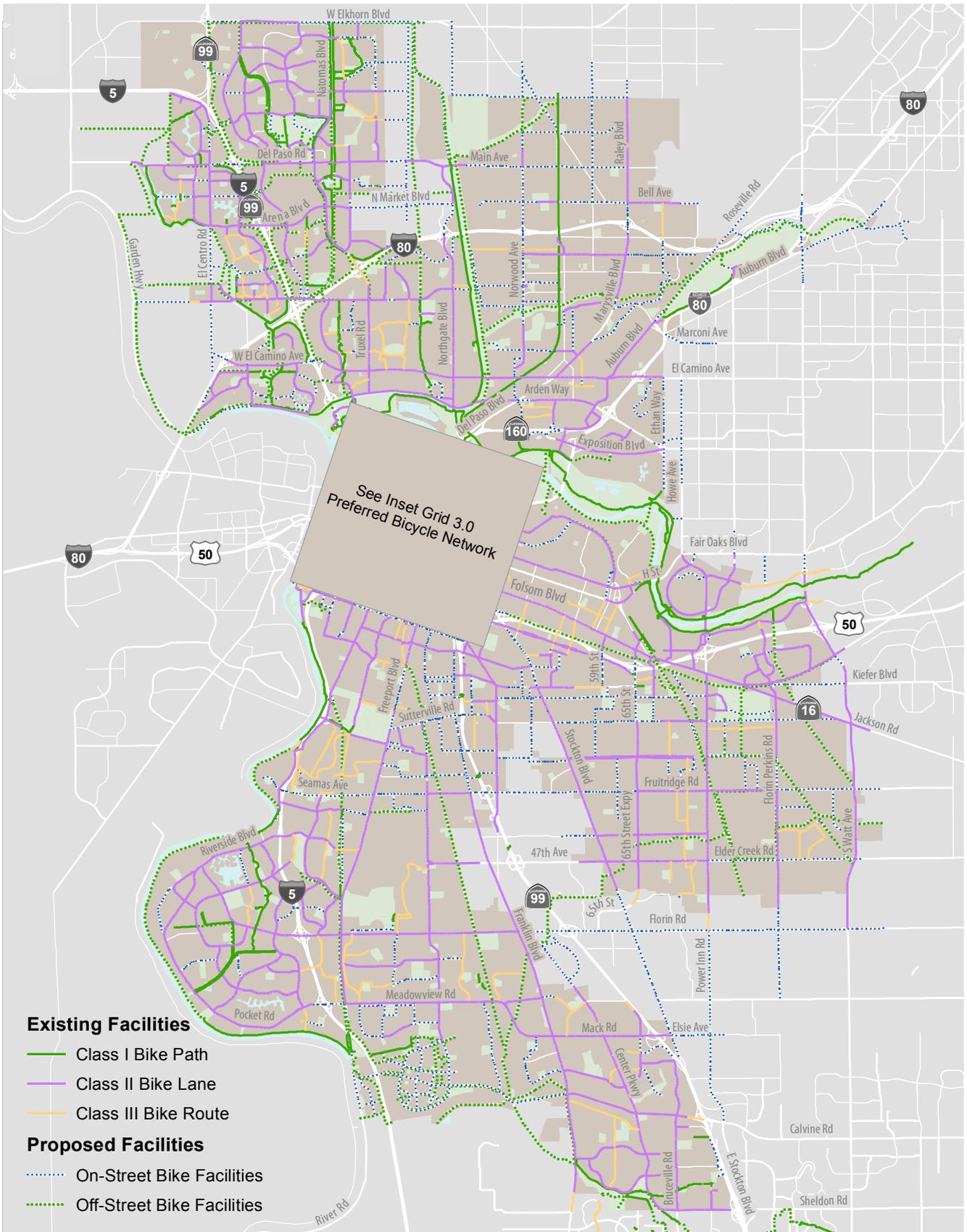
for which type of roadway. The goal of this Guideline is to provide staff a framework to implement low stress bikeways that are comfortable for all ages and abilities by using the posted travel speed and average daily traffic volume.

This is only a guide and site specific factors should be considered when determining the appropriate bikeway facility.



On-Street Bike Lane

# NEXT STEPS FOR ENHANCING THE CITY'S BICYCLE NETWORK



## GRID 3.0

The City of Sacramento recently undertook a comprehensive effort to plan the future of the Central City's system of gridded streets. This multi-year stakeholder-driven process identified a vision for an improved downtown transportation network, known as "Grid 3.0." Grid 3.0 will optimize the Central City's transportation network for all travel modes – motor vehicles, transit, bicycles, and pedestrians- in order to position the Grid to accommodate future growth in travel demand.

A key strategy identified in the plan involves restriping multiple roadways to accomplish the following objectives:

- Fill gaps in the existing bicycle network by adding new facilities through travel lane reductions and two-way conversions when necessary
- Provide new buffered bike lanes
- Add new bike/pedestrian paths to provide a more complete system along the Sacramento and American Rivers

- Establish a more complete Low Stress Bicycle Network

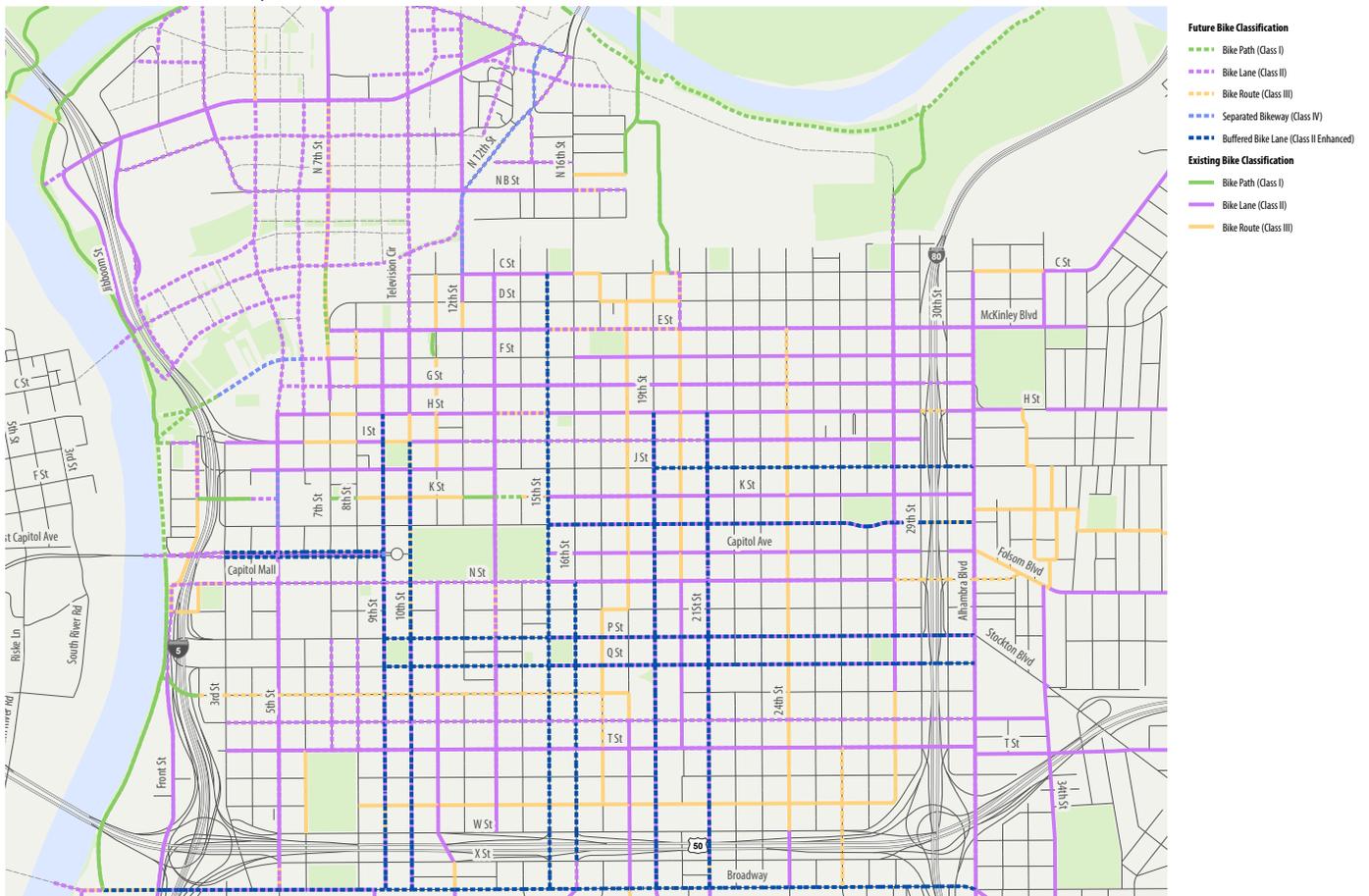
The resulting "preferred bicycle network" from Grid 3.0 is shown below. Implementation of this network over the next 20 years will result in the following bicycle-related investments within the Central City:

- Two-way conversions that add bike lanes: 68 blocks
- Center Turn Lane Conversions for Bike Lanes (S Street): 28 blocks
- Three Lane to Two lane

- Conversion for Bike lanes: 61 blocks
- Bike Lane Retrofit – Convert to Buffered Lanes: 108 blocks
- Class 1 Paths: 5,000 feet

The BMP update incorporates the investment strategy identified as part of Grid 3.0, and these future facilities are reflected in the map of proposed bicycle facilities included as part of this update to the plan. The inclusion of the Grid 3.0 recommendations has afforded this update to focus its outreach and analysis on the outlying areas of the City of Sacramento.

Grid 3.0 Preferred Bicycle Network

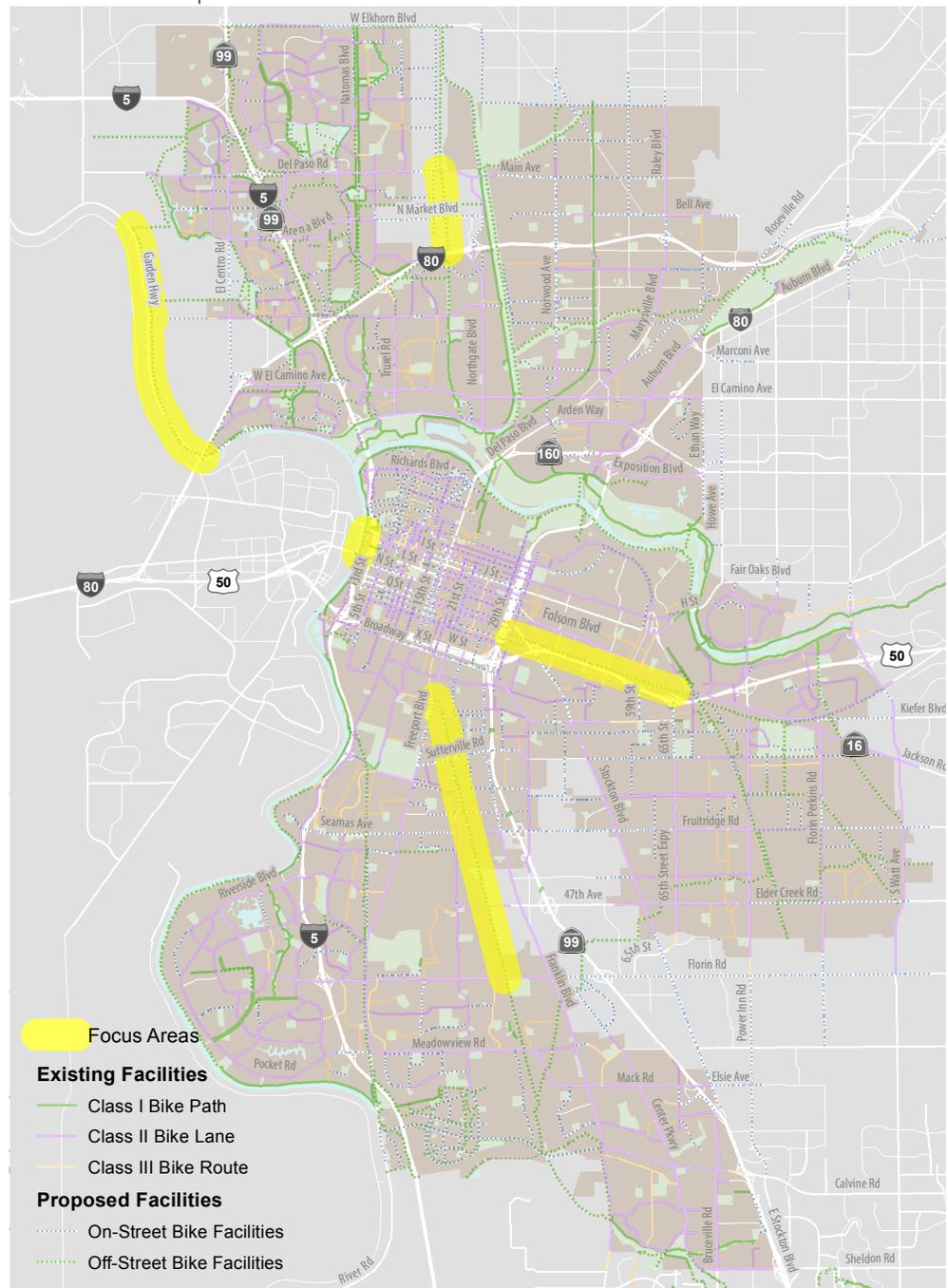


# FOCUS AREAS

A number of proposed projects likely face significant implementation challenges and require evaluation to determine their viability. The projects listed below are recommend as focus areas to study feasibility:

- Sacramento RT right of way along the Gold Line from 34th Street to 65th Street
- Sacramento RT right of way along the Blue Line from Freeport Boulevard to Florin Road
- Old Sacramento Gap Closure
- Coordination with Sacramento County along Garden Highway
- North/South trail near North Market Boulevard in the “pan handle” area of north Sacramento

Focus Areas Map



## BUFFERED & SEPARATED BIKEWAY CONSIDERATIONS

In addition to further evaluation of these off-street facilities, the City should expand the focus to include consideration of buffered bike lanes and separated bikeways for parallel on-street facilities. The following considerations matrix serves as a tool for City staff and community members to evaluate roadways for bikeway enhancements.

It should be noted that no single criteria in the matrix should be used to qualify or reject a facility for buffered or protected improvements. All of the criteria should be considered holistically with an understanding of the present and future context of the roadway being considered.

Criteria are related to the quantity and characteristics of adjacent motor vehicle traffic. Multilane roadways with high speeds and high volumes of automobiles and/or trucks are most applicable for candidate bikeway improvements. Corridors with very short blocks and frequent intersections and driveways



*Separated Bikeway in Davis, CA*

should be considered carefully and may be less applicable because of the multiple breaks the bikeways and increased turning conflicts. Roadway corridors that have excessively wide lanes and shoulders or extra right-of-way may be excellent corridors for early adoption of buffered and protected facilities, as right-of-way acquisition may not be required.

Criteria related to the existing or projected active transportation users on

the corridor should be considered. Corridors with high rates of bicycle-related collisions and pedestrian conflicts may benefit from a dedicated facility solely for bicycle use. Anticipated high volumes of vulnerable users such as children and seniors due to the proximity to schools, parks, and senior residential uses may warrant additional investment in enhanced facilities. Separated bikeways are often used as on-street facilities to connect or extend existing off-street paths.

Corridors where bus stops and loading zones enable motor vehicles to block the standard bike lane may benefit from a separated facility. High turnover on-street parking is another condition that can benefit from a separated bikeway, removing a common conflict found with standard bike lanes. Care should be given to address ADA accessibility at bus stops and accessible parking near enhanced bikeway facilities.

Lastly, to discourage wrong-way or sidewalk riding on one-way streets and improve access, a two-way cycle track could be implemented to provide more direct access for bicycle riders. This was a major contributing factor for the development of the North 12th Street separated two-way bikeway.

Table 1: Considerations for Protected Bikeways or Cycle Tracks

	Less Applicable	Applicable	Most Applicable
Traffic Speed	< 25 mph	< 35 mph	< 45 mph
Traffic Volume		< 20,000 ADT	> 20,000 ADT
Large Truck Volume	None	Low	High
Number of Traffic Lanes	2	4	> 4
Excess Width (wide lanes, shoulders, r/w)	None	Some	Yes
Access Control and Intersection Spacing	Low	Medium	High
Bicycle Crash History	None	Low	High
Bike Volume		Low	High
Pedestrian Volume		Low	High
Proximity to Schools / Parks / Seniors	> 2 Miles	1/2 miles to 2 miles	< 1/2 Miles
Extension or Gap fill of Class I	Parallel to Class I	No	Yes
Bus Stop		Low Frequency	High Frequency
Loading Zone		Occasional / Off Peak	Many / Peak Hour
Parking		Low Turnover	High Turnover
Accessible Parking		Yes	No
One-way Street (with need for bike contraflow)		No	Yes

## BIKE PARKING **RECOMMENDATIONS**

The City of Sacramento should develop Bicycle Parking Design Guidelines that include design specifications for bicycle racks and placement standards. City-funded and privately-funded bike rack installations shall conform to the Bike Parking Design Guidelines.

## STREET DESIGN STANDARDS **RECOMMENDATIONS**

The City of Sacramento should update its Street Design Standards to include a policy to consider bike lanes on residential streets at parks and schools.

## WAYFINDING **RECOMMENDATIONS**

Bikeway wayfinding not only helps communicate identified bike routes through the City, it can promote bicycling by educating people about distance, direction and estimated time to bike to key activity centers. The City should develop bikeway specific wayfinding guidelines, informed by NACTO guidance, and implement as funding allows.





# IMPLEMENTATION

The Transportation Programming Guide (TPG) is a comprehensive document that prioritizes the City's transportation projects every two years. The guide is used to provide the City Council with the background information needed to make strategic decisions about which projects to fund.

Transportation projects are ranked according to criteria that are reflective of the City's current policies and priorities. Examples of criteria include congestion, public safety, economic, and infill development, along with cost.

Potential projects are scored and ranked in each of the following transportation program areas:

- Major Street Improvements
- Street Maintenance
- Street Reconstruction
- Traffic Signals
- Bicycle Improvements
- Bridge Replacement and Rehabilitation
- Streetscape Enhancement
- Pedestrian Improvements
- Train Horn Quiet Zones

This Bicycle Improvement section of the TPG is organized into three sections: On-Street Bikeways, Off-Street Bikeways and Bike/Pedestrian Bridges. The on-street bikeways combine both bike lanes, buffered bike lanes, separated bikeways, and bike routes. Additional scoping would be necessary to verify what is most appropriate. Off-street bikeways evaluate non-motorized trails or paths. Special consideration is given to criteria for bike/pedestrian bridges. Within this section of the TPG, the term “bridges” refers

to a stand-alone bike and pedestrian overcrossing or undercrossing including associated approaches.

*The City of Sacramento should update the criteria in the TPG Bicycle Improvement Section for all bicycle program projects. The TPG prioritization criteria for bikeway improvements should be based on the goals from this Bicycle Master Plan so projects that best meet the goals rise to high priority for implementation.*



To achieve the goals stated in the Introduction Chapter, the City [should] to develop a comprehensive implementation plan by 2018. The implementation plan should include project prioritization for bicycling projects that is aligned with the goals of this Bicycle Master Plan Update.”

- SACBAC May 10, 2016



# APPENDIX A

## RELATIONSHIP TO OTHER PLANS

A successful BMP must be coordinated with neighboring jurisdictions and ensure consistency with local, regional, and statewide policies and adopted plans. The following planning documents and policies have been taken into consideration during the development of the BMP:

### City Planning

#### 2035 City of Sacramento General Plan

The City of Sacramento's 2035 General Plan recognizes the importance of developing a first class, multi-modal transportation network that includes supporting short- and long-distance bicycle trips. Goal M 5.1 outlines policies for an integrated bicycle system that encourages bicycling and achieves the City's goals for bicycle mode share as documented in previous planning documents. Specific policies and goals in the General Plan include updating and maintaining the BMP (this document), providing a continuous bikeway network throughout the City, improving bicycle routes to minimize conflicts with pedestrians and motorists, supporting bicycle connections to new developments, converting underused facilities to bicycle routes, and promoting bicycling education and safety to the public.

### Regional Planning

#### 2010 Sacramento City/County Bikeway Master Plan

The Sacramento City/County Bikeway Master Plan has been an ongoing effort between the City of Sacramento and Sacramento County to coordinate and develop a regional bicycle network that benefits both commuting and recreational bicyclists. The plan was first adopted in 1975 as the region's first standalone bikeway master plan, and has subsequently been updated and revised over the past forty years to accommodate changes in population,

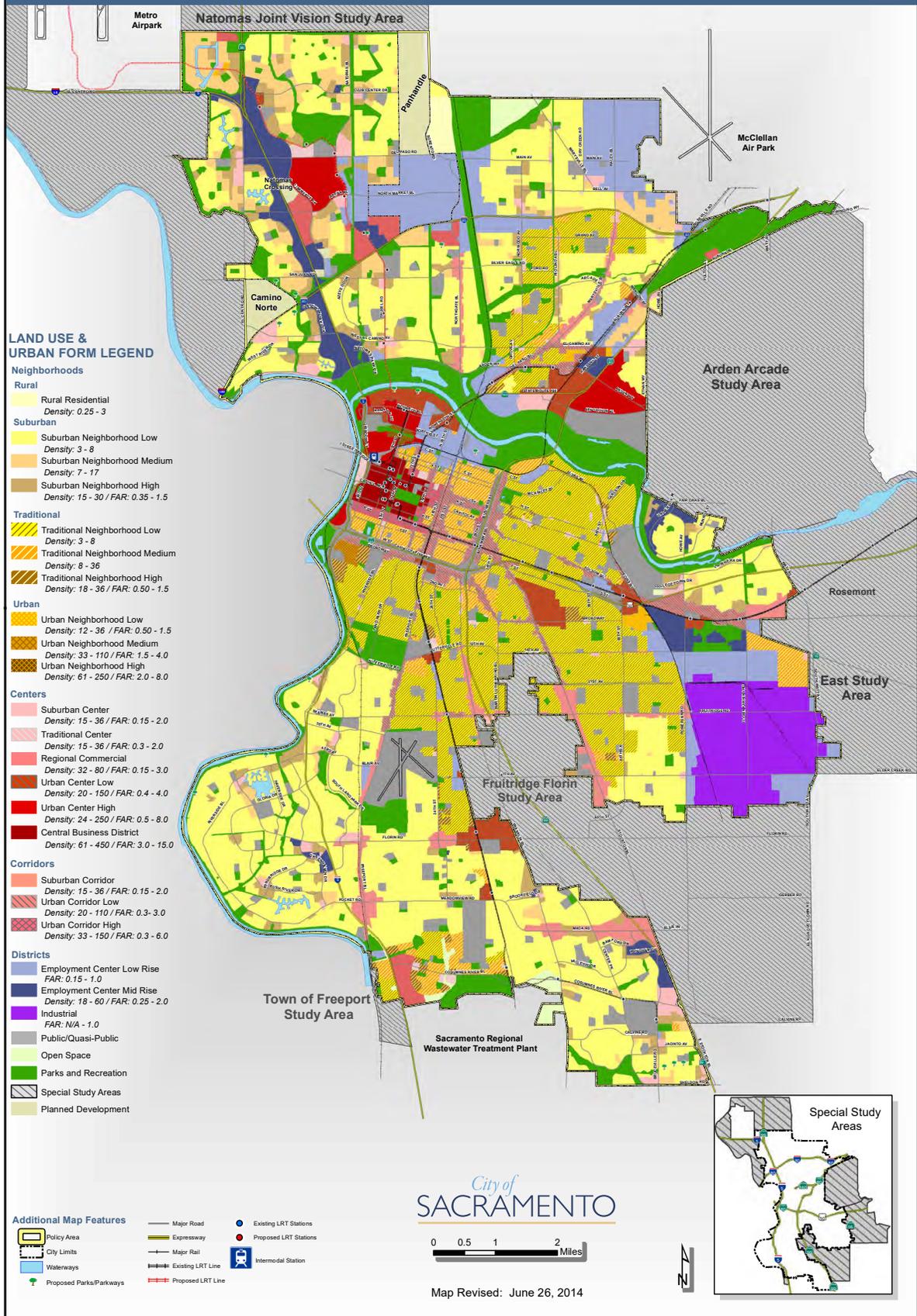
design standards, and public policy. The document includes regional goals for bicycling, design standards, an inventory of existing bicycle facilities, recommendations for future bicycle facilities, and implementation strategies. The plan was last approved by the City of Sacramento in March of 2011.

#### 2030 Sacramento County General Plan

The 2030 Sacramento County General Plan has a stated goal to "provide safe, continuous, efficient, integrated, and accessible bicycle and pedestrian systems that encourages the use of the bicycle and walking as a viable transportation mode and as a form of recreation and exercise." Specific policies in the plan include developing a comprehensive and accessible bicycle system, implementing and updating the Sacramento City/County Bicycle Master Plan, constructing and maintaining bicycle facilities that minimize conflicts with pedestrians and motorists, and collaborating with neighboring jurisdictions and regional agencies to coordinate the planning and development of the County's bicycle network.

#### 2016 MTP/SCS

The Metropolitan Transportation Plan / Sustainable Communities Strategy (MTP/SCS) is a regional document that links land use, air quality, and transportation needs. The plan incorporates regional transportation planning with an emphasis on policies and strategies that reduce greenhouse gas emissions to meet requirements set by the California Air Resources Board. The MTP/SCS recognizes the importance of bicycling to meet these goals, and envisions a larger and more complete bicycle network in the region.



## Statewide Planning

### California Global Warming Solution Act of 2006 (AB 32)

The California Global Warming Solution Act of 2006 requires California to reduce its Greenhouse Gas Emissions to 1990 levels by the year 2020. The act requires the California Air Resources Board to develop a Scoping Plan, updated every five years, that lays out California's strategy for meeting the goal. One of the key recommendations in the Scoping Plan is to promote more travel and housing options through greater access to active forms of transportation including bicycling.

### Sustainable Communities and Climate Protection Act of 2008 (SB 375)

The Sustainable Communities and Climate Protection Act of 2008 is a direct result of the California Global Warming Solution Act of 2006 and requires that all Metropolitan Planning Organizations include a "Sustainable Communities Strategy" in their Metropolitan Transportation Plan. These plans integrate transportation, housing, and land-use plans for a region in an effort to reduce greenhouse gas emissions. In Sacramento, the Sacramento Area Council of Governments (SACOG) is the regional MPO and has made the inclusion of active transportation projects a priority for the region to reduce emission levels.

### Complete Streets Act of 2008 (AB 1358)

The Complete Streets Act of 2008 requires that all Cities and Counties "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, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan." The City of Sacramento has incorporated this in act in their most recent General Plan including this Bicycle Master Plan.

### Actuated Traffic Signals (AB 1581)

Assembly Bill 1581 was approved in 2012 and requires that all projects constructing new actuated traffic signals or modifying existing traffic signals include technology that has the ability to detect bicyclists and motorcyclists. It also calls for the timing of actuated traffic signals to account for bicycles.

### Protected Bikeways Act of 2014 (AB 1193)

The Protected Bikeways Act of 2014 recognizes Class IV "protected" bikeways as a legal bicycle facility and requires Caltrans to establish and maintain minimum safety design criteria for their planning and construction. Caltrans subsequently published Design Information Bulletin Number 89 with design guidelines for local agencies. Collectively, these documents provide the legal groundwork for the implementation of Class IV bikeways in the State of California.

### California State Bicycle and Pedestrian Plan

In 2014, Caltrans released the Complete Street Implementation Action Plan 2.0 in an effort to integrate complete street functionality into all of Caltrans' projects. One of the action items resulting from this document was the California State Bicycle and Pedestrian Plan which is currently being drafted. This document will guide the planning and development of non-motorized facilities on State facilities. The plan will include recommendations for improving connections between the State's bicycle facilities with the existing and planned network of local and regional bicycle routes.

# APPENDIX B

## COMMUNITY OUTREACH REPORT



Produced July 2016 by:

FEHR  PEERS