





“

I want to ride here, I just want it to be safer.”

FRUITVALE RESIDENT

# 05

## Recommended Bicycle Projects



# The Bicycle Network

In 2007, at the time Oakland adopted its last Bicycle Plan, the City had 104 miles of bikeways. Today, there are over 164 miles of bikeways in Oakland, with an increasing focus on bikeway types that provide greater protection for bike riders from vehicles.

Chapter Five introduces the different types of bikeways and supporting amenities that OakDOT will be installing, and the overall strategy the project team employed in deciding where and what kind of facilities should be recommended- guided by the community input we heard.



## WHAT WE HEARD

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**Bicycling is uncomfortable because of all the potholes and stressful because cars drive too fast.**

**Any investment in bikeways should first serve local neighborhood destinations and meet the transportation needs of existing residents.**

**Bikeways are only useful if they are connected. Gaps as short as crossing an intersection or as long as several miles can keep more people from bicycling more often.**



## WHAT WE'VE PROPOSED

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**Three strategies to guide future bikeway investments**

### Make it Comfortable

- Move streets that share a bikeway recommendation to the front of the line in Oakland's repaving schedule.
- Involve the community in bikeway design process early and often to help weigh the benefits and tradeoffs that may be needed to create as much separation from moving vehicles as possible.

### Make it Local

- Prioritize bikeways that connect residents within established neighborhoods to destinations like grocery stores, schools, parks, libraries, recreation centers, commercial districts, and popular bus stops.
- Find opportunities for bikeway designs and wayfinding to reflect the existing local culture within Oakland's neighborhoods.

### Make it Connected

- Build continuous cross-town corridors that help people bicycle safely to Lake Merritt and downtown from as many parts of Oakland as possible.
- Evaluate design changes at intersections so that crossing a street is not a barrier to bicycling.
- Continue to provide directional signs to help bicyclists find their way and secure bicycle parking to protect their property once they reach their destination.



<p><b>HOW WILL BICYCLE NETWORK RECOMMENDATIONS ACHIEVE OUR GOALS?</b></p>				
	<p><b>ACCESS</b></p>	<p><b>HEALTH &amp; SAFETY</b></p>	<p><b>AFFORDABILITY</b></p>	<p><b>COLLABORATION</b></p>
	<p>Bicycle network recommendations create continuous routes throughout the City, connecting neighborhoods to major destinations and to one another.</p>	<p>Bicycle network recommendations should address the most critical safety issues and prioritize improvements at high-injury corridors and intersections.</p>	<p>Bicycle network recommendations should provide affordable travel options for low-income neighborhoods.</p>	<p>The Plan should prioritize bicycle network recommendations desired by the community and should include realistic cost estimates that keep the City accountable for project delivery.</p>

**PROGRESS UPDATE SINCE 2007 BIKE PLAN**

Oakland has made great strides in developing a more bikeable city since the last Bike Master Plan was adopted in 2007. A few accomplishments include:

- Creation of a citywide Department of Transportation (OakDOT) with direction to “reimagine how city streets are used, with a focus on serving people, rather than simply moving vehicles”
- The bicycle network grew by 58%, from 104 miles to 164 miles
- Improvement to the comfort of the bikeway network with low-stress bikeway mileage raising from 18.2 miles to 55.7 miles; a growth of 206%
- Adoption of a Complete Streets Policy in 2013, with over 3 out of 4 implemented road projects now including bicycle facilities
- A tripling of publicly available bike parking spaces, including two attended bike stations that can serve 366 bicyclists daily
- Roll-out of regionwide bikeshare program adding 850 bikes within Oakland and offering a \$5 annual membership for low income residents
- Increase in grant funding secured for protected bike lanes, specifically \$28 million dollars in grant funding between 2015 and 2018
- Recognized national leader in coordinating bikeway implementation with routine resurfacing projects, allowing the recent majority of Oakland’s bikeway mileage to be delivered through paving projects
- Recognition as a Bicycle Friendly Community (BFC) by the League of American Bicyclists since 2010 and recognition as a Gold Level BFC since 2018 (one of only 34 cities nationwide to carry this distinction)





# Bikeways Toolbox

Different types of bikeways are better suited for different roadways, based on considerations such as how fast and how frequently vehicles use the road, the roadway width, and other types of transportation using the space. The following bikeways and bike amenities are part of Oakland Department of Transportation's bikeway "toolbox."

## LOW-STRESS BIKEWAYS



### Shared Use Path

- Paths shared by people walking and biking completely separated from motor vehicle traffic
- Comfortable for people of all ages and abilities
- Typically located within or along parks, roadway medians, rail corridors, or bodies of water
- Oakland refers to this as Class 1 Bikeway



### Protected Bike Lane

- On-street bike lane separated from motor vehicle traffic by curb, median, planters, parking, or other physical barrier
- Oakland refers to this as Class 4 Bikeway



### Buffered Bicycle Lane

- Dedicated lane for bicycle travel separated from traffic by a painted buffer
- Adding a buffer provides additional comfort and space from motor vehicles and/or parking
- Oakland refers to this as Class 2B Bikeway



### Neighborhood Bike Route

- Calm local streets where bicyclists have priority, but share roadway space with automobiles.
- Includes shared roadway bicycle markings on pavement and additional traffic calming measures like speed humps or traffic diverters to keep streets comfortable for bicyclists
- Comfortable for bicyclists with wider range of comfort levels
- Oakland refers to this as Class 3B Bikeway



### Bike Lane

- Dedicated lane for bicycle travel adjacent to traffic
- Oakland refers to this as a Class 2 Bikeway



### Bike Route

- Signed bike route, sharing the roadway with motor vehicles
- Can include pavement markings
- Comfortable for more confident people biking
- Used when space for bike lane may not be feasible
- Oakland refers to this as a Class 3 Bikeway



## BIKE AMENITIES



### Bike Parking

- Includes curbside and sidewalk racks, corrals, bike lockers or bike stations
- Racks provide short-term dedicated parking outdoors
- Lockers provide long-term secure parking at high demand locations
- Stations provide long-term indoor parking typically near transit and can be staffed or self-serve



### Bicycle-Friendly Intersections

- Intersections designed to provide additional separation, comfort, and safety for people biking and walking
- May include bike boxes, signal priority, curb extensions, or islands to separate bicyclists from turning motorists
- Ideal for locations with conflicts between people driving, walking, and biking



### Bike Share

- Self-serve bike pickup, either at designated stations or dockless
- Ideal for short point-to-point trips and connections to and from transit stations
- Provides access to bikes for people who may not own a personal bicycle or not have storage space for a bike



### Bike Repair/ Hydration Stations

- Self-serve bike repair with tools and stand
- Allows access to tools for basic do-it-yourself bike repair
- Ideal locations along trails and at community facilities





# Neighborhood Bike Routes

More than any other type of bikeway, this plan is focusing on designating neighborhood bike routes (over 60 miles recommended in total). Also known as bicycle boulevards, these type of bikeways resonated with people we talked to as facilities that provide continuous, comfortable bicycle routes on the local street network instead of busy arterials. Neighborhood Bike Routes include directional marking and wayfinding signage to provide users with coherent routing, but also importantly focus on traffic calming that decrease cars speeds and limit motorist volumes to prioritize people biking. Streets designated as neighborhood bike routes, OakDOT will focus on the following actions:

## **IMPROVING MAJOR STREET CROSSINGS**

A person's comfort biking on a low volume neighborhood street can be impacted when crossing of a high volume arterial. OakDOT will focus on improving these intersections with treatments such as protected intersections, bike boxes, traffic signals, or curb extensions to improve the visibility and safety of bicyclists at major crossings.

## **REDUCING OR PREVENTING SPEEDING**

Research shows that the severity of an injury of a bicyclist in a collision is related to the speed of the vehicle. Neighborhood Bike Routes are recommended for bikeways with posted speeds of 25 MPH

or below. Some nearby cities and neighborhoods within Oakland are choosing to reduce speeds through traffic calming measures (speed humps, chicanes, curb extensions) and reduced posted speeds to create a more bicycle friendly street.

## **PREVENTING HIGH CAR VOLUMES**

The number of cars passing someone biking on the street affects the comfort of a bicyclist, particularly when sharing a lane with motor vehicles. We can look at the average numbers of vehicles per day as a proxy for comfort. For example, at 3,000 vehicles a day, a car passes a bicycle every 46 seconds. For Neighborhood Bike Routes, having 2,000 vehicles per day is preferred

and 3,000 vehicles per day is acceptable. For roadways with higher volumes, traffic diversion methods should be considered.

## **INCREASING PAVEMENT QUALITY**

Many of the streets designated as Neighborhood Bike Routes through this plan currently have low pavement quality. Cracks, potholes, and bumps can make riding these streets uncomfortable. OakDOT is working to repave these streets by prioritizing them in their internal paving schedule.

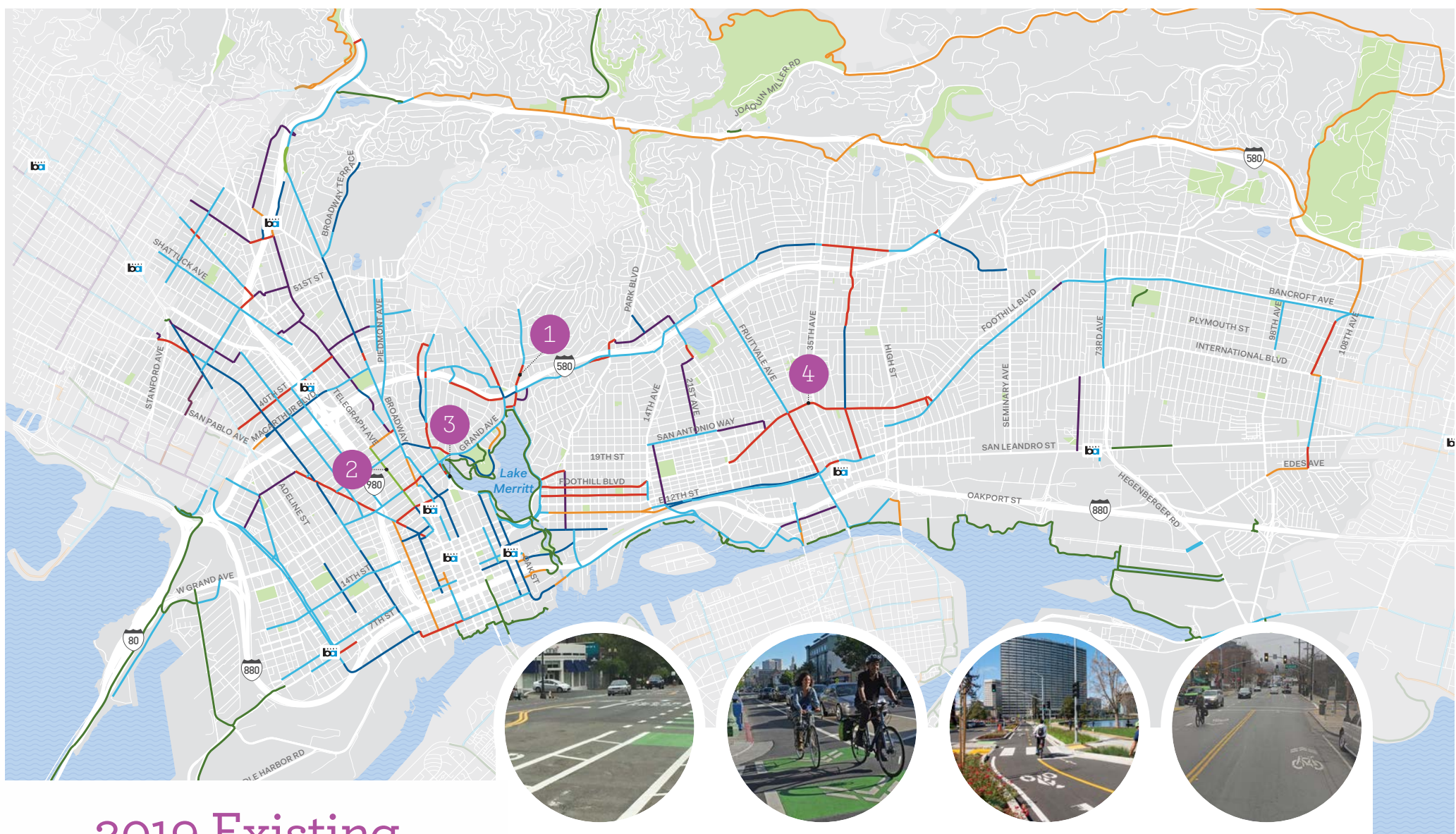


“

I use back streets, not main streets when biking to stay away from speeding cars. I grew up in Oakland so I don't need a map, I just know the roads.”

OAKLAND BIKE PLAN LISTENING  
SESSION PARTICIPANT





# 2019 Existing Bicycle Network

- Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Neighborhood Bike Route
- Bike Route
- Arterial Bike Route
- Park
- Oakland City Limits
- b BART Station



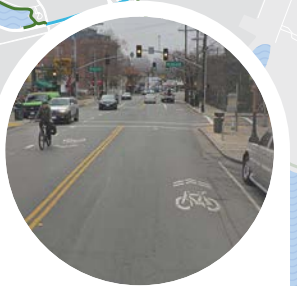
**1** The City's focus on lane conversion projects that reduce the number of travel lanes, such as on Grand Avenue, is a strategy to make room for bikeways while providing traffic calming benefits to the roadway.



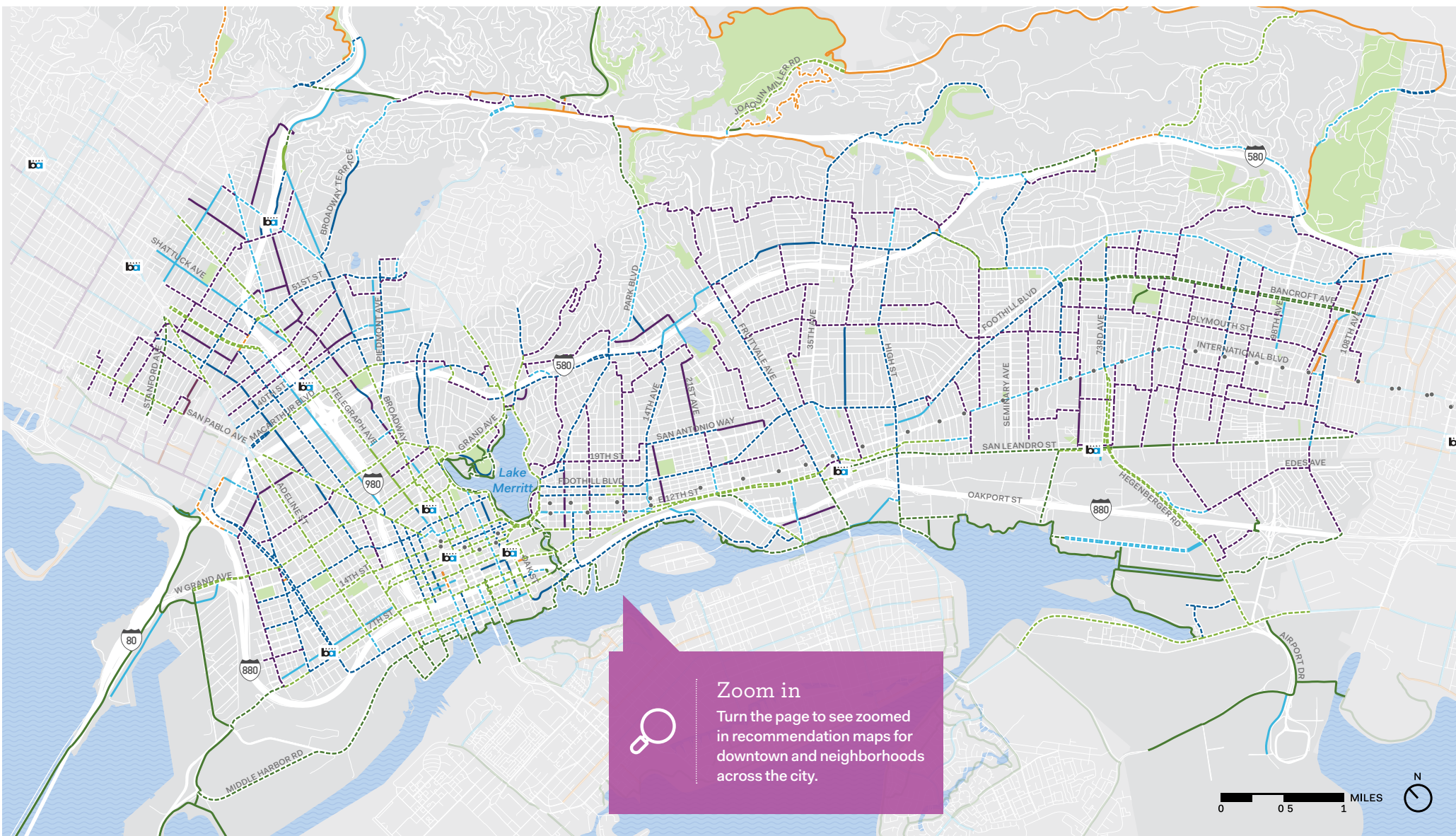
**2** Oakland's first parking protected bikeway on Telegraph Ave has illustrated the safety benefits of increased separation - with a 40% reduction in collisions measured after installation.



**3** Projects like the Lakeside Green Streets project next to Lake Merritt are providing high quality, separated experiences of Oakland's assets.

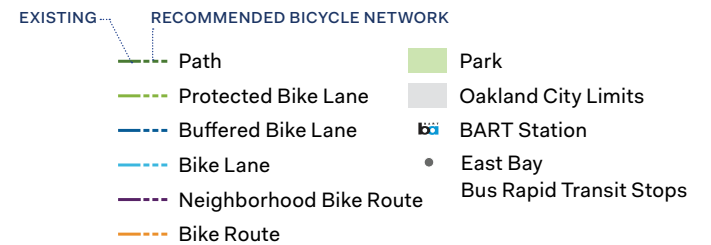


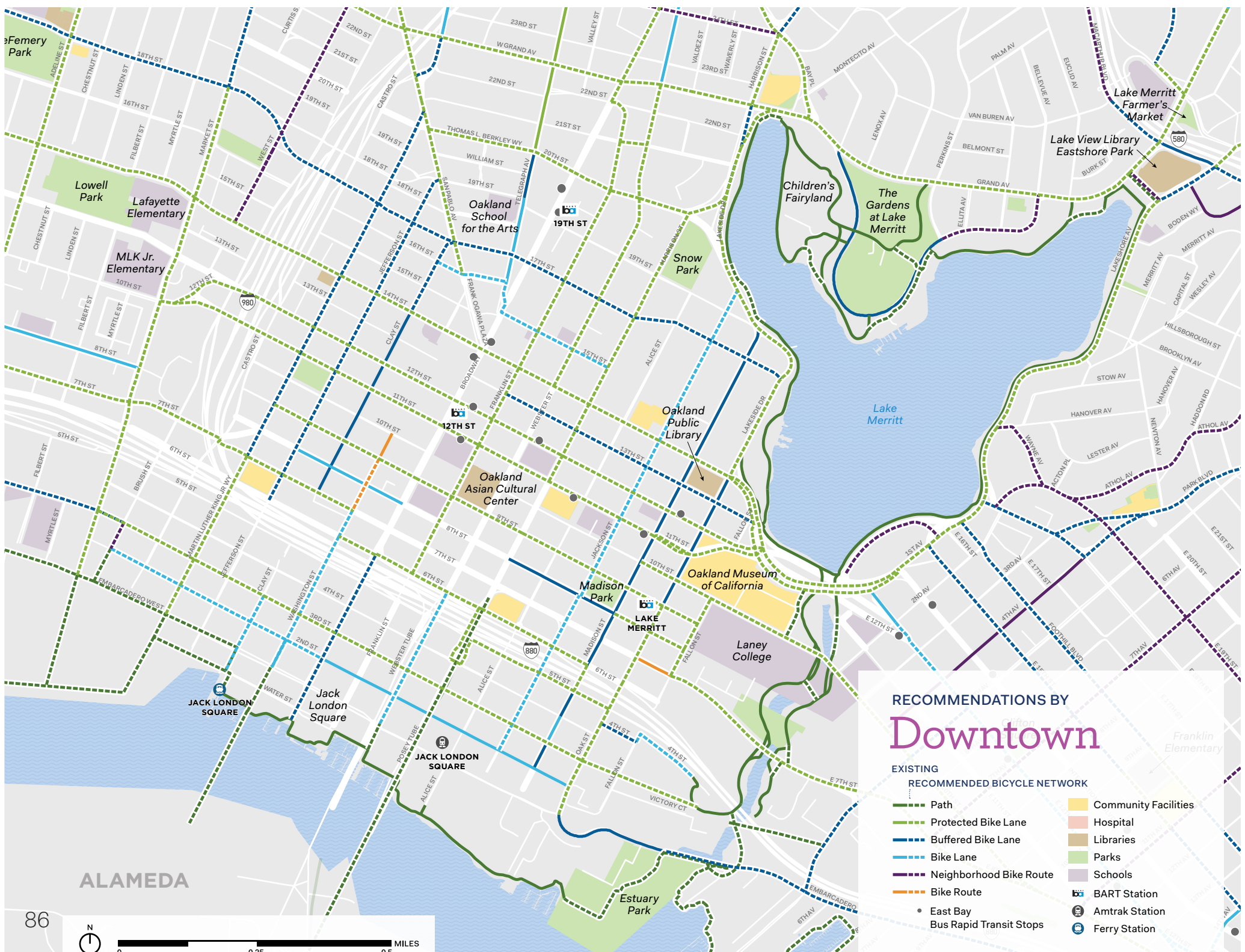
**4** Arterial Bike Routes, which require bicyclists to share lanes with cars on busy streets, will no longer be proposed. The 14 miles of existing routes are proposed for more comfortable bikeway types.



# Citywide Recommendations

This map identifies Oakland's existing 164-mile bike network and the 219 miles of proposed upgraded and new bikeways.





## RECOMMENDATIONS BY Downtown

- EXISTING**
- Path
  - Protected Bike Lane
  - Buffered Bike Lane
  - Bike Lane
  - Neighborhood Bike Route
  - Bike Route
  - East Bay Bus Rapid Transit Stops
- RECOMMENDED BICYCLE NETWORK**
- Community Facilities
  - Hospital
  - Libraries
  - Parks
  - Schools
  - BART Station
  - Amtrak Station
  - Ferry Station

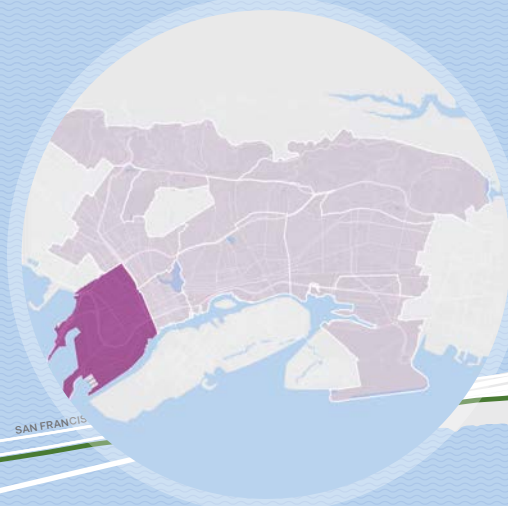
ALAMEDA

86



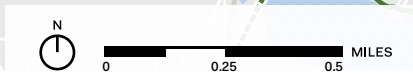
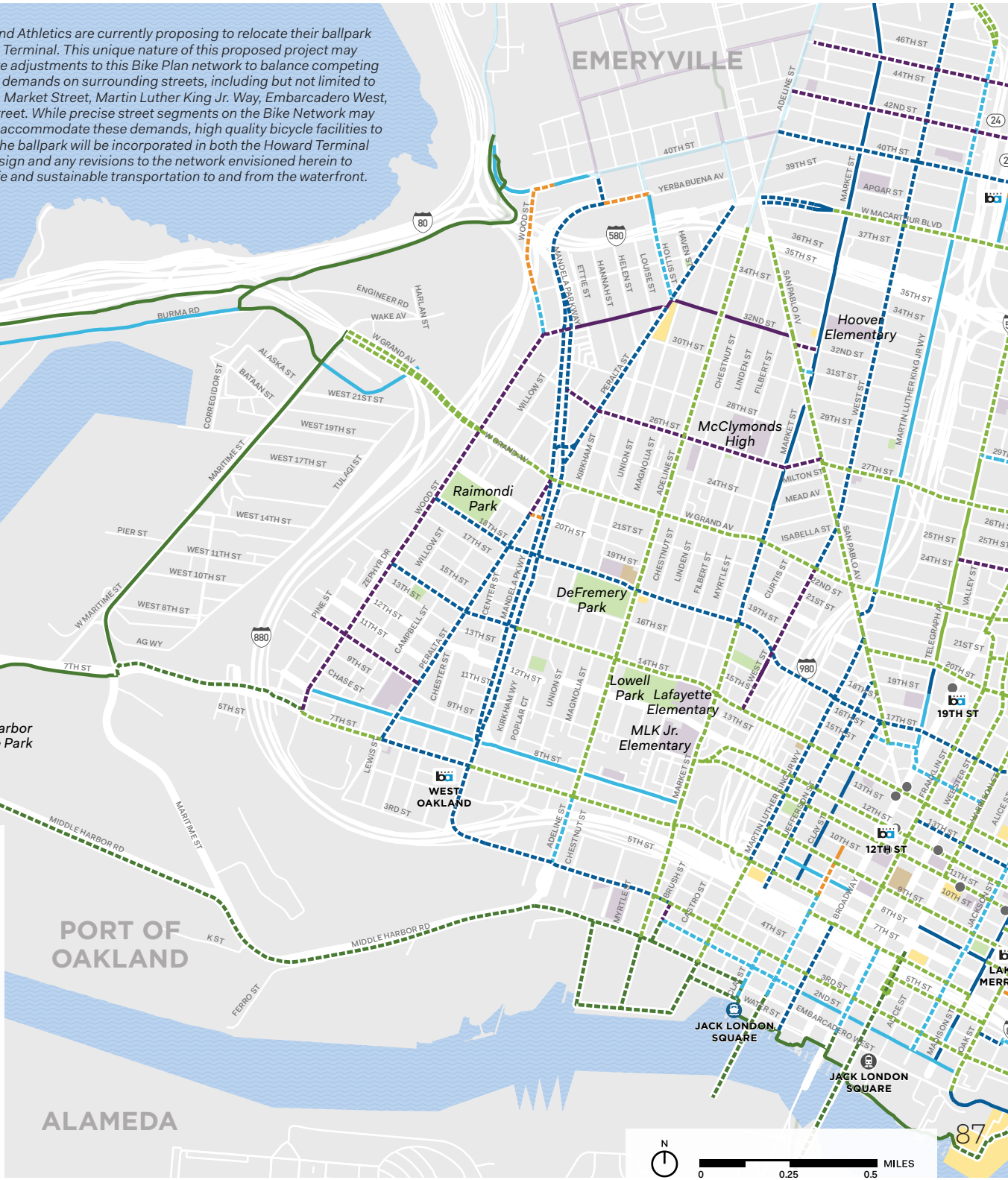
0 0.25 0.5 MILES

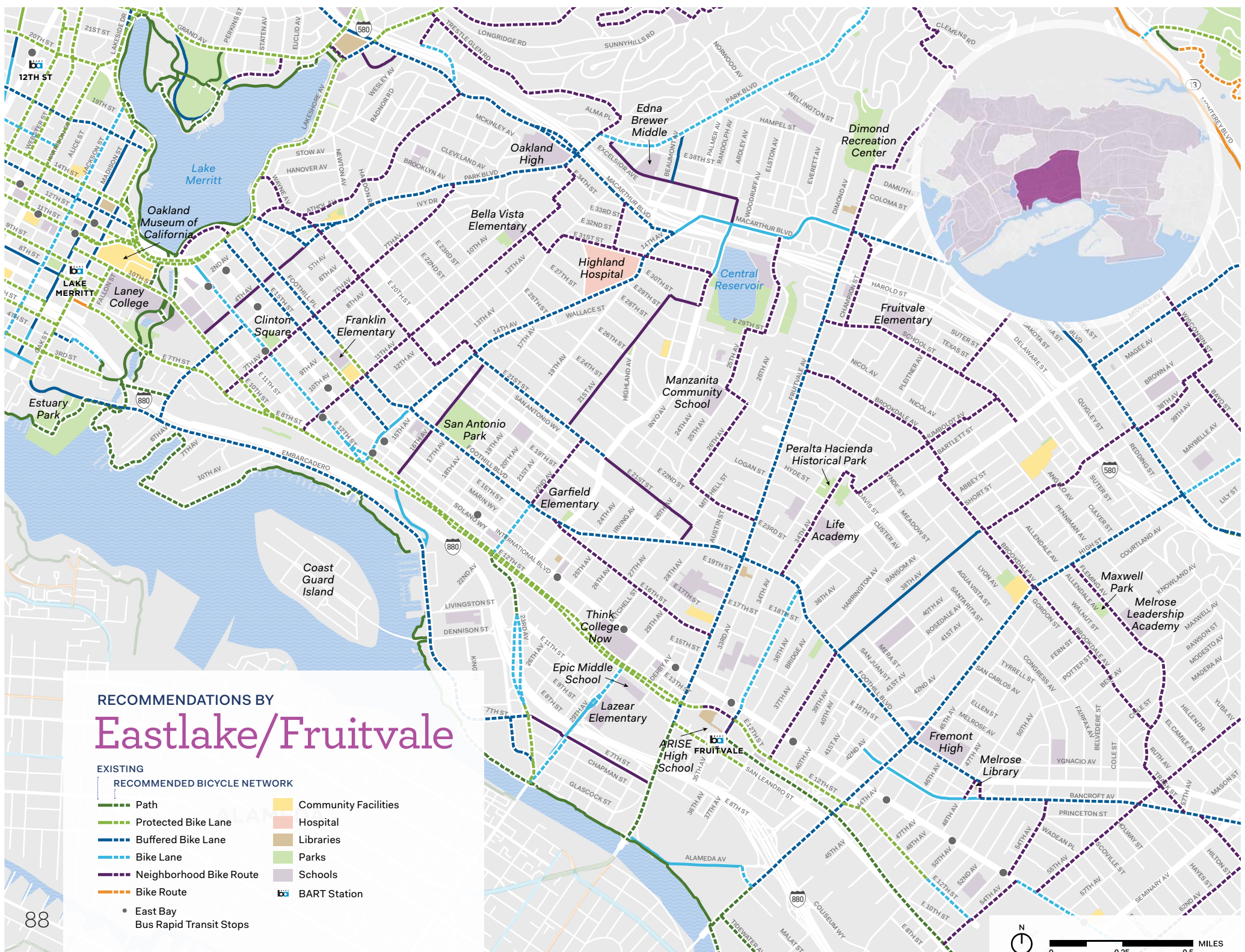
The Oakland Athletics are currently proposing to relocate their ballpark to Howard Terminal. This unique nature of this proposed project may necessitate adjustments to this Bike Plan network to balance competing game-day demands on surrounding streets, including but not limited to Broadway, Market Street, Martin Luther King Jr. Way, Embarcadero West, and 3rd Street. While precise street segments on the Bike Network may change to accommodate these demands, high quality bicycle facilities and from the ballpark will be incorporated in both the Howard Terminal project design and any revisions to the network envisioned herein to ensure safe and sustainable transportation to and from the waterfront.



## RECOMMENDATIONS BY West Oakland

- |                             |                                  |
|-----------------------------|----------------------------------|
| EXISTING                    |                                  |
| RECOMMENDED BICYCLE NETWORK |                                  |
|                             | Path                             |
|                             | Protected Bike Lane              |
|                             | Buffered Bike Lane               |
|                             | Bike Lane                        |
|                             | Neighborhood Bike Route          |
|                             | Bike Route                       |
|                             | Community Facilities             |
|                             | Hospital                         |
|                             | Libraries                        |
|                             | Parks                            |
|                             | Schools                          |
|                             | BART Station                     |
|                             | Amtrak Station                   |
|                             | Ferry Station                    |
|                             | East Bay Bus Rapid Transit Stops |





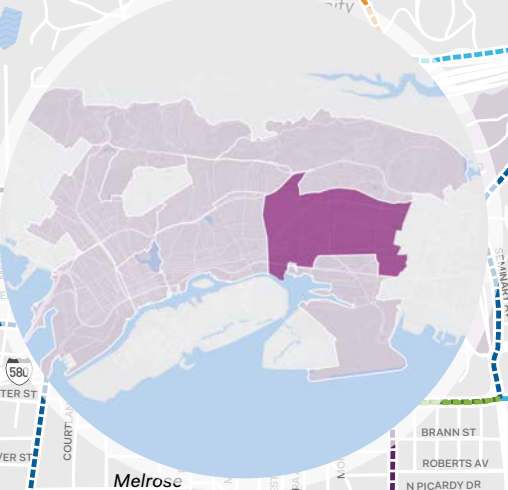
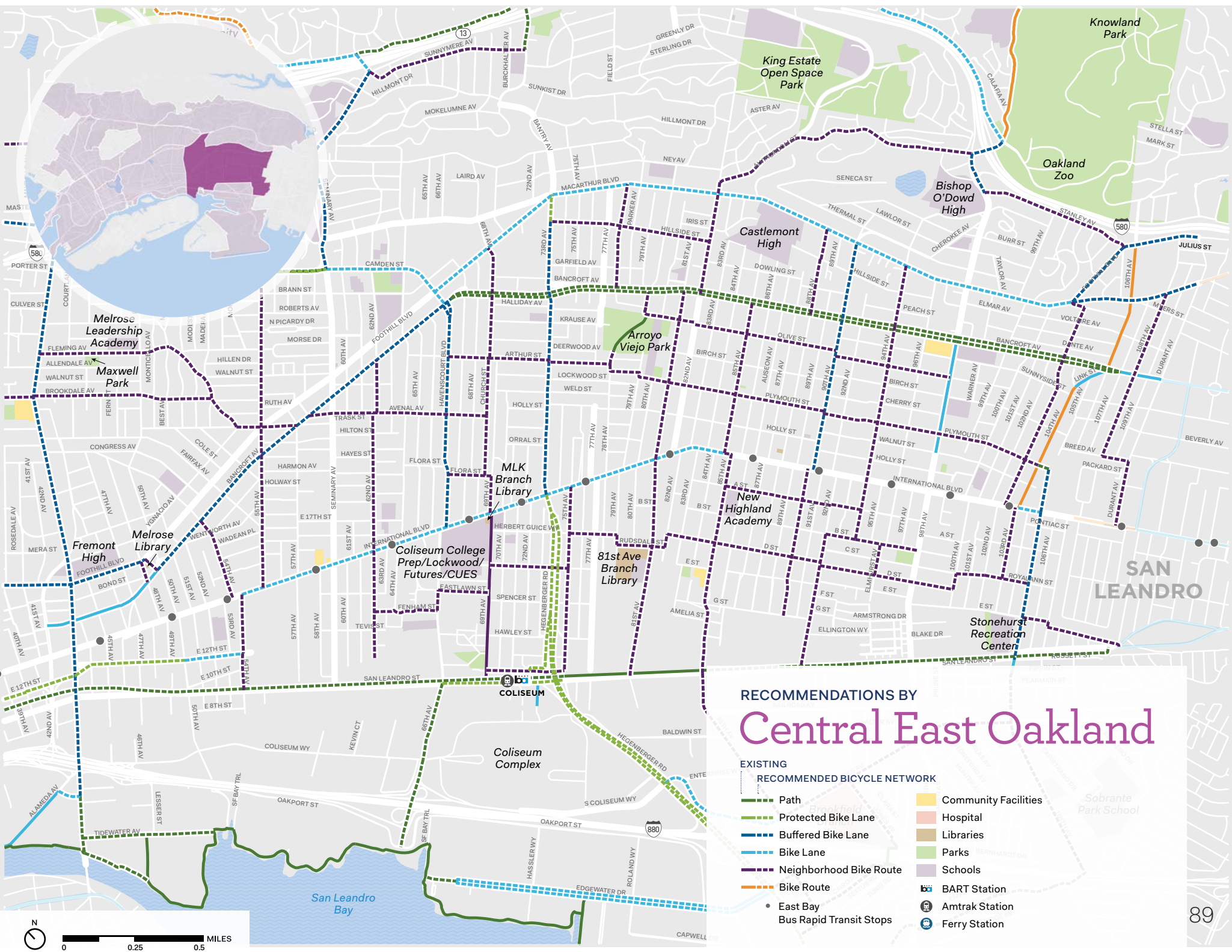
RECOMMENDATIONS BY

# Eastlake/Fruitvale

EXISTING

RECOMMENDED BICYCLE NETWORK

- Path
- - - Protected Bike Lane
- - - Buffered Bike Lane
- Bike Lane
- - - Neighborhood Bike Route
- - - Bike Route
- Community Facilities
- Hospital
- Libraries
- Parks
- Schools
- BART Station
- East Bay Bus Rapid Transit Stops



Melrose Leadership Academy

Maxwell Park

Fremont High

Melrose Library

Coliseum College Prep/Lockwood/Futures/CUES

MLK Branch Library

81st Ave Branch Library

COLISEUM

Coliseum Complex

Castlemont High

Arroyo Viejo Park

New Highland Academy

Stonehurst Recreation Center

Bishop O'Dowd High

King Estate Open Space Park

Oakland Zoo

Knowland Park



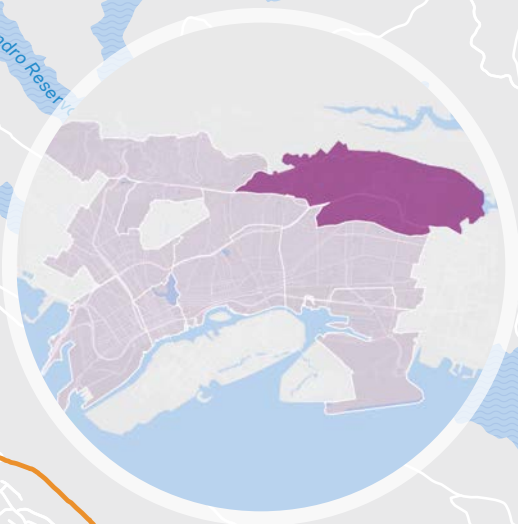
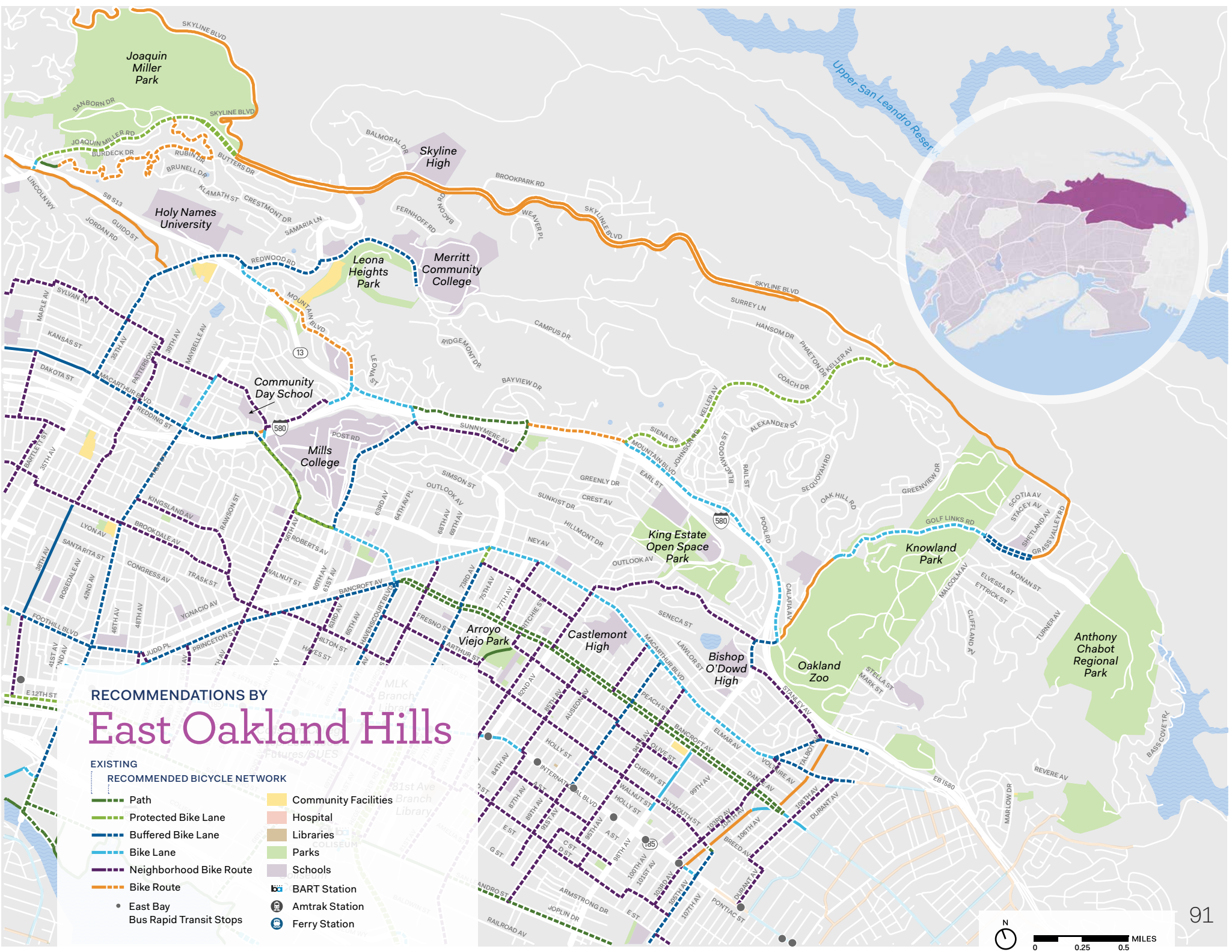
RECOMMENDATIONS BY

# Coliseum/Airport

EXISTING

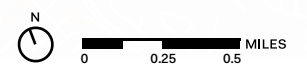
RECOMMENDED BICYCLE NETWORK

- |                                  |                      |
|----------------------------------|----------------------|
| Path                             | Community Facilities |
| Protected Bike Lane              | Hospital             |
| Buffered Bike Lane               | Libraries            |
| Bike Lane                        | Parks                |
| Neighborhood Bike Route          | Schools              |
| Bike Route                       | BART Station         |
| East Bay Bus Rapid Transit Stops | Amtrak Station       |
|                                  | Ferry Station        |

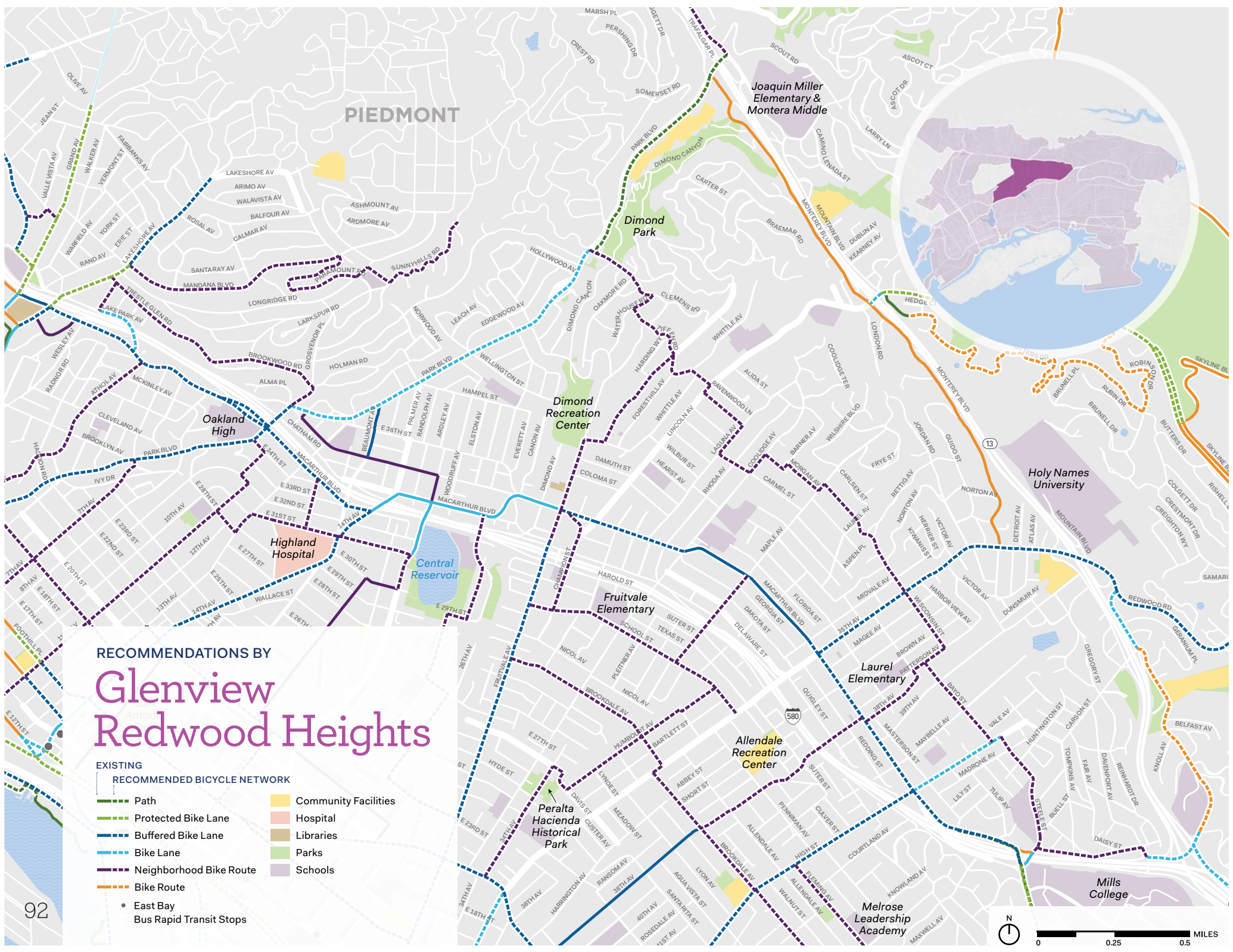


RECOMMENDATIONS BY  
**East Oakland Hills**

- EXISTING**
- RECOMMENDED BICYCLE NETWORK
  - Path
  - Protected Bike Lane
  - Buffered Bike Lane
  - Bike Lane
  - Neighborhood Bike Route
  - Bike Route
  - Community Facilities
  - Hospital
  - Libraries
  - Parks
  - Schools
  - BART Station
  - Amtrak Station
  - Ferry Station
  - East Bay Bus Rapid Transit Stops

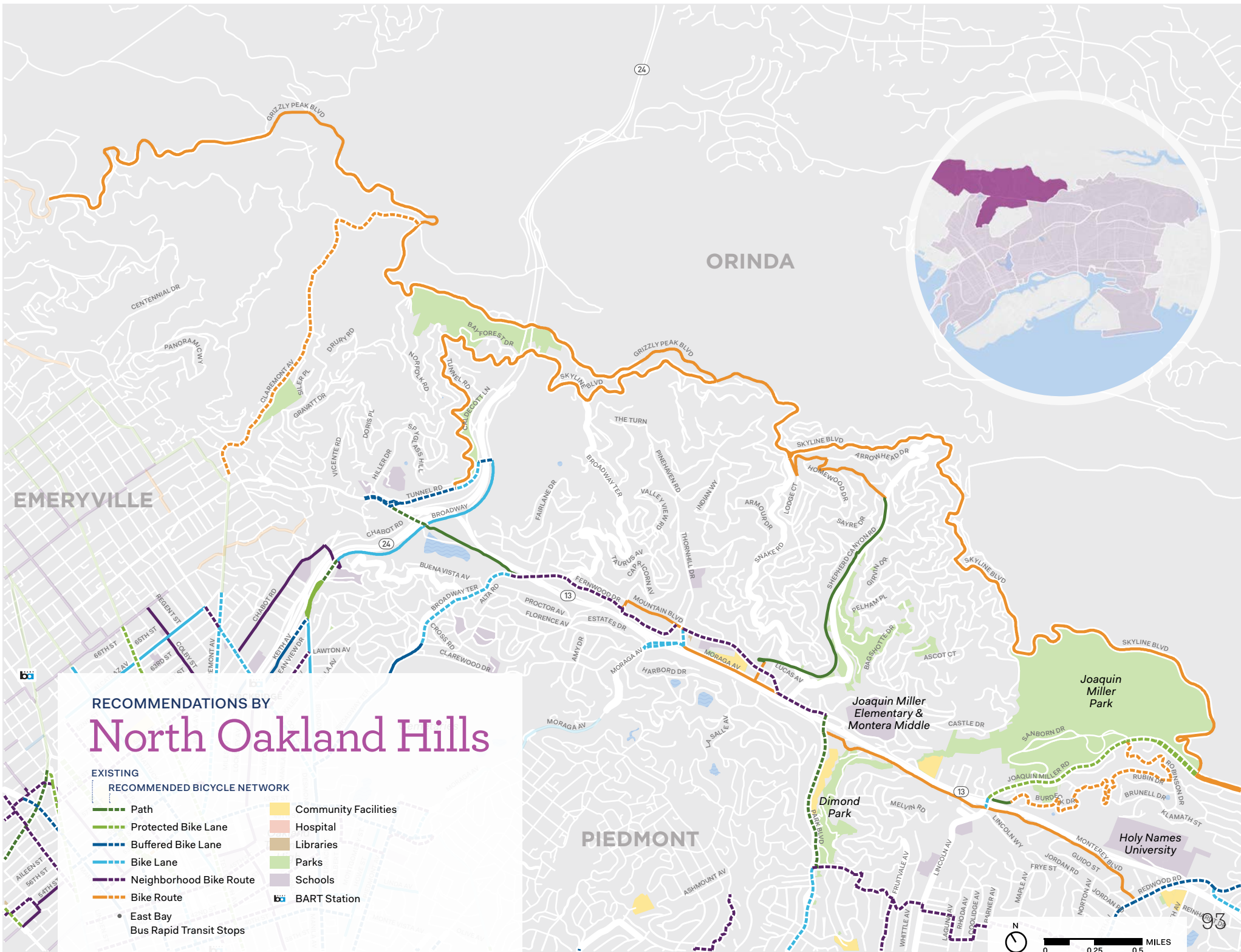






RECOMMENDATIONS BY  
**Glenview**  
**Redwood Heights**

- EXISTING
- East Bay
  - Bus Rapid Transit Stops

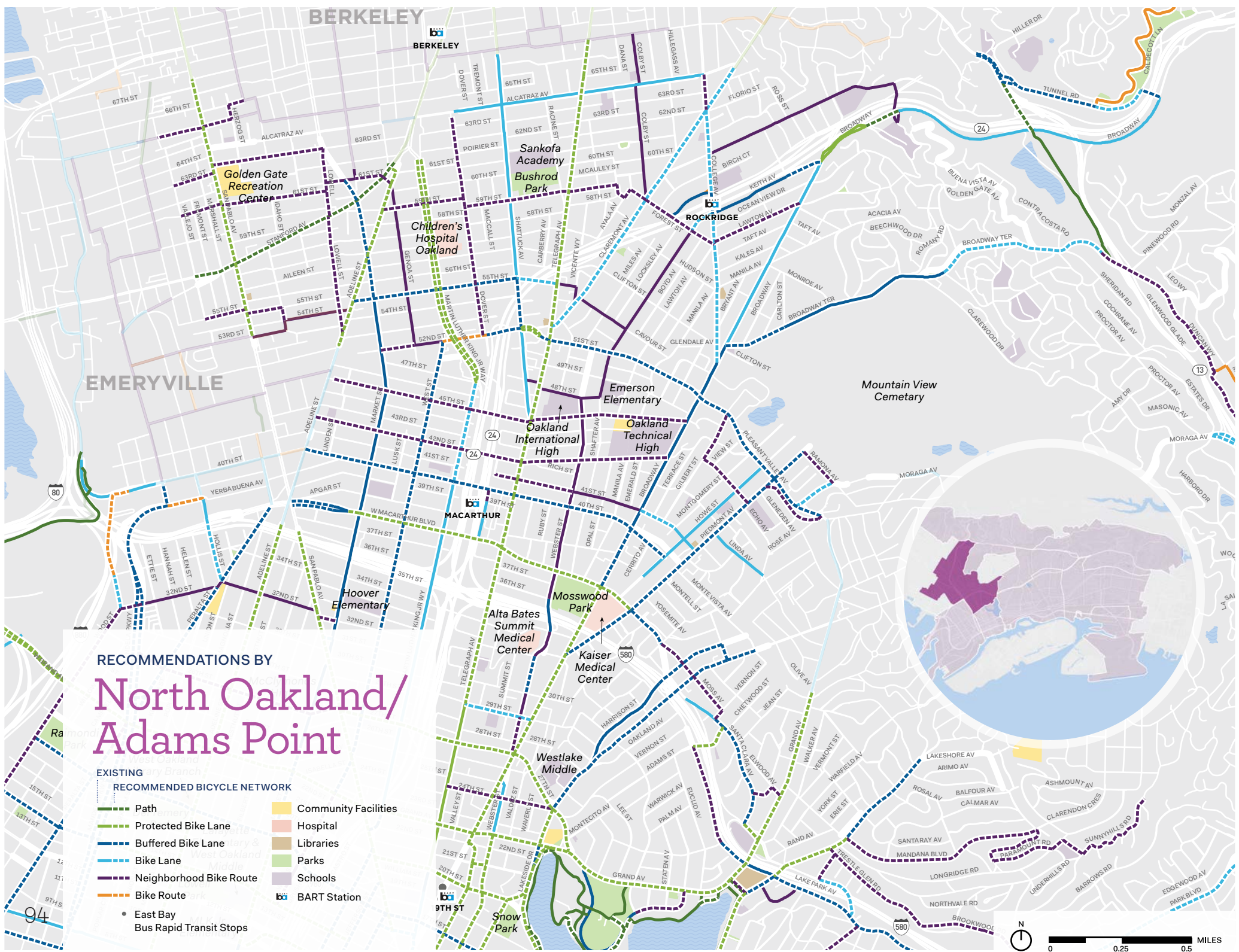


# RECOMMENDATIONS BY North Oakland Hills

- EXISTING**
- RECOMMENDED BICYCLE NETWORK**
- Path
  - - - Protected Bike Lane
  - - - Buffered Bike Lane
  - - - Bike Lane
  - - - Neighborhood Bike Route
  - - - Bike Route
  - Community Facilities
  - Hospital
  - Libraries
  - Parks
  - Schools
  - BART Station
  - East Bay Bus Rapid Transit Stops

0 0.25 0.5 MILES

BERKELEY



RECOMMENDATIONS BY

# North Oakland/ Adams Point

EXISTING  
RECOMMENDED BICYCLE NETWORK

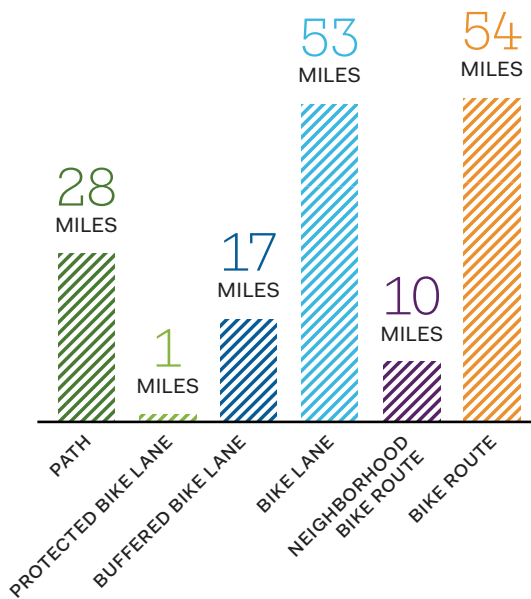
- Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Neighborhood Bike Route
- Bike Route
- Community Facilities
- Hospital
- Libraries
- Parks
- Schools
- BART Station
- East Bay Bus Rapid Transit Stops



# By the Miles

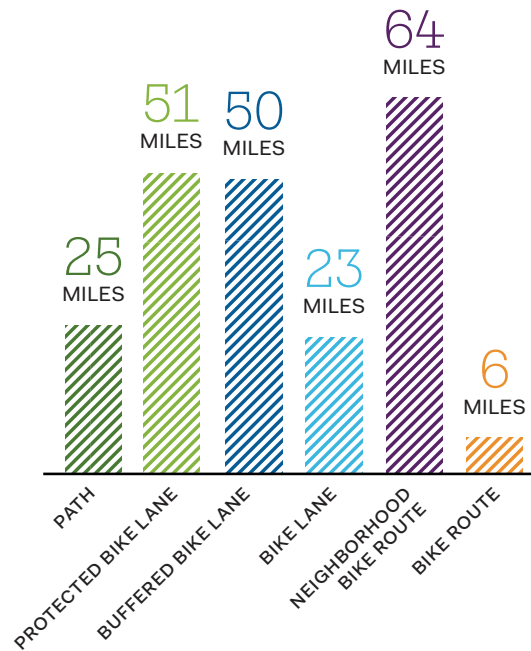
164  
MILES

BIKE NETWORK TODAY



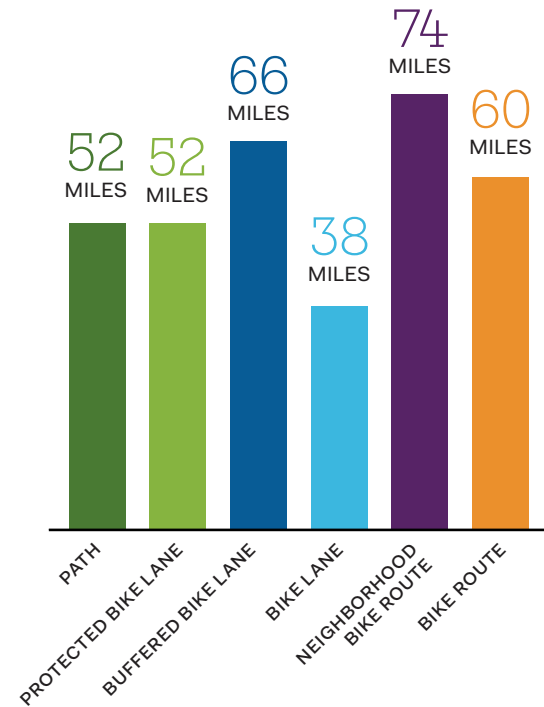
219  
MILES

PROPOSED NEW & UPGRADED BIKEWAYS



343  
MILES

COMPLETE NETWORK





# How Did we Develop the Recommended Network?

What steps did the project team take to develop the recommended bikeway network that supports a comfortable, local, and connected network?

- **Public Input**

Demand for new and improved bikeways was recorded through Bike Plan workshops and listening sessions, the online community input map, and mobile workshop events. Roadways and areas that were mentioned across different outreach methods were examined for inclusion in the bikeway network.

*Example: Public interest for a bikeway on High Street resulted in a Vision Network project on that corridor.*

- **2007 Bike Plan Recommendations**

The project team identified completed projects and upgraded remaining recommendations to current low-stress bikeway standards, where possible.

- **Local Destination Connectivity**

The project team identified bikeways to better connect users to parks, community centers and libraries, transit centers, and local middle and high schools.

*Example: The proposed neighborhood bike routes on Rudsdale Street and 81st Avenue will provide new connections to the 81st Ave Library.*

- **Network Coverage**

Research shows that coverage and density of bikeways is an important factor to encourage bike ridership. The project team identified bikeways that would increase the density of the bikeways, especially in East Oakland where there are few existing bikeways.

*Example: The proposed network of neighborhood bike routes in Central East Oakland fills in coverage of East-West and North-South bikeways in that area.*

- **Gap Closure**

The project team looked at where new facilities were needed to close the gap in the existing network. These were often more challenging projects that were precluded from past planning efforts because of design constraints.

*Example: the proposed continuation of bike facilities on Telegraph Avenue will provide connections to existing bikeways through downtown and North Oakland.*

- **Projects and Plans Under Development**

The project team incorporated bikeway projects that were part of recent or undergoing planning efforts.

*Example: Bikeway recommendations from Oakland-based planning efforts such as the Downtown Oakland Specific Plan are included, as are multi-jurisdictional efforts such as the Stanford Bike Path and the East Bay Greenway.*

- **Upgrading Existing Bikeways**

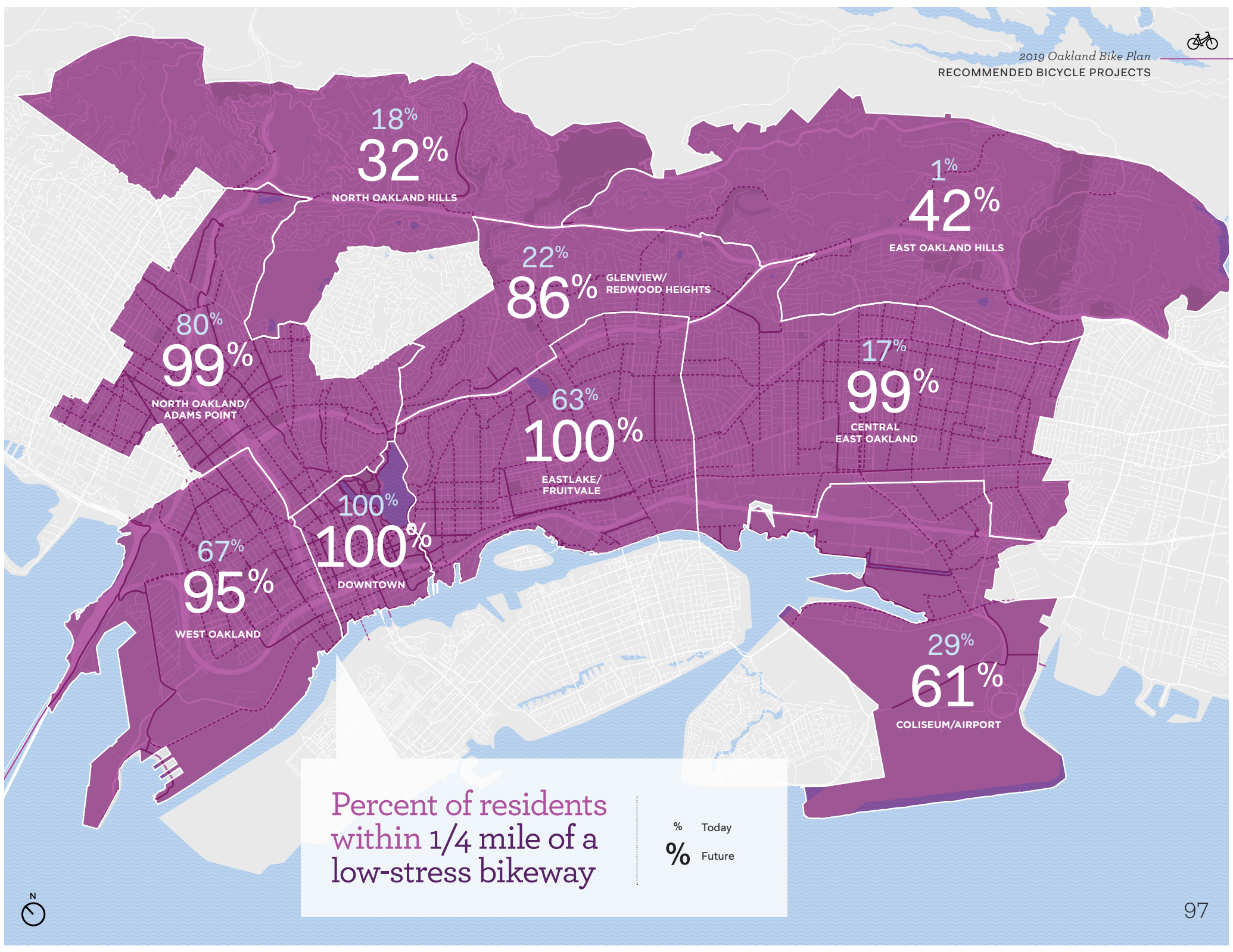
The project team look at which existing bikeways could be upgraded to provide a more comfortable connection.

*Example: Recommendations on Grand Avenue, Adeline Street, and many of the east-west cross streets through Downtown upgrade existing bicycle lanes.*

- **OakDOT Staff Recommendations**

The project team incorporated projects proposed by OakDOT staff that have been generated since the adoption of the 2007 Oakland Bicycle Plan.

*Example: OakDOT staff identified the challenges with the current 104th-106th Ave bikeways, and project team staff proposed an alternative bike boulevard route on 108th Avenue, Breed Avenue, and Durant Avenue.*



Percent of residents within 1/4 mile of a low-stress bikeway

% Today  
% Future





## REALITY CHECK

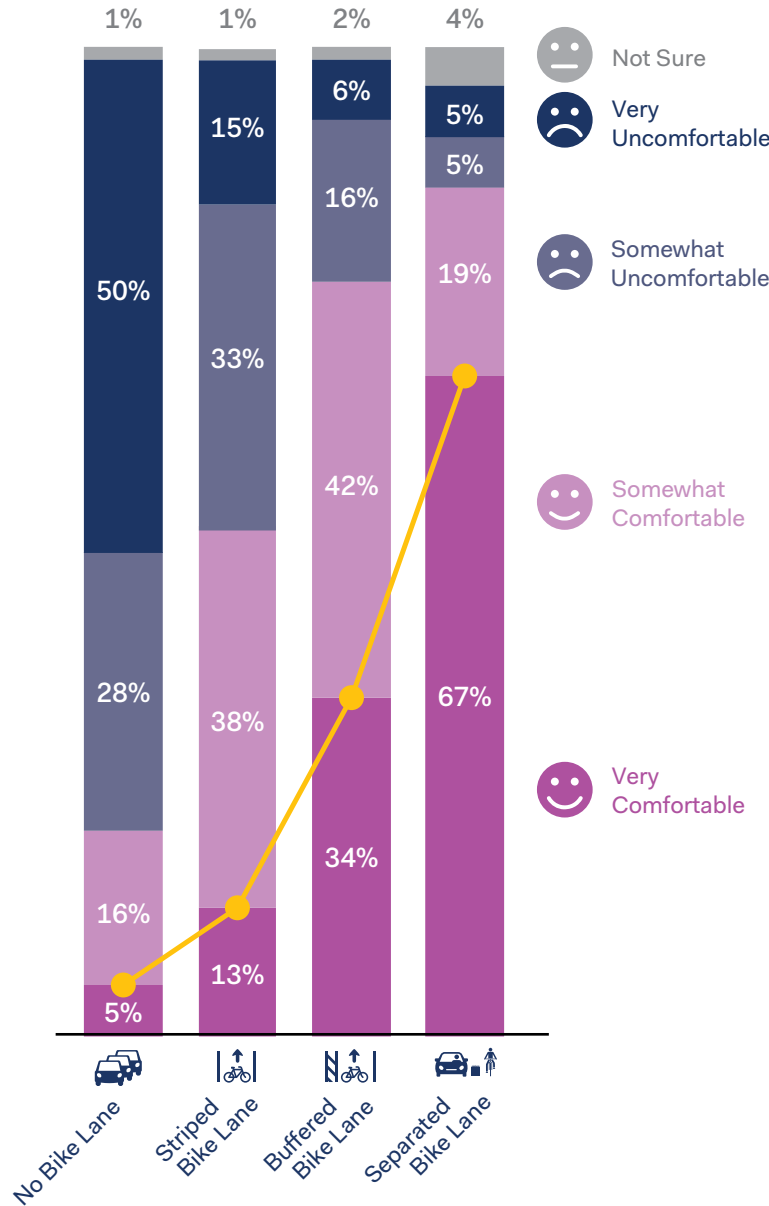
How are Oakland's three strategies to make bicycling more comfortable, local, and connected reflected in the proposed network?

### STRATEGY 1

# Make it Comfortable

Nearly half of Oaklanders who bike prefer not to share the road with cars, and prefer to bike on low volume streets or streets with separated bikeways. The proposed bikeway network should provide low-stress routes that allow for families and those that are interested but concerned to reach their destinations.

To do that, the project team tried to designate low-stress bikeways (see Bikeways Toolbox section), wherever possible, to provide riders with more protection from moving vehicles.



## LOW-STRESS BIKEWAYS

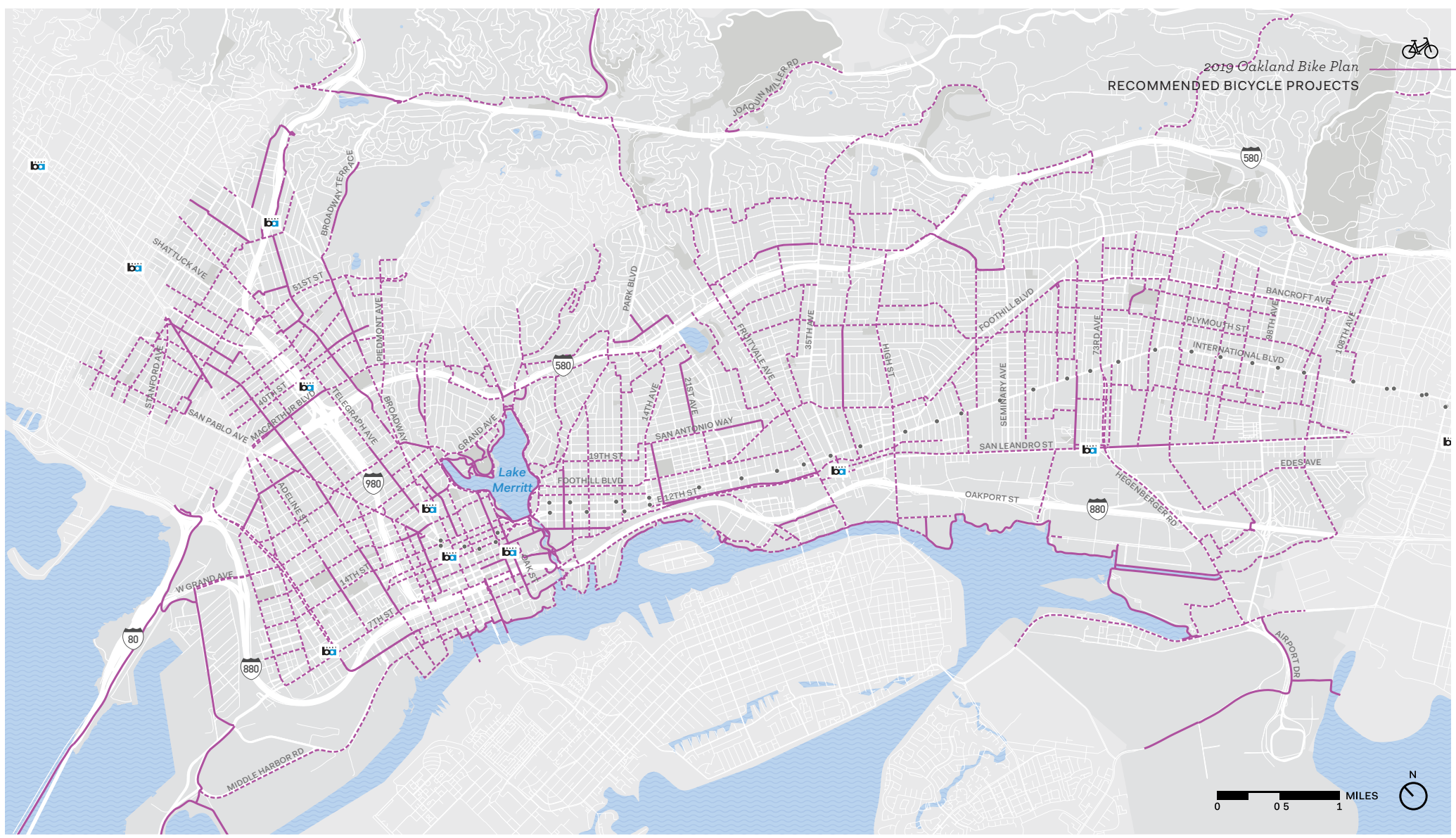
Providing low-stress bikeways can be an important strategy for people to feel more comfortable or safer biking to their destinations. Bikeways are considered low-stress if they involve very little traffic interaction by nature of the roadway's vehicle speeds and volumes (e.g., a shared low-traffic neighborhood street) or if greater degrees of physical separation are placed between the bikeway and traffic lane on roadways with higher traffic volumes and speeds.



Neighborhood Bike Route on Shafter Ave



Protected Bike Lane on Telegraph Photo courtesy of Bike East Bay



# Low-Stress Bikeways

More than 80% of the recommended new or upgraded bikeway miles will provide low-stress options that appeal to more Oaklanders.

- Existing
- - - Recommended
- Park
- Oakland City Limits
- bt BART Station
- East Bay Bus Rapid Transit Stops





STRATEGY 2

## Make it Local

Not every bike trip is for commuting to work, and residents need to be able to access local destinations, such as grocery stores, libraries, parks, and schools, via bike. The proposed bikeway network should designate bikeways that provide good connections within neighborhoods.

To do that, the project team looked at how new bikeways could better connect people to BART stations, frequented bus stops, middle and high schools, libraries and parks, and grocery stores, among others destinations.





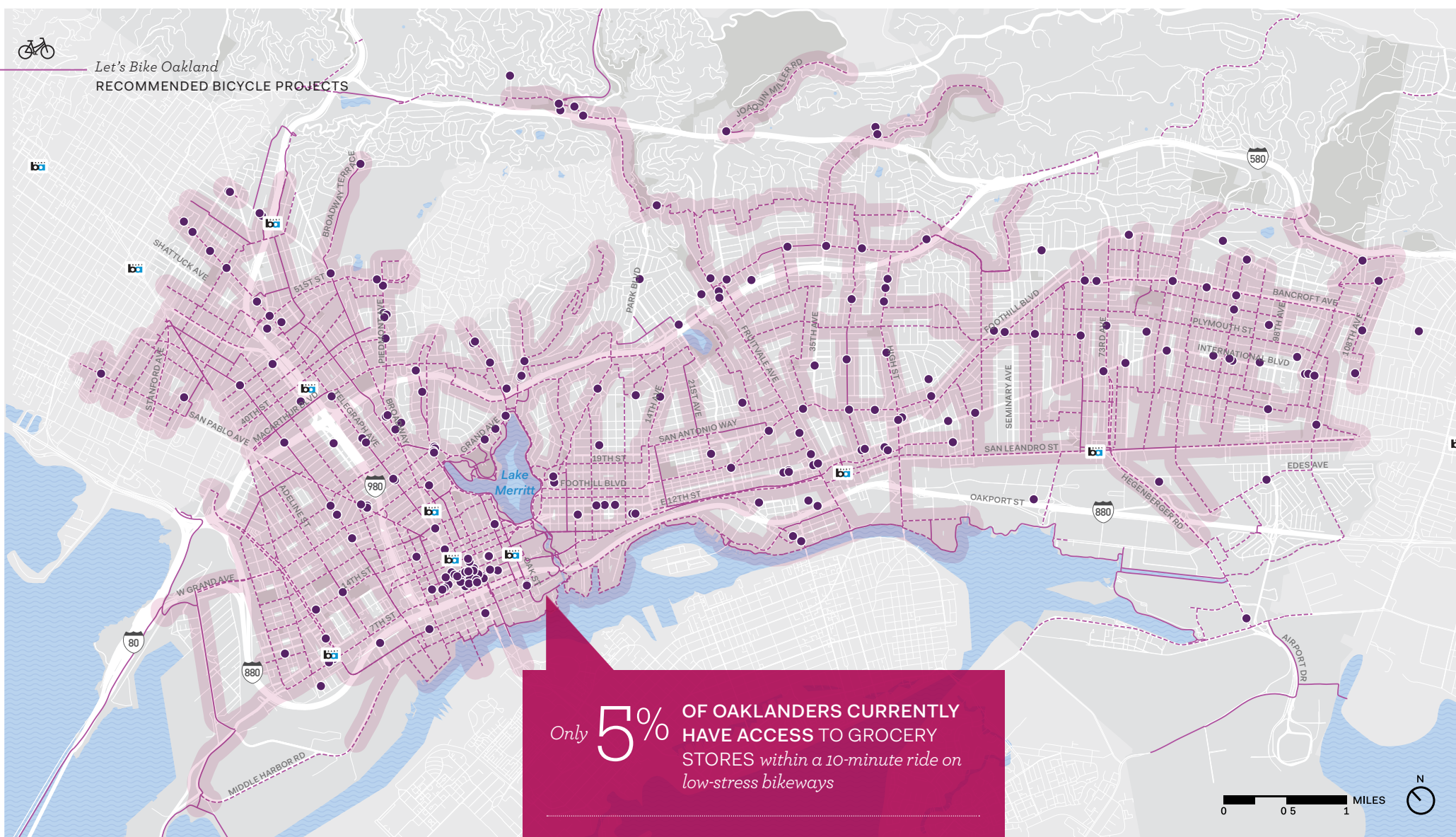
### CLOSER LOOK

To make sure the network connects residents with as many local neighborhood destinations as possible, OakDOT measured how many people can access schools, parks, recreation centers, grocery stores, and transit within a **ten minute bike ride** using low-stress bikeways. Existing access to local destinations was then compared to how many more people will gain access when the full set of recommended bikeways are built. The following pages display the results of this analysis.



Let's Bike Oakland

RECOMMENDED BICYCLE PROJECTS



Only **5%** OF OAKLANDERS CURRENTLY HAVE ACCESS TO GROCERY STORES *within a 10-minute ride on low-stress bikeways*

**67%** OF OAKLANDERS WILL HAVE ACCESS AFTER INSTALLING THE RECOMMENDED BIKEWAYS

82% of Oaklanders within disadvantaged communities will have access to grocery stores within a 10-minute ride on low-stress bikeways

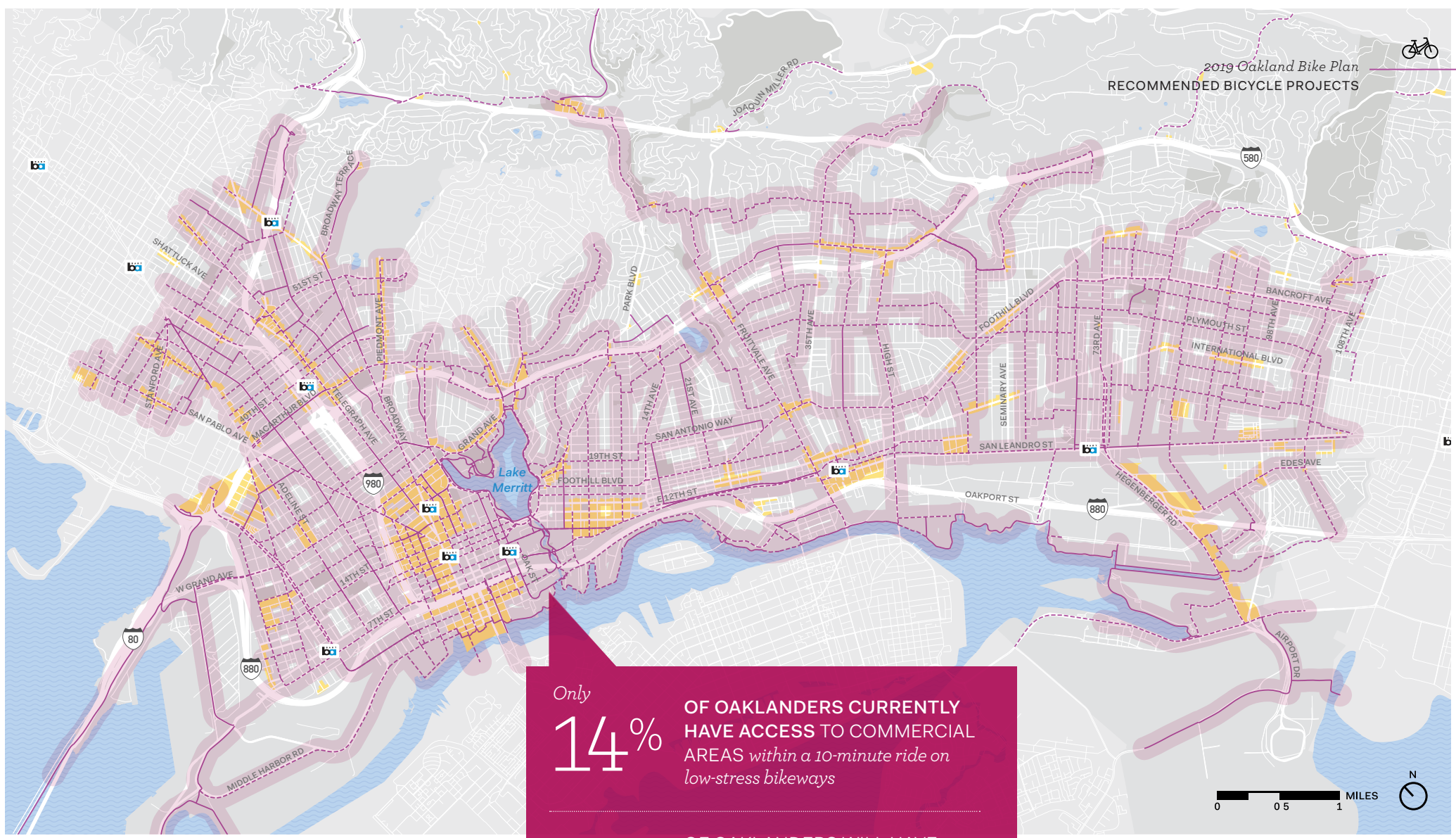
RECOMMENDED BICYCLE NETWORK

# Access to Grocery Stores

Source: City of Oakland, Department of Economic Development. Note: Convenience stores were not included in this analysis.

- Access within 10 minute bike ride
- Existing Low-Stress Bicycle Network
- Recommended Low-Stress Bicycle Network
- Grocery Store
- BART Station





Only **14%** OF OAKLANDERS CURRENTLY HAVE ACCESS TO COMMERCIAL AREAS *within a 10-minute ride on low-stress bikeways*

**65%** OF OAKLANDERS WILL HAVE ACCESS AFTER INSTALLING THE RECOMMENDED BIKEWAYS

RECOMMENDED BICYCLE NETWORK

# Access to Commercial Areas

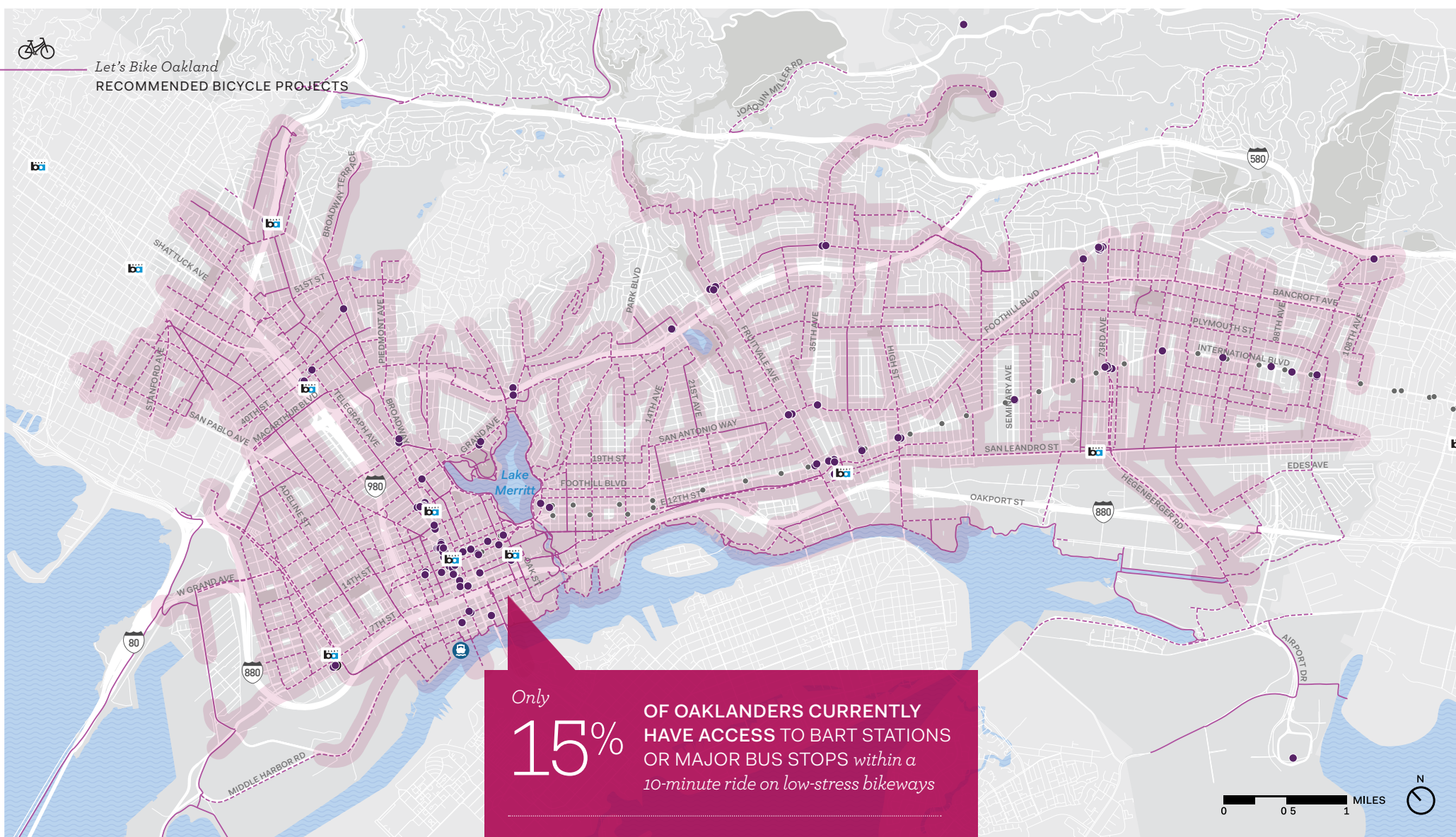
79% of Oaklanders within disadvantaged communities will have access to commercial areas within a 10-minute ride on low-stress bikeways.

- Access within 10 minute bike ride
- Commercial Areas
- Existing Low-Stress Bicycle Network
- Recommended Low-Stress Bicycle Network
- BART Station



Let's Bike Oakland

RECOMMENDED BICYCLE PROJECTS



Only **15%** OF OAKLANDERS CURRENTLY HAVE ACCESS TO BART STATIONS OR MAJOR BUS STOPS *within a 10-minute ride on low-stress bikeways*

**69%** OF OAKLANDERS WILL HAVE ACCESS AFTER INSTALLING THE RECOMMENDED BIKEWAYS

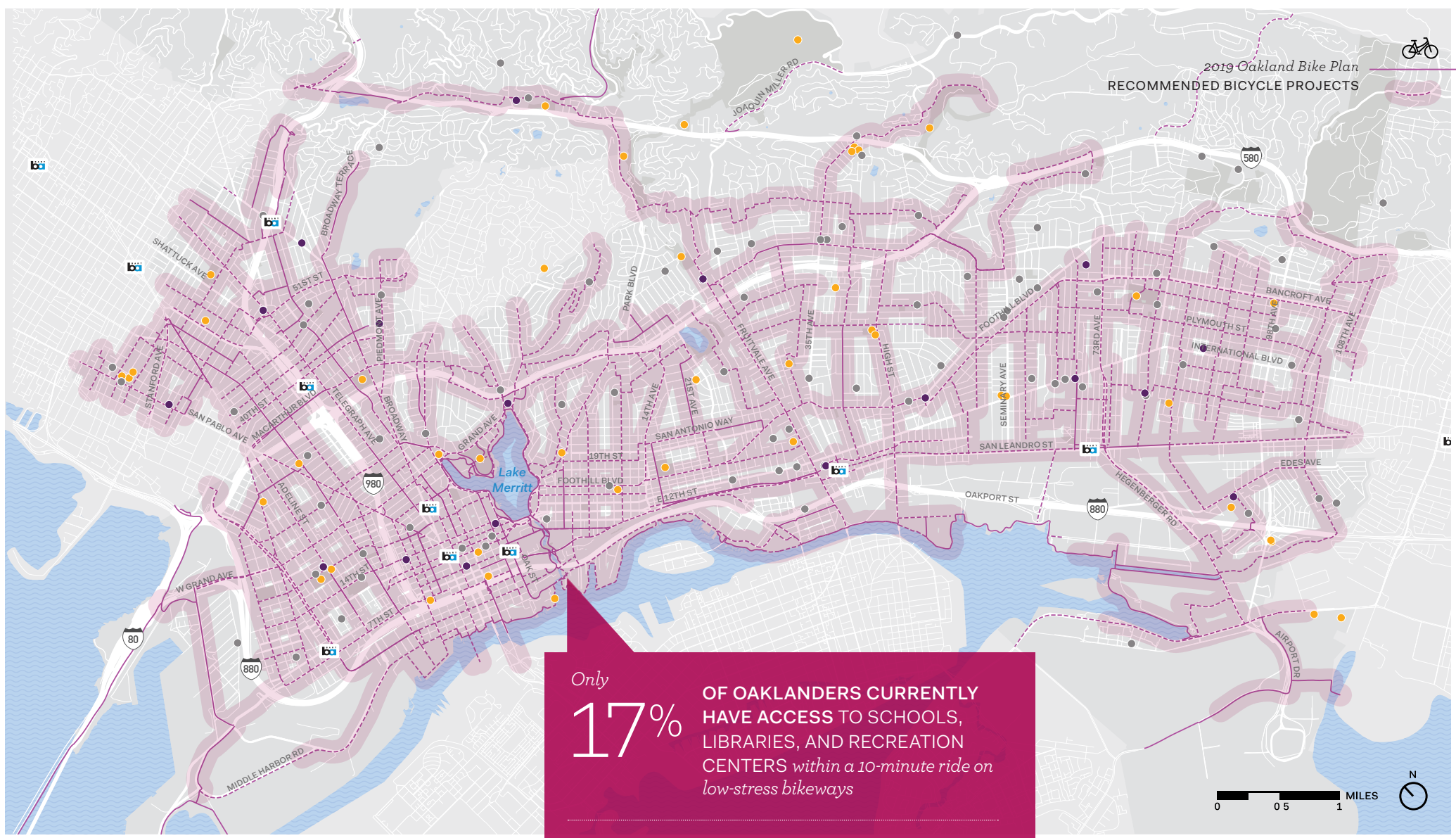
RECOMMENDED BICYCLE NETWORK

# Access to Transit

82% of Oaklanders within disadvantaged communities will have access to BART stations or major bus stops within a 10-minute ride on low-stress bikeways.

- Access within 10 minute bike ride
- Existing Low-Stress Bicycle Network
- Recommended Low-Stress Bicycle Network
- Ferry
- BART Station
- East Bay Bus Rapid Transit Stops
- Major Transit Stop  
*Future Bus Rapid Transit stops and AC Transit bus stops with more than 300 daily boardings*





Only **17%** OF OAKLANDERS CURRENTLY HAVE ACCESS TO SCHOOLS, LIBRARIES, AND RECREATION CENTERS *within a 10-minute ride on low-stress bikeways*

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**70%** OF OAKLANDERS WILL HAVE ACCESS AFTER INSTALLING THE RECOMMENDED BIKEWAYS

84% of Oaklanders within disadvantaged communities will have access to schools, libraries, and recreation centers within a 10-minute ride on low-stress bikeways.

RECOMMENDED BICYCLE NETWORK

# Access to Schools, Libraries, Recreation Centers

- Access within 10 minute bike ride
- Existing Low-Stress Bicycle Network
- Recommended Low-Stress Bicycle Network
- School
- Library
- Recreation Center
- BART Station



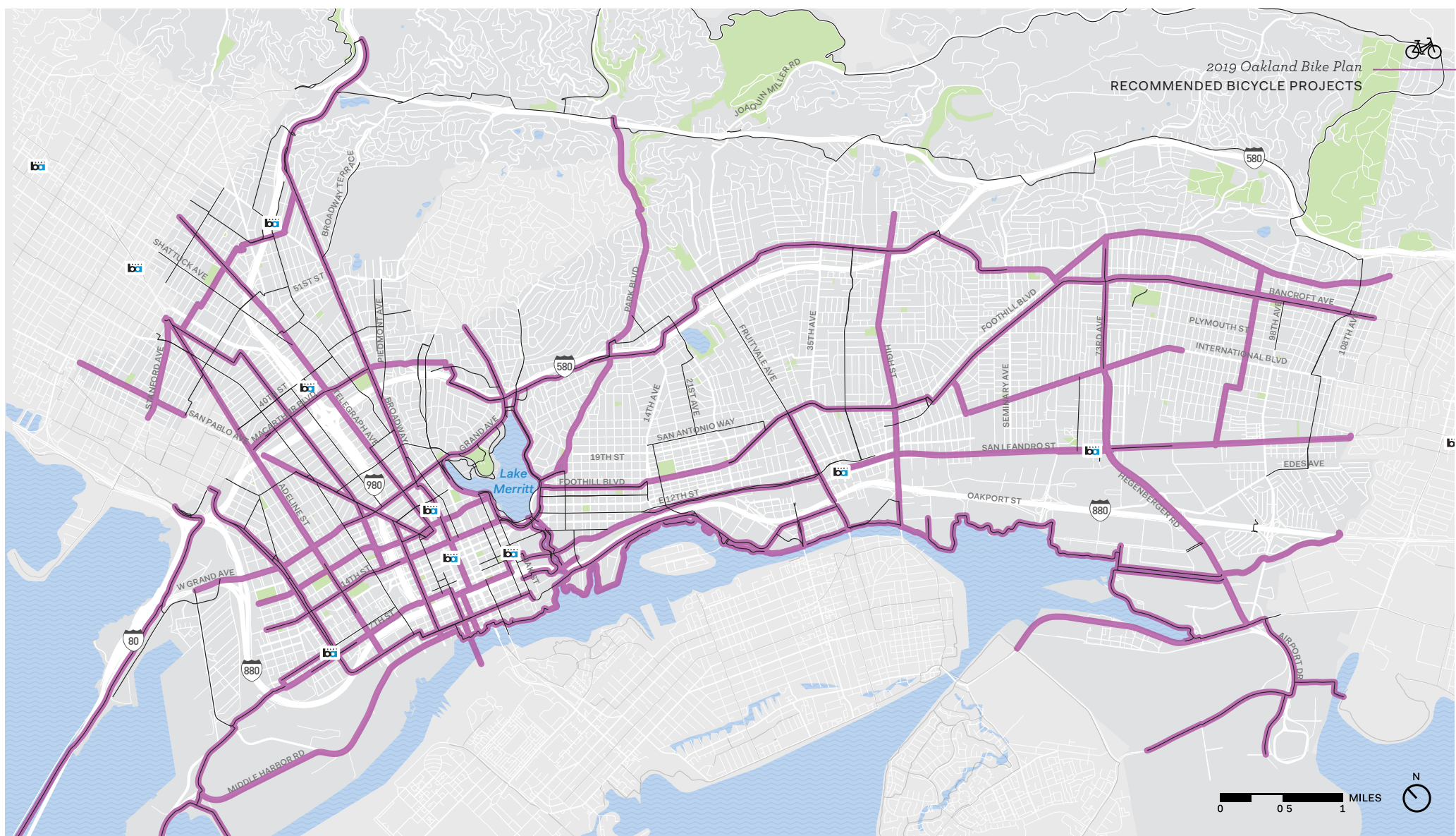
STRATEGY 3

## Make it Connected

The proposed bikeway network closes gaps in the existing bikeway network to help people biking reach their destinations across town. This strategy will look to add bikeways where bike lanes currently end, and focus on longer corridors to serve as the bike network backbone .

To do that, OakDOT is also looking at long distance corridors in the City, such as Broadway, Telegraph Avenue, Foothill Boulevard, and Bancroft Avenue that can provide meaningful connections across different neighborhoods.





STRATEGY 3: MAKE IT CONNECTED

# Long-Distance Corridors

These corridors will provide a continuous travel experience for those who need to move beyond their immediate neighborhood.

- Existing Bikeways
- Long-Distance Corridors
- Park
- Oakland City Limits
- BART Station





# Bike Share

## BACKGROUND

In July, 2017 bike share launched in Oakland. It is part of the regional bike share system that includes Berkeley, Emeryville, San Francisco and San Jose. Bike sharing systems allow members to rent bikes for short trips. Oakland has 80 bike sharing stations with about 900 bikes , including 400 electric-assist "E-bikes". Bike sharing can help reduce barriers to bicycling, such as repair costs, availability of a bicycle and fear of having a bike stolen. In 2018, Oakland's 1,600 bike share members who took 250,000 trips.

However, bike sharing systems have their own barriers that include credit card requirements, up-front costs, cell phone access, a lack of stations in underserved communities and a lack of familiarity with how the system works.

In order to address some of those barriers, Oakland's bike sharing system offers a discounted



membership to anyone who qualifies for CalFresh or PG&E's CARE service. Known as Bike Share for All, this program costs \$5 for the first year and \$5 per month afterwards. Members can pay using cash at the Oakland Public Library Main Branch.

OakDOT staff worked with TransForm, Bike East Bay, the Scraper Bike Team and Cycles of Change to sign up hundreds of Oaklanders for Bike Share for All. These efforts helped to introduce bike sharing to the community. As of early 2019, Oakland has 350 Bike Share for All members, about 20% of the total.



## WHAT WE HEARD

Many people at mobile workshops and listening sessions expressed dislike of the current form of bikeshare and expressed that future iterations should be community-owned and expanded into East Oakland. Concerns also included station design, corporate branding and the age limit for use (18).

Participants in the Design Lab provided ideas on how to make bike share better. They suggested that bike share systems should:

- Offer technical support
- Fund a community owned bike share system (such as a bike library)
- Support and partner with community groups
- Offer a more accessible pricing structure
- Offer bikes for kids
- Expand service to East Oakland
- Make bike share accessible to people with physical disabilities



## WHAT WE'VE PROPOSED

### Community-led Bike Share Expansion

#### Mobility4All Partnership Expansion

Fund a pilot free ride program for underserved populations.

#### The Shed Bike Library

Establish a bike lending library at the Scraper Bike's Shed.

#### Community-Driven Bike Station Activation (Parklets)

Work with community members to design bike stations that better serve and reflect the culture and businesses in East Oakland.

*See page 75 for more information on how we are working towards addressing these issues in the future expansion of the system to meet the needs of Oaklanders and support our unique bike culture.*

### Expand Adaptive Bike Share Pilot

Adaptive bikes are cycles that are modified to meet the needs of the individual rider, making it possible for anyone to ride, regardless of physical ability. In partnership with Oakland's ADA Programs Division, Ford GoBike, and the Bay Area Outreach and Recreation Program (BORP) Oakland's adaptive bike share pilot program will provide hand cycles, recumbent trikes, and side-by-side tandems for people with disabilities.

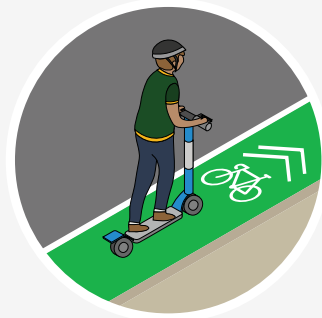
Six adaptive bikes will be available twice a week at a "pop-up" location near bike routes that includes off-street trail, such as the Lake Merritt Trail or the Bay Trail. The "pop-up" will also be near regular bike share stations. Staff from BORP, the region's leading provider of accessible sports and recreation opportunities for people with disabilities, will be on-hand to fit,

train and assist riders on how to use the adaptive bikes.

After this six-month pilot, OakDOT will gather data and survey riders to determine how to permanently increase the accessibility of the bike share program.



Photo: Clane Gessel Photography



### NOT JUST FOR BICYCLES

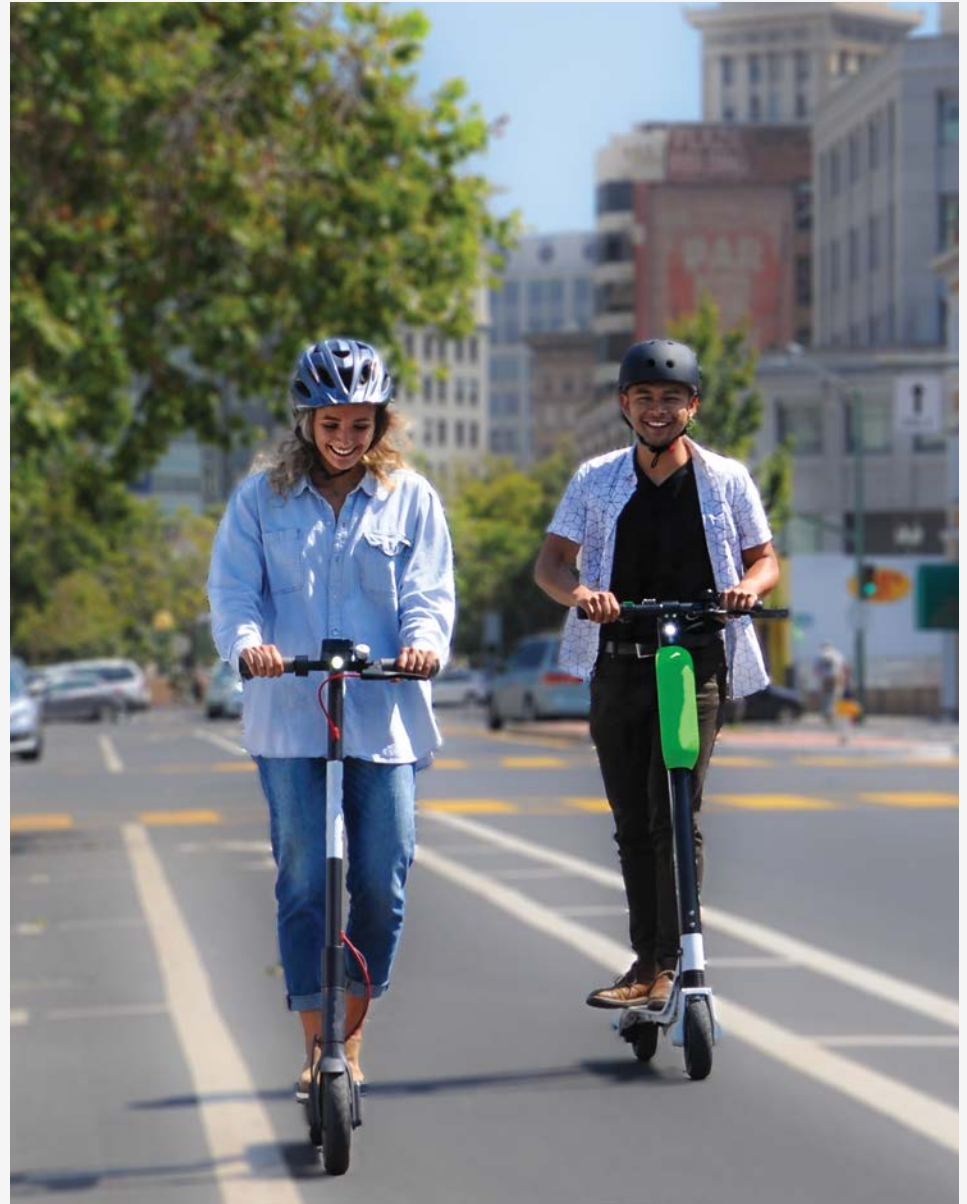
Bike lanes aren't only used by people riding bikes, and have long been used by people on small-wheeled devices such as mobility scooters, skateboards, roller skates, and tricycles. Shared electric scooter, or "E-scooter" sharing companies arrived in Oakland in 2018 offering two-wheeled, battery powered vehicles for short term rental throughout Oakland. Since Fall 2018, riders in Oakland took nearly one million scooter trips covering 1.2 million miles.

#### Public input

OakDOT held five community listening sessions to learn about Oaklanders experience and inform our E-scooter permitting program. Participants asks included the need for the City to fix potholes and design streets to make riding safer.

#### What's next?

Electric scooters have greatly increased the number of Oaklanders using bike lanes, and we expect this trend to continue. Small electric vehicles are rapidly evolving into new forms, helping to meet the needs of a wider range of users. While the future of e-scooters is unknown, one thing is clear: small electric vehicles will be rolling though Oakland's bike lanes for years to come.



# Supporting Infrastructure

Building a network of connected and low-stress bikeways is the first step in supporting existing bicyclists and attracting more people to bicycle in Oakland. To ensure an enjoyable trip from beginning to end, supporting infrastructure is needed at intersections to make crossing easier, wayfinding signs along the way to help reach your destination, and secure parking once you reach your destination to store your bicycle.

## TYPES OF SUPPORTING INFRASTRUCTURE

- **Intersection Enhancements**  
A bike network is not complete without looking at how people cross challenging intersections and reduce conflicts between people driving, walking, and biking. New treatments can be added to retrofit intersections to better serve bicyclists moving through or turning across intersections. Consideration must also be given when designing bike infrastructure adjacent to accessible parking.
- **Bike Parking**  
Knowing you have a secure place to store your bike at your destination is an important part of making a bike trip feasible. The City has thousands of bicycle parking locations, however it is not distributed across the City.
- **Wayfinding**  
The City continues to work on providing wayfinding that directs people to nearby destinations on the safest route and reflect the local bicycling culture and context of each neighborhood.





SUPPORTING INFRASTRUCTURE

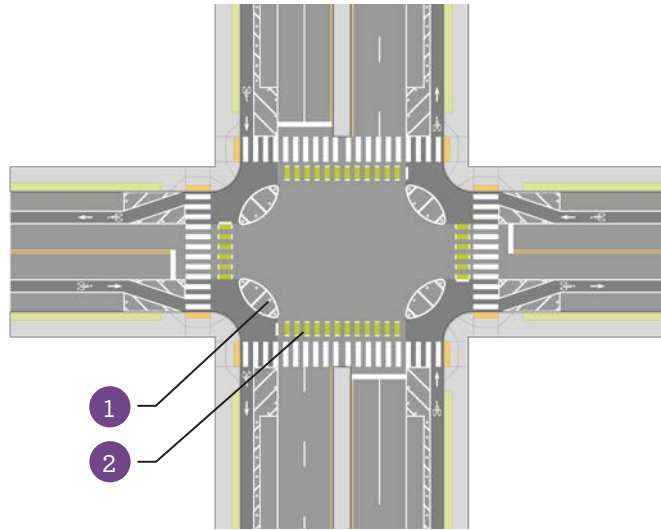
# TYPICAL INTERSECTION TREATMENTS

Street intersections create conflict points between different modes of travel. Intersection design is important because it affects how pedestrians, bicycles, and motor vehicles interact. There is no single intersection design that can be applied everywhere. Variations in each location's context need different design features. The best approach is to create predictable interactions between pedestrians, bicycles, and motor vehicles. This increases safety and comfort for everyone. The following graphics illustrate some common design methods.

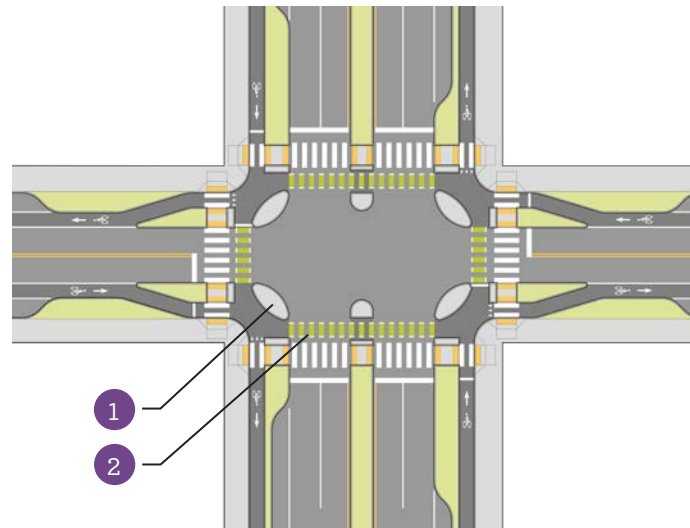
OakDOT consults the NACTO Urban Bikeway Design Guide, AASHTO Guide for the Development of Bicycle Facilities, California Manual on Uniform Traffic Control Devices (MUTCD), Caltrans Highway Design Manual (HDM), AC Transit Multimodal Corridor Guidelines, City standards, and engineering judgment to make context sensitive design decisions.

*Protected intersections minimize exposure to conflicts, reduce speeds at conflicts points, increase sight distance, and clarify right-of-way priority.*

## PROTECTED INTERSECTION Short Term/Lower Cost



## PROTECTED INTERSECTION - Long Term/Higher Cost



### Key Features:

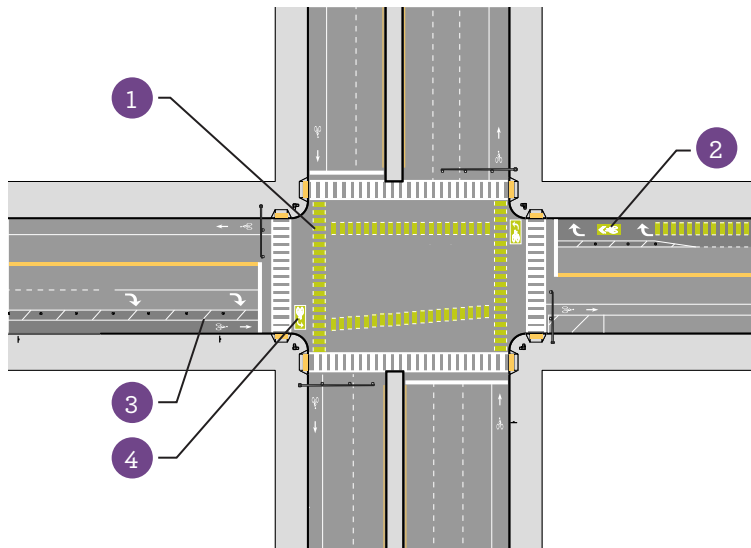
- 1 **Bike lane buffer** – install bike lane buffer treatments that extend into the intersection and include protection islands at corners. The extension of the protection buffer provides a safer and more intuitive crossing through the intersection, and allows bicycles to wait for red lights in a position that is more visible to motor vehicle traffic.
- 2 **Marked bicycle crossings** – install to enhance awareness of bicycles crossing roadway and define dedicated space to make those crossings.

### Optional Features:

- **Buffers** – can be semi-permanent (e.g., flex posts, painted buffer) or permanent (e.g., raised curb)
- **Bicycle signals** – use for separate bicycle-specific signal phasing.
- **Pedestrian and median refuge islands** – can provide additional safety for pedestrians crossing arterial roadway.



## BIKE LANES CROSSING AN ARTERIAL INTERSECTION



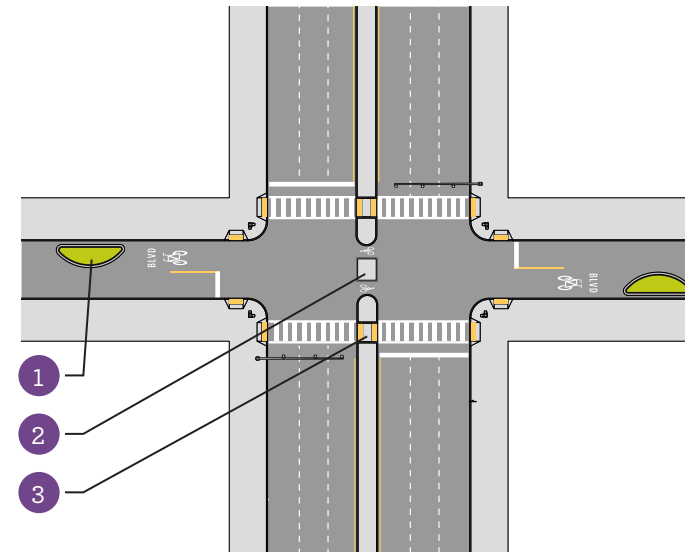
### Key Features:

- 1 **Marked bicycle crossings** – install to enhance awareness of bicycles crossing roadway and define dedicated space to make those crossings.
- 2 **Right-turn channelization** – install to define locations for bicycles and right turning vehicular traffic at the intersection with pavement markings, flexible posts, and possible signalization.
- 3 **Bike lane buffer** – continue buffered area adjacent to bike lane up to the to intersection where possible.
- 4 **Two-stage green turn boxes** – identify space for left-turning bicycles to make a two-stage left turn.

### Optional Features:

- **Bicycle signals** – use for separate bicycle-specific signal phasing

## NEIGHBORHOOD BIKE STREET CROSSING AN ARTERIAL



### Key Features:

- 1 **Traffic calming** – install features on neighborhood bike streets to reduce traffic speeds, such as the chicanes shown above. Other options include speed humps, curb bulbs, traffic circles, etc.
- 2 **Traffic Diverters** – can reduce non-neighborhood cut-through traffic along bike boulevard.
- 3 **Median refuge islands** – can provide additional safety for pedestrians crossing arterial roadway.

### Optional Features:

- **Signalization** – use rectangular rapid flashing beacons (RRFB) or full signalization for pedestrians and bicycles.



“

We need streets that feel safer for everyone.”

OAKLAND RESIDENT,  
LAUREL STREETFAIR

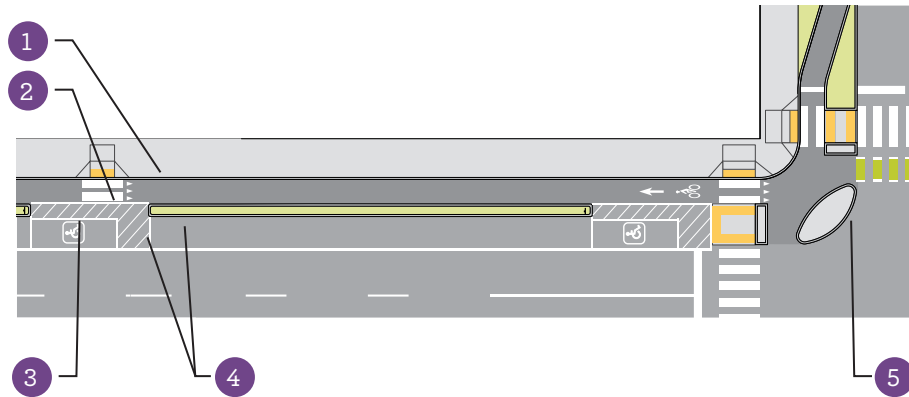
## ADA ACCESS NEXT TO SEPARATED BIKE LANES

At separated bike lanes, ADA accessible parking and transit stops need clear, accessible pedestrian crossings of the bike lane that indicate that pedestrians have the right-of-way.

The City of Oakland reserves 4% on-street parking spaces on a block perimeter to have blue curbs. An accessible crossing (with curb

ramp) across the bike lane shall be provided at a minimum every 150 feet. Locations for accessible spaces are typically selected based on access to key destinations, engineering considerations, and distance to intersections. Sometimes accessible parking spaces are located next to separated bike lanes, as shown below.

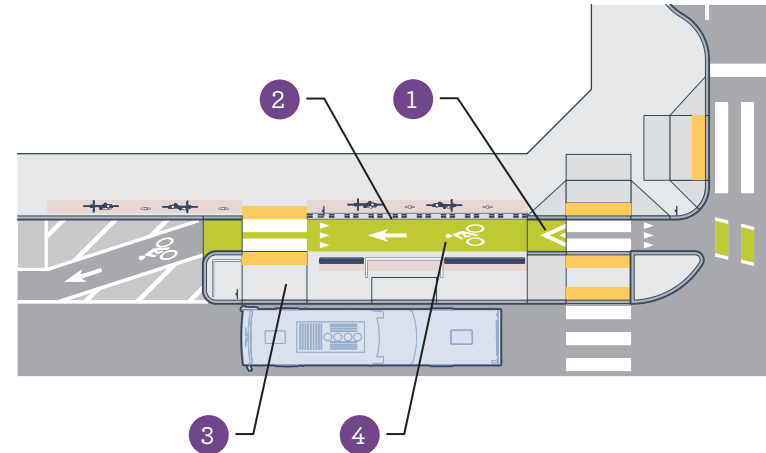
### ACCESSIBLE PARKING SPACE ALONG A SEPARATED BIKE LANE



#### Key Features

- 1 **Curb ramp** – provide a curb ramp at a minimum of 150' from the intersection to connect between street/bike lane and sidewalk grades, if bike lane is at street grade.
- 2 **Access aisle** – provide a 5' minimum wide access aisle, extending the full length of the parking space, to allow a clear path to the curb ramp and sidewalk.
- 3 **Accessible parking signs** –place RESERVED PARKING (R7-8) and, if applicable, VAN ACCESSIBLE (R7-8P) sign at the head of each accessible parking space.
- 4 **Accessible parking space dimensions** – minimum parking space size shall be 8' x 20'. 5' deep rear clear access area connecting the rear and drivers side of the vehicle to the access aisle is recommended.
- 5 **Corner refuge island** – separate the bike lane up to the intersection corner with a refuge island that helps control potential conflicts with turning vehicles.

### ACCESSIBLE TRANSIT ISLAND ALONG A SEPARATED BIKE LANE



#### Key Features

- 1 **Sidewalk-grade bike lane and bike ramp** – bring bike lanes up to sidewalk and transit island grade to provide level pedestrian access between sidewalk and transit island.
- 2 **Vertical railing** – direct pedestrians to the designated crossing areas.
- 3 **Accessible landing zone** - provide a clear area with space for wheelchairs to turn and for bus ramp/lift to deploy.
- 4 **Green paint** - highlight the bike lane.





SUPPORTING INFRASTRUCTURE

# BIKE PARKING

Bicyclists expect a safe, convenient place to secure their bicycle when they reach their destination. This may be short-term parking of 2 hours or less, or long-term parking for employees, students, residents, and commuters.

# 29

CORRALS

..... can hold .....

# 400

BICYCLES

# 13

LOCKER LOCATIONS  
IN OAKLAND

..... can hold .....

# 440

BICYCLES



## TYPES OF BICYCLE PARKING



### Bike Racks

Bike racks provide short-term bicycle parking and is meant to accommodate visitors, customers, and others expected to depart within two hours. It should be an approved standard rack, appropriate location and placement, and weather protection. As of January 2019, over 1,900 locations in Oakland have bicycle racks.



### On-street Bike Corrals

Bike corrals consist of bicycle racks grouped together in a common area within the street traditionally used for automobile parking. Each motor vehicle parking space can be replaced with approximately 6-10 bicycle parking spaces. Corrals may be prioritized for installation where demand for bike parking is higher than can be accommodated on the sidewalk. Corrals will be installed in response to requests from businesses or business improvement districts and require a signed maintenance agreement from the applicant.



### Bicycle Lockers

Bicycle lockers are intended to provide long-term bicycle storage for employees, students, residents, commuters, and others expected to park more than two hours. Long-term facilities protect the entire bicycle, its components and accessories against theft and against inclement weather, including snow and wind-driven rain. Renting an Oakland eLocker costs five cents an hour, and the first five hours of each rental are free.



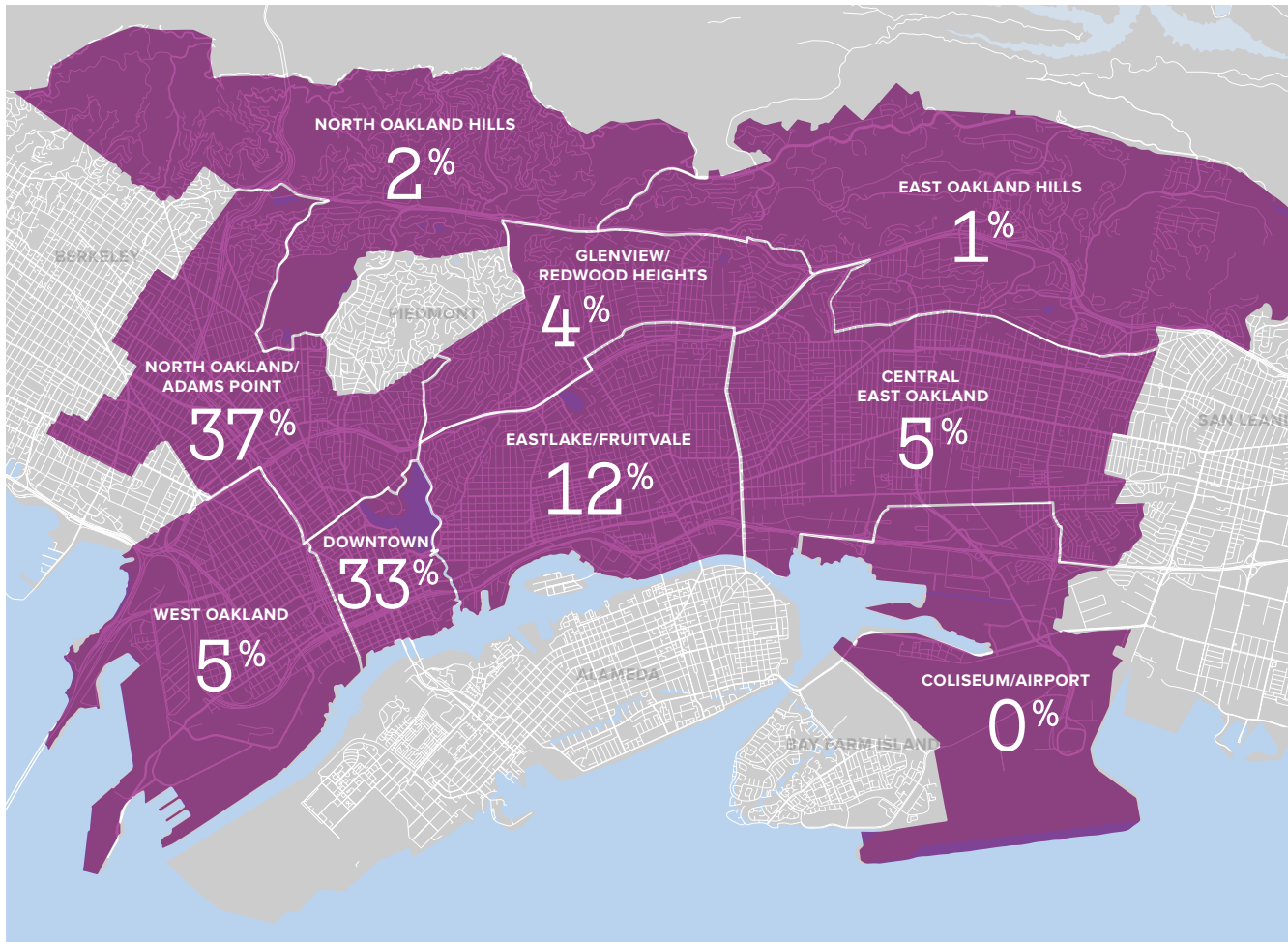
### Secure Parking Area

A Secure Parking Area for bicycles, also known as a Bike Station, is a semi-enclosed space that offers a higher level of security than ordinary bike racks. Bike Stations provide high-capacity parking for 10 to 300 or more bicycles. Increased security measures create an additional transportation option for those whose biggest concern is theft and vulnerability. Oakland's two Bike Stations are located at Fruitvale and 19th Street BART stations where valet parking is free during the day. Two additional Bike Stations are in development for MacArthur and Rockridge BART stations.

*Bike parking should consider spacing and rack type to accommodate adaptive bicycles.*



DISTRIBUTION OF BIKE PARKING CURRENTLY AVAILABLE



**Bike Parking Recommendation #1:**

While some bicycle parking is required as part of new development, the majority of parking is installed by the City in the public right of way via the by-request CityRacks Program (now in its 20th year). Many key destinations without bike parking are on private property. The City should continue to work with schools and private property owners to site bike parking at locations outside the scope of the by-request program. Locations in the flatlands should be prioritized. For more information on bike parking or to request a rack, go to <https://www.oaklandca.gov/topics/bicycle-parking>



**Bike Parking Recommendation #2:**

Install more customized bicycle parking designs that are both functional and reflect the neighborhood in which they are located. Bike parking can be part of a larger placemaking and public art initiative.





SUPPORTING INFRASTRUCTURE

# WAYFINDING

The Department of Transportation has made great strides to provide direction to people bicycling. Currently, over 130 lane miles of Oakland's bikeway network have wayfinding signs with destinations, distances, and directions.

What we heard from community groups is that there is a desire to customize wayfinding elements so that they reflect different cultures of biking and reflect people of different ages and abilities biking in Oakland. Efforts like this are already happening through Oakland's Paint the Town pilot program where community members can paint temporary street murals on Oakland's roads.

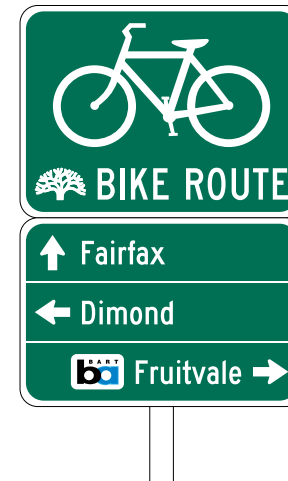
CURRENT WAYFINDING SIGN TYPES



Confirmation Sign



Turn Sign



Decision Sign



Branded street signs on Berkeley's Bicycle Boulevards support a broader wayfinding approach.



### Wayfinding Recommendation #1

OakDOT will engage communities in a collaborative design process to develop placemaking signage for Neighborhood Bike Routes. The signs will complement bicycle wayfinding signage by depicting neighborhood identities.



OakDOT's Paint the Town program allows communities to paint temporary murals on Oakland's streets. The program adds playfulness and art to the street in the spirit of bringing communities together. The mural in the image above is located on Arthur Street between Dashwood and 78th Avenue. The program could serve as a model for designing wayfinding signs for Neighborhood Bike Routes.



### Wayfinding Recommendation #2

To provide a low-stress experience, sometimes bike facilities are shifted off of high stress roads onto parallel routes. We heard that it's not always clear when bikeways change designation how to navigate to the nearest route. OakDOT will continue to evaluate wayfinding needs where low-stress bikeways end and install wayfinding to parallel routes where available.



Residents submitted ideas for new neighborhood bike route pavement markings to better reflect their unique neighborhoods.