



CHAPTER 3: EXISTING CONDITIONS

INTRODUCTION

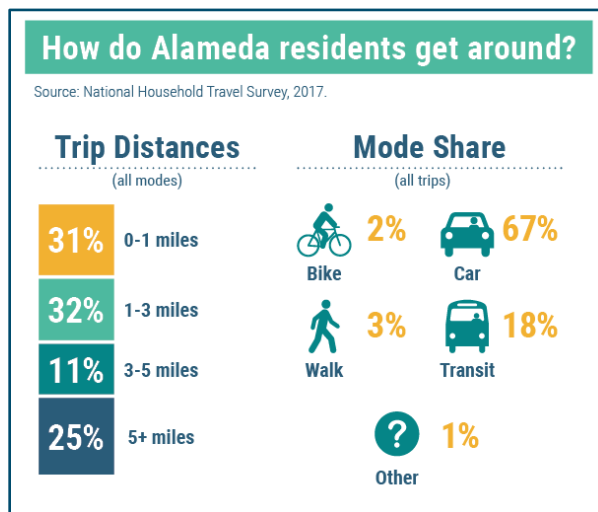
Understanding how well Alameda’s active transportation network operates today is an important first step in determining what can be done to improve the active transportation network for the future. This chapter provides an overview of how Alamedans use and perceive the active transportation network and how they would like it to be; the existing pedestrian, bicycle and trail facilities on the ground; and data-driven assessments of the stress levels and safety of our streets.

For a more in-depth review of the existing conditions, see *Appendix D. Existing Conditions Report*.



TRAVEL PATTERNS

The most recent data on travel patterns, from 2017 (pictured below), shows that only 2% and 3% of all trips in Alameda are by bike and foot, respectively, though some of the 18% of trips by transit likely include some walking and biking. However, one third of all trips are less than one mile, an easy walking distance for most, and another third are one to three miles, an easy biking distance for most.



Tallies conducted by the Countywide Safe Routes to Schools program in Alameda in 2017 and 2018 found that, on average, about **one third of students walk to school and 8% bike**, higher than other districts in the county. These percentages vary, with the highest reported biking rate of 25% at Lincoln Middle School.

COMMUNITY PERCEPTIONS AND BEHAVIORS

In late 2019, the City conducted a statistically significant survey to gather data on how people travel around Alameda, their concerns about existing walking and bicycling conditions, their transportation challenges and the types of changes Alamedans want to see in the future, including an assessment of level of comfort crossing the street or riding a bicycle under different conditions. It was a representative survey with responses from over 1,000 randomly selected Alamedans age 16 or older. Key findings from this survey are included below, and the full survey, including methodology, can be found in *Appendix B. Summaries of Community Survey and Public Engagement*.

- » **75%** of Alameda residents use active transportation at least a few times a month when traveling within the city, and **32%** do the same when leaving the island.
 - Within Alameda, nearly **70%** of residents walk, almost **40%** ride a bike, and **three percent** scooter at least a few times a month.
- » While most residents believe Alameda is a great place to walk and bike, over **80%** of City residents think Alameda should do more to make it safer to walk across busy streets, and over **70%** think Alameda should do more to make it safer for people to bicycle.
- » More than half of residents (**55%**) believe they would drive less if biking and walking in Alameda were safer.
- » Two thirds (**66%**) say they have car trips they could replace with walking or biking.
- » Over half (**56%**) of Alameda residents regularly take trips by bike, while nearly all (**92%**) regularly take trips by walking.
- » Seven in ten residents indicate children in their household walk at least a few times a month. Over half of school-aged children ride a bike a few times a month and **8%** ride a scooter, both of which are higher rates than adults.
- » Bike lanes, especially buffered and separated bike lanes, dramatically increase comfort with biking on streets with faster, busier traffic
- » Introducing painted crosswalks greatly improves how safe Alamedans feel crossing streets without stop signs or other controls and reducing crossing distances across larger streets helps further improve comfort levels.

EXISTING FACILITIES

PEDESTRIAN

The City of Alameda has a well-connected pedestrian network, with sidewalks on both sides of most streets, short connector walkways through blocks and marked pedestrian crossings at many locations. Shared use paths and off-street walkways supplement this network, increasing connectivity and providing access along the waterfronts.



High-visibility crosswalks on Central Avenue

In addition to on- and off-street pedestrian infrastructure, crossing treatments at intersections and midblock locations are essential for maintaining the continuity, comfort and safety of the overall pedestrian network, since crossings are often the most stressful movement for people walking, and where most pedestrian collisions occur. The City uses a range of traffic control treatments to facilitate crossings. As of the end of 2022, there are 90 traffic signals in the City and 23 Rectangular Rapid Flashing Beacons (RRFBs). For more details about the many types of pedestrian facilities in Alameda, see *Appendix D. Existing Conditions Report*.

Alameda has over 200 miles of sidewalks and 26 miles of shared use paths (Table 1). The existing pedestrian network is shown in Figure 1.

Table 1. Existing Pedestrian Facility Mileage

Pedestrian Facility Type	Existing Length (miles)
Sidewalks	200*
Shared Use Path	26
Off-street Walkway (paved)	8
Off-street Walkway (unpaved)	4
Total	238

*Existing and planned for construction between 2020-2024

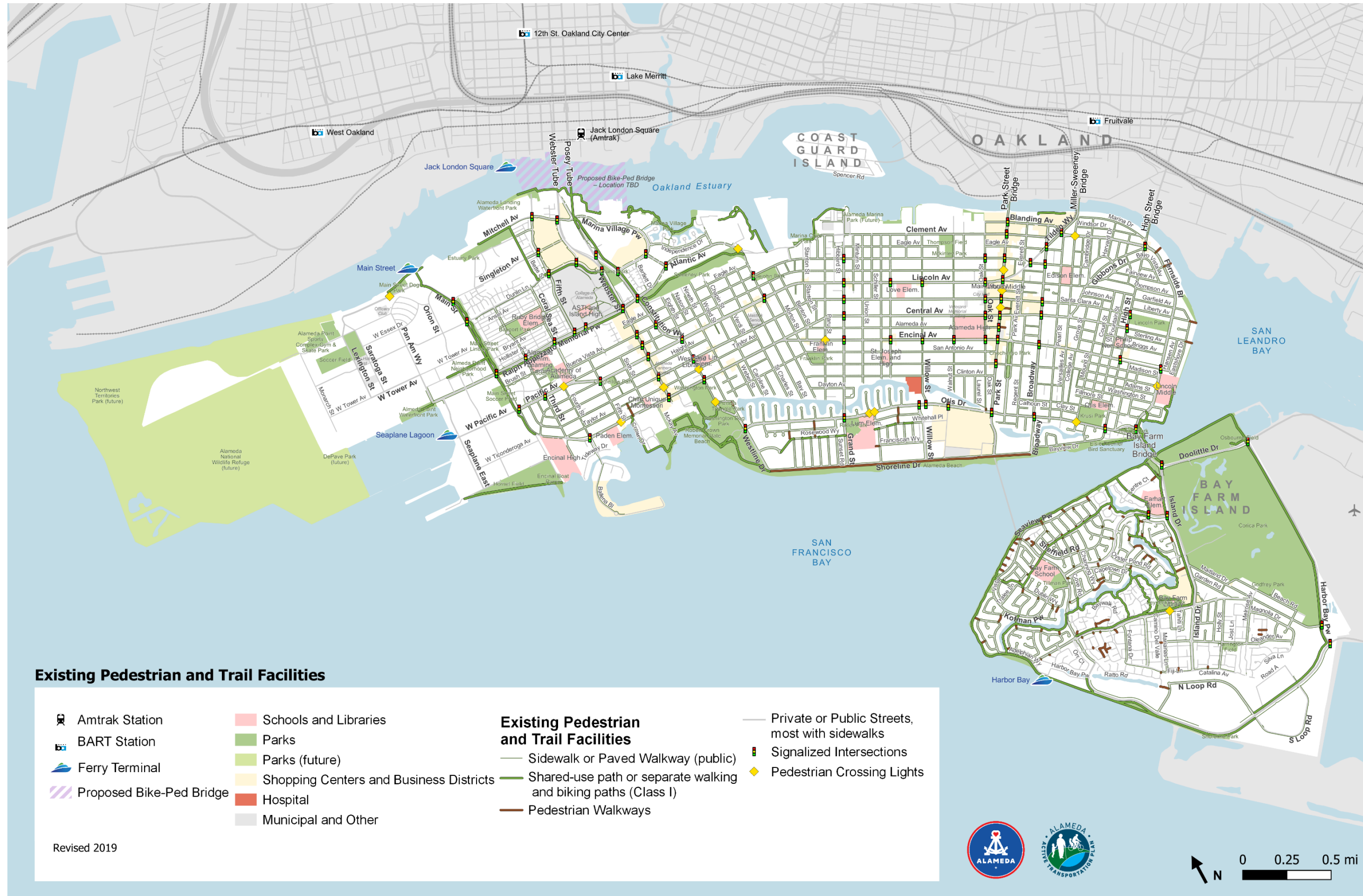


Figure 1. Existing Pedestrian and Trail Facilities

BICYCLE

Alameda has a strong bicycling culture, many people and families who bike and a well-established existing bicycle network upon which to build. Many schools are connected to residential areas by bicycle facilities, and large numbers of students ride their bicycles to school, especially in higher income, lower density neighborhoods.

The City of Alameda’s existing bicycle network includes a mix of shared use paths, separated bike lanes, bike lanes (standard and buffered) and bike routes (shared lanes with only signage and painted sharrows). Some facilities, such as the Cross Alameda Trail through Jean Sweeney Open Space Park, are easy and comfortable for most people to use. Other facilities, such as shared lanes and standard bike lanes along major streets, only serve those people willing to ride in and adjacent to high-speed, high-volume vehicular traffic.

The City was an early adopter in the use of “low-stress” bikeway facilities, which are bikeways that are more comfortable for people bicycling because they are either physically separated from traffic or exist on low-speed, low-volume streets. In 2009, the City installed separated bike lanes with concrete curb protection along Fernside Boulevard connecting the Bay Farm Bicycle Bridge to Lincoln Middle School, and, in 2015, separated bike lanes were installed along Shore Line Drive. These were some of the first separated bike lanes in the Bay Area.



Two-way separated bike lane on Shore Line Drive

More recently, best practices nationwide have started to address the challenges and stresses of bicycling through intersections. Alameda installed a new, safer intersection at Otis Drive and Grand Street in 2021: the City’s first “protected” intersection.

Reflecting these many investments and the City’s strong bicycling culture, in 2021, the City was awarded the silver-level for a Bicycle Friendly Community by the League of American Bicyclists, advancing Alameda to silver from the bronze-level award first given to the City in 2012.



Having ample and easily accessible bike parking and other support facilities can encourage riders to make more trips by bicycle. Alameda has over 650 bicycle racks, most clustered around the city’s main commercial districts, and 48 secure, inexpensive bicycle lockers that can park 122 bikes throughout the city, including at all ferry terminals. In 2021, the City’s first in-street bicycle parking corrals (six total) were installed along Park Street and Webster Street.

The City of Alameda’s existing bicycle network includes approximately 65 miles of bikeways, including new bikeways that are funded and will be built through 2024. Table provides an overview of the existing bikeway mileage in Alameda, and Figure 2 maps these facilities. These facility types are described in Chapter 5.

Table 2. Mileage of Existing Bikeways (Including Bikeways to be Constructed through 2024)

Bikeway Type	Existing Length (miles)	Low-Stress
Shared Use Path	26	✓
Separated Bike Lane	7	✓
Buffered Bike Lane	3	
Bike Lane	18	
Neighborhood Greenway	0	✓
Bike Route	11	
Total	65	

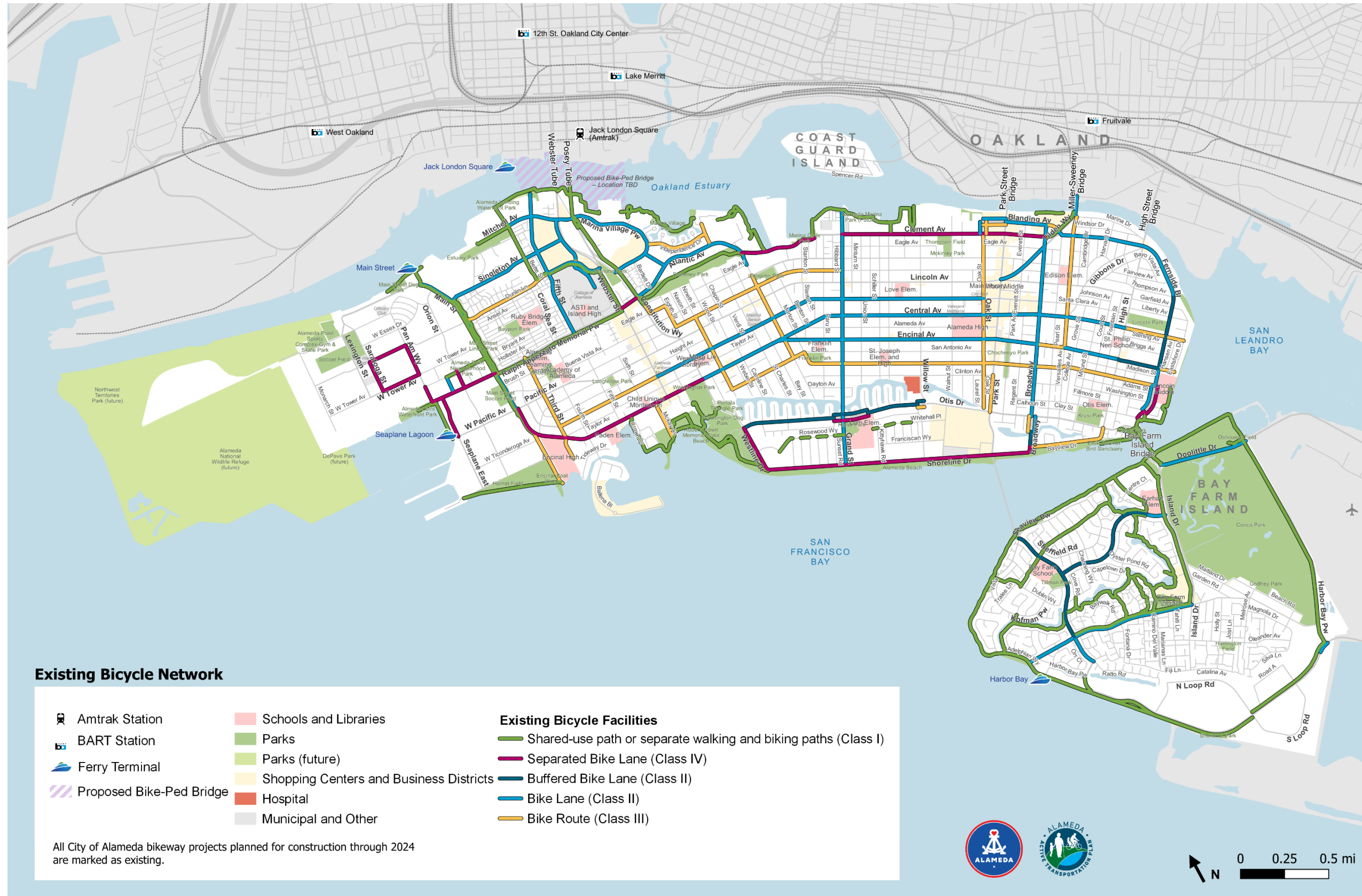


Figure 2. Existing Bicycle Network

SLOW STREETS



In early 2020, Alameda, along with many cities around the nation, implemented a new type of facility, called “Slow Streets,” to facilitate physical distancing during the COVID-19 pandemic. By placing barricades and “no through traffic” signs at select intersections on local streets that were already bicycle routes, automobile traffic was reduced and more space was added for the community to safely walk, run, bike, scooter and roll both for exercise and for transportation. Over a one-and-a-half-year period, 4.7 miles of streets became Slow Streets in Alameda. These Slow Streets have remained in place since then, as places with less and calmer traffic that are still used for bicycling and walking.

What’s next for Slow Streets?

Guided by the recommendations in this Plan and Council direction in December 2021, the existing Slow Streets that are recommended to be Neighborhood Greenways will continue as they are currently, until they transition to Neighborhood Greenways. This effort will be prioritized for the near term using lower-cost infrastructure that can be built quickly. These streets are Pacific Avenue, San Jose Avenue and Versailles Avenue. This transition work will happen in tandem with building out the 2030 Low-Stress Backbone Network that includes other Neighborhood Greenways. The two streets not recommended as Neighborhood Greenways – Santa Clara Avenue and Orion Street – will be removed as Slow Streets shortly after the Plan is adopted.

See Chapter 5 for the proposed Neighborhood Greenways, and a description of this facility type.

See Chapter 8 for the capital project implementation priorities, including transitioning the Slow Streets and the 2030 Low-Stress Backbone Network.

NETWORK STRESS ANALYSES

Community input clearly demonstrates the need for more comfortable biking and walking facilities throughout the city to encourage active travel and increase safety. To better understand existing conditions and where to target improvements, a data-driven analysis of the stress levels of Alameda’s streets was conducted for both active transportation networks. This Level of Traffic Stress (LTS) analysis quantifies the level of traffic discomfort a bicyclist or pedestrian experiences on any given road.⁴

⁴ All network analyses were completed in 2019 and may not reflect the impact of any of the facilities that have been built since completing the analyses.

The Bicycle Level of Traffic Stress (BLTS) helps identify the areas of the city that are not currently served by a low-stress and comfortable bicycle network. It analyzes stressfulness for people riding bicycles based on street characteristics, including the street width, traffic speed and volume and the presence of parking. Roads are rated on a scale of 1 (low stress) to 4 (high stress).

The analysis is based on the perspective of an “Interested but Concerned” person bicycling. Most people in the United States (50-60%) have little tolerance for interacting with motor vehicle traffic while bicycling unless volumes and speeds are low. This has proven to also hold true in Alameda, based on the statistically significant survey conducted in Alameda in 2019 (described earlier in this chapter) which found that 46% of Alamedans fall into the “Interested but Concerned” category (Table 3). While interested in biking, this group of people will generally avoid riding on higher stress streets.

Table 3. Bicycle Comfort Typology of Alamedans

	Not Interested or Able	Interested but Concerned	Somewhat Confident	Highly Confident
Percent of Alamedans	22%	46%	26%	7%

The key takeaways from the BLTS analysis of Alameda streets are listed below.

- » **High-stress major roadways** – Nearly 60% of Alameda’s major roadways (called “arterial streets”) are classified as high-stress (BLTS 3 or 4). Arterials provide important north-south and east-west connections through the city but bicycling on these streets is uncomfortable for the majority of bicyclists. While most local streets are low-stress (BLTS 1 or 2), many people cannot reach destinations using only low-stress bikeways because of the barriers presented by arterials.
- » **Low-stress parallel shared use paths** – Some of Alameda’s high-stress streets, such as Ralph Appezzato Memorial Parkway and Island Drive, have parallel shared use paths which provide low-stress alternatives to bicycling on, and walking near, the high-stress arterials. While the shared use paths themselves are low-stress, the connections to the paths from adjacent streets may still be stressful for bicyclists or pedestrians.
- » **Poor low-stress access to commercial areas** – All commercial and shopping areas in Alameda are primarily served by high-stress bikeways. Webster Street and Park Street, the City’s two main commercial areas, have the highest stress rating of BLTS 4.
- » **No low-stress access to Oakland** – All bridges connecting the City of Alameda to the City of Oakland are high stress, and the shared use path in the Posey Tube is extremely narrow and uncomfortable for people walking and bicycling.

The Pedestrian Level of Traffic Stress (PLTS) is a similar analysis to the BLTS, but with a focus on comfort associated with walking adjacent to traffic and when crossing a street. The PLTS for Alameda focused on intersections and mid-block crossings where marked crosswalks are present since Alameda has only a handful of sidewalk gaps. The analysis found that crossings of busy streets with multiple lanes of traffic and travel speeds faster than 25 mph, are higher stress.

For more information on the Level of Traffic Stress analyses for bicyclists and pedestrians, including maps with the LTS ratings, see *Appendix F. Level of Traffic Stress and Trip Potential Analysis*.

SAFETY

Safety is the highest priority for all transportation plans, projects and decisions, per the City’s adopted Vision Zero Action Plan. As part of the development of the Action Plan, the City conducted an extensive safety analysis of all crashes over a ten-year period. This Active Transportation Plan relies on the bicycling and walking findings of that crash analysis (included as *Appendix E. Detailed Crash Analysis Report*) to understand the safety needs of people walking and biking.

People walking, rolling and biking are among the most vulnerable road users in Alameda. Between 2009 and 2018, 2,229 people were injured or killed in collisions on streets in Alameda.

- » People walking or biking are involved in 39% of crashes and 62% of life-changing injury crashes, despite comprising only 5% of Alameda’s commute-to-work mode share.
- » In 55% of pedestrian crashes, the driver failed to yield to pedestrian (either at a marked or unmarked crosswalk).
- » In 20% of pedestrian crashes, a pedestrian failed to yield right of way to a driver.
- » Bicycle crashes are linked to a wide range of behaviors; however, improper yielding (by both drivers and bicyclists) and improper turning were the most frequently cited traffic violations and were associated with 27% and 14% of bicycle crashes, respectively.
- » The top two behaviors associated with crashes that resulted in a death or life-altering injury were failure to yield to pedestrians and traveling at unsafe speeds.

Pedestrians and bicyclists make up...

5% of Alameda’s commute to work mode share

And are involved in...

39% of Alameda’s crashes

62% of Alameda’s severe crashes

Speed

Vehicle speed was a top factor in crashes and has a large impact on traffic safety in Alameda for all modes. Speed impacts the ability of road users to avoid a crash and higher speeds increase victim injury severity. The impacts are especially significant for crashes between motor vehicles and pedestrians or bicyclists, especially seniors. Dropping vehicle speeds from 30 to 20 miles per hour, for example, reduces the risk of serious injuries and fatalities by more than half.

Street Design

Safely designed streets is a core tenet of Vision Zero. While it is important for all road users to travel safely and follow the law, Alameda’s streets must also be designed to minimize the chances of an error causing a life-changing injury or death. Traffic enforcement can change behavior in the very short-term, while street design can provide permanent solutions.

High Injury Corridors

The City’s Vision Zero Action Plan used a data-driven analysis to identify street segments that are High Injury Corridors for all travel modes, and also by individual mode, including pedestrian and bicycle. The High Injury Corridor maps show those streets with the highest crash densities and weight crashes by severity. Crashes that resulted in a fatal or life-altering injury receive a higher weight than other injury crashes. Three tiers are mapped, with Tier 1 indicating the streets with the greatest frequency and severity of crashes, as shown in Figures 3 and 4, for pedestrians and bicycles, respectively.

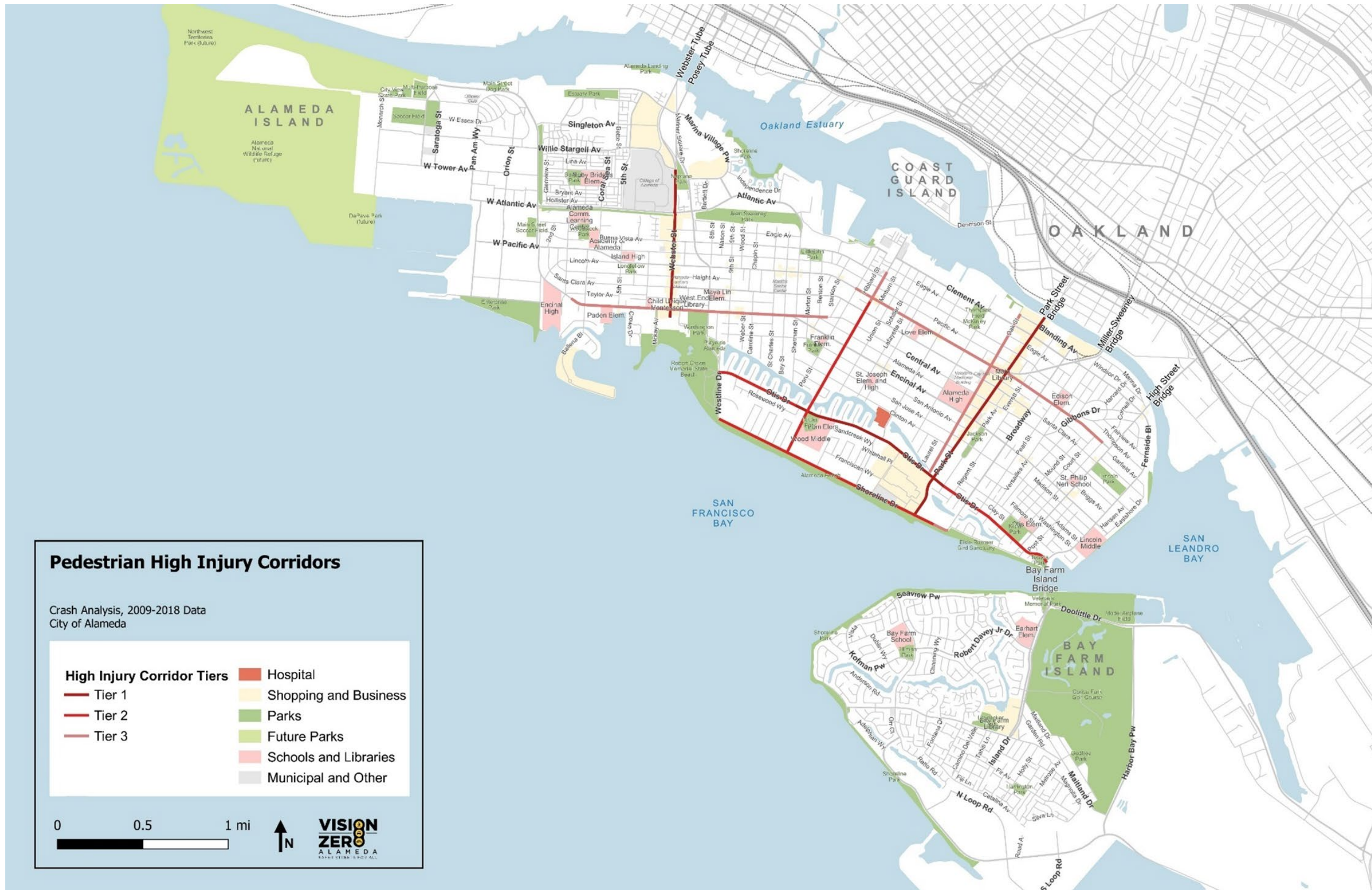


Figure 3. Pedestrian High Injury Corridors

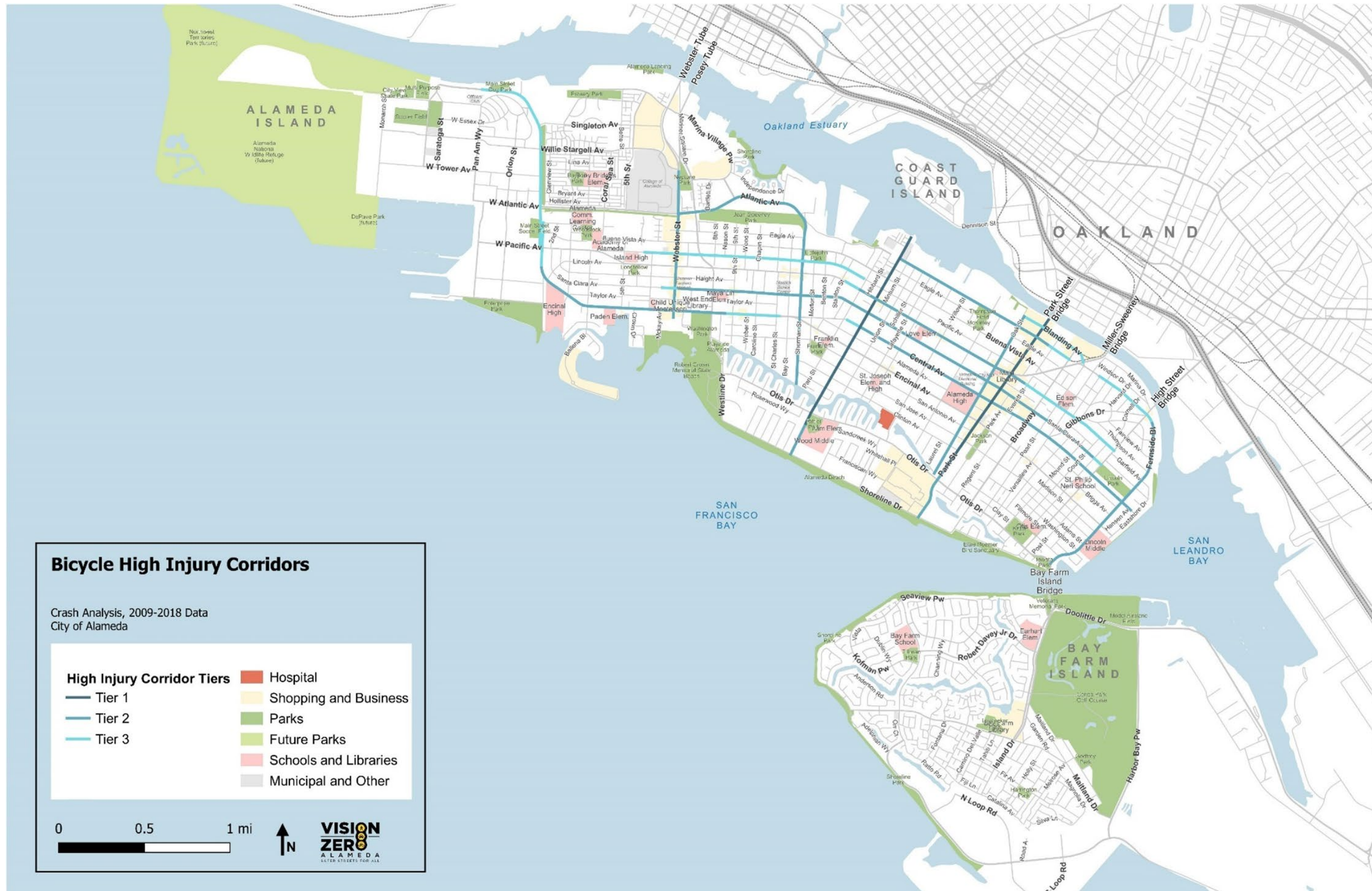


Figure 4. Bicycle High Injury Corridors

OPPORTUNITIES FOR IMPROVEMENT

Alameda's active transportation network, while successful in some ways, can use improvement. The existing pedestrian network is extensive and covers much of Alameda, but there is room to make walking more comfortable, attractive, convenient, and safer for the community. The existing bicycle network covers parts of the city and includes some high-comfort (low-stress) bikeways, but there are significant deficiencies that make traveling by bicycle challenging and discourage its common use by the majority of Alamedans.

Key opportunities for active transportation improvements include:

- Ensuring that busy streets do not create barriers to bicycling or walking, by making them safer to cross, including for people with disabilities;
- Closing gaps in the existing bicycle network and ensuring the network provides direct connections to popular destinations including schools;
- Upgrading existing facilities and adding new facilities to create a low-stress, connected and comfortable bikeway network that serves people of all ages and abilities;
- Improving north-south bikeway connectivity;
- Increasing sidewalk and shared use trail maintenance and making upgrades; and
- Adding and improving pedestrian and bicycle crossings of the estuary.