

Brisbane Bicycle and Pedestrian Master Plan

February 2017



Acknowledgments

Bicycle Pedestrian Master Plan Stakeholder Group

The City of Brisbane would like to thank the members of the stakeholder group who helped guide the development of this plan. Members of the group included:

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- » Linda Dettmer, representing the Complete Streets Safety Committee
- » Kima Hayuk, representing the Open Space and Ecology Committee
- » Mayor Cliff Lentz, representing the City Council
- » Susan Maynard, representing the Complete Streets Safety Committee
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* provided under separate cover



01

Introduction

Introduction

Brisbane, known as the “City of Stars,” is located in the northern part of San Mateo County and is home to 4,400 residents. Nestled in San Bruno Mountain, Brisbane borders San Francisco to the north, Daly City to the northwest, South San Francisco to the southeast, and unincorporated lands of San Mateo County to the south and west. The east side is bordered by the San Francisco Bay and a lagoon. Bayshore Blvd and U.S. 101 are the major arterials running north-south. Trails, parks, and open spaces, such as San Bruno Mountain State Park, are an integral part of the City’s landscape where residents and visitors enjoy ample opportunities for walking and biking.

Brisbane’s small size and community character is highly valued by residents and played a key role in developing this Bicycle and Pedestrian Master Plan (Plan). This Plan will provide a broad vision and serve as a blueprint for the City to improve the walking and biking environment, secure funds dedicated to improving safety, and increase walking and biking trips in Brisbane.

The Plan identifies policies that support biking and walking, along with a preferred set of new project investments that range from adding sidewalks and path connections to new or improved bicycle lanes to improved street crossings. The Plan provides opportunities to connect the several areas of the City together, and to link residents to employment areas, transit, and the world class recreational facilities available to Brisbane residents, especially San Bruno Mountain.

Purpose of the Plan

This Bicycle and Pedestrian Master Plan provides a strategy for the development of a comprehensive bicycle and pedestrian transportation network, support facilities, and support education, encouragement,

enforcement and evaluation programs. This Plan documents what bicycling and walking is like now in Brisbane, reasons for improvements, and a strategy to make the City safer and more comfortable to bicycle and walk for transportation and recreation for all ages and abilities.

Setting

The City of Brisbane, just under five square miles, has a mix of land uses that include open space, aquatic, residential, and commercial and retail. The City is divided into 13 subareas, each with a designated land use detailed below. The Baylands and Bayshore areas in the north, and Crocker Park in the west, are designated for commercial and retail development. Central Brisbane is primarily residential, with small portions of open space and commercial and retail activity along Visitacion Avenue and the northern portion of the area. Northeast Ridge and Owl and Buckeye Canyons contain open space and parks. Figure 1-1 shows current land uses in the City.

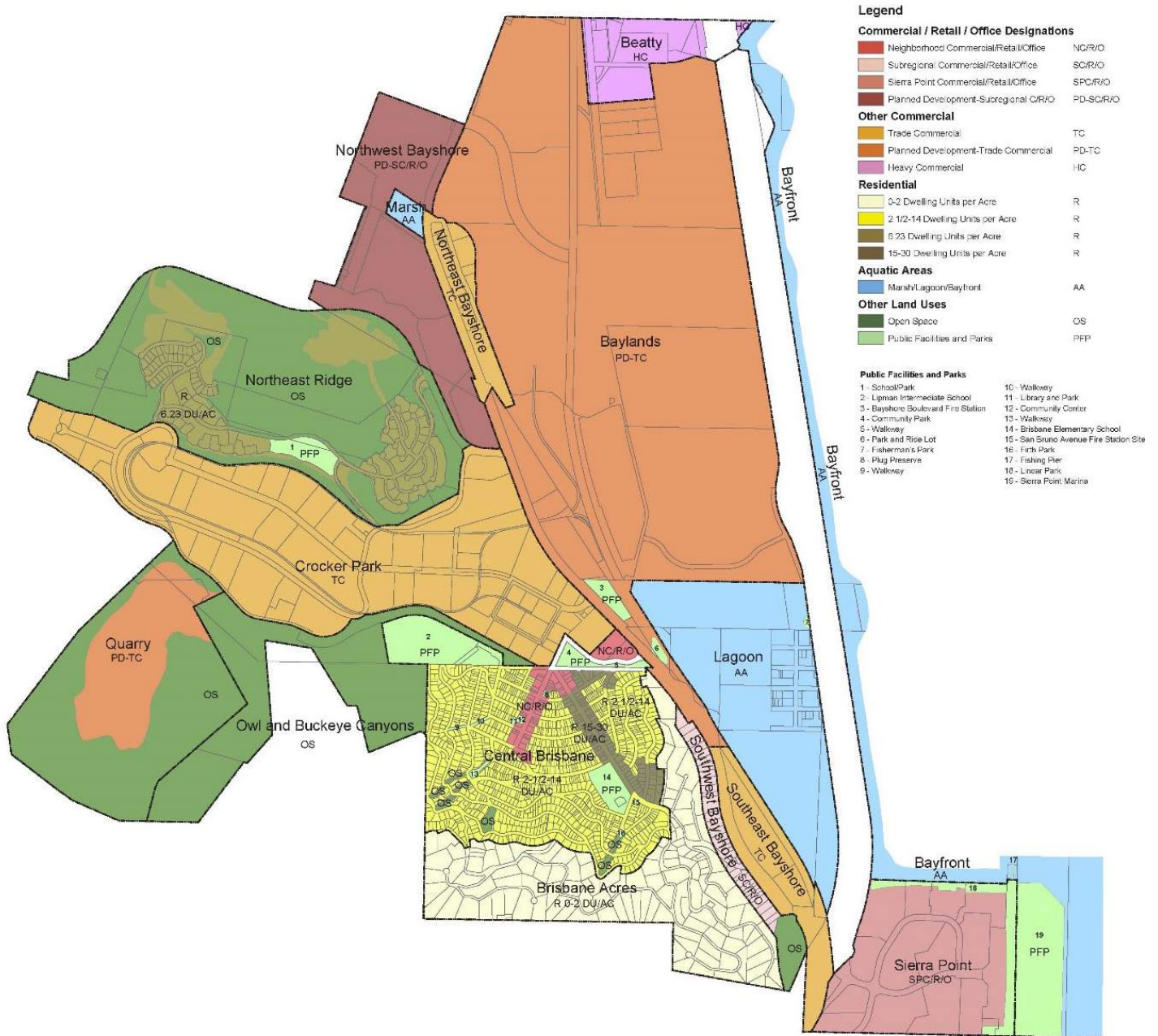


Figure 1-1: 1994 General Plan Land Use Diagram, City of Brisbane

Planning Process and Public Involvement

Brisbane encouraged residents, advocates, and agency partners to provide input at all stages of development for this Plan, to ensure the Plan truly reflects the diverse needs and priorities of the community. The City held two meetings with a stakeholder working group that included members of several City departments as well as local bicycling and walking advocates. A survey was conducted during the Spring and Summer of 2016, receiving over 90 responses. Public input was also gathered from over 20 people at an event at the Brisbane Farmers Market on October 20, 2016 and on the draft plan at a City Council meeting on December 8, 2016.

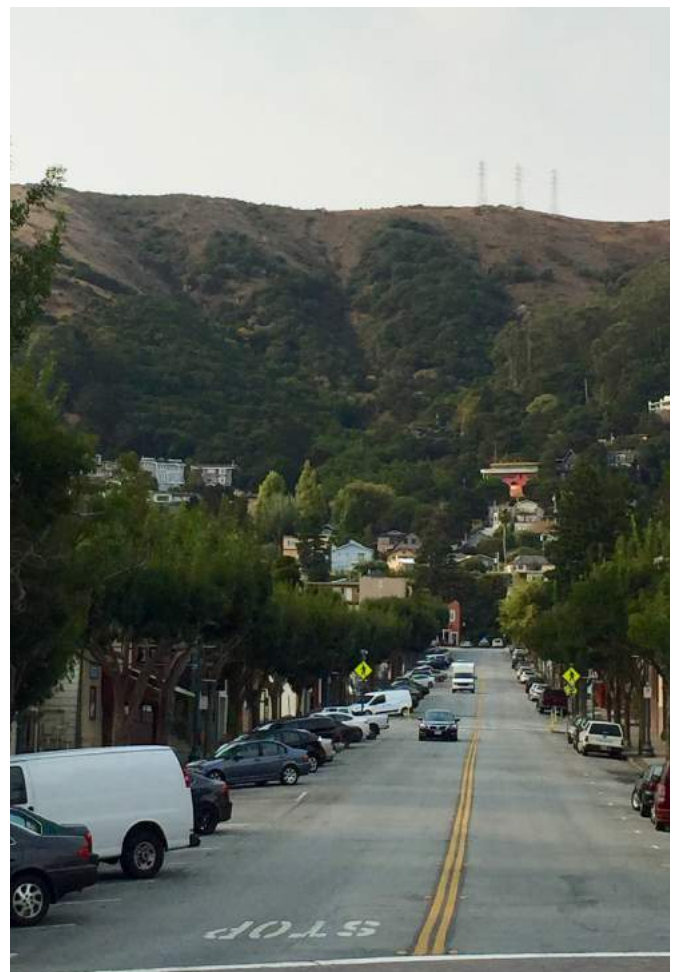
Plan Vision, Goals, and Policies

The Plan includes an overall vision, several specific goals and a set of policies that are intended to help guide the City's investments in its active transportation network. The vision, goals, and policies were developed based on a review of the City's existing policies, as established through the City's general plan, specific plans, and other planning documents, as well as a review of County plans and neighboring plans.

The following pages present the vision, goals, objectives, and policies for the plan.

- » The vision is an aspirational statement for bicycling and walking in Brisbane.
- » Four goals provide definition of that vision in terms of specific, long term outcomes that the City will work to achieve through the implementation of this plan.
- » Objectives provide additional specificity for the goals.
- » Policies identify how Brisbane will implement the goals and objectives through a variety of actions and investments.

Together, these elements provide a strategic framework and direction to the City for implementation of bicycle and pedestrian infrastructure in Brisbane.



VISION: *A connected network that accommodates all users and is designed to improve safety and increase walking and bicycling in Brisbane.*

Goal 1: Connect Brisbane’s bikeway and pedestrian system to the County and regional networks.

Objective 1.A: Create functional, safe and efficient circulation systems for bicyclists and pedestrians.

Policy 1.A.1: Continue to connect Brisbane’s bikeway and pedestrian system to the County and regional networks.

Policy 1.A.2: Prioritize projects that close gaps in existing bicycle or pedestrian networks.

Policy 1.A.3: Provide support facilities, such as bicycle parking, sidewalk furniture, and way-finding, at appropriate locations such as employment centers, schools, and commercial centers to create a sense of place and promote Brisbane’s character.

Objective 1.B: Provide improved access and connections to open space and trails.

Policy 1.B.1: Prioritize projects that provide connections to existing and proposed trailheads.

Policy 1.B.2: Seek to retrofit existing roadway rights-of-way to provide a system of paths and on-street facilities that connect the community internally and to the County’s trail network.

* Green Streets refers to the inclusion of landscape elements into the street right-of-way to help reduce storm water runoff. In some contexts, Green Streets may be a component of Complete Streets, in that these landscape features enhance the pedestrian and bicycle experience and thereby encourage all modes of travel.

Goal 2: Integrate Complete Streets into the transportation network to provide for a balanced, connected, safe and convenient multi-modal network.

Objective 2.A: Plan, design, construct, and manage a Complete Streets transportation network that accommodates the needs of all mobility types, users, and ability levels.

Policy 2.A.1: Integrate bicycle and pedestrian facilities as part of the design and construction of new roadways and, where there is available right-of-way, upgrades or resurfacing of existing roadways.

Policy 2.A.2: Provide safe and convenient access to existing and future transit facilities and stops.

Policy 2.A.3: Incorporate Green Streets* best practices, as appropriate to the context, for new streets and street retrofits, to enhance the pedestrian and bicyclist experience, to promote low impact development (LID) consistent with state water board initiatives to reduce the impacts of development on storm water resources and to enhance the natural environment.

Policy 2.A.4: Comply with the Complete Streets policy requirements of Caltrans and the Metropolitan Transportation Commission concerning safe and convenient access for bicyclists and pedestrians.

Policy 2.A.5: Monitor citywide transportation projects to ensure that the needs of bicyclists and pedestrians are considered in programming, planning, design, construction, operation and maintenance.

Goal 3: Increase walking and bicycling for transportation and recreation.

Objective 3.A: Enhance opportunities for active transportation and recreation, thereby promoting and facilitating healthy lifestyles.

Policy 3.A.1: Incorporate messaging in all City media that promotes the benefits of active lifestyles and raises awareness of walking and bicycling facilities in the community.

Policy 3.A.2: Work with local, county, and regional agencies and organizations to develop effective encouragement programs that promote bicycling and walking as safe, convenient, and healthy modes of transportation.

Policy 3.A.3: Encourage local agencies and transit operators, such as SamTrans, Caltrain and BART, to work cooperatively to promote bicycling and walking to transit by improving access to and through stations and stops, installing bicycle parking, and maximizing opportunities for on-board bicycle access.

Goal 4: Improve safety for pedestrians and bicyclists.

Objective 4.A: Reduce the number and severity of pedestrian and bicycle related collisions.

Policy 4.A.1: Provide for the safety of bicyclists by dedicating bikeways where practicable, by installing appropriate signing and striping, and by maintaining the pavement.

Policy 4.A.2: Maximize safe pedestrian facilities and access to all areas of the City, as reasonable and feasible.

Policy 4.A.3: When allocating funds, place an emphasis on projects that address safety deficiencies, especially conflicts with motor vehicles, for bicyclists, pedestrians, and people with disabilities.

Policy 4.A.4: Promote collaboration among the Brisbane Police Department and other local agencies to develop and administer effective safety, education and enforcement strategies related to non-motorized transportation.

Policy 4.A.5: Provide support for programs that educate drivers, bicyclists and pedestrians about their rights and responsibilities, as well as traffic education and safety programs for adults and youth.

Policy 4.A.6: Continue to fund and enhance Brisbane's Safe Routes to Schools (SRTS) programs.

Policy 4.A.7: Work with the County Congestion Management Agency, C/CAG, and local schools to develop priorities and implement Safe Routes to School projects consistent with state and federal legislation.

Active Transportation Program Compliance

This Plan complies with the Active Transportation Program (ATP) guidelines, making Brisbane eligible to receive ATP funding upon approval of this Plan by a regional transportation planning agency.

As described in Chapter 5, the Active Transportation Program is a California grant funding program that consolidates a variety of state and Federal funding sources to fund active transportation projects.

See Appendix A for a reference compliance table.

Plan Organization

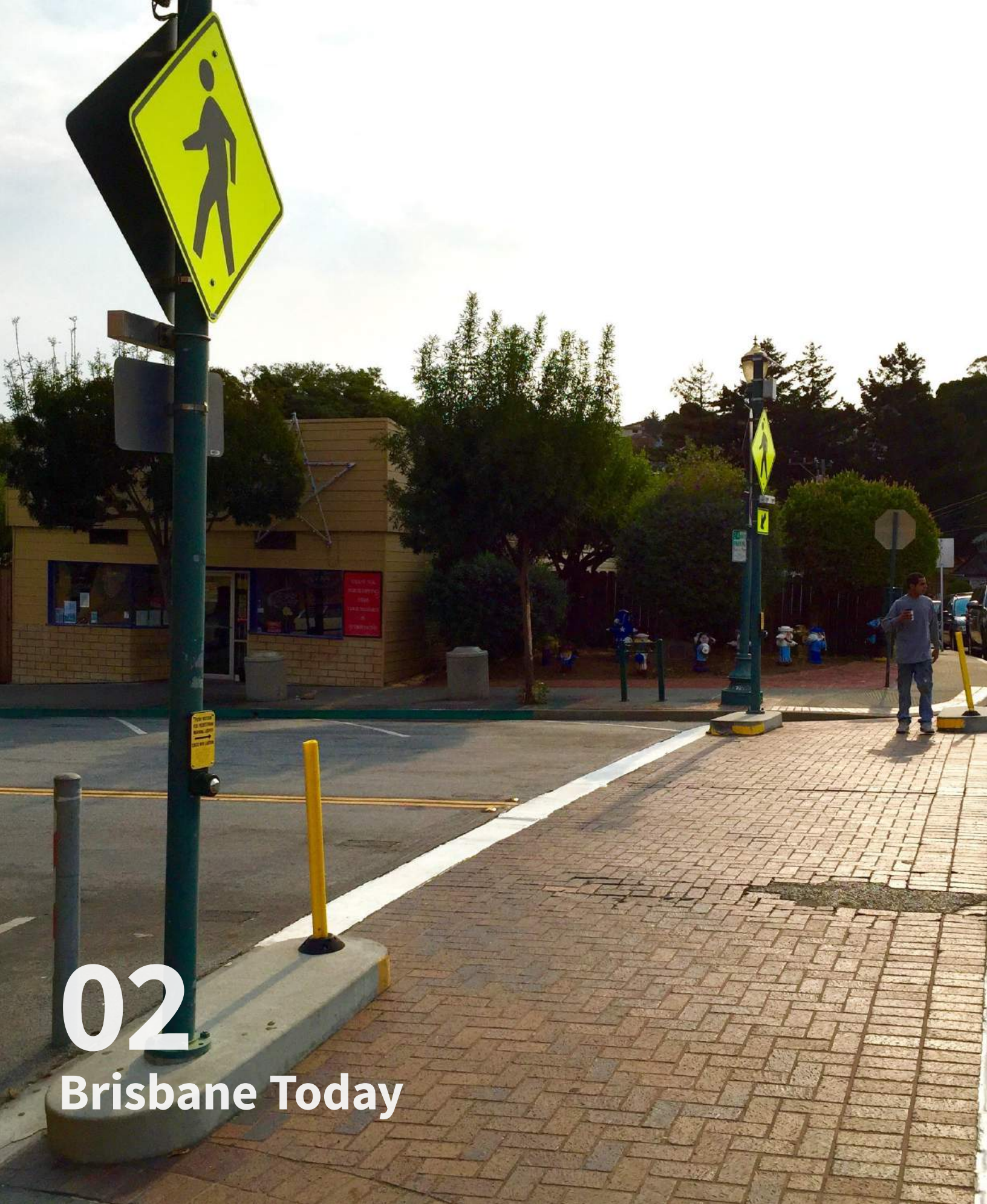
This Plan is organized in five chapters as follows:

- » Chapter 1 Introduction: Plan purpose
- » Chapter 2 Bicycling and Walking in Brisbane Today
- » Chapter 3 Future Bicycling and Walking Needs
- » Chapter 4: Recommendations: Projects and Programs
- » Chapter 5: Implementation: Setting the Course

Several appendices are available with the in depth analysis conducted to support the plan. Appendix A, the ATP Compliance checklist is included within the plan.



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02

Brisbane Today

Biking and Walking in Brisbane Today

The foundation of a successful Bicycle and Pedestrian Master Plan is an understanding of the existing conditions. This section focuses on available infrastructure and programs that support bicycling and walking in Brisbane today.

Existing Bicycle and Pedestrian Network

The street network in Brisbane is determined by physical constraints, including San Bruno Mountain and the San Francisco Bay. Highway 101 and Bayshore Boulevard are the main vehicular corridors to and through Brisbane. Downtown is a network of local streets, with San Bruno Avenue and Visitacion Avenue

serving as minor arterials connecting to other parts of the City. Residential areas of Brisbane are primarily developed around series of narrow, local streets that follow the topography of San Bruno Mountain (Central Brisbane) and a network of cul-de-sacs (Northeast Ridge). The existing bicycle and pedestrian networks are described below.



Bicycle Network

Bikeways are designated into four classes by Caltrans that vary by their level of separation from motor vehicle travel. This section describes the types of facilities and summarizes the extent of these facilities in Brisbane today.

Class I - Shared Use Path

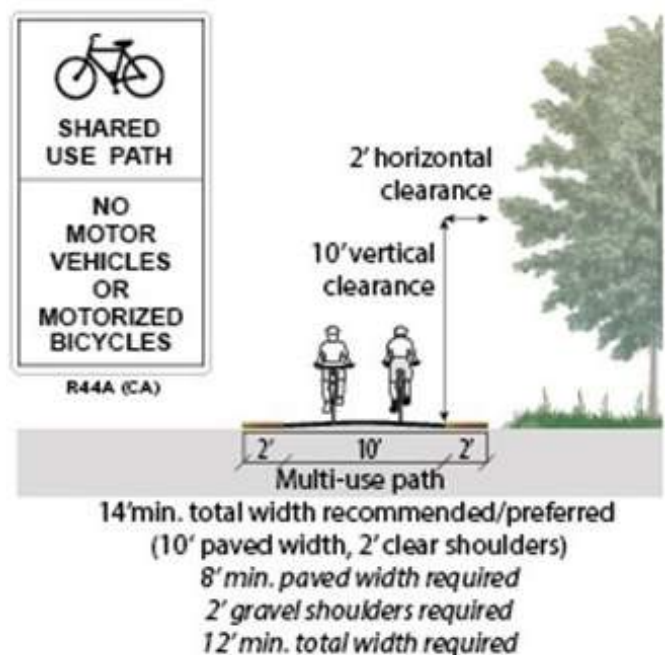


A **Class I facility** is a shared use path for bicyclists and pedestrians that is separated from motor vehicle travel. Brisbane currently has a Class I facility on Old Quarry Road, providing separated bicycle and pedestrian access. The San Francisco Bay Trail runs along the Brisbane Marina, providing a separated route for recreational bicyclists, bicycle commuters, and pedestrians.

Miles in Brisbane

Paved: 1.85

Unpaved: 2.65

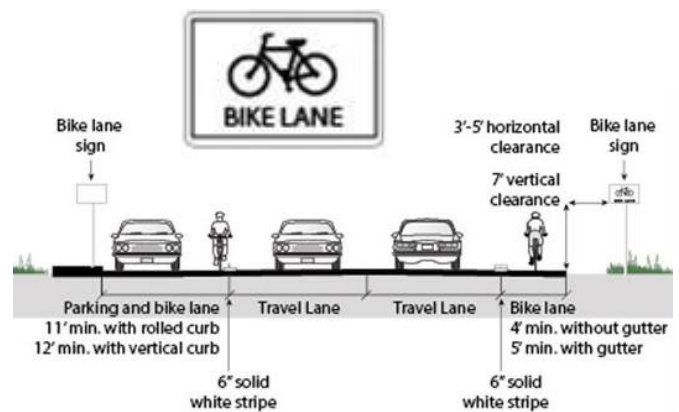


Class II - Bicycle Lane



Class II Bike Lanes provide a signed, striped and stenciled lane for one-way bicycle travel on a roadway, next to the vehicle travel lane. Brisbane has over 7 miles of bike lanes, with Bayshore Boulevard providing north-south access throughout Brisbane, and Sierra Point Parkway providing bike lanes to the San Francisco Bay Trail. Bike lanes on Valley Drive and Mission Blue Drive provide east-west access north of central Brisbane.

Miles in Brisbane: 7.37

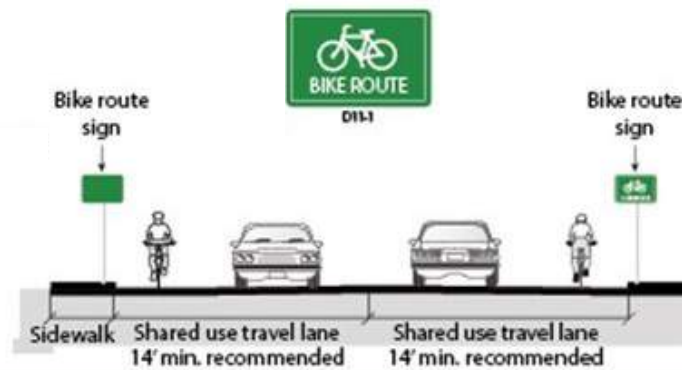


Class III - Bike Route



Class III Bike Routes provide for shared travel lane use and are generally only identified with signs. Bike routes may have a wide travel lane or shoulder that allow for parallel travel with automobiles. Brisbane currently has no designated Bike Routes.

Miles in Brisbane: 0

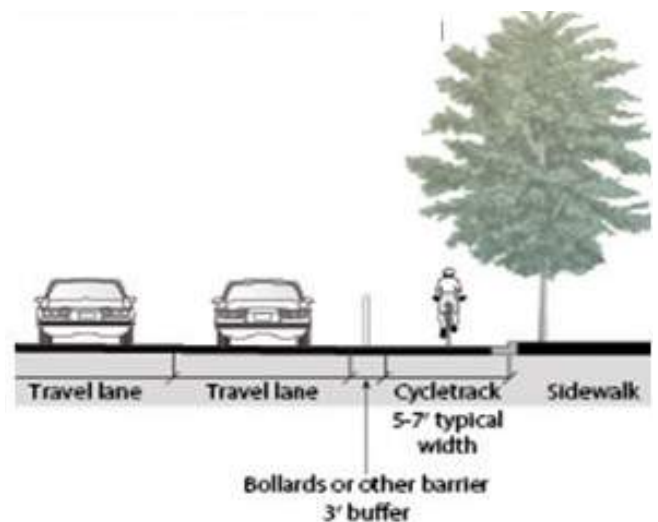


Class IV - Protected Bikeways



Class IV Protected Bikeways were approved for use by Caltrans in 2016 as part of Design Information Bulletin Number 89. Class IV Bikeways (also called Separated Bikeways or Cycle Tracks) are on street bike lanes that are physically separated from automobile traffic by a grade separation, inflexible physical barriers (e.g., planters), flexible posts, or parking. Brisbane currently has no Class IV facilities.

Miles in Brisbane: 0



End of Trip Facilities

Secure long or short term bike parking at local destinations is an important component of bike facilities. Long term bike parking, such as lockers, should be provided at transit stations and short term bike parking should be provided at stores, parks, and other local destinations. Bike parking is currently available in central Brisbane, pictured at right. Additional bike parking ideas are shown on page 16.

Pedestrian Network

The pedestrian network in Brisbane is comprised of sidewalks and paths, supported by crosswalks, curb ramps, signage and other amenities, such as lighting and benches.

Sidewalks

Many streets in central Brisbane and residential neighborhoods in northern Brisbane have sidewalks. As the street network approaches San Bruno Mountain, sidewalks are infeasible, but paths connect to San Bruno Mountain at the southern edge of Brisbane. Industrial areas of the City also lack sidewalks. Due to the topography of the City, several staircases serve as pedestrian connectors.

Sidewalk width varies in Brisbane but is generally narrow, with most sidewalks having little buffer from the travel lane. The American with Disabilities Act (ADA) requires a minimum 4-foot wide sidewalk. Many streets have rolled curbs in Brisbane, allowing cars to encroach into the sidewalk. While this can be beneficial for emergency vehicles, it also makes it easy for cars to park on the sidewalk, blocking accessibility for pedestrians.

Crosswalks

Legal crossings exist at all intersections, marked or unmarked. While crosswalks are not required to be marked, doing so alerts motorists to expect pedestrians crossing and guides pedestrians where to cross.



Existing Bicycle Parking in Brisbane

Marked crosswalks vary by type and can be standard (also known as transverse) consisting of two parallel lines with a minimum six feet between them, or continental (also known as high visibility) with perpendicular lines across the width of the street. Crosswalks are white, except in school zones where they are yellow.

In Brisbane, continental crosswalks are marked near schools and decorative paving is used on Visitacion Avenue, increasing visibility of pedestrian crossings while also adding to the character of central Brisbane. Standard crosswalks are used at other marked locations, including San Bruno Avenue. Few marked crosswalks exist in residential neighborhoods.

Curb ramps

Curb ramps provide access to the street for those using assistive devices or strollers. Curb ramps are required to include detectable warnings or raised truncated domes to provide directional and hazard warning information to pedestrians who are visually impaired. Brisbane has installed curb ramps in many locations, though not all intersections have these facilities.

Figure 2-1 on the facing page presents a map of existing bicycle and pedestrian facilities.




EXISTING BICYCLE & PEDESTRIAN FACILITIES

Brisbane Bicycle & Pedestrian Plan

Existing Facilities

- Sidewalk
- Unpaved Path
- - - Paved Footpath
- Class I Shared Use Path
- Class II Bike Lane

Points of Interest

-  K-12 School
-  Government Building
-  Library

Land Use

-  School Grounds
-  Parks & Open Space



 Map produced August, 2016. Data Sources: OSM, City of Brisbane, San Mateo County



Figure 2-1: Existing Bicycle and Pedestrian facilities in Brisbane

Existing Programs

Programs support bicycling and walking by providing encouragement to those considering bicycling and walking, education for motorists, bicyclists and pedestrians about safe and appropriate sharing of streets and roads, and enforcement of traffic laws that help ensure the safety of vulnerable road users.

Brisbane has several existing programs that are described here.

Safe Routes to School

The City of Brisbane's Complete Streets Safety Committee developed a Safe Pedestrian Routes to Schools Plan, adopted by City Council in December 2014. The Plan includes a map, updated August 2016, displaying safe pedestrian routes and infrastructure improvements to be completed within the next year. Route maps are both an education and encouragement tool, providing important safety information to families in Brisbane. See Figure 2-2 on the following page for the Interim Safe Pedestrian Routes to School map.

The goals of Brisbane's Safe Pedestrian Routes to Schools include:

- » To design infrastructure and public facilities to be efficient, cost effective and to contribute to the cohesion and character of the community
- » To maintain and improve infrastructure
- » To promote transportation opportunities that maximize safety, reliability, enhance circulation and create options, thereby reducing reliance on the use of the automobile
- » To preserve and enhance livability and diversity of neighborhoods
- » To encourage community involvement and participation

Improving pedestrian safety in Brisbane is approached in a multi-faceted way, consisting of

infrastructure improvements, traffic circulation modifications, maintenance of existing infrastructure, community involvement and enforcement.

Education

Providing education about safe biking and walking is a vital component of any efforts to increase walking and biking. Schools in Brisbane are eligible to receive bicycle and pedestrian rodeos through Safe Routes to School San Mateo County, a countywide program offered by the San Mateo County Office of Education. Bicycle rodeos are taught by instructors certified by the League of American Bicyclists and cover topics such as hand signals and proper helmet use. Pedestrian rodeos teach elementary students how to safely cross the street, be cautious at driveways, and other aspects of pedestrian safety.

Encouragement

Brisbane Elementary and Lipman Middle School participate in International Walk to School Day, held each year in October to encourage walking trips to school and provide pedestrian safety education. The day provides a fun way for families to try alternative modes on their trip to school.

Enforcement

Enforcement efforts can support pedestrian and bicycle safety in several ways. The Brisbane Police Department has taken enforcement action for vehicles blocking sidewalks, since many sidewalks in Brisbane have rolled curbs that allow vehicles to mount them. The speed limit on segments of streets near schools has been reduced to 15 miles-per-hour (mph). The City is also investigating creating speed limits lower than 25 mph in other areas of central Brisbane. Other mechanisms, such as speed feedback trailers, help to reduce motorist speed and improve safety for those walking or biking.

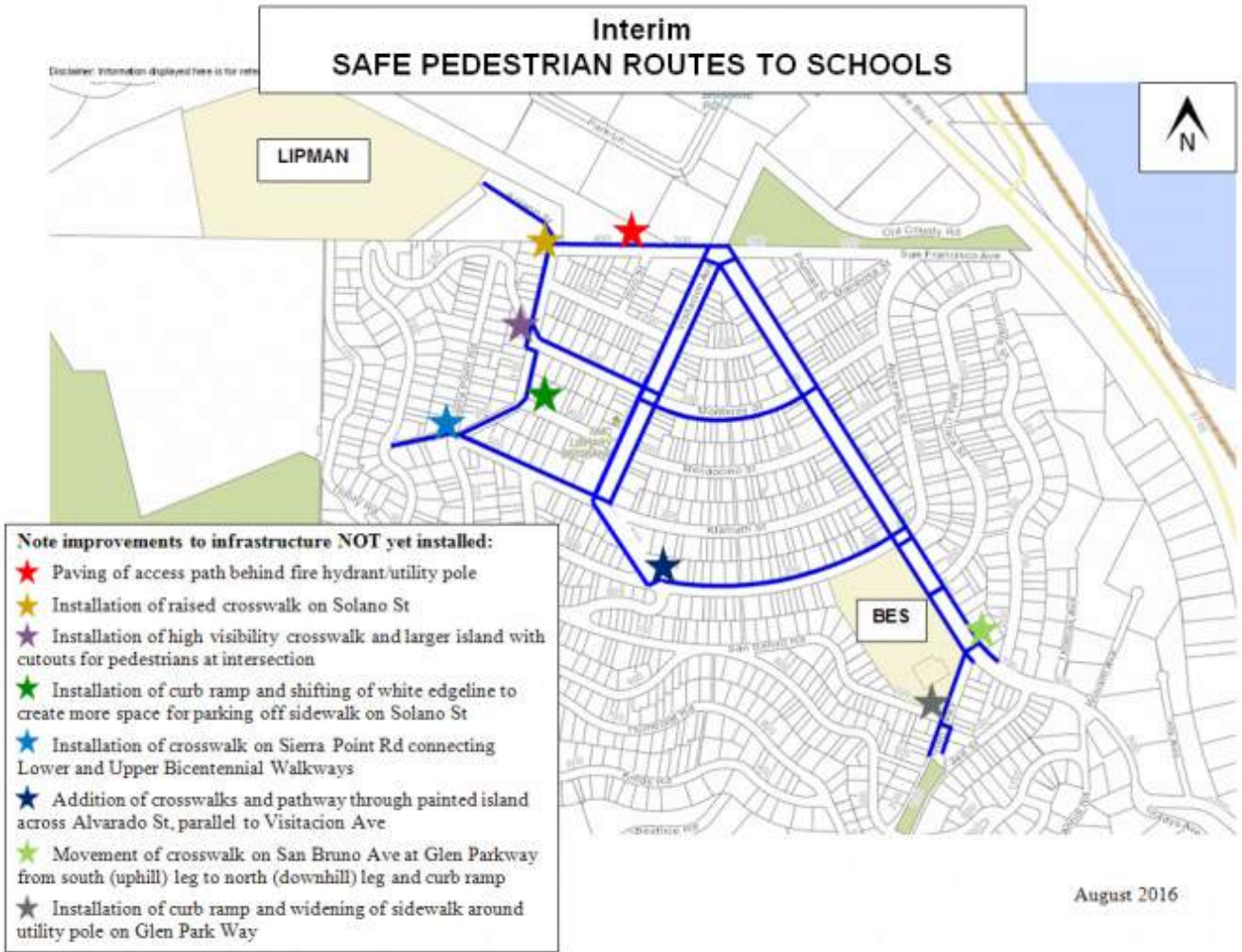


Figure 2-2: Interim Safe Pedestrian Routes to Schools

Community Attractors and Generators

Community attractors and generators include schools, parks, community centers, major employers, and other facilities in Brisbane that could potentially generate pedestrian or bicycle activity. The downtown area encompasses City Hall, the community park, and library, as well as shopping and restaurants, generating traffic for both recreational and utilitarian purposes.

In addition to the downtown area, places of employment are also concentrated along Bayshore Blvd and the northwest area of the city along Valley Drive. Residential development is concentrated in the northwest and southeast portions of the city, suggesting the need for a connected transportation network to allow residents to access all parts of the city.

Another major attraction for residents of Brisbane are the hiking trails on San Bruno Mountain. Having a walking routes within the city that connect to these trail heads is an important consideration for City residents.

Community generators are identified on the maps that are provided throughout this plan, including Figure 2-1 on page 15 (Existing Conditions).

Travel Patterns

The majority of workers (16 years and over) drive to work, with 65% driving alone and 13% carpooling. Public transportation is the next most common means of getting to work (11%). About 4% of residents walk to work, while less than 1% bike to work (Figure 2-3). According to the US Census, over 6% of workers live and work in Brisbane, and almost 40% of Brisbane's workers live less than ten miles from their primary job, presenting an opportunity to shift toward active modes for work commutes.

Households without access to a vehicle are especially reliant on transit and active modes of transportation for their daily travel needs, whether for work, recreation, or personal errands. In Brisbane, 10% of households lack access to a vehicle, making walking, bicycling, or transit critical for their daily transportation needs.

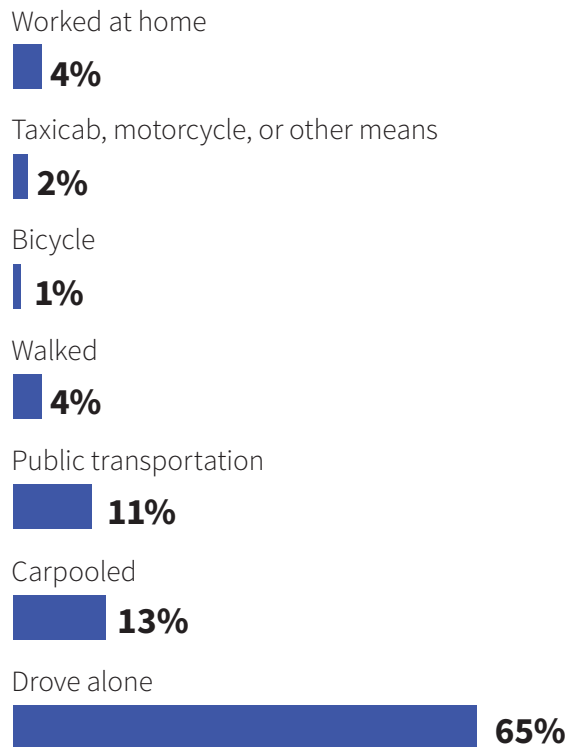


Figure 2-3: Commuter Travel

Table 2-1 Bicycle and Pedestrian Commuting in Neighboring and Similar Jurisdictions

City	Commuters	Bike (%)	Walk (%)	Combined (%)
Brisbane	2,177	0.9%	4.2%	5.1%
San Mateo County	370,844	1.3%	2.5%	3.8%
Colma	1,059	0.0%	5.3%	5.3%
Hillsborough	4,426	0.0%	1.3%	1.3%
Woodside	2,378	1.1%	1.2%	2.2%
Greater Bay Area Cities with Under 5,000 Commuters				
Calistoga	2,444	4.6%	5.7%	10.4%
Los Altos Hills	3,190	2.3%	0.1%	2.4%
Tiburon	3,930	1.5%	2.1%	3.6%
Ross	836	2.6%	3.9%	6.6%
Sausalito	4,352	3.9%	3.0%	6.9%
Sebastapol	3,905	1.7%	10.0%	11.7%
Sonoma	4,812	2.5%	6.8%	9.3%

In San Mateo County as a whole, people bicycle to work (1.3%) less than they walk (2.5%). Compared to other San Mateo County cities, relatively more Brisbane residents bicycle or walk to work (Table 2-1). A few other small Bay Area towns (fewer than 5,000 commuters) have high use of active transportation for commuting, including Calistoga, Ross, Sausalito, Sebastapol, and Sonoma.

While less than 3 percent of Brisbane residents walk or bicycle to work, a larger number work distances where bicycling or walking may be possible. Over 15 percent of Brisbane’s residents work in town, and just under 15 percent of residents commute less than 10 minutes to work (Table 2-2).

Table 2-2 Travel Time to Work

Minutes to work	Residents (%)
Less than 5	5%
5 to 9	9%
10 to 14	12%
15 to 19	15%
More than 20	59%

For people who work in Brisbane (residents and people commuting to the town), just under 2 percent walk to work and less than 1 percent bicycle to work.

According to national data sources, over 80 percent of trips taken are for non-commuting purposes, including shopping, recreation, and other purposes. As a compact community, with restaurants, shopping, and recreational opportunities all within walking or bicycling distance, Brisbane has significant opportunities to increase the share of all trips taking place by active transportation.

Further investment in the bicycle and pedestrian network in Brisbane presents an opportunity to grow the share of commuting trips by between 50 and 100 percent, while total trips may grow faster, as a result of Brisbane’s compact size. The remainder of this plan describes active transportation needs and potential projects to help connect walking and bicycling facilities in town.



Item	Location	Estimated Cost
Complete sidewalk	...	\$2
Install sidewalk	...	N9
Complete sidewalk on west side of @	...	N10
Complete sidewalk on east side of @	...	N11
Complete sidewalk on west side of @	...	N12
Complete sidewalk on east side of @	...	N13
Complete sidewalk on west side of @	...	N14
Complete sidewalk on east side of @	...	N15
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Complete sidewalk on east side of @	...	N49
Complete sidewalk on west side of @	...	N50

03

Brisbane's Needs

Bicycling and Walking Needs in Brisbane

A number of factors help the City understand why improvements are needed. This chapter outlines why with a review of bicycle and pedestrian related crashes, community identified needs, and supporting evaluation.

Bicycle and Pedestrian Related Crashes

The analysis of reported bicycle and pedestrian related collisions can reveal patterns and potential sources of safety issues, both design and behavior-related. These findings can provide the City of Brisbane with a basis for infrastructure and program improvements to enhance bicycle and pedestrian safety.

Bicycle and pedestrian related collisions and collision locations in Brisbane were analyzed over the most recent five-year period of available data, 2010-2014 using state data on crashes. In some cases, these data can underestimate the number of crashes because some parties do not report minor collisions to law enforcement, particularly collisions not resulting in injury.

Number, Location, and Trends

Between 2010 and 2014, there were 497 reported collisions in Brisbane. Of those collisions, 12 (2.4%) were bicycle-related and 7 (1.4%) were pedestrian related. There were no bicyclist fatalities and 3 pedestrian fatalities (out of 6 total traffic fatalities). Two bicyclists suffered severe injuries (14% of the total severe injuries resulting from traffic collisions). Table 3

summarizes crashes by severity for the 2010 to 2014 period.

Brisbane is fortunate to have few crashes, serious injuries, and fatalities. The small number makes it challenging to draw specific conclusions about safety patterns and trends. However, looking closer at the collision scenarios can provide insight about risk factors to prevent future collisions. A more detailed analysis of the collision data is provided in Appendix C.

Notable findings from the analysis include:

- » Three pedestrian collisions occurred on US 101, where pedestrians are prohibited, two of which resulted in a pedestrian fatality. US 101 is outside the City of Brisbane’s scope of responsibility. Collisions on high speed freeways could result from broken down vehicles or other causes.
- » Almost half of bicycle collisions occurred in the vehicle right-of-way, potentially indicating the need for greater separation between bicyclists and vehicles in Brisbane. With few separate bicycle lanes, automobiles and bicyclists must share the right of way. Bayshore Blvd had more crashes and more severe crashes for pedestrians and bicyclist. During the course of the study, a pedestrian fatality occurred at Bayshore and San Bruno Ave, though this is not reflect in the official record yet. While Bayshore has bicycle lanes, higher speed roads present a particular challenge to bicyclists and pedestrians.

Table 3-1: Severity of Collisions, 2010-2014

	Fatality		Severe injury		Minor Injury		No injury	
	#	%	#	%	#	%	#	%
Bicyclist	0	0.0%	2	14.3%	5	3.1%	0	0.0%
Pedestrian	3	50.0%	0	0.0%	3	1.9%	0	0.0%
All modes	6	100.0%	14	100.0%	161	100.0%	83	100.0%

Community Identified Needs

Community needs were identified through engagement with a technical working group, a community survey, and community events to gather input on local priorities and plan needs.

Technical Working Group

A Technical Working Group supported the project by providing information about local priorities and community needs. This group met twice during the development of the Plan to provide guidance and feedback on goals and objectives, community priorities, and proposed projects. The working group also reviewed the Plan's working papers and provided comments.

The working group identified several initial priorities for the Plan, including:

- » **Connections** – existing/proposed trails, connections through town, to the mountain
- » **Safety** – personal safety and safety from vehicular traffic
- » **Access** – to transit, recreation, to the mountain
- » **Education/Awareness** about existing bike and pedestrian facilities, including a map of trails that is interactive, user-friendly, and provided to the public
- » **Wayfinding** signage for cyclists/pedestrians
- » **Facilities** that accommodate users of all ages from ages 8 to 80
- » **Engaging** commuters who ride through the City

Members of the Plan Working Group

The working group was comprised of City staff from several departments and local bicycle and pedestrian advocates, including:

Randy Breault, Brisbane Public Works
Lyle Covino
Linda Dettmer
Mario Garcia, Brisbane Police Department
Ken Johnson, Brisbane Planning Department
Kima Hayuk
Karen Kinser, Brisbane Public Works
Noreen Leek, Brisbane Parks and Recreation
Cliff Lentz, Mayor
Susan Maynard
Michael Schumann

Community Survey

A community survey was developed to gather input on walking and bicycling challenges and opportunities throughout Brisbane. The survey was made available online from March 2, 2016 through June 17, 2016, and was distributed to community members in hard copy at a community event for Bike to Work Day on May 12, 2016. Ninety-one responses to the survey were received.

Surveys were received by adults of all ages. The largest age group responding was adults between 45 and 54. Women were represented slightly higher than men (56%). The majority (61%) of respondents live in Brisbane, 28% work in Brisbane, and another 28% travel to Brisbane for other purposes. Note that many respondents both live and work in Brisbane.

Two-thirds of respondents would like to walk more, and more than half of respondents would like to bicycle more for their daily commute, errands, and other activities than they currently do.

Walking Needs

About one-third of respondents to the survey agreed that they can conveniently walk where they want, feel safe from cars, have enough time to cross streets, feel personally safe, and feel that pedestrian areas in retail and commercial areas are well lit. However, over one-quarter of respondents do not feel safe from cars while walking. About 15 to 17% of respondents did not respond to each category.

Respondents' favorite places to walk in Brisbane include Visitacion Ave, San Bruno Mountain, Humboldt Road, and the shopping center. Streets and intersections that need improvements include the Sierra Point and San Benito intersection as well as San Bruno at various cross streets.

Figure 3-1 summarizes walking needs from the survey.

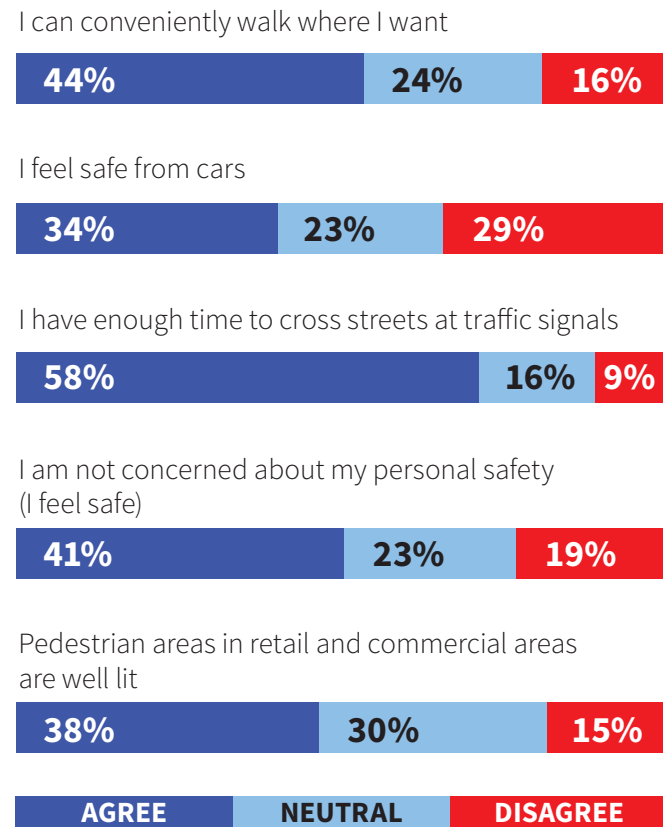


Figure 3-1: Walking experience in Brisbane

I can conveniently bike where I want



I feel safe from cars



I have enough time to cross streets at traffic signals



I am not concerned about my personal safety (I feel safe)



AGREE NEUTRAL DISAGREE

Figure 3-2: Bicycling experience in Brisbane

Bicycling Needs

The most common reasons respondents bicycle were because it is good for their health (27%) and because they enjoy bicycling (23%). About one quarter of respondents reported that they do not bicycle.

Respondents' favorite places to bicycle in Brisbane include Tunnel Ave, Sierra Point Road, and the marina. Streets and intersections that need improvements include Tunnel Ave and Bayshore Blvd.

Figure 3-2 summarizes bicycling needs from the survey.

Barriers to Bicycling and Walking

Survey respondents were asked to identify potential barriers to walking and bicycling in Brisbane. Lack of infrastructure (such as lack of sidewalks, insufficient lighting, lack of dedicated bicycle space) was the top identified type of barrier that prevents respondents from walking or bicycling more often (Figure 3-3). Convenience (distance to destinations) and safety were also key concerns raised.

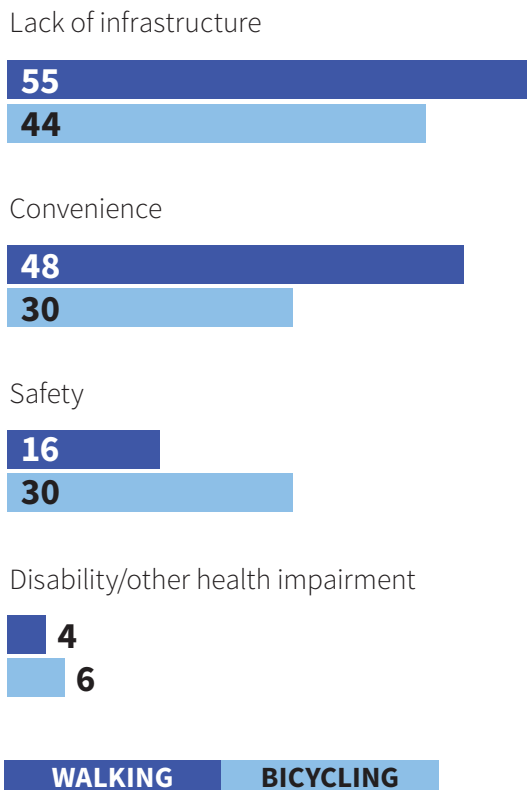


Figure 3-3: Barriers to walking or bicycling

Priorities

Finally, respondents were asked to name their top priorities for future investment in improving walking and bicycling. Priorities included.

- » Improved connections to trails (57%)
- » Additional bicycle lanes (57%)
- » New sidewalks (39%)
- » Adding bicycle markings, such as sharrows (37%)
- » Improving access to transit via walking or bicycling (32%)

About one-third (32%) of the respondents who never walk to transit and 42% of the respondents who never bicycle to transit identified “access to transit via walking/biking” as a top priority.

In addition to general priorities, respondents identified specific locations for new infrastructure, including:

- » Adding bicycle parking at locations like the community park, recreation areas (like the community pool), near shopping and downtown areas, and along Visitacion Ave.
- » Improvements to the Crocker Trail
- » Improvements to crossings of US 101 for bicyclists
- » Restricting parking near crosswalks (daylighting) to improve visibility of pedestrians
- » Use of native plants in any trail improvement projects.

Public Outreach Events

Farmers Market

Attendees of the Brisbane Farmers' Market held on October 20, 2016 were invited to provide comments on the proposed bicycle and pedestrian projects. Over 20 residents and visitors to Brisbane stopped to discuss the bicycle and pedestrian plan and provide comments to the team.

Input from the event showed support for installing bikeway facilities, completing sidewalk gaps, and crossing improvements. The information gathered was incorporated into the evaluation of proposed projects.

Public Meeting

A public meeting was held as part of a City Council Meeting on December 8, 2016.

To be added after completion of council meeting.





04

Recommendations

Proposed Projects and Programs

This chapter outlines the recommendations for improving bicycling and walking in Brisbane, including both new potential projects and programs. Projects and programs were identified by City staff, the public survey, community meetings, and the technical team. The proposed projects set the foundation for improving safety for those who currently walk or bicycle, encouraging more trips by walking or bicycling within Brisbane, and connecting to regional destinations.

Project Evaluation

The projects were evaluated against the goals established for the master plan. Several specific criteria were developed to use in the evaluation process, including:

- » **Safety.** The project addresses a known safety challenge or reduces the risk of a facility
- » **Community Priority.** The project was identified in existing plans, by the technical working group, or the public.
- » **Project Readiness.** The difficulty or ease of implementing the project, based on right of way availability and project complexity.
- » **Activity Generator Connection.** The project makes direct or indirect connections to transit stations, employment, and other key community destinations.
- » **Regional or Local Trail Connection.** The project connects to regional trail and bicycle networks.

Projects and programs were evaluated qualitatively based on available information. A complete accounting of this evaluation is provided in Appendix D.

Recommended Improvements

Network improvements are intended to make bicycling and walking safer, more comfortable, and more enjoyable for all ages, abilities, and trip purposes. Spot improvements are designed to address specific locations where there are specific bicycling or walking challenges identified through the planning process.

Bicycle Network Improvements

Recommended bicycle improvements include the installation of new bicycle lanes, enhancements to existing bicycle lanes, traffic calming, and trail connections. Figure 4-1 shows the recommended bicycle improvements. Almost eight miles of bicycle facilities, summarized in Table 4-1, along with supporting spot improvements are recommended in order to create a safe, convenient and comfortable bicycling environment in Brisbane.

Table 4-1: Recommended Bicycle Network Additions

Type	Length (miles)
Class I	2.19
Class II	3.53
Class III	1.05
Class IV	1.32
Other Network Connections	0.82
Grand Total	8.91

Major projects include:

- » Resurfacing the Crocker Trail
- » Adding a system of bicycle lanes on Valley Dr, Old County Rd, Monarch, and several other streets to create a network in town.
- » Adding separated facilities for improved connection to the Caltrain station along Tunnel Ave and to Sierra Point.
- » Improved marking of crossings by US 101 ramps and other locations

PROPOSED BICYCLE FACILITIES

Brisbane Bicycle & Pedestrian Plan

Proposed Facilities

Class I Shared Use Path

Class II Bike Lane

Class III Bike Route

Class IV Separated Bike Lane

Traffic Calming

Crossing Improvements

Intersection Improvements

Bicycle Parking

Existing Facilities

Trailhead

Unpaved Path

Pedestrian Pathway

Pedestrian Staircase

Class I Shared Use Path

Class II Bike Lane



Map produced October 2016. Data Sources: OSM, City of Brisbane, San Mateo County

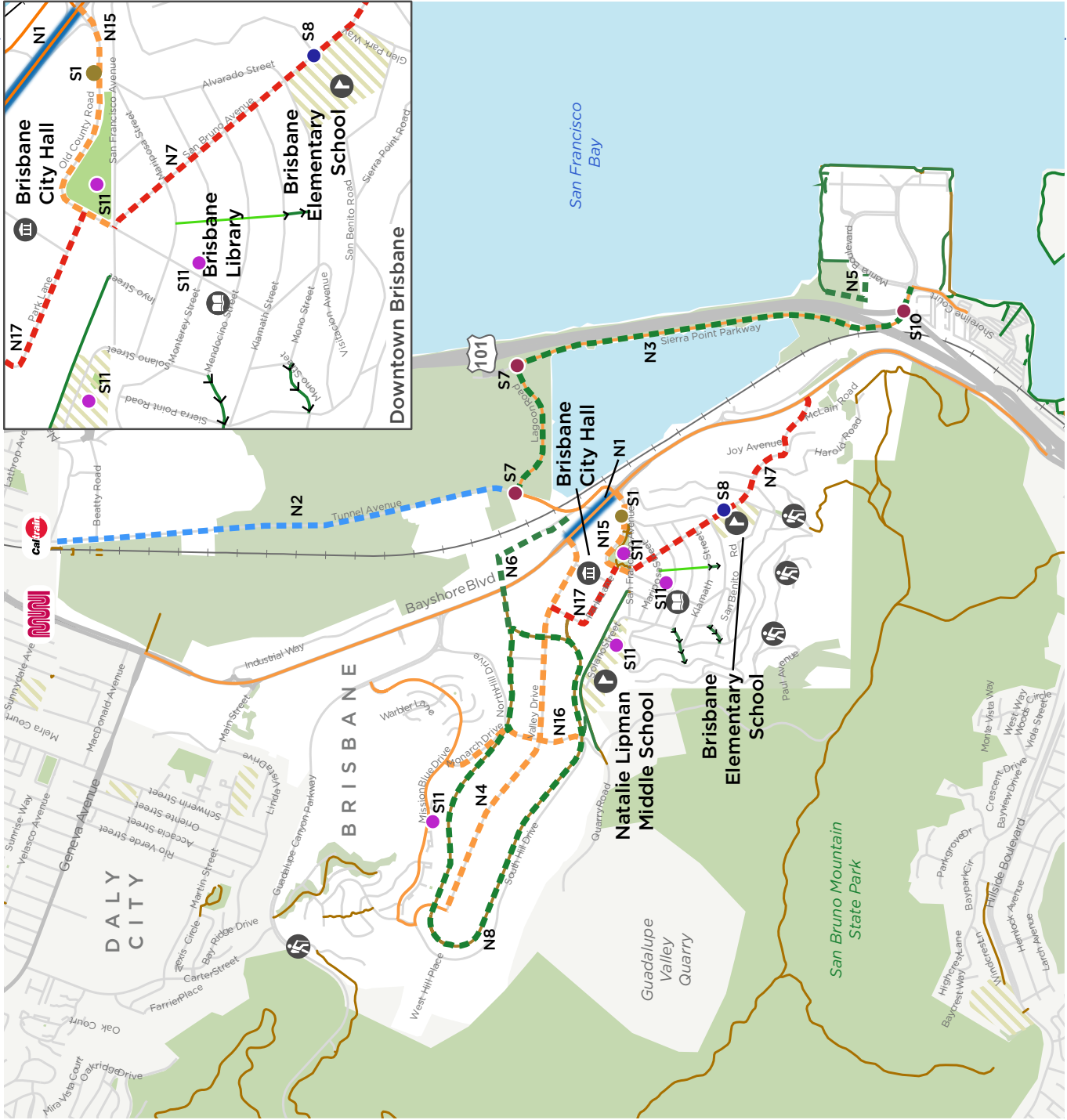


Figure 4-1: Proposed Bicycle Facilities in Brisbane

Bicycle Parking

Bicycle parking can range from a simple bicycle rack to storage in a bicycle locker or cage that protects against weather, vandalism and theft. Across the city, bicyclists visiting downtown, parks, schools and places of employment need safe places to park their bicycles. To serve current and future bicycling demand in Brisbane, bicycle parking is recommended at the community park, library, Mission Blue, and the community pool/soccer field. Table 4-2 details the recommended number of bicycle parking spaces to support various land use types.

Table 4-2 Guidelines for Bicycle Parking Location and Quantities

Land Use or Location	Physical Location	Quantity
Parks	Adjacent to rest rooms, picnic areas, fields, and other attractions	8 spaces per acre
Schools	Near office and main entrance with good visibility	8 spaces per 40 students
Public Facilities (libraries, community centers)	Near main entrance with good visibility	8 spaces per location
Commercial, retail and industrial developments over 10,000 square feet	Near main entrance with good visibility	1 space per 15 employees or 8 spaces per 10,000 square feet
Shopping Centers over 10,000 square feet	Near main entrance with good visibility	8 spaces per 10,000 square feet
Transit Stations	Near platform, security or ticket booth	1 space or locker per 30 automobile spaces
Multi-Family Residential	Near main entrance with good visibility	1 short-term space per 10 units 1 long-term space per 2 units

Figure 4-2 presents recommended types of bicycle parking. Brisbane has expressed interest in developing unique bike racks that reflect the character of the City. Figure 4-3 presents several creative examples.

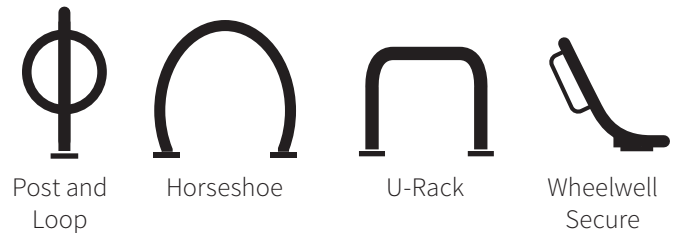


Figure 4-2: Recommended Bicycle Racks



Figure 4-3: Example Creative Bicycle Racks

PROPOSED PEDESTRIAN FACILITIES

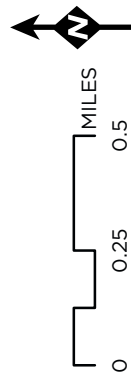
Brisbane Bicycle & Pedestrian Plan

Proposed Facilities

- Class | Shared Use Path
- Share the Road Signage
- Sidewalk Improvements
- Pedestrian Connector
- Traffic Calming
- Intersection Improvements
- Crossing Improvements
- Pedestrian Staircase

Existing Pedestrian Facilities

- Trailhead
- Sidewalk
- Unpaved Trail
- Pedestrian Pathway
- Pedestrian Staircase
- Class | Shared Use Path



Map produced January 2017. Data Sources: OSM, City of Brisbane, San Mateo County.



Figure 4-4: Proposed Pedestrian Facilities in Brisbane

Pedestrian Improvements

Proposed pedestrian improvements include completion of sidewalk gaps, stair connections, crossing improvements, and intersection treatments. Figure 4-4 shows the recommended pedestrian improvements.

Over three miles of sidewalks plus additional pedestrian connections were identified as part of the plan. These are summarized in Table 4-3, along with supporting spot improvements are recommended in order to create a safe, convenient and comfortable walking environment in Brisbane.

Table 4-3: Recommended Pedestrian Improvements

Type	Extent
Sidewalks (miles)	3.37
New trail connections (#)	3
New staircase paths (#)	3

Major pedestrian improvements include:

- » Adding to Brisbane’s existing stair network
- » Improving wayfinding to connect residents to San Bruno Mountain and other destinations
- » Adding sidewalks in several locations
- » Improving pedestrian crossings in several locations, including adding crosswalks and flashing beacons.

Program Recommendations

A robust and safe network of pedestrian and bicycle facilities should be supplemented by programs focused on increasing walking and biking in Brisbane. The recommended programs outlined in this section build off of existing programs in the City and provide opportunities for expansion. Program recommendations are organized into four E’s: Education, Encouragement, Enforcement and Evaluation.



» **Education** programs are designed to raise awareness and improve safety for pedestrians and bicyclists.



» **Encouragement** programs focus on promoting walking and biking for transportation by providing incentives.



» **Enforcement** programs promote safety by enforcing laws regarding walking, biking, and driving. Enforcement can range from targeted law enforcement presence to the use of speed trailers in a neighborhood.



» **Evaluation** programs track progress toward achieving goals set forth in the Plan, including improving safety and increasing walk and bike mode share.

Education

Bicycle Safety Education

Bicycle safety education is important for youth and adults alike, as many adults who bike or have the potential to bike may not have any traffic-related safety education. This Plan recommends Brisbane coordinate with the San Mateo County Safe Routes to School program to provide bicycle rodeos for youth. Bicycle rodeos provide education to elementary school students, incorporating a bicycle safety check, helmet fitting, instruction about rules of the road, and a skills course. Rodeos may be led by adult volunteers, the local police department, certified League of American Bicyclists (LAB) instructors, and/or members of a local bicycle advocacy organization such as the Silicon Valley Bicycle Coalition.

The League of American Bicyclists offers classes for adults taught by LAB-certified instructors. These can often be implemented by a local bicycle group. Information can be found at www.bikeleague.org.

Pedestrian Safety Education

This Plan recommends pedestrian safety education for elementary school students to provide training on crossing the street safely and avoiding distractions while walking. Education can be provided through the San Mateo County Safe Routes to School program.

Share-the-Road Campaign

Share-the-road signs should be used where pedestrians, bicyclists, and motorists share the road. Many such streets exist in Brisbane. Signage reminds all users to travel safely and respectfully. The City can also incorporate a Share-the-Road campaign into its media advisories or social media strategy.

Encouragement

Bike-Friendly Business Programs

Brisbane Village could establish a Bike-Friendly Business Program, where merchants provide incentives, such as coupons, to patrons who arrive by bike. This program expands “Bike to Shop” events promoted by San Mateo County.

Bike to Work Day

Brisbane should continue participating in Bike to Work Day each May by hosting Energizer Stations along commute corridors and encouraging City staff and residents to participate by biking to work.

Bike to Work Day, 2016



Suggested Routes to School Map

The City of Brisbane has developed a Suggested Routes to School map with routes to Brisbane Elementary and Natalie Lipman Middle and planned infrastructure improvements. This Plan includes a bicycling and walking map with suggested routes to schools and other destinations and safety tips for pedestrians, bicyclists and drivers. Maps can distributed during Walk or Bike to School Day and at school events.

Enforcement

Targeted Enforcement

Targeted enforcement focuses traffic law enforcement at locations with a history of violations or crashes. It is meant to increase compliance of traffic laws by pedestrians, bicyclists and motorists. Enforcement should not target specific demographics or modes, but can be used as an education tool to increase safety. This Plan recommends that the Brisbane Police Department conduct targeted enforcement at locations known for noncompliance and at high conflict areas.

Evaluation

Annual Report Card

Annual report cards track progress toward achieving Plan goals. The report card can use data already collected by the City, focusing on projects and programs implemented and any available statistics about safety improvements and increasing in walking and biking.

Bicycle and Pedestrian Community Survey

A community survey about walking and biking in Brisbane will track progress made toward achieving the goals of the Plan and provide valuable information about walking and biking trips within the City. A community survey should be conducted in conjunction with updates to this Plan, roughly every five years.

Wayfinding

A good bicycling and walking environment includes both supportive facilities and an easily navigable network. Wayfinding assists residents, tourists, and visitors find key community destinations. Signs may also include “distance to” information, which displays mileage to community destinations.

Brisbane is in close proximity to trails and recreational opportunities, such as San Bruno Mountain State Park and the Crocker Trail. A city-wide wayfinding system and map can raise awareness and improve access for residents and visitors to community assets.



Principles of Wayfinding

A wayfinding system plan should be legible and easy to navigate. Principles to guide design, placement, and destination include:

- » **Connect Places:** Effective wayfinding should enable locals and visitors to travel between destinations and discover new destinations and services.
- » **Promote Active Travel:** Wayfinding should encourage people to walk and bicycle by creating a clear, attractive system that is easy to navigate.
- » **Maintain Motion:** Wayfinding should be easy to understand while bicycling or walking.
- » **Be Predictable:** Wayfinding should be predictable and consistent, including consistent sign materials, dimensions, colors, forms, and placement.
- » **Keep Information Simple:** Information should be presented in a clear and logical form so that it is usable for the widest possible demographic.

Navigational Elements

The fundamental family of signs that provide cyclists with navigational information consists of decision, confirmation, and turn signs (Figure 4-5). Figure 4-6 provides typical locations of signs. Decision signs (D) are located prior to an intersection of two routes. Turn signs (T) are located prior to turns. Confirmation signs (C) are located after the turn movement and periodically along routes for reassurance.

Signage Technical Guidance

A variety of standards and guidelines influence both the designs and placement of wayfinding elements in Brisbane. The Manual of Traffic Control Devices (MUTCD) provides standards and guidelines for the design, size, and content of wayfinding signs. However, many jurisdictions have implemented unique signs to enhance visibility while reinforcing local identity. Appendix E provides additional information on wayfinding technical guidance.

Decision Sign

- » Clarify route options when more than one is available
- » Typically include a system brand
- » Up to 3 destinations
- » Distance in time or miles (based on 10 mph or 6 min per mile)
- » FHWA standard size for 3 destinations is 18" H x 30" W
- » Municipalities can modify, often 24" W x 30" or 36" H, and place bicycle symbol at top
- » Generally, 6" of vertical space per destination
- » Sign width not standardized by the CA MUTCD

Confirmation Sign

- » Placed after turn movement or intersection to reassure the cyclist is on the correct route
- » Standard D11-1 series signs, system brand mark and route or pathway name may be included
- » Minimum size of 24" W x 18" H should be used for bike route signs, both on-and off-street

Turn Sign

- » Clarify a specific route at changes in direction
- » Used when only one route option is available
- » Standard D1-1 series sign: system brand mark, route or pathway name, and/or a directional arrow may be included
- » A minimum height of 6" should be used for arrow plaque, width may vary with destination length
- » Standard turn arrows (M5 and M6 series) may be used to clarify movements

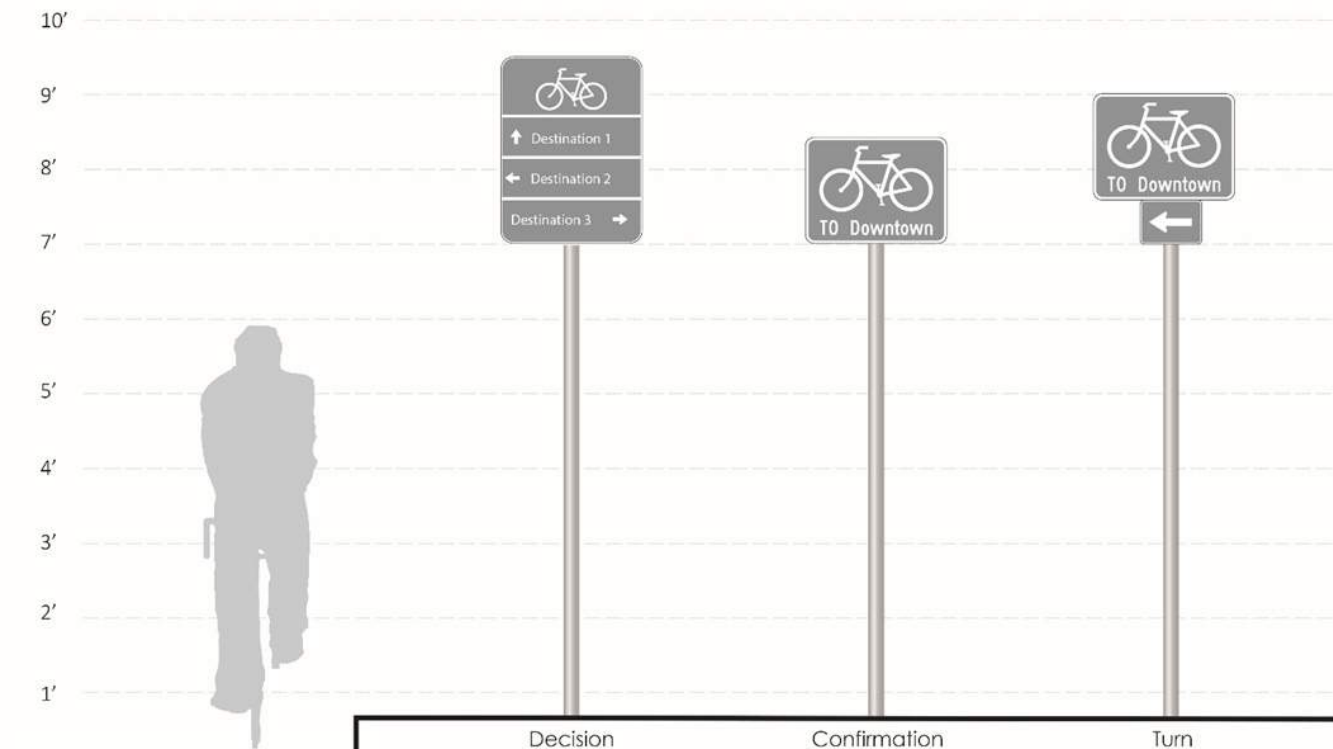


Figure 4-5: On Street Wayfinding Tools (Bicycle Focused)

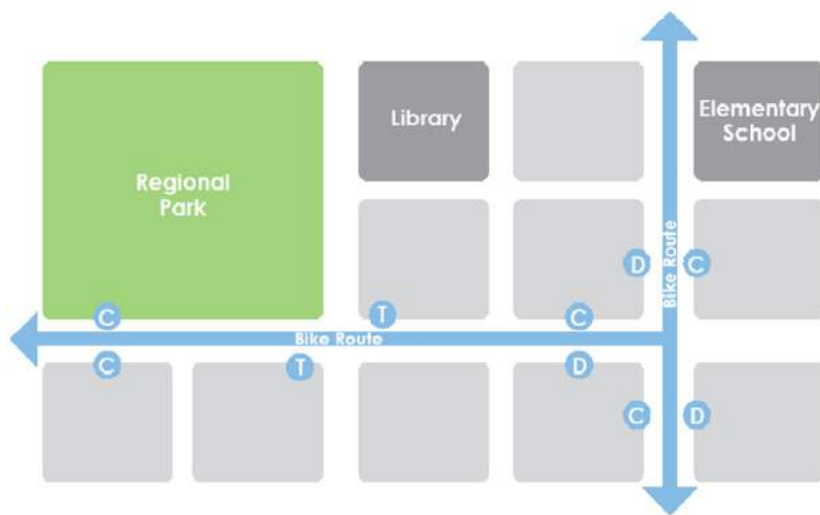


Figure 4-6: Typical Wayfinding Locations

Bicycle Guide Signs

Both on-street and off-street bicycle facilities are required to follow the standards within the MUTCD. The State of California has adopted specific state standards for all traffic control devices called the CA MUTCD, which supersedes the MUTCD.

The proposed design guideline options use standard signs from both the federal and California MUTCD. MUTCD signs used in this signage plan are shown in Figure 4-5 and include:

- » D11-1: Bicycle Route Guide Sign
- » D1-1b: Destination Supplemental Sign
- » M7-1 through M7-7: Directional Arrow Supplemental Sign

The combination of standard signs with modifications allows for signage that is consistent throughout Brisbane but brands the network.

Community Wayfinding

Community wayfinding signs allow for an expression of community identity, reflect local values and character, and may provide more information. California has not yet adopted MUTCD

community wayfinding standards, but many communities use these. The proposed signage designs for the Brisbane BPMP include community wayfinding elements.

Other Wayfinding Elements

In addition to the core elements, several other wayfinding elements should be considered, including:

- » Distance and time. Adding distance in familiar units can be an effective encouragement tool for bicycling and walking. Cities sometimes include travel time.
- » Street name sign blades and sign toppers. Some cities have enhanced street name sign blades to provide additional recognition of bikeways and major pedestrian routes. For example, some cities use purple street signs to indicate bicycle boulevards.
- » Pavement markings. Directional pavement markings indicate confirmation of bicycle or pedestrian presence on a designated route and can indicate turns. Especially in urban settings, pavement markings can often be more visible and can help supplement or reinforce signage.

Sign Recommendations

Figures 4-8, 4-9, and 4-10 on the following pages provide potential bicycle and pedestrian wayfinding design concepts for the City of Brisbane. Table 4-4 lists potential destinations.



Figure 4-7: Standard CA MUTCD Compliant Bicycle Signage

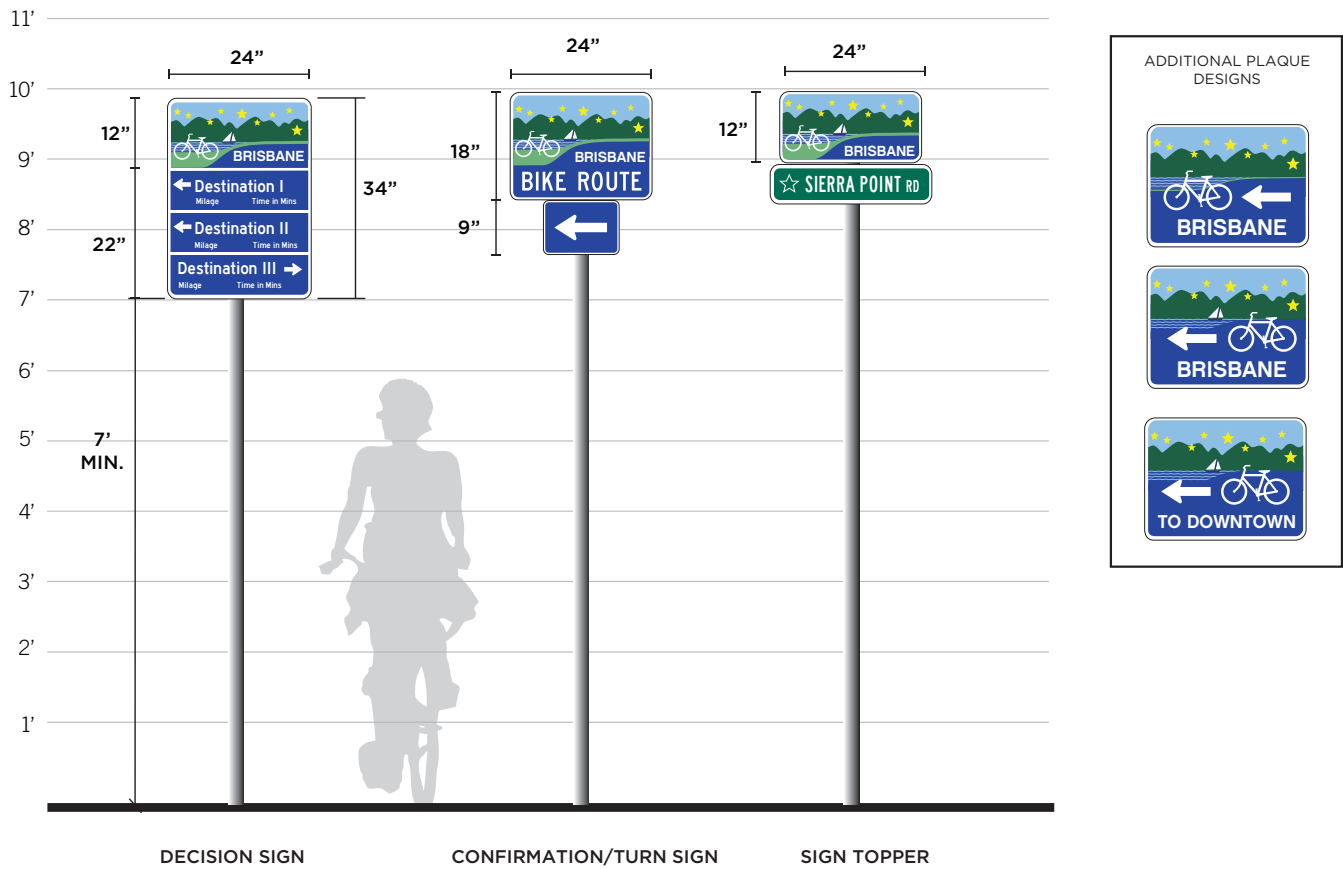


Figure 4-8: Brisbane Branded Sign Design Concepts

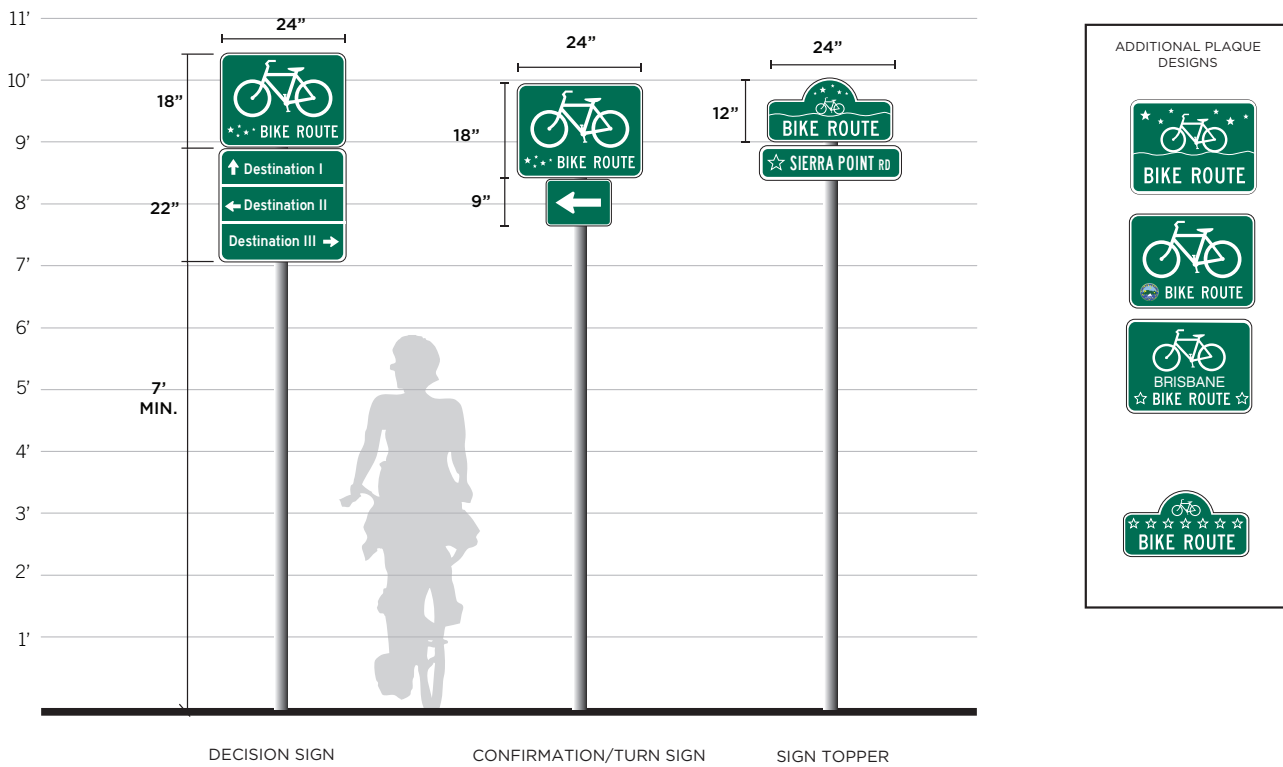


Figure 4-9: MUTCD Guide Inspired Sign Design Concepts

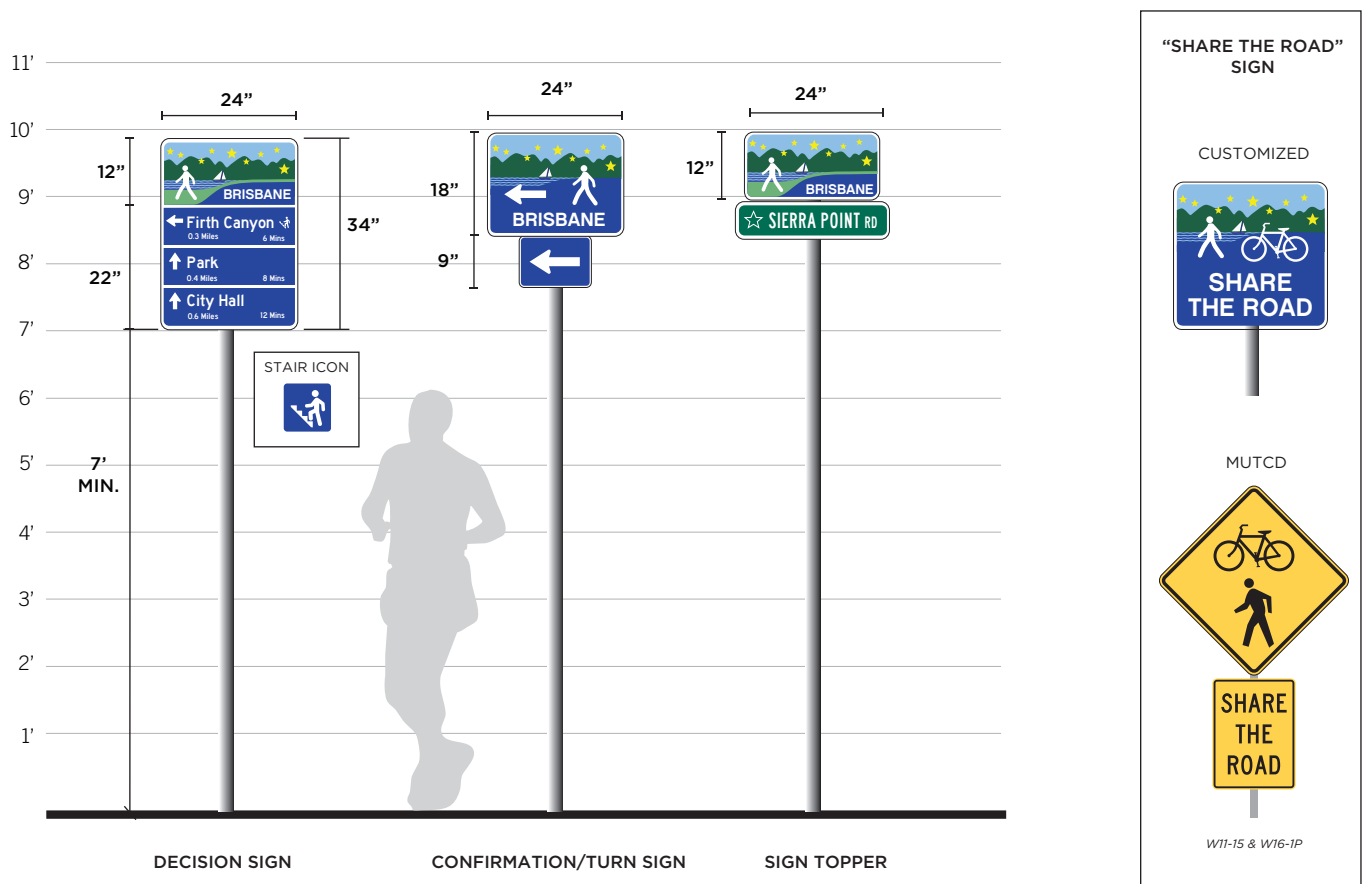


Figure 4-10: Potential Pedestrian and Share the Road Sign Design Concepts

Table 4-4 Potential Wayfinding Destinations by Type

Type	Destinations	Type	Destinations
Parks	» Community park	Commercial areas	» Downtown Brisbane
	» Brisbane Community Pool		» Brisbane Village shopping center
	» Soccer and baseball field	Trails and trail heads	» San Bruno Mountain trail heads
	» City of Brisbane Marina		» Crocker Trail
	» Firth Park		» Bay Trail
Schools	» Lipman Middle School	» City staircase connections	
	» Brisbane Elementary School	Public Facilities	» Costaños Canyon
Public Facilities	» Community library		» Firth Canyon
	» City Hall		
	» Mission Blue Community Center		



05

Implementation

Setting the Course

This Bicycle and Pedestrian Master Plan includes projects and programs intended to improve the quality of life and create a legacy of healthy, active transportation options for the Brisbane community.

Doing so will take time and funding. This Chapter lays out the City’s strategy towards implementation and includes:

- » Priority Projects and Programs presents how implementation priorities were developed and the cost to implement those priorities.
- » Funding sources identifies potential funding sources for the proposed projects.

Priority Projects and Programs

The intent of evaluating projects is to create a prioritized list of projects for implementation. Using the project evaluation process described in Chapter 4, projects were sorted into four groups based on their overall priority and the feasibility of implementing the project (Table 5-1). While individual projects fall somewhere on each continuum, this approach provides a easy way to select priority projects.

As projects are implemented, other projects may move up a priority level. The project list and individual projects to be included in this Plan are flexible concepts

that serve as a guideline. The High Priority project list, and the overall project list, will change over time as a result of changing bicycling and walking patterns, land use patterns, implementation constraints and opportunities and the development of other transportation improvements.

High Priority Network

The high priority network includes several low to moderate cost projects that can help build out a core bicycle and pedestrian network in Brisbane, including:

- » Bicycle lanes and shared route (Class III) markings on several streets, including on Valley Dr to connect existing lanes in the northern part of the city towards downtown
- » Several new or improved pedestrian crossings, especially around the Crocker Trail and the Parkside neighborhood, the latter of which are consistent with the projects in the Parkside specific plan.

Table 5-2 presents the list of high priority projects identified for the plan.

Table 5-1: Priority Project Evaluation Matrix

		FEASIBILITY	
		High	Low
PRIORITY	High	High Priority. High priority, low cost or easy to implement projects for short term development.	Long Term. Long term projects for further study and evaluation. Seek grant funding to advance these projects
	Low	Opportunity projects. Lower priority investments that may be implemented through regular repaving projects. Otherwise, not a priority.	Low Priority. Low priority, challenging projects that maybe pursued long term, but are not a priority for the City at this time.

Table 5-2: High Priority Projects

Project	Cost
Valley Dr - Class II bike lanes - Bayshore Blvd to Silverspot Dr	\$87,000
San Bruno Ave - Class III bike route (sharrows) - Bayshore Blvd to San Francisco Ave	\$23,000
Old County Rd - Class II bike lane - Bayshore Ave to San Francisco Ave	\$22,000
Park Lane - Class III bike route (sharrows) - Valley Dr to Old County Rd	\$9,000
Old County Rd - Improved pedestrian crossing (flashing beacon, median island) - community park to Brisbane Village Shopping Center	\$40,000
Valley Dr - Extend existing median islands and pedestrian cages at 2 locations (Crocker Trail and City Hall)	\$16,000
Sierra Point Parkway - Green striping at US 101 on ramp	\$20,000
Park Lane - High visibility crosswalk at Valley Dr & Old County Rd	\$5,000
Valley Dr - Add median islands, pedestrian cages, yield teeth at two existing locations	\$20,000
TOTAL	\$242,000



Long Term Projects

The long term projects are somewhat more expensive or require design, but were identified as priorities through the evaluation. These projects include :

- » New sidewalks in several locations that are regular walking areas or provide access to local transit.
- » Resurfacing the Crocker Trail to improve bicycle use and long term condition.
- » New separated bikeways (Class IV) or shared use paths (Class I) on key routes connecting to Caltrain (Tunnel Ave) or to employment centers and recreation (Lagoon Rd and Sierra Point Pkwy).
- » Studying anew pedestrian connection on Guadalupe Canyon Parkway between Elderberry Ln and Old Ranch Trail Rd. This connection may include additional striping or narrowing travel lanes on Guadalupe Canyon Pkwy, signage, rumble strips, or demarcating a specific path.

Table 5-3 identifies the long term projects.

Table 5-3: Long Term Projects

Project	Cost
Tunnel Avenue - Class IV cycle track entire length	\$1,715,000
Crocker Trail - Resurface to Class I using stabilized decomposed granite	\$986,000
S Hill Drive - Add sidewalk on west side of S. Hill Dr from W Hill Place to Quarry Rd	\$486,000
Old County Rd - Add sidewalk from Park Ln to Shopping Center	\$95,000
Park Lane - Add sidewalk on both sides between Old County Rd & Valley Dr	\$259,000
Sierra Point Parkway and Lagoon Rd - Class I or IV bicycle facility from Tunnel Ave to Marina Blvd	\$2,113,000
Study pedestrian connection on Guadalupe Canyon Parkway	\$50,000
TOTAL	\$6.1M

Opportunistic Projects

The final set of projects were not identified as a high priority by the community or through the technical analysis, but are relatively simple, easy to implement projects that can be addressed in the normal course of repaving streets or making other investments..

These projects include:

- » Consolidating driveways at the Brisbane Village Shopping Center, potentially as part of redevelopment identified through the Parkside Specific Plan
- » Adding advance stop bars on safe routes to school routes where those are not available.
- » Adding bicycle parking in several locations.
- » Improving currently lightly used street crossings for improved bicycle safety.

Table 5-4 identifies the opportunistic projects.

Table 5-4: Opportunistic Projects

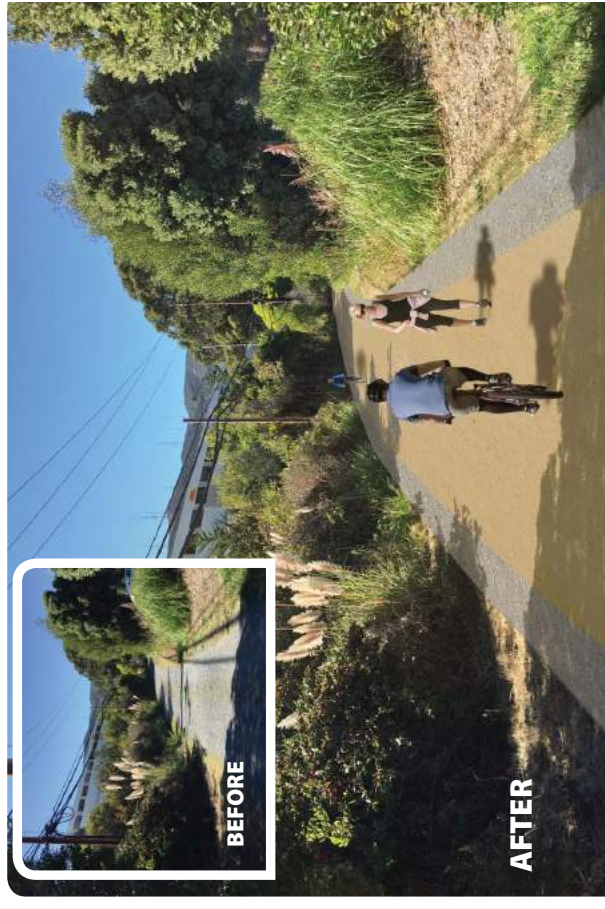
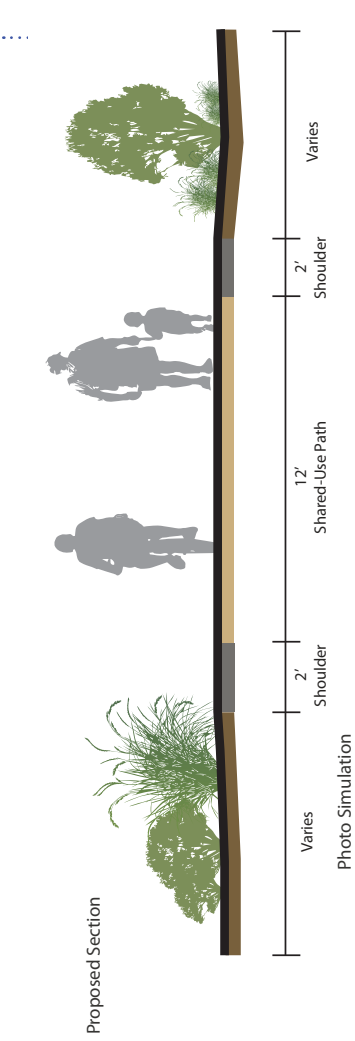
Project	Cost
Brisbane Village Shopping Center - Driveway consolidation	\$10,000
Bicycle Parking Racks (up to 20 racks) at various locations	\$15,000
Advanced stop bars at San Bruno Ave & Alvarado St and at San Benito Rd & Glen Park Way	\$2,000
Reduce turning radius, mark bicycle crossings with green paint at Lagoon Rd & Sierra Point Parkway and at Lagoon Rd & Tunnel Ave	\$40,000
TOTAL	\$67,000

Priority Project Sheets

For two of the proposed projects, project summaries were developed to help Brisbane pursue grant funding and be prepared to advance projects into design and construction. Project sheets are available for:

- » Crocker Trail. This project includes resurfacing the existing trail to improve the usability and reduce long term maintenance of this existing trail (Figure 5-1).
- » Lagoon Road Shared Use Path. This project would build a new class I shared use path along Lagoon Rd and Sierra Point Parkway from Tunnel Road to just past the US 101 Interchange (Figure 5-2).

As the City pursues these projects, regional and state funding sources may be available to fund these and other projects. Those are addressed in the following section. One challenge for the Lagoon Road project is the constrained section along Sierra Point Parkway. There is limited right-of-way between the road and the Lagoon, requiring fencing to separate automobile traffic from bicyclists and pedestrians. Cleaning this path may require specialized equipment



Project Information

This project proposes to resurface the 2.2 mile Crocker Recreation Trail with a stabilized decomposed granite. The proposed surface will provide a smoother and safer experience for walkers, joggers, and cyclists. Stabilizing decomposed granite or other similar aggregate maximizes the strength, extends the useful life, and keeps the surface permeable and natural looking. Organic, resin-based binders are ideally pre-mixed with the chosen aggregate and maintain a degree of flexibility unlike a rigid asphalt or concrete surface.



Planning Level Cost Information

ITEM	UNIT	UNIT COST	QUANTITY	COST
Stabilized Decomposed Granite Trail (assumes 12' width)	Mile	\$450,000	2.2	\$990,000

Figure 5-1: Crocker Trail Resurfacing Project Summary

Lagoon Road Shared-Use Path Project



This project proposes to create a Class I shared use path along Lagoon Road and Sierra Point Parkway from Tunnel Road to just past the US 101 interchange. The new trail would provide a mostly separated connection from between downtown Brisbane and Sierra Point, including employment areas, the City marina, and the Bay Trail. A portion of the route (primarily along Lagoon Road) is unconstrained and would be separated by a minimum of five feet. Much of the route along Sierra Point Parkway is constrained and would be separated by a Caltrans approved fence or barrier.

Planning Level Cost Information

ITEM CLASS / PATH	UNIT MILE	UNIT COST	TOTAL COST	QTY	COST
		\$1,300,000	\$2,100,000	1.6	\$2,100,000

Plan View



Proposed Section

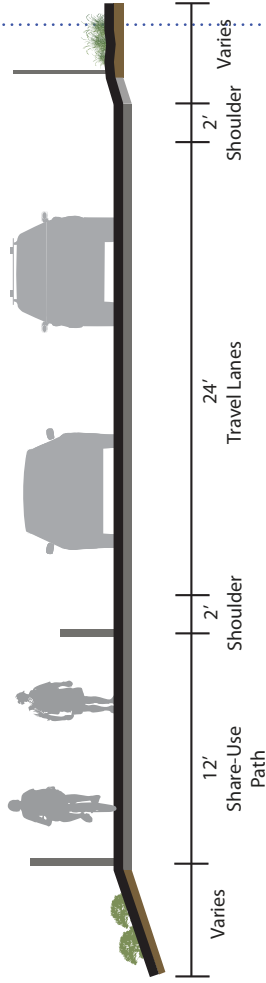


Photo Simulation



Figure 5-2: Lagoon Road Shared Use Path Project Summary

Funding Sources

Brisbane has the opportunity to leverage local, regional, state, and federal funds for implementation and maintenance of the bicycle and pedestrian projects recommended in this plan. This section describes funding sources that the City is eligible for.

Federal Sources

Federal transportation legislation, currently the Fixing America's Surface Transportation Act (FAST Act) provides a variety of funding programs that are provided to states and metropolitan planning organizations. Key programs include:

- » The Surface Transportation Block Grant Program (STBGP) provides states with flexible funds that may be used for a variety of projects. Bicycle and pedestrian improvements are eligible, including trails, sidewalks, bike lanes, crosswalks, pedestrian signals, and other ancillary facilities. Fifty percent of each state's STBGP funds are sub-allocated geographically by population and are managed by MPOs in California.
- » STBGP Set-Aside: Transportation Alternatives Program (TAP). Formerly a separate program the TAP was folded into STBGP as a set-aside. Generally, these funds are for enhancements, safe routes to school, and recreational trails, including both infrastructure and programs.
- » The Highway Safety Improvement Program (HSIP) provides \$2.4 billion nationally for projects that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. Pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for active transportation users in school zones are examples of eligible projects. HSIP projects must be consistent with the state's Strategic Highway Safety Plan.

- » Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides funding for projects and programs in areas with air quality issues. These funds can be used for pedestrian and bicycle facilities that reduce automobile travel. Purely recreational facilities are not eligible. In the Bay Area, CMAQ funding is administered through the Metropolitan Transportation Commission (MTC).
- » 405 National Priority Safety Program is managed by NHTSA to fund a variety of safety improvement programs. This program includes approximately \$14 million annually to States to decrease bike and pedestrian crashes with motor vehicles. States where bike and pedestrian fatalities exceed 15 percent of their overall traffic fatalities are eligible for: training law enforcement officials on bike/pedestrian related traffic laws, enforcement campaigns related to bike/pedestrian safety, and education and awareness programs related to relevant bike/pedestrian traffic laws.

More information on the FAST Act is available at:

<https://www.transportation.gov/fastact>

State Sources

State sources for active transportation include:

- » In 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP), consolidating the Federal TAP, California's Bicycle Transportation Account (BTA), and Federal and California Safe Routes to Schools (SRTS) programs. Eligible projects include both capital infrastructure projects and non-infrastructure projects, such as education, encouragement, enforcement, and planning. ATP Guidelines are available here: <http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html>

- » The California Office of Traffic Safety (OTS) administers grants drawn from the National Highway Traffic Safety Administration (NHTSA) and FHWA to establish new traffic safety programs, expand ongoing programs or address deficiencies in current programs. Grants are awarded on a competitive basis, and priority is given to agencies with the greatest need. Evaluation criteria to assess need include potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants. More information: <http://www.ots.ca.gov/>
- » California Strategic Growth Council (SGC) administers grant programs to fund broad-based greenhouse gas emission reduction projects, including transportation, housing, and others that provide local economic, environmental and health benefits to disadvantaged communities. More information: <http://sgc.ca.gov/Grant-Programs/index.html>

Regional & Local Sources

At the regional level, there are several funding sources available, including:

- » Metropolitan Transportation Commission OneBayArea Grant (OBAG) program is a funding approach that aligns MTC’s investments with support for focused growth. Established in 2012, OBAG taps federal funds to maintain MTC’s commitments to regional transportation priorities while also advancing the Bay Area’s land-use and housing goals. OBAG includes both a regional program and a county program that targets project investments in Priority Development Areas. Bicycle and pedestrian improvements and safe routes to schools projects are allowed under this program. More information: <http://www.mtc.ca.gov/our-work/fund-invest/federal-funding/obag-2>

- » San Mateo County Measure A is a countywide half-cent general sales tax passed by voters in 2012 to support essential County services and to maintain or replace critical facilities. It expires in 2023. Measure A includes a Pedestrian and Bicycle Program category that provides funding for construction of facilities for bicyclists and pedestrians. Annually, three percent of the Measure A sales tax revenues are set aside for Pedestrian and Bicycle Program. A call for projects is conducted biennially.

Facility maintenance

Maintenance for the complete recommended network includes sweeping, restriping, occasional sign replacement, and litter removal as appropriate for each facility type. The estimated annual maintenance costs for various facility types are identified in Table 5-5. Note that many of these costs would likely be covered through routine street maintenance.

Table 5-5: Maintenance Costs Per Mile

Facility Type	Cost Per Mile
Paths (Class I)	\$10,000
Bike Lanes (Class II)	\$2,000
Bike Routes (Class III)	\$1,200
Protected Bikeway (Class IV)	\$10,000



OA
Appendices

Supporting Documentation

The Brisbane Bicycle and Pedestrian Plan was developed through a series of technical memoranda that provide detailed information about the development of the plan. The following appendices are available to support the plan:

- » Appendix A — Active Transportation Program (ATP) compliance. Provided within this section, ATP compliance table identifies where all requirements are addressed.
- » Appendix B — Working Paper #1 summarized existing policies, studies, and programs within Brisbane.
- » Appendix C — Working Paper #2 reviewed existing conditions for bicycling and walking in Brisbane today.
- » Appendix D — Working Paper #3 provided a detailed review of potential projects and programs for inclusion in the plan.
- » Appendix E - Wayfinding Technical Memorandum provides additional information about bicycle and pedestrian wayfinding in Brisbane.

Appendix A - ATP Compliance Checklist

Table A-1 on the following two pages identifies the required elements of an Active Transportation Program compliant plan. The Brisbane Bicycle and Pedestrian Master Plan includes all of the required information. Links to the specific location of each item are provided in the final column of the table.

Table A-1: Active Transportation Program Compliance Checklist

Subject	ATP Compliance Checklist	Location in Plan
Future Trip Estimates	The estimated number of existing bicycle trips and pedestrian trips in the plan area, both in absolute numbers and as a percentage of all trips, and the estimated increase in the number of bicycle trips and pedestrian trips resulting from implementation of the plan.	Chapter 2, Appendix B
Collision Report	The number and location of collisions, serious injuries, and fatalities suffered by bicyclists and pedestrians in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	Chapter 1, Chapter 2, Appendix B
Land Use Patterns	A map and description of existing and proposed land use and settlement patterns which must include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other destinations.	Appendix A
Existing and Proposed Facilities and Programs	A map and description of existing and proposed bicycle transportation facilities, including a description of bicycle facilities that serve public and private schools and, if appropriate, a description of how the five Es (Education, Encouragement, Enforcement, Engineering, and Evaluation) will be used to increase rates of bicycling to school.	Chapter 2, Chapter 4, Appendix B, and Appendix D
End-of-Trip Bicycle Parking	A map and description of existing and proposed end-of-trip bicycle parking facilities	Chapter 2, Chapter 4, and Appendix B
Bicycle Parking Policy	A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	Appendix A
Bicycle Connections to other Modes	A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These must include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.	Chapter 2, Chapter 4, and Appendix B
Pedestrian Connections to other Modes	A map and description of existing and proposed pedestrian facilities at major transit hubs. These must include, but are not limited to, rail and transit terminals, and ferry docks and landings.	Chapter 2, Chapter 4, and Appendix B
Wayfinding	A description of proposed signage providing wayfinding along bicycle and pedestrian networks to designated destinations.	Chapter 4
Maintenance	A description of the policies and procedures for maintaining existing and proposed bicycle and pedestrian facilities, including, but not limited to, the maintenance of smooth pavement, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	Chapter 5
Education Programs	A description of bicycle and pedestrian safety, education, and encouragement programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the law impacting bicycle and pedestrian safety, and the resulting effect on accidents involving bicyclists and pedestrians.	Chapter 4
Community Involvement	A description of the extent of community involvement in development of the plan, including disadvantaged and underserved communities.	Chapter 3

Subject	ATP Compliance Checklist	Location in Plan
Regional Plan Coordination	A description of how the active transportation plan has been coordinated with neighboring jurisdictions, including school districts within the plan area, and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	Appendix A
Project List	A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	Chapter 4, Chapter 5, and Appendix D
Past Expenditures and Future Financial Needs	A description of past expenditures for bicycle and pedestrian facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicyclists and pedestrians in the plan area. Include anticipated revenue sources and potential grant funding for bicycle and pedestrian uses.	Appendix B
Implementation	A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	Chapter 5
Adoption Resolution	A resolution showing adoption of the plan by the city, county or district. If the active transportation plan was prepared by a county transportation commission, regional transportation planning agency, MPO, school district or transit district, the plan should indicate the support via resolution of the city(s) or county(s) in which the proposed facilities would be located.	To be added after council adoption

