Brisbane Bicycle and Pedestrian Master Plan

February 2017

PLANNING + DESIGN

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:

» Lyle Covino, representing the Parks and Recreation Commission

» 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

» Michael Schumann, at-large representative

Ex-officio staff serving this group included:

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Plan Contents

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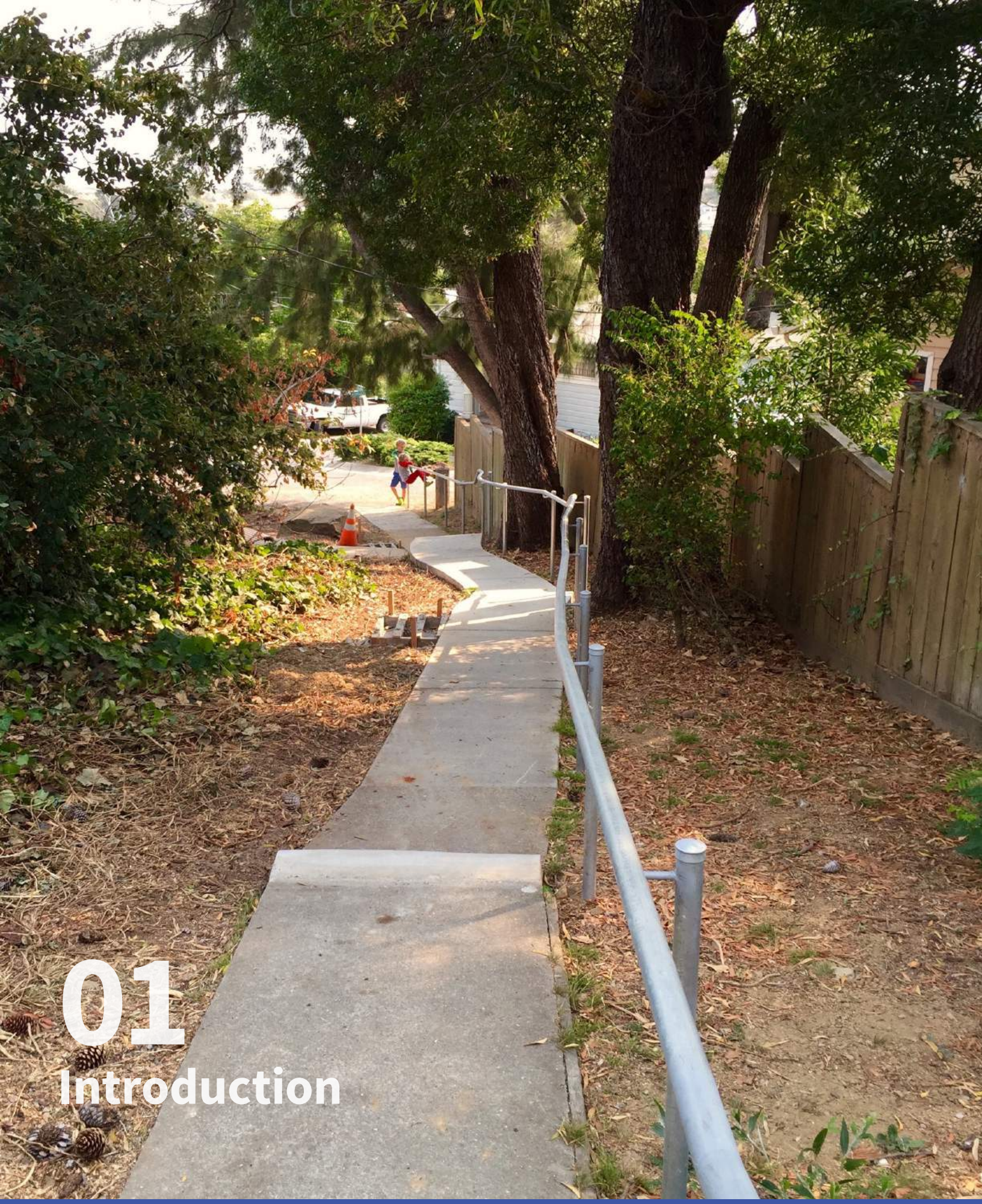


01
Introduction

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.

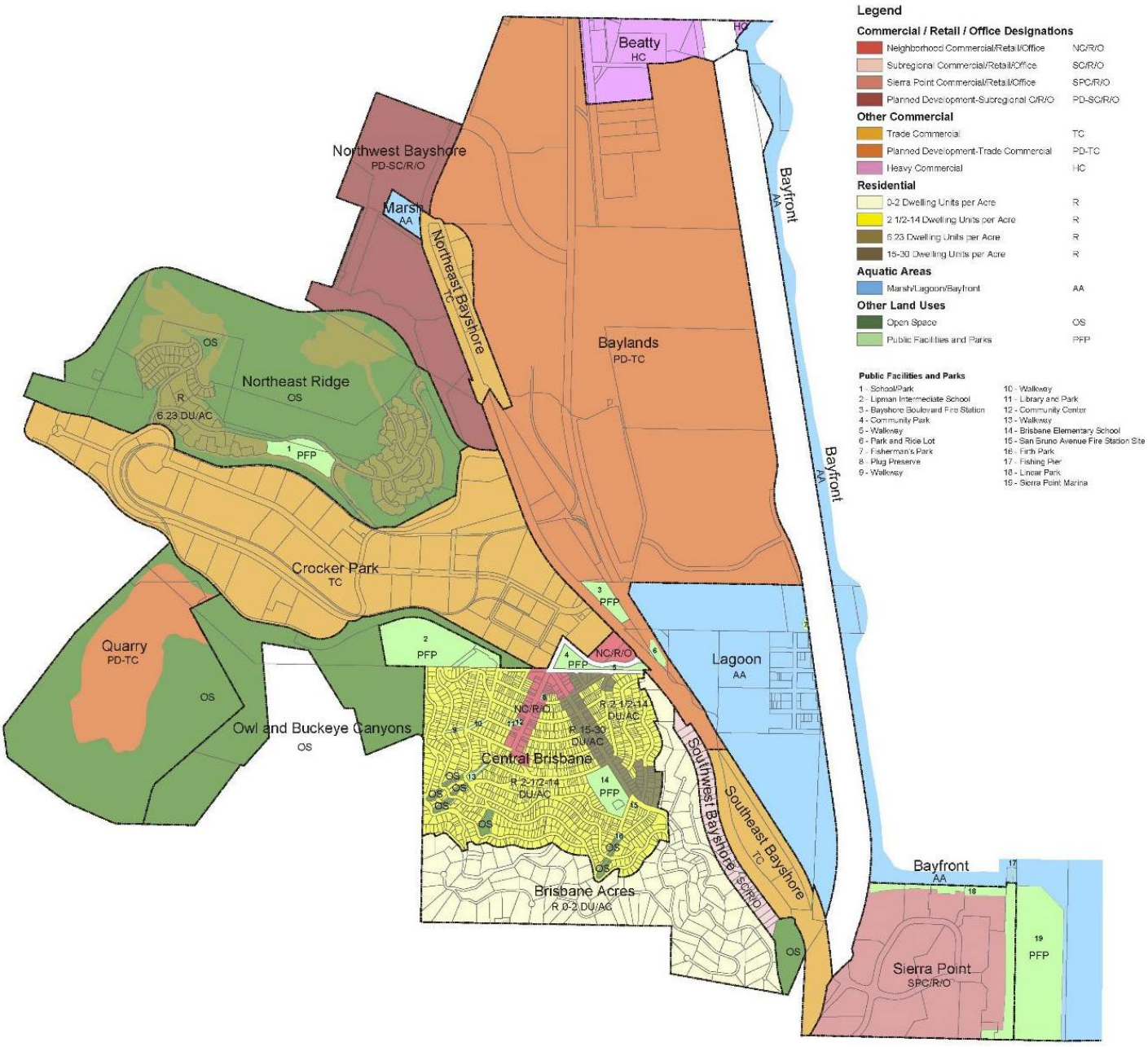


Figure 1-1: 1994 General Plan Land Use Diagram, City of Brisbane

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 wayfinding, 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

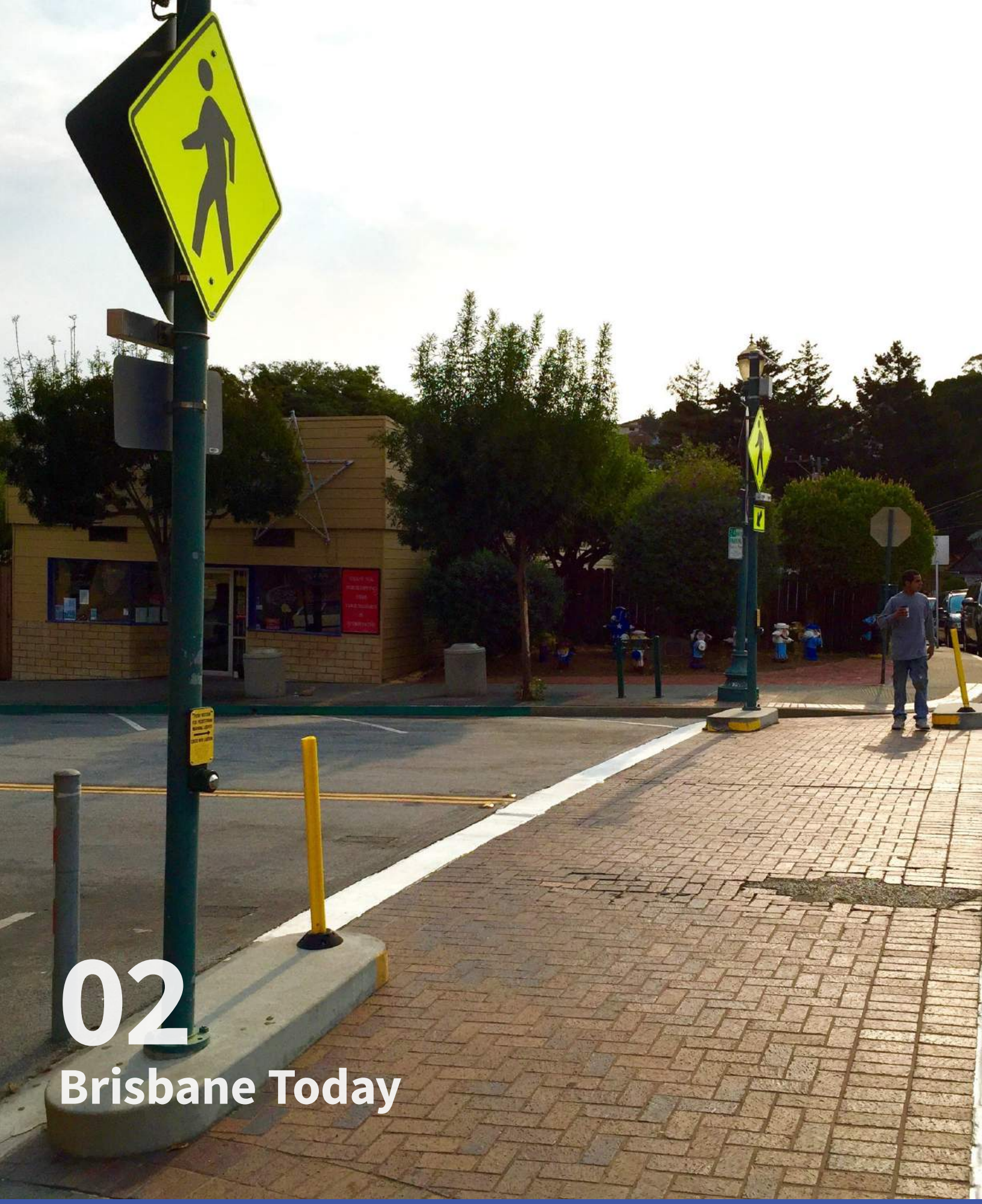
» Chapter 2 Bicycling and Walking in Brisbane Today

» 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.



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.

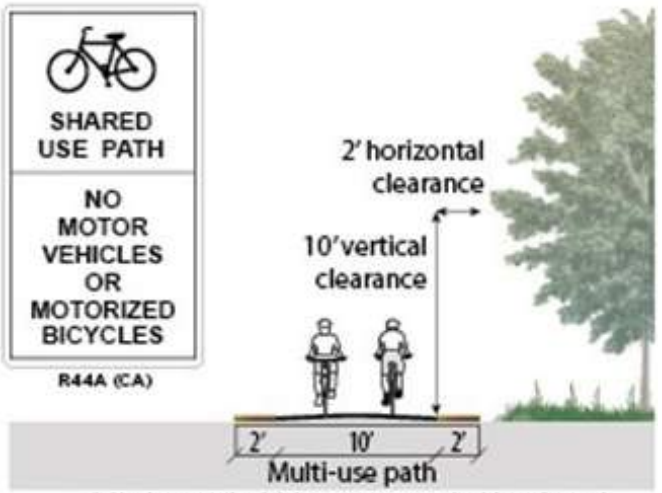
Class I - Shared Use Path

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

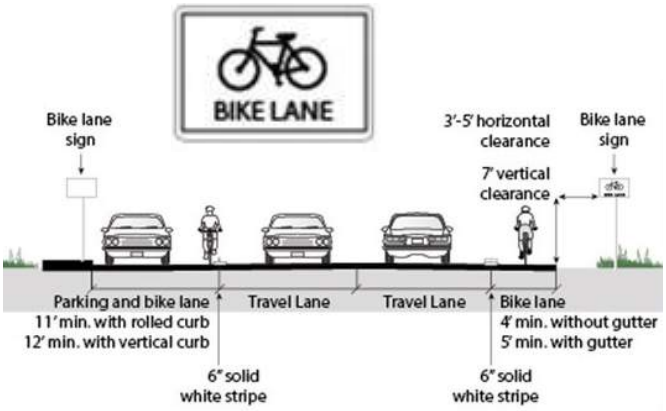


14'min. total width recommended/preferred
(10' paved width, 2' clear shoulders)
8' min. paved width required
2' gravel shoulders required
12' min. total width required

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

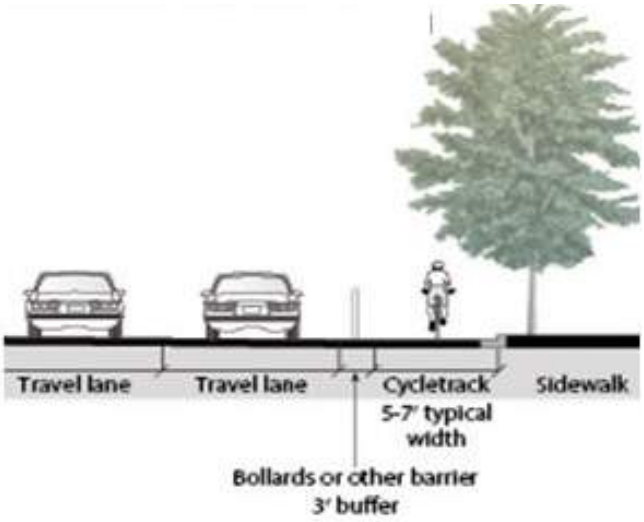
Class III Bike Routes provide for shared travel lane use and are generally only identified with signs. Bike routes may have a wide travel lane or shoulder that allow for parallel travel with automobiles. Brisbane currently has no designated Bike Routes.

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.

Existing Bicycle Parking in Brisbane

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.

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

0 0.25 0.5 MILES

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.

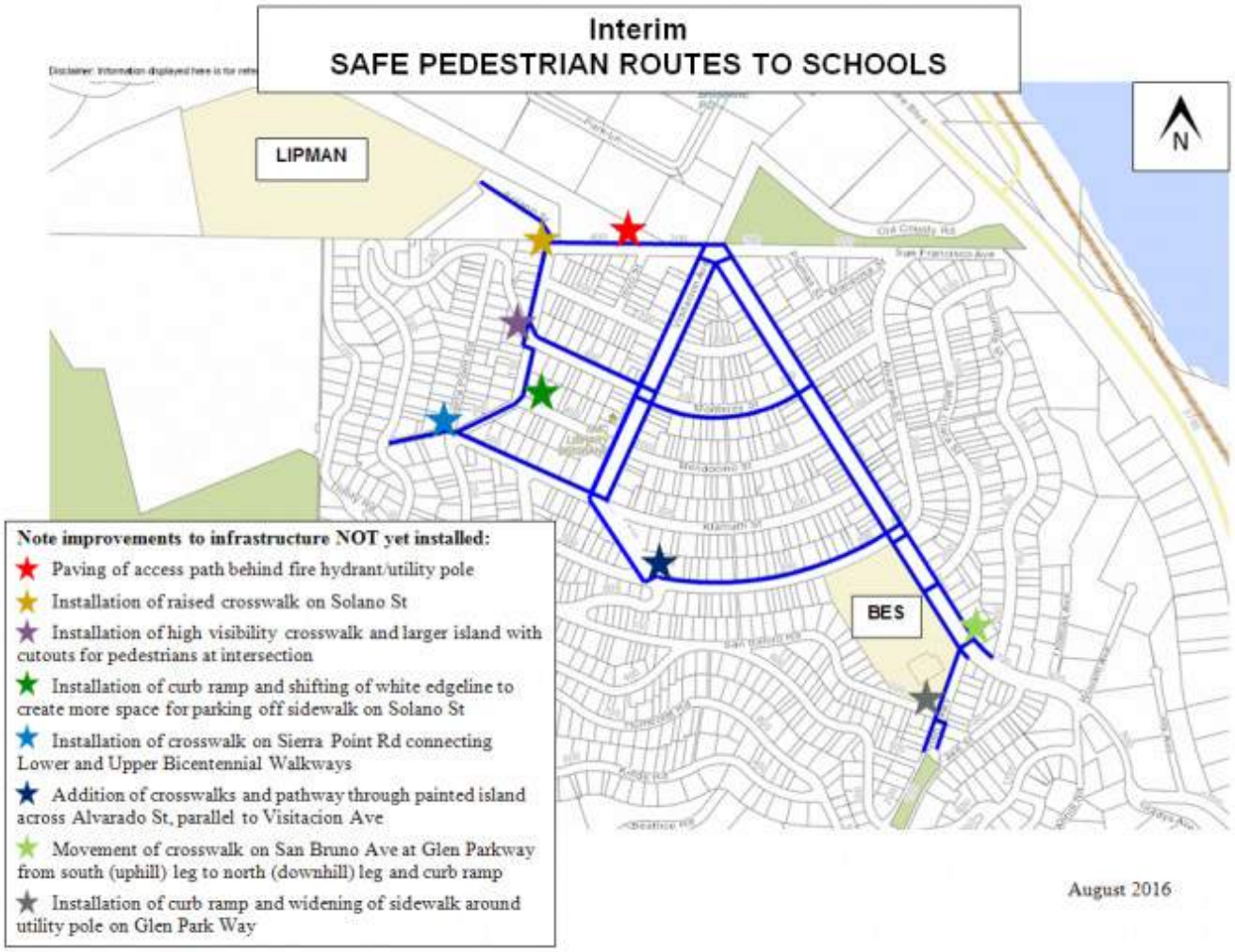


Figure 2-2: Interim Safe Pedestrian Routes to Schools

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 moth 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.

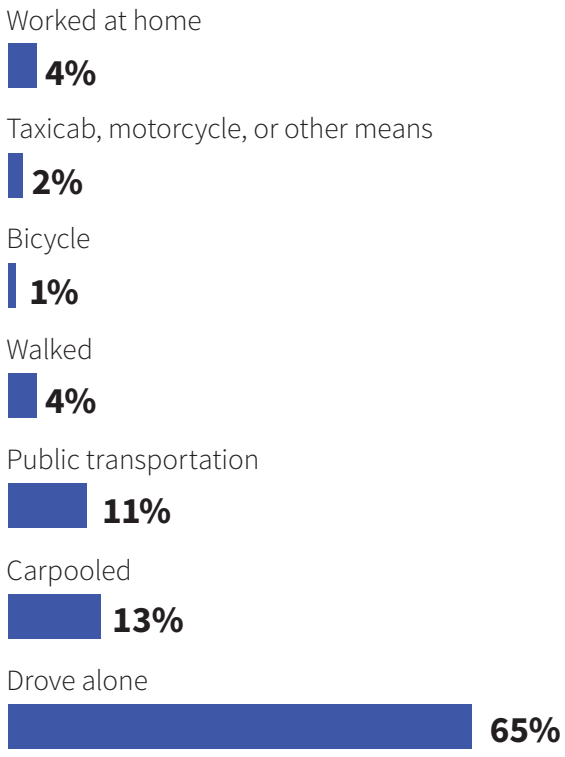


Figure 2-3: Commuter Travel

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.

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.

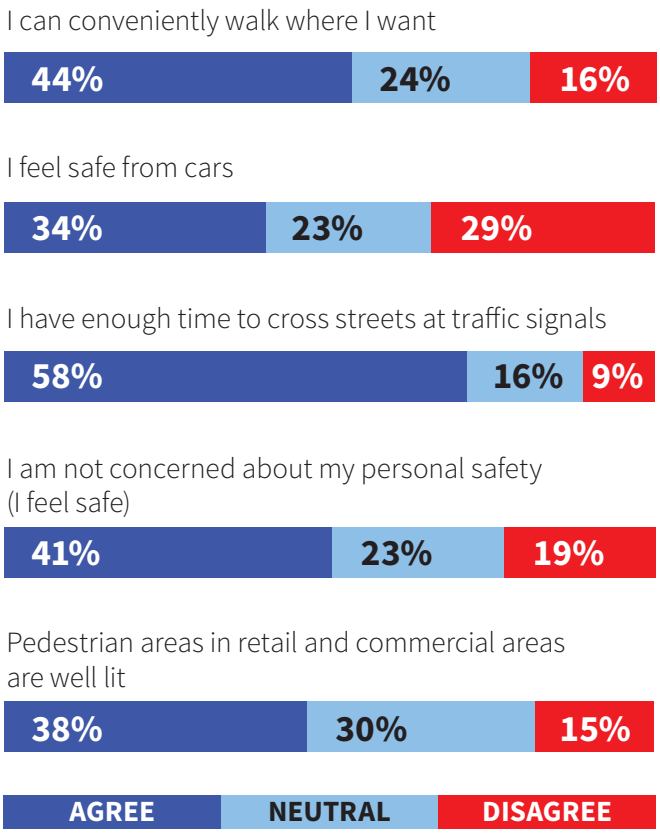


Figure 3-1: Walking experience in Brisbane

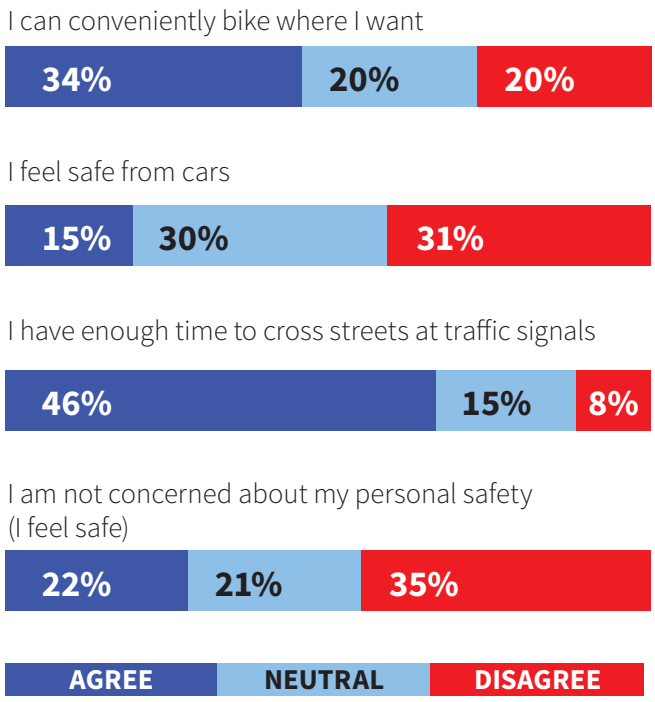


Figure 3-2: Bicycling experience in Brisbane

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.

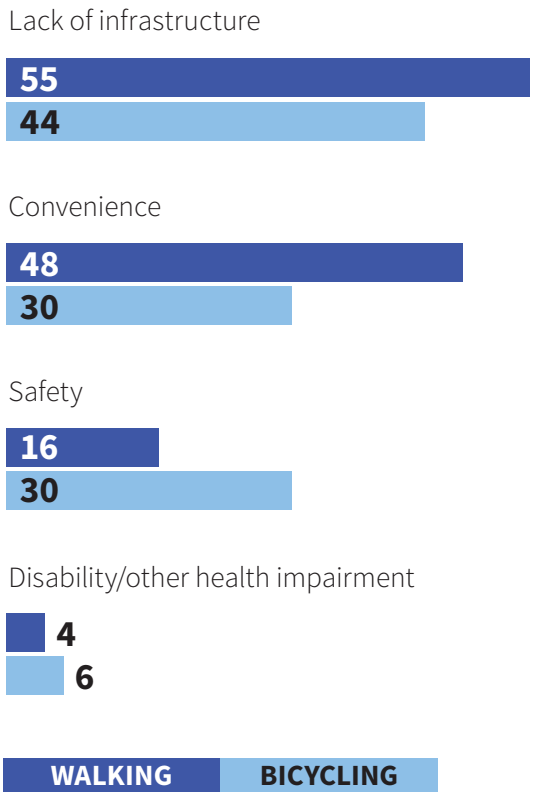


Figure 3-3: Barriers to walking or bicycling

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

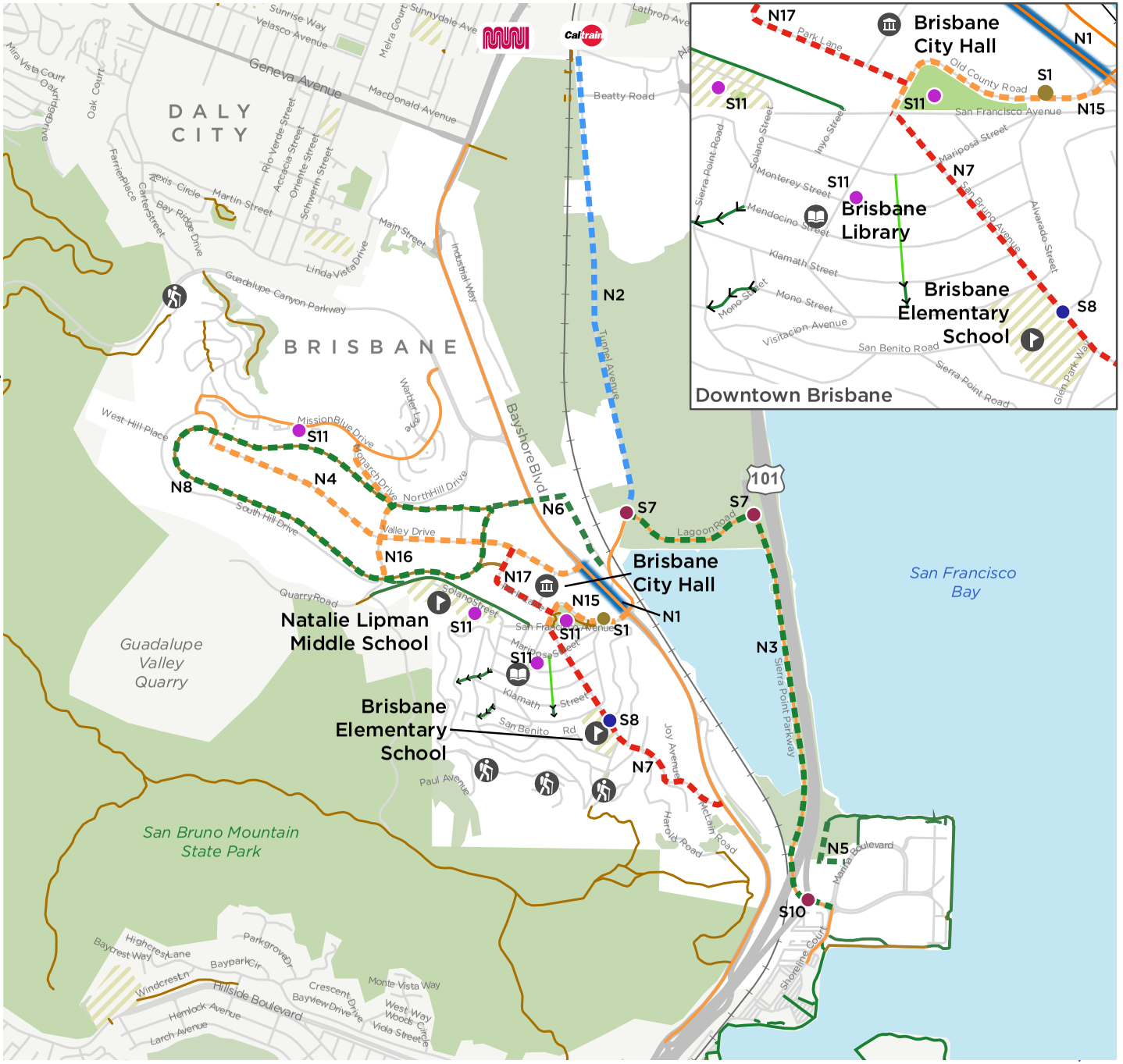
Brisbane Bicycle & Pedestrian Plan

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.

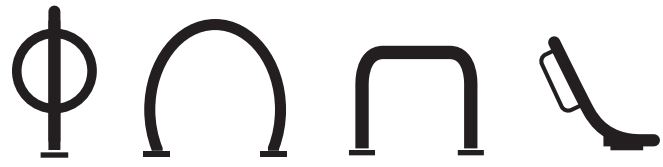


Figure 4-2: Recommended Bicycle Racks

Figure 4-3: Example Creative Bicycle Racks

PROPOSED PEDESTRIAN FACILITIES

Brisbane Bicycle & Pedestrian Plan

Proposed Facilities

- Class I 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 I Shared Use Path

0 0.25 0.5 MILES

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.

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.

Bike to Work Day, 2016

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

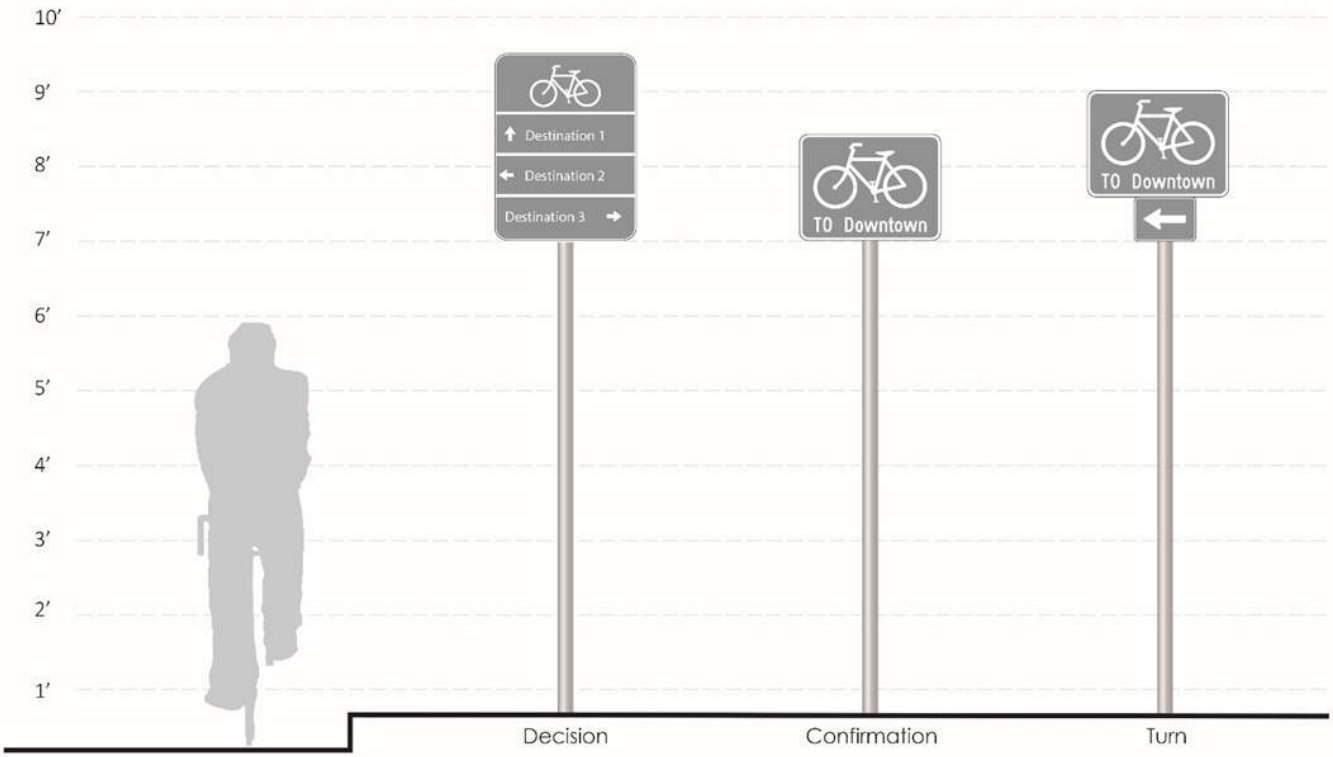


Figure 4-5: On Street Wayfinding Tools (Bicycle Focused)

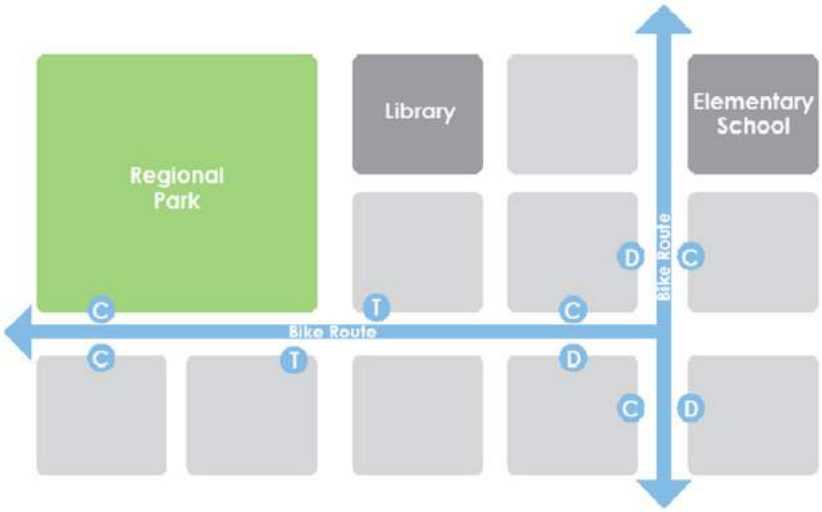


Figure 4-6: Typical Wayfinding Locations

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 superseeds 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

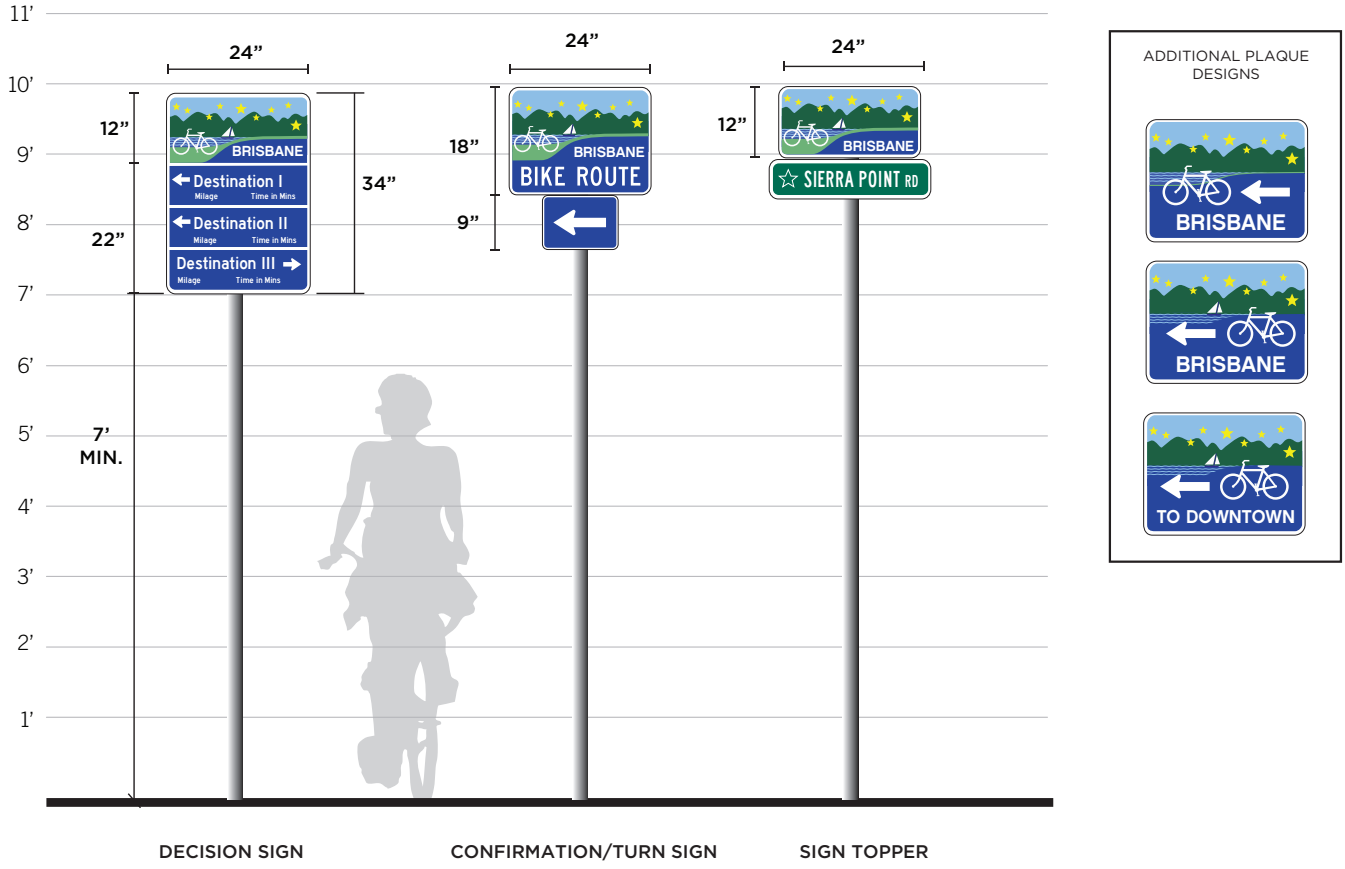


Figure 4-8: Brisbane Branded Sign Design Concepts

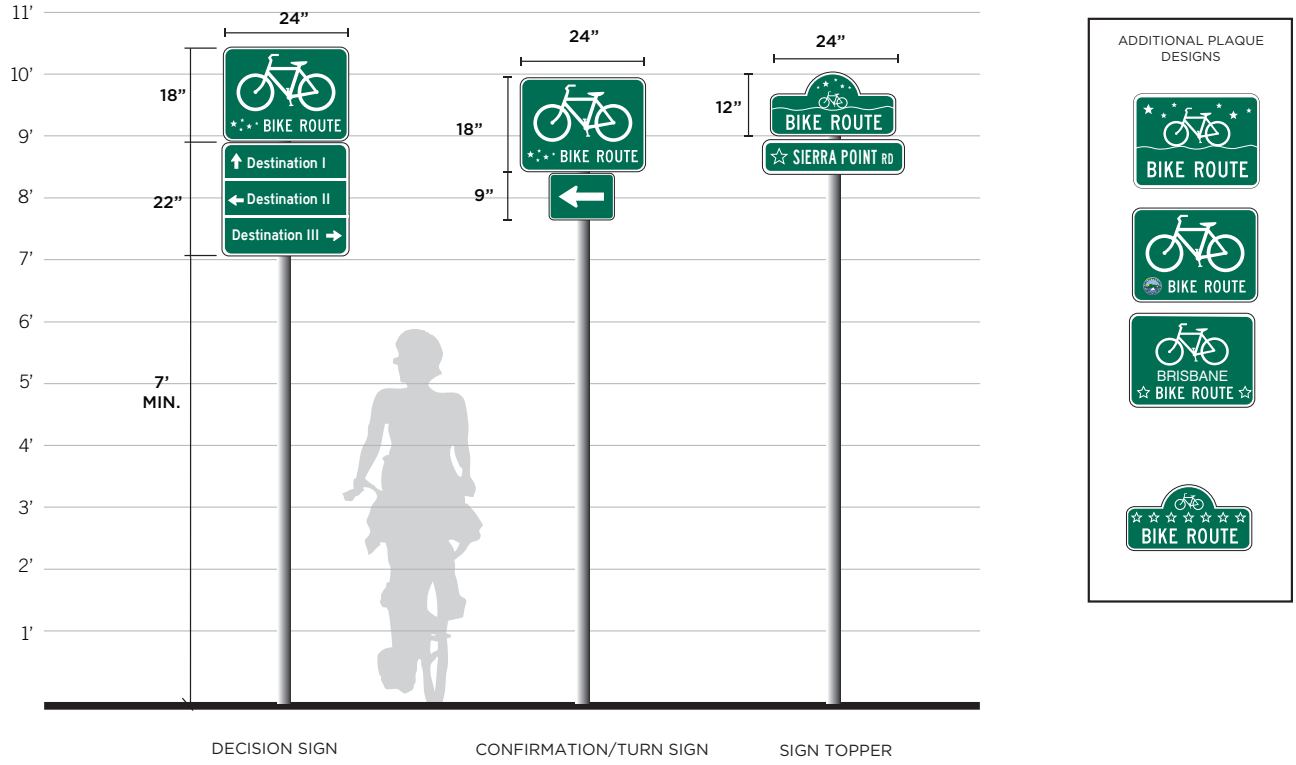


Figure 4-9: MUTCD Guide Inspired Sign Design Concepts

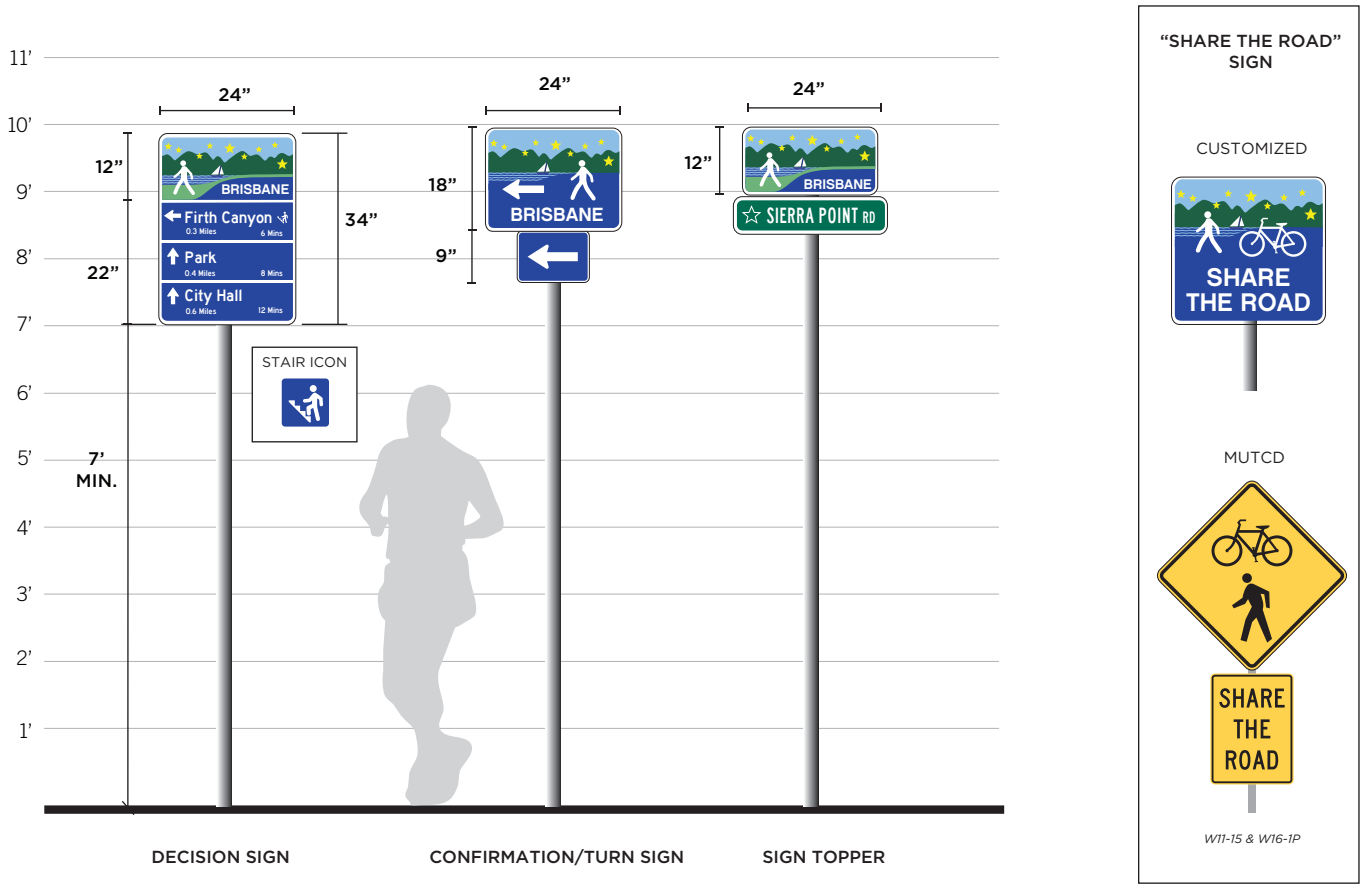


Figure 4-10: Potential Pedestrian and Share the Road Sign Design Concepts

Table 4-4 Potential Wayfinding Destinations by Type

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

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

Crocker Trail Resurfacing Project

Plan View

Crocker Trail

Old Bayshore Tunnel Trail

0 500 1000 FEET

Proposed Section

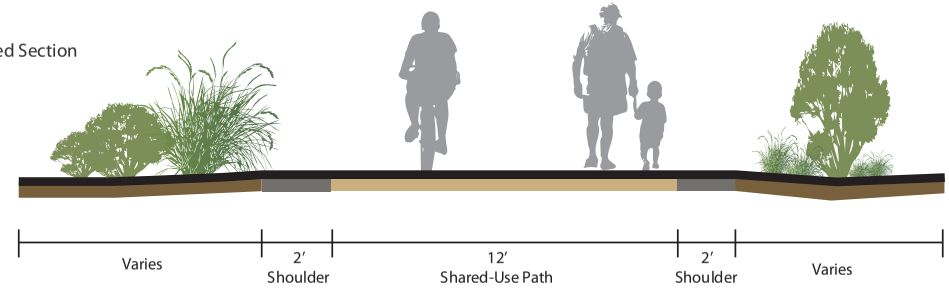


Photo Simulation

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 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	UNIT	UNIT COST	QTY	COST
CLASS I PATH	MILE	$1,300,000	1.6	$2,100,000

Plan View

Proposed Section

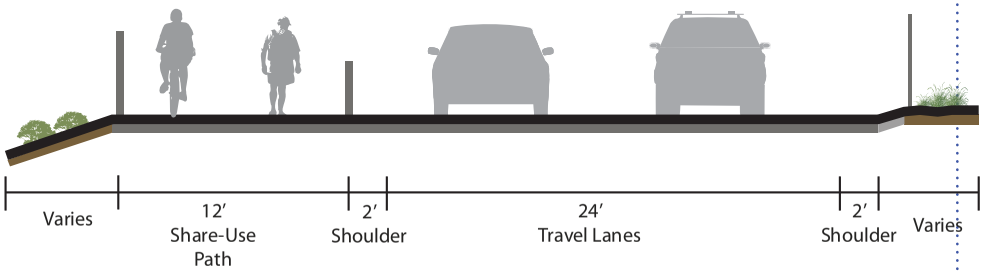


Photo Simulation

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

0A
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

Appendix B – Review of Existing Policies

City of Brisbane

July 2016

alta PLANNING + DESIGN

Document Information			
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	Project Title	Brisbane Bicycle and Pedestrian Master Plan	
	Client	Randy Breault	

Document Revision Schedule			
Review of Existing Documents			
Rev.	Description	Date	Reviewed by
v1	Draft report	7/30/2016	Hugh Louch
v2	Final Report	8/26/2016	Hugh Louch
v3	Appendix A	11/29/2016	Hugh Louch

Table of Contents

1. Introduction

The Brisbane Bicycle and Pedestrian Master Plan (BPMP) will build on existing transportation and land use plans and policies in place within the City of Brisbane and San Mateo County. Over the last 20 years, a number of strategic transportation-planning efforts have taken place in the City of Brisbane and the region. To understand the priorities and goals put forth by past planning efforts, the Alta team has reviewed many of these documents. The following pages contain summaries of these plans, including:

- General Plan – Land Use (1994), Circulation (2015), Community Health and Safety (1994)
- Parkside Precise Plan (2016)
- Baylands Sustainability Framework (2015)
- Community Issues, Goals & Policies Survey (2005)
- Crocker Park Technical Assistance Panel (2014)
- Combined Site and Architectural Design Guidelines, Sierra Point (2001)
- Sierra Point Design Guidelines (2012)
- NCRO-2 Downtown Brisbane Neighborhood Commercial District Design Guidelines (2002)
- Brisbane is Awesome: Place Evaluation Workshop Results (2005)
- Geneva-Harney BRT Feasibility Study (2015)
- San Mateo County Comprehensive Bicycle and Pedestrian Plan (2011)
- San Mateo County Trails Plan (2001)
- Get Healthy San Mateo County (2015)

The review of these existing plans and policies revealed several overarching themes that will be used to develop a draft vision, goals, and objectives for the BPMP:

- Improving connectivity on a regional and local scale, particularly between commercial and residential developments, trails and open spaces, transit facilities, and north-south access in Crocker Industrial Park.
- Creating a safe and convenient network that accommodates users of all modes and abilities by integrating Complete Streets policies and design features, while allowing for necessary truck access on major arterials.
- Reducing collisions and traffic related injuries and fatalities. Although Brisbane does not have a history of high numbers of collisions, safety is a concern and priority for the City. Reducing the risk of collisions and perception of unsafe conditions is important for encouraging more bicycling and walking.
- Increasing opportunities for bicycling and walking for transportation and recreation through a combination of education, encouragement, enforcement, and engineering strategies.
- Maintaining the local character of Brisbane. This can be achieved through the integration of pedestrian-friendly and mixed-use development, wayfinding that promotes a sense of place, and places to gather.

The remainder of this working paper provides a detailed review of existing policies and plans.

2. Local Plans and Policies

General Plan (1994)

The General Plan outlines the City's goals and plans regarding land use, housing, traffic, natural resources, open space, safety, and noise. The Circulation Element was updated in 2015 and the City of Brisbane is currently undergoing a process to update the General Plan.

Land Use

Brisbane is divided into 13 subareas in the General Plan with specific policies and programs for each. The policies and programs are categorized by: land use, transportation and circulation, recreation and community services, open space and conservation, and community health and safety. Relevant policies and programs for each subarea and categories are provided below.

Figure 2-1 shows the location of land use designations given to public and private properties within the General Plan planning area. The central part of the City is primarily comprised of residential land use, with select areas established for commercial activity and open space. Key areas of the City include:

- Bayfront, designated as an aquatic area.
- Baylands, designated as a Planned Development area, will be used for commercial and retail activity.
- Beatty, designated for commercial and retail activity.
- Brisbane Acres, designated as residential.
- Central Brisbane, designated primarily as residential with a small portion of open space and commercial and retail activity.
- Crocker Park, designated for commercial and retail activity.
- Lagoon, designated as an aquatic area.
- Northeast Bayshore, designated for commercial and retail activity.
- Northeast Ridge, designated as open space.
- Northwest Bayshore, designated as a Planned Development area, will be used for commercial and retail activity.
- Owl and Buckeye Canyons, designated as open space.
- Quarry, designated as a Planned Development area, will be used for commercial and retail activity.
- Sierra Point, designated for commercial enterprises as outlined in the Development Agreement for Sierra Point.

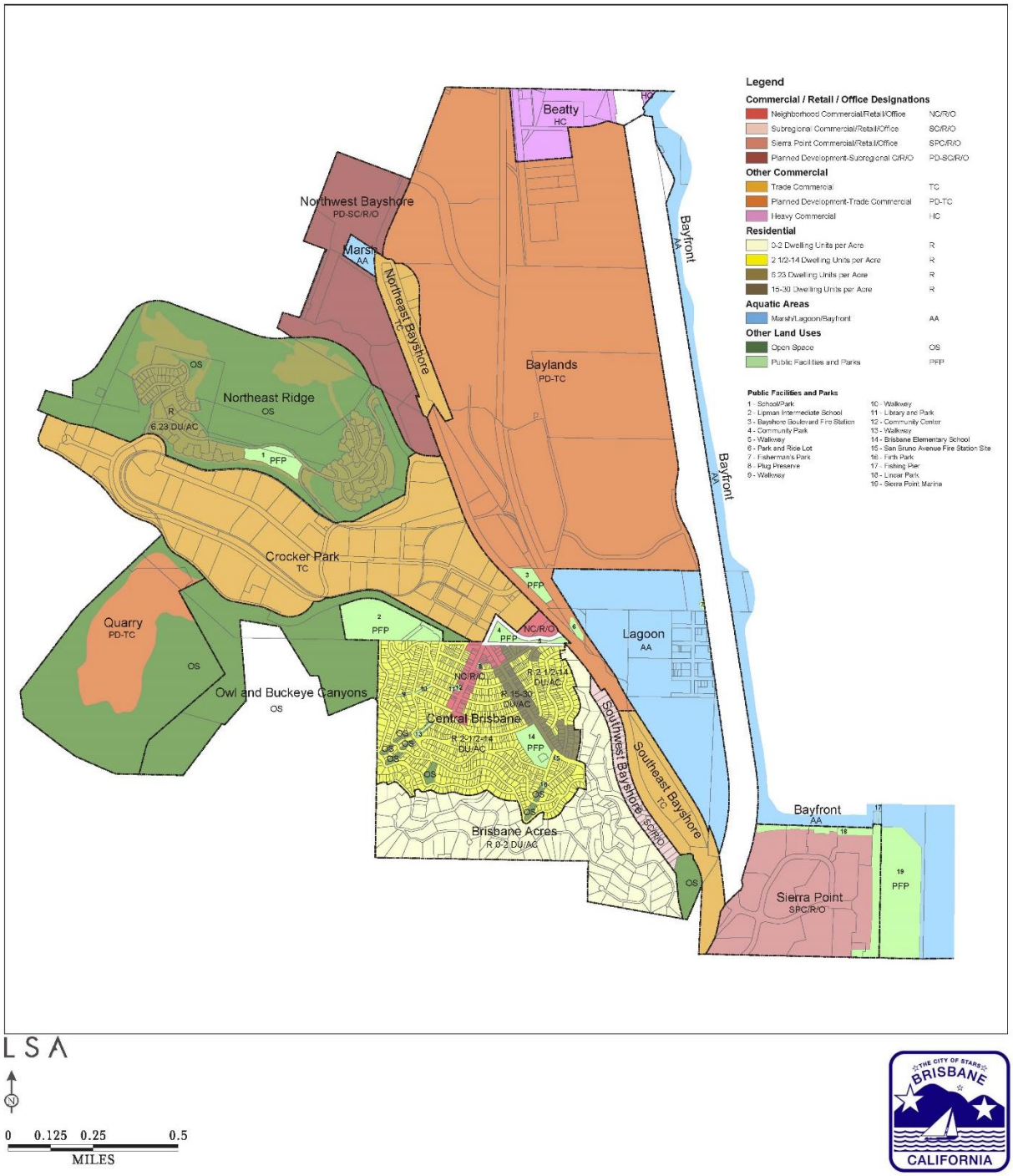


Figure 2-1 1994 General Plan Land Use Designations

Land Use Policies

The following policies and programs in the Land Use chapter of the General Plan are relevant to the Brisbane Bicycle and Pedestrian Master Plan.

Nature and Character of Development

Policy 26: Locate and design commercial recreational facilities and services so as to encourage use by a broad spectrum of Brisbane residents and businesses.

Program 26a: Consider access for vehicles, bicycles and pedestrians in conjunction with the siting of commercial services and recreational facilities.

Streets

Policy 34: In conjunction with safety improvements to existing streets, retain the historic character of the City to the greatest extent feasible.

Program 34a: If safety standards are met, retain and enhance unique features such as rock escarpments, retaining walls, "gateways" (such as the entry to Crocker Park) and historic, aged trees.

Policy 35: Design new streets to be attractive and comfortable for pedestrians and bicyclists, and to safely accommodate vehicular traffic. Street configuration, landscape and signage should all be considered as they contribute to community character.

Program 35a: Require landscaping along all major arterial streets.
Program 35b: Construct landscaped medians where appropriate in arterial streets.
Program 35c: Use drought resistant, water-conserving non-invasive plant materials that reflect local character.
Program 35d: Continue to implement a street tree planting and management program and improve it as appropriate.
Program 35e: Improve the program for street and directional signs.
Program 35f: Prohibit new commercial billboard sites and seek to remove those currently in place.

Program 35g: Provide standards in the Municipal Code to assure that abutting properties have adequate separation from travelways and protection from noise and other traffic impacts

Program 35h: Consider funding methods, such as landscape assessment districts, to install and maintain improvements within rights-of-way.

Program 35i: Work with appropriate State and County agencies, private organizations, service clubs and property owners to maintain an attractive appearance of major thoroughfares. Program 35j: Encourage environmental groups, local service clubs, individuals and local businesses to "adopt a street" to support litter removal and encourage volunteer beautification projects along streets and remaining rights-of-way.

Programs and Policies by Subareas

Sierra Point
Transportation and Circulation

Policy 231: Examine the circulation system approved in the Development Plan to incorporate improvements that can be implemented as the subarea develops.

Program 231a: Pursue better connections between Sierra Point and Brisbane, including pedestrian/bicycle over-crossing of the railroad tracks.

Policy 232: Seek opportunities to improve public transit opportunities for the area.

Southeast Bayshore
Land Use

Policy 236: Retain a landscape buffer on Bayshore Boulevard to reduce noise and screen the industrial development from through traffic.

Southwest Bayshore
Land Use

Program 238b: Examine opportunities to provide greater amenities for the residences in the Mobile Home Park through installation of public and private improvements such as curb, gutter, sidewalk, off-street parking and landscaping.

Transportation and Circulation

Policy 239: Require special attention to off-street parking and safe access to Bayshore Boulevard in all use and development proposals.

Program 239a: Discourage multiple individual driveways onto Bayshore Boulevard.

Community Health and Safety

Policy 243: Consider requiring new construction to incorporate features to reduce intrusion of traffic noise.

Policy 244: Develop a screening program using landscape and/or other materials to mitigate noise and screen buildings from Bayshore Boulevard.

Brisbane Acres
Open Space/Conservation

Program 245c: Retain a trail system through the Brisbane Acres to connect the area to Central Brisbane and the San Bruno Mountain State and County Park.

Central Brisbane
Transportation and Circulation

Policy 256: Develop and improve pedestrian paths and walkways to connect Central Brisbane to all areas of the City and with the San Bruno Mountain State and County Park.

Policy 257: In conjunction with subdivision and other development applications, require private roadways to be upgraded and maintained to City standards and offered for dedication to the City.

Program 257a: In conjunction with the City's development review process and Capital Improvement Program, examine ways to improve existing bottlenecks and cul-de-sacs and improve safety in the upper residential streets.

Program 257c: Develop a direct street connection between Central Brisbane and Crocker Park.

Policy 257.1: Work with residents on a block-by-block basis to develop programs to relieve congestion caused by on-street parking.

Open Space/Recreation and Community Services

Policy 266: Facilitate carpooling and the use of public transit.

Program 266a: Seek input from merchants and the public on how SamTrans service might be made more useful.

Program 266b: Support continued development and improvement of shuttle service for Sierra Point, Crocker Park and future development in areas such as the Baylands, and consider ways to extend such service into Central Brisbane.

Policy 267: Encourage the use of bicycles and walking for transportation and recreation.

Program 267a: Provide bicycle racks at public meeting facilities and public offices.

Program 267b: Develop and implement a plan for providing benches at key locations for pedestrian rest stops.

Crocker Park

Transportation and Circulation

Policy 286: Improve pedestrian access through the development of sidewalks and trails, including but not limited to those set forth in the conditions of approval for the Northeast Ridge Development Project.

Policy 287: Add bike paths to the circulation system.

Policy 288: Connect Crocker Park to the rest of the City and the San Bruno Mountain State and County Park through pedestrian and vehicular circulation improvements.

Policy 291: Investigate opportunities to change rails to trails, fire access, parking, or landscaping when rail spurs are abandoned.

Baylands

Transportation and Circulation

Policy 342: Mitigate traffic impacts by improved access to public transportation, by construction of street and intersection improvements, and by implementing the measures adopted by the City in Transportation System Management, Transportation Demand Management and Congestion Management Plans.

Policy 343: Develop a pedestrian and bicycle system to reach all areas of the City from the Baylands.

Policy 344: Connect all development within the Baylands with bicycle and pedestrian networks.

Policy 345: Work with other agencies to promote interconnection with regional bicycle systems.

Policy 346: Include the upgrade or replacement of Tunnel Avenue and its overpass or alternative access in the circulation plan for the Baylands.

Policy 347: Cooperate with other agencies to develop the Bay Trail between Sierra Point and the Candlestick Recreation Area.

Beatty
Transportation and Circulation

Policy 382: Mitigate traffic impacts by implementing the measures adopted by the City in Transportation System Management, Transportation Demand Management and Congestion Management Plans.

Circulation Element (2015)

The City of Brisbane adopted Resolution No. 2015-38 on September 17, 2015, amending the Circulation Element of the General Plan.

Goals
The City of Brisbane will be a place…

> Where there is an established rational relationship between land use and circulation in place to guide the City into the future;
>
> Where all users of the transportation network can travel safely and comfortably throughout Brisbane;
>
> Where Complete Streets are integrated into the transportation network to provide for a balanced, connected, safe and convenient multi-modal network;
>
> Where reliable public transit services are promoted and expanded, creating viable transportation alternatives to the automobile;
>
> Where parking needs have been reasonably balanced to encourage walkable neighborhoods, economic vitality, safety and convenience; and
>
> Where the transportation network serves the needs of residents as well as commercial and industrial businesses.

The goals are consistent with the state and regional goals which are expressed through the Bay Area's Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments' (ABAG's), "Plan Bay Area" and the intent of the California Complete Streets Act of 2008 (AB 1358, Leno), codified in Sections 65040.2 and 65302 of the Government Code.

Traffic Flow, Convenience and Access
Level of Service

Policy C.4: Continue to upgrade north-south arterial and collector streets while providing the appropriate level of service.

> *Program C.4.b: Study Bayshore Boulevard and, as feasible, respecting its classification as a principal arterial, implement traffic calming features, pedestrian amenities and landscape design elements.*

Policy C.6: Investigate and pursue traffic calming features for Visitacion Avenue, Old County Road and San Bruno Avenue to provide for greater pedestrian comfort and safety at street crossings.

Street Standards

Policy C.9: The City Engineer shall consider the following factors during plan review as they apply to residential, residential hillside, and commercial streets:

- grade
- topography

- average lot frontage size
- number of lots and potential intensity of development
- maximum block length
- maximum length of cul-de-sac streets
- length of street in relation to number of units served
- turnarounds
- parking
- secondary access

Program C.9.c: Continue to implement standards for sidewalks, bikeways, signalization, striping, and street lighting.

Traffic Safety

Local Residential Streets

Policy C.14: Post and actively enforce the 25-mile per hour (mph) maximum speed limit in Central Brisbane and 15 mph on identified street segments near the schools, and investigate creating speed limit zones lower than 25 mph in other areas of Central Brisbane where appropriate.

Policy C.15: Promote a public awareness campaign regarding speed limits.

Arterial Streets

Policy C.16: Maintain traffic flow and continue to improve arterial streets.

Program C.16.a: Limit and control the number and location of driveways into arterial streets. Encourage adjacent properties to develop common access.

Program C.16.b: Use landscaped medians and islands whenever possible to direct and channel traffic, and to provide safe separation and visual respite.

Complete Streets

Complete Streets Applicability and Design Standards

Policy C.20: The City shall provide for the development of Complete Streets consistent with Government Code Sections 65040.2 and 65302 and subsequent applicable Complete Streets legislation) to meet the needs of all users of "streets, roads and highways". Such users include bicyclists, children, youth, families, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, seniors, and first responders.

Policy C.2:1 Integrate Complete Streets infrastructure and design features, such as sidewalks, bikeways and transit stops, into street design and construction to create safe and inviting environments for people to walk, bicycle and use public transportation.

Program C.21.a: Review and where needed, update the City's engineering design standards to implement Complete Streets infrastructure elements.

Program C.21.b: Incorporate Complete Streets infrastructure elements into new streets, street retrofits and certain maintenance projects to encourage multiple modes of travel, as appropriate to the context and determined reasonable and practicable by the City. Depending on the context, these elements may include:

- *Infrastructure that promotes a safe means of travel for all users along the public right-of-way, such as sidewalks, shared use of paths, bicycle lanes, and paved shoulders;*

- *Infrastructure that facilitates safe pedestrian crossings of the right of way, such as accessible curb ramps, crosswalks, refuge islands, and signals to meet the needs of children, people with disabilities and the elderly;*
- *Street design features that promote safe and comfortable travel by pedestrians, bicyclists and users of public transportation, such as traffic calming features and physical buffers between vehicular traffic and other users;*
- *Inclusion of amenities that improve the comfort and addresses the safety needs of pedestrians and bicyclists, such as, but not limited to, signs, pavement markings, pedestrian-scale lighting, benches, seat walls, bike lockers and racks;*
- *Improvements to public transit and multi-modal connections, to enhance City-wide transit access and connections to regional destinations;*
- *Minimizing vehicular ingress and egress points on major arterials and consolidating private driveway entries to enhance bicycle, pedestrian and automobile safety along these arterials;*
- *Inclusion of street trees and other landscaping features, to enhance the appearance of the streetscape and to encourage pedestrian and bicycle use. Landscaping should use San Bruno Mountain native plants where feasible. In any case, plants should be non-invasive and drought resistant.*
- *Balance on-street parking as appropriate to the context, to promote the Complete Streets Act goals and encourage economic vitality. (See also the Parking section of this element.)*

Program C.21.c: Where possible, work with MTC to secure regional funding for Complete Streets projects.

Policy C.22: Seek to retrofit existing roadways to create Complete Streets.

Program C.22.a: Identify roadways where retrofits may reasonably be accomplished in balance with existing and planned land uses, giving priority to arterial and collector streets and to projects that would provide greater connectivity between key areas of the City, such as, but not limited to, between the Northeast Ridge, Sierra Point and Central Brisbane.

Program C.22.b: Identify roadways where Complete Streets retrofits may provide for enhanced place-making and contribute to the City's vitality.

Program C.22.c: Seek regional, state, and/or federal funding sources to retrofit roadways to create Complete Streets.

Policy C.23: For new multifamily, mixed use or commercial development projects subject to discretionary review that would affect the public right-of-way, incorporate and implement Complete Streets elements at each stage of the development process as determined reasonable and practicable by the City.

Program C.23.a: As part of the design review permit process, require documentation of how the routine accommodation of bicyclists and pedestrians will be satisfied.

Program C.23.b: As part of the project design review process, ensure that the project objectives and purpose are consistent with current MTC directives on Complete Streets and Routine Accommodation.

Regional Connections

Policy C.24: Provide input to the City and County of San Francisco and San Mateo County in regional planning efforts to enhance and expand the regional bicycle and pedestrian networks, including, where appropriate, amendments to regional bicycle and pedestrian plans.

Policy C.25: Continue to Connect Brisbane's bikeway and pedestrian system to the County and regional networks.

Program C.25.a: Continue to apply for Transportation Development Act (TDA), successors to TDA, and other funding sources.

Safe Routes to School

Policy C.26: 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.

Program C.26.a: Continue to identify improvement projects and seek funding for Safe Routes to School infrastructure improvements.

Program C.26.b: Continue non infrastructure-related activities that encourage walking and bicycling to school, through outreach on the City's website, informational articles in the local City news publications, communications through community leaders, partnering with non-profit entities, promoting walk and bike to school days, and supporting partnerships with the schools to provide education directly to students and parents on the benefits of walking and bicycling to school.

Program C.26.c: Develop and promote a traffic safety education program for the schools.

Program C.26.d: Continue to provide a crossing guard program.

Bicycles

Policy C.27: Maximize bicycle access to all areas of the City, as practicable.

Program C.27.a: Identify areas of the City where bikeways may be constructed, as both recreational and transportation amenities, with the aim of connecting all areas of the City with a network of bikeways.

Program C.27.b: Design and install bikeways to meet best current engineering practices.

Policy C.28: Provide for the safety of bicyclists by dedicating bikeways where practicable, by installing appropriate signing and striping, and by maintaining the pavement.

Program C.28.a: Install as many bikeways as can safely be accommodated and are economically feasible.

Policy C.29: Require new development and redevelopment to plan for and construct bikeways and/or bicycle parking facilities, as determined reasonable and practicable by the City.

Policy C.30: All new arterial streets and any existing arterials that are improved should provide for bicycle transportation.

Program C.30.a: As a part of the budget and Capital Improvement Program development, seek opportunities to upgrade existing bikeways and to install new bikeways.

Policy C.31: Provide or require bicycle parking facilities at major destination points.

Program C.31.a: Include bicycle lockers in park-and-ride facilities.

Program C.31.b: Encourage business and employment centers to provide bicycle-parking facilities for their employees.

Program C.31.c: Design and install bicycle-parking facilities to meet best current engineering practices.

Policy C.32: Provide public information on bicycle transportation.

Program C.32.a: Promote bicycle use through a public information program, at special events, and through City publications.

Program C.32.b: Establish an educational program on safe bicycle use.

Program C.32.c: Make bicycle network maps available.

Pedestrians

Policy C.33: Maximize safe pedestrian facilities and access to all areas of the City, as reasonable and feasible.

Program C.33.a: Identify sidewalks, walkways, and trails throughout the City to improve with pedestrian amenities as funds are made available; and continue to apply for new grant funding.

Program C.33.b: Consider opportunities to enhance and expand pedestrian access between Central Brisbane, the Caltrain station, Sierra Point Marina and other regional destinations and transit connections.

Program C.33.b: As part of the budget and Capital Improvement Program preparation, seek funding to upgrade and expand the system of pedestrian sidewalks, walkways and trails, especially in conjunction with street improvement projects.

Program C.33.c: For newly designed and constructed sidewalks, disallow automobile parking thereon; and for existing sidewalks adjacent to rolled or vertical curbs, encourage residents to park such that sidewalks are kept clear for pedestrians in accordance with the Americans with Disabilities Act (ADA) width standards.

Program C.33.d Where practicable and where funds are available, establish and improve midblock and block-end, public right-of-way pedestrian paths, in order to provide direct off-street pedestrian access between the upper and lower parts of Central Brisbane.

Policy C.34: Require pedestrian amenities with new development and expansion of existing uses, as appropriate.

Program C.34.a: Adopt standard requirements for sidewalk improvements along property frontages, taking into consideration constraints imposed by topography, and where sidewalks are not appropriate, consider in-lieu fees for new development for funding pedestrian amenities elsewhere in the City.

Policy C.34.b: Consider accepting sidewalk improvements beyond the frontage of a development site as a means to help mitigate traffic and parking impacts.

Transit

Policy C.35: Seek opportunities to install and improve transit facilities, establish multi-modal connections and increase the service network.

Program C.35.i: Require new development that are subject to the City's transportation demand measures (TDM) ordinance to also incorporate measures that facilitate Complete Streets compliance measures, such as transit stops, shuttle stops, and bicycle facilities.

Green Streets

Green Streets refers to the inclusion of landscape elements into the street right-of-way to help reduce storm water runoff by both interception and infiltration of rainwater and biological treatment of storm water by those landscape elements. Green Streets are also a means to enhance the pedestrian experience of streetscapes and may be used in conjunction with efforts to reduce wide roadways, provide for traffic calming, and create overall safer roadways. 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.

Policy C.50: 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.

Community Health and Safety

The following policies and programs in the Community Health and Safety chapter of the General Plan are relevant to the Brisbane Bicycle and Pedestrian Master Plan.

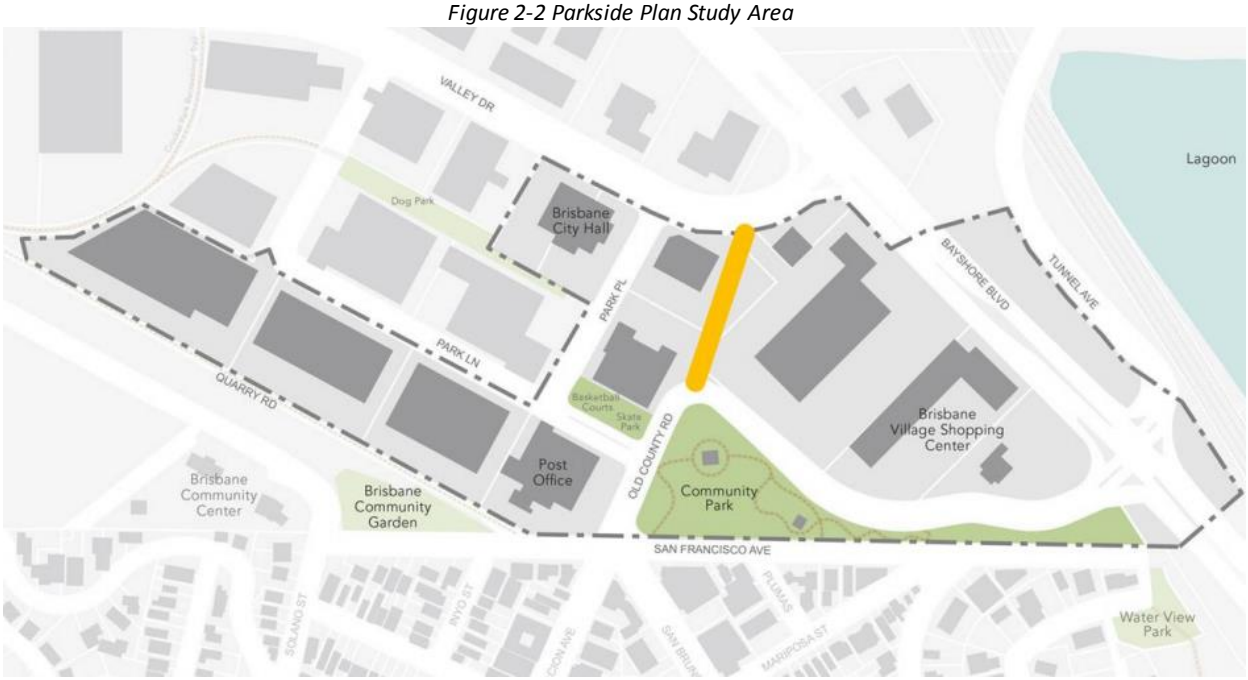
Policy 194: Attempt to minimize dependence on automobile travel by encouraging transit, bicycle and pedestrian alternatives and incorporating alternatives to the automobile in land use planning and project design.

> *Program 194a: Program 194a: Provide park-and-ride facilities to facilitate use of transit.*
>
> *Program 194b: Provide bicycle and pedestrian access to all areas of the City to provide alternatives to automobile use.*
>
> *Program 194c: Require all new development to include design principles that are transit oriented and otherwise reduce dependence on the automobile.*

Parkside Precise Plan (2016)

The City of Brisbane's Parkside Precise Plan (Parkside Plan) focuses on the 25-acre area of Parkside, shown in Figure 2-2, including the two primary entrances into Brisbane, the Brisbane Village Shopping Center, City Hall, Community Park, and light industrial sites. The Parkside Plan will address the City's zoning requirements to meet its Regional Housing Needs Allocation (RHNA) of housing units and Housing Element goals, and ensure that new residential development aligns with the community's vision. At the time of this review, the Parkside Plan was still in development.

Figure 2-2 Parkside Plan Study Area



The Parkside Plan establishes the following goals:

- Preserve Brisbane's small-town feel
- Promote holistic community health
- Build connections between destinations for all modes of travel
- Facilitate the development of a vibrant Parkside area
- Proactively plan for new residential development

- Foster a sustainable Brisbane

Baylands Sustainability Framework (2015)

The Baylands Sustainability Framework was adopted by Brisbane's City Council in November 2015. The purpose of the framework is to identify key sustainability principles to be incorporated in future development in Baylands and create an approach for implementing these principles. The principles were guided by BioRegional's One Planet Living principles, and modified to fit with the goals for the Baylands and Brisbane. The principles, performance indicators, and implementation strategies are aspirational and not intended as mandatory requirements for future Baylands projects. The framework is intended to evolve over time to reflect new information, funding mechanisms, policies, and technologies.

Among the ten principles developed for the Baylands Sustainability Framework, the principles, performance indicators, and implementation strategies that are relevant to the BPMP are listed below.

Principle 3: Sustainable Transportation

Using low carbon modes of transport to reduce emissions and reducing the need to travel with good planning.

Key Performance Indicators

- Steady year-on-year progress toward greenhouse gas emissions of 0.282 tons CO2e per employee per year for commuting by 2030.
- Design for a ¼ to ½ mile radius of diverse, multi-use development that provides basic services and amenities in convenient locations on site within this radius. Design to encourage walking, biking and non-auto use within this radius. This means at a minimum grocery store, pharmacy, one restaurant per 600 employees, hotel, cultural/art/recreation facility, daycare facility, park space, and trail access.
- Complete a Level of Service analysis for cycling and walking to ensure a Level B or better grade for all sidewalks, paths, roads and intersections. Include at least the following metrics in the analysis: safety, accessibility (e.g., obstructions in sidewalk, mid-block access), convenience (e.g., shortest path, minimal wait at intersections), signage and navigation, parking availability and convenience, and comfort. Accessibility is defined by building code and is meant to apply to all public ways such that people of all mobilities can benefit from the experience.
- Survey of Baylands employee home ZIP codes shows annual progress toward creating a local workforce and an average one-way commute of less than 7.3 miles, which is 50% of the San Mateo County average. Future plans shall promote and facilitate ride-sharing, electric vehicle charging, bike use, pedestrian pathways, shuttles and connectivity, electric (renewable energy) shuttles, etc.
- Provide an annual transportation survey of residents and businesses to determine level of public transit and non-auto modes.

Implementation Strategies

- Develop Brisbane Baylands Project Transportation Demand Management (TDM) Plan.
- Collaborate with the developer to implement a bicycle sharing program that could be subsidized through businesses and or other means such as advertising, to provide a free and healthy way for people to navigate the Baylands.
- Create an easy pedestrian and bicycle lifestyle, where the location of jobs, restaurants, retail, services, recreation and housing (if permitted) are in close proximity to each other.
- Consider Class 1 bicycle paths where feasible when creating the bicycle and pedestrian path system to reduce engagements with motorized vehicles.

Principle 7: Open Space and Habitat

Protecting and restoring biodiversity and natural habitats through appropriate land use and integration into the built environment.

Key Performance Indicators

- Contribute to development of an open space plan that provides connectivity to community-wide natural resources. Project landscape plans will provide connectivity to the open space plan and be supportive of the conservation and restoration plan.

Implementation Strategies

- Encourage open space accessibility for people of all mobilities to be within a short five minute walk (1/4 mile) of all buildings. Promote connectivity with nature throughout the project site.
- Where feasible, create open space corridors that connect San Bruno Mt. with the bay and lagoon.

Principle 8: Culture and Heritage

Reviving local identity and wisdom; supporting and participating in the arts.

Key Performance Indicators

- Work with design firms that are knowledgeable and experienced with sustainable design and demonstrate a respect for local culture, heritage and high quality community design.

Implementation Strategies

- Integrate culturally relevant public art into the project including:
    - Incorporate art into the way finding system.

Principle 10: Recreation, Health, Safety and Happiness

Encouraging active, safe, meaningful lives to promote good health and well-being.

Key Performance Indicators

- Adopt principles of Active Design in the community plan. The community should incorporate strategies that encourage active transportation and recreation, including walking, bicycling and all forms of activity and mobility. Building design should incorporate opportunities for daily physical activity. Consult the Active Design Guidelines: Promoting Physical Activity and Health in Design published by the Center for Active Design, 2010.
- Incorporate active design strategies in the project.
    - Walking and biking for local trips
    - Design buildings to encourage physical movement, such as using stairs instead of elevators
    - Provide access to walking trails and other recreational activities for all community members of varying mobility to use during the day (also addressed in Habitat and Open Space).
    - Develop additional strategies that support an active work and lifestyle.
- Establish a commercial assessment district for the Baylands to support implementation of key sustainability strategies such as alternative transportation, bike-and car-sharing, electrical vehicle charging, open space management, public art and maintenance, etc.

3. Local Studies

Community Issues, Goals & Policies Survey (2005)

In 2005, the City of Brisbane's Community Development Department developed a community survey to collect public input as part of its process of updating the General Plan. The following survey results are relevant to the Brisbane Bicycle and Pedestrian Master Plan.

Small town character factors

- Out of 26 small town character factors, respondents gave highest ratings to pedestrian friendly streets in residential areas and in downtown and other commercial areas (73% and 80% respectively rated these factors as "very important").

Transportation systems and facilities

- The majority of residents felt that the following systems and facilities were adequate as is: downtown parking, directional signage, stop signs, and traffic lights.
- More than half of those who had an opinion felt that the following should be improved: access to Caltrain rail passenger service, bicycle paths, pedestrian paths, bicycle lanes on roads, waterfront path system, bus system, routes for truck traffic in non-residential areas.
- The majority (more than 80%) of respondents drive alone as their primary mode of transportation to work. Walking was a distant second, followed by bus. Few people utilized carpools or vanpools.

Uses for the Baylands

- The most commonly suggested uses for the Baylands area were recreational, including walking and biking paths, parks, picnic areas, playing fields and a golf course.

Crocker Park Technical Assistance Panel (2014)

The City of Brisbane undertook the Urban Land Institute's Technical Assistance Panel (TAP) process to bring together various stakeholder groups to discuss the long-term future of several key opportunity sites in the city. These sites include Crocker Industrial Park, Guadalupe Valley Quarry, and Brisbane Village Shopping Center.

Panelists came from a wide variety of disciplines including market analysis, land use and design, finance and development strategies, governance and policy, and implementation. The TAP interviewed community stakeholders comprised of elected officials, community-based organizations, business representatives, City representatives, property owners, and realtors and brokers. Common themes from the interviews included:

- Improve existing trails and pedestrian amenities
- New mixed-use development in Crocker Industrial Park could be used to better connect the Village and the Ridge

Challenges identified by stakeholders regarding connectivity and walkability:

- The main residential developments in Brisbane are on the slopes and ridgetops, with Crocker Industrial Park in the valley between them. This configuration, in additional to the steep topography, separates the two residential areas of the City.
- While a trail network exists through Crocker Industrial Park, it is located on the former rail line and does not provide north-south connectivity.

- Large, truck-serving arterials such as Valley Drive need additional pedestrian amenities to make them more walkable.

The panel developed the following design interventions in Crocker Industrial Park and Brisbane Village to strengthen the entry to the city, increase connectivity, and improve and integrate open space throughout the community.

- Increase connectivity between housing on the ridges and Brisbane Village Center by enhancing trails and connections to open space, shown in Figure 3-1 and Figure 3-2 below.
- Integrate open space for gathering areas and connections. Improved north-south connections are needed to create and open space network to serve all areas of the city. Additional improvements such as lighting, signage, and pedestrian crossings could make these open spaces important gathering areas in Brisbane.
- Create complete streets with configurations that still accommodate truck access, but are safer for pedestrians and bicyclists.
- Be more transit-oriented by improving pedestrian and bicycle access to the Caltrain station.

Figure 3-1 Existing Connection Issues

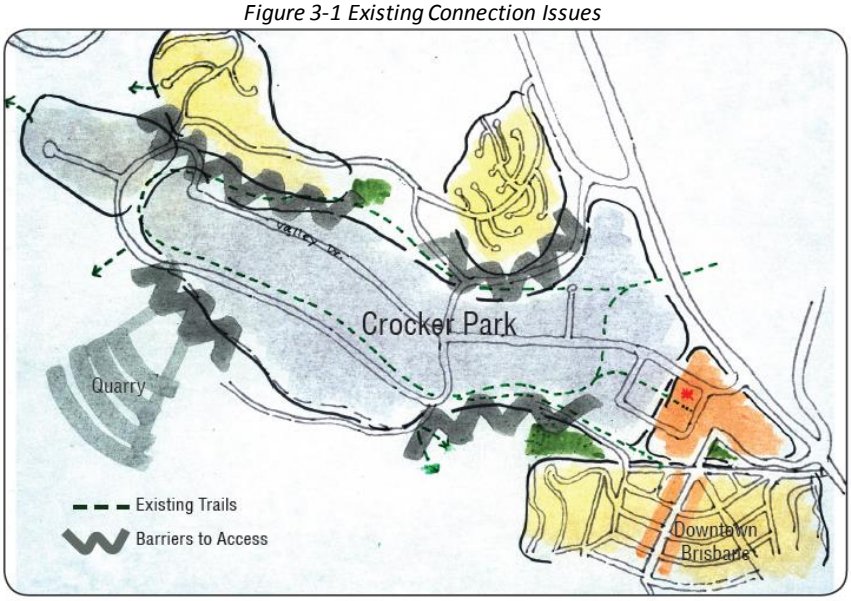
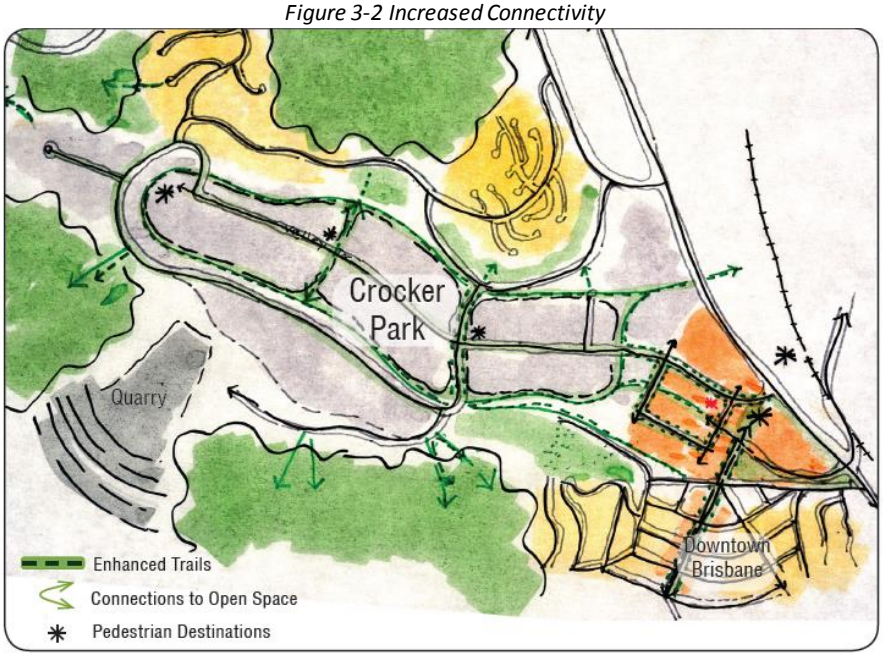


Figure 3-2 Increased Connectivity



The panel developed implementation strategies to address these challenges.

- Short-term: establish a Transportation Management Association within a Property Owners Group
- Long-term: use the update to the General Plan as an opportunity for residents to help shape the future direction of Brisbane.

Brisbane is Awesome: Place Evaluation Workshop Results (2005)

Project for Public Spaces, a non-profit specializing in the design and management of public spaces and placemaking, facilitated two workshops for the City of Brisbane in September 2005. The workshops were convened as part of the city's General Plan update process. Workshop participants were charged with creating a vision for what a revitalized and place focused downtown Brisbane would look like, not only with regard to creating new places to go and improving pedestrian access to them, but also for the kinds of uses, activities, and amenities that could be programmed in specific areas, to create excitement and draw people to these spaces.

The guiding principle behind the Place Evaluation workshops is that every City needs Ten Great Places, and every public space has to have ten special places within it, with ten reasons to be there or things to do in that place. The purpose of these workshops was to begin to identify Brisbane's potential Ten Great Places.

Participants focused on eight sites and recommended short and long-term improvements for each site. Overall, the process established the following next steps:

- Research the feasibility of and develop a series of traffic circulation guidelines and goals geared toward decreasing speed on Bayshore Boulevard, increasing connections between Central Brisbane and Sierra Point, and public transportation connections with the regional systems in the Bay area.
- Establish a Visitacion Business Merchants Association to maintain and improve the main business corridor in town. Undertake a master planning effort for creation of a Central Square in Central Brisbane that would focus on relating all major public institutions to one another, the possible creation of a charter high school,

the redevelopment of Brisbane Village Shopping Center into a more pedestrian scaled shopping area, and the success of local business partnerships with merchants on Visitacion Avenue.

- More attention needs to be focused upon guiding the buildout of Sierra Point through the development and implementation, by the City, of urban design guidelines and a site plan framework describing a series of desirable alternatives for creating a walkable mixed use community circumscribed around a new, vibrant public park or central square. At the same time, the ideas presented here need to be analyzed in terms of their feasibility for implementation and prioritized.

4. Local Design Guidelines

Combined Site and Architectural Design Guidelines, Sierra Point (2001)

The Combined Site and Architectural Design Guidelines were adopted by City Council in 2001 and set a general direction for integrated and cohesive development. They are meant to be used as a tool to ensure that Sierra Point meets the requirements of various public and private bodies involved in its development including: Bay Conservation and Development Commission (BCDC), City of Brisbane, lenders, developers, and consultants.

Objectives

Relevant objectives from the Design Guidelines include:

1. Creation of an identity for Sierra Point.

4. Creation of functional and efficient circulation systems for pedestrians, autos, and bicycles.

Circulation Guidelines

The following guidelines provide guidance on circulation that is also relevant to the BPMP.

A hierarchy of vehicular roadways and pedestrian pathways has been established to provide circulation routes throughout the project. Sierra Point Parkway, the major roadway will carry the main vehicular load. Within the right-of-way on the bayward side of the parkway is pedestrian and bicycle paths which continue for the full length of this road.

Roadway Landscape Guidelines

The following guidelines provide guidance on roadway landscape that is also relevant to the BPMP.

3. Incorporate an 8 foot pathway into the 80 foot road right-of-way.

Public Access and View Corridors Guidelines

The following guidelines provide guidance on public access that is also relevant to the BPMP.

1. Utilize a continuous 8 -foot pathway throughout the site for public access, widening it to 10 feet along the Bayfront.

2. Provide connections to existing public access pathways in adjacent developments.

Sierra Point Design Guidelines (2012)

The updated draft 2012 Design Guidelines has not been adopted by City Council, but offers relevant information. Content that was not included in the 2001 Design Guidelines is listed below.

Objectives

Relevant objectives from the Design Guidelines include:

1.b. Enhancing opportunities for walkability and active recreation, thereby promoting and facilitating healthy lifestyles.

7. Integration of buildings and sites to ensure human scale and comfort, promote wayfinding and walkability, and support pedestrian activity at points of entry and gathering.

Wayfinding Guidelines

The following wayfinding guidelines provide guidance on wayfinding that is also relevant to the BPMP.

1. Wayfinding signage system components are an element of the public realm and should be shaped with distinctive design.

4. At key points of pedestrian and bicyclist entry or arrival, such as Sierra Point Park, installation of a directory sign with a district map is recommended.

6. The format, size, and placement of signs should be configured relative to whether they are targeted to motorists, bicyclists, pedestrians, or any combination of which.

General Roadway Landscaping Guidelines

Finally, the guidelines have relevant information on roadway landscaping guidelines.

4. Utilize a planting concept with tall vertical trees at intersections, set back to accommodate safe stopping distances and sight lines for vehicles, bicycles and pedestrians; between intersections, groups of non-deciduous tree planting would be used in an informal arrangement along the roadway spaced a maximum of 100 feet apart between intersections.

NCRO-2 Downtown Brisbane Neighborhood Commercial District Design Guidelines (2002)

The Downtown Brisbane Neighborhood Commercial District Design Guidelines were adopted by City Council in 2002. They are intended to ensure that zoning regulations for Downtown Brisbane respect, protect, and enhance the historical scale and character of the neighborhood. Guidelines that pertain to the BPMP are listed below.

Design Permit Requirements

- Alternatives to travel by automobile are encouraged, through facilities for pedestrians, bicycles, and/or public transit.

Storefront Requirements

- Must be designed to be pedestrian-oriented, typically with window or other displays to prevent visual access from the street to the goods or services offered inside.
- Any landscaping or fencing along the street should be inviting to passerby.

5. County Plans, Policies, and Studies

San Mateo County Comprehensive Bicycle and Pedestrian Plan (2011)

The San Mateo County Comprehensive Bicycle and Pedestrian Plan (CBPP) provides a useful baseline of information to begin developing the Brisbane BPMP. This section reviews both relevant goals and policies and potential infrastructure investments.

Goals and Policies

Goal 1: A Comprehensive Countywide System of Facilities for Bicyclists and Pedestrians

- Policy 1.1: Program funds for bicycle, pedestrian and accessibility improvements to local jurisdictions for the planning, design, construction and maintenance of facilities of countywide priority.
- Policy 1.2: In developing a countywide system of facilities, place special attention on implementing or improving north–south routes (particularly for bicyclists) and reducing barriers to east–west access.
- Policy 1.3: Encourage and collaborate with Caltrans and local agencies to implement countywide priority facilities within their jurisdiction. In particular, encourage Caltrans to provide safe bicycle and pedestrian crossings of state highways in San Mateo County and local agencies to include bicycle and pedestrian projects in their capital improvement programs.

Goal 2: More People Riding and Walking for Transportation and Recreation

- Policy 2.1: Work with local, county and regional agencies and organizations—including those with a focus on public health—to develop effective encouragement programs that promote bicycling and walking as safe, convenient and healthy modes of transportation.
- Policy 2.2: Provide funding for effective support programs and events that encourage bicycling and walking among a broad range of potential users, including people with disabilities.
- Policy 2.3: Encourage local school districts to implement projects and activities that promote bicycling and walking to school among students and staff.
- Policy 2.4: 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.
- Policy 2.5: Promote integration of bicycle-related and walking-related services and activities into broader countywide transportation demand management and commute alternatives programs.
- Policy 2.6: Serve as a resource to county employers on promotional information and resources related to bicycling and walking.
- Policy 2.7: Encourage local agencies to provide safe and convenient bicycle and pedestrian infrastructure for underserved communities.

Goal 3: Improved Safety for Bicyclists and Pedestrians

- Policy 3.1: 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 3.2: Promote collaboration among the Sheriff's Office, local police departments and other county and local agencies to develop and administer effective safety, education and enforcement strategies related to non-motorized transportation.
- Policy 3.3: 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.

Goal 4: Complete Streets and Routine Accommodation of Bicyclists and Pedestrian

- Policy 4.1: Comply with the complete streets policy requirements of Caltrans and the Metropolitan Transportation Commission concerning safe and convenient access for bicyclists and pedestrians, and assist local implementing agencies in meeting their responsibilities under the policy.
- Policy 4.2: For local transportation projects funded by county or regional agencies, encourage that local implementing agencies incorporate —complete streets principles as appropriate; that they provide at least equally safe and convenient alternatives if they result in the degradation of bicycle or pedestrian access; and that they provide temporary accommodations for pedestrians and bicyclists during construction.
- Policy 4.3: Monitor countywide transportation projects to ensure that the needs of bicyclists and pedestrians are considered in programming, planning, design, construction, operation and maintenance, and encourage local agencies to do the same for their projects.
- Policy 4.4: Provide support to local agencies in adopting policies, guidelines and standards for complete streets and for routine accommodation of bicyclists and pedestrians in all new transportation projects.
- Policy 4.5: Encourage local agencies to adopt policies, guidelines, standards and regulations that result in truly bicycle-friendly and pedestrian-friendly land use developments, and provide them technical assistance and support in this area.
- Policy 4.6: Discourage local agencies from removing, degrading or blocking access to bicycle and pedestrian facilities without providing a safe and convenient alternative.

Goal 5: Strong Local Support for Non-Motorized Transportation

- Policy 5.1: Encourage all local jurisdictions to develop comprehensive bicycle and pedestrian plans, and provide assistance and support in this area as appropriate.
- Policy 5.2: Encourage all local jurisdictions to designate bicycle and pedestrian coordinators and to establish local bicycle and pedestrian advisory committees or provide other meaningful opportunities for public input on issues related to non-motorized transportation.
- Policy 5.3: Involve the public and local agencies meaningfully in making decisions about the planning, design and funding of bicycle and pedestrian projects, and maintain an open and accessible process for providing input and influencing decisions.
- Policy 5.4: Provide timely information to local jurisdictions on funding programs and sources not administered by C/CAG that may be used to implement bicycle and pedestrian facilities, and encourage them to submit applications for project funding.

Infrastructure Recommendations

The CBPP recommends several bicycle projects in order to complete the Countywide Bikeway Network (CBN), which are categorized into three project groups: key corridors, bicycle signage, and bicycle parking.

Key Corridors

Key corridors are defined as long-distance corridors that serve key transportation and recreation needs, identified by County commute patterns, population, and geographic location. Key corridors within Brisbane are the North-South Bikeway (provides an alternative route to El Camino Real), Bay Trail (consists primarily of Class I Bike Paths, with Class II Bike Lanes and sidewalks in some locations), and Northern East-West Route (on-street bikeway).

Signage

The CBPP recommends using the route numbering system developed for the 2000 San Mateo County Comprehensive Bicycle Route Plan and installation of wayfinding signage that is compliant with California MUTCD standards along all CBN bikeways.

Bicycle Parking

Secure bicycle parking is also a key component of the CBPP. The Plan recommends secure bicycle parking at key regional destinations, including transit stations, transit hubs, community downtowns, and regional parks.

The CBPP establishes eight Focus Areas to guide local jurisdictions in developing pedestrian improvement projects.

- Downtown Area Improvements – Downtown areas in San Mateo County with moderate to high levels of walking demand that do not have high quality walking environments would benefit from projects that improve pedestrian environments and encourage pedestrian activity. Projects in this Focus Area may include sidewalk furniture or plants, pedestrian plazas, and a wide pedestrian through zone.
- El Camino Real Corridor Improvements – In addition to running through many downtown areas and commercial districts, many Caltrain stations are located near El Camino Real. Controlled crossings are not well spaced for pedestrians, making the corridor a substantial barrier to walking despite high demand. Projects in this Focus Area should make crossings more frequent, safer, and more convenient.
- Highway 1/Coastal Trail/Parallel Trail Improvements – The corridor includes several town centers and provides access to many state parks and beaches. In many places, pedestrian access along the Highway 1 corridor is limited by infrequent crossing opportunities, heavy traffic volumes, high vehicle speeds, and unimproved pedestrian facilities. Projects in the Focus Area may include new walking pathways and new or enhanced crossing opportunities.
- Major Barrier Crossings – Barrier crossings are defined as improved connections across physical barriers to walking, and may include traditional grade-separated crossings of freeways, railroads and waterways. Projects in the Focus Area may include sidewalk widening and grade separated pedestrian crossings.
- Safe Routes to School – The area within a one-mile radius of a school is considered the highest priority for Safe Routes to School infrastructure improvements. Projects in this Focus Area may include bulb-outs at intersections along recommended school access routes, improved pedestrian crossings, and traffic calming measures to help reduce motor vehicle speeds.
- Safe Routes to Transit – Pedestrian access to transit hubs is critical for encouraging transit ridership. Projects in the Focus Area may include sidewalks, wayfinding signage, and bus stop amenities that improve the pedestrian experience.
- Access to County/Regional Activity Centers – Activity centers include major hospitals, civic uses, employment districts, parks, as well as rural town centers and neighborhood shopping districts. Projects in this Focus Area may include new sidewalks, intersection improvements, and crossing improvements.
- Regional Trails – Regional trails provide key recreational and commute opportunities for pedestrians. All Class I paths identified in the CBN are also considered Pedestrian Focus Areas. Projects in this Focus Area

may include construction of new trails, upgrading existing trails, constructing trailheads, and roadway crossing improvements along trails.

San Mateo County Trails Plan (2001)

The 2001 San Mateo County Trails Plan (Trails Plan) is the third iteration since 1990. The Trails Plan includes an inventory of existing and proposed trail routes along with policies, design guidelines, and use and management guidelines to provide a vision for a coordinated trails system throughout San Mateo County. This section reviews relevant policies, design guidelines, and proposed trails.

Policies

Policies in the Trails Plan complement those in the San Mateo General Plan, in particular, Chapter 6: Park and Recreation Resources.

Access to Park and Recreation Facilities (General Plan Policy 6.5)

- Policy 6.5.2: Use of motorized vehicles on trails shall be prohibited, except for wheelchairs, maintenance, and emergency vehicles.
- Policy 6.5.5: All trails should be marked. Signage should be standardized trail system-wide and should include guidelines, styles, and language (i.e., bilingual). Signed information should be provided on all trails to encourage responsible trail use. Appropriate markers should be established along historically significant trail routes.

Development Plans (General Plan Policy 6.13)

- Policy 6.13.3: Work with interested groups (including but not limited to: affected landowner groups, trail interest groups (e.g., community groups, homeowner groups), and organizations representing persons with disabilities) in developing recommendations for specific trail design and development plans. The recommendations should be consistent with County, State and Federal design regulations (see Design and Management Guidelines), and be reflective of environmental and safety constraints, community needs, and the needs of the various user groups.

Techniques for Providing Park and Recreation Facilities (General Plan Policy 6.17)

- Policy 6.17.2: Make maps and trail guides available to the public to increase awareness of existing public trails.
    - Publish and periodically update maps and guides to existing public trails.
    - Provide signage to indicate where trails are located.

Protection, Operation, and Maintenance (General Plan Policy 6.29)

- Policy 6.29.5: Prior to developing new trail routes for public use, ensure that services and improvements necessary for the safety and support of the public using the trail are provided.

Trail System Coordination (General Plan Policy 6.38)

- 6.38.1 Support, encourage, and participate in the development of a system of trails that:
    - Link existing and proposed park, recreation and open space lands within San Mateo County and adjacent counties
    - Provide access from the urban area to these lands
    - Link park and recreation facilities on San Francisco Bay to those on the Pacific Coast
    - Connect to transit facilities

- Give the public environmentally superior alternative transportation routes and methods
- Close strategic gaps in non-motorized transportation routes
- Offer opportunities for maintaining personal health
- Offer opportunities for outdoor education and recreation
- Offer non-motorized access to significant destinations and points of interest
- Could serve as emergency evacuation routes

Design Guidelines

The Design Guidelines provide direction to the County for the implementation of new trails, reworking existing trails, or maintenance of existing trails, recognizing that it would be impossible to anticipate every situation. These guidelines are a general guide, rather than a specific formula for success.

- D.G. 1.5 Trail Alignment: Trail alignments should be selected that minimize intersections with motorized vehicles. Where feasible, trail grades should be separated from roadway grades at crossings. Where separated crossings are not possible, at-grade crossings must be designed to equally consider vehicular and trail user safety. New trail crossings at state highways shall be designed and located at existing signalized or stop-control intersections or where signalized or stop-controlled intersections will be provided concurrent with the new trail.
- D.G. 1.6 Usage: Locate trails to promote and allow as many uses as possible, if feasible. At the intersections of multiple-use trails or where off-street bicycle trails intersect with on-street bicycle routes not at a road intersection, there should ideally be a 15-foot turning radius and 25-foot sight clearance between the two trail routes.
- D.G. 2.6 Speed Limits: A speed limit of at least 15 miles per hour (MPH) shall be placed on all trails that permit cyclists and other trail uses (e.g., pedestrian, equestrian). Signs shall be located at trail entrances that indicate that a speed limit is in effect.
- D.G. 4.4.1 Types of Barriers: Bollards, boulders, logs, stiles and/or other structures shall be used to prevent motorized vehicles from entering trail routes at any crossing of a public road right-of-way or at any trail staging area. Barriers shall be designed to comply with the latest Americans with Disabilities Act (ADA) Accessibility Guidelines for Outdoor Developed Areas at trails designated as ADA accessible.
- D.G. 4.5.3 Safety Signs: Safety signs displaying warnings of upcoming underpasses, street intersections, blind curves, vertical clearances; providing information about water availability along the trail; advising trail users of the need to reduce speed or dismount and walk their bicycles or horses; warning of mountain lion or other wildlife danger; identifying any use restrictions during the fire season; and explaining the hierarchy of yielding among trail users. Safety signs should be located on an as-needed basis.

Proposed Trails

Proposed trails within Brisbane and the adjacent area include:

- San Bruno Mountain State & County Park Trail Connections: from San Bruno Mountain State & County Park to McClaren Park in San Francisco (estimated length: unknown)
- San Bruno Mountain State & County Park Trail Connections: from San Bruno Mountain State & County Park to Bay Trail (estimated length: unknown)
- San Bruno Mountain State & County Park Trail Connections: from San Bruno Mountain State & County Park to Milagra/Sweeney Ridge in Golden Gate National Recreation Area (estimated length: unknown)
- San Francisco Bay Trail: from Candlestick Park to San Francisquito Creek Palo Alto Baylands (estimated length: 35 miles)

Get Healthy San Mateo County (2015)

Get Healthy San Mateo County (GHSMC) is a collaborative of community-based organizations, cities, schools, hospitals, and leaders working together to advance healthy, equitable communities. After a series of five workshops throughout San Mateo County, a community vision and a list of 10 key components for creating healthy, equitable communities were identified. The components closely related to the Brisbane Bicycle and Pedestrian Master Plan are listed below:

- Complete Neighborhoods and Communities: People-centered design with housing, businesses, services, schools, jobs, recreation, and public transit in close proximity. Easy access to open space, affordable healthy foods and thriving small businesses. High-quality infrastructure and street design with good lighting and landscaping to support public transit and walkability.
- Active Transportation Options: Affordable and accessible transportation options for all ages, such as walking, biking, and public transit; innovative, easy-to-use, fast, well-connected, and efficient transit located near jobs, housing, and retail; and quality bike and pedestrian infrastructure.
- Safe and Diverse Public Places, Parks, and Open Space: Public places (plazas, mini-parks, etc.) in convenient locations across neighborhoods for people to be active, relax, socialize, and host community events; and age and culturally appropriate programs and amenities such as benches and community gardens.

6. Neighboring Jurisdiction Studies

The Alta team also reviewed plans from neighboring jurisdictions that have direct implications for the City of Brisbane.

Geneva-Harney BRT Feasibility Study (2015)

The Geneva-Harney Bus Rapid Transit Feasibility Study was conducted by the San Francisco County Transportation Authority, in coordination with the City and County of San Francisco, the City of Daly City, San Mateo County, and various community groups. The process included conceptual feasibility planning and design work and the evaluation of several bus rapid transit (BRT) and light rail transit (LRT) alternatives. The alternatives were designed to close the rapid transit gap that currently exists along the Geneva Avenue Corridor and between Bayshore Boulevard and Candlestick Point-Hunters Point Shipyard. Two long-term visionary options that include BRT and LRT were also developed and compared against a long-term baseline that has the BRT running on the proposed Geneva Avenue Extension.

The two sets of alternatives – near-term and long term – are detailed in Table 6-1 and Table 6-2.

Table 6-1 Near-term Alternatives

	Geneva	Bayshore	Little Hollywood
2023 Baseline	Mixed-flow	Mixed-flow	Mixed-flow from Executive Park Blvd to Blanken
Alternative 1	4-lane General Purpose/Side Running BRT	4-lane General Purpose/Side Running BRT	Blanken/Lathrop Couplet Option 1
Alternative 2	2-lane General Purpose/Center Running BRT	4-lane General Purpose/Side Running BRT	Blanken/Lathrop Couplet Option 2
Alternative 3	2-lane General Purpose/Center Running BRT	4-lane General Purpose/Side Running BRT	Beatty

Table 6-2 Long-term Alternatives

	Description	Key Features
2040 Baseline	BRT in Geneva Extension	2-Lane General Purpose/Side Running BRT on Geneva Ave. BRT continues on Geneva Extension over US 101, including station at Tunnel Ave as Caltrain transfer T-Third is extended to Caltrain
2040 LRT Option 1	LRT on Geneva, Forced BRT to LRT Transfer at Bayshore	T-Third is extended on Bayshore Blvd and Geneva Ave (center-running) to Balboa Park BART. No extension to Caltrain. Harney BRT operates on Geneva Extension, including station at Tunnel Ave as Caltrain transfer. Transfer to Geneva LRT at Bayshore Ave
2040 LRT Option 2	LRT + BRT on Geneva	T-Third is extended on Bayshore Blvd and Geneva Ave (center-running) to Balboa Park BART. No extension to Caltrain. Harney BRT operates on Geneva Extension, including station at Tunnel Ave as Caltrain transfer. BRT continues in same lanes as LRT to Balboa Park BART.

		Results in greater frequency along Geneva Ave segment

The evaluation assessed the performance of each BRT alternative with respect to the following metrics: transit operations, transit rider experience, access and pedestrian and bicycle safety and comfort, urban landscape and design, traffic operations and parking, and capital and operating costs.

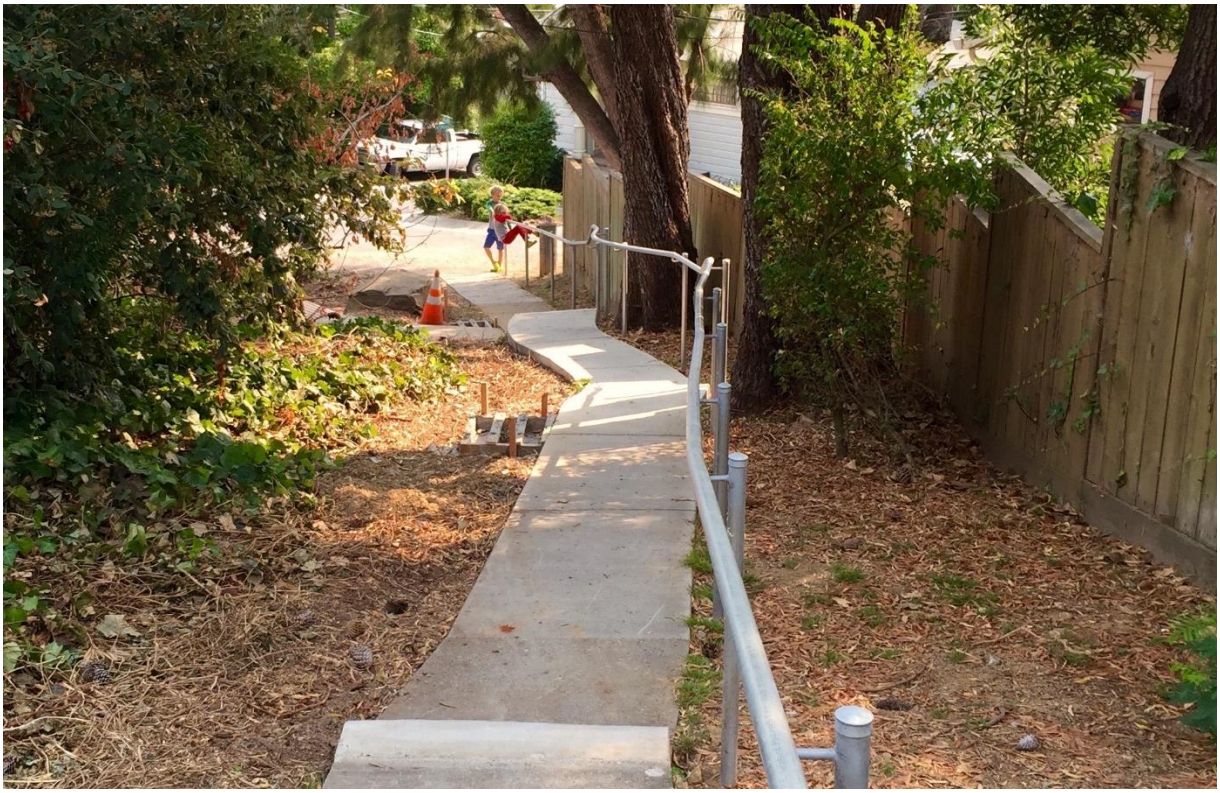
In the near-term, all alternatives provide improvements for pedestrians, bicyclists, and access to jobs over the baseline, but the evaluation determined that Alternative 2 provided the best pedestrian and bicycle access, safety, and comfort.

In the long-term, Geneva BRT would maintain and improve the ridership benefits observed in the near-term options. The study determined that the BRT-only option was adequate to accommodate the demand generated in the corridor and provide connections destination and transfer points within the corridor.

This study finds that there are feasible options that accommodate the City/County's need for bus rapid transit service and connections in this corridor. However, there are several questions remaining that must be addressed before the most beneficial option for each segment of the corridor can be selected. The preferred alternative will not be selected until the environmental phase since it will require environmental and cost analysis information.

Appendix C – Inventory of Facilities, Programs and Existing Conditions

City of Brisbane



August 2016

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Document Revision Schedule			
Inventory of Facilities, Programs and Existing Conditions			
Rev.	Description	Date	Reviewed by
v1	Draft report	8/18/2016	Hugh Louch
v2	Appendix B	11/29/2016	Hugh ouch

Table of Contents

1. Introduction

Brisbane, known as the "City of Stars," is located in the northern part of San Mateo County and is home to 4,421 residents. Brisbane borders the City and County of San Francisco to the north, the City of Daly City to the northwest, the City of 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 will play 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 foundation of a successful Bicycle and Pedestrian Master Plan is a detailed understanding of the existing conditions, including:

- Land use and demographics
- Transportation facilities and programs
- Activity generators
- Community input on barriers and opportunities

2. Land Use and Demographics

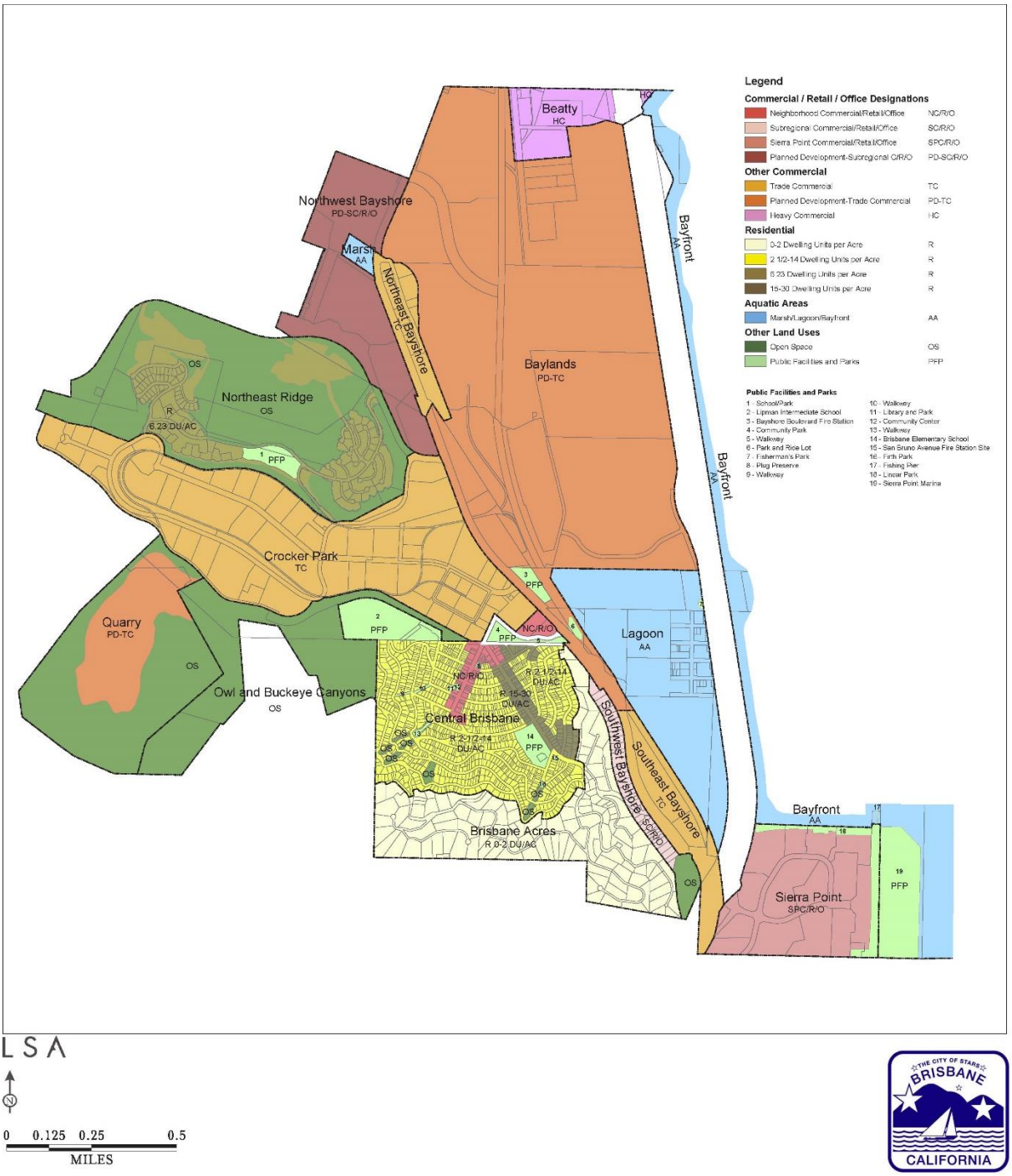
Land Use

The City of Brisbane, comprised of 4.9 square miles, has a mixture of land uses including 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 mostly 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 2-1 shows current land uses in the City.

Land use designations for the 13 subareas of Brisbane include:

- Bayfront, designated as an aquatic area.
- Baylands, designated as a Planned Development area, will be used for commercial and retail activity.
- Beatty, designated for commercial and retail activity.
- Brisbane Acres, designated as residential.
- Central Brisbane, designated primarily as residential, with higher density than Brisbane Acres. A small portion of Central Brisbane is designated as open space and commercial and retail activity.
- Crocker Park, designated for commercial and retail activity.
- Lagoon, designated as an aquatic area.
- Northeast Bayshore, designated for commercial and retail activity.
- Northeast Ridge, designated as open space.
- Northwest Bayshore, designated as a Planned Development area, will be used for commercial and retail activity.
- Owl and Buckeye Canyons, designated as open space.
- Quarry, designated as a Planned Development area, will be used for commercial and retail activity.
- Sierra Point, designated for commercial enterprises as outlined in the Development Agreement for Sierra Point.

Figure 2-1 City of Brisbane General Plan Land Use, 1994



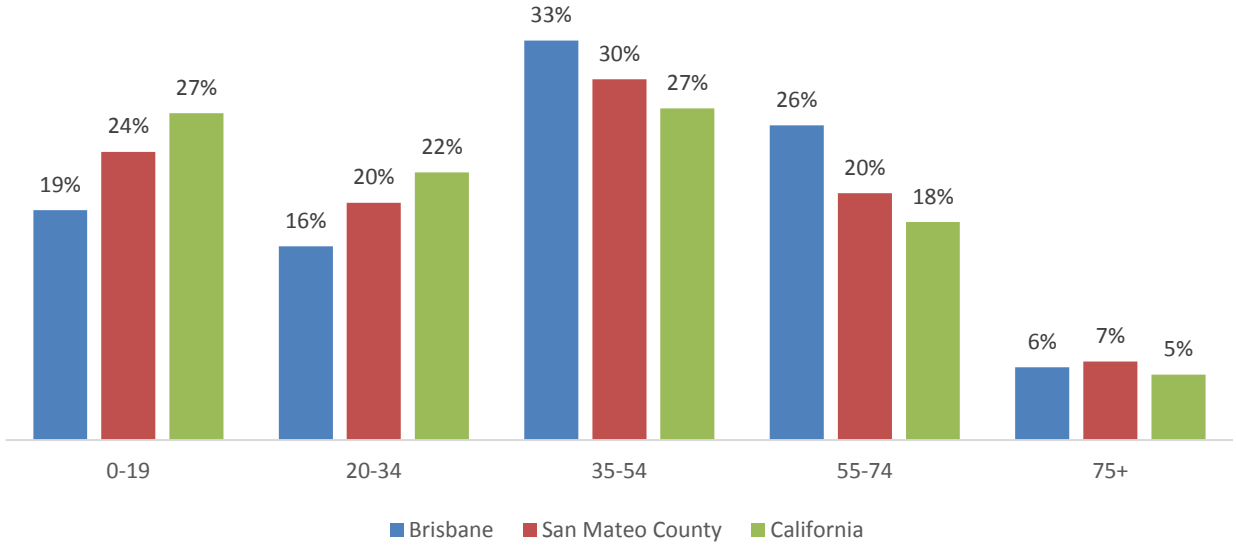
Demographics

This section describes the Brisbane population by age, car ownership, and mode share to better understand how people use the active transportation network and the potential for growth[1].

Population

Brisbane is home to 4,421 residents, according to the U.S. Census Bureau's American Community Survey. As shown in Figure 2-2, about one-third of the population is under 34 years old, one-third is between 35 and 54 years old, and one-third is over 55 years old. Brisbane's population is substantially older than both San Mateo County and California as a whole.

Figure 2-2 Age of Population



Access to Personal Vehicle

Households without access to a vehicle must rely on other modes of transportation for their daily travel needs, whether for work, recreation, or personal errands. The majority (90%) of households have access to one or more vehicles, and over half have access to two or more vehicles available. The 10% of households without access to a vehicle may walk, bike, or take transit for their daily transportation needs.

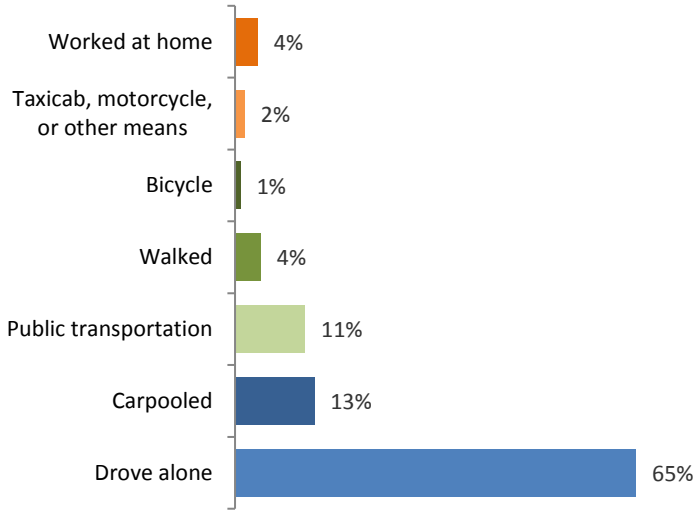
[1] U.S. Census, American Community Survey

Commuter Travel

As shown in

Figure 2-3, 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. Over 6% of workers live and work in Brisbane, and almost 40% of workers live less than ten miles from their primary job[2], which presents an opportunity to shift toward active modes for work commutes.

Figure 2-3 Commuter Travel



[2] U.S. Census Bureau, Longitudinal Employer-Household Dynamics

3. Existing Transportation Facilities and Programs

Existing Transportation Facilities

The street network in Brisbane is by 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. rs), flexible posts, or parking. Brisbane currently has no Class IV facilities.

Table 3-1 summarizes the existing bikeways in Brisbane.

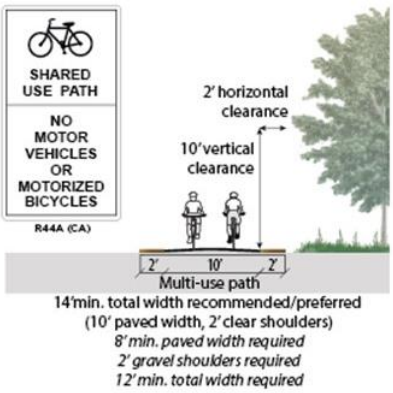
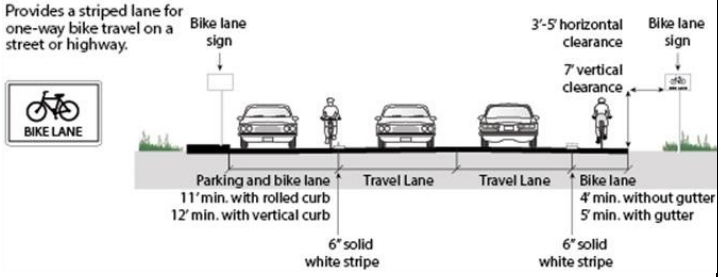
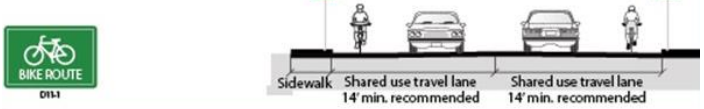
A Class I facility is a shared use path for bicyclists and pedestrians that is separated from motor vehicle travel. Brisbane currently has a Class I facility on Old Quarry Road, providing separated bicycle and pedestrian access. The San Francisco Bay Trail runs along the Brisbane Marina, providing a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

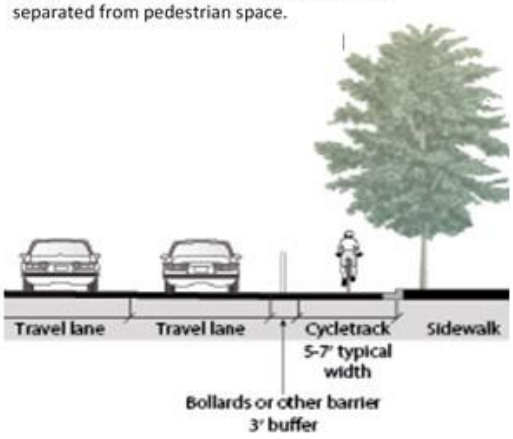
Class II Bike Lanes provide a signed, striped and stenciled lane for one-way bicycle travel on a roadway, next to the vehicle travel lane. Brisbane has over 7 miles of bike lanes, with Bayshore Boulevard providing north-south access throughout Brisbane, and Sierra Point Parkway providing bike lanes to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

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.

Class IV 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.

Table 3-1 Bikeways

Facility Type		Miles in Brisbane
CLASS I **Multi-Use Path** Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized.  14' min. total width recommended/preferred (10' paved width, 2' clear shoulders) *8' min. paved width required* *2' gravel shoulders required* *12' min. total width required*		Paved: 1.85 Unpaved: 2.65
CLASS II **Bike Lane** Provides a striped lane for one-way bike travel on a street or highway. 		7.37
CLASS III **Bike Route** **Signed Shared Roadway** Provides for shared used with motor vehicle traffic, typically on lower volume roadways. 		0

Facility Type		Miles in Brisbane
CLASS IV **Cycle Track** Provides a separated space for one-way or two-way bicycle travel adjacent to a street or highway. Bicycles are separated from motor vehicle traffic by a raised curb, bollards, parking with a striped buffer or other vertical physical barrier, in addition from being separated from pedestrian space. 		0

Existing Bicycle Parking in Downtown Brisbane

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 left.

For a map of existing bicycle facilities, see Figure 3-1.

Pedestrian Network

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

Sidewalks

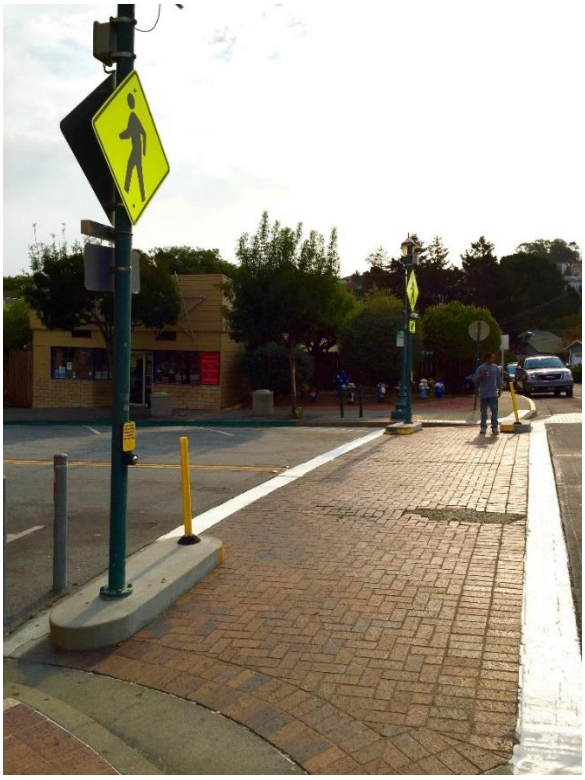
Many streets in central Brisbane and residential neighborhoods in northern Brisbane have sidewalks. As the street network approaches San Bruno Mountain, sidewalks become non-existent, but there are paths connecting to the mountain at the southern edge of Brisbane. Industrial areas of the City also lack sidewalks. Due to the topography of the City, there are several staircases used as pedestrian connectors.

Sidewalk width varies in Brisbane but is generally narrow, with some segments having a buffer from the travel lane and others not. The American with Disabilities Act (ADA) requires a minimum 4-foot wide sidewalk. Many streets have rolled curbs which allow 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

Crosswalks 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 about where to cross. 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.

Marked Crosswalk with Decorative Paving



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, but some intersections are still lacking.

See Figure 3-1 for a map of existing bicycle and pedestrian facilities.

Figure 3-1 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**

0 0.25 0.5 MILES

N

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

Existing Programs

Safe Routes to Schools

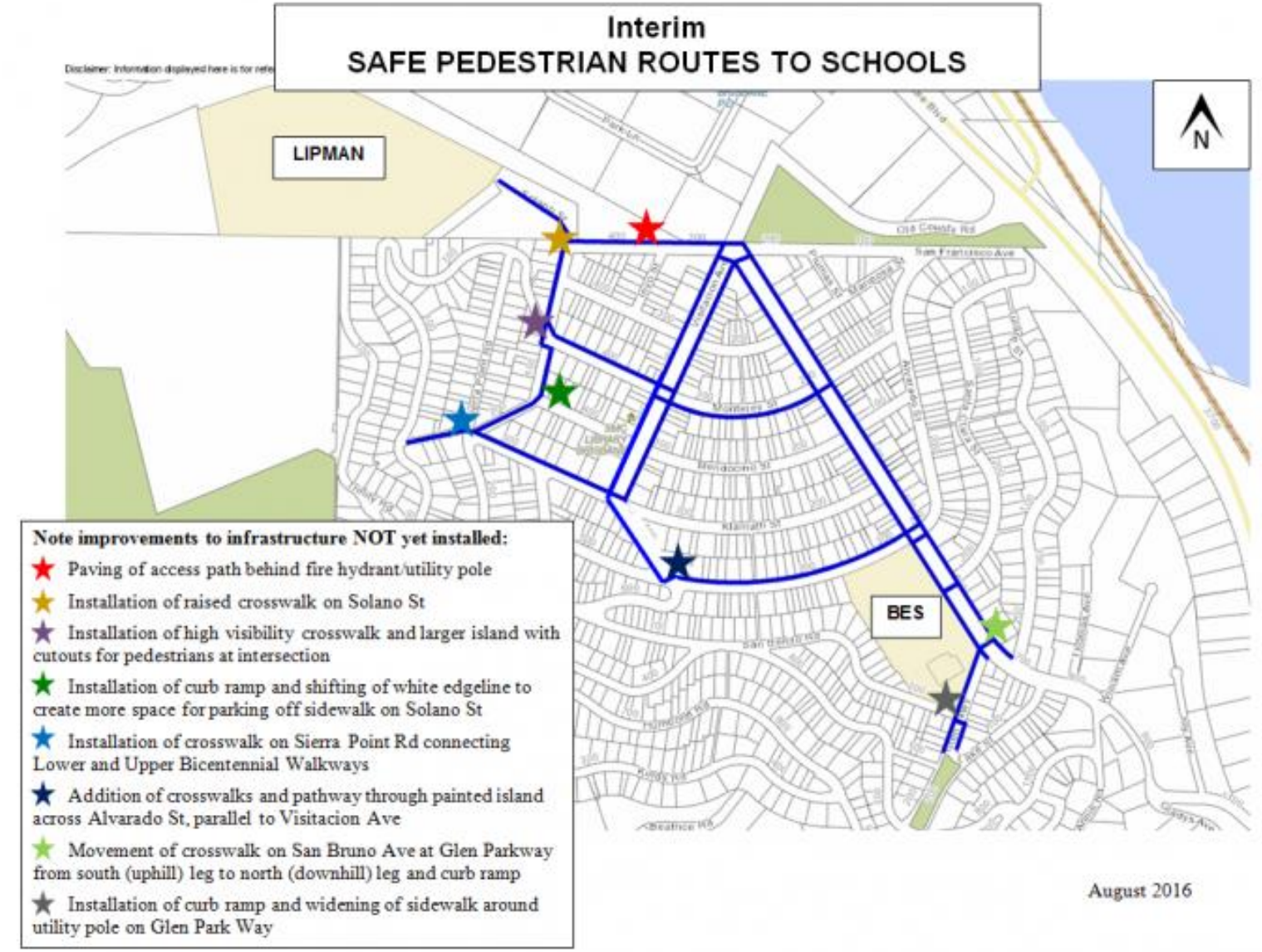
The City of Brisbane's Complete Streets Safety Committee developed a Safe Pedestrian Routes to Schools Plan, adopted by City Council in December 2014. The Plan includes a map, updated August 2016, displaying safe pedestrian routes and infrastructure improvements to be completed within the next year.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

Figure 3-2 Interim Safe Pedestrian Routes to Schools



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.

Past Investment

Over the last five years, Brisbane has invested over $1.3 million in its active transportation system, including:

- Retrofitting school safety crossings in 2014 - $100,000
- Installing bike lanes on Bayshore Blvd (Phase 2 from Valley Dr. to Geneva Ave.) in 2012 - $600,000
- Lipman Middle School sidewalk repair in 201, which installed a walkway to school separate from existing roadway that has no shoulder or sidewalk - $600,000

4. Collision Analysis

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. Collision data was generated from the California Statewide Integrated Traffic Report System (SWITRS). Because SWITRS combines records from all state and local police departments, data varies due to differences in reporting methods. It is important to note that the number of collisions reported to SWITRS is likely an underestimate of the actual number of collisions that take place because some parties do not report minor collisions to law enforcement, particularly collisions not resulting in injury or property damage. Although under-reporting and omissions of "near-misses" are limitations, analyzing the collision data lets us look for trends both spatially and in behaviors (motorist, cyclist, and pedestrian) or design factors that may contribute to collisions in Brisbane.

Figure 4-1 Bicycle and Pedestrian Collisions

BICYCLE & PEDESTRIAN COLLISIONS

Brisbane Bicycle & Pedestrian Plan

Collision Severity

2010 - 2014, SWITRS

Pedestrian-Involved Collisions

Fatality (3)	Serious Injury (0)	Minor Injury (3)	No Injury (1)

Bicycle-Involved Collisions

Fatality (0)	Serious Injury (2)	Minor Injury (6)	No Injury (4)

Land Use

- School Grounds
- Parks & Open Space

0 0.25 0.5 MILES

N

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

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, resulting in zero bicyclist fatalities and 3 pedestrian fatalities (50% of total traffic fatalities across all modes). Two bicyclists suffered severe injuries, comprising 14.3% of the total severe injuries that resulted from traffic collisions across all modes. Figure 4-2 shows the severity of collisions between 2010 and 2014. Given the small number of collisions, it is difficult to draw conclusions about safety patterns and trends. However, looking closer at the collision scenarios can provide insight about risk factors to prevent future collisions.

Figure 4-2 Severity of Collisions

	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%

Age

As shown in Figure 4-3, bicyclists involved in collisions tend to be older, with the majority of reported victims being 35-64 years old, while pedestrians tend to be younger, with the majority of reported victims being 20-34 years old.

Figure 4-3 Age of Victim

Age	0-19	20-34	35-49	50-64	65+	Unknown
Bicyclist	1	0	2	3	0	1
Pedestrian	1	3	1	1	1	0

Collision Factors

Code violation was the primary collision factor for the majority of pedestrian and bicycle collisions. Three of the pedestrian collisions were caused by pedestrian violations and two were caused by improper turning. Five of the bicycle collisions were caused by an automobile right-of-way violation and three were caused by improper turning.

Figure 4-4 Violation Category

Violation Category	Pedestrian	Bicycle
Unsafe speed	0	2
Improper turning	2	3
Automobile right of way	0	5
Pedestrian violation	3	0
Traffic signals and signs	0	1
Unknown	1	1
Not stated	1	0
Total	7	12

Type of Collision

All of the pedestrian collisions involved a pedestrian and a vehicle. In four of the collisions, the pedestrian was in the road. As shown in Figure 4-5, the pedestrian was crossing in three of the collisions, two of which were not at a crosswalk, and the remaining one was in a crosswalk at an intersection. Figure 4-6 shows that sideswipe and broadside were equally common for bicycle collisions, with three of each collision type occurring between 2010 and 2014.

Figure 4-5 Pedestrian Action

Pedestrian action	Frequency
Crossing in crosswalk at intersection	1
Crossing not in crosswalk	2
In road, including shoulder	4
Total	7

Figure 4-6 Type of Bicycle Collision

Type of bicycle collision	Frequency
Sideswipe	3
Rear end	1
Broadside	3
Hit object	1
Overturned	1
Other	3
Total	12

Location

Three of the pedestrian collisions occurred on Route 101, where pedestrians are prohibited, and two of those collisions resulted in a pedestrian fatality. Issues that occur on Route 101 are not within the City of Brisbane's scope of responsibility to address. Two pedestrian collisions occurred on Bayshore Blvd, and were due to pedestrian violations where the pedestrian did not yield to the driver. In one collision, the pedestrian was crossing without a

crosswalk. The pedestrian was in the roadway in the other collision involving a pedestrian violation. According to City of Brisbane records, the pedestrian fatality that occurred on Bayshore Blvd was due to the pedestrian having a heart attack while crossing, but a collision did not occur. The remaining pedestrian collisions occurred on Kings Rd and Valley Dr.

Four of the bicycle collisions occurred on Bayshore Blvd, which has existing bicycle lanes. Ten (83.3%) of the bicycle collisions occurred outside of an intersection, suggesting needed improvements for shared roadways to accommodate bicycle travel.

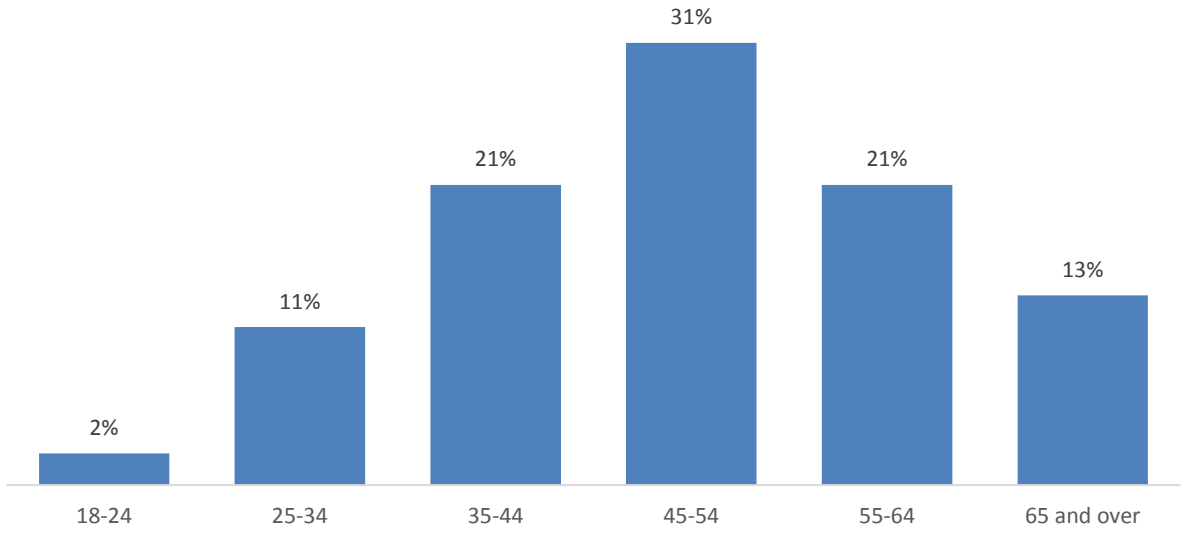
Bayshore Blvd appears to be especially dangerous for pedestrians and bicyclists, as collisions were both more severe and more frequent on this corridor. Additionally, safety measures should be focused in locations where the City anticipates having more pedestrian and bicycle activity as a result of implementing the Brisbane Bicycle and Pedestrian Master Plan in order to prevent an increased risk of collisions due to higher exposure.

5. Community Input

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, and are summarized below.

The largest age group represented was adults 45-54 years old, with 31% of the responses. Figure 5-1 shows the age distribution of respondents. Females were represented slightly higher than males, with 56% female and 42% male. Two percent declined to state or did not respond. The majority (61%) of respondents live in Brisbane, 28% work in Brisbane, and another 28% travel to Brisbane for other purposes.

Figure 5-1 Age



Key findings

Respondents are more likely to walk for shorter trips and bike for longer trips. Over 68% of respondents often or always walk for trips less than 1 mile, while only 16% of respondents often or always walk for trips 1-5 miles. By comparison, 28% of respondents often or always bike for trips less than 1 mile, while 34% of respondents often or always bike for trips 1-5 miles.

Personal errands, visiting friends or relatives, and exercise or recreation are common trip purposes for both walking and bicycling. Most respondents (over 60%) do not walk for their work or school commute or to access transit. The majority of respondents (85%) do not bike to access transit. However, 13% respondents commute by bike to work or school five days per week.

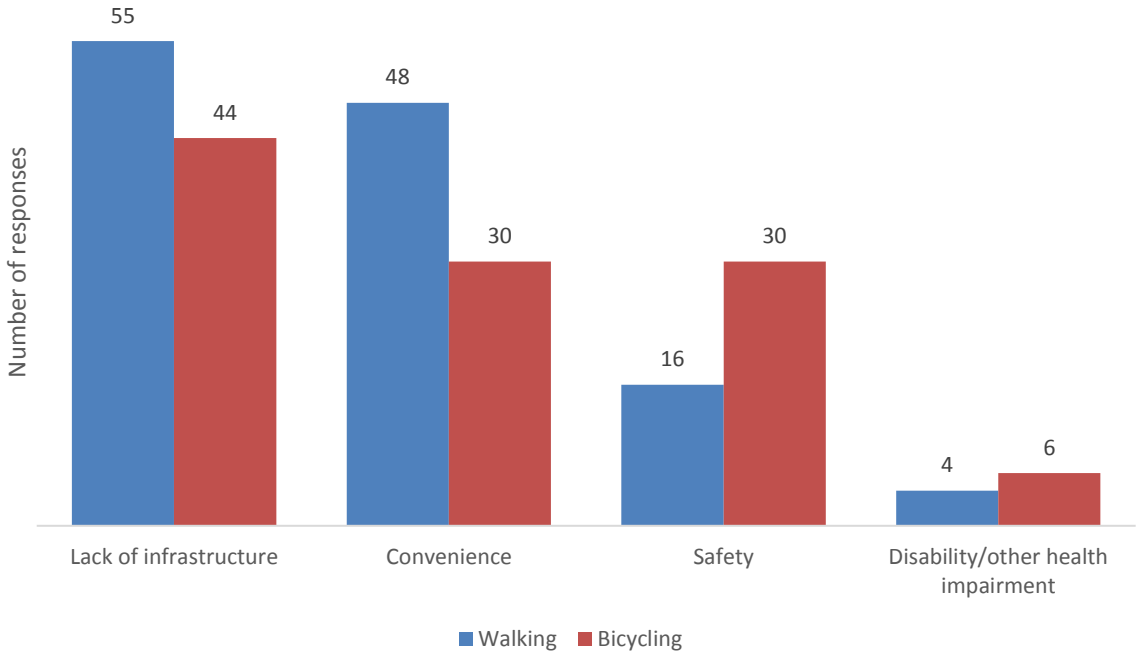
The top priorities identified for future investment in improving walking and bicycling are listed below. (Respondents could select 3 choices)

- Connections to trails (57%)
- Bicycle lanes (57%)
- Sidewalks (39%)
- Bicycle markings, such as sharrows (37%)
- 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.

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. 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, as shown in Figure 5-2.

Figure 5-2 Barriers to walking or bicycling more often



Walking

The most common reasons respondents walk were for their health (48%) and because they enjoy walking (33%).

The top barriers to walking more often were: not enough time/destinations too far (57%), lack of sidewalks/walkways (44%), roads and sidewalks do not feel safe (23%), as shown in Figure 5-3. The barriers are summarized by categories in Table 5-1.

Figure 5-3 Barriers to walking

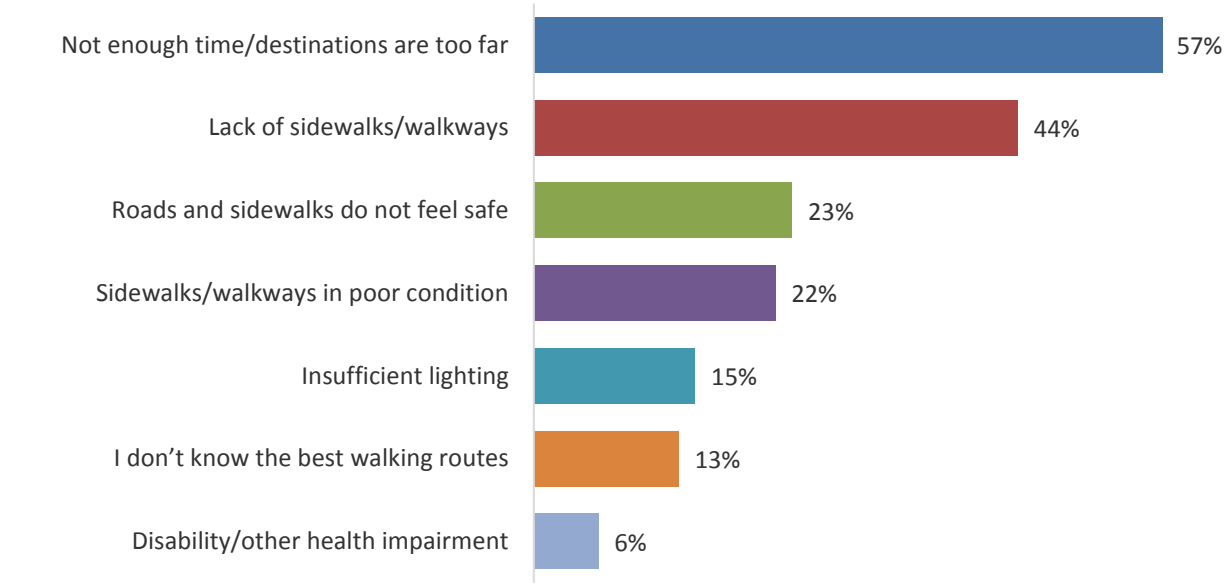


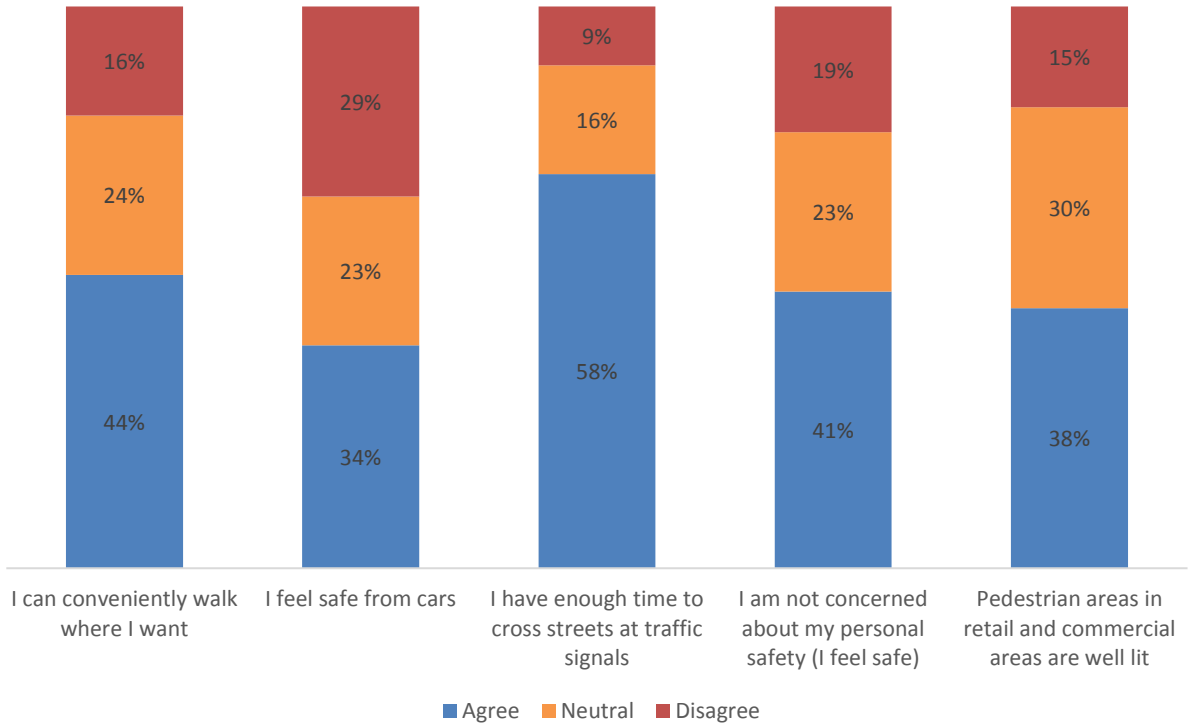
Table 5-1 Barriers to walking

Issue	# of Responses
Lack of infrastructure	**55**
Lack of sidewalks/walkways	30
Insufficient lighting	10
Sidewalks/walkways in poor condition	15
Convenience	**48**
Not enough time/destinations are too far	39
I don't know the best walking routes	9
Safety	**16**
Roads and sidewalks do not feel safe	16
Disability/other health impairment	**4**

As shown in Figure 5-4, at least one-third of respondents 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. The percentage of respondents who answered "N/A" are not shown in Figure 5-4, but account for approximately 15-17% of the responses for each category.

Figure 5-4 Walking experience in Brisbane



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.

Bicycling

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.

The top barriers to biking more often were: roads do not feel safe (53%), lack of dedicated bicycle space (53%), and not enough time/destinations too far (40%), as shown in Figure 5-5. The barriers are summarized by categories in Table 5-2.

Figure 5-5 Barriers to bicycling

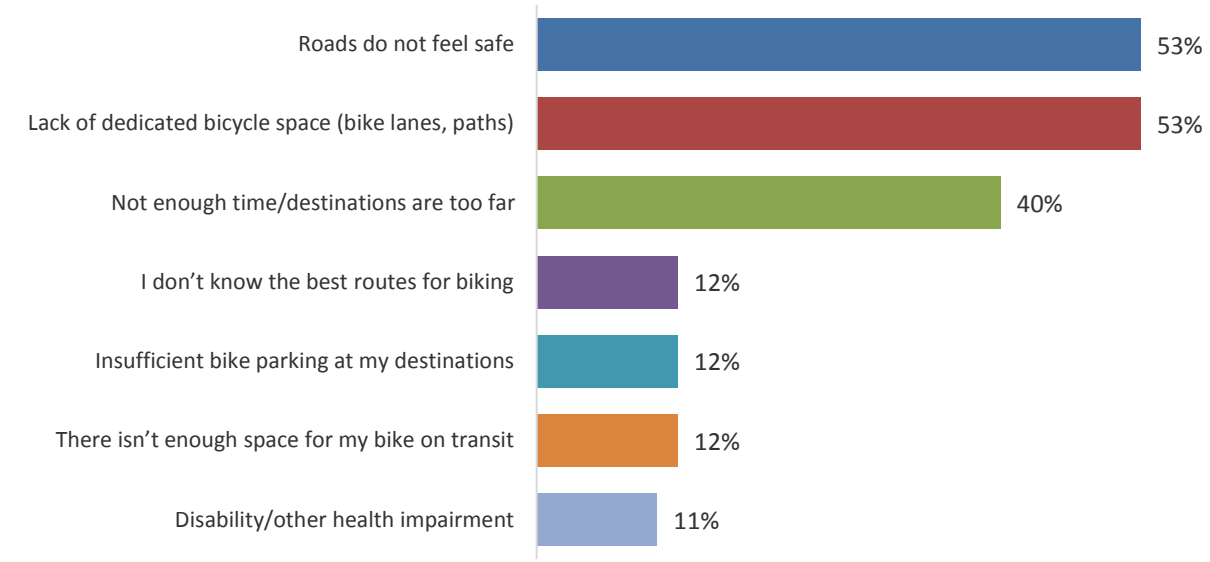


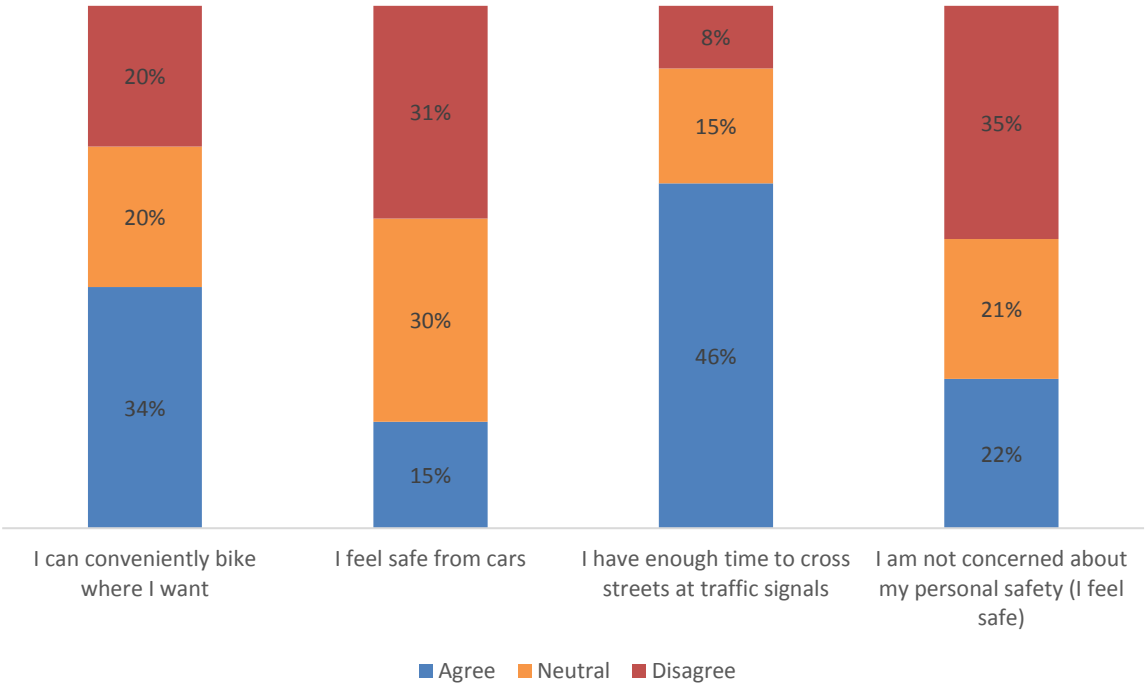
Table 5-2 Barriers to bicycling

Issue	# of Responses
Lack of infrastructure	**44**
Lack of dedicated bicycle space (bike lanes, paths)	30
Insufficient bike parking at my destinations	7
There isn't enough space for my bike on transit	7
Convenience	**30**
Not enough time/destinations are too far	23
I don't know the best routes for bicycling	7
Safety	**30**
Roads do not feel safe	30
Disability/other health impairment	**6**

Common locations for bicycle parking identified by respondents include the community park, near shopping and downtown areas, and along Visitacion Ave.

As shown in Figure 5-6, personal safety is more of a concern when biking than walking. Furthermore, only 15% of respondents feel safe from cars while biking. The percentage of respondents who answered "N/A" are not shown in Figure 5-6, but account for approximately 22-30% of the responses for each category.

Figure 5-6 Bicycling experience in Brisbane



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.

Appendix D – Prioritized Projects

City of Brisbane

September 2016

alta
PLANNING + DESIGN

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	Client	Randy Breault	

Document Revision Schedule			
Prioritized Projects			
Rev.	Description	Date	Reviewed by
v1	Draft report	10/3/2016	Hugh Louch
v2	Appendix C	11/29/2016	Hugh Louch

Table of Contents

1. Introduction

This working paper presents an evaluation of individual infrastructure improvements and programs intended to improve the bicycle and pedestrian network in Brisbane. Projects were identified through a combination of analyzing existing conditions and network gaps, reviewing existing planning efforts and policies, gathering community input, and consulting with City staff and local stakeholders. 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. Table 1-1 provides a summary of the proposed projects. Figure 1-1 shows a map of the proposed bicycle facilities and Figure 1-2 shows a map of the proposed pedestrian facilities.

Table 1-1 Summary of Proposed Projects

#	Project	Location	Cross Street A	Cross Street B
Network Improvements				
N1	Landscaped median and roadway restriping to reduce speeds	Bayshore Boulevard	Old County Road	Valley Dr
N2	Install Class IV cycle track (details TBD)	Tunnel Avenue		
N3A	Enhance existing Class II bike lane	Sierra Point Parkway & Lagoon Rd		
N3B	Install Class I or IV bicycle facilities	Sierra Point Parkway & Lagoon Rd		
N4	Install Class II bicycle lane	Valley Dr	Bayshore Blvd	Silverspot Dr
N5	Connection from Bay Trail to Marina Blvd	Bay Trail	Marina Blvd	
N6	Extend trail connection to Tunnel Ave/Bayshore using the tunnel under Bayshore (long term)	Bayshore Tunnel		
N7	Install Class III bike route (sharrows)	San Bruno Ave	Bayshore Blvd	San Francisco Ave
N8	Resurface existing path to Class I using permeable materials	Crocker Park Recreational Trail		
N9	Complete sidewalk gaps	Bayshore Boulevard	Sunnydale Ave	San Bruno Ave
N10	Complete pedestrian staircase to connect Sierra Point and San Benito	Extend pedestrian stair network		
N11	Shared road signage	San Benito Rd	Alvarado St	Sierra Point and San Benito
N12	Install sidewalk	Old County Rd		

#	Project	Location	Cross Street A	Cross Street B
N13	Complete sidewalk gaps on both sides	Park Lane	Old County Road	Valley Dr
N14	Install sidewalk on west side of S. Hill Dr	Valley Dr	W Hill Drive	N Hill Drive
N15	Install Class II bike lane	Old County Rd	Bayshore Ave	San Francisco Ave
N16	Install Class II bike lane	Monarch Dr, N Hill Dr, S Hill Dr	Mission Blue Dr	Crocker Park Recreational Trail
N17	Install Class III bike route (sharrows)	Park Lane	Valley Dr	Old County Rd
N18	Install staircase	Connecting Alvarado St to Santa Clara St to Tulare St		
N19	Install staircase	Connecting north end of Tulare St to Santa Clara St		
Spot Improvements				
S1	Driveway consolidation	Brisbane Village Shopping Center		
S2	Crossing improvement (RRFB, median island) from community park to Brisbane Village Shopping Center	Old County Rd		
S3	Add new median crossing island and pedestrian cage, install yield teeth (2 locations)	Valley Dr	Near WSI Corporate Office and Universal Telescope	
S4	Crocker Park Recreational Trail	Crocker Park Recreational Trail	S Hill Dr	
S5	Add marked crosswalks	Park Lane	Old County Rd	
S6	Install advance stop bars	Multiple	San Bruno Ave & Alvarado St	San Benito Rd & Glen Park Way
S7	Tighten up intersection, mark turning movements and conflict zones with green paint (2 locations)	Multiple	Lagoon Rd & Sierra Point Parkway	Lagoon Rd & Tunnel Ave
S8	Upgrade intersection to all-way stop	San Bruno Ave	Santa Clara St	
S9	Extend median and pedestrian cages, add yield teeth (2 locations)	Valley Dr	Crocker Park Recreational Trail City Hall	
S10	Install green striping at US 101 on ramp	Sierra Point Parkway	101 ramp	
Bicycle and Pedestrian Facilities				
F1	Bike Parking: Community park, library (next to the eagle), Mission Blue, community pool/soccer field			
F2	Wayfinding: Add city-wide wayfinding system			

#	Project	Location	Cross Street A	Cross Street B
Programs				
P1	Education: Bicycle Safety Education			
P2	Education: Pedestrian Safety Education			
P3	Education: Share the Road campaign			
P4	Encouragement: Bike-Friendly Business Program			
P5	Encouragement: Bike to Work/School Day			
P6	Encouragement: Suggested Routes to School Maps			
P7	Enforcement: Targeted Enforcement			
P8	Evaluation: Bicycle and Pedestrian Counts			
P9	Evaluation: Annual Report Card			
P10	Evaluation: Bicycle and Pedestrian Community Survey			

Figure 1-1 Proposed Bicycle Facilities

PROPOSED BICYCLE FACILITIES

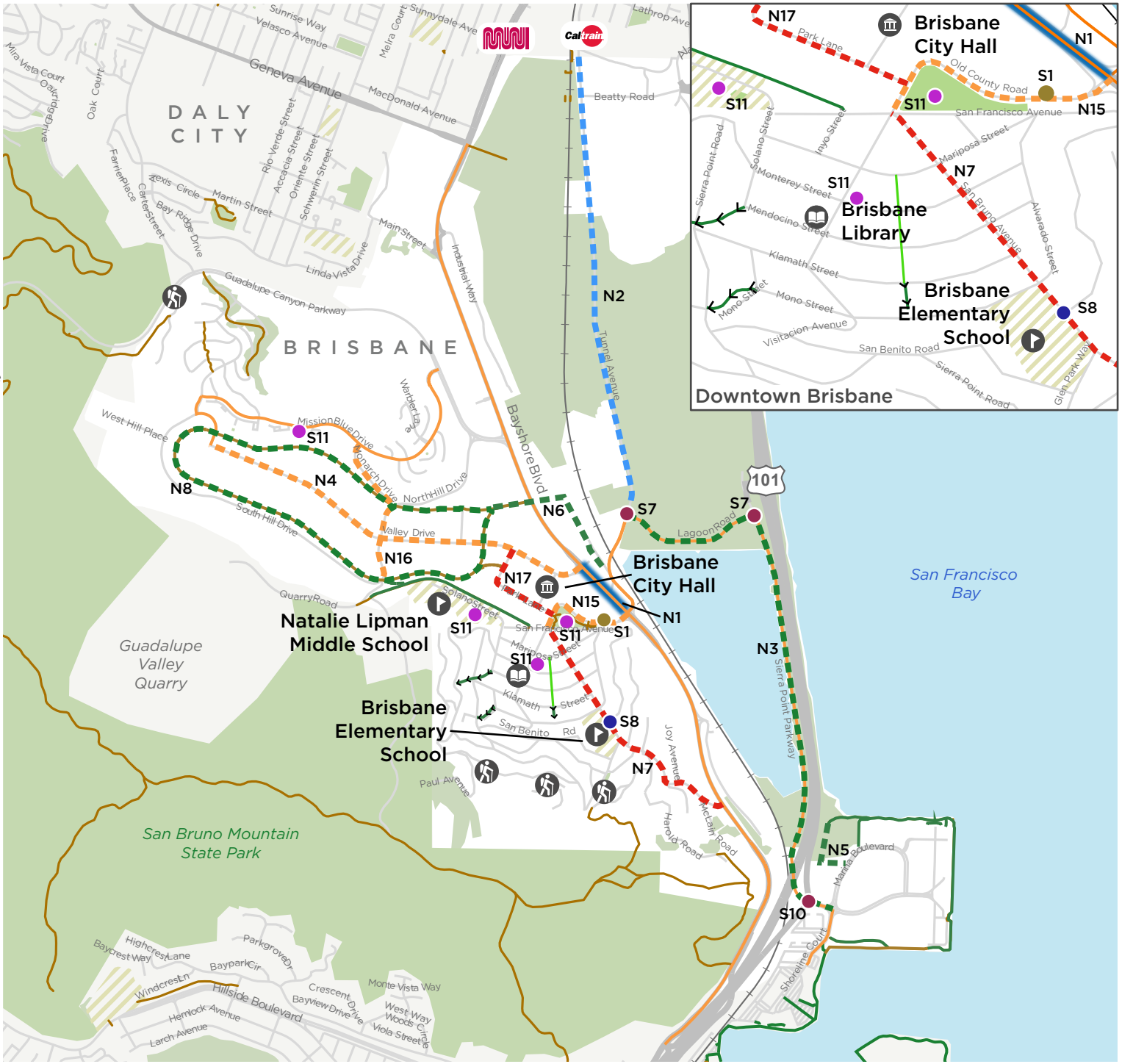
Brisbane Bicycle & Pedestrian Plan

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



MILES
0 0.25 0.5

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

Figure 1-2 Proposed Pedestrian Facilities

PROPOSED PEDESTRIAN FACILITIES

Brisbane Bicycle & Pedestrian Plan

Proposed Facilities

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

Existing Pedestrian Facilities

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

0 0.25 0.5 MILES

N

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

2. Project Evaluation

Evaluation Strategy

The projects were evaluated based on the criteria described in Table 2-1 to demonstrate the types of benefits that projects and programs can achieve.

Table 2-1 Project Evaluation Criteria

Criterion	Rationale	Description
Safety	This criteria addresses known safety challenges based on crash data.	*The project addresses safety identified through collision data and known risk factors.* High – Projects that address safety concerns identified through reported crashes, based on the most recent five years of data for bicycle or pedestrian related crashes Med –Projects that improve conditions for bicyclists and pedestrians on a high speed street, wide crossing, and other unsafe environments Low – no expected impact on safety
Community Identified Challenge Area	This criteria addresses community identified needs.	*The project is at a location identified as a priority through the Technical Advisory Committee, survey, or community outreach events. The project is recommended for implementation in an existing plan, such as the General Plan, Parkside Specific Plan, San Mateo County Comprehensive Bicycle and Pedestrian Plan, and San Mateo County Trails Plan.* High – Projects identified by community members and Technical Advisory Committee, and recommended for implementation in an existing plan Med – Projects identified by community members or Technical Advisory Committee, or recommended for implementation in an existing plan Low – Projects not identified by community members or Technical Advisory Committee, and not recommended for implementation in an existing plan
Project Readiness	This criteria addresses the ability of the City to implement projects.	*This evaluation is based on known factors regarding estimated public right-of-way.* High – The project is in the public right-of-way and faces no known implementation challenges Med – The project is not likely to require the public right-of-way but may face implementation challenges. Low – The project is not in the public right-of-way or faces substantial implementation challenges
Activity Generator Connection	This criteria addresses connections to likely community destinations.	*The project improves or provides a connection to an attractor identified in the Existing Conditions working paper (health care facilities, parks, transit stops, community centers, top employers, shopping centers, parks, and schools).* High - Projects that directly connect to activity generators, are within a ½ mile of a school, or along an identified school route Med - Projects that indirectly connect to activity generators (i.e., connect to existing facility that connects to the activity generator) Low - Projects that do not connect to activity generators

Criterion	Rationale	Description
Regional or Local Trail Connection	This criteria addresses connections to regional and local networks.	*The project improves or provides a connection to an existing or proposed trail or regionally significant route in Brisbane or San Mateo County.* High - Projects that directly connect to a trail or to a regionally significant route (or are part of that route) Med - Projects that indirectly connect a trail or regionally significant route Low - Projects that are entirely local

Projects Identified in Existing Plans

For the community identified challenge criteria, the following plans were reviewed. Specific improvements are noted below and the relevant plan is noted in the evaluation table.

General Plan, Circulation Element (GP)

Policy C.4: Continue to upgrade north-south arterial and collector streets while providing the appropriate level of service.

> *Program C.4.b: Study Bayshore Boulevard and, as feasible, respecting its classification as a principal arterial, implement traffic calming features, pedestrian amenities and landscape design elements.*

Policy C.6: Investigate and pursue traffic calming features for Visitacion Avenue, Old County Road and San Bruno Avenue to provide for greater pedestrian comfort and safety at street crossings.

Parkside Plan (PP)

Projects that fall within the geographic boundaries of the Parkside Plan and support elements of the Vision Framework:

- Build Connections between Destinations for All Modes of Travel. The Parkside Plan should prioritize safe and seamless connections, particularly for bicycles and pedestrians, both within the plan area to Community Park, City Hall, and Village Shopping Center and to wider destinations such as San Bruno Mountain, the Bay Trail, and nearby communities.

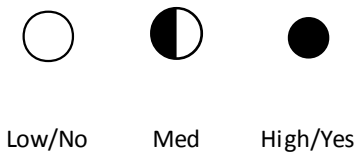
San Mateo County Comprehensive Bicycle and Pedestrian Plan (CBPP)

The CBPP establishes eight Focus Areas to guide local jurisdictions in developing pedestrian improvement projects. The Focus Areas related to the Brisbane Bicycle and Pedestrian Master Plan are:

- Downtown Area Improvements – Downtown areas in San Mateo County with moderate to high levels of walking demand that do not have high quality walking environments would benefit from projects that improve pedestrian environments and encourage pedestrian activity. Projects in this Focus Area may include sidewalk furniture or plants, pedestrian plazas, and a wide pedestrian through zone.
- Major Barrier Crossings – Barrier crossings are defined as improved connections across physical barriers to walking, and may include traditional grade-separated crossings of freeways, railroads and waterways. Projects in the Focus Area may include sidewalk widening and grade separated pedestrian crossings.
- Safe Routes to School – The area within a one-mile radius of a school is considered the highest priority for Safe Routes to School infrastructure improvements. Projects in this Focus Area may include bulb-outs at intersections along recommended school access routes, improved pedestrian crossings, and traffic calming measures to help reduce motor vehicle speeds.

The projects were evaluated and symbolized to visually represent the range of benefits on a scale shown in Figure 2-1.

Figure 2-1 Evaluation Criteria Scale



Network Improvements

Network improvements are intended to make bicycling and walking safer, more comfortable, and more enjoyable for all ages, abilities, and trip purposes. Recommended projects include traffic calming, installation or enhancements to bicycle lanes, trail connections, completion of sidewalk gaps, and crossing improvements.

Table 2-2 evaluates the potential network improvements.

Spot Improvements

Spot improvements include location-specific improvements. These are designed to address specific locations where there are specific bicycling or walking challenges identified through the planning process. Proposed projects include crossing improvements and intersection treatments.

Table 2-3 provides an evaluation of potential spot improvements.

Table 2-2 Evaluation of Potential Network Improvements

#	Project	Location	Length (mi)	Safety	Community Identified Challenge	Project Readiness	Activity Generator Connection (employment, school, transit)	Activity Generator Connection (parks, community center, library, commercial, retail)	Regional or Local Trail Connection	Consistency with Existing Plans and Policies	Cost Estimate
N1	Landscaped median and roadway restriping to reduce speeds	Bayshore Boulevard	0.18	●	●	◑	●	◑	●	GP, Policy C.4	$239,000
N2	Install Class IV cycle track (details TBD)	Tunnel Avenue	1.32	◑	◑	○	●	◑	●		$1,715,000
N3A	Enhance existing Class II bike lane	Sierra Point Parkway & Lagoon Rd	1.63	◑	◑	○	◑	○	●		$195,000
N3B	Install Class I or IV bicycle facilities	Sierra Point Parkway & Lagoon Rd	1.63	◑	◑	○	◑	○	●		$2,113,000
N4	Install Class II bike lane	Valley Dr	1.16	●	◑	●	●	●	●		$87,000
N5	Connection from Bay Trail to Marina Blvd	Bay Trail	0.17	○	◑	○	◑	○	●		$108,000

#	Project	Location	Length (mi)	Safety	Community Identified Challenge	Project Readiness	Activity Generator Connection (employment, school, transit)	Activity Generator Connection (parks, community center, library, commercial, retail)	Regional or Local Trail Connection	Consistency with Existing Plans and Policies	Cost Estimate
N6	Extend trail connection to Tunnel Ave/Bayshore using the tunnel under Bayshore (long term)	Bayshore Tunnel	0.47	◑	◑	○	○	○	●		$302,000
N7	Install Class III bike route (sharrows)	San Bruno Ave	0.76	●	◑	◑	●	●	◑		$152,000
N8	Resurface existing path to Class I using permeable materials	Crocker Park Recreational Trail	2.19	◑	◑	●	●	●	●		$986,000
N9	Complete sidewalk gaps	Bayshore Boulevard	2.43	●	◑	◑	◑	○	●		$2,189,000
N10	Complete pedestrian staircase to connect Sierra Point and San Benito	Extend pedestrian stair network	0.07	○	◑	◑	○	◑	○		$25,000
N11	Shared road signage	San Benito Rd	0.41	◑	◑	○	●	◑	○		$500
N12	Install sidewalk	Old County Rd	0.11	◑	◑	◑	●	●	◑		$95,000

#	Project	Location	Length (mi)	Safety	Community Identified Challenge	Project Readiness	Activity Generator Connection (employment, school, transit)	Activity Generator Connection (parks, community center, library, commercial, retail)	Regional or Local Trail Connection	Consistency with Existing Plans and Policies	Cost Estimate
N13	Complete sidewalk gaps on both sides	Park Lane	0.29	◑	◑	◑	●	●	○		$259,000
N14	Install sidewalk on west side of S. Hill Dr	S Hill Drive	0.54	●	◑	◑	●	●	◑		$486,000
N15	Install Class II bike lane	Old County Rd	0.30	◑	◑	○	●	●	○		$22,000
N16	Install Class II bike lane	Monarch Dr, N Hill Dr, S Hill Dr	0.44	◑	○	○	●	○	●		$33,000
N17	Install Class III bike route (sharrows)	Park Lane	0.29	◑	○	◑	●	●	○	PP	$9,000
N18	Install staircase	Connecting Alvarado St to Santa Clara St to Tulare St		○	◑	○	○	○	○		$245,000
N19	Install staircase	Connecting north end of Tulare St to Santa Clara St		○	◑	○	○	○	○		$90,000

Table 2-3 Evaluation of Potential Spot Improvements

#	Project	Location	Quantity	Safety	Community Identified Challenge	Project Readiness	Activity Generator Connection (employment, school, transit)	Activity Generator Connection (parks, community center, library, commercial, retail)	Regional or Local Trail Connection	Consistency with Existing Plans and Policies	Cost Estimate
S1	Driveway consolidation	Brisbane Village Shopping Center	1	◑	◑	○	●	●	○	PP CBPP	$10,000
S2	Crossing improvement (RRFB, median island) from community park to Brisbane Village Shopping Center	Old County Rd	1	◑	◑	●	●	●	○	PP	$40,000
S3	Extend median and pedestrian cage, install yield teeth (2 locations)	Valley Dr	2	◑	◑	●	●	○	●		$16,000
S4	Raised crosswalk at S. Hill Dr, alter path for direct crossing	Crocker Park Recreational Trail	1	◑	◑	◑	●	●	●		$12,000
S5	Add marked crosswalks	Park Lane	2	◑	●	●	●	●	○	PP CBPP	$5,000
S6	Install advance stop bars	Multiple	3	◑	●	●	●	◑	○	CBPP	$2,000

#	Project	Location	Quantity	Safety	Community Identified Challenge	Project Readiness	Activity Generator Connection (employment, school, transit)	Activity Generator Connection (parks, community center, library, commercial, retail)	Regional or Local Trail Connection	Consistency with Existing Plans and Policies	Cost Estimate
S7	Tighten up intersection, mark turning movements and conflict zones with green paint (2 locations)	Multiple	2	◑	◑	●	◑	○	●		$40,000
S8	Upgrade intersection to all-way stop	San Bruno Ave	1	◑	◑	●	●	◑	○	CBPP	$3,000
S9	Construct raised crosswalks at Crocker Park Recreational Trail Crossing (2 locations)	Crocker Park Recreational Trail	2	●	○	○	●	●	●		$24,000
S10	Install green striping at US 101 on ramp	Sierra Point Parkway	1	●	●	◑	○	○	●	CBPP	$20,000

Bicycle and Pedestrian Facilities

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 do not have available bicycle parking and instead may lock their bikes to street fixtures such as trees, telephone poles, and sign poles. Bicycle parking is an essential element of any bikeway network and this section presents recommended types of bicycle parking and general requirements for bicycle parking.

Wayfinding

A good bicycling and walking environment not only includes supportive facilities, but also includes 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. Table 2-4 provides an evaluation of potential facilities improvements

Table 2-4 Evaluation of Potential Facilities Improvements

#	Type	Project	Safety	Community Identified Challenge	Project Readiness	Activity Generator Connection (employment, school, transit)	Activity Generator Connection (parks, community center, library, commercial, retail)	Regional or Local Trail Connection	Consistency with Existing Plans and Policies	Cost Estimate
F1	Bike Parking	Identify citywide bike parking locations	○	◑	●	●	●	○		$1,600
F2	Wayfinding	Add city-wide wayfinding system	○	◑	●	○	○	●		

Programs

Programs support the bicycle and pedestrian infrastructure improvements through education, encouragement, and enforcement efforts to improve safety and awareness of the facilities. Table 2-5 provides an evaluation of potential program improvements. The recommended programs are described in more detail in Section 3.

Table 2-5 Evaluation of Potential Programs Improvements

#	Type	Project	Safety	Community Identified Challenge	Project Readiness	Activity Generator Connection (employment, school, transit)	Activity Generator Connection (parks, community center, library, commercial, retail)	Regional or Local Trail Connection	Consistency with Existing Plans and Policies
P1	Education	Bicycle Safety Education	◑	●	●	◑	◑	◑	CBPP
P2	Education	Pedestrian Safety Education	◑	●	●	◑	◑	◑	CBPP
P3	Education	Share the Road campaign	◑	○	●	◑	◑	◑	
P4	Encouragement	Bike-Friendly Business Program	◑	○	●	●	●	○	
P5	Encouragement	Bike to Work/School Day	◑	○	●	●	◑	◑	CBPP
P6	Encouragement	Suggested Routes to School Maps	◑	○	●	●	○	○	CBPP
P7	Enforcement	Targeted Enforcement	◑	○	●	○	○	○	
P8	Evaluation	Bicycle and Pedestrian Counts	○	○	●	○	○	○	
P9	Evaluation	Annual Report Card	○	○	●	○	○	○	
P10	Evaluation	Bicycle and Pedestrian Community Survey	○	○	●	○	○	○	

3. 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. This 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 on streets where pedestrians, bicyclists, and motorists share the road. Many of these streets in exist in Brisbane and signage serves as a reminder to 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 provides an opportunity to establish a Bike-Friendly Business Program, where merchants encourage people to bike to the area to shop and dine. Businesses provide incentives, such as coupons, to patrons who arrive

by bike and promote bicycling to the commercial area. This program expands the "Bike to Shop" events that have been promoted by the County of San Mateo.

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 in the event by biking to work.

Suggested Routes to School Map

The City of Brisbane has developed a Suggested Routes to School map showing routes to Brisbane Elementary and Natalie Lipman Middle, along with planned infrastructure improvements on those routes. This Plan recommends developing a Suggested Routes to School map that focuses on the suggested routes to each school and provides safety tips for pedestrians, bicyclists and drivers. These maps can be used as an education and encouragement tool for families thinking about walking or biking to school but not knowing the best route for the trip. Maps can be incorporated into existing school events or distributed as part of a Walk or Bike to School Day.

Enforcement

Targeted Enforcement

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

Evaluation

Bicycle and Pedestrian Counts

The City should conduct bicycle and pedestrian counts at locations identified in the Data Collection Recommendations chapter of this Plan.

Annual Report Card

Annual report cards can be used to track progress toward achieving Plan goals and sharing that information with City Council and the public. 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.

4. 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

The Fixing America's Surface Transportation Act (FAST Act)

The FAST Act, which replaced Moving Ahead for Progress in the 21st Century Act (MAP-21) in 2015, provides long-term funding certainty for surface transportation projects, meaning States and local governments can move forward with critical transportation projects with the confidence that they will have a Federal partner over the long term (at least five years).

The law makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects and providing new safety tools. It also allows local entities that are direct recipients of Federal dollars to use a design publication that is different than one used by their State DOT, such as the *Urban Bikeway Design Guide by the* National Association of City Transportation Officials.

More information: https://www.transportation.gov/fastact

Surface Transportation Block Grant Program (STBGP)

The Surface Transportation Block Grant Program (STBGP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of bicycle and pedestrian improvements are eligible, including trails, sidewalks, bike lanes, crosswalks, pedestrian signals, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STBGP-funded pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System.

Fifty percent of each state's STBGP funds are sub-allocated geographically by population. These funds are funneled through Caltrans to the MPOs in the state. The remaining 50 percent may be spent in any area of the state.

STBGP Set-Aside: Transportation Alternatives Program

Transportation Alternatives Program (TAP) has been folded into the Surface Transportation Block Grant program (STBG) as a set-aside funded at $835 million for 2016 and 2017, and $850 million for 2018, 2019, and 2020. Up to 50 percent of the set-aside is able to be transferred for broader STBGP eligibility.

Improvements eligible for this set-aside fall under three categories: Transportation Enhancements (TE), Safe Routes to Schools (SR2S), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian and streetscape projects including sidewalks, multi-use paths, and rail-trails. TAP funds may also be used for selected education and encouragement programming such as Safe Routes to Schools.

Non-profit organizations (NGOs) are now eligible to apply for funding for transportation safety projects and programs, including Safe Routes to Schools programs and bike share.

Complete eligibilities for TAP include:

1. **Transportation Alternatives**. This category includes the construction, planning, and design of a range of pedestrian infrastructure including "on–road and off–road trail facilities for pedestrians, bicyclists, and other active forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety–related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990." Infrastructure projects and systems that provide "Safe Routes for Non-Drivers" is still an eligible activity.
2. **Recreational Trails.** TAP funds may be used to develop and maintain recreational trails and trail-related facilities for both active and motorized recreational trail uses. Examples of trail uses include hiking, in-line skating, equestrian use, and other active and motorized uses. These funds are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails
- Purchase and lease of trail construction and maintenance equipment
- Construction of new trails, including unpaved trails
- Acquisition or easements of property for trails
- State administrative costs related to this program (limited to seven percent of a state's funds)
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a state's funds)

3. **Safe Routes to Schools.** There are two separate Safe Routes to Schools Programs administered by Caltrans. There is the Federal program referred to as SRTS, and the state-legislated program referred to as SR2S. Both programs are intended to achieve the same basic goal of increasing the number of children walking and bicycling to school by making it safer for them to do so. All projects must be within two miles of primary or middle schools (K-8).

The Safe Routes to Schools Program funds non-motorized facilities in conjunction with improving access to schools through the Caltrans Safe Routes to Schools Coordinator.

Eligible projects may include:

- Engineering improvements. These physical improvements are designed to reduce potential bicycle and pedestrian conflicts with motor vehicles. Physical improvements may also reduce motor vehicle traffic volumes around schools, establish safer and more accessible crossings, or construct walkways or trails. Eligible improvements include sidewalk improvements, traffic calming/speed reduction, and pedestrian crossing improvements.
- Education and Encouragement Efforts. These programs are designed to teach children safe walking skills while educating them about the health benefits and environmental impacts. Projects and programs may include creation, distribution and implementation of educational materials; safety based field trips; interactive pedestrian safety video games; and promotional events and activities (e.g., assemblies, walking school buses).
- Enforcement Efforts. These programs aim to ensure that traffic laws near schools are obeyed. Law enforcement activities apply to cyclists, pedestrians and motor vehicles alike. Projects may include development of a crossing guard program, enforcement equipment, photo enforcement, and pedestrian sting operations.

- Planning, designing, or constructing roadways within the right-of-way of former Interstate routes or divided highways. At the time of writing, detailed guidance from the Federal Highway Administration on this new eligible activity was not available.

405 National Priority Safety Program

Approximately $14 million annually (5 percent of the $280 million allocated to the program overall) will be awarded 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 will be eligible for grants that can be used for:

- Training law enforcement officials on bike/pedestrian related traffic laws
- Enforcement campaigns related to bike/pedestrian safety
- Education and awareness programs related to relevant bike/pedestrian traffic laws

Highway Safety Improvement Program (HSIP)

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. Non-infrastructure projects are no longer eligible. Eligible projects are no longer required to collect data on all public roads. Pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for active transportation users in school zones are examples of eligible projects. All HSIP projects must be consistent with the state's Strategic Highway Safety Plan.

The 2015 California SHSP is located here: http://www.dot.ca.gov/hq/traffops/shsp/docs/SHSP15_Update.pdf

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

The Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality nonattainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. These federal dollars can be used to build pedestrian and bicycle facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible.

To be funded under this program, projects and programs must come from a transportation plan (or State (STIP) or Regional (RTIP) Transportation Improvement Program) that conforms to the SIP and must be consistent with the conformity provisions of Section 176 of the Clean Air Act. States are now given flexibility on whether to undertake CMAQ or STBGP-eligible projects with CMAQ funds to help prevent areas within the state from going into nonattainment.

In the Bay Area, CMAQ funding is administered through the Metropolitan Transportation Commission (MTC) on the local level. These funds are eligible for transportation projects that contribute to the attainment or maintenance of National Ambient Air Quality Standards in non-attainment or air-quality maintenance areas. Examples of eligible projects include enhancements to existing transit services, rideshare and vanpool programs, projects that encourage pedestrian transportation options, traffic light synchronization projects that improve air quality, grade separation projects, and construction of high-occupancy vehicle (HOV) lanes. Projects that are proven to reduce direct PM2.5 emissions are to be given priority.

Partnership for Sustainable Communities

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to "improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide." The

Partnership is based on five Livability Principles, one of which explicitly addresses the need for pedestrian infrastructure ("Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health").

The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including the TIGER grants). Brisbane should track Partnership communications and be prepared to respond proactively to announcements of new grant programs.

More information: https://www.sustainablecommunities.gov/

State Sources

Active Transportation Program (ATP)

In 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP). This program is a consolidation of the Federal Transportation Alternatives Program (TAP), California's Bicycle Transportation Account (BTA), and Federal and California Safe Routes to Schools (SRTS) programs.

The ATP program is administered by Caltrans Division of Local Assistance, Office of Active Transportation and Special Programs.

The ATP program goals include:

- Increase the proportion of trips accomplished by biking and walking,
- Increase safety and mobility for nonmotorized users,
- Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals,
- Enhance public health,
- Ensure that disadvantaged communities fully share in the benefits of the program, and
- Provide a broad spectrum of projects to benefit many types of active transportation users.

The California Transportation Commission ATP Guidelines are available here:
http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html

Eligible bicycle and Safe Routes to Schools projects include:

- Infrastructure Projects: Capital improvements that will further program goals. This category typically includes planning, design, and construction.
- Non-Infrastructure Projects: Education, encouragement, enforcement, and planning activities that further program goals. The focus of this category is on pilot and start-up projects that can demonstrate funding for ongoing efforts.
- Infrastructure projects with non-infrastructure components

The minimum request for non-SRTS projects is $250,000. There is no minimum for SRTS projects. *More information is available here:* http://www.dot.ca.gov/hq/LocalPrograms/atp/

Office of Traffic Safety (OTS) Grants

The Office of Traffic Safety Program is a partnership effort between the National Highway Traffic Safety Administration (NHTSA), Federal Highway Administration, and the states. In California, the grants are administered by the California Office of Traffic Safety (OTS).

Grants are used to establish new traffic safety programs, expand ongoing programs or address deficiencies in current programs. Eligible grantees are governmental agencies, state colleges, state universities, local City and County government agencies, school districts, fire departments, and public emergency services providers. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction. Grants are awarded on a competitive basis, and priority is given to agencies with the greatest need. Evaluation criteria to assess need include potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants.

The California application deadline is January of each year. There is no maximum cap to the amount requested, but all items in the proposal must be justified to meet the objectives of the proposal.

More information: http://www.ots.ca.gov/

California Strategic Growth Council Grants

The California Strategic Growth Council (SGC) brings together State agencies and departments within Business, Consumer Services and Housing, Transportation, Natural Resources, Health and Human Services, Food and Agriculture, and Environmental Protection, with the Governor's Office of Planning and Research to coordinate activities that support sustainable communities, with an emphasis on strong economies, social equity, and environmental stewardship. The SGC administers two grant programs that support greenhouse gas emission projects. The Transformative Climate Communities (TCC) grant program, was created under AB2722 on September 14, 2016, and funds broad-based greenhouse gas emission reduction projects that provide local economic, environmental and health benefits to disadvantaged communities. The Affordable Housing and Sustainable Communities (AHSC) program provides grants and affordable housing loans for compact transit-oriented development and related infrastructure and programs that increase the accessibility of housing, employment centers, and key destinations through low-carbon transportation options (walking, biking, transit), resulting in fewer vehicle miles traveled (VMT) and mode shift.

More information: http://sgc.ca.gov/Grant-Programs/index.html

Regional & Local Sources

Metropolitan Transportation Commission OneBayArea Grant (OBAG)

The Bay Area Metropolitan Transportation Commission (MTC) OBAG program is a funding approach that aligns the Commission'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 and rewards cities and counties that approve new housing construction and accept allocations through the Regional Housing Need Allocation (RHNA) process. Cities and counties can use these OBAG funds to invest in:

- Local street and road maintenance
- Streetscape enhancements
- Bicycle and pedestrian improvements
- Transportation planning
- Safe Routes to School projects
- Priority Conservation Areas

In late 2015, MTC adopted a funding and policy framework for the second round of OBAG grants. Known as OBAG 2 for short, the second round of OBAG funding is projected to total about $800 million to fund projects from 2017-18 through 2021-22.

More information: http://www.mtc.ca.gov/our-work/fund-invest/federal-funding/obag-2

San Mateo County Measure A

Measure A is a countywide half-cent general sales tax passed by voters on Nov. 6, 2012 to support essential County services and to maintain or replace critical facilities. It took effect on April 1, 2013, and expires in 2023.

The San Mateo County Transportation Authority (SMCTA) administers the Measure A funds for transportation projects and programs in San Mateo County. Measure A includes a Pedestrian and Bicycle Program category that provides funding for construction of facilities for bicyclists and pedestrians. The goal of the category is to fund infrastructure projects that encourage and improve bicycling and walking conditions in San Mateo County. Annually, three percent (3%) of the new Measure A sales tax revenues are set aside for Pedestrian and Bicycle Program. The Pedestrian and Bicycle Program call for projects is conducted biennially.

Developer Impact Fees

As a condition for development approval, municipalities can require developers to provide certain infrastructure improvements, which can include bikeway projects. These projects have commonly provided Class II facilities for portions of on-street, previously-planned routes. They can also be used to provide bicycle parking or shower and locker facilities. The type of facility that should be required to be built by developers should reflect the greatest need for the particular project and its local area. Legal challenges to these types of fees have resulted in the requirement to illustrate a clear nexus between the particular project and the mandated improvement and cost.

Roadway Construction, Repair and Upgrade

Future road widening and construction projects are one means of providing improved pedestrian and bicycle facilities. To ensure that roadway construction projects provide these facilities where needed, it is important that the review process includes input pertaining to consistency with the proposed system. In addition, California's 2008 Complete Streets Act and Caltrans's Deputy Directive 64 require that the needs of all roadway users be considered during "all phases of state highway projects, from planning to construction to maintenance and repair."

More information: *http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html*

Utility Projects

By monitoring the capital improvement plans of local utility companies, it may be possible to coordinate upcoming utility projects with the installation of bicycle and pedestrian infrastructure within the same area or corridor. Often times, the utility companies will mobilize the same type of forces required to construct bikeways and sidewalks, resulting in the potential for a significant cost savings. These types of joint projects require a great deal of coordination, a careful delineation of scope items and some type of agreement or memorandum of understanding, which may need to be approved by multiple governing bodies.

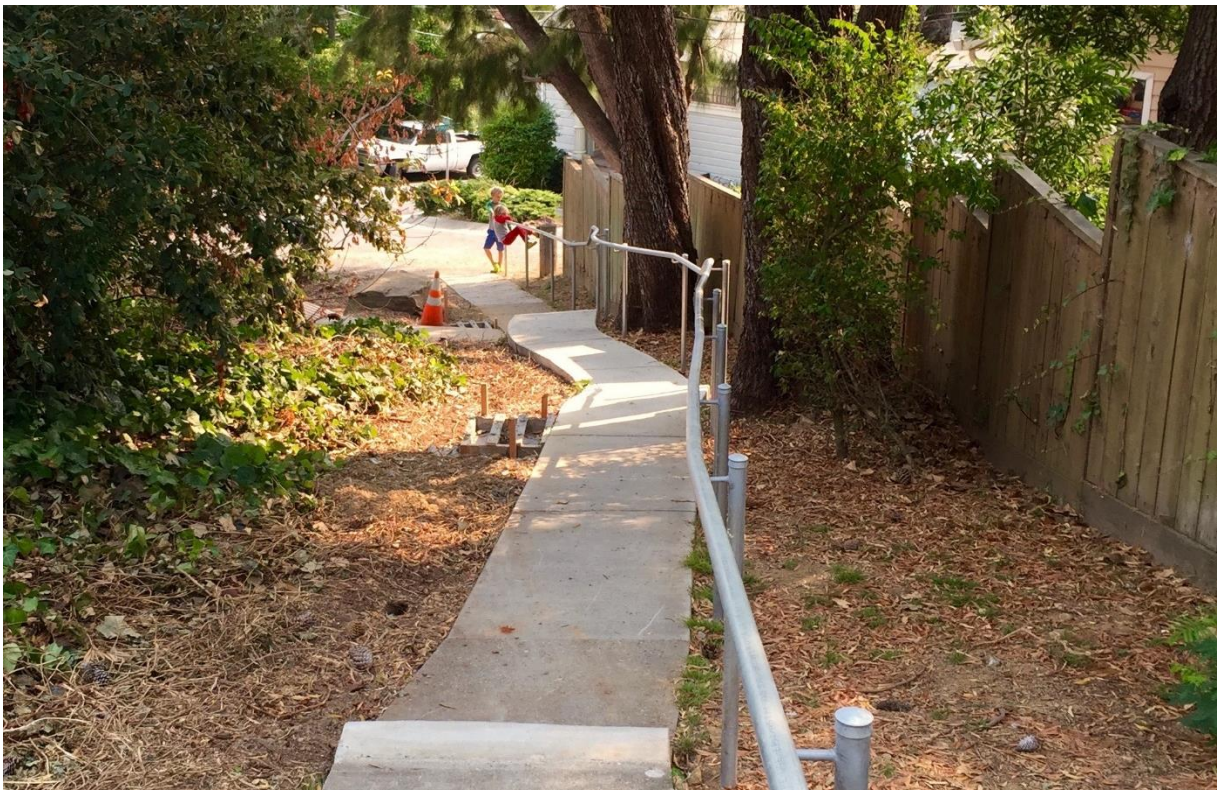
Cable Installation Projects

Cable television and telephone companies sometimes need new cable routes within public right-of-way. Recently, this has most commonly occurred during expansion of fiber optic networks. Since these projects require a significant amount of advance planning and disruption of curb lanes, it may be possible to request reimbursement for affected bicycle facilities to mitigate construction impacts. In cases where cable routes cross undeveloped areas, it may be

possible to provide for new bikeway facilities following completion of the cable trenching, such as sharing the use of maintenance roads.

Appendix E – Wayfinding

City of Brisbane



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v1	Appendix E	11/22/2016	Hugh Louch

Table of Contents

1. Introduction

This appendix presents a bicycle and pedestrian wayfinding and signage plan for Brisbane that will support the proposed bikeway network, while simultaneously creating an identity for local streets. The signage plan presented here is meant to assure bicyclists and pedestrians that they are using a network that is continuous and easily navigated. Recommended signage presented in this plan should be placed on all existing and proposed bicycle routes as well as on key pedestrian connections.

The following best practices are described with respect to wayfinding principles, wayfinding sign family elements, and placement recommendations. This review will explain what is involved in effective wayfinding using well-researched and proven practices.

Wayfinding Principles

The following wayfinding principles combine to create a wayfinding system plan that is both legible and easy to navigate. These principles should be considered when guiding design, placement, and destination logic. By following a clear set of principles, an organized approach to wayfinding design will be achieved.

1. Connect Places: Effective wayfinding information should enable both locals and visitors to travel between destinations as well as to discover new destinations and services accessible by bicycle.
2. Promote Active Travel: Wayfinding should encourage more people to ride bikes by creating a clear and attractive system that is easy to understand and navigate, validating bicycling as a transportation option, and reducing fear amongst those potentially interested in bicycling
3. Maintain Motion: Wayfinding should present information in a way that is easy to understand while riding a bike.
4. Be Predictable: Wayfinding should be predictable and consistent. Predictability should relate to all aspects of wayfinding placement and design (i.e. sign materials, dimensions, colors, forms, and placement).
5. Keep Information Simple: Information should be presented in as clear and logical form as possible. Wayfinding should be both universal and usable for the widest possible demographic.

2. Fundamental Navigational Elements

Decision Sign:

- Clarify route options when more than one is available
- Typically consist of a system brand mark
- 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
- Some municipalities modify, often 24" W x 30" or 36" H, and place bicycle symbol at top rather than each line
- 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

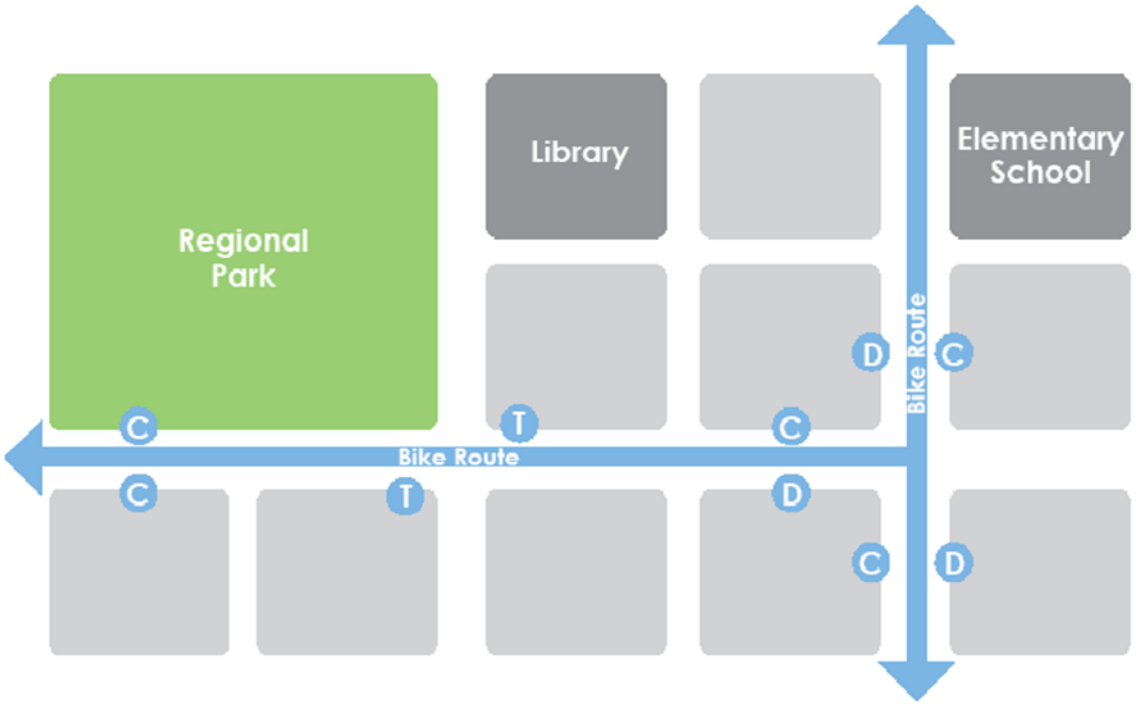

***Figure 1**: Typical placement scenario: Decision signs (D) are located prior to an intersection of two bicycle facilities, turn signs (T) located prior to turns, and confirmation signs (C) after the turn movement and periodically along the route for reassurance.*

3. Wayfinding Signage Technical Guidance

A variety of standards and guidelines influence both the sign designs and placement of wayfinding elements in Brisbane. While the MUTCD provides standards and guidelines for the design, size, and content of wayfinding signs, many jurisdictions have implemented unique signs to enhance visibility while reinforcing local identity. The MUTCD Spectrum figure below shows a range of wayfinding elements that have been implemented by municipalities around the nation. The range extends from rigid MUTCD on the left to the more flexible options on the right.

- CA MUTCD compliant signs
- Information is clear and consistent
- Regional context or local identity is not present
- Variation in sign size and shape compliant signs
- Encouragement information not present

- D1 series signs consolidate into a single sign reduces the number of signs required, overall sign clutter and sign dimension variation
- CA MUTCD does not provide for travel times however numerous cities and states incorporate this additional information. For example, distance measured in time is included within Oregon's MUTCD supplement.

- Community signs may be augmented by unique system or municipality identifiers or enhancement markers as per Section 2D.50
- MUTCD allows for custom color variations for community wayfinding signs

- Directional sign with clear directional information and arrows, high contrasting text, custom sign post and decorative elements

- Custom framing and support structures, unique sign shapes, high contrast graphic content and non-standard colors and layout

***Figure 2**: Spectrum of flexibility in wayfinding signage design*

Signs that adhere to the MUTCD basic minimum standards are readily understood by a wide audience, economical, and simple to fabricate and maintain. These signs also are clearly eligible to be implemented utilizing federal transportation funding sources. Signs that follow the community wayfinding standards may be costlier to design, fabricate, and maintain, however they have the added benefits of reflecting local character and identity.

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 includes the FHWA MUTCD standards, but is amended for the state, thus superseding the MUTCD.

The proposed design guideline options use standard signs from the federal Manual on Uniform Traffic Control Devices (MUTCD), as well as the California MUTCD. MUTCD signs used in this signage plan include:

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

Using signage standards outlined in the MUTCD allows for signage that is consistent throughout Brisbane. However, the proposed signs include revised modifications to brand the bicycle network.

D1-3c M1-8 D11-1c

Per the CA MUTCD, devices should be designed so that:

- Size, shape, color, composition, lighting or retro-reflection, and contrast are combined to draw attention to the devices; simplicity of message combine to produce a clear meaning.
- Legibility and size combine with placement to permit adequate time for response.
- Uniformity, size, legibility, and reasonableness of the message combine to command respect.

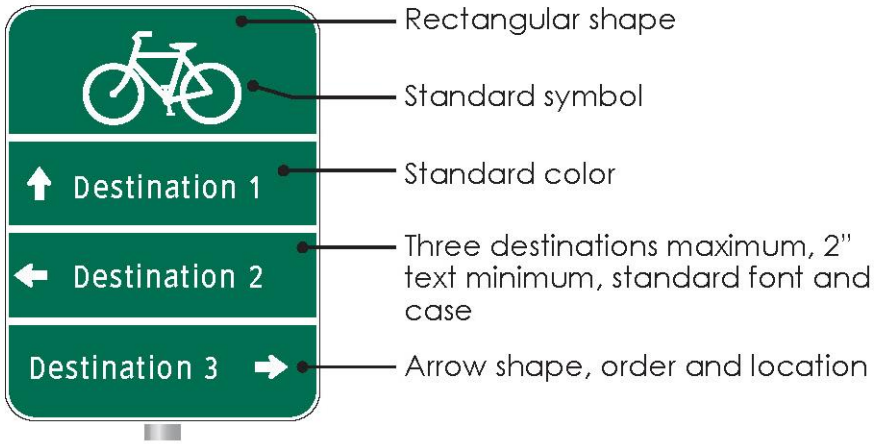

***Figure 3**: Standard CA MUTCD Compliant Directional or Decision Sign*

The CA MUTCD also recommends the arrangement and amount of text, or legend, on each section of each sign:

- Guide signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions.
- A straight-ahead location should always be placed in the top slot followed by the destination to the left and then the right. If two destinations occur in the same direction, the closer destination should be listed first followed by the farther destination.
- Arrows shall be depicted as shown above for glance recognition, meaning straight and left arrows are to be located to the left of the destination name, while an arrow indicating a destination to the right shall be placed to the right of the destination name. The approved arrow style must be used.
- 19 characters (including spaces) in titlecase should be considered a maximum length for a single destination title. 10-14 characters (including spaces) in titlecase should be considered an ideal maximum length for a single destination title.
- In situations where two destinations of equal significance and distance may be properly designated and the two destinations cannot appear on the same sign, the two names may be alternated on successive signs.
- Approved fonts include the Federal Series (series B, C, or D), also known as Highway Gothic. Clearview is also currently approved for use, however the FHWA is considering rescinding the use of Clearview.
- A contrast level of 70% needs to be achieved between foreground (text and graphics) and background.

Community Wayfinding Standards

Community wayfinding signs allow for an expression of community identity and pride, reflect local values and character, and may provide more information than bicycle guide. Section 2D.50 of the MUTCD describes community wayfinding signs as follows:

1. Community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other road users to key civic, cultural, visitor, and recreational attractions and other destinations within a city or a local urbanized or downtown area.

2. Community wayfinding guide signs are a type of destination guide sign for conventional roads with a common color and/ or identification enhancement marker for destinations within an overall wayfinding guide sign plan for an area.

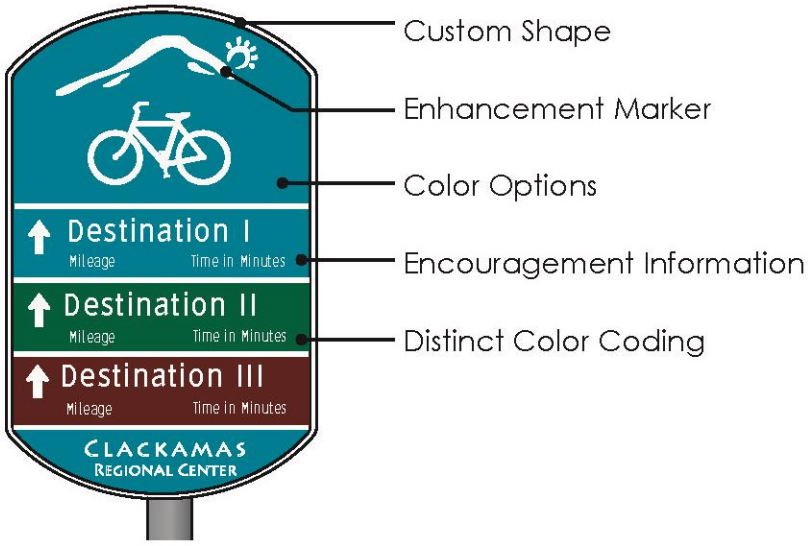

Figure 4: Flexible directional or decision sign incorporating community wayfinding standards.

The design of the directional arrows shown in Figure 6 above provide clarity and are approved by the FHWA. The standard arrow has been deemed by engineering study to have superior legibility. Enhancement markers may occupy up to 20% of the sign face on the top or side of the sign.

Distance and Time

The addition of measuring distance in terms of miles and minutes has been employed by a number of cities in the United States. Adding distance in familiar units has been found to be an effective encouragement tool to bicycling and walking. To some, two miles may sound daunting while twelve minutes sounds approachable. To others, the opposite may be true. A pace of 10 miles per hour or 6 minutes per mile is the typical pace used for bicycle wayfinding signs. This is lower than typical bicycle design speed to reflect and encourage the riding speed of the casual rider.

Street Name Sign Blades and Sign Toppers

Municipalities across the nation have enhanced street name sign blades to provide additional recognition of bikeways. Enhancements include supplemental signs and sign toppers added to existing CA MUTCD standard street sign blades and graphic embellishments integrated into new street name sign blades.

Good wayfinding practice also includes the use of street name sign blades on off-street pathways in reference to the roadway network. Numerous cities follow the practice of indicating cross streets at bridges, underpasses, and at-grade mid-block roadway crossings to inform pathway users of their location. Green, blue, and brown are all accepted colors for street name sign blades according to the CA MUTCD, as long as colors are used consistently.

Pavement Markings

Directional pavement markings indicate confirmation of bicyclist presence on a designated route and where bicyclists should turn. Especially in urban settings, pavement markings can often be more visible and can help supplement or reinforce signage.

On-Street Markings

Figure 6 below shows different types of pavement markings used for wayfinding purposes. While the shared lane marking is currently the only FHWA approved pavement marking shown, cities have experimented with the other options.

Figure 5: Types of wayfinding pavement markings.

In Berkeley, CA and Minneapolis, MN, some bicycle boulevards have large "Bicycle Boulevard" stencils that take up nearly the entire width of one travel lane.

In Lakewood, CO along the West Rail/D-10 route, the chevrons on the top of the CA MUTCD-standard shared lane marking (sharrow) indicate the direction of intended travel (second photo from left in the four-photo matrix above). Although this practice is not FHWA approved or eligible for federal funding, many local transportation engineers are confident that the benefits of the turned chevrons outweigh the risks. Portland, OR installs standard shared lane markings with federal funds, and then makes modifications later with local monies to add the directional wayfinding component.