DRAFT

City of Sausalito
Ferry Terminal to Gate 6 Road Path Feasibility Study

October 2010

PREPARED BY:
Alta Planning + Design
IN ASSOCIATION WITH:
Parisi Associates
Coastland Civil Engineering
PREPARED FOR:
City of Sausalito

alta
PLANNING + DESIGN

Acknowledgements

The City of Sausalito appreciates the efforts of everyone who participated in the development of this study. Their creativity, energy, and commitment were the driving force behind this planning effort. In addition, the following staff and other agency and organization members contributed regularly to the Ferry Landing to Gate 6 Road Path Feasibility Study:

City Council

Mayor Jonathan Leone
Vice Mayor Linda Pfeifer
Councilmember Mike Kelly
Councilmember Herb Weiner
Councilmember Carolyn Ford

Technical Advisory Committee

City Council Member - Herb Weiner
Member of Transportation Action Committee - Bonnie MacGregor
Member of the Waterfront and Marinship Committee - Bill Werner
Marin County Bicycle Coalition - David Hoffman

City Staff

Jonathon Goldman, Public Works Director
Todd Teachout, City Engineer
Andy Davidson, Civil Engineer

Alta Staff

Ian Moore, Principal
Matt Lasky, Project Manager
Kristin Maravilla, Planner
Tony Salomone, GIS Analyst

alta
PLANNING + DESIGN

DRAFT

Table of Contents

1. INTRODUCTION 1-1

1.1. Project Overview and Purpose 1-1

1.2. Project Study Area 1-1

1.3. Public Outreach Process 1-1

1.4. Goals and Objectives 1-4

2. PLANNING CONTEXT 2-1

2.1. General Plan (1995) 2-1

2.2. Marinship Specific Plan (1989) 2-2

2.3. Bicycle Master Plan Update (2008) 2-4

2.4. Marin County North-South Bikeway Feasibility Study (1994) 2-5

2.5. Bike Policy for Marin County (1974) 2-7

2.6. Historic District Design Criteria and Guidelines (1993) 2-7

2.7. Sausalito's Community Visioning Process – Pedestrian/Bicycle Facilities 2-7

2.8. City Resident Survey (2006) 2-8

2.9. Imagine Sausalito Harbor And Downtown Action Committee, Final Report (April 2009) 2-8

2.10. Imagine Sausalito Waterfront and Marinship Committee, Sausalito Waterfront and Marinship Vision (2010) .. 2-9

3. BICYCLIST AND PEDESTRIAN NEEDS 3-1

3.1. Pedestrian and Bicycle User Groups 3-1

3.2. Bicycle and Pedestrian Counts 3-3

3.3. Historical Collision Information 3-5

3.4. Engineering and Traffic Study 3-7

3.5. Demand Analysis 3-7

4. OPPORTUNITIES & CONSTRAINTS ANALYSIS 4-1

4.1. Segment 1 – Ferry Terminal to Johnson Street 4-3

4.2. Segment 2 – Johnson Street to Locust Street 4-4

4.3. Segment 3 – Locust Street to Napa Street 4-7

4.4. Segment 4 – Napa Street to Liberty Ship Way 4-9

4.5. Segment 5 – Liberty Ship Way to Harbor Drive 4-10

4.6. Segment 6 – Harbor Drive to Gate 6 Road 4-14

5. ALTERNATIVE ANALYSIS 5-1

5.1. Path Alternatives 5-1

5.2. Evaluation Criteria 5-2

5.3. Evaluation of Alternatives 5-3

5.4. Preferred Alternative 5-4

6. DESIGN STANDARDS 6-1

6.1. Path Design Standards 6-1

6.2. Street and Driveway Crossings 6-5

6.3. Street Trees 6-6

6.4. Landscape Buffer 6-8

6.5. Developing a Path Theme 6-8

7. RECOMMENDED PATH ALIGNMENT 7-1

7.1. Introduction 7-1

7.2. Cost Estimates 7-3

7.3. Segment 1 – Ferry Terminal to Johnson Street 7-4

7.4. Segment 2 – Johnson Street to Locust Street 7-23

7.5. Segment 3 – Locust Street to Napa Street 7-26

7.6. Segment 4 – Napa Street to Liberty Ship Way 7-31

7.7. Segment 5 – Liberty Ship Way to Harbor Drive 7-35

7.8. Segment 6 – Harbor Drive to Gate 6 Road 7-41

7.9. Project Cost Estimate 7-49

8. IMPLEMENTATION STRATEGY 8-1

8.1. Introduction 8-1

8.2. Phases 8-2

8.3. Cost Estimates by Phase 8-12

8.4. Environmental Regulatory and Permitting Guidance 8-13

8.5. Funding 8-16

DRAFT

APPENDIX A: PROPERTY DATA **A-1**

APPENDIX B: COST ESTIMATES **B-1**

APPENDIX C: PATH MAINTENANCE **C-1**

List of Tables

Table 3-1 2009 Bicycle and Pedestrian Counts 3-5

Table 3-2 Bicycle and Pedestrian Related Collisions in the Study Area, 2002-2008 3-5

Table 3-3 Peak Hour Bicycle and Pedestrian Counts 3-8

Table 3-4 Existing Study Area Bicyclists and Pedestrians 3-9

Table 3-5 Existing Transportation and Recreation Trip Split 3-9

Table 5-1 Evaluation of Alternatives 5-3

Table 7-1: Unit Costs 7-3

Table 7-2 Recommended County of Marin Parking Stall Demensions Compared to the City of Sausalito Parking Stall Dimensions 7-5

Table 7-3 Parking Space Gains and Losses with New Dimensions and Bay Fill 7-5

Table 7-4 Segment 1 Cost Estimate with Intersection A 7-22

Table 7-5 Segment 2 Cost Estimate 7-25

Table 7-6 Segment 3 Cost Estimate 7-30

Table 7-7 Segment 4 Cost Estimate 7-33

Table 7-8 Approximate Property Requirements for Path through the Marinship District 7-39

Table 7-9 Segment 5 Cost Estimate 7-39

Table 7-10 Gate 6 Road Intersection Improvement Options 7-45

Table 7-11 Segment 6 Cost Estimate 7-48

Table 7-12 Sausalito Path Cost Estimate 7-49

Table 8-1 Project Weighing 8-2

Table 8-2 Project Phasing 8-3

Table 8-3 Gap Closure: Johnson Street to Litho Street Cost Estimate 8-3

Table 8-4 Gap Closure: Napa Street to Easterby Street Cost Estimate 8-4

Table 8-5 Harbor Drive to Gate 6 Road Cost Estimate6 Road Cost Estimate 8-4

Table 8-6 Bridgeway/Gate 6 Road Intersection Cost Estimate 8-5

DRAFT

Table 8-7 Parking Lot 2 Cost Estimate 8-5
Table 8-8 Johnson Street Cost Estimate 8-6
Table 8-9 Johnson Street to Napa Street Cost Estimate 8-7
Table 8-10 Napa Street to Libery Ship Way Cost Estimate 8-8
Table 8-11 Parking Lot 1 Cost Estimate 8-9
Table 8-12 Parking Lots 3 and 4 Cost Estimate 8-10
Table 8-13 Liberty Ship Way to Testa Street Cost Estimate 8-11
Table 8-14 Testa Street to Harbor Drive 8-12
Table 8-15 Cost Estimates by Phase 8-13
Table 8-16 Existing City of Sausalito BCDC Permits for Minor Fill 8-15
Table 8-17 Funding Sources 8-25
Table A-1 Project Area Property Data A-3
Table C-1 Routine Trail Maintenance Frequencies C-3

List of Figures

Figure 1-1 Project Study Area 1-3
Figure 2-1 General Plan Shoreways and Bikeways Plan 2-2
Figure 2-2 Marinship Specific Plan Area 2-3
Figure 2-3 Marinship Specific Plan Pedestrian Paths & Bikeways 2-4
Figure 2-4 Existing and Proposed Bikeways 2-6
Figure 2-5 WAM Report Circulation Plan 2-9
Figure 3-1 Sausalito Bicycle and Pedestrian Counts at Bridgeway and Princess Street, 1999-2009 3-4
Figure 3-2 Study Area Bicycle and Pedestrian Collisions, 2002-2008 3-6
Figure 3-3 Bicycle and Pedestrian Count Location 3-8
Figure 4-1 Study Area Segments 4-2
Figure 4-2 Opportunities and Constraints: Segment 1 Ferry Terminal to Johnson Street 4-5
Figure 4-3 Opportunities and Constraints: Segment 2 Johnson Street to Locust Street 4-6
Figure 4-4 Opportunities and Constraints: Segment 3 Locust Street to Napa Street 4-8
Figure 4-5 Opportunities and Constraints: Segment 4 Napa Street to Liberty Ship Way 4-11
Figure 4-6 Opportunities and Constraints: Segment 5 Liberty Ship Way to Harbor Drive 4-12

DRAFT

Figure 4-7 Opportunities and Constraints: Segment 6 Harbor Drive to Gate 6 Road....4-16

Figure 5-1 Path Alternatives....5-1

Table 5-1 Evaluation of Alternatives....5-3

Figure 6-1 Standard Path Cross-Sections for Locations adjacent to Bridgeway with 15 feet of right-of-way (left) and 20 feet of right-of-way (right)....6-2

Figure 6-3 2009 MUTCD Example of Mode-Specific Guide Signing on a Shared-Use Path (left) Shared-Use Path Guide and User Permitted Signs (middle) and Shared-Use Type Restriction Sign (right)....6-4

Figure 6-2 Vertical and Lateral Clearances for Signs....6-4

Figure 6-4 Wayfinding Signage directs bikeway users in the City of Lafayette....6-5

Figure 7-1 Study Area Segments....7-2

Figure 7-2 Segment 1 Parking Lot 1 Reconfiguration to Allow Space for a Path....7-7

Figure 7-3 Segment 1 Parking Lot 3 Reconfiguration to Allow Space for a Path....7-8

Figure 7-4 Segment 1 Parking Lot 4 Reconfiguration to Allow Space for a Path....7-9

Figure 7-5 Segment 1A Parking Lot 1 Existing Conditions....7-11

Figure 7-6 Segment 1A Parking Lot 1 Proposed Improvements....7-11

Figure 7-7 Segment 1B Parking Lot 1 Existing Condition....7-12

Figure 7-8 Segment 1B Parking Lot 1 Proposed Improvements....7-12

Figure 7-9 Summer 2010 Bike and Pedestrian Route at the Sausalito Ferry Terminal....7-14

Figure 7-10: Segment 1C Humboldt Avenue - Anchor Street to Bay Street Existing Conditions....7-15

Figure 7-11: Segment 1C Humbold Avenue - Anchor Street to Bay Street Proposed Improvements....7-16

Figure 7-12 Segment 1D Parking Lot 3 South Existing Conditions....7-16

Figure 7-13 Segment 1C Parking Lot 3 South Proposed Improvements....7-17

Figure 7-14 Segment 1D Parking Lot 3 North Existing Conditions....7-17

Figure 7-15 Segment 1D Parking Lot 3 North Proposed Improvements....7-18

Figure 7-16 Segment 1E Parking Lot 4 South Existing Conditions....7-18

Figure 7-17 Segment 1E Parking Lot 4 South Proposed Improvements....7-19

Figure 7-18 Segment 1F Parking Lot 4 North Existing Conditions....7-19

Figure 7-19 Segment 1F Parking Lot 4 North Proposed Improvements....7-20

Figure 7-20 Segment 1G Johnson Street Existing Conditions....7-21

Figure 7-21 Segment 1G Johnson Street Proposed Improvements....7-21

Figure 7-22 Segment 2 Johnson Street to Locust Street....7-22

DRAFT

Figure 7-23 Section A Existing Conditions....7-23
Figure 7-24 Section A Proposed Improvements....7-24
Figure 7-25 Section B Proposed Improvements....7-24
Figure 7-26 Segment 3 Locust Street to Napa Street....7-25
Figure 7-27 Section C Existing Conditions....7-26
Figure 7-28 Section A Proposed Improvements....7-27
Figure 7-29: Section C Existing Conditions....7-28
Figure 7-30 Section C Proposed Improvements....7-28
Figure 7-31 Napa Street Intersection....7-29
Figure 7-32 Segment 4 Napa Street to Marinship Way....7-30
Figure 7-33 Section D Existing Conditions....7-31
Figure 7-34 Section D Proposed Improvements....7-31
Figure 7-35 Mono Street improvement....7-32
Figure 7-36 Marinship Way and Liberty Ship Way Intersection....7-33
Figure 7-37 Segment 5 Liberty Ship Way to Harbor Drive....7-34
Figure 7-38 Section E Existing Conditions....7-35
Figure 7-39 Section E Proposed Improvements....7-36
Figure 7-40 Marinship – Bridgeway Path Connection....7-36
Figure 7-41 Section F Proposed Improvements....7-37
Figure 7-42 Harbor Drive Intersection....7-38
Figure 7-43 Segment 6 Harbor Drive to Gate 6 Road....7-40
Figure 7-44 Section G Existing Conditions....7-41
Figure 7-45 Section H Existing Conditions....7-42
Figure 7-46 Section I and J Existing Conditions....7-42
Figure 7-47 Section G Proposed Improvement....7-43
Figure 7-48 Section H Proposed Improvements....7-43
Figure 7-49 Section I Proposed Improvements....7-44
Figure 7-50 Section J Proposed Improvements....7-44
Figure 7-51 Gate 5 Road Intersection Improvement Option - Bike Signal....7-45
Figure 7-52 Gate 6 Road Intersection Improvement Option A Gate 6½ Road Connection....7-46

DRAFT

Figure 7-53 Gate 6 Road Intersection Improvement Option B Bike Signal 7-47

Figure 7-54 Gate 6 Road Intersection Improvement Option C Gate 6 Road Path Improvement 7-47

Figure 7-55 Gate 6 Road Intersection Improvement Option D Bike Box 7-48

Figure A-1 Parcel Boundaries: Segment 1 Ferry Terminal to Johnson Street A-5

Figure A-2 Parcel Boundaries: Segment 2 Johnson Street to Locust Street A-6

Figure A-3 Parcel Boundaries: Segment 3 Locust Street to Napa Street A-7

Figure A-4 Parcel Boundaries: Segment 4 Napa Street to Liberty Ship Way A-8

Figure A-5 Parcel Boundaries: Segment 5 Liberty Ship Way to Harbor Drive A-9

Figure A-6 Parcel Boundaries: Segment 6 Harbor Drive to Gate 6 Road A-10

DRAFT

This page is intentionally left blank.

DRAFT

1. Introduction

1.1. Project Overview and Purpose

The Sausalito Ferry Landing to Gate 6 Road Path Feasibility Study examines design options for a bicycle and pedestrian connection between the Sausalito Ferry Landing and the Gate 6 Road and Bridgeway intersection. The County of Marin's Non-motorized Transportation Pilot Program (NTPP) funded this Study. The NTPP is a federally funded project that allocated $25 million each to four communities nationwide to determine whether increased investments in programs and projects would result in more people walking and bicycling. Marin County was one recipient of these funds.

The purpose of this Study is to review the options for a Ferry Landing to Gate 6 Road bicycle and pedestrian connection in Sausalito and to develop a preferred alignment of the facility while identifying traffic, environmental, land use, and safety constraints.

1.2. Project Study Area

The Project Study Area for the Sausalito Ferry Landing to Gate 6 Road Feasibility Study is primarily located in the City of Sausalito with the northern terminus at Gate 6 Road in County of Marin and Caltrans jurisdiction. As **Figure 1-1** shows, the northern terminus is the connection with the Mill Valley-Sausalito Path on the northeast corner of the Bridgeway and Gate 6 Road. The intersection serves as the Highway 101 northbound on-ramp and is operated by the California Department of Transportation (Caltrans). The Plan's southern terminus is the Ferry Landing where this Plan will link with a project currently under design and soon to be constructed–the Bridgeway to Ferry Landing Improvements. To the west, the project area boundary is Bridgeway and to the east the boundary varies. From the Ferry Terminal north to Johnston Street the project area includes the properties between Bridgeway and the Richardson Bay Shoreline. North of Johnson Street the project area is west of the Shoreline closer to Bridgeway along the track alignment of the former North Pacific Coast Railroad.

Bicyclists at the northern terminus of the project Study Area- the Mill Valley-Sausalito Path at Bridgeway and Gate 6 Road

1.3. Public Outreach Process

The Sausalito Ferry Landing to Gate 6 Road Path Feasibility Study had an outreach process that included a Technical Advisory Committee, presentations to City Council, and a project open house.

1.3.1. Technical Advisory Committee

The Project Technical Advisory Committee (TAC) met five times throughout the course of the project to discuss the Study Area's existing conditions, opportunities and constraints, path alignment options, and

recommended design treatments. The TAC was comprised of five stakeholders including a City Councilmember (Herb Weiner), Transportation Action Committee member (Bonnie MacGregor), Waterfront and Marinship Committee member (Bill Werner), a Marin County Bicycle Coalition representative (David Hoffman), and a local business operator (Tony Tom). There were also other interested parties that attended the project TAC meetings including local residents (Bob Mitchell, Michael Rex, Adam Krivatsy, Kate Flavin, Dorothy Gibson), a County of Marin Department of Public Works engineer (Eric Steger), and a representative from Transportation Alternatives Marin (Patrick Seidler).

1.3.2. City Council

The Feasibility Study was presented to City Council twice during the course of the project. At the first meeting, the project team shared draft recommendations including figures for sections of the proposed path. Comments provided by City Council were then incorporated into the Feasibility Study. The Study was also presented to City Council for adoption.

1.3.3. Project Open House

To be completed after the open house.

DRAFT

Figure 1-1 Project Study Area

1.4. Goals and Objectives

The overall goal of the Ferry Terminal to Gate 6 Road Path Study is to develop design recommendations for a bicycle and pedestrian connection through Sausalito, linking the Sausalito Ferry Terminal with the Mill Valley-Sausalito path and Marin County's North-South Bikeway. There are descriptions of this Path in a number of other planning documents (see Chapter 2) and this Study sets specific recommendations for the Path in Sausalito. The importance of this study has grown as the number of bicyclists and pedestrians in Sausalito have increased in recent years.

Specific goals for pedestrians and bicyclists are contained in the City of Sausalito's various planning documents, including the General Plan and Bicycle Plan. Drawing on these existing plans, the following goals and objectives guided the evaluation process in this Study.

Goal 1: Improve bicycle and pedestrian path connectivity in Sausalito from the Ferry Terminal to Gate 6 Road and the Mill Valley-Sausalito Path.

Objective 1.1: Close gaps in existing north-south path facilities.

Objective 1.2: Define and improve the Marin County North-South greenway in Sausalito.

Goal 2: Develop the project to be consistent with adopted policies, standards, and goals.

Objective 2.1: Design the project to be consistent with the local, regional, and State adopted design standards.

Objective 2.2: Design the preferred alternative to be consistent with existing and future local and regional improvement projects.

Objective 2.3: Design the preferred alternative to avoid the Sausalito Shoreline through the Marinship area.

Goal 3: Provide a path for Sausalito residents and employees and bicycle and pedestrian tourists.

Objective 3.1: Enhance bicycle and pedestrian tourist access to Bridgeway and Sausalito businesses.

Objective 3.2: Enhance bicycle commuter access to local employment and shopping along the corridor.

Goal 4: Improve bicycle safety in the project corridor.

Objective 4.1: Minimize conflicts with motor vehicles, especially at intersections and driveways.

Objective 4.2: Maximize separation between bicycles, pedestrians, and vehicles to the extent feasible.

Objective 4.3: Provide for slower moving bicyclists and pedestrians not wanting to use the existing on-street bikeways.

DRAFT

Goal 5: Design the bikeway improvements to enhance the local environment and neighborhoods.

Objective 5.1: Avoid direct impacts to biological, hydrologic, historical and archaeological resources.

Objective 5.2: Minimize impacts to local traffic capacity.

Objective 5.3: Minimize impacts to private property and residential neighborhoods, and avoid the need to acquire right-of-way or easements where feasible.

DRAFT

This page is intentionally left blank.

DRAFT

2. Planning Context

This section reviews planning and policy documents relevant to this Sausalito Ferry Landing to Gate 6 Road Multi-Use Path Study. These documents describe walking and bicycling policies for Sausalito and describe a north south path through the City. The purpose of this review is to ensure consistency between this study and previously adopted City policies and plans and to document the previously described options for a north-south bikeway connection through Sausalito. These policies, objectives, and route descriptions present support or guidance for the recommended study alignment.

2.1. General Plan (1995)

The City's General Plan guides development decisions so they reflect the desires of the residents. The General Plan consists of seven elements that address specific implementation policies. The most relevant sections to this study are the Land Use and Growth Management, Circulation and Parking, and Environmental Elements. An Environmental Impact Report (EIR) was prepared to evaluate the potential environmental impacts of the City's 1995 General Plan. The EIR identifies one impact related to Sausalito Ferry Landing to Gate 6 Road Path Study area. Upon full build out of the General Plan, the EIR estimates that peak demand for parking in Downtown occurring on weekend summer days would exceed the 1,100 parking stalls (available in 1995) by 200 stalls The following General Plan policy measures mitigate this demand increase may be achieved in part by the implementation of the path in this study.

- Work cooperatively with local business interests in developing programs to reduce traffic and parking.
- Reduce reliance on the private automobile by emphasizing alternative modes of transportation.

2.1.1. Circulation and Parking Element

The Circulation and Parking Element ensures that people and goods move about the city efficiently. The Element focuses on reducing traffic, minimizing vehicle parking impacts, and minimizing widening to the existing roadways. Objective 4.0 and **Figure 2-1** General Plan Shoreways and Bikeways Planspecifically address walking and bicycling in Sausalito. It states: "Enhance bicycling and pedestrian infrastructure and programs to reduce the use of motorized vehicles within the City and reduce conflicts between bicyclists, pedestrians, and motorists." To implement this overarching objective, the Circulation and Parking Element has a series of policies and programs. The most relevant Policy to this Study is CP-4.2.

- **CP-4.2 North-South Bicycle Route System:** Identify a combination of short term projects (1-10 years) and long term projects (1-20 years) to develop a bicycle system from the Golden Gate National Recreation Area (GGNRA) at the south entrance of the City, to the Mill Valley multi-use path at the north City limits, linking residential neighborhoods, commercial and visitor centers, key transportation areas,, scenic shorelines with local and regional destinations.

The Circulation and Parking Element recommends both short-term and long-term programs for implementation of this Policy. For the Bridgeway corridor, the short-term includes Class II bike lane striping

where feasible and otherwise Class III bike route improvements from the South City limits to Johnson Street and installing Class II bike lanes along Bridgeway from Johnson Street to the northern city limit. Additionally, a Class I bike path is recommended parallel to Bridgeway from Johnson Street to the northern city limit. A long term recommendations is the construction of a Class I path from Pine Street to the Gate Five Road as a condition of development and by City right-of-way acquisition.

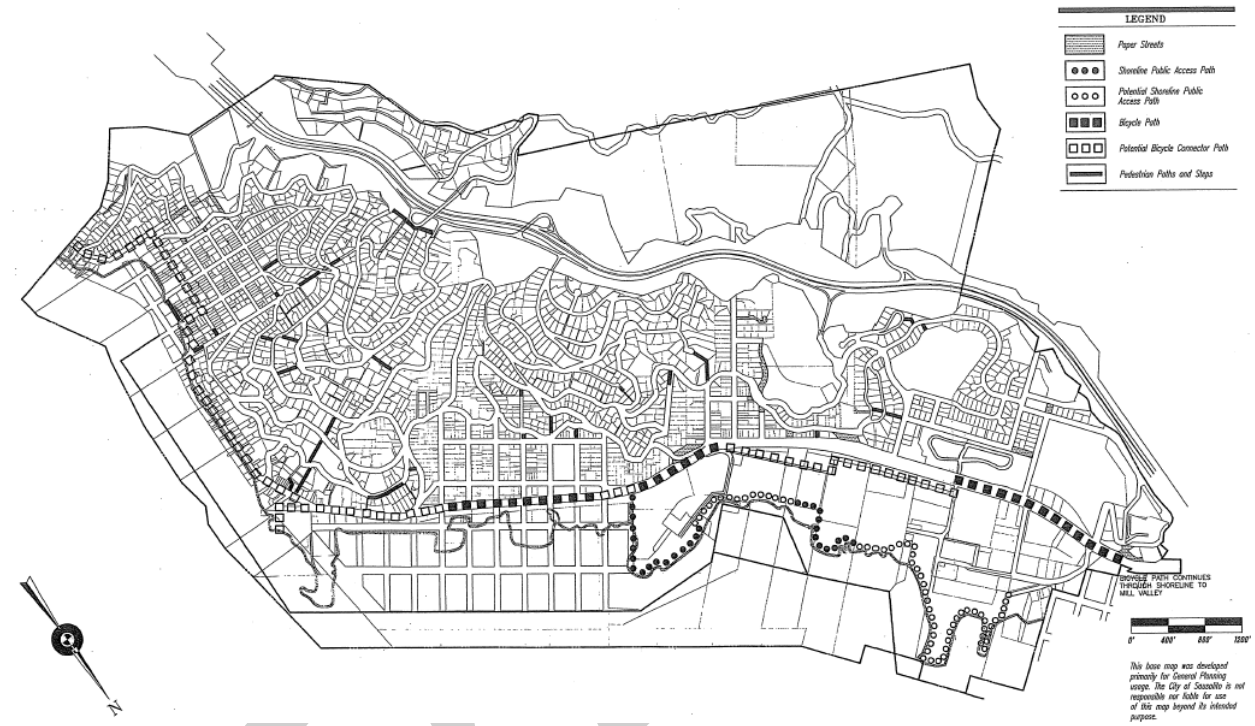


Figure 2-1 General Plan Shoreways and Bikeways Plan

2.1.2. Environmental Quality Element

The Environmental Element presents policies guiding the development of open space, trails and pathways. Objective 2.0 of this element is to maintain and expand the parks and recreational system. While the focus of this multi-use path study is to provide a transportation oriented path, the path will also provide recreation for residents and tourists.

2.2. Marinship Specific Plan (1989)

The Marinship Specific Plan presents development and design standards and details for land uses, circulation, and view corridors in the Marinship area, which is bound by North Bridge Boulevard/Gate 6 Road to the north, Napa Street to the south, Bridgeway to the west, and Richardson Bay to the east. Figure 1-1 shows a map of Marinship Specific Plan Area. The intent of this Plan is to "promote the waterfront area and promote

diversified water-dependent uses" and "promote other lands in the Marinship with industrial uses and uses compatible with an industrial area."[1] Goal 15 of the plan is to "give special attention to the establishment and enhancement of the pedestrian and bicycle paths to and through the Marinship."

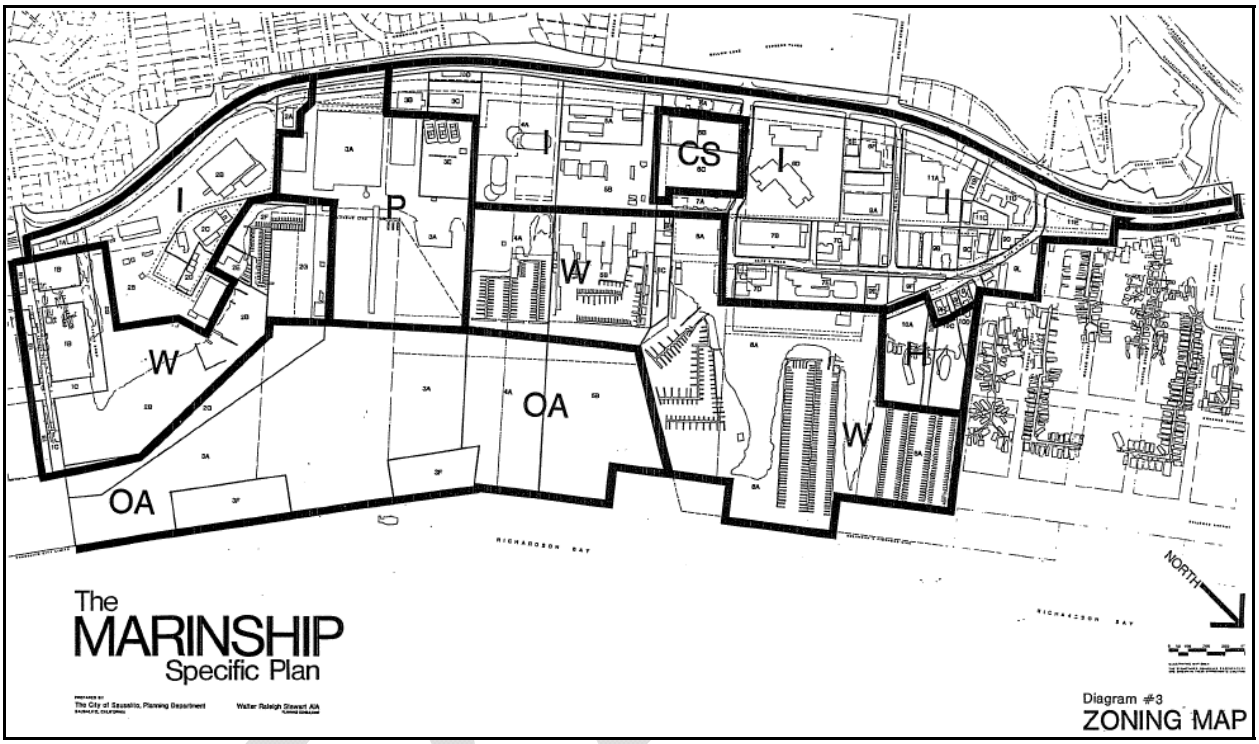


Figure 2-2 Marinship Specific Plan Area

The Specific Plan provides a path system for providing pedestrian access to the Marinship waterfront detouring around active marine industrial areas as shown in **Figure 2-3**. The Plan describes two pedestrian paths that are required as a part of developments or redevelopments when reasonable if the development plans increase the Floor Area ratio or market value of the parcel 25 percent. A description of the two paths, Path A and Path B, follows:

- **Path A:** Along the foot (toe of slope) of Bridgeway (between Parcels 1A and 1B, western edges of Parcels 2A, 2B, 3A, 3B, between Parcels 3C and 3D, the western edge of Parcels 5A, 5B, and the eastern edge of Parcel 6A). North of this location the path shall follow the existing alignment to the northern City limits.
- **Path B:** Pathways, accommodating both pedestrians and bicycles, shall be provided along Harbor Drive (south side of the street), at the Army Corps of Engineers (Parcel 3A), and along the northern

[1] City of Sausalito "Marinship Specific Plan"

edge of or near Mono Street, in locations considered to avoid potential negative impacts to the marsh restoration project.

- The Marinship Specific Plan for Pedestrians and Bikeways (Figure 2-3) includes a bike path. The Plan calls for an extension and widening of the path on the eastern side of Bridgeway between the northern city limit and Harbor Drive, at Harbor Drive the path connects to Marinship Way. This would connect with three shoreline paths:
    - A route along the southern edge of Harbor Drive between Bridgeway and Parcel 8A
    - A route near Parcel 3A (Army Corps of Engineers)
    - Between Mono Street at Bridgeway and Schoonmaker Point

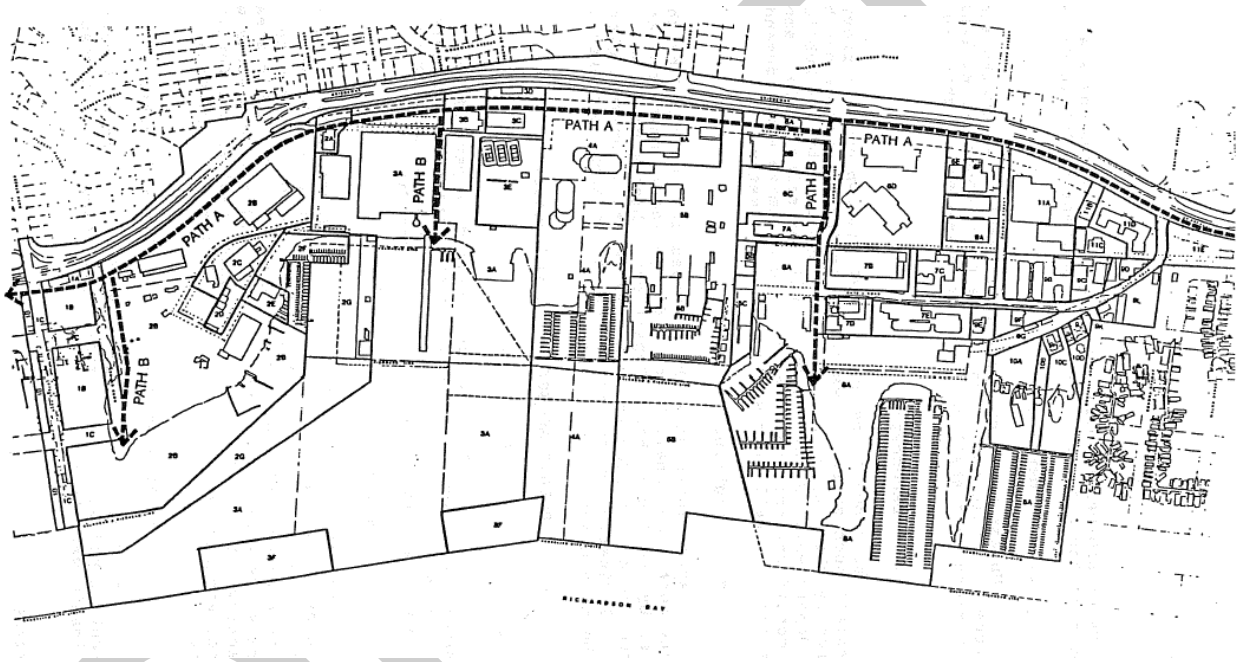


Figure 2-3 Marinship Specific Plan Pedestrian Paths & Bikeways

2.3. Bicycle Master Plan Update (2008)

The most recent update to the Sausalito Bicycle Master Plan was in 2008. The Bicycle Master Plan identifies projects that complete a continuous bicycle network in Sausalito. The development of a pathway between the Ferry Terminal and Gate 5 Road is identified as a long term project and recommended to comply with the Caltrans minimum standard of an eight foot width with two foot wide non-paved shoulders. The Bicycle Plan recognizes that a path entirely off-street may not be compatible with the area's marine industrial land uses and recommends using on-street bicycle facilities in incompatible areas. Potential on-street alternatives are the recommended Class II bicycle lanes on Marinship Way, Harbor Drive and Gate 5 Road. The recommended path is divided into two segments. Segment 1 is from Harbor Drive (near Gate 6 Road) to Liberty Ship Way

and Segment 2 is from Johnson Street to the Ferry Terminal. Segment 1 follows Bridgeway to the east and requires the acquisition of land from existing private properties. Segment 2 follows the former railroad rights-of-way and has similar challenges with the need for property acquisition, additionally its development would require reconstruction of the existing boardwalks that do not have bicycle-friendly surfaces and are not wide enough to accommodate additional bicycle traffic due to high pedestrian traffic on weekends. The Bicycle Plan identifies the most continuous off-street path may follow the shoreline. **Figure 2-4** is a map of the City's existing and proposed bikeways.

2.4. Marin County North-South Bikeway Feasibility Study (1994)

The Marin County North-South Bikeway Feasibility Study's purpose is to identify a safe and feasible bikeway between Marin County cities. The priority of the bikeway is to provide connections for bicycle commuters, putting recreational bicycle use secondary. Three segments of the bikeway travel through the Study Area on Bridgeway South and Bridgeway North.

The short term recommendation for Bridgeway South, from Anchor Street and Napa Street, is to remove the then existing median to make room to stripe Class II bicycle lanes and this recommendation has been implemented. A Class I path following the west side of Humboldt Avenue from Bay Street to Johnson Street and then shifting to the east side of Bridgeway is a long term recommendation.

The short term recommendation for Bridgeway North, from Napa Street to Coloma Street is Class II bicycle lanes and removing the existing bollards in the center of the bike path running adjacent to the east side of Bridgeway. Today along this segment there are existing bike lanes on Bridgeway where feasible and along a portion of the road there are existing Class III bike routes. The long term recommendation is to pave and stripe the existing Class I path from Napa Street to Liberty Ship Way. North of Liberty Ship Way, the Class I path would travel along the former railroad right-of-way as described in the Marinship Specific Plan, immediately south of Harbor Drive, the path would replace a portion of the existing parking lots. Some portions of this Class I path have been implemented in the Marinship Area. At the time of the North-South Feasibility Study, the City owned two of the twenty-two parcels along the proposed path.

North of Coloma Street Class II bicycle lanes are recommended and have been implemented. Additionally, a Class I path is recommended along the east side of Bridgeway where there is currently a sidewalk this proposed Class I path would connect to the Mill Valley-Sausalito Path north of Gate 6 Road).

DRAFT

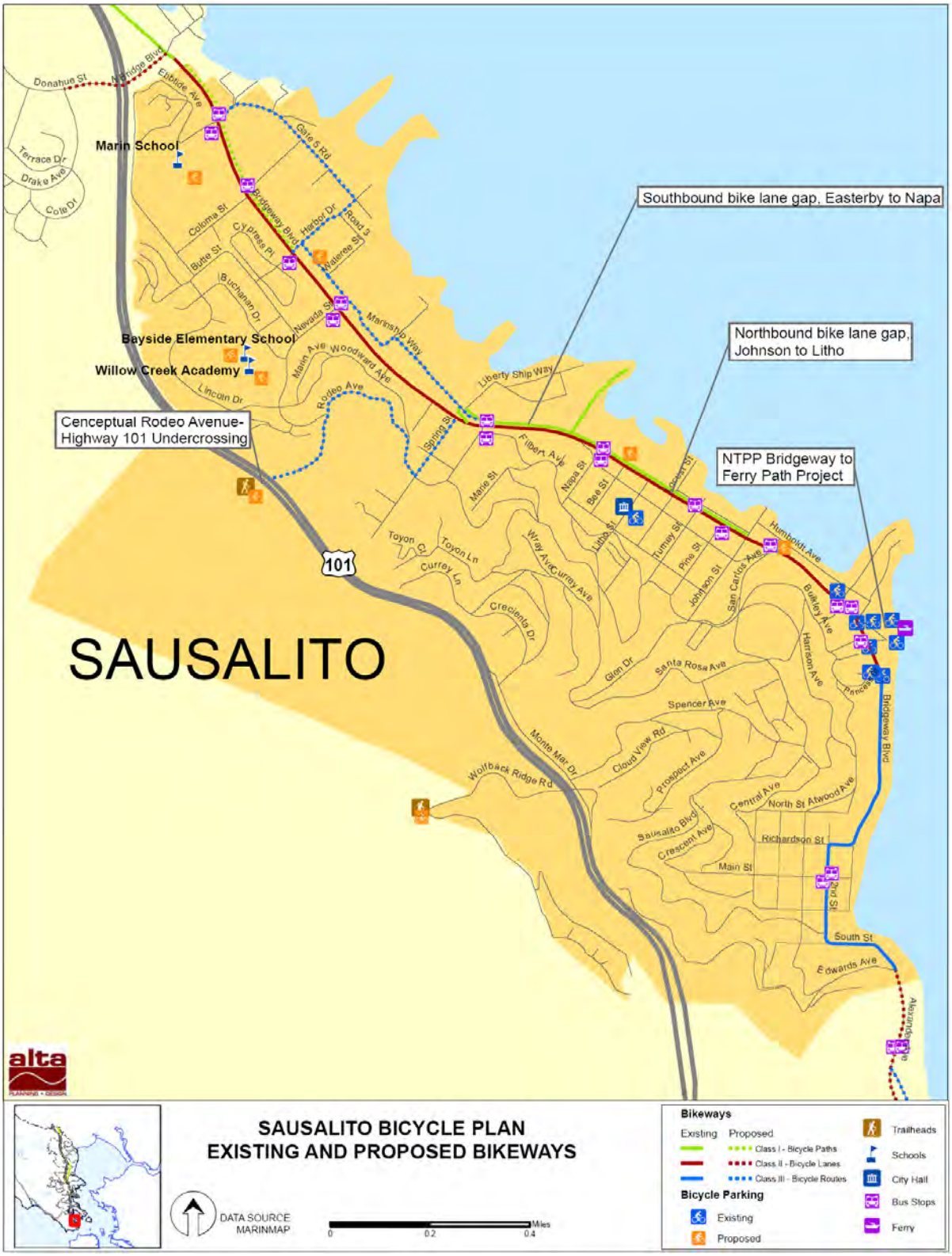


Figure 2-4 Existing and Proposed Bikeways

2.5. Bike Policy for Marin County (1974)

A Bike Policy for Marin County was drafted by the Board of Supervisors in 1975 and call for "safe accommodation for bicycling in all public streets and roads." The Policy call for the County to:

1. Require new road construction and repair projects to be designed to safely accommodate bicycles as well as motor vehicles;
2. Integrate bicycle planning into transportation planning and construction;
3. Provide recreational bikeways along scenic routes and connections between recreation areas;
4. Develop uniform signing and safety standards for bikeway design, construction devices;
5. Support bicycle traffic safety education and skills training programs; and,
6. Support statewide and local legislative efforts to establish bicycle safety rules, and support enforcement and education programs which may be necessary.

The Bike Policy lays out major arterial bicycle routes. Route 1 – Redwood Route travels from Sonoma County to the Golden Gate Bridge and along Bridgeway through Sausalito. Additionally, the Sausalito Ferry Terminal is identified as a bicycle-transit interchange point. The Policy calls for larger scale shelters and theft proof racks.

2.6. Historic District Design Criteria and Guidelines (1993)

In 1981, the Sausalito City Council established a Historic Preservation District, the location of many of the City's early commercial buildings. This area is centered at the Princess Street and Bridgeway intersection, at the south end of the Study Area. The Sausalito Historic Landmarks Board adopted Historic District Design Criteria and Guidelines in 1993 to define the criteria and the procedures to conserve historic design values. In relation to this multi-use path study and its design, the Historic District Design Guidelines prohibit "shiny metallic" and "bogus" materials that replicate natural materials. When metal framing is required, the historic design guidelines recommend using bronze anodized aluminum.

2.7. Sausalito's Community Visioning Process – Pedestrian/Bicycle Facilities

Sausalito's Business Advisory Committee wrote Sausalito's Community Visioning Process – *Pedestrian/Bicycle Facilities* in May 2007. This report's objective is to "identify possibilities and means for creating a system of safe and convenient non-motorized circulation within Sausalito." The vision is to create pedestrian and bike access to the waterfront, downtown, to improve access to hillside residences, and regional trails. The Committee reviewed existing bicycle and pedestrian plans and programs, developed basemaps, surveyed city paths and stairs, identified potential bicycle and pedestrian opportunities, and participated in workshops to identify implementation strategies. The report has a series of recommendations for project implementation. The projects relevant to the Sausalito Ferry Landing to Gate 6 Road Path Study are:

- Build a separate ped/bike path between Litho and Napa Streets, along the inland side of Dunphy Park
- Improve the (inland) walking experience between Marinship Park and Harbor Drive. Provide sidewalks and landscaping on Marinship Way

DRAFT

- Endorse the proposed North/South Greenway, the path system from the Sausalito Ferry Terminal to Gate 6 Road as an alternative route for families to use within Sausalito

2.8. City Resident Survey (2006)

In 2006, the City commissioned Gene Bregman & Associates to conduct a scientific opinion survey to find their preference for improvements to the city. Some questions were asked regarding infrastructure. A sample of 172 residents responded with a 4 to 7 percent margin of error to questions about if more recreational opportunities were needed and the results were that 57 percent selected that there was a "great need". When asked what transportation improvements were needed, 74 percent selected that there was a "great need" for pedestrian facilities, including multi-use paths and 66 percent selected that there was a "great need" for expanding or improving bicycle facilities. When asked how frequently they would use the improved and expanded bicycle and pedestrian facilities, 75 percent would frequently use pedestrian and 51 percent would frequently use bicycle facilities.

2.9. Imagine Sausalito Harbor And Downtown Action Committee, Final Report (April 2009)

The 2006 Community Visioning Efforts resulted in general recommendations for changes to the City and further effort known as *Imagine Sausalito* arose including a Harbor and Downtown Action Committee. The committee members deliberated on many issues at over thirty meetings. Results of these efforts are in this Report, memorializing recommendations for infrastructure improvements in the committee's focus area, from Johnson Street to the 500 block of Bridgeway where commercial operations transition into residential uses. Recommendations were presented to the City Council in May of 2010.

The recommendation relevant to this planning effort include: realigning and extending a path from the Sausalito Yacht Harbor Boardwalk to the Ferry Landing; improving the tour bus waiting area for better vehicle flows and pedestrian safety; including more bicycle parking and potentially bicycle lockers and a pick-up point for rental bikes. Additionally, it calls for relocation of (approximately 60) parking spaces from parking lot 1 to parking lot 3 and constructing a bulkhead along the bay frontage of parking lot 3 to provide additional area for a path.

DRAFT

2.10. Imagine Sausalito Waterfront and Marinship Committee, Sausalito Waterfront and Marinship Vision (2010)

The Imagine Sausalito Waterfront and Marinship Committee (WAM) developed the Sausalito Waterfront and Marinship Vision Report. This report documents and assesses waterfront public benefits; physical and environmental challenges related to existing and anticipated natural and man-made conditions; and development influences, namely property ownership, government regulations and economic conditions. The WAM Report also analyzes alternatives for improved circulation through the Marinship area including a Shoreline Path and the North/South Greenway. The Shoreline Path is outside the scope of this Study but a proposed alignment in the Report for the North/South Greenway is similar to the path defined in this study. The WAM Report presents the existing path adjacent to Bridgeway south and north of the Marinship Area as the North/South Greenway.

Figure 2-5 shows, through the Marinship Area, the proposed path follows the toe of the slope east of Bridgeway starting at Liberty Ship Way and connecting back to Bridgeway immediately south of 2400 Bridgeway, the location of FedEx and other office tenants.

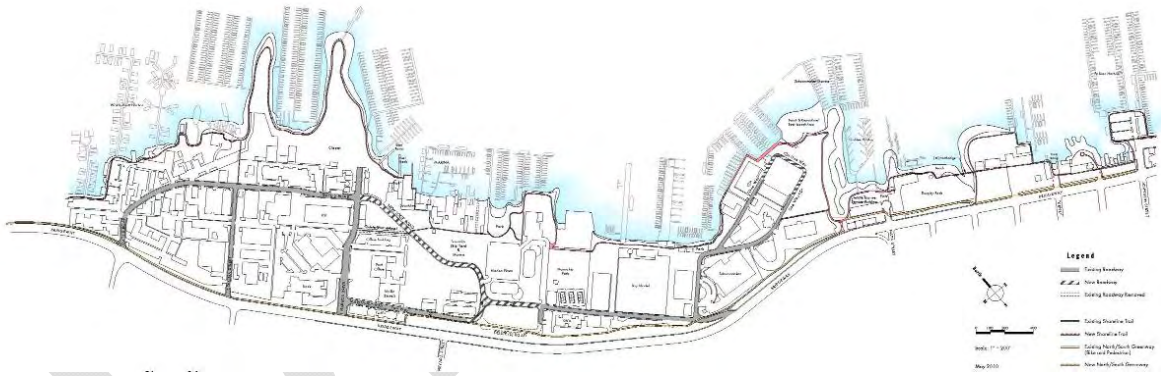


Figure 2-5 WAM Report Circulation Plan

DRAFT

This page is intentionally left blank.

DRAFT

3. Bicyclist and Pedestrian Needs

This chapter provides an overview of the need for a continuous path from the Ferry Terminal to the Bridgeway/Gate 6 Road intersection including descriptions of path users, past bicycle and pedestrian collisions and counts in the Study Area, and a summary of future demand for the project.

3.1. Pedestrian and Bicycle User Groups

This section provides an overview of the user needs for the Ferry Terminal to Gate 6 Road Path. As discussed above, a separated pathway parallel to Bridgeway could serve a variety of commute and recreational bicyclists and local and tourist pedestrians.

The Ferry Terminal to Gate 6 Road Path would be accessible for a range of users, from strollers to bicycle tourists. The existing on-street Class II bike lanes and Class III bike routes serve as the high-speed bicycle corridor whereas the proposed path would serve pedestrians and slower moving bicyclists. This section of the document separates the range of users for the two different facilities and categorizes them into two Classes with an explanation of characteristics that each prefer in bicycle and pedestrian facilities.

3.1.1. Pedestrian Needs

Specific pedestrian circulation, safety and regulatory needs must be addressed in the design of the Ferry Landing to Gate 6 Road Path. The discussion below identifies the unique pedestrian needs among these three themes, differentiated from bicyclist needs.

Pedestrians using the proposed pathway need unimpeded and pleasant access to adjacent land uses, connecting walkways, intersection crossings, transit stops and all manner of adjacent attractors. Pedestrians are the most vulnerable user of the local transportation network and should be separated from other high speed travel modes to the fullest extent feasible. Local businesses are locations for shopping and commuting trips so pedestrians should have simple access to them from the path. Path users will also want to access transit stops in the Study Area, therefore access to bus stops and the Ferry Terminal should be safe and direct. People parking vehicles become pedestrians when they leave their car. Therefore, the path should provide access between parking and the path.

Providing for pedestrian safety in a multi-modal context including auto, bus and bicycle traffic requires clear delineation of pedestrian only areas and clear delineation of areas where all transportation modes should exercise caution and reduce speeds. Pedestrians are deterred from paths when they are adjacent to traffic and speeding bicyclists. Therefore the design of the Path should buffer pedestrians from traffic and attempt to slow bicyclists so not to speed on the path. The pathway design should delineate pedestrian and bicycle separation where feasible.

Regulatory design requirements for the pedestrian walkways are described in the Americans with Disabilities Act (ADA) guidelines and associated documents. Design guidelines and specifications for walkways include but are not limited to clear path, longitudinal and cross slopes, obstacles and gaps, curb ramp configurations,

street crossings, crossing times, accessible pedestrian signals and detectable wayfinding. This study includes neither a detailed ADA compliance inventory nor audit for the Study Area but does emphasize ADA compliance in the recommended improvements presented in Chapter 6. As this project moves into detailed design development, environmental review, final design and construction ADA compliance is a required element of the project. ADA guidelines change rapidly and it will be the job of the project designer and City staff to ensure current ADA compliance at the time of construction.

3.1.2. Bicycle Commuter and Utility Trip Needs

Commuters and utility trip trail users consist of employed adults and students of all ages. These trips are between work and home as well as to other locations with specific purposes, such as a store or a park. Typically these types of trips account for about one-third of all weekday person trips. This represents a substantial opportunity for bicycle and pedestrian usage because of the link to commercial, residential, neighboring cities, and transportation in Sausalito. Common commute characteristics include:

- Commuter trips usually range from several blocks to ten miles.
- Commuters typically seek the most direct and fastest route available.
- Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with motor vehicles.
- Major commuter concerns include changes in weather (rain and heavy fog), riding in darkness, personal safety and security.
- In general, a primary concern to all bicycle commuters are intersections with no control signs (i.e., stop or yield signs) or signal controls.
- Commuters generally prefer routes where they are required to stop as few times as possible, thereby minimizing delay.

Marin County commuters who currently drive to Sausalito and San Francisco for work face parking shortages and likely face traffic delays. Greater use of the bikeways in Sausalito may encourage some commuters who currently drive to walk or bicycle to San Francisco or the San Francisco Ferry, thereby offering commuters saved resources and less traffic congestion.

3.1.3. Recreational Bicyclist Needs

Recreational use generally falls into one of three categories: exercise, travel to non-work destinations (such as shopping or libraries), and sightseeing. Recreational bicyclists can be a varied user group in and of themselves, since the term encompasses a broad range of skill and fitness levels, from a racer who rides 100-miles each weekend, to a family with young children who are bicycling while on vacation. Regardless of the skill level of recreational users, directness of route is typically less important than being in scenic surroundings, having amenities like restrooms and water fountains, and being on routes with few traffic conflicts. Visual interest, shade, protection from wind, moderate gradients, and artistic or informational features also has a much higher value to recreational users. Also, a smooth surface is important.

All recreational corridor users require some basic amenities to have a comfortable experience. They include dedicated facilities (such as sidewalks or bike lanes), clear destination and intersection signage, and even

DRAFT

surfaces. The aesthetic component of a facility is very important to most recreational users. In other words, most people prefer to walk or bicycle in pleasing surroundings. For families and children, most often these are facilities separate from vehicle traffic. All of these recreational bicyclists provide a commercial resource to local businesses. They stop for food and drinks and other shopping needs.

The Sausalito Ferry Terminal to Gate 6 Road corridor has different levels of recreational needs. First is the need to provide a dedicated continuous and direct facility that connects north to south for recreational sport bicyclists. The needs for these users are much like commuters. They prefer on-street, direct, and with traffic. This facility is provided in Sausalito with the existing bike lanes and bike routes on Bridgeway. The other need is providing a facility for slower moving bicyclists and pedestrians, such as tourists or families with children. The proposed Ferry Terminal to Gate 6 Road Path will meet this need being that it will be primarily off-street with amenities and places to stop on along the route.

3.2. Bicycle and Pedestrian Counts

Bicycle and pedestrian counts were performed at Bridgeway and Princess Street in Sausalito in 1999, 2007, 2008, and 2009. The County of Marin performed the 1999 counts for the County Bicycle Plan. The more recent counts from 2007-2009 were performed by the Transportation Authority of Marin and the County for the Non-motorized Transportation Pilot Program (NTPP) and the National Bicycle & Pedestrian Documentation Project (NBPDP). [2] The NTPP funded this Study and a description of it is in Chapter 1. The NBPDP project aims to establish a consistent national bicycle and pedestrian count and survey methodology, to generate a national database of bicycle and pedestrian count information. This information will assist analysis on correlations between various factors and bicycle and pedestrian activity, ranging from land use to demographics to facility-type. Section 3.5's demand analysis uses NBPDP data.

Figure 3-1 shows the count results from these data collection efforts at Bridgeway and Princess Street, located immediately south of the Study Area. Weekday counts occurred from 4:00 PM to 6:00 PM and weekend counts occurred from 12:00 PM to 2:00 PM. According to these counts, since 1999, weekday bicycle and pedestrian activity increased until 2008 and then there was a slight decrease in 2009. The weekend counts show that there was a small decrease in walking and biking between 1999 and 2007 and then an increase in 2008 and 2009.

[2] http://bikepeddocumentation.org/

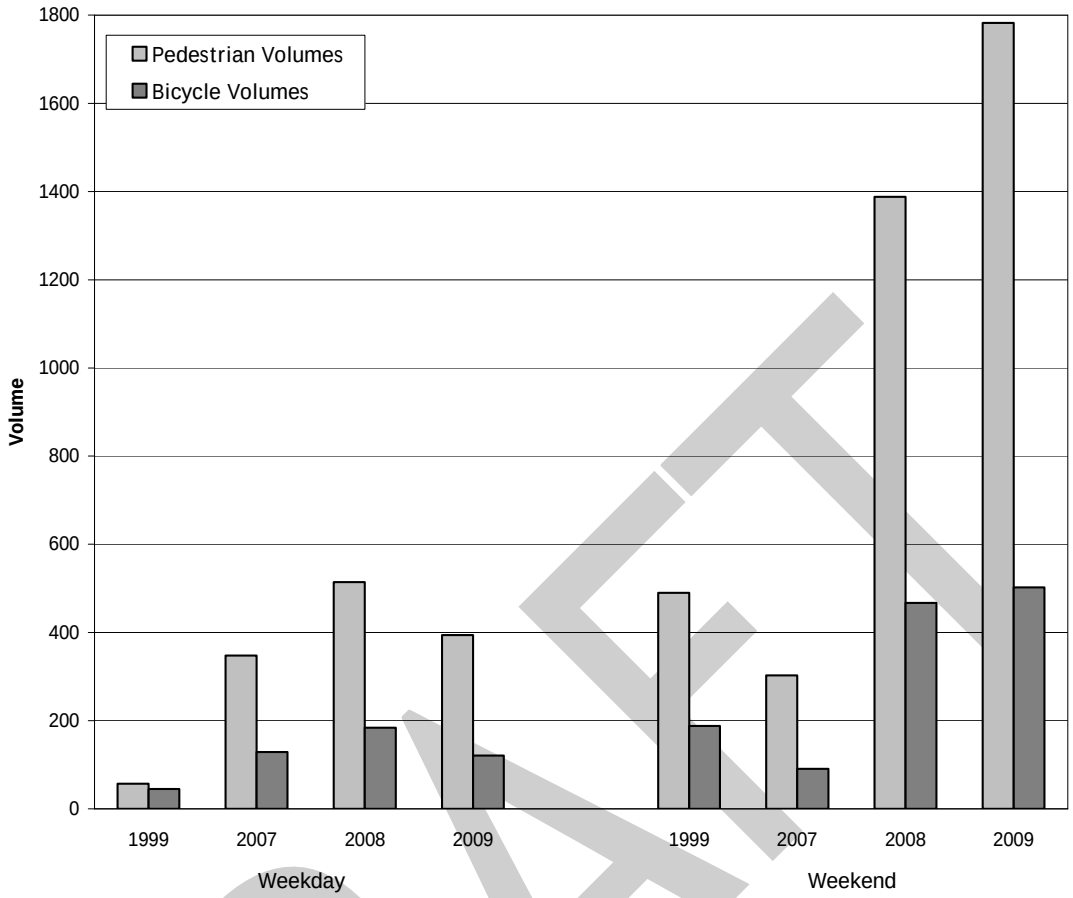


Figure 3-1 Sausalito Bicycle and Pedestrian Counts at Bridgeway and Princess Street, 1999-2009

In addition to the counts at Bridgeway and Princess Street, bicycle and pedestrian counts were collected for this Study in November 2009 on Bridgeway at Dunphy Park. Counts occurred from 4:00 PM to 6:00 PM and the results are in **Table 3-1**. The data is split into northbound and southbound travel and whether bicyclists were riding on the street or on the sidewalk/sidepath

The results show that the sidewalks and the on-street bicycle lanes are heavily used. During this count period, the majority of bicyclists used the on-street bicycle lanes. Additionally, this data shows that there are many pedestrians in the corridor. A further analysis of this data is in Section 3.5, the demand model that forecasts future path users.

DRAFT

Table 3-1 2009 Bicycle and Pedestrian Counts

		Northbound			Southbound		
Start	Stop	Pedestrians on Sidewalk	Bicyclists on Sidewalk/ Sidepath	Bicyclists in Bike Lane	Pedestrians on Sidewalk	Bicyclists on Sidewalk/ Sidepath	Bicyclists in Bike Lane
4:00	4:15	7	4	7	6	4	10
4:15	4:30	1	0	3	5	3	9
4:30	4:45	8	0	12	7	3	11
4:45	5:00	6	1	9	4	2	5
5:00	5:15	4	4	13	3	2	3
5:15	5:30	10	2	6	3	0	10
5:30	5:45	4	0	12	2	1	0
5:45	6:00	4	0	9	8	0	2
Total		44	11	71	38	15	50

3.3. Historical Collision Information

Bicycle and pedestrian collision data from the Statewide Integrated Traffic Records System (SWITRS) and from the City of Sausalito illustrates the collision history for the Study Area. As **Table 3-2** shows there were 116 collisions involving bicyclists and pedestrians from 2002 to 2008 and one of the pedestrian collisions resulted in a fatality. As **Figure 3-2** shows these bicycle collisions occurred on Bridgeway or within one block of Bridgeway.[3] Figure 3-2 shows the pedestrian collisions, all of these were on Bridgeway except for one.

There are high volumes of bicycles and pedestrians on Bridgeway. This Study addresses specific locations with improvements where there are historically high numbers of bicycle and pedestrian collisions. The intersections with the highest collision totals are:

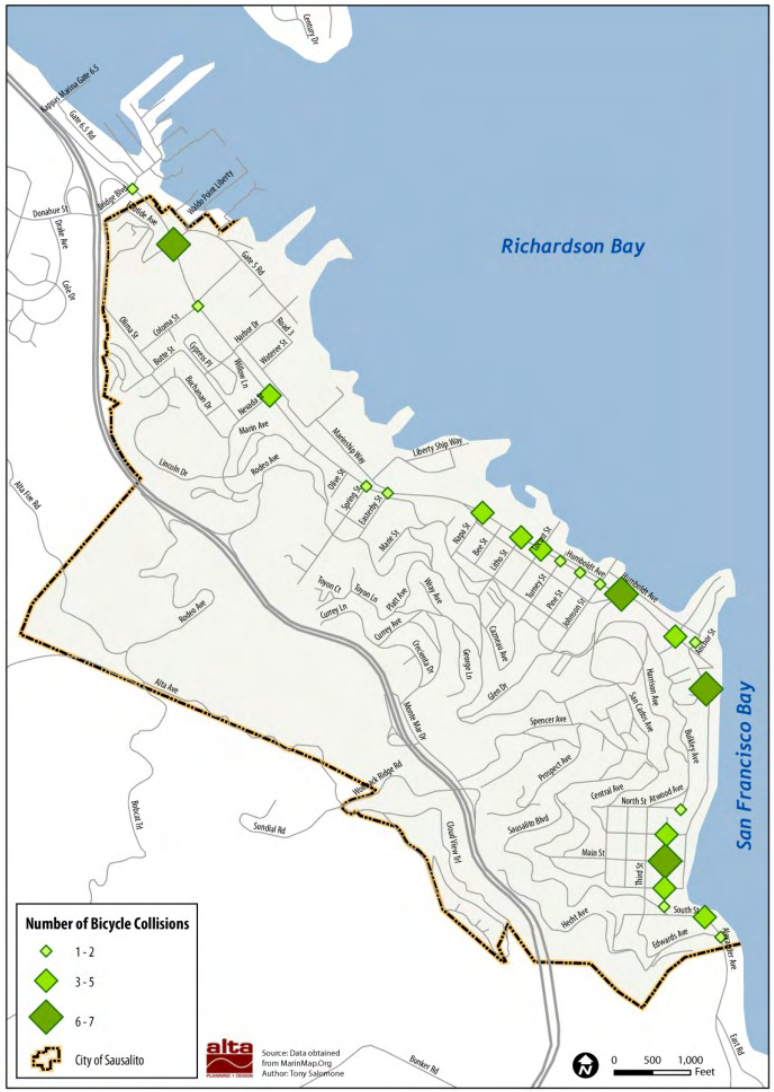
1. Bridgeway and Princess Street (9 collisions)
2. Bridgeway and Ebbtide Avenue/Gate 5 Road (8 collisions)
3. Bridgeway and Caledonia Street (7 collisions)

Table 3-2 Bicycle and Pedestrian Related Collisions in the Study Area, 2002-2008

	Collisions	Fatalities
Bicycle	97	0
Pedestrian	19	1
Total	116	1

[3] Figure 3-2 shows the collisions with cross streets included in the SWITRS data set. Approximately 45 of the collisions are not mapped because the data set does not include a cross-street.

DRAFT



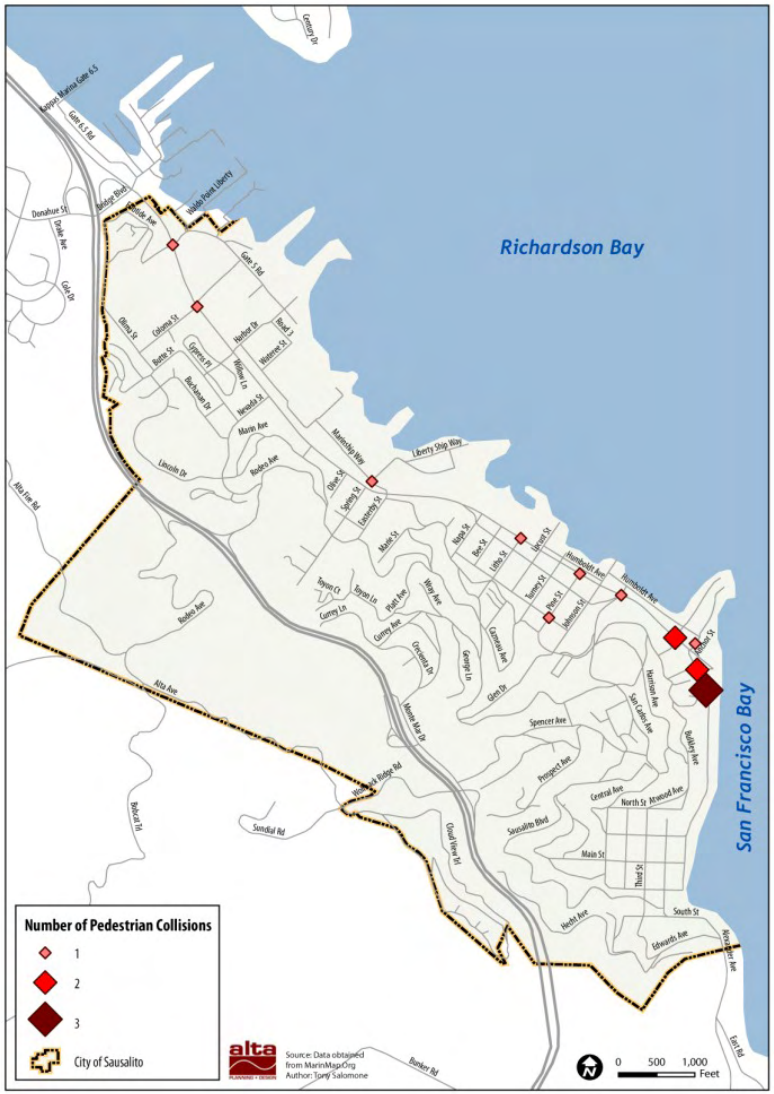


Figure 3-2 Study Area Bicycle and Pedestrian Collisions, 2002-2008

3.4. Engineering and Traffic Study

In accordance with California Vehicle Code, the City conducted its five-year traffic and speed study March through May 2009. The purpose of this study was to evaluate the posted speed limits on Bridgeway, Harbor Drive and Gate 5 Road. The determination of speed limit appropriateness is based on the 85th percentile speed. Under normal circumstances speed limits are set at the speed that 85 percent of vehicles are traveling. The results of the survey are mixed, with reductions and increases in proposed speed limits. Northbound Bridgeway is proposed to increase to 35 miles per hour (mph) where it is currently 30 mph. This information assists in determining proposed crossing treatments for the project pathway.

3.5. Demand Analysis

One of the goals for the Ferry Landing to Gate 6 Road Path Study is to provide a path for bicycle and pedestrian tourists and Sausalito residents and employees. The number of users attracted to the corridor will increase with the proposed improvements. This analysis provides an estimate of existing bicycle and pedestrian use in the corridor and an estimated demand for the Study Area including the development of a completed path.

3.5.1. Existing Use

This demand forecast is based in part on counts from the 2009 Non-Motorized Transportation Pilot Program (NTPP). The counts are from the peak usage hours collected in September 2009 and tabulated in accordance with the National Bicycle and Pedestrian Documentation Project (NBPD).[4] The NTPP count data geographically nearest the Study Area is from Mill Valley-Sausalito Path at the Tennessee Valley Path intersection in Tam Valley. **Figure 3-3** shows an aerial view of the count location and the screen line for the counts. This location is north of the Project Study Area, however there are no major destinations or turn off points for path users between this location and the northern boundary of the Study Area at Gate 6 Road. The results of the existing and future demand estimates are conservative given that the southern end of the Study Area at the Ferry Terminal has higher demand due to the number of tourists in downtown Sausalito and waiting for ferry departures.

DRAFT

[4] The NBPD is a nationwide effort by Alta Planning + Design and the Institute of Transportation Engineers (ITE) providing a consistent model for data collection and ongoing data for use by planners, governments, and bicycle and pedestrian professionals. http://bikepeddocumentation.org/

Figure 3-3 Bicycle and Pedestrian Count Location

Table 3-3 shows the peak hour bicycle and pedestrian counts for the corridor. Both recreational and commuting bicyclists and pedestrians use the path. However, based on the higher weekend bicycle counts, the path has more recreational bicycle use. On the weekday, 74 percent of users were bicyclists and on the weekend, 88 percent of users were bicyclists.

Table 3-3 Peak Hour Bicycle and Pedestrian Counts

	Peak Hour	Bicyclists	Pedestrians	Total
Weekday	4:00-5:00 PM	116	40	156
Weekend	12:00-1:00 PM	397	55	452

Table 3-4 shows, daily, monthly, and annual estimated bicyclists for the Study Area. These estimates are derived from the peak hour counts and adjustment factors from the NBPD. The NBPD has established factors for determining daily count estimates from peak hour counts. These factors are based on 365-day 24-hour automated counts and manual counts on bike paths nationwide. Based on NBPD data, peak counts account for 7 percent of daily users on weekdays and 9 percent of daily users on weekends. For monthly estimates, the number of daily weekday users is then multiplied by 20 for approximate number of weekdays in a month and the number of daily weekend users is multiplied by 8 for the approximate weekend days in a month. These estimates are then added for a monthly estimate (84,860). To estimate the number of annual users, the NBPD

DRAFT

uses monthly factors. It is assumed that the monthly estimates accounts for 8 percent of annual users. Based on this methodology and combining weekdays and weekends, Table 3-4 shows an existing estimated 1,060,750 annual bicyclists and pedestrians in the Study Area.

Table 3-4 Existing Study Area Bicyclists and Pedestrians

	Bicyclists	Pedestrians	Bicyclists & Pedestrians	Adjustment for 24 hours[1]	Hourly Adjust Factors	Daily Estimate[2]	Monthly Estimate[3]	Monthly Estimate	Annual Estimate[4]
Weekday	116	40	156	164	0.07	2,343	46,860	84,860	1,060,750
Weekend	397	55	452	475	0.10	4,750	38,000		

1 Peak hour has a 5 percent adjustment to derive the daily estimate. This is because daily estimates are based on 6 AM to 10 PM factors and an additional 5 percent walk and bike during other times.

2 Daily Estimates are based on factors for bicycle and pedestrian facilities derived in the National Bicycle & Pedestrian Documentation Program

3 Monthly total based on 20 weekdays and 8 weekend days in a month

4 Annual estimates are based on factors for bicycle and pedestrian facilities derived in the National Bicycle Pedestrian Documentation Program

Based on the existing counts, *NTPP Summary of 2007 and 2008 Bicycle and Pedestrian Counts and Surveys*[5], and NBPD research, **Table 3-5** shows that an estimated 84 percent of annual Study Area corridor users are bicyclists and 16 percent of annual path users are pedestrians. NTPP surveys of bicyclists and pedestrians in Marin County also found that 37 percent of bicyclists and 44 percent of pedestrians use this type of facility in Marin for transportation (rather than recreation).

Table 3-5 Existing Transportation and Recreation Trip Split

	Annual Estimate	Transportation	Recreation
Bicyclists	891,030	329,681	561,349
Pedestrians	169,720	74,677	95,043
Total	1,060,750	404,358	656,392

3.5.2. Future Demand

The number of users in the project Study Area is expected to increase to 1,380,000 with development of the Ferry Terminal to Gate 6 Road Path. New users will include local Sausalito and Marin County residents connecting between cities and to the Ferry Terminal and increased numbers of tourists connecting north on

[5] February 2008. Available here: http://www.walkbikemarin.org/documents/NTPP_Count_Survey_Report_Update_2.09r.pdf

the Sausalito Path and to the Mill-Valley Sausalito Path. In total, a 30 percent increase over current 2010 annual volumes is expected. As referenced above, this demand estimate is based on existing bicycle and pedestrian users in the project vicinity and comparable counts on paths nationwide; calibrated for local environment, trail length, surrounding land use, population, density, climate, number of visitors, and aesthetics.

This high number of estimated users warrants bicycle and pedestrian facilities that can accommodate the high level of use. Fortunately for Sausalito, the existing Class II bike lanes provide a facility for some bicyclists and the improved Bridgeway path will provide for the remaining bicyclists. The sidewalks on both sides of Bridgeway also help disperse the high volume of pedestrians to the two facilities on different sides of the street. During peak hours on weekends, the bicycle path may have high levels of use but will still be operational at an acceptable level.

Using existing available data and available modeling techniques it is not possible to accurately forecast the split of bicyclists between the proposed pathway and the existing Class II on-street bicycle lanes nor is it feasible to estimate how many pedestrians will use the proposed pathway versus existing sidewalks in the Study Area. It is clear that these users will self distribute among the proposed pathway, the existing Bridgeway sidewalk, and the Bridgeway Class II bicycle lanes. Under the existing condition, a significant number of long-distance and high speed commuter and recreational bicyclists use the Bridgeway Class II on-street bicycle lanes through Sausalito and would continue to do so even with development of the recommended pathway. It is also important to point out that the existing discontinuous bicycle path parallel to Bridgeway does not attract many bicyclists due to root upheaval, circuitous routing, and other obstacles. Based on local and national use and trends, the majority of high-speed bicyclists will continue to ride on the street, regardless of trip origin and destination. In addition, recent transportation research has clearly established that less experienced and more vulnerable bicyclists are attracted to separated, protected bicycling environments.[6] The final design inclusive of wayfinding, intersection treatments, as well as paving surface and site amenities will significantly influence what types of riders choose which facility.

DRAFT

[6] "Cycling for Everyone: Lessons from Europe," *Transportation Research Record: Journal of the Transportation Research Board*, No. 2074, November 2008, pp. 58-65 (with Ralph Buehler).

4. Opportunities & Constraints Analysis

This chapter of the Study describes the existing conditions and opportunities and constraints for a pathway in the Study Area. As **Figure 4-1** shows, the project area is divided into six segments. These segments are:

- Segment 1 – Ferry Terminal to Johnson Street
- Segment 2 – Johnson Street to Locust Street
- Segment 3 – Locust Street to Napa Street
- Segment 4 – Napa Street to Liberty Ship Way
- Segment 5 – Liberty Ship Way to Harbor Drive
- Segment 6 – Harbor Drive to Gate 6 Road

The following pages and figures show the opportunities and constraints for each segment in more detail. Additionally, the maps show the parcel boundaries in the Study Area.

DRAFT

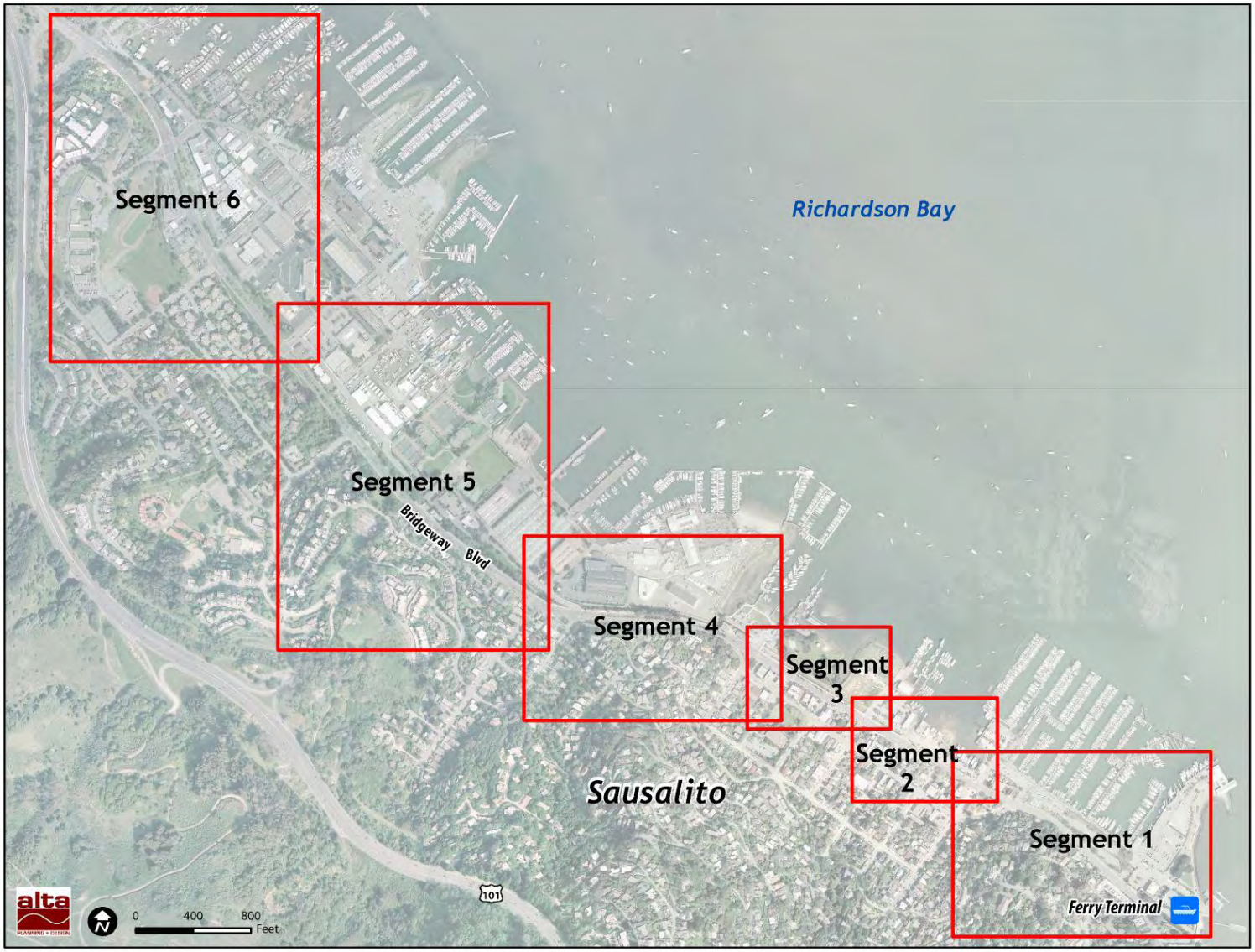


Figure 4-1 Study Area Segments

4.1. Segment 1 – Ferry Terminal to Johnson Street

Segment 1 begins at the Ferry Terminal, proceeds northward to parking lot 1, crosses Anchor Street, parallels Humbolt Avenue, across Bay Street, cuts through Parking lots 3 and 4, to the intersection with Johnson Street and then along Johnson Street to the Bridgeway right-of-way. The City owns the parking lots and controls the street rights-of-way. The parking lots are often parked to capacity and they are highly valued by the City, local residents, and businesses. At the northern limit of Segment 1, Johnson Street has existing sidewalks on both sides and there is a signalized crosswalk on the east leg of the Bridgeway/Johnson Street intersection. Popular destinations on this segment are the Ferry Terminal, downtown Sausalito shops and restaurants, Gabrielson Park and Vina Del Mar Park, which is located just west of parking lot 1 and is a popular pedestrian site. Gabrielson Park is located between Spinnaker Drive (an extension of Anchor Street) and the Ferry Terminal. Tourists often wait at Gabrielson Park before boarding the San Francisco bound ferry.

The Shoreline Path adjacent to Parking Lot 4 serves pedestrians

4.1.1. Opportunities

Several opportunities for a separated pathway exist along Segment 1 that will greatly enhance nonmotorized access through this segment of the corridor. Bridgeway has existing Class II bike lanes in both directions and a shoreline boardwalk path borders Richardson Bay and the private marina, Sausalito Yacht Harbor. Many pedestrians use the boardwalk path and also use the sidewalks along Bridgeway. In the parking lots, the City plans to remove the vehicle entrance/exit gates and install a pay per space fare collection system. This is expected to improve the utilization rate of the available spaces and may provide an opportunity to consider alternative parking layouts, which could open up some space in the lots for additional parking. Additionally, the City uses conservative parking stall widths and lengths and aisle widths in the parking lots. There are opportunities to modify the parking lot layouts with the addition of new parking collection technology, removal of the entrance/exit gates, and modifying the standard parking stall and aisle dimensions.

4.1.2. Constraints

Parking lots 1, 3, and 4 present a major constraint in the project area. Though parking layout modifications are possible, this is a costly change. Additionally, the City has an existing ordinance (Number 1128) establishing that parking lots 1, 2, 3, and 4 "shall not be used for purposes other than public parking lot uses without voter approval" and according to the Sausalito General Plan, the amount of public land area provided in Downtown for public parking cannot be increased by any amount or decreased by five percent without Sausalito voter approval. Therefore, the best solution for the Ferry Terminal to Gate 6 Road path is to not impact the number of existing parking spaces by more than five percent.

DRAFT

On the south end of the Study Area, there is a walkway through Gabrielson Park connecting the Ferry Terminal sidewalk to the sidewalk adjacent to Humboldt Avenue between Anchor and Bay Streets. This walkway is not a direct line of travel to the sidewalk adjacent to parking lot 2 and could be improved for bicyclists and pedestrians. Gabrielson Park is called out in the same approved ordinance described above for the parking lots in Sausalito; the ordinance states that Gabrielson Park shall not be changed from its current conditions without voter approval.

Continuing north through the corridor, parking lot 3 abuts Richardson Bay, which is an earthen bank that has been hardened and reinforced with rip-rap to minimize erosion. The top of bank is currently landscaped with low maintenance grass and ground cover. Due to physical constraints, there is limited existing space to develop a path between the parking lot pavement in the vicinity of the top of bank. There is no funded plan to install a bulkhead or fill this area between the existing boardwalk and the parking lot.

4.2. Segment 2 – Johnson Street to Locust Street

Segment 2 is within the Bridgeway right-of-way from Johnson Street to Locust Street. The route crosses Pine and Turney Streets. Locust Street from Bridgeway to the Humbolt right-of-way is operated as parking lot 5. The east side of Bridgeway has a sidewalk and a deteriorating parallel side path that crosses driveways, Pine Street and Turney Street. These are side-street stop-controlled unsignalized crossings, striped with parallel line crosswalks. Popular destinations along this segment are the businesses along Bridgeway and the residential areas west of Bridgeway. There is a public boat launch at the east end of Turney Street. On the west side of Bridgeway there is an existing sidewalk approximately 10 feet wide and a Class II bicycle lane.

The Bridgeway sidepath at the Pine Street intersection

The Bridgeway sidepath has stencils delineating space for bicyclists

4.2.1. Opportunities

Segment 2 opportunities include the existing sidewalk and parallel side path on the east side of Bridgeway. With some variation, the width of this section within public right-of-way is approximately 18 feet. The side path currently serves as a bike path adjacent to the sidewalk. Bicyclists and pedestrians use both the sidewalk and the parallel path to travel in north and southbound directions. There is an opportunity to close a "gap" in the existing Class II bike lane by creating a new facility in this segment. There is also an opportunity to address the demand for street crossing by modifying the traffic signal at Johnson to include protected turning movements, bicycle detection for southbound traveling bicyclists and pedestrians who desire/need to cross Bridgeway and enter (bicyclists only) the southbound Class II path south of Johnson Street.

DRAFT

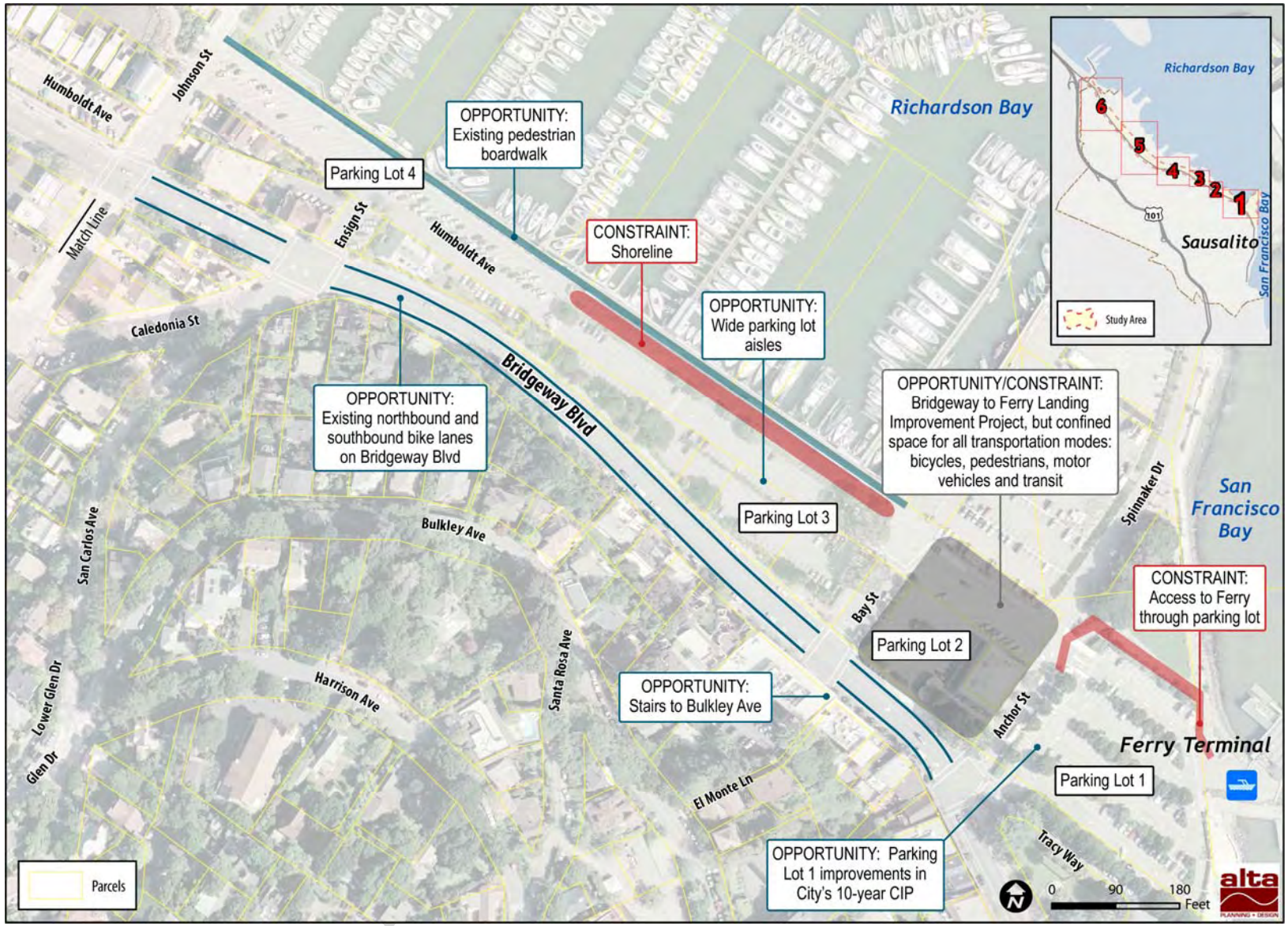


Figure 4-2 Opportunities and Constraints: Segment 1 Ferry Terminal to Johnson Street

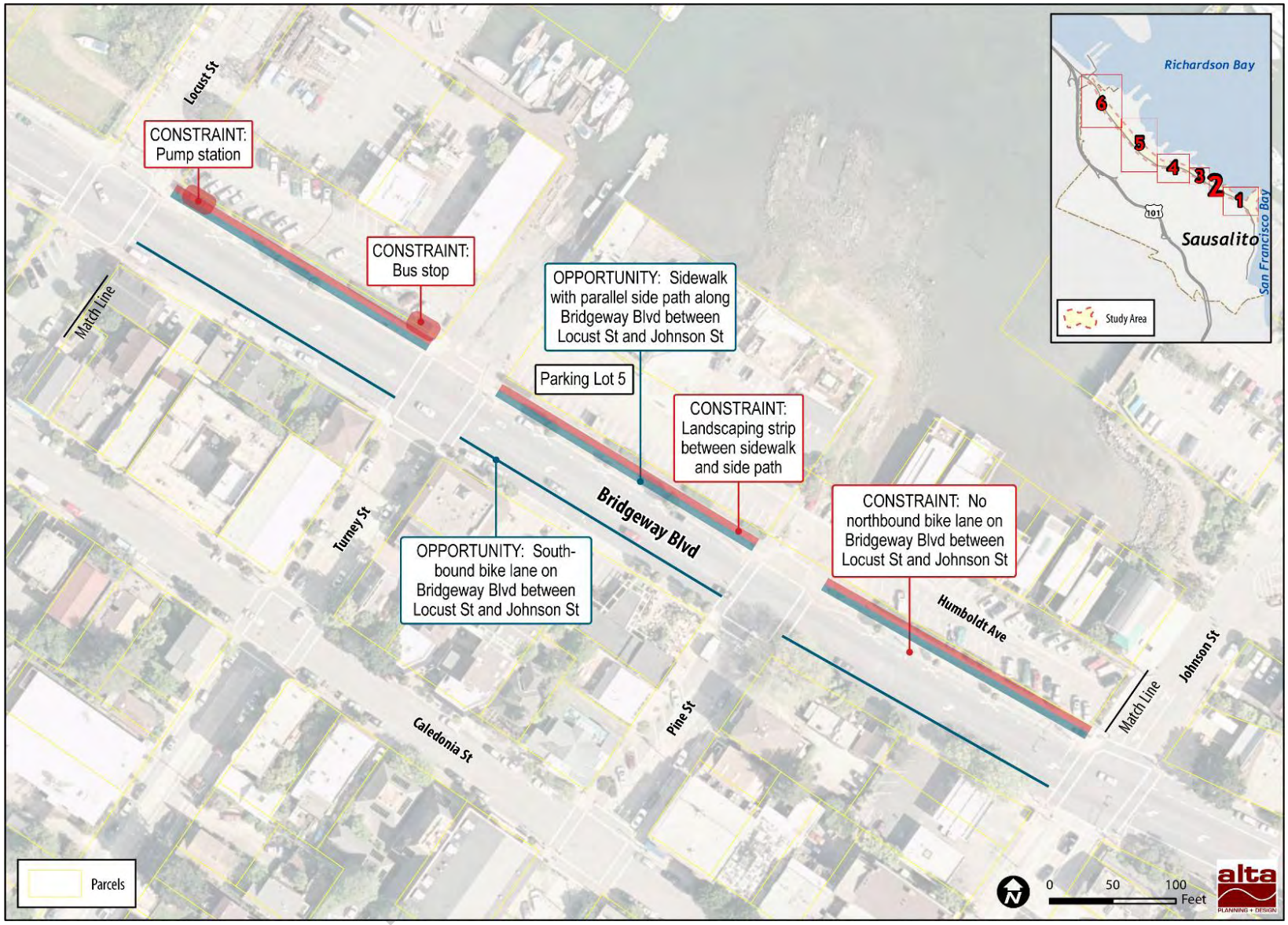


Figure 4-3 Opportunities and Constraints: Segment 2 Johnson Street to Locust Street

4.2.2. Constraints

There is an existing landscaped area separating the sidewalk and side path on the east side of Bridgeway between Johnson and Turney Streets. This is a buffer between the existing bicycle path and sidewalk. However these paths of travel are narrow and constrain the through-zones. Along these paths of travel, pedestrians and bicyclists use both facilities. Other constraints along Segment 2 are the bus stop on the northeast corner of the Bridgeway/Turney Street intersection and the pump station at the southeast corner of the Bridgeway/Locust Street intersection. These constraints cause the sidewalk/side path to narrow. Along Segment 2, the east side of Bridgeway does not have existing on-street bicycle facilities due to constrained right-of-way within the curb lines. These constraints include on-street parking and corner curb "bulbs" that interfere with lane reconfiguration. The east side of Bridgeway is also constrained by street lighting and traffic signal standard position that may interfere with potential path position and/or increase project cost due to utility relocation costs. The sidewalk along southbound Bridgeway abuts several privately owned commercial structures that do not meet current accessibility standards. These standards may be may be achieved by changing sidewalk grade and/or redesigning interior floors of the building.

4.3. Segment 3 – Locust Street to Napa Street

Segment 3 is along the Bridgeway right-of-way from Locust Street past Dunphy Park to Napa Street. This segment connects adjacent to a privately-owned and currently vacant parcel on the south end then continues north past an adjacent City-owned parcel, which is also currently vacant. Segment 3 continues further north past the City of Sausalito's Dunphy Park. The sidewalk and parallel side path on the east side of Bridgeway intersect with Locust Street, a side-street stop, with a parallel lined crosswalk. Destinations along this segment are the park, where there is an existing gravel parking lot immediately to the east of Bridgeway, the Sausalito Cruising Club, Cass' Marina, Galilee Harbor Marina. Connections along this segment include Bee Street and Litho Street where City Hall and the Sausalito Library are located. Bridgeway has a Class II bicycle lane on the west side serving southbound bicyclists. There is a sidewalk along the west side of Bridgeway that is approximately 10 feet wide.

4.3.1. Opportunities

The two parcels at the south end of Segment 3, on the east of Bridgeway, offer path development opportunities. Construction of path facilities, dedication of right-of-way for pathway or a combination of the two may be imposed as Development Conditions of approval. Additionally, along this segment there is a combined wide sidewalk/side path that continues from Segment 2. Between Napa Street and Litho Street, there are existing Class II bike lanes on both sides of Bridgeway.

4.3.2. Constraints

Due to constrained right-of-way on Bridgeway between Locust and Litho Streets, there is an existing bicycle lane on the east side but not on the west side. Another constraint for this area is Dunphy Park that presently does not have a master plan to guide path recommendations in this area. The Park is an especially popular destination during summertime events.

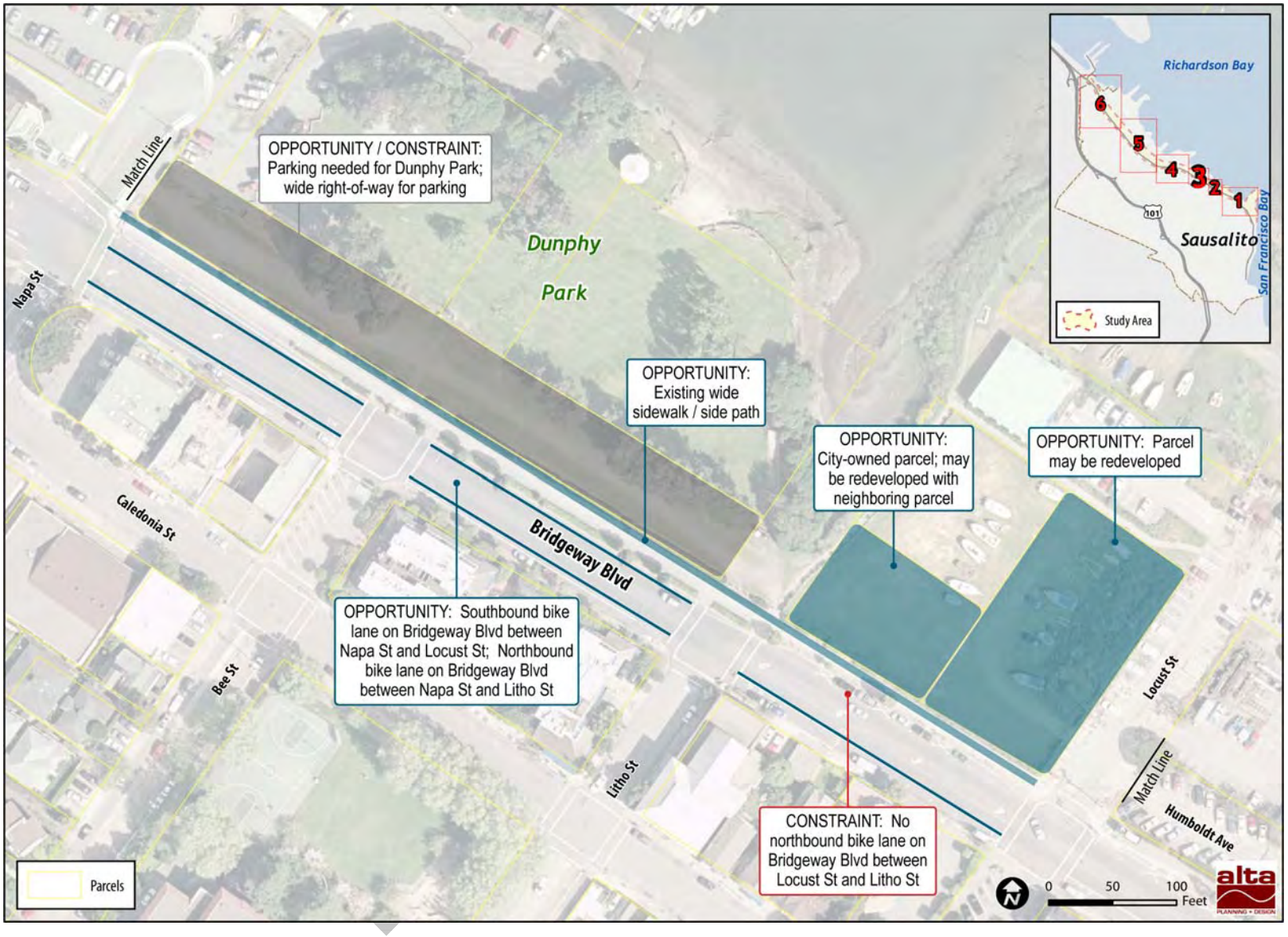


Figure 4-4 Opportunities and Constraints: Segment 3 Locust Street to Napa Street

4.4. Segment 4 – Napa Street to Liberty Ship Way

Segment 4 of the alignment connects Napa Street and Marinship Way. In this segment, there is an opportunity to consider a route along Bridgeway and also an opportunity to consider a route outside of the Bridgeway right-of-way, along the historic railroad right-of-way route. There is an existing Class I path along this former railroad route. Within this section, the existing path is located within public easements that traverse through privately owned parcels. Most of the existing path follows the railroad route and stays level with the shore's elevation. There is one unpaved section of the existing path at Mono Street, an unimproved City street that is 60 feet wide. Though unimproved, this section of the path is currently composed of compacted gravel.

Existing path parallel to Bridgeway and connecting from Marinship Way

In Segment 4, Bridgeway slopes up and separates from the railroad route. Along this segment, Bridgeway is a divided four lane arterial road with a Class II bike lane on the street for northbound cyclists. Bridgeway has a Class III bicycle route for southbound bicycle traffic. There are four to five foot wide sidewalks along Bridgeway in various conditions.

The Bridgeway/Napa Street intersection is side-street stop controlled with a parallel line striped crosswalk. There are sidewalks on both sides of Napa Street. On the north end of the existing path is the Marinship Way/Liberty Ship Way intersection. There is no traffic control on the southern leg of the intersection where traffic travels downhill from Bridgeway. This intersection is private property though the "ramp" portion of Marinship Way is within a public easement and the street improvements are maintained by the City of Sausalito. The other two legs are stop-controlled. There is a parallel line striped crosswalk across Liberty Ship Way. The path connects to the neighboring office buildings and the shore path. The existing path intersects Libertyship Way but is slightly offset east of the Marinship Way/Libertyship Way intersection. The privately-owned Libertyship Way follows the same alignment as Spring Street. A significant elevation difference exists, precluding a direct connection between Libertyship Way with Spring Street.

4.4.1. Opportunities

The primary opportunity for the Ferry Terminal to Gate 6 Road Path in Segment 4 is connecting to the existing path. This path varies from approximately eight to eleven feet wide, providing ample room for bicyclists and pedestrians. Additionally, there is a need to install a Class II bike lane on Bridgeway between Napa and Easterby/Marinship Way to close a gap in the southbound Bridgeway bike lane. Sidewalks along Bridgeway are adequate for single file use. However the sidewalk grade is has been altered by ground movement. Additional width, to approximately eight feet would allow for side-by-side pedestrian use along Bridgeway.

DRAFT

Other opportunities include modifying traffic signal to enable protected left turns and installing bicycle and ADA accessible pedestrian detection on the side street intersections with Bridgeway.

4.4.2. Constraints

Bridgeway presents the largest constraints along Segment 4. The existing sidewalks on Bridgeway are four to five feet wide and do not allow for pedestrians to walk side by side. Also, there is a steep hillside on the east side of Bridgeway between the existing sidewalk and path that prevents future road or sidewalk widening without major construction. Also due to the constrained right-of-way due to the hills and on-street motor vehicle parking, there are no bike lanes on the west side of Bridgeway between Napa Street and Marinship Way. A 2004 improvement project found high demand for on-street parking along this segment from residents that do not have off-street parking and marine "liveaboards" in the vicinity.

4.5. Segment 5 – Liberty Ship Way to Harbor Drive

Open Space below Bridgeway near the Bay Model

Marinship Way between the parking lot and the boat storage parcels

Segment 5 connects Liberty Ship Way north to Harbor Drive. Like Segment 4, there is an opportunity to consider a path route along Bridgeway and/or along the historic and former railroad right-of-way. This portion of the Study Area travels down the slope along Bridgeway and along the mostly privately-owned Marinship Way. The southernmost section of this segment is within private owned property, from the Marinship Way/Liberty Ship intersection north to Testa Street. Marinship Park is on the southeast corner of the Marinship Way/Testa Street Intersection. Marinship Way doglegs at Testa Street and is privately owned until Wateree Street which is visually the southern boundary of the Mollie Stone's Grocery Store (100 Harbor Drive) and the Fed Ex Office (2400 Bridgeway). Along this segment there are buildings and several boat storage sites. The Bay Model and Mollie Stone's Grocery Store are the major destinations along this segment. Marinship Way appears to follow the former railroad route in this segment.

DRAFT

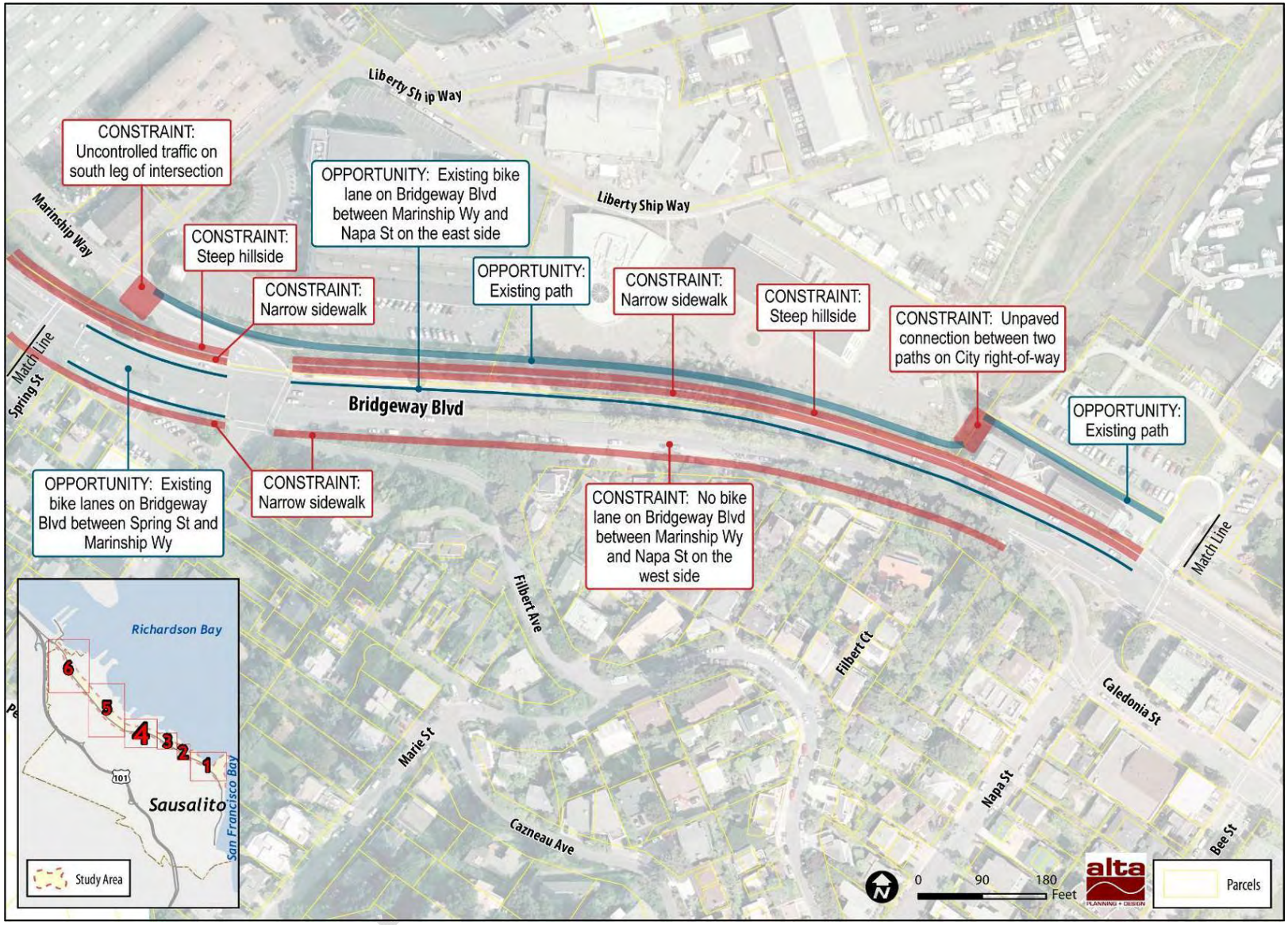


Figure 4-5 Opportunities and Constraints: Segment 4 Napa Street to Liberty Ship Way

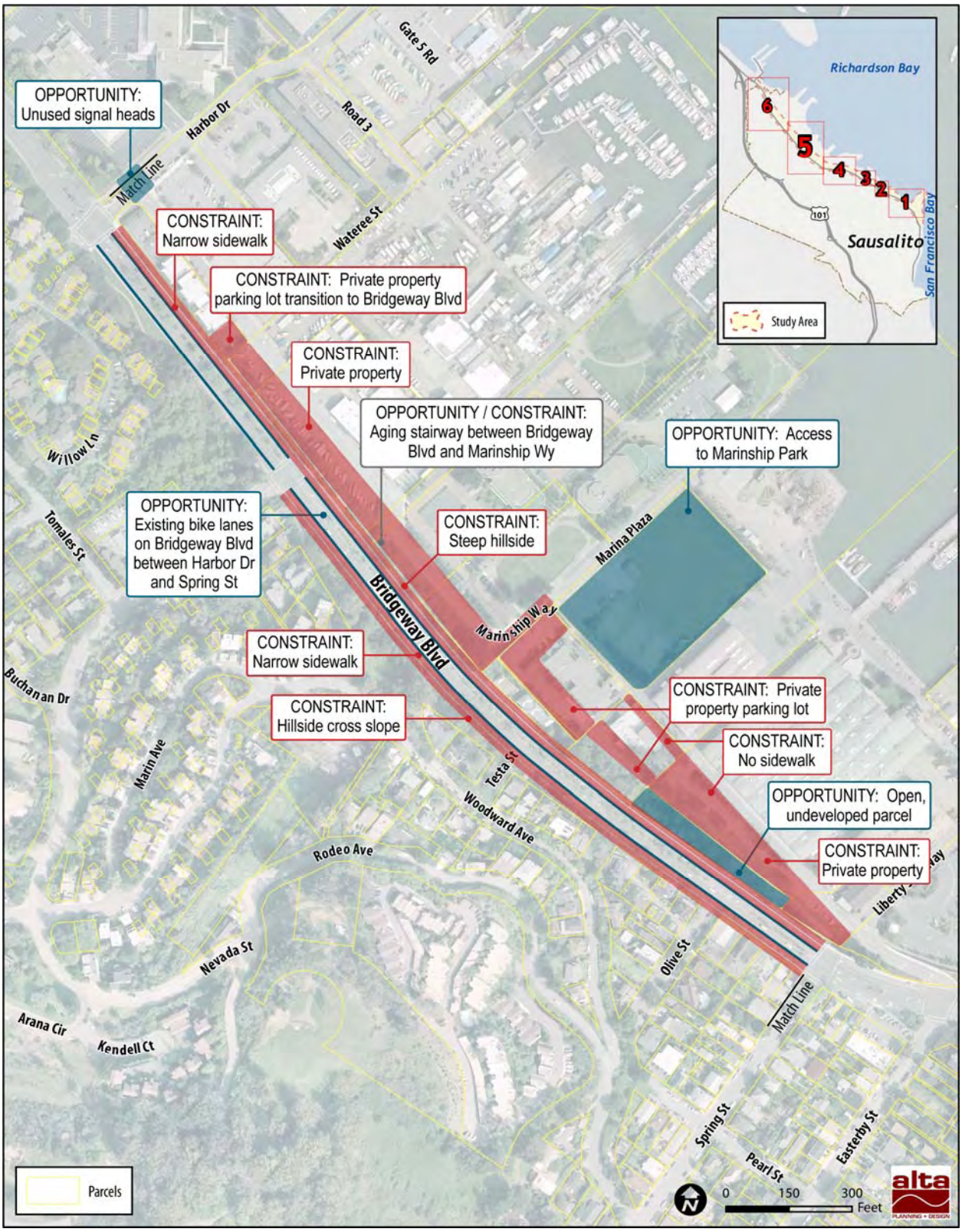


Figure 4-6 Opportunities and Constraints: Segment 5 Liberty Ship Way to Harbor Drive

4.5.1. Opportunities

There are several opportunities for the Path in Segment 5. As mentioned in the segment description, Marinship Way is on/or near former railroad rights-of-way. The route has lower traffic volumes and slower speeds than Bridgeway. There is an underdeveloped strip of land that is below Bridgeway that parallels Marinship Way adjacent to the Bay Model parcel. Marinship Park is also in this segment, a City park with tennis courts and other park amenities. The route is a de-facto street that is not formally mapped but is the result of an access easement. Marine and other businesses rely heavily on the route for circulation and the Bay Model, SWA Associates and other properties rely on Marinship Way for access. Along this segment, there is a stairway linking Bridgeway to Marinship Way and another stair linking Bridgeway to Woodward Avenue. These stairs serve pedestrians connecting between Bridgeway and a path below. There are existing sidewalks and bike lanes on Bridgeway between Spring Street and Harbor Drive. Like Segment 4, there are opportunities to construct wider sidewalks along Bridgeway to accommodate side by side walking.

Other opportunities include modifying traffic signals to enable protected left turns and installing bicycle and Americans with Disabilities (ADA) accessible pedestrian detection at the side street intersections with Bridgeway.

4.5.2. Constraints

Segment 5 has a number of constraints. The Marinship Way corridor, the former railroad route, is almost completely comprised of privately held parcels between Liberty Ship Way and Wateree Street. Before a path can be constructed in this corridor, property easements or right-of-way acquisition will be required through this area. There are no sidewalks on Marinship Way between Liberty Ship Way and Testa Street due to right-of-way constraints and that this portion of Segment 5 is primarily within private parcels. Consideration of aligning the path along the current Marinship Way alignment or through parking lots is an issue in need of further consideration.

Marinship Way intersects Harbor Drive less than 100 feet from the Harbor Drive/Bridgeway intersection. This separation distance is a significant traffic problem for all travel modes. An off street path will likely to need to cross Harbor Drive along the eastern side of Bridgeway, to minimize turning movement conflicts. Transitioning a path alignment from Marinship Way to Bridgeway will need further study to minimize loss of property use by the current property owners. Acquisition of right-of-way and/or easement will be needed.

There steep slope on the east side of Bridgeway down to the Marinship Area as well as on the west side of Bridgeway up to the residential area. This limits consideration of installing an off street path along Bridgeway. Due to these hills, the sidewalks along Bridgeway are constrained to approximately four to five feet wide. These hillsides also prevent road or sidewalk widening without major construction that would include retaining walls for the currently unsupported cut slopes.

DRAFT

4.6. Segment 6 – Harbor Drive to Gate 6 Road

Segment 6 connects Harbor Drive to Gate 6 Road and the Mill-Valley Sausalito Path. In this Segment the former railroad route returns to the east side of Bridgeway. The path is expected to be within the public right-of-way adjacent to Bridgeway. The Gate 6 Road/Coloma Street, Gate 5 Road and Harbor Drive intersections are all signalized. There are traffic signals controlling pedestrian crossings that have parallel lined crosswalks. Gate 5 Road has a pork-chop island where vehicles turning right onto Bridgeway YIELD to oncoming traffic. Major destinations along this section are the businesses on the west side of Bridgeway, offices on the east side of Bridgeway, Charter Schools, non-profits and studios at Martin Luther King Park, A commercial center anchored by Mike's Bikes at the Gate 6 Road intersection, and the start/end point of the proposed path, the Mill Valley-Sausalito Path.

The sidepath between Harbor Drive and Gate 5 Road features trees planted in the center

4.6.1. Opportunities

Between Harbor Drive and Gate 5 Road there is a wide sidewalk or a sidewalk with an adjacent side path. On the west side of Bridgeway there is a wide meandering sidewalk between Coloma and Harbor Drive. Class II bicycle lanes line both sides of Bridgeway in Segment 6. The City has identified the Gate 5/Ebbtide/Bridgeway traffic signal to receive bicycle detection improvements, though these improvements have not yet been installed.

North of Coloma Street there is a section of existing sidewalk where there is wide public right-of-way

The parcel(s) on the southeast corner of the Bridgeway/Gate 6 Road, which is part of Waldo Point Harbor and a site currently known as the Gates Cooperative, are anticipated to undergo redevelopment in spring 2010. The properties are located outside the city limits and have received development permits. A path could be included on the west side of the property, providing for the bicycle and pedestrian path, but may require revisions to permitted plans.

There is an opportunity to direct bicyclists through improved crossings along southbound Bridgeway Class II lane to the Gate 5 Road/Ebbtide/Bridgeway. Other opportunities include modifying traffic signals to enable protected left turns and installing bicycle and ADA accessible pedestrian detection at the side streets intersections with Bridgeway.

DRAFT

Not all of the intersection corners and driveway crossings in this Segment meet ADA accessibility Standards.

4.6.2. Constraints

Though there is an existing sidewalk/side path on the east side of Bridgeway in Segment 6, sections of the bicycle/pedestrian path of travel have street trees in the center and roots are pushing up the asphalt. The existing path facility does not meet current Caltrans design standard for multi-use pathways. North of Gate 5 Road where there is only a sidewalk, adjacent properties' landscaping abuts the existing sidewalk, narrowing the width of public right-of-way above the Bridgeway curb.

The Gate 6 Road/Bridgeway intersection is a challenging location for all modes of traffic. Southbound bicyclists enter Gate 6 Road from the Sausalito-Mill Valley path and are then forced to choose between an obsolete off-street path or a southbound Class II bike lane on the west side of Bridgeway, south of the intersection. Many bicyclists and pedestrians attempt to turn onto the southbound Bridgeway Class II bike lane without protected movement indications from the traffic signal because current detectors are not sensitive enough to recognize their presence. As described in Section 3.3, there is a history of non-motorized collisions at this location.

DRAFT

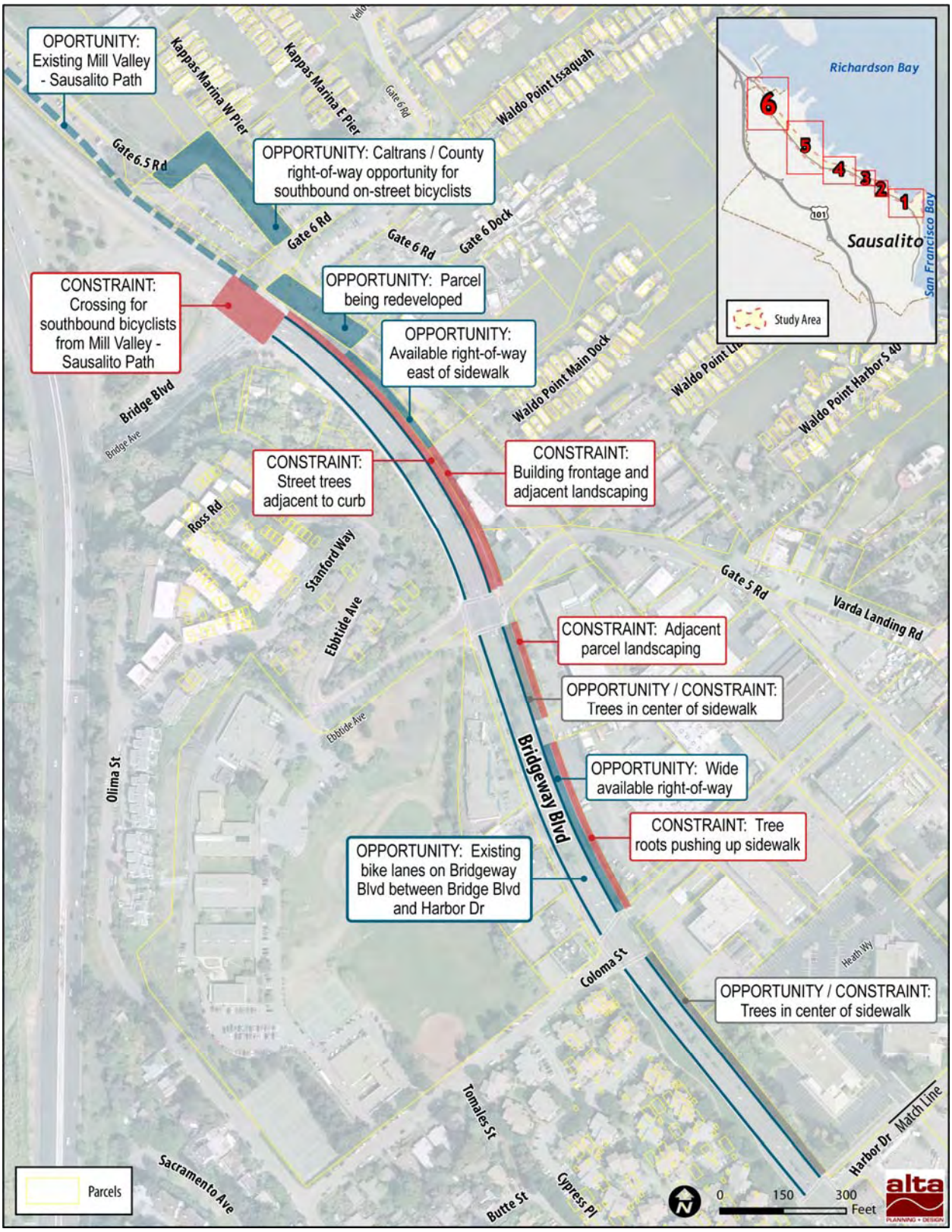


Figure 4-7 Opportunities and Constraints: Segment 6 Harbor Drive to Gate 6 Road

5. Alternative Analysis

In this chapter, alternative alignments for the proposed path are developed and evaluated using four specific evaluation criteria. With the evaluation results, a preferred alternative is identified. This chapter describes the evaluation criteria, three alignment alternatives, and the evaluation process. Also included is a preferred option for connecting the Ferry Terminal to the Mill-Valley Sausalito Path at Gate 6 Road.

5.1. Path Alternatives

Three alternatives for the path between the Sausalito Ferry Terminal and Gate 6 Road were identified through input from City staff, the TAC, and extensive field work. The path alternatives vary in type of potential facility. For example, two alternatives are separated from the roadway and the third alternative is on-street. The three alternatives also vary in location. They all connect the project endpoints but they vary in the routes through the Study Area. This section identifies the three alternatives and touches on the potential bicycle and pedestrian facilities that can make the connection. **Figure 5-1** presents the three different alternatives and a more detailed description follows.

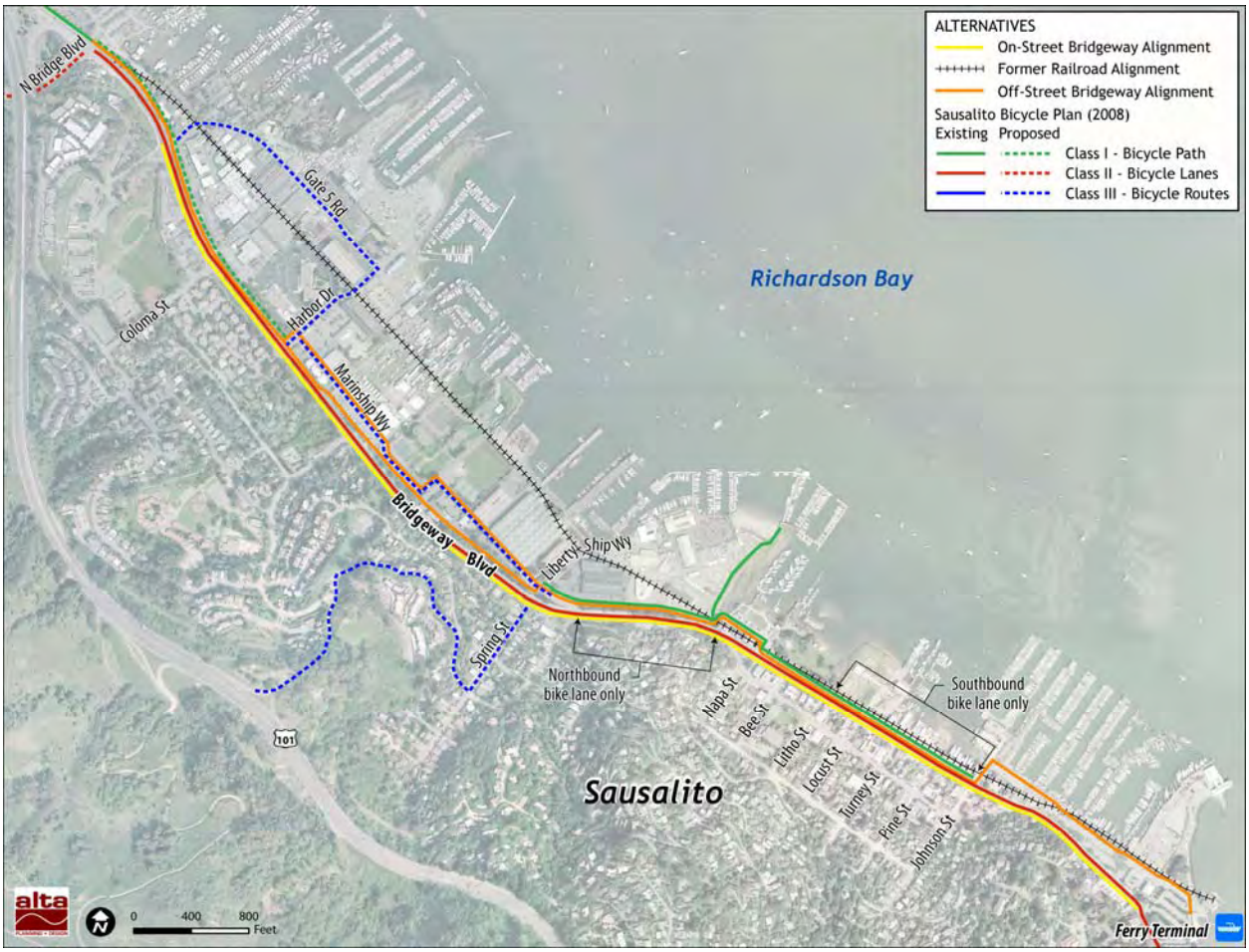


Figure 5-1 Path Alternatives

5.1.1. On-Street Bridgeway Alignment

The On-Street Bridgeway Alignment for the path follows Bridgeway. This connection uses the existing sidewalks along Bridgeway for pedestrians and the Class II bike lanes on Bridgeway for bicyclists. For this alignment, there are existing continuous sidewalks extending along the entire corridor and for bicyclists there are continuous bike lanes except for at two locations – Johnson Street to Litho Street in the northbound direction and Easterby Street to Napa Street in the southbound direction. At these gaps the project would propose on-street bikeway improvements.

5.1.2. Former Railroad Alignment

The Former Railroad Alignment connects through the Project Study Area along the former railroad alignment closest to Richardson Bay. This alignment was determined using historical maps of the railroad through Sausalito and it connects along the east side of Parking Lots 1 through 3, then connects to Bridgeway and continues parallel to Bridgeway until Dunphy Park when it shifts east through the Marinship. At Liberty Ship Way, this Alignment continues in a line straight from the existing path east of Bridgeway. The Former Railroad Alignment extends north through the Marinship District and existing private parcel buildings and parking lots. This alignment would require improvements to the existing Bridgeway path south of Napa Street and new facilities through the Marinship District.

5.1.3. Off-Street Bridgeway Alignment

The Bridgeway Alignment extends from the Ferry Terminal, on the east side of Parking Lots 1 through 4, connecting to the east side of Bridgeway to Napa Street, along the existing path and through the Marinship adjacent to the toe of slope or along Marinship Way. The alignment then reconnects with the east side of Bridgeway at Harbor Drive. This alignment includes improved facilities along the existing Bridgeway path and new paths south of Johnson Street and through the Marinship District.

5.2. Evaluation Criteria

An evaluation matrix with clearly described criteria is used to evaluate each alternative. These evaluation criteria are based on the overall project goals and used to evaluate each of the three alignments and to help determine a preferred alternative.

5.2.1. Opportunities for Multiple User Groups

As stated in the goals of this study, the project should enhance the local environment and neighborhoods, providing maximum benefit to the public by providing a facility for the widest range of users. Class I – multi-use paths generally provide for the greatest number of users ranging in bicycling skill level. Alternatives that provide opportunities for multiple skill levels and ages of users score higher in the evaluation criteria than those alternatives that provide facilities for limited skill levels and ages of users such as children and bicycle and pedestrian tourists.

5.2.2. Ease of Implementation

Ease of Implementation refers to the timing or coordination needed for developing the path through the Study Area. If a segment of an alternative requires an abundance of planning and negotiation then it ranks less favorably. A lower rank is given to alternatives that rely on the development or redevelopment of Study Area property.

5.2.3. Path Environment

Path Environment considers potential environmental aesthetics while on the facility. Bicyclists and pedestrians prefer areas with natural beauty, for example areas with trees and natural areas. Alignments with more potential for environmental aesthetics score more favorably than those alignments without potential environmental aesthetics.

5.2.4. Public Support

Public support for the alignments is based on input from the project TAC and the City Council in developing the project request for proposals and during presentation of draft study materials. Alignments with more public support score better than those without public support.

5.3. Evaluation of Alternatives

This section presents an evaluation for each of the three alternative alignments using the evaluation criteria. Symbols were used to score the alignments with the criteria ranging a low benefit or a negative impact to a high benefit or low negative impact. **Table 5-1** presents how each alternative scored according to the evaluation criteria.

Table 5-1 Evaluation of Alternatives

	Opportunities for Multiple User Groups	Ease of Implementation	Path Environment	Public Support
On-Street Bridgeway Alignment	◗	●	○	◗
Former Railroad Alignment	◗	○	◗	○
Off-Street Bridgeway Alignment	●	◗	●	◗

○ Low ◗ Medium ● High

5.3.1. Opportunities for Multiple User Groups - *Evaluation*

Non-secluded Class I- multi-use paths provide the greatest opportunity for multiple user groups walking and bicycling because they are separated from traffic. Class I – multi-use paths provide excellent opportunities for children and less experienced bicyclists like tourists to feel comfortable walking or biking. These facilities

DRAFT

serve the most users when they are not completely secluded so passerby traffic can see wanted or any unwanted activity on the path. The Off-Street Bridgeway Alignment scores the best on this criteria because it is a Class I path in a non-secluded location. Alternatively, the Former Railroad Alignment would likely be an off-street facility but in a more secluded area of the City. Lastly, the On-Street Bridgeway Alignment would not serve as many user groups that an off-street path would serve.

5.3.2. Ease of Implementation – *Evaluation*

Ease of Implementation refers to associated planning, design, engineering, and construction time and costs associated with a project. The On-Street Bridgeway Alignment offers the easiest implementation opportunities. There is an existing roadway (Bridgeway) that requires improvements. Depending on the types of improvements, these can happen quickly with City support. The Former Railroad Alignment would take the longest to implement. This alignment extends through private property that is developed. The City would need to acquire property or wait for redevelopment to occur for development of the path and this could become a very long time period. The Off-Street Bridgeway Alignment would be easier to implement than the Former Railroad Alignment since a large percentage of this is within public right of way and there is an existing non-standard facility where it is proposed. The challenges occur through the Marinship District where roadway and property changes are necessary for implementation.

5.3.3. Path Environment – *Evaluation*

The Off-Street Bridgeway Alignment offers the most potential in terms of path environment. There are existing trees along this alignment. The Former Railroad Alignment has some existing trees but through the Marinship District it has no vegetation and the on-street segment has street trees but it is also bordered by the asphalt roadway. The On-Street Bridgeway Alignment scores the lowest path environment score because it is along the roadway, adjacent to passing vehicles.

5.3.4. Public Support – *Evaluation*

Based on input collected from the City Council in the request for proposal process and during the presentation of draft materials in addition to input from the TAC, the Former Railroad Alignment has the least public support of the three alternatives. This alignment travels through the Marinship District and any project through the Marinship District was discouraged for the project from its initiation. The On- and Off-Street Bridgeway Alignments have mixed public support so they receive a score in the middle.

5.4. Preferred Alternative

Based on the alternative evaluation results, the Off-Street Bridgeway Alignment is the preferred alternative. This route scored the highest or tied for the highest in comparison to the other alternatives in three of the four criteria. Being parallel to Bridgeway, along the existing non-standard facility for some of the alignment, helps rank this project higher than the others. Additionally, it impacts the Marinship District less than the Former Railroad Alignment. While the On-Street Bridgeway Alignment provides improvements to the existing Bridgeway corridor, it does not provide a bicycle and pedestrian facility for less experienced and younger users. The following two chapters present design standards and more details for the preferred alternative.

6. Design Standards

The Ferry Terminal to Gate 6 Road Path Study recommends new bicycle and pedestrian facilities and retrofitting existing bicycle and pedestrian facilities. The majority of the project corridor is a path along Bridgeway between the existing curb line and developed private parcels. Based on the constraints of the Study Area and the preferences of the project Technical Advisory Committee, an innovative design for the path is necessary. The design was developed using existing standards, accommodating local needs and interests including separating bicyclists and pedestrians on the path, site specific considerations, and the ultimate goal of a world class bicycle and pedestrian facility. The design standards in this chapter include both standard and innovative design treatments for the Project Study Area.

6.1. Path Design Standards

The preferred alignment requires the installation of a path with separation between bicyclists and pedestrians. The recommended pathway is a paved path between 15 and 20 feet wide with bicyclists and pedestrians separated by a single stripe or striped buffer. This path meets relevant standards and best practices and uses the corridor space in the most efficient way possible while complying with Caltrans' Highway Design Manual standards. These minimum standards are as follows:

- Path width of eight feet with two foot graded shoulders on both sides.
- Where five feet between the path and the closest roadway travel lane is not attainable due to right-of-way constraints, a landscaped barrier separates the path from the travel or bike lane.

6.1.1. Path Dimensions

The total width of the proposed path cross-section is between 15 and 20 feet wide. As preferred by the project Technical Advisory Committee, the design provides for of bicyclists and pedestrians. Four-feet of path is provided for bicyclists in each direction and four to six feet is provided for pedestrians for new facilities, depending on the right-of-way available. Determination of the width depends on the amount of space available in the study corridor. For example, Segments 2, 3, and 6 are adjacent to Bridgeway so the path dimension depends on the public right-of-way between the curb line and the adjacent property boundaries. **Figure 6-1** presents the typical cross-sections. The 15 foot cross-section provides the minimum standards for bicyclists and pedestrians and the 20 foot cross-section provides more space for pedestrians, a buffer from bicyclists, and street trees.

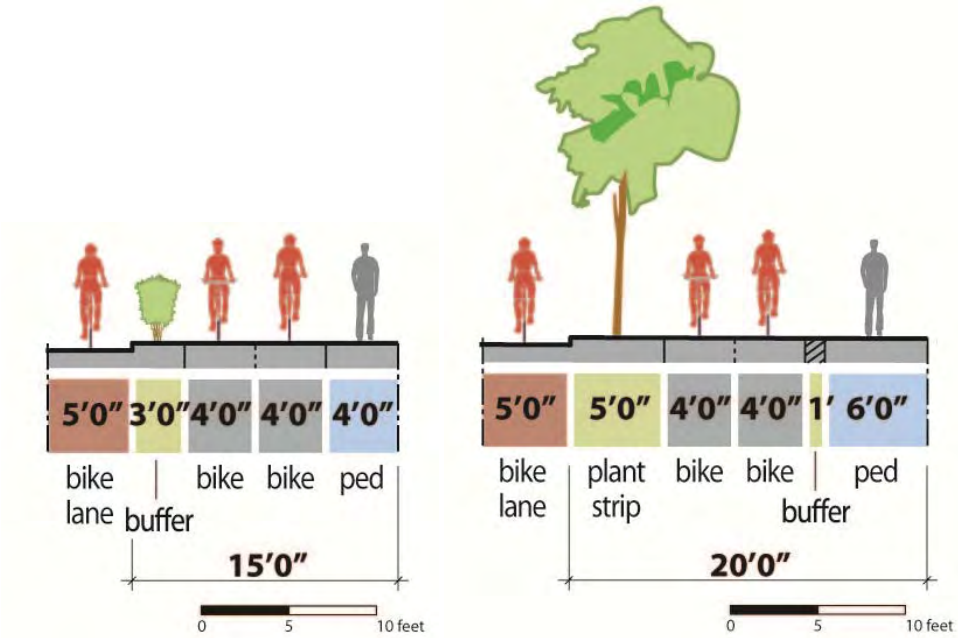


Figure 6-1 Standard Path Cross-Sections for Locations adjacent to Bridgeway with 15 feet of right-of-way (left) and 20 feet of right-of-way (right)

6.1.2. Path Striping and Signage

The separation of bicyclists and pedestrians is recommended where there is ample space along the path corridor. It is recommended because bicyclists travel at higher speeds than pedestrians, causing people walking to feel less comfortable when using a multi-use path. Separation is achievable by striping the path, providing pavement markings where pedestrians should walk and bicyclists should ride and providing signage showing where different users should be located on the path. Where there is enough space available, a buffer is recommended between the bicycling and walking areas of the path. Due to right-of-way constraints in many locations along the corridor, the buffer delineation is only by a painted stripe. However, more right-of-way allows greater separation and could even provide a landscaped buffer.

Bicycle and pedestrian pavement markings show where users should be on the pathway

For the vast majority of the corridor, the Study recommends that pedestrians are on the outside of the pathway, furthest away from the street, and bicyclists are on in the inside of the path closer to vehicle traffic. The project Technical Advisory Committee felt that this would provide the best alternative for pedestrians, providing them a buffer between the walking area and the roadway. This configuration enables pedestrians to access adjacent land uses

directly, without crossing the bicycle path.

Striping

Due to right-of-way constraints on Bridgeway, bicyclists and pedestrians will be located adjacent to one another along the path. To distinguish the different locations for users on the path, striping is recommended. A yellow skipped stripe is recommended to distinguish each direction of bicycle travel separated by a solid white stripe from where pedestrians are to walk along the path.

Recommended path striping shows a yellow skipped stripe dividing bicycle travel lanes and a white solid stripe demarcating the pedestrian walkway

Standard pavement stencils are recommended for the path to separate the paths of travel for bicyclists and pedestrians. A bicycle stencil delineates where bicyclists ride on the path along with arrows for direction of travel and a pedestrian stencil delineates the pedestrian walking area on the path.

User and Wayfinding Signage

Path signs and markings should include regulatory and way-finding signs for bicyclists and pedestrians. Sign selection and placement should generally follow the guidelines in the CA MUTCD. All signs shall be retro-reflective on shared use paths. As shown in **Figure 6-2** lateral sign clearance shall be a minimum of three feet and a maximum of six feet from the near edge of the sign to the near edge of the path. Mounting height shall be a minimum of four feet and a maximum of five feet from the bottom edge of the sign to the path surface level.

With more right-of-way, there is greater availability for wider pedestrian and bicycle paths and a landscaped separation between users as shown in this example from the Cultural Trail in Indianapolis, Indiana

Signage informing users where to ride or walk on the path is recommended. This signage is compliant with the 2009 Federal MUTCD and shown in **Figure 6-3**. At a minimum, D11-2 and D11-1a are recommended at the beginning of each block or at entrances to the path. The D11-2 is a pedestrian placard and the D11-1a is a bicycle placard. These signs are for pathways that provide separate facilities for different users. They guide users to the path intended for a specific mode, whether bicycling or walking. In addition to the striping and pavement markings, these signs will help users know where to locate themselves while using the facility.

DRAFT

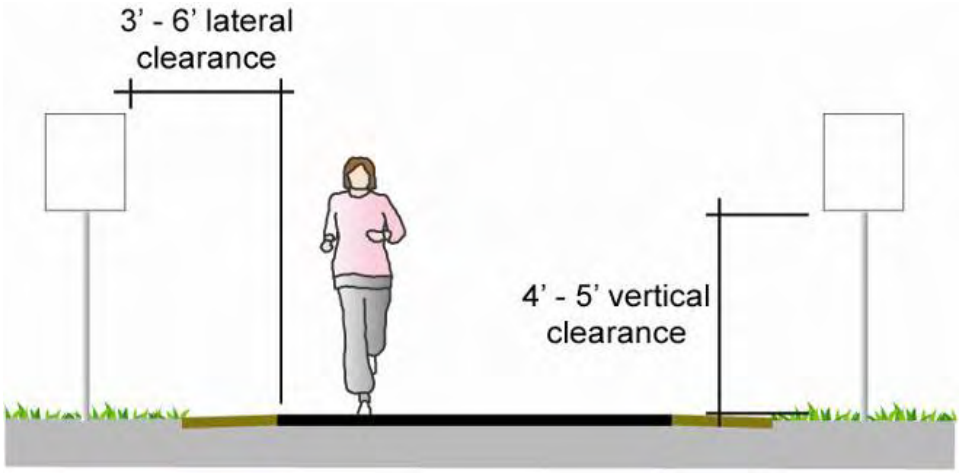


Figure 6-2 Vertical and Lateral Clearances for Signs

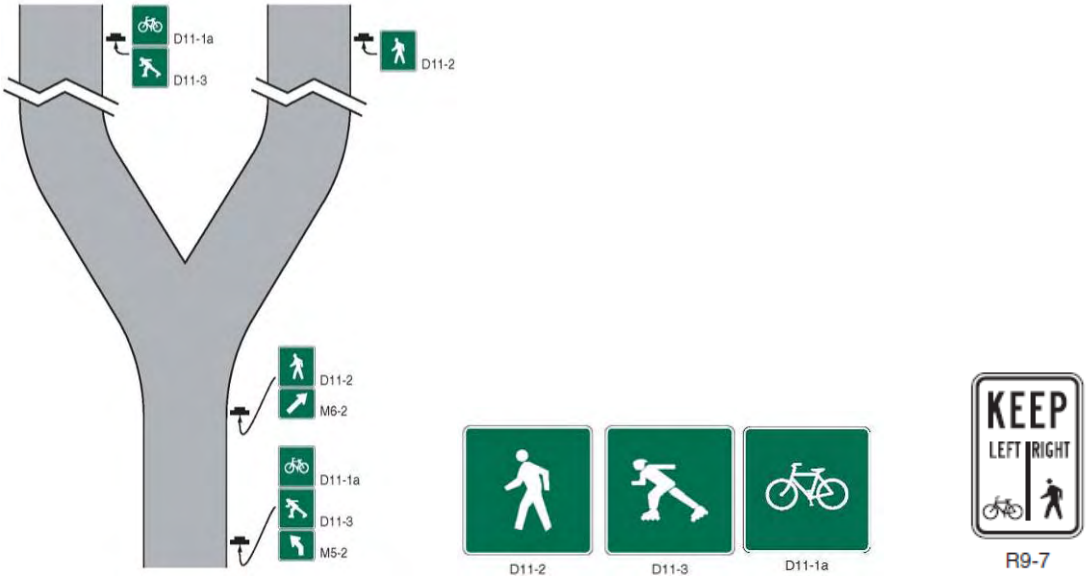


Figure 6-3 2009 MUTCD Example of Mode-Specific Guide Signing on a Shared-Use Path (left) Shared-Use Path Guide and User Permitted Signs (middle) and Shared-Use Type Restriction Sign (right)

Wayfinding signage, such as illustrated with **Figure 6-4**, acts as a "map on the street" for cyclists, pedestrians, and trail users. Signage and wayfinding is an important component for trail users. Visitors who feel comfortable and empowered will keep coming back to an area, and an effective wayfinding system is key to creating that comfort level. Wayfinding also plays an important role in trail use safety, connecting users with emergency services. Wayfinding signs are typically placed at key locations leading to and along bicycle facilities, including where multiple routes intersect and at key bicyclist "decision points."

Signage is most important at locations where there are poor sight lines from the path to cross-traffic (either pedestrian or motor vehicle). All signs should be oriented so as not to confuse motorists and designs (though not the size) of signs and markings should generally be the same as used for motor vehicles. The final striping,

marking, and signing plan for the Ferry Terminal to Gate 6 Road Path will be resolved in the design phase of the path.

6.2. Street and Driveway Crossings

The design of at-grade crossings is important to overall function of the Sausalito path. The project corridor has 12 side-street crossings at crosswalk locations. The City of Sausalito should designate all of these crosswalks as part of the bicycle path, to assist in protecting users while crossing roadways while on the path and to provide clarification to oncoming vehicles. Design of these crossing locations, through signs and pavement markings, should warn motorists of bicyclist and pedestrian presence and warn bicyclists and pedestrians entering the roadway that vehicles may be present. Bicyclists and pedestrians will be required to stop at all intersections and in crosswalks, where bicyclists and pedestrians share the path space, bicyclists must yield to pedestrians.

Figure 6-2 Wayfinding Signage directs bikeway users in the City of Lafayette.

The Ferry Terminal to Gate 6 Road Path crosses approximately 12 driveways. Given the 1.45 mile length of new pathway, this is a low number of driveways for a developed urban project location. Proper signage and crosswalk markings are recommended at each driveway crossing. At most locations this consists of stop signs and stop bars for vehicles exiting parking lots, before crossing the path. On the path, users should be warned with signage, alerting them of these crossings and to be aware of entering and exiting vehicles. Depending on these volumes, yield or stop signs are recommended for the path at driveway locations.

High Visibility Ladder Crosswalk

Chapter 7 provides details on the larger intersections in the corridor, however where details are not provided high-visibility ladder crosswalks are recommended for the path connections. These are two solid white lines, 12 to 24 inches wide, spaced at least 6 feet apart (refer to CA MUTCD Sec. 3B.17) with "rungs." Width of ladder lines or rungs should be 1 foot, with minimum spacing of ladder lines 1-5 feet. These roadway crossings should also comply with the CA MUTCD and curb ramps that meet the Americans with Disabilities Act Accessible Guidelines are also recommended at all crossings.

DRAFT

6.3. Street Trees

This section provides general guidance to be followed in all tree replacement and new tree plantings required for this project. Specific tree impacts and mitigations are described in Chapter 6. As proposed, the project would result in the loss of approximately 55 street trees (if those existing trees proposed to be located in 5-foot wide landscaped buffers remain) to 95 street trees (if those existing trees proposed to be located in 5-foot wide landscaped buffers are removed) along Bridgeway and Parking Lot 3. This estimate does not include trees on private property between Liberty Ship Way and 2400 Bridgeway, where the Class I path rejoins the street. The project proposes to plant as many as 90 new street trees along the northeast side of Bridgeway, depending on the number and placement of existing trees that remain.

Street trees provide a number of benefits, such as creating neighborhood character, screening unsightly views and buffering people from wind and cars. They enhance the pedestrian environment by providing shade, visual interest and a sense of security from cars on an adjacent roadway. Street trees also provide environmental benefits; they absorb carbon dioxide, improve water quality and provide habitat. If not properly selected, planted or maintained, street trees can block views.

As stated in Sausalito's General Plan, the city's scenic quality is exemplified in part by its garden atmosphere. Within the Study Area, the character of the street trees varies, reflecting the transition from an urban downtown setting near the ferry terminal to a less urban environment near Gate 6 Road. In general, the Study Area contains mature trees of numerous species. Tree spacing ranges from 25 to 50 feet in some areas. Other areas do not include trees. More consistent street tree planting in the Study Area will greatly improve the city's aesthetics and pedestrian and bicyclist comfort. This study proposes street trees where there is available right-of-way.

6.3.1. Tree Planting Guidelines

New street trees should be planted in either landscaped strips or tree wells. Where landscaping is adjacent to the street and on street parking is not allowed, a continuous landscaped strip is recommended. Landscaped strips with trees should measure a minimum five feet in width. Trees should be located at a regular spacing with adjustments made to avoid driveways, utility poles and other fixed elements where necessary and aligned where possible with striping and on street parking. Any adjustment to the recommended tree spacing should be done in full block increments. Existing trees that are dead, diseased or on the City's undesirable species list should be removed and replaced with the species identified for the particular block or street segment.

Tree Location and Pruning

Tree planting and pruning will have a significant effect on the character of the street and path users' experience. Specific tree planting and pruning guidelines are as follows:

- Trees should be a minimum 24-inch box size at planting.
- Trees should be regularly spaced at 25 feet on center (or more as noted for species). Spacing may need to be adjusted slightly to avoid driveways, utility poles and other fixed elements.
- Trees should be located at least 15 feet from utility poles.

- Trees should be located at least 10 feet from the edge of any driveways.
- Trees should not be planted at intersections and street corners within the corner triangle.
- Branching height of mature trees must not interfere with visibility of traffic control devices.
- Trees should be located a minimum of 30 inches from the face of curb.
- Tree trunks should be located so as to maintain a minimum two feet of lateral clearance from the path edge.
- The branching height of mature trees on the street side should be maintained at no less than 14 feet above the street.
- The branching height of mature trees should be maintained at no less than ten feet above the path.

Tree Selection

Street tree selection is beyond the scope of this study. Generally, the selected tree species should complement the streetscape and the neighborhood. Street trees should not displace pavement or drop seeds, seed pods or fruit that could create tripping hazards or otherwise obstruct the path. It is assumed that the selected trees will not be any of the City of Sausalito's undesirable trees: Blue Gum Eucalyptus, Monterey Pine, Monterey Cypress or Coast Redwood, Black Acacia, Bailey Acacia or Green Wattle. Existing, mature trees should be incorporated into the overall plan whenever possible.

Tree Wells and Grates

When used, tree wells should measure approximately four feet by four feet and be covered with uncoated cast iron grates. Existing mature trees that are to be retained and located adjacent to on street parking should be fitted with grates or surrounded by an ADA acceptable surface such as decomposed granite to ensure an even pedestrian surface. All grates adjacent to the path should be flush with the level of the surrounding path surface, and be located within the furnishings zone.

Tree Guards

Tree guards are structures placed over or around small trees for protection against browsing animals or trampling in high use areas. Tree guards should be installed where appropriate to protect trees and ensure their longevity.

Structural Soil

Structural soil is a mixture of crushed stone, clay loam and a hydrogel stabilizing agent. When installed under paving, structural soil allows tree roots to grow out of the tree well and under the adjacent paved surface without causing the pavement to heave or buckle. This greatly increases the long-term health of the tree and ensures that the paved surface remains even. Like other soils, structural soil can be compacted to meet engineering requirements for paved surfaces. However, compaction of non-structural soil often inhibits root growth, causing roots to be contained within a small useable volume of soil without adequate water, nutrients or oxygen. Subsequently, urban trees planted in non-structural soil with most of their roots under pavement tend to grow poorly and may die prematurely. It is strongly recommended that structural soil be used for all new street tree plantings.

DRAFT

6.4. Landscape Buffer

Where the separation between the path and the roadway cannot accommodate a five feet buffer with street trees, three feet with a landscape buffer separates the path from the roadway. Chapter 1000 of the Highway Design Manual states, *A wide separation is recommended between bike paths and adjacent highways. Bike paths closer than five feet from the edge of the shoulder shall include a physical barrier to prevent bicyclists from encroaching onto the highway.* Bridgeway is not a highway but it is a regional arterial road. Therefore Caltrans recommends a barrier between the path and the roadway. This barrier can be a variety of different improvements such as landscaping, a railing, or a fence. Caltrans recommends that the barrier be 42 inches in height. Based on input from the Technical Advisory Committee and the existing aesthetics in the corridor, a landscape buffer is recommend where there no on-street parking spaces buffering the path from the roadway and there is less than five feet of space between the path and the curb line.

6.5. Developing a Path Theme

A path theme creates a cohesive and memorable path, while establishing a distinctive, clearly recognized identity or "sense of place." Numerous influences can inspire a path theme. It can draw on the areas' cultural or historical context thereby giving a sense of continuity within and connection to the larger region. The Ferry Terminal to Gate 6 Road Path theme could draw inspiration from current or past cultural characteristics of the city, its ecology or setting. The path identity could reveal natural, historic and cultural patterns in the landscape. The Ferry Terminal to Gate 6 Road Path is a portion of the North-South Greenway through Marin County. If chosen for this path, the North-South Greenway name and theme will give users a seamless experience while traveling the path from Sausalito to Novato and reinforce the path's function as a regional connection. Once established, the theme brands a path segment as a unique place and provides a reason for people to experience it.

A unifying theme also informs subsequent design choices from site furnishings to interpretive information and art installations. The path theme can be expressed in building materials, craftsmanship, how the path responds to climate (ex: use of shade structures, color or drought-tolerant plantings) and natural, historic and cultural references, to name a few.

6.5.1. Art Installations

Local artists can be commissioned to provide art for the path and its theme, making it unique. Many shared use path art installations are functional as well as aesthetic, as they may provide places to sit and play on. Artistic themes can draw upon the history or environmental surroundings of Sausalito. This type of art can add to the path experience, especially for children. Art is best suited in high visibility areas, such as intersection access points and areas

Art Installations like the Elephants in Vina del Mar Plaza, originally made for the 1915 Panama Pacific Exposition in San Francisco, can provide attractions on the path and recall historical events.

near the Ferry Terminal at the south end or the Mill-Valley Sausalito Path at the north end of the path. In general, all art installations should be located three to six feet from the edge of the paved surface.

DRAFT

This page is intentionally left blank.

7. Recommended Path Alignment

7.1. Introduction

This Chapter presents the recommended alignments, cross-sections, and segment costs for a Class I multi-use path through the Study Area, from the Sausalito Ferry Terminal to the southern terminus of the Mill-Valley Sausalito Path. The proposed path takes advantage of the opportunities and addresses the constraints as best as possible while maintaining a separated facility for non-motorized users. Additionally, the recommended path separates bicyclists and pedestrians to potentially decrease conflicts and to separate the varying speeds between these user groups. **Figure 7-1** Study Area Segments shows the proposed alignment.

This chapter presents cross-sections for the typical segments and at key points where the design varies in response to site conditions and planning level costs estimates. As in Chapter 4 and shown in **Figure 7-1**, the corridor is divided into the six segments. Each segment has sub-segments with cross-sections showing the recommendations. Additionally, certain intersections along the corridor require detailed design to show bicycle and pedestrian crossing facilities. These intersection details are also provided in each segment section of this chapter. Labels for all of these improvement locations are on plan view maps at the beginning of each segment description. Each segment discussion includes planning level cost estimates for the recommendations included in the Study. Cost estimates are also summarized at the end of the Chapter.

Each proposed sub-section improvement is illustrated by figures showing the existing conditions and proposed improvements. This chapter describes the site and proposed improvements facing north.

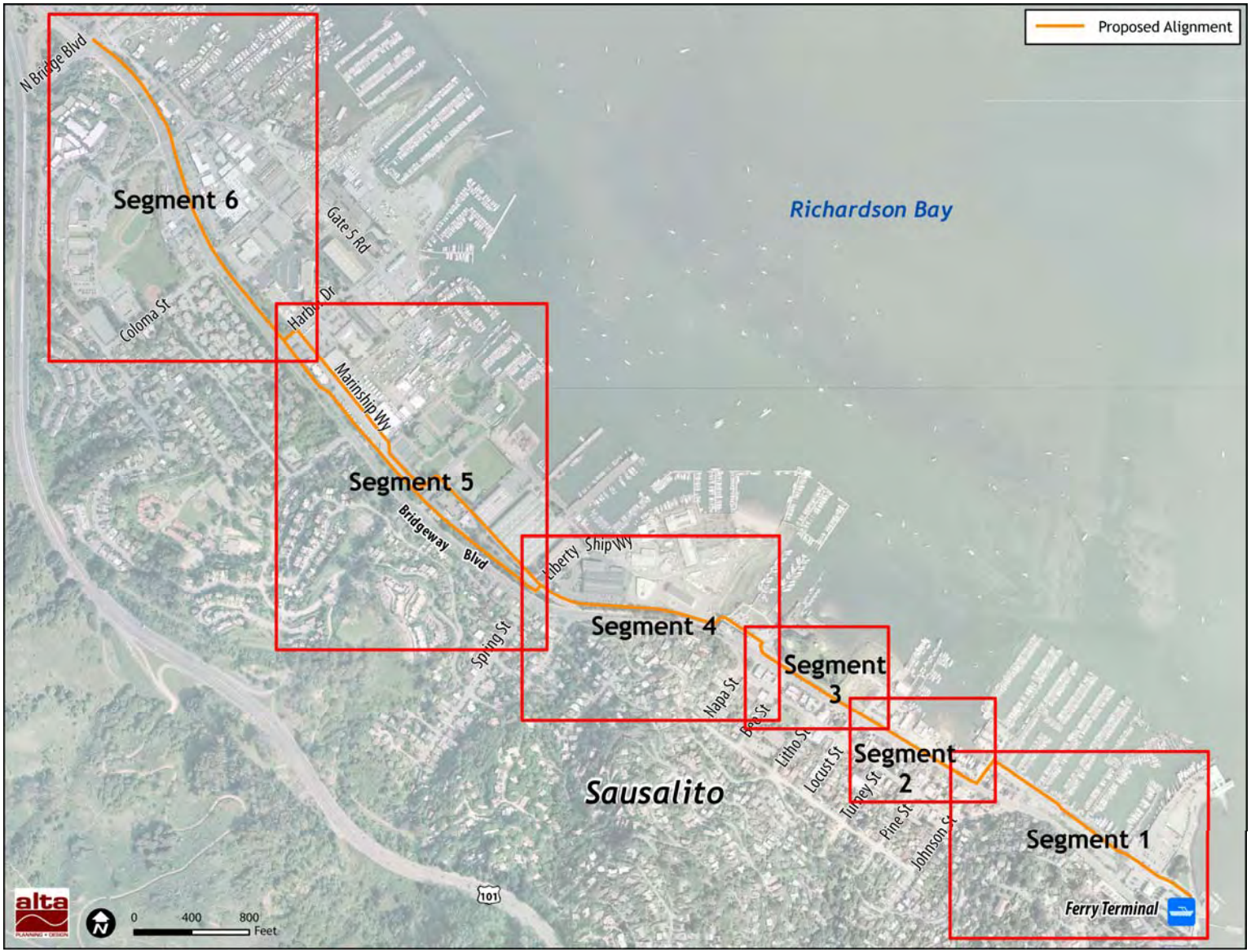


Figure 7-1 Study Area Segments

7.2. Cost Estimates

Each segment of the Study Area includes a planning level cost estimate table. These estimates include construction, landscaping and lighting, design and permitting, contingency costs, and right of way costs (where necessary) based on July 2010 dollars. These costs may need adjusting in the future with inflation and changes to design and construction management costs. Appendix B includes more detailed cost estimates for the path construction including the quantity and unit costs. For the purposes of this chapter, the construction subtotal consolidates all of these elements. It includes all path elements such as management controls during construction, demolition utility and utility box relocation where necessary, development of a concrete path, signing, striping, and curb ramps. The landscaping and lighting estimates include all planting and irrigation in the planting strips adjacent to the proposed path. It also includes site amenities such as recommended benches, trash cans, and pedestrian scale lighting. The design and permitting cost (15 percent of the subtotal) is an industry standard for hard and soft improvements in planning level cost estimates. Finally, the 20 percent contingency is also an industry standard for planning level cost estimates.

7.2.1. Unit Costs

Table 7-1 presents frequently recurring unit costs used in the preparation of the planning level cost estimates. Unit costs were developed based on recently built projects in the San Francisco Bay Area.

Table 7-1: Unit Costs

Item Description	Unit of Measure	Unit Cost
ADA Ramp	EA	$1,000
Bike Path	SF	$8
Concrete Islands & Curb	EA	$2,500
Curb and Gutter and AC Conforms	LF	$50
Drainage	LS	$2,500
Drainage Modification	LS	$3,000
Earthwork	CY	$30
Excavation	SF	$20
Import Fill	CY	$40
Landscaping, Irrigation	SF	$5
Lighting	EA	$4,000
Minor Concrete (Sidewalk, Ramp)	SF	$10
Pavement Markings	SF	$3
Pavement Stripes	LF	$1
Planter Island	SF	$8
Rail/Fence	LF	$40

Item Description	Unit of Measure	Unit Cost
Railing/Fence	LF	$40
Raised Crosswalk	SF	$40
Reinforcing Fabric	SY	$2
Remove Concrete, AC & other surfacing	SF	$4
Retaining Structure	SF	$75
Retaining Wall	SF	$75
Rock Slope Protection	CY	$100
Signal Modifications	LS	$60,000
Slurry Seal Parking Lot Pavement	SF	$1
Storm Drain Inlet (New & Modified)	EA	$4,000
Unsuitable Material	CY	$300
Wall Foundation	LF	$150
Wayfinding Signs	EA	$500
Note: Additional costs are identified as lump sum items that vary by segment. For SWPPP and erosion control; utility relocation/allocation; removal of traffic striping and marking; resetting of parking bumpers, meters and signs; and path and roadway signs, the lump sum estimate is based on recent bid costs from projects of a similar type and size. Mobilization and traffic control is estimated at approximately 10 percent of the construction improvement cost. Clearing and grubbing, tree removal is estimated based on recent bid costs from projects of a similar type, size and amount of trees to be removed. Unsuitable material is estimated by taking five to six percent of the volume of bike path excavation.		

For two of the segments the proposed alignment travels through private right of way. This property could be acquired by the City during redevelopment, through an easement, or could negotiate it for purchase. For the purposes of this Study, approximate right of way cost estimates are provided based on the approximate square footage needed per parcel. The right of way unit cost is $150 to $200 per square foot. This amount is based on a survey of recent sales in the area as well as input from a commercial real estate professional in Sausalito.

7.3. Segment 1 – Ferry Terminal to Johnson Street

Segment 1 traverses the existing city-owned parking lots. Figure 7-2, Figure 7-3, and Figure 7-4 show the Segment 1 plan view, including modifications to the parking lots 1, 3, and 4. A cost estimate for Segment 1 improvements is at the conclusion of section 7.3.

7.3.1. Parking Lot Layout

The City of Sausalito is removing the existing parking lot fare collection stations and replacing the parking collection system with automated machines. Removal of these stations will open up some space in the parking lots. This Study assumes that the space currently occupied by these structures will be removed by the time the

path is developed, providing an opportunity to install additional parking spaces.

In order to achieve a parking lot design with the addition of a bicycle path but without significantly impacting the number of parking spaces in lots 1, 3 and 4, various parking stall standards and expansion of the parking lots were considered for the reconfiguration including the City of Portland (OR), City of Emeryville, both standard and compact, the Town of Corte Madera and County of Marin. The City of Sausalito's zoning standards require longer stalls than those of the other jurisdictions. However, based on field measurements many of the existing spaces are smaller than the City of Sausalito's standard dimensions.

If the City's standard parking stall and aisle width dimensions are used in the parking lots, there is not adequate space for a path on the east side of parking lot 3. Use of the County of Marin standard parking dimensions is recommended to create space for the path. Marin County and Sausalito standard stall dimension are in **Table 7-2**.

Table 7-2 Recommended County of Marin Parking Stall Demensions Compared to the City of Sausalito Parking Stall Dimensions

Jurisdiction	Angle	Width (ft)	1-Way Aisle Width (ft)	2-Way Aisle Width (ft)	Stall Depth (ft)
County of Marin	45° (Lot 1)	8.5	12.0	-	17.0
City of Sausalito	45°	9.0	15.0	-	19.8
County of Marin	90° (Lot 3 & 4)	8.5		24.0	18.0
City of Sausalito	90°	9.0	-	24.0	19.0

Use of Marin County parking standards in conjunction with fill between the existing edge of parking lot 3 and the existing pedestrian boardwalk provides for the pathway. This reconfiguration, as shown in Figure 7-2, Figure 7-3, and Figure 7-4, would result in a loss of 14 spaces in lot 1 and 11 spaces in parking lots 3 and 4. This is approximately a nine percent loss of parking which would require City of Sausalito voter approval. The existing and proposed parking space counts are in **Table 7-3**.

Table 7-3 Parking Space Gains and Losses with New Dimensions and Bay Fill

Parking Lot	Existing	Proposed	Gain/(Loss)
Parking Lot 1	190	176	(14)
Parking Lots 3 and 4	289	279	(11)
Total	481	460	(25)
Note: Implementation of the path proposed northeast of Parking Lot 2 would result in the loss of an additional 17 parking spaces on private property.			

This page is intentionally left blank.

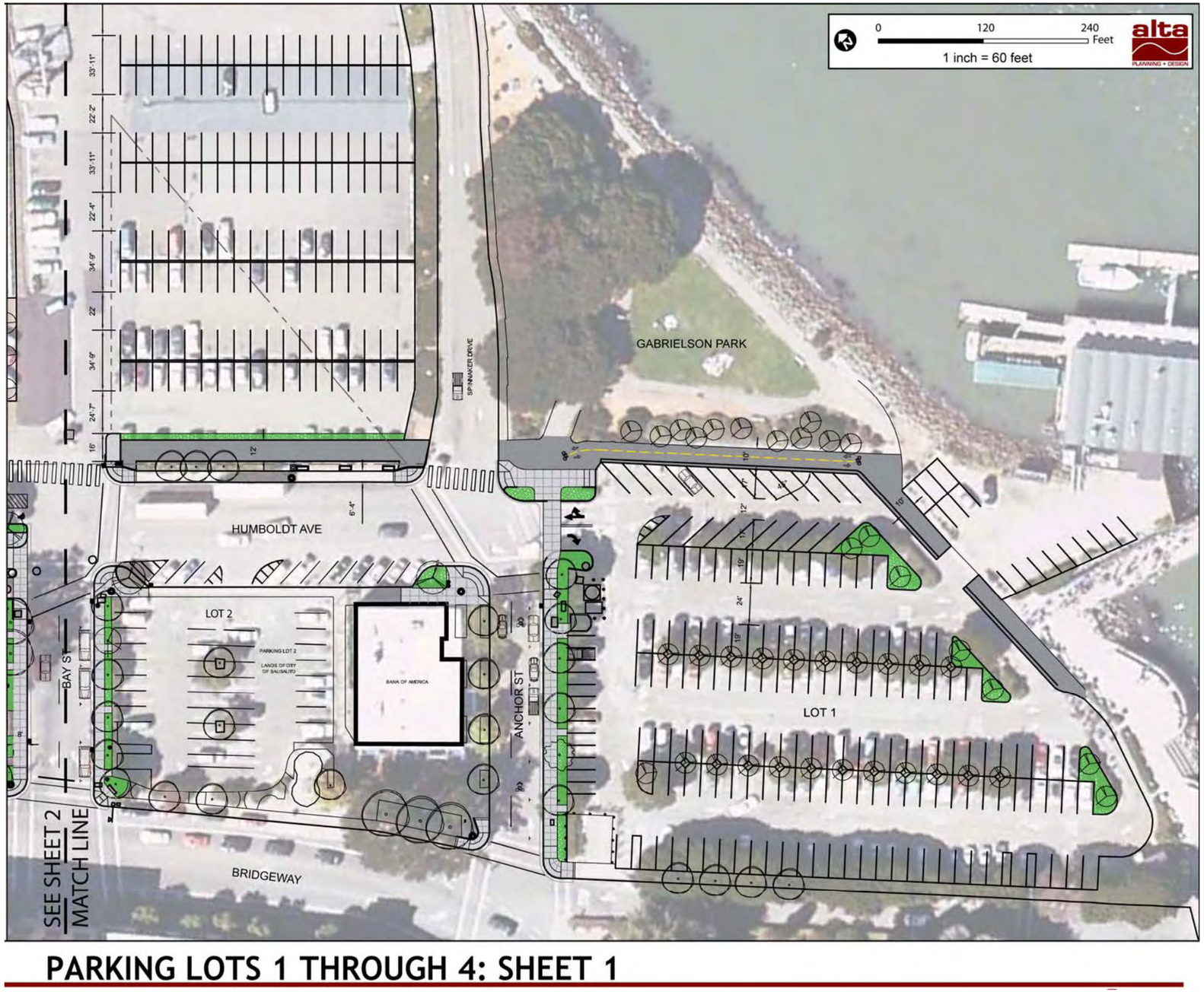


Figure 7-2 Segment 1 Parking Lot 1 Reconfiguration to Allow Space for a Path

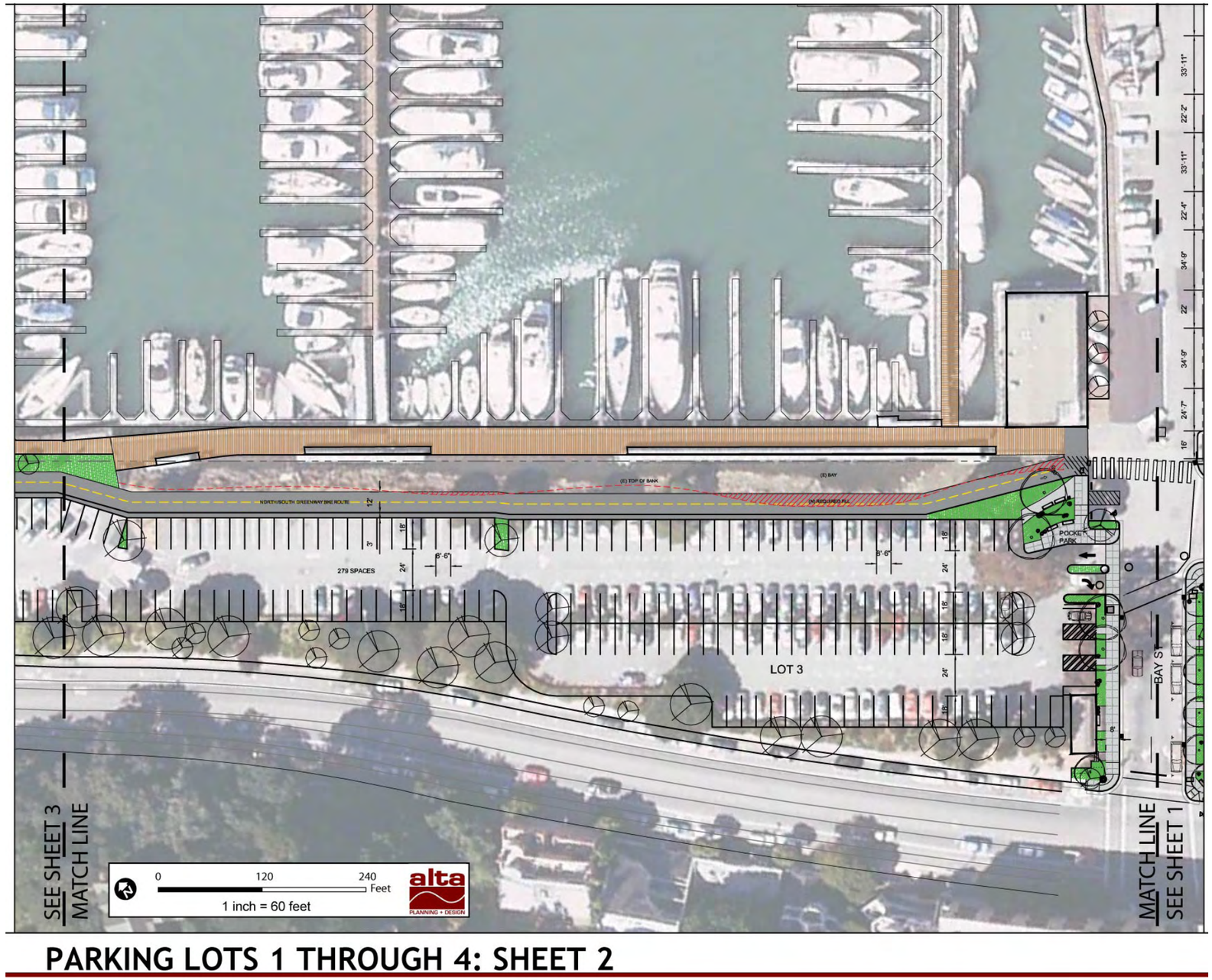


Figure 7-3 Segment 1 Parking Lot 3 Reconfiguration to Allow Space for a Path

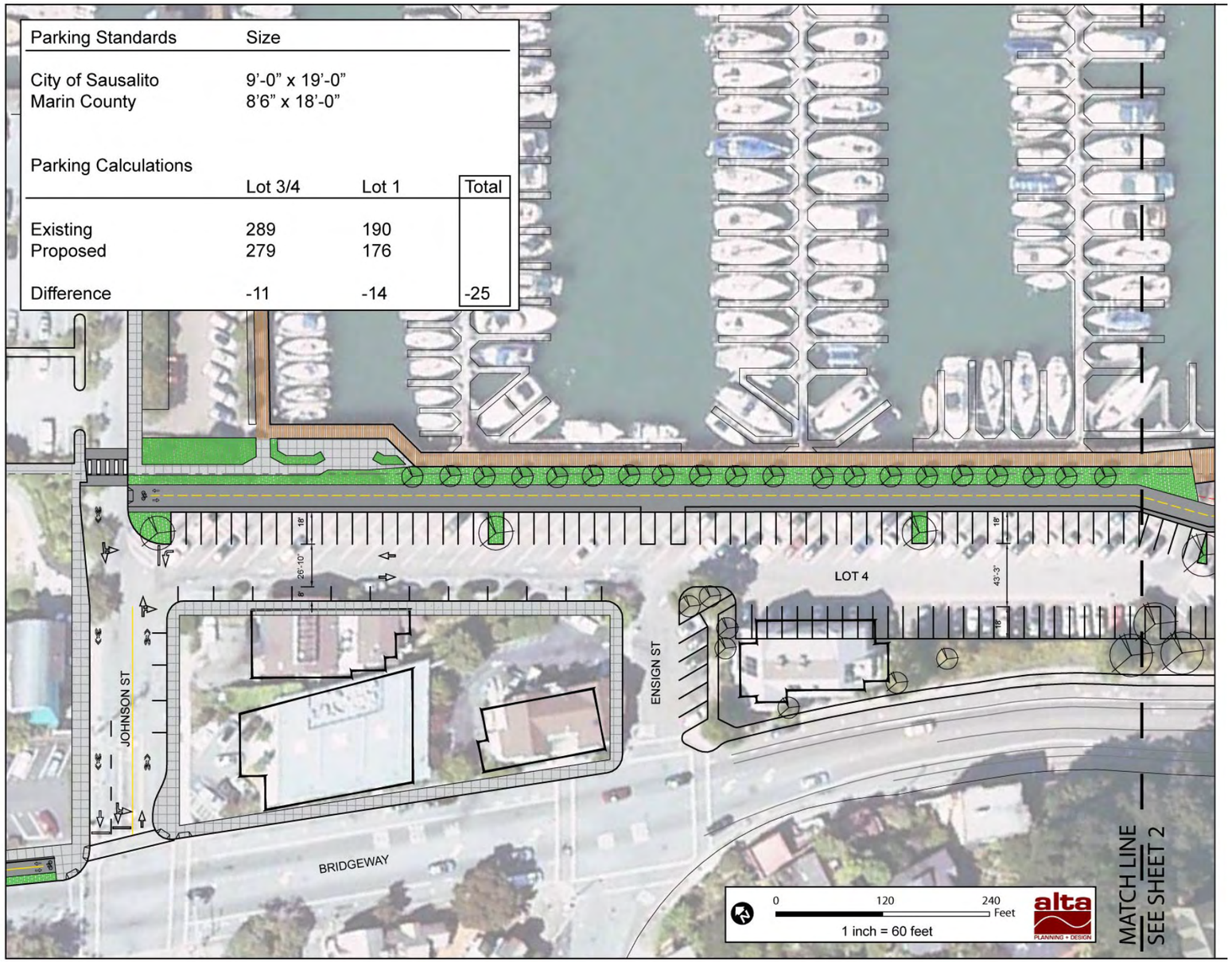


Figure 7-4 Segment 1 Parking Lot 4 Reconfiguration to Allow Space for a Path

This page is intentionally left blank.

7.3.2. Segment 1A Parking Lot 1

From	To	Proposed Facility	Width	Needed Improvements
Sausalito Ferry Terminal	Eastern Parking Row in Lot 1	Multi-Use Path	12' 0"	Widening sidewalk Shifting two parking row islands

From the Sausalito Ferry Terminal, the proposed path extends east on the south end of parking lot 1. There is an existing sidewalk approximately six feet wide connecting the Ferry Terminal with Gabrielson Park. This sidewalk can be widened to accommodate both bicyclists and pedestrians before entering the Park. **Figure 7-5** shows existing roadway dimension and **Figure 7-6** shows the proposed improvements. Construction of the proposed pathway requires shifting the exit drive aisle six feet north, resulting in elimination of three parking spaces.

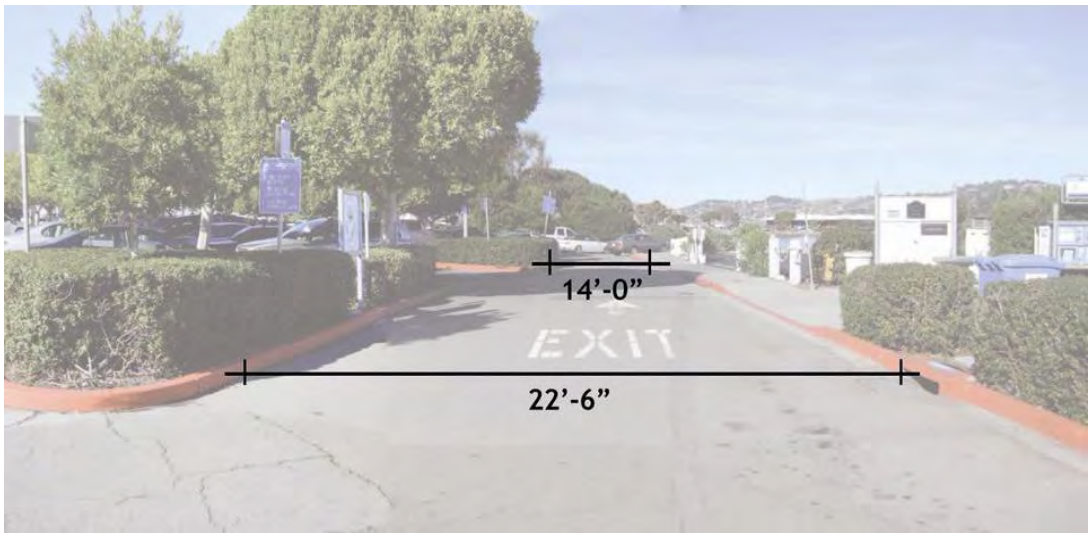


Figure 7-5 Segment 1A Parking Lot 1 Existing Conditions

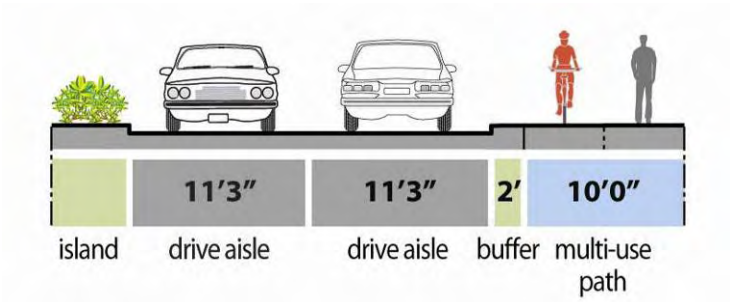


Figure 7-6 Segment 1A Parking Lot 1 Proposed Improvements

7.3.3. Segment 1B Parking Lot 1

From	To	Proposed Facility	Width	Needed Improvements
Eastern Parking Row in Lot 1	Bay Street	Multi-Use Path	12' 0"	Shifting parking row and restriping Path Installation

Continuing north through parking lot 1 to parking 3, a new bicycle path is proposed on the east side of lot 1 where there is an existing parking row and landscaped boundary from Gabrielson Park. Pedestrians would continue east from Segment 1A to the existing path in Gabrielson Park. As **Figure 7-7** shows, the existing east aisle of the parking lot 1 has 90-degree parking spaces. To accommodate the bicycle path, two-feet of space within the landscaped area at the eastern edge of the parking lot is required as is shifting vehicle parking spaces in the eastern parking aisle from 90 to 45-degrees. **Figure 7-8** shows the proposed cross-section for parking lot 1.

Figure 7-7 Segment 1B Parking Lot 1 Existing Condition

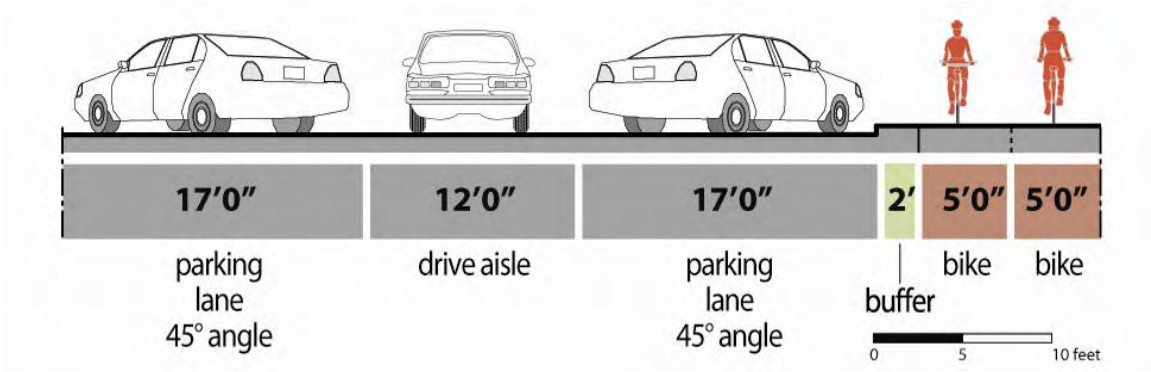


Figure 7-8 Segment 1B Parking Lot 1 Proposed Improvements

The Sausalito City Council approved a Ferry Terminal bicycle parking and circulation plan for the summer of 2010. **Figure 7-9** shows this plan for how passengers should alight from the ferry and queue when waiting to board. People queuing to board with bicycles wait in a separate line from passengers without bicycles. If this bicycle parking and queuing plan is successful in 2010 and is still in operation when the proposed path is developed, an additional queuing area is necessary. Since the proposed path connects to the Ferry Terminal from the east (or north in Figure **7-9**), path users will wait along the proposed path on the south (east side in the Figure) of parking lot 1. Bicyclists in this line will merge with the line shown in the Council approved plan at the base of the Ferry Terminal entrance/exit.

Golden Gate Transit District is developing plans for ferry landing improvements that it still needs to negotiate with the City. For that process, these recommendations can assist the City in describing pedestrian and bicycle needs at the landing location. These recommendations may also need review and modifications depending on the ferry landing improvements that are ultimately built.

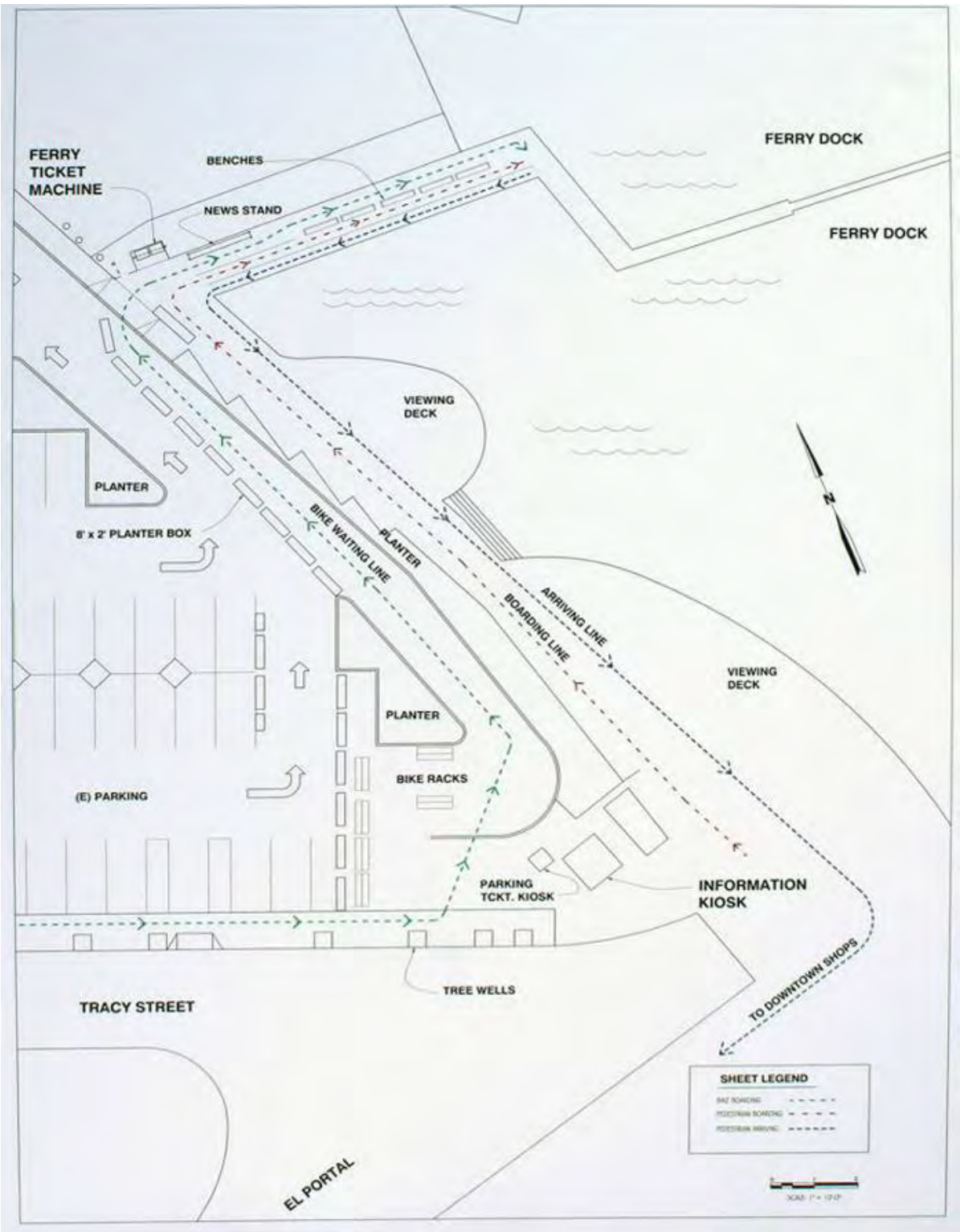


Figure 7-9 Summer 2010 Bike and Pedestrian Route at the Sausalito Ferry Terminal

The intersection improvements at Humboldt Avenue and Anchor Street and at Humboldt Avenue and Bay Street are part of the City's Sausalito Ferry Landing to Downtown project. Like the Ferry Terminal to Gate 6 Road Path Study, the County of Marin Nonmotorized Transportation Pilot Program funded the Ferry Landing project. This project has a design and the City is working to develop the project improvements. The approved design is shown in Figure 7-2 and includes a sidewalk on the north side of Humboldt Avenue. Costs for completing the design for this block are not included in this Study.

7.3.4. Segment 1C Humboldt Avenue – Anchor Street to Bay Street

From	To	Proposed Facility	Width	Needed Improvements
Anchor Street	Bay Street	Multi-Use Path	12' 0"'	Path Installation

The path extends from Parking Lot 1 to Parking Lot 3 along Humboldt Avenue. There is an existing sidewalk that is approximately six feet wide connecting these two points between Anchor Street and Bay Street. The proposed path will join south of Anchor Street and then cross on Humboldt east of the site of the Bridgeway to Ferry Landing Improvement Project. For the path, the sidewalk can be widened either by narrowing the roadway or acquiring right of way from the adjacent private parcel. Implementation of the path on the adjacent private parcel would result in the loss of 17 parking spaces. This is an important connection since this block serves as the transit center for Sausalito. **Figure 7-10** shows existing roadway dimension and **Figure 7-11** shows the proposed improvements.

Figure 7-10: Segment 1C Humboldt Avenue - Anchor Street to Bay Street Existing Conditions

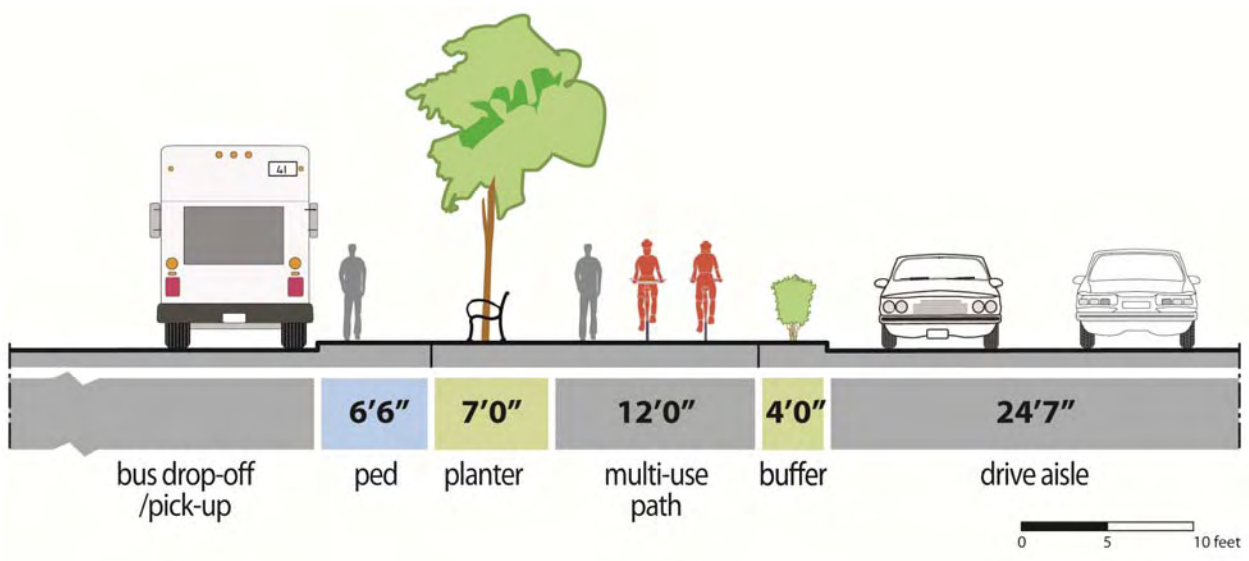


Figure 7-11: Segment 1C Humbold Avenue - Anchor Street to Bay Street Proposed Improvements

7.3.5. Segment 1D Parking Lot 3 South

From	To	Proposed Facility	Width	Needed Improvements
Bay Street	Parking Lot 3 North	Bicycle Path	12' 0"'	Shifting parking rows and restriping Path Installation

North of Bay Street, the path splits into two separate facilities for pedestrians and bicyclists. The pedestrian path follows the existing boardwalk to the east and the proposed bicycle path splits to the west along the east boundary of parking lot 3. **Figure 7-12** shows the existing conditions for this lot -two circulation aisles and four rows of 90-degree parking. On the east edge of the lot there is a grass buffer between the edge of asphalt and Richardson Bay ranging from approximately 4 to 20 feet wide.

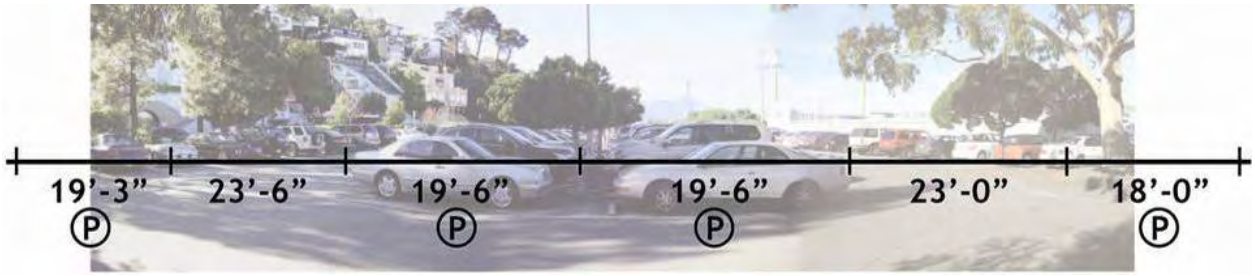


Figure 7-12 Segment 1D Parking Lot 3 South Existing Conditions

The two-way 10 foot bicycle path is recommended for the eastern edge of parking lot 3. To accommodate the path, fill and a new seawall are required along the eastern border of the parking lot, east of the existing parking stalls and west of the boardwalk. **Figure 7-13** shows the proposed cross-section for parking lot 3

south. As Figure 7-3 shows, the parking lot circulation would remain the same with 90-degree parking spaces. However, for the recommended design, County of Marin parking stall dimensions will need to be used.

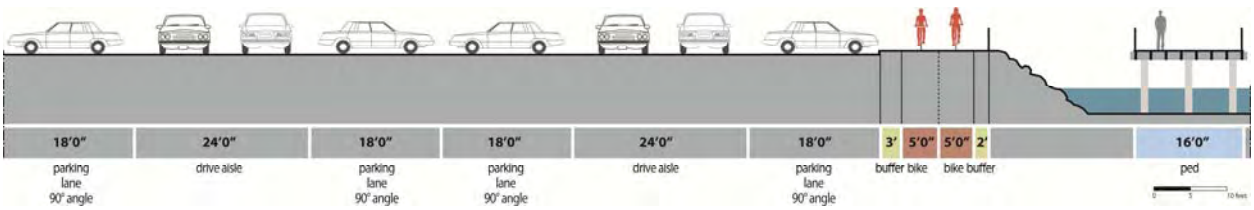


Figure 7-13 Segment 1C Parking Lot 3 South Proposed Improvements

7.3.6. Segment 1E Parking Lot 3 North

From	To	Proposed Facility	Width	Needed Improvements
Parking Lot 3 South	Parking Lot 4 South	Bicycle Path	14' 0"	Shifting parking row and restriping Path Installation

In parking lot 3 north, the recommended bicycle path alignment continues on the east side of the lot between the parking aisle and Richardson Bay and the pedestrian path continues along the existing boardwalk. **Figure 7-14** shows the existing conditions for this lot, one circulation aisle and two rows of 90-degree parking. On the east edge of the lot there is a grass buffer between the edge of asphalt and Richardson Bay ranging from approximately 4 to 20 feet wide.

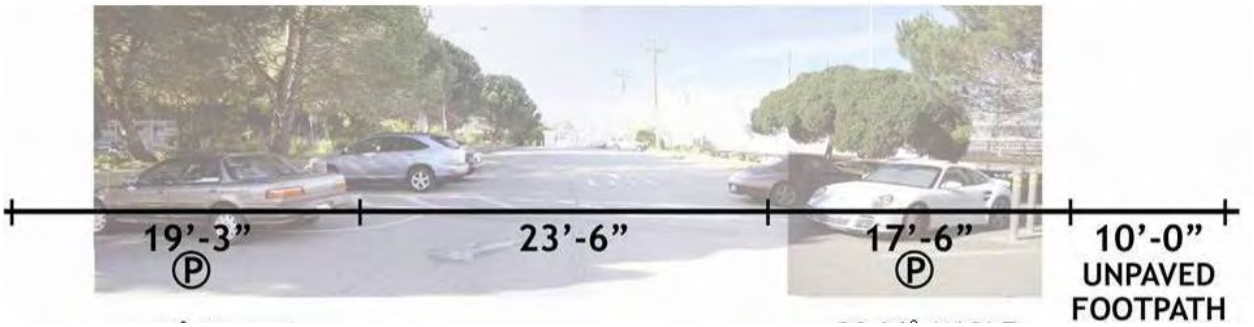


Figure 7-14 Segment 1D Parking Lot 3 North Existing Conditions

As **Figure 7-15** shows, the recommended bike path is 10 feet wide with buffers on both sides. Parking lot 3 north requires fill and a new seawall to create space for the path. As Figure 7-3 shows, the parking lot circulation would remain the same with 90-degree parking spaces. However, for the recommended design County of Marin parking stall dimensions will need to be used.

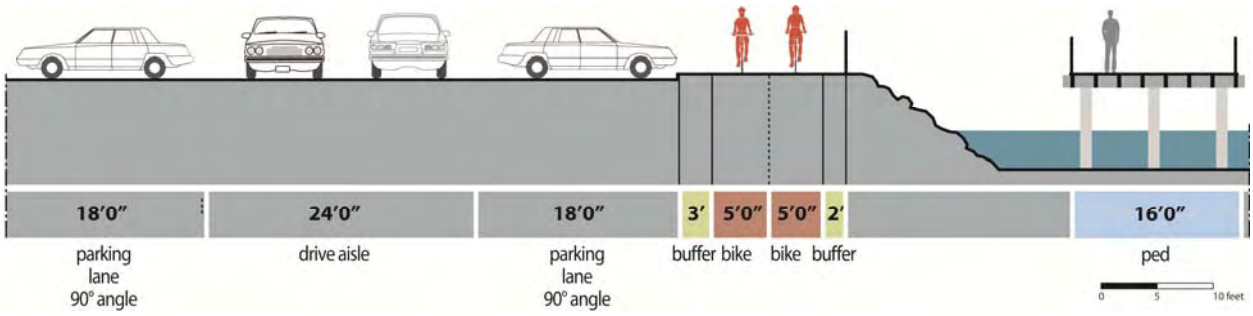


Figure 7-15 Segment 1D Parking Lot 3 North Proposed Improvements

7.3.7. Segment 1F Parking Lot 4 South

From	To	Proposed Facility	Width	Needed Improvements
Parking Lot 3 North	Parking Lot 4 North	Bicycle Path Pedestrian Boardwalk	26' 4"	Widening Boardwalk Parking Lot Restriping

In parking lot 4, the existing pedestrian boardwalk and the proposed bicycle path rejoin and continue north as adjacent parallel facilities. As **Figure 7-16** shows, Parking lot 4 south currently consists of one row of 90-degree parking, two rows of 45-degree angled parking and two drive aisles. On the east side is the existing pedestrian boardwalk.

Figure 7-16 Segment 1E Parking Lot 4 South Existing Conditions

As **Figure 7-17** shows, the recommended bicycle and pedestrian paths are on the east side of the parking lot. The existing boardwalk is widened to accommodate an adjacent bicycle path. The recommended bicycle path is 10 feet wide with buffers on both sides. The existing trees and tree wells remain.

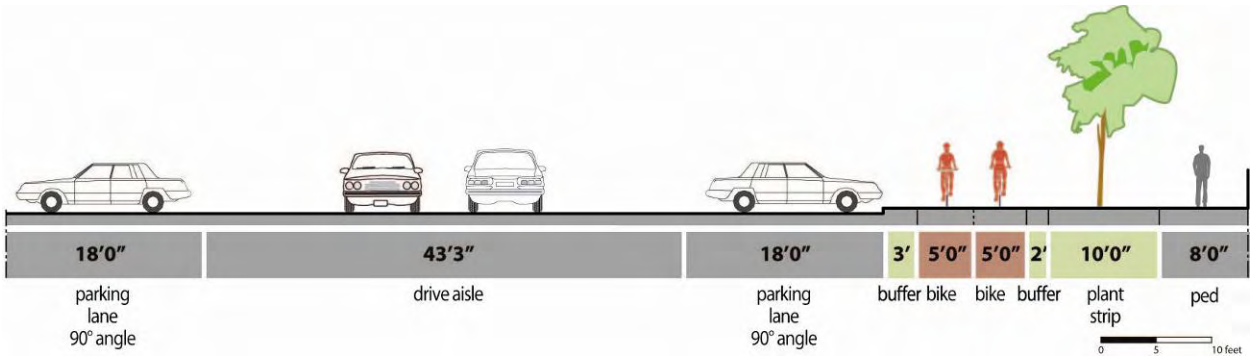


Figure 7-17 Segment 1E Parking Lot 4 South Proposed Improvements

To provide right-of-way for the path, the parking lot will be reconfigured as Figure 7-4 shows, consisting of two 90-degree parking aisles, one drive aisle and the bicycle and pedestrian paths. The bicycle path travels along the existing easterly drive aisle. For the recommended design, County of Marin parking stall dimensions will need to be used.

7.3.8. Segment 1G Parking Lot 4 North

From	To	Proposed Facility	Width	Needed Improvements
Parking Lot 4 South	Johnson Street	Bicycle Path Pedestrian Boardwalk	26' 4"	Widening Boardwalk Parking Lot Restriping

In parking lot 4 north, the existing pedestrian boardwalk and the proposed bicycle path continue north as adjacent parallel facilities. As **Figure 7-18** shows, Parking lot 4 north currently has one row of parallel parking, two rows of 45-degree angled parking and two drive aisles. On the east side is the existing pedestrian boardwalk.

Figure 7-18 Segment 1F Parking Lot 4 North Existing Conditions

As **Figure 7-19** shows, the recommended bicycle and pedestrian paths are on the east side of the parking lot. The existing boardwalk is widened to accommodate an adjacent bicycle path. The recommended bicycle path is 10 feet wide with buffers on both sides. The existing trees and tree wells remain as existing.

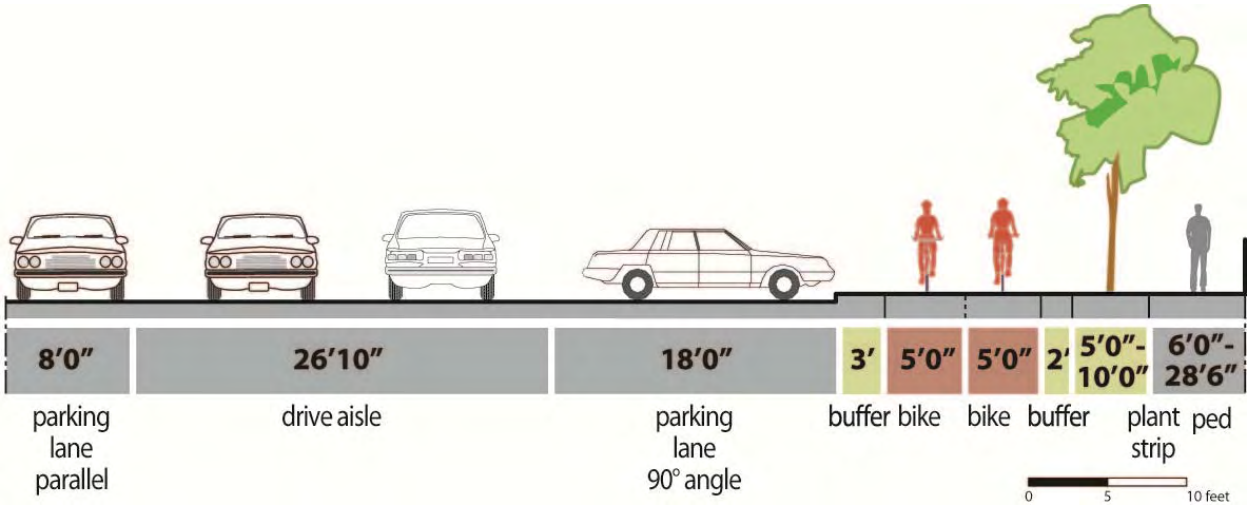


Figure 7-19 Segment 1F Parking Lot 4 North Proposed Improvements

To provide right-of-way for the path, the parking lot will be reconfigured as Figure 7-4 shows, consisting of two 90-degree parking stalls, one drive aisle and the bicycle and pedestrian paths. The bicycle path travels along the existing easterly drive aisle. For the recommended design, County of Marin parking stall dimensions are required.

7.3.9. Segment 1H Johnson Street

From	To	Proposed Facility	Width	Needed Improvements
Parking Lot 4 South/Johnson Street	Bridgeway/Johnson Street	Bicycle Path Pedestrian Boardwalk	15'0"	Raised Crosswalks Path Installation High Visibility Crosswalks

The pedestrian boardwalk and bicycle path transition at Johnson Street where pedestrians cross to the sidewalk on the opposite side of the street and bicyclists ride on the street connecting to Bridgeway. As **Figure 7-20** shows, Johnson Street has two-travel lanes and sidewalks on both sides of the street. The south side of Johnson Street has parallel parking and the north side has 90 degree head-in parking at an adjacent private property.

Figure 7-20 Segment 1G Johnson Street Existing Conditions

Figure 7-4 shows the recommended transition for pedestrians at Johnson Street, crossing a raised crosswalk to the sidewalk on the north side of the street. Bicyclists transition from the path to the street where shared lane markings are recommended. **Figure 7-21** shows the recommend cross-section of Johnson Street.

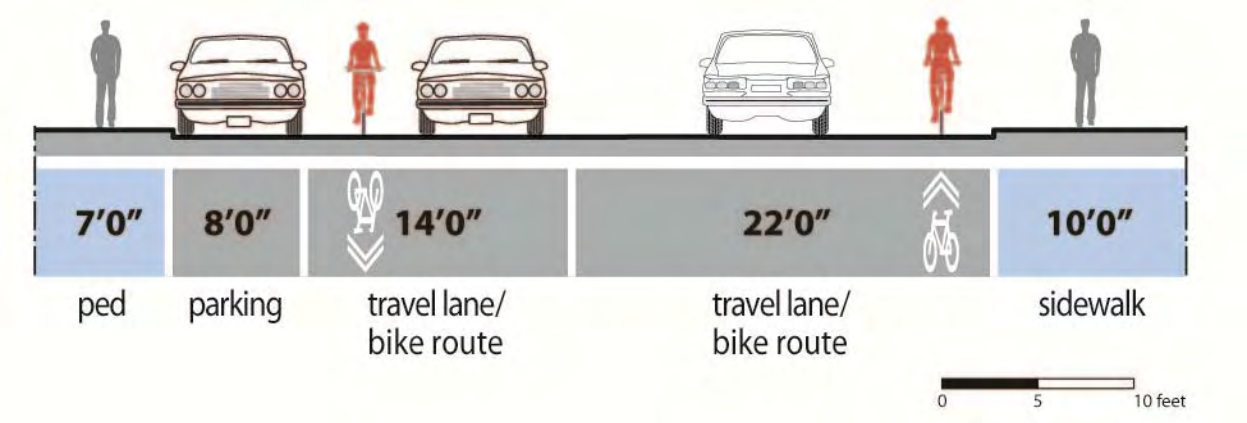


Figure 7-21 Segment 1G Johnson Street Proposed Improvements

7.3.10. Segment 1 Cost Estimate

Table 7-4 presents a cost estimates for the completion of Segment 1 through parking lots 1, 3, and 4. The cost estimate includes all construction, landscaping, and lighting improvements as well as design and permitting.

Table 7-4 Segment 1 Cost Estimate with Intersection A

Item	Cost
Construction Subtotal	$1,040,164
Landscaping & Lighting Subtotal	$124,930
Design and Permitting (15%)	$218,234
Contingency (20%)	$233,019
ROW Acquisition	$422,850 - $563,800
Total Cost	$2,039,200 - $2,180,100

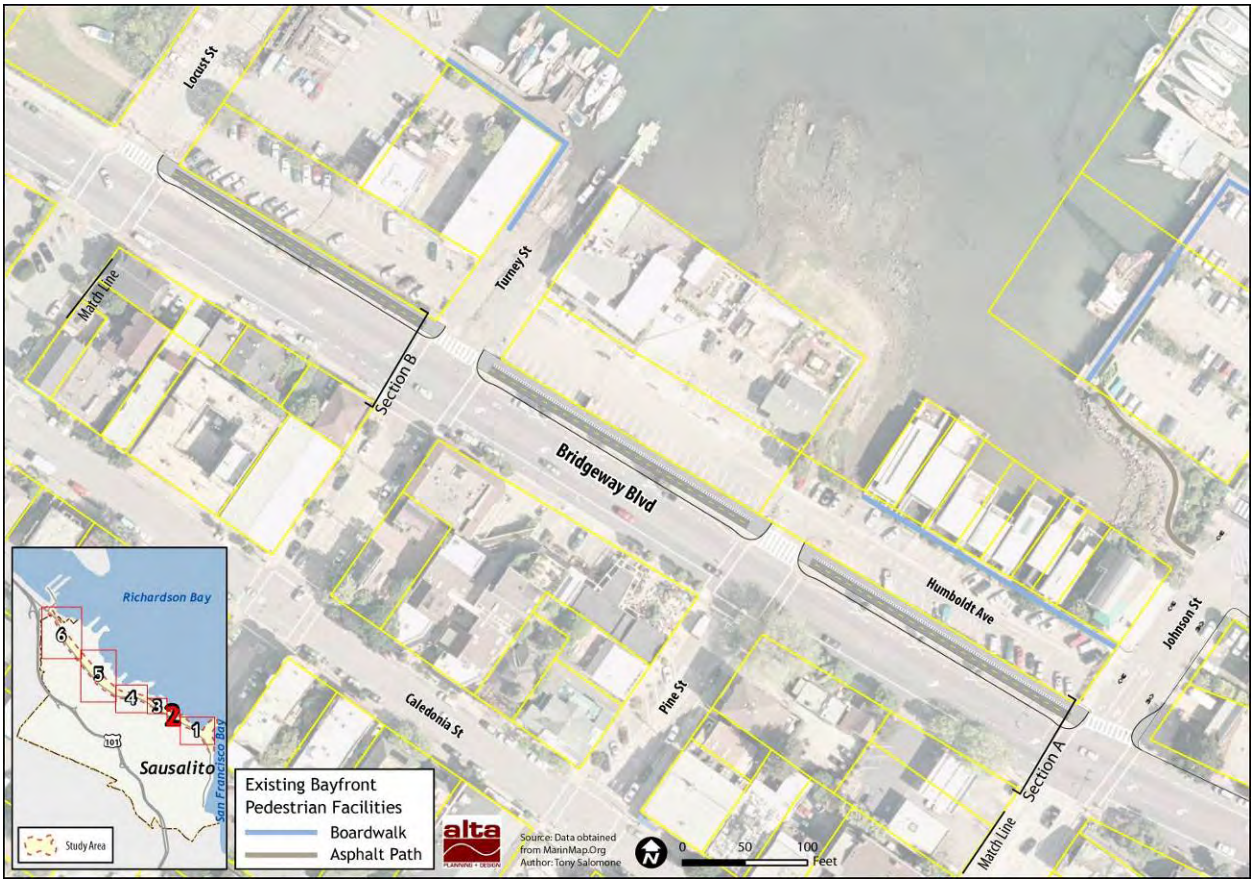


Figure 7-22 Segment 2 Johnson Street to Locust Street

7.4. Segment 2 – Johnson Street to Locust Street

From	To	Proposed Facility	Width	Needed Improvements
Bridgeway/Johnson Street	Bridgeway/Locust Street	Bicycle Path Pedestrian Path	15' 0" – 20'0"	Path Installation High Visibility Crosswalks

Segment 2 extends from the Bridgeway and Johnson Street intersection north to Locust Street. On the east side of Bridgeway the existing right-of-way between the curb line and the property boundaries varies from approximately 15 to 20 feet. This area has an existing sidewalk and parallel substandard bicycle path. West of the existing curb there are parallel parking spaces between the existing sidewalk and the northbound travel lane. **Figure 7-23** shows the existing typical cross-section for this segment.

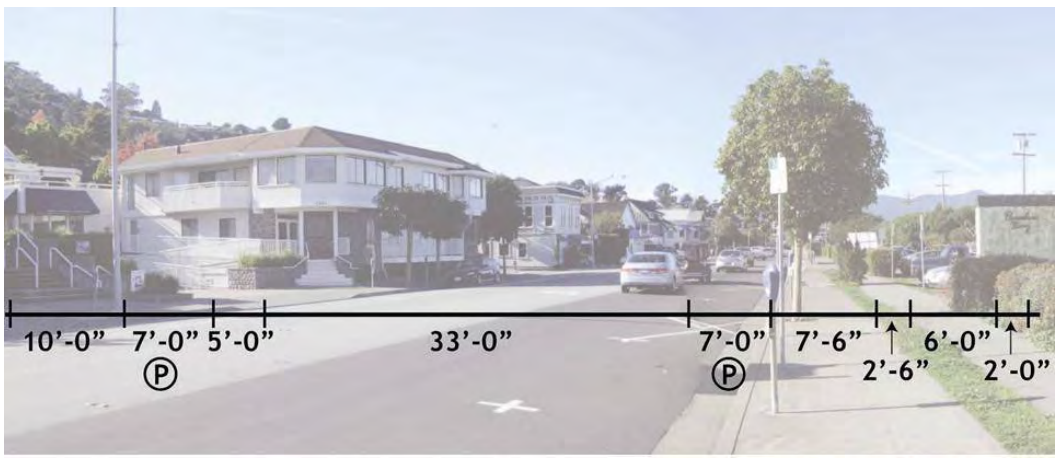


Figure 7-23 Section A Existing Conditions

The proposed path improvement is a separated bicycle and pedestrian path that utilizes all of the right-of-way between the curb line and the property boundaries. The exact cross-section measurements depend on the right-of-way area. Based on parcel data, there is 20 feet of right-of-way width between Johnson Street and Turney Street.[7] As **Figure 7-24** shows, this cross-section includes street trees and a buffer between the bicycle and pedestrian paths. For the remainder of Segment 2, from Turney Street to Locust Street, there is 15 feet of right-of-way and allows a three foot buffer from Bridgeway with the bicycle and pedestrians paths adjacent to one another. This proposed cross-section is in **Figure 7-25**.

[7] Parcel and property line information collected from Marin Map: http://mmgis.marinmap.org/dnn4/

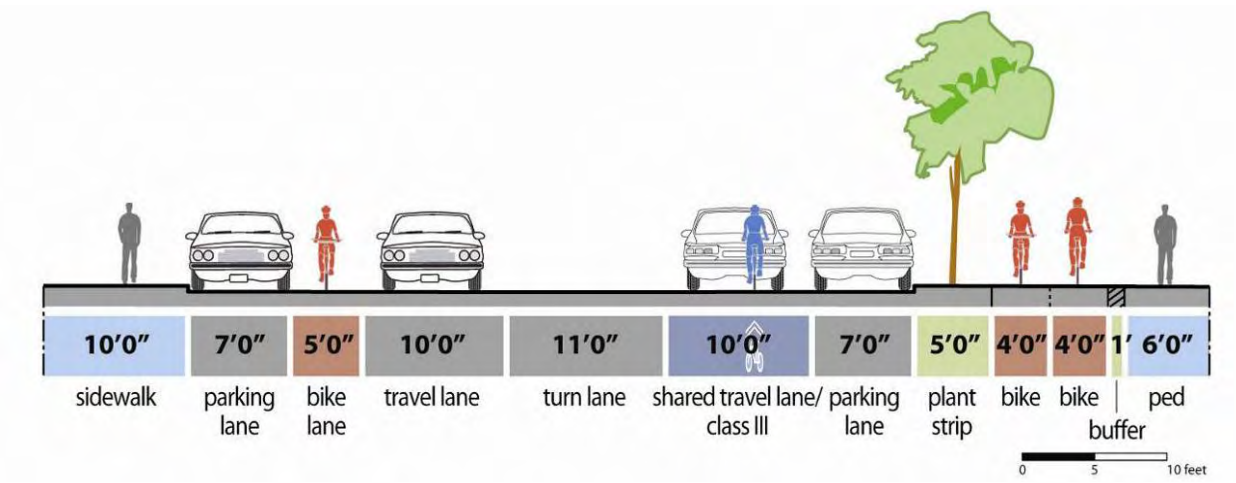


Figure 7-24 Section A Proposed Improvements

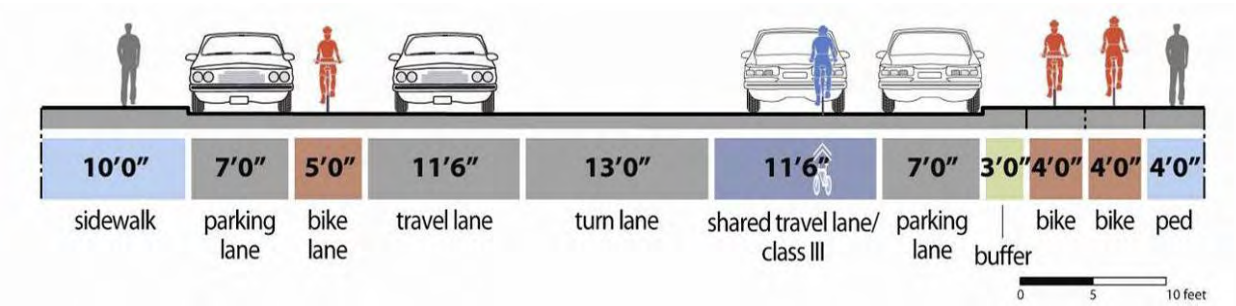


Figure 7-25 Section B Proposed Improvements

Between Johnson Street and Locust Street there is a gap in the existing northbound Bridgeway Class II bicycle lane. There is not adequate width for the lane given the existing parking lane and travel lane dimensions. Adding shared lane markings to the northbound travel lane is recommended, making this gap a Class III bicycle route. This would allow the parking to stay in place and alert motorists of bicyclists' presence in the shared lane. Figure 7-24 and Figure 7-25 show these improvements.

7.4.1. Segment 2 Cost Estimate

Table 7-5 presents the cost estimate for Segment 2, from Johnson Street to Locust Street. The cost estimate includes all construction, landscaping, and lighting improvements as well as design and permitting. Construction costs include the shared lane markings on Bridgeway.

Table 7-5 Segment 2 Cost Estimate

Item	Cost
Construction Subtotal	$227,356
Landscaping & Lighting Subtotal	$53,065
Design and Permitting (15%)	$42,063
Contingency (20%)	$56,084
Total Cost	$378,600

Figure 7-26 Segment 3 Locust Street to Napa Street

7.5. Segment 3 – Locust Street to Napa Street

From	To	Proposed Facility	Width	Needed Improvements
Bridgeway/Locust Street	Existing Path/ Napa Street	Bicycle Path Pedestrian Path	20'0"	Path Installation High Visibility Crosswalks

Segment 3 extends from the Bridgeway and Locust Street intersection north to Napa Street. On the east side of Bridgeway the existing right-of-way between the curb line and the property boundaries is approximately 15 feet between Locust Street and Litho Street. Like Segment 2, this portion of Segment 3 has on-street parallel parking on the east side of Bridgeway without northbound bicycle lanes, but an existing wide sidewalk.

On Bridgeway north of Litho Street, there are Class II bicycle lanes in both travel directions and no on-street parking in the northbound direction. North of Locust Street and adjacent to Bridgeway is an undeveloped private parcel and an undeveloped public parcel. Dunphy Park is north of Litho Street and east of the existing sidewalk. The amount of right-of-way between the Bridgeway curb and the Dunphy Park is approximately 20 feet and more in some areas. **Figure 7-27** shows the existing conditions on Bridgeway adjacent to Dunphy Park.

Figure 7-27 Section C Existing Conditions

The proposed path improvement is a separated bicycle and pedestrian path that utilizes all of the right-of-way between the curb line and the property boundaries. The exact cross-section measurements depend on the right-of-way area. Based on parcel data, there is 15 to 20 feet of space between Locust Street and Litho Street.[8]

[8] Parcel and property line information collected from Marin Map: http://mmgis.marinmap.org/dnn4/

Where the available right-of-way is less than 20 feet, required width to develop the path would come from city property at Dunphy Park and from condition of development at the undeveloped private parcel. This cross-section includes a five foot buffer from Bridgeway with the bicycle and pedestrians paths adjacent to one another.

Like Segment 2, a shared lane is recommended to improve the bicycle lane gap on this block. The shared lane markings are proposed for the northbound travel lane, making this gap a Class III bicycle route as **Figure 7-28** shows. This would allow the parking to stay in place and alert motorists of bicyclists' presence in the shared lane.

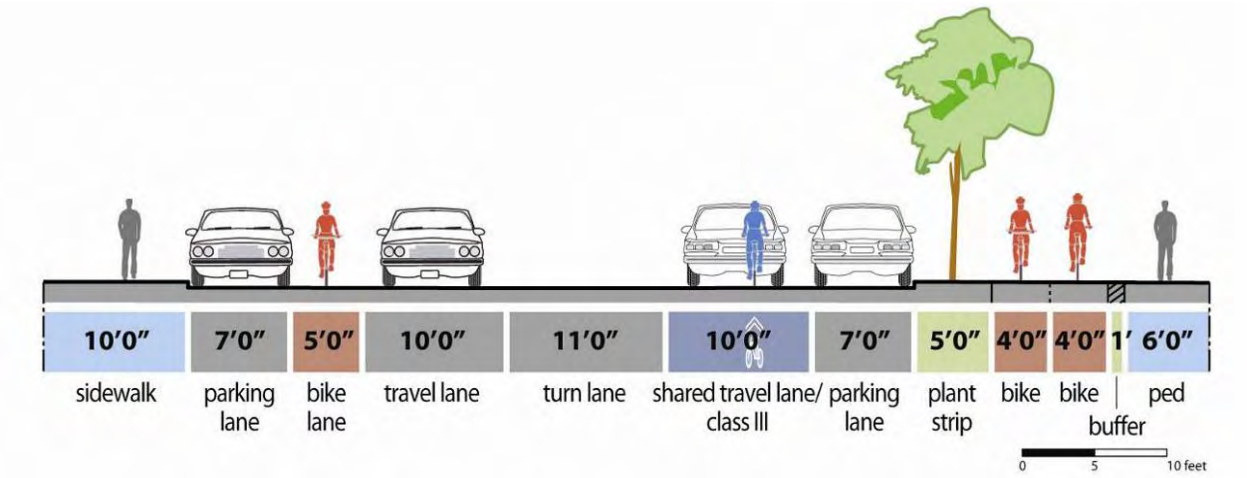


Figure 7-28 Section A Proposed Improvements

North of Litho Street there is 20 feet of right-of-way available between the existing curb line and Dunphy Park. This cross-section includes street trees and a buffer between the bicycle and pedestrian paths. **Figure 7-30** shows this cross-section. The path then transitions to the existing path north of Napa Street. **Figure 7-31** shows improvements for this path crossing. The easterly dogleg allows for a pedestrian connection from the west side of Bridgeway. The path shift at Napa Street meets the parking lot layout needs of the Dunphy Park site plan.[9]

[9] The Dunphy Park site plan is not approved by Sausalito City Council

Figure 7-29: Section C Existing Conditions

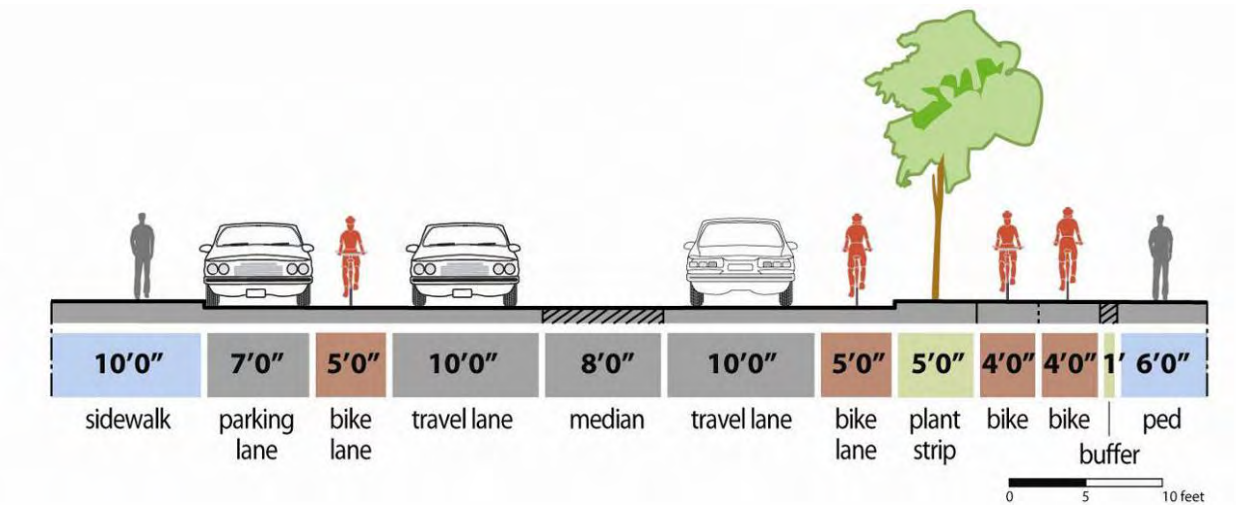


Figure 7-30 Section C Proposed Improvements

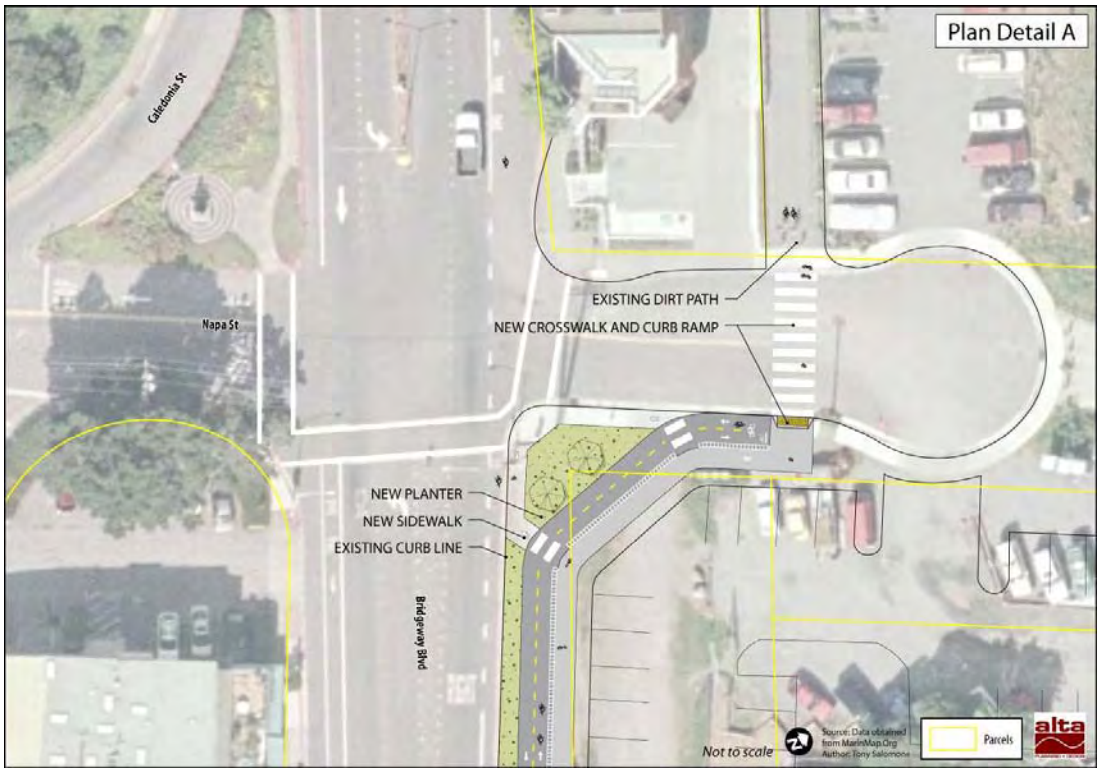


Figure 7-31 Napa Street Intersection

7.5.1. Segment 3 Cost Estimate

Table 7-6 presents the cost estimate for the completion of Segment 3, from Locust Street to Napa Street. The cost estimate includes all construction, landscaping, and lighting improvements as well as design and permitting. Construction costs include modifications to the Dunphy Park parking lot.

Table 7-6 Segment 3 Cost Estimate

Item	Cost
Construction Subtotal	$239,184
Landscaping & Lighting Subtotal	$69,870
Design and Permitting (15%)	$46,358
Contingency (20%)	$61,811
Total Cost	$417,200

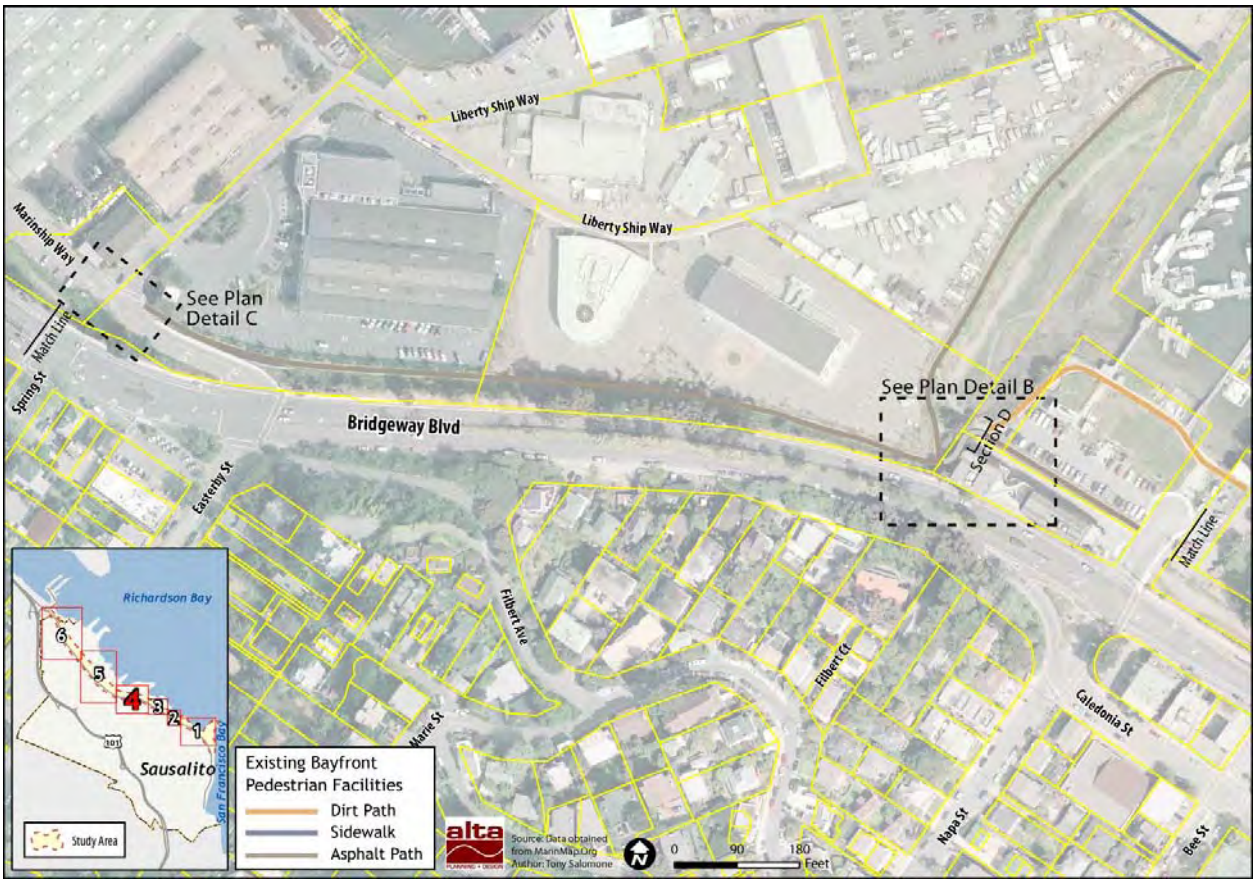


Figure 7-32 Segment 4 Napa Street to Marinship Way

7.6. Segment 4 – Napa Street to Liberty Ship Way

From	To	Proposed Facility	Width	Needed Improvements
Existing Path/ Napa Street	Marinship Way/Liberty Ship Way Intersection	Multi-Use Path	10'0"	Path Installation

Segment 4 extends from Napa Street to the Marinship Way and Liberty Ship Way intersection. There is an existing paved bike path 8 feet 6 inches to 10 feet wide. The only required path improvement along this section is to pave the existing decomposed granite segment at Mono Street. **Figure 7-33** shows the existing conditions, **Figure 7-34** shows the proposed cross-section for improvement, and **Figure 7-35** shows a plan view of the location.

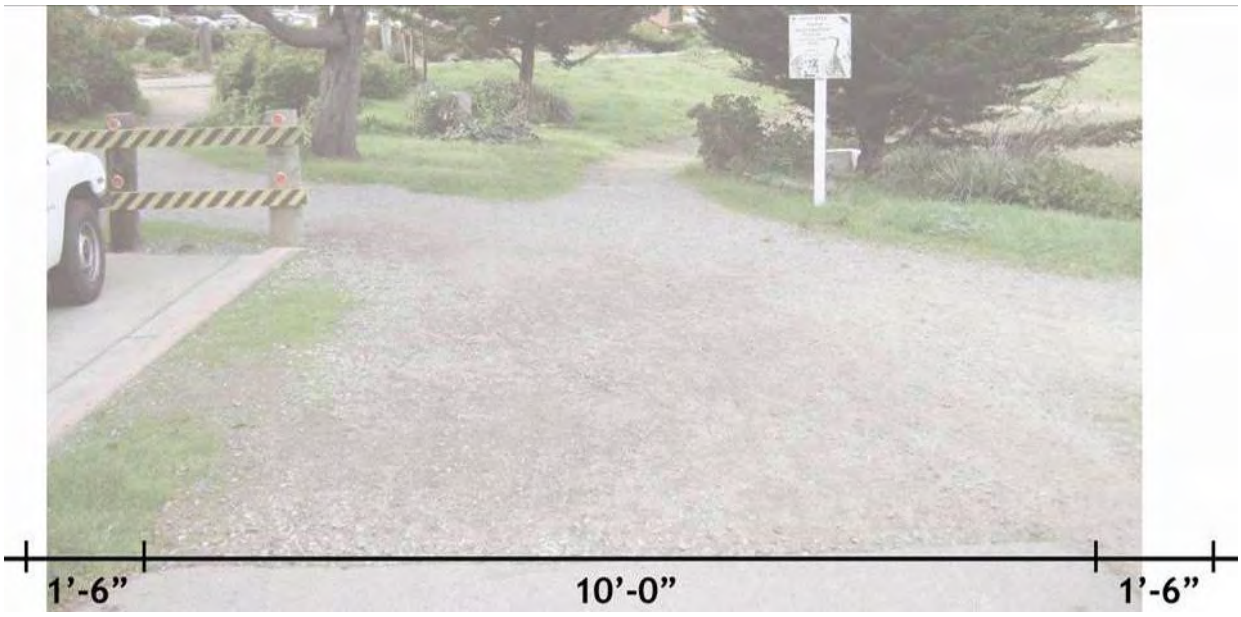


Figure 7-33 Section D Existing Conditions

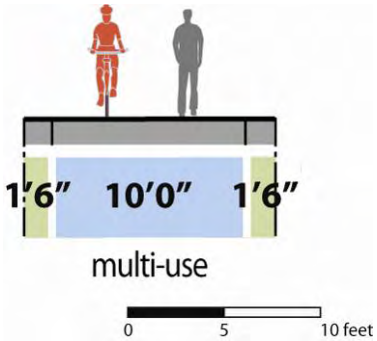


Figure 7-34 Section D Proposed Improvements

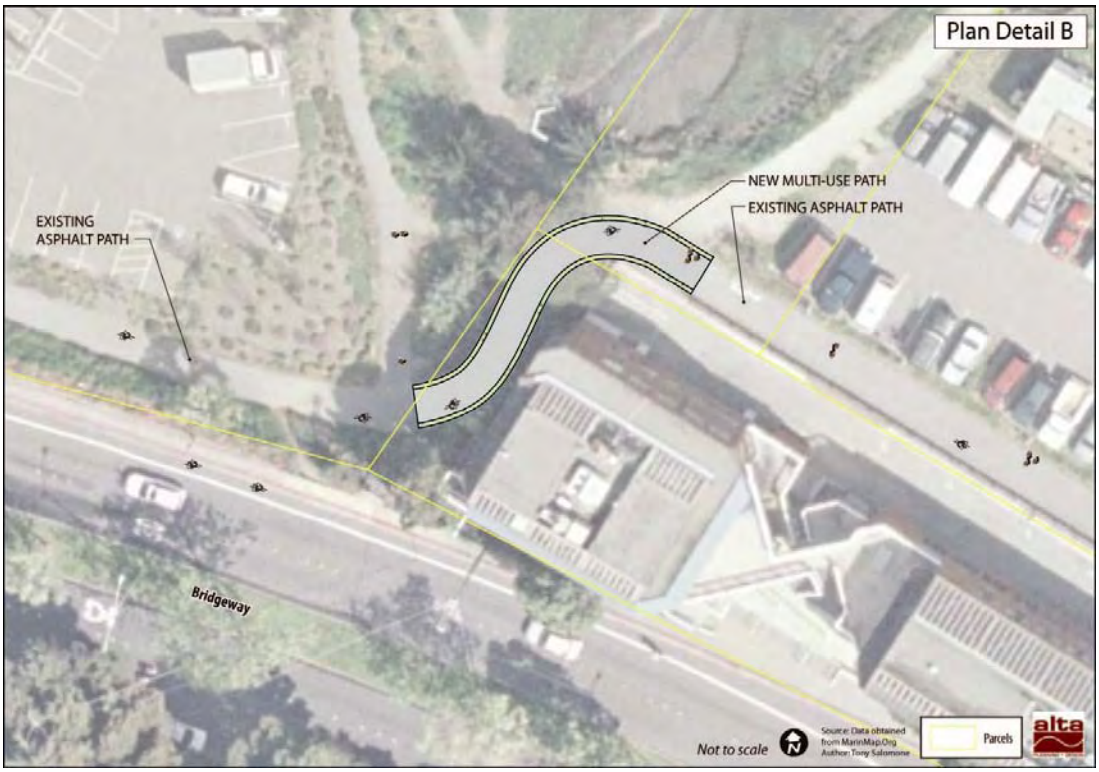


Figure 7-35 Mono Street improvement

Segment 4 also has a bike lane gap on Bridgeway in the southbound direction. The gap is between Easterby Street and Napa Street where there are two vehicle travel lanes in each direction, a median, and a parking lane on the southbound side of the street. Bridgeway is bound by a hill on both sides, constricting the available right-of-way. There is not adequate right-of-way in this segment for bicycle lanes due to the topographic constraints. Shared lane markings are recommended for this southbound section of Segment 4.

The existing Marinship Way and Liberty Ship Way intersection is complicated for bicyclists and pedestrians wishing to cross either street from the existing path. The ramp portion of Marinship Way allows motorists to travel at high speeds from Bridgeway to the intersection. **Figure 7-36** shows the improvements for this intersection. A small pork chop island is recommended to slow and channelize vehicle traffic making the right-turn movement from Marinship Way to Liberty Ship Way as well as to provide a refuge for path users. High visibility crosswalks are recommended at the intersection to alert motorists of bicyclists and pedestrians using the path.

Figure 7-36 Marinship Way and Liberty Ship Way Intersection

7.6.1. Segment 4 Cost Estimate

Table 7-7 presents the cost estimate for the completion of Segment 4, from Napa Street to Liberty Ship Way. The cost estimate includes all construction, landscaping, and lighting improvements as well as design and permitting.

Table 7-7 Segment 4 Cost Estimate

Item	Cost
Construction Subtotal	$17,329
Landscaping & Lighting Subtotal	$9,275
Design and Permitting (15%)	$3,991
Contingency (20%)	$5,321
ROW Acquisition	$111,750 - $149,000
Total Cost	$147,700- $184,900

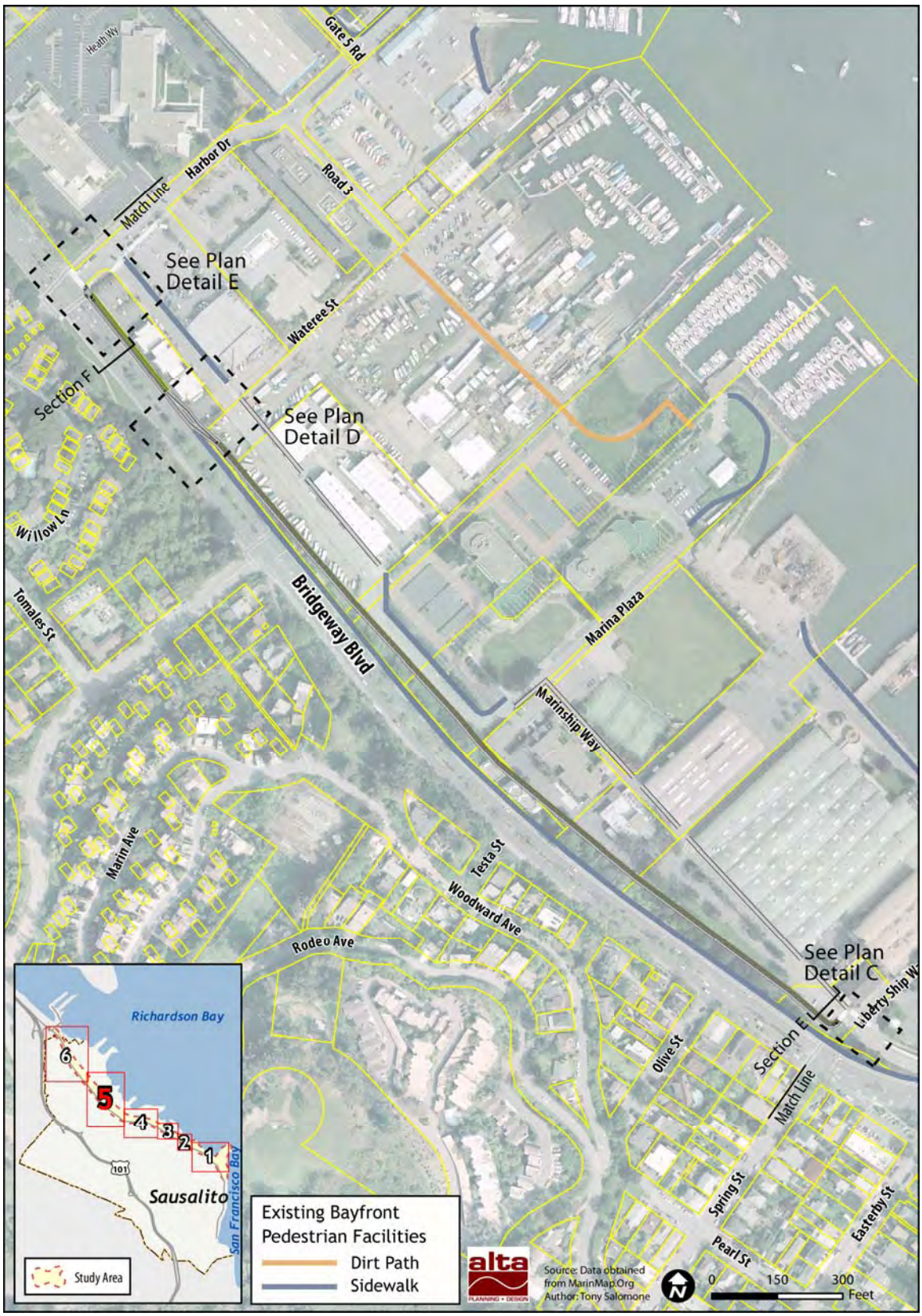


Figure 7-37 Segment 5 Liberty Ship Way to Harbor Drive

7.7. Segment 5 – Liberty Ship Way to Harbor Drive

From	To	Proposed Facility	Width	Needed Improvements
Marinship Way/Liberty Ship Way Intersection	Harbor Drive	Bicycle Path Pedestrian Path	13'0" 5'0"	Path Installation High Visibility Crosswalks

Segment 5 extends from the Marinship Way and Liberty Ship Way intersection north to Harbor Drive. This segment is in the Marinship District of Sausalito where Marinship Way and the parcels are privately owned. On the south end of this segment, west of Marinship Way and east of Bridgeway, there is an informal dirt path along the former railroad right-of-way. **Figure 7-38** shows this parcel as well as the Marinship Way road dimensions on the south end of the segment. To the north of this segment, there are parking lots for private properties abutting the hillside. There are also storage parcels and privately owned buildings. Through Segment 5, Marinship Way is two lanes with two unconnected segments of sidewalk on the east side - north of Testa Street and west of Molly Stone's Grocery Store.

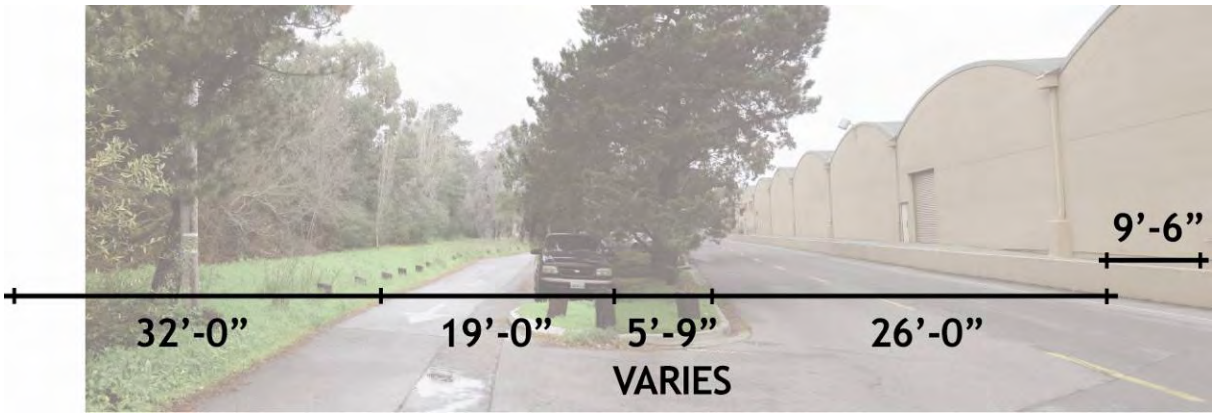


Figure 7-38 Section E Existing Conditions

The recommended alignment for the path is at the base of the slope immediately adjacent to and east of Bridgeway. The recommend path alignment impacts twelve private parcels and one public parcel and extending north until it shifts to Bridgeway. As **Figure 7-39** shows, bicycle improvements are recommended on the west side of Marinship Way with a dedicated path and pedestrian improvements are recommended for the east side of Marinship Way with a new continuous sidewalk. As **Figure 7-40** shows, the bicycle path reconnects with Bridgeway and the sidewalk south of 2400 Bridgeway. Due to narrow right-of-way and two utility poles at this transition point, the pedestrian path is on the inside, adjacent to Bridgeway, before transitioning to the outside of the path north of Harbor Drive. **Figure 7-41** shows the proposed cross-section for this section and as **Figure 7-42** shows, for accommodating bicyclists and pedestrians across the Harbor Drive intersection, a high-visibility crosswalk is recommended.

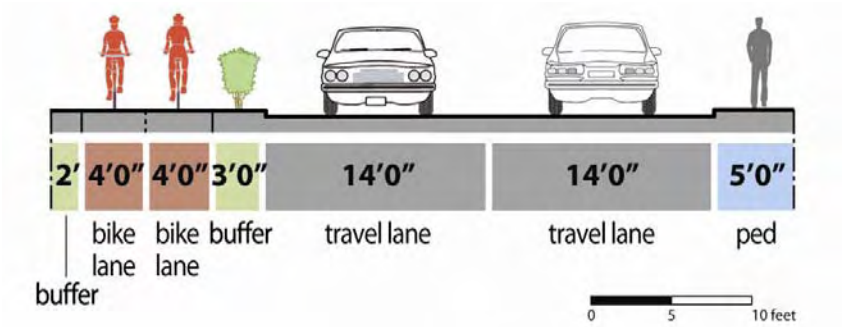


Figure 7-39 Section E Proposed Improvements

Figure 7-40 Marinship – Bridgeway Path Connection

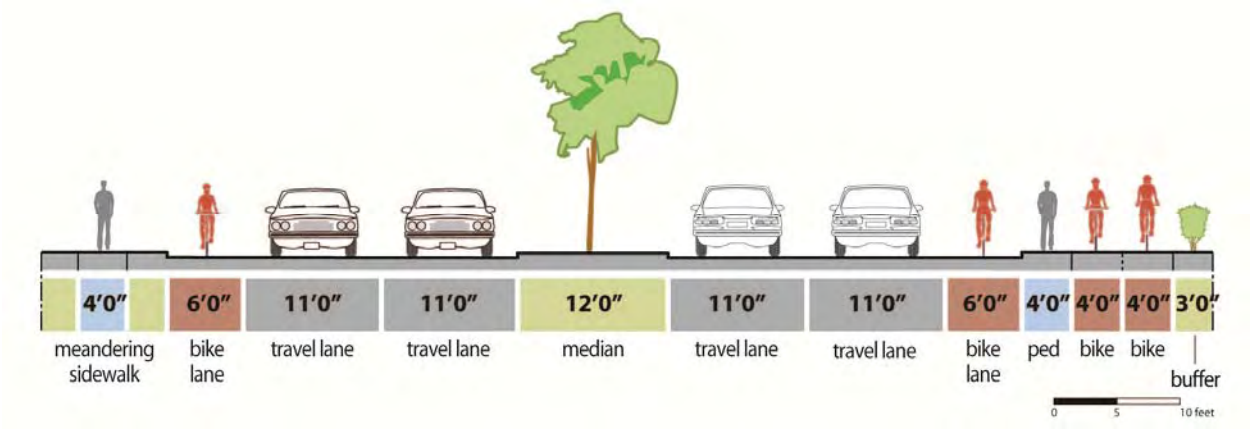


Figure 7-41 Section F Proposed Improvements

Figure 7-42 Harbor Drive Intersection

The recommended path alignment in Segment 5 impacts 12 private properties in the Marinship District. As **Table 7-8** shows, a total of approximately 0.5 acres total is needed from these parcels for the development of the path. The path alignment may also impact the existing parking lot at 2400 Bridgeway, the location where the path transitions back to Bridgeway. For the south section of Segment 5, the bicycle path is on the slope adjacent to Bridgeway. To accommodate the bicycle path, a retaining wall is needed. The path has to be elevated to not impact the hillside building supports of 2200 Bridgeway.

Table 7-8 Approximate Property Requirements for Path through the Marinship District

Parcel Number*	Path Width (ft)	Area (sf)	Area (ac)
063-100-01	12	1,787	0.04
063-100-10	12	2,518	0.06
063-100-11	12	2,494	0.06
063-110-01	12	2,229	0.05
063-110-12	12	1,491	0.03
Public Parcel	12	555	0.01
063-110-09	12	1,127	0.03
063-110-31	12	2,284	0.05
063-110-27	12	2,083	0.05
063-110-28	12	337	0.01
063-120-01	12	4,852	0.11
063-120-02	12 to 14	1,202	0.03
063-130-01	9	797	0.02
Total		23,756	0.55

*Parcel Maps are in Appendix A of this Study

7.7.1. Segment 5 Cost Estimate

Table 7-9 presents the cost estimate for the completion of Segment 5, from Liberty Ship Way Street to Harbor Drive. The cost estimate includes all construction, landscaping, and lighting improvements as well as design and permitting. This cost estimate includes the hillside path and the transition to and continuation along Bridgeway.

Table 7-9 Segment 5 Cost Estimate

Item	Cost
Construction Subtotal	$1,189,330
Landscaping & Lighting Subtotal	$182,740
Design and Permitting (15%)	$205,811
Contingency (20%)	$274,414
ROW Acquisition	$2,415,300 - $3,220,400
Total Cost	$6,437,700 - $7,966,100

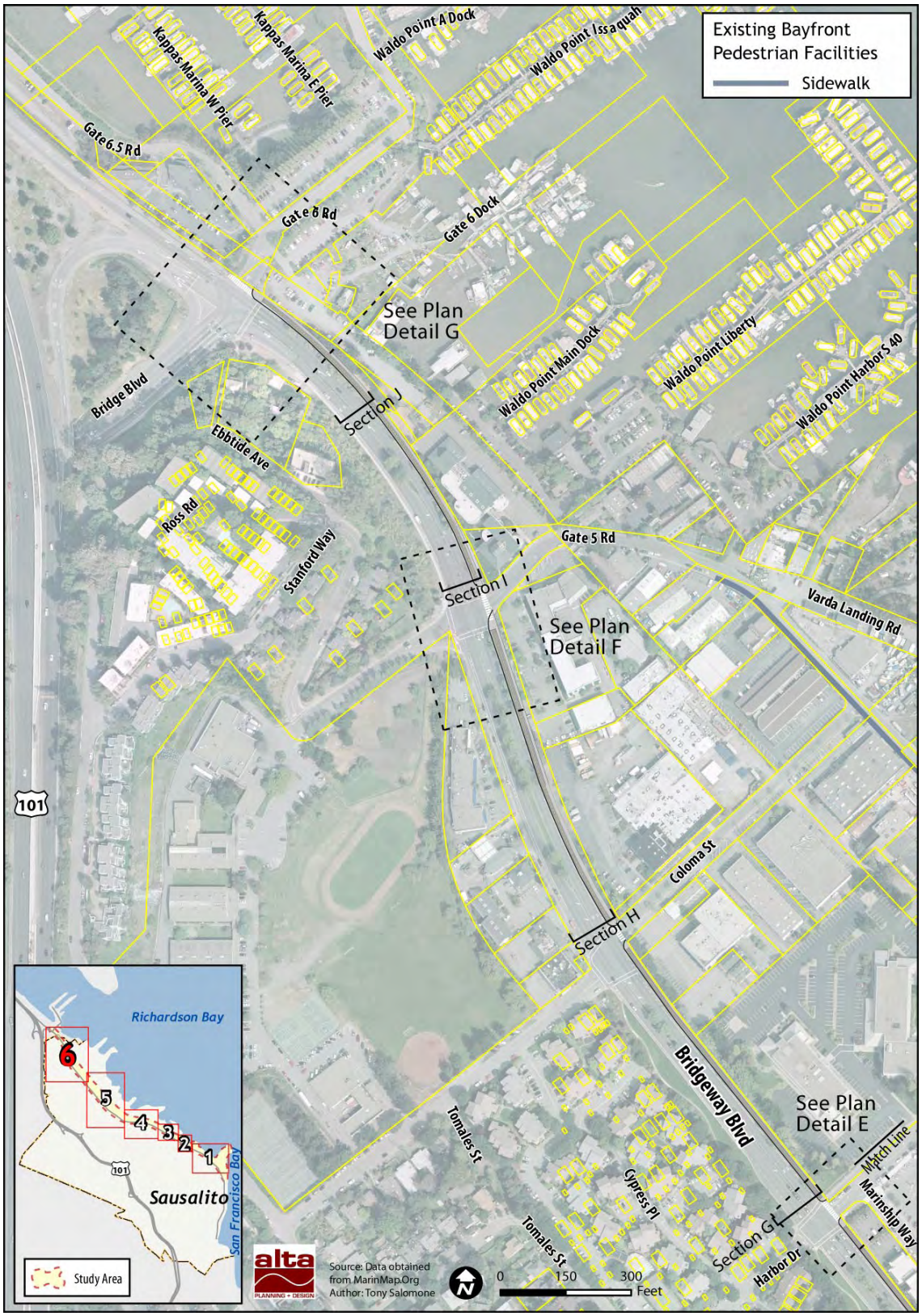


Figure 7-43 Segment 6 Harbor Drive to Gate 6 Road

7.8. Segment 6 – Harbor Drive to Gate 6 Road

From	To	Proposed Facility	Width	Needed Improvements
Harbor Drive	Gate 6 Road	Bicycle Path Pedestrian Path	15'0" 20' 0"	Path Installation High Visibility Crosswalks Bike Signal

Segment 6 extends from Harbor Drive to Gate 6 Road and the Mill-Valley Sausalito Path on Bridgeway. On the east side of Bridgeway, the existing right-of-way between the curb line and the property boundaries range from 15 feet to more than 20 feet. **Figure 7-44**, **Figure 7-45, and Figure 7-46** show the existing sidewalk/path and the available public right-of-way. This segment of Bridgeway has four travel lanes, a center median and bicycle lanes. The existing sidewalk/path has trees adjacent to or in the middle of the path.

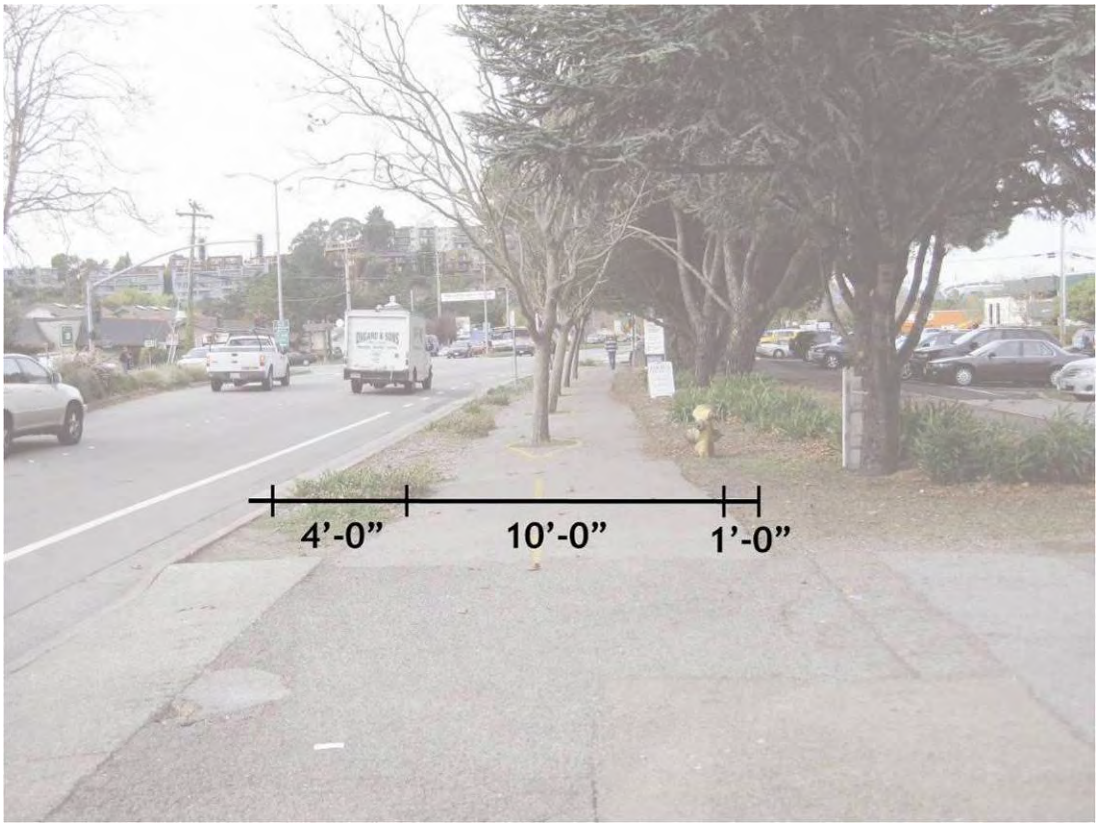


Figure 7-44 Section G Existing Conditions

Figure 7-45 Section H Existing Conditions

Figure 7-46 Section I and J Existing Conditions

The recommended path is located on the east side of Bridgeway following the alignment of the existing sidewalk. As **Figure 7-47**, **Figure 7-48**, **Figure 7-49** and **Figure 7-50** show, the proposed path improvement is a separated bicycle and pedestrian path that utilizes all of the right-of-way between the curb line and the property boundaries if there is less than 20 feet. If there is more than 20 feet of right-of-way available, a 20 foot cross-section is proposed.

As illustrated in the proposed cross sections, removal of approximately 40 to 60 existing trees along the east side of Bridgeway is required to accommodate the proposed pathway between Harbor Drive and Gate 6 Road. The three foot wide landscape buffer proposed in Section G **(Figure 7-47)** and Section I **(Figure 7-49)** is not wide enough to support healthy street trees, thus tree removal would have to be mitigated offsite. In the proposed design, approximately 24 trees can be planted at 25-feet on-center along Section H between Coloma Street and Gate 5 Road, shown in **Figure 7-48.** Approximately 18 trees can be planted 25-feet on-center in Section J, shown in **Figure 7-50**. This on-site replacement will provide for restoration of approximately 50 trees in the landscape strip between the proposed pathway and Bridgeway.

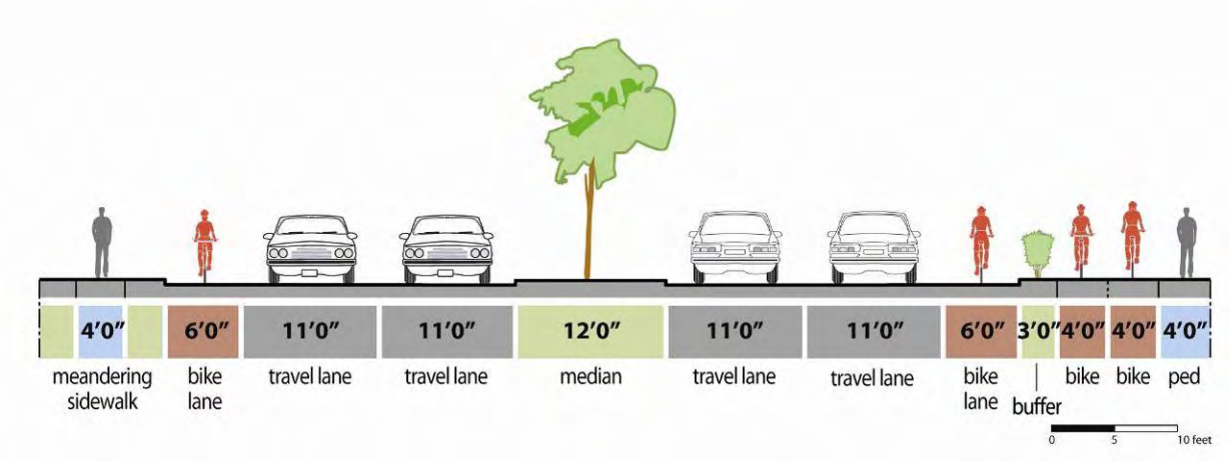


Figure 7-47 Section G Proposed Improvement

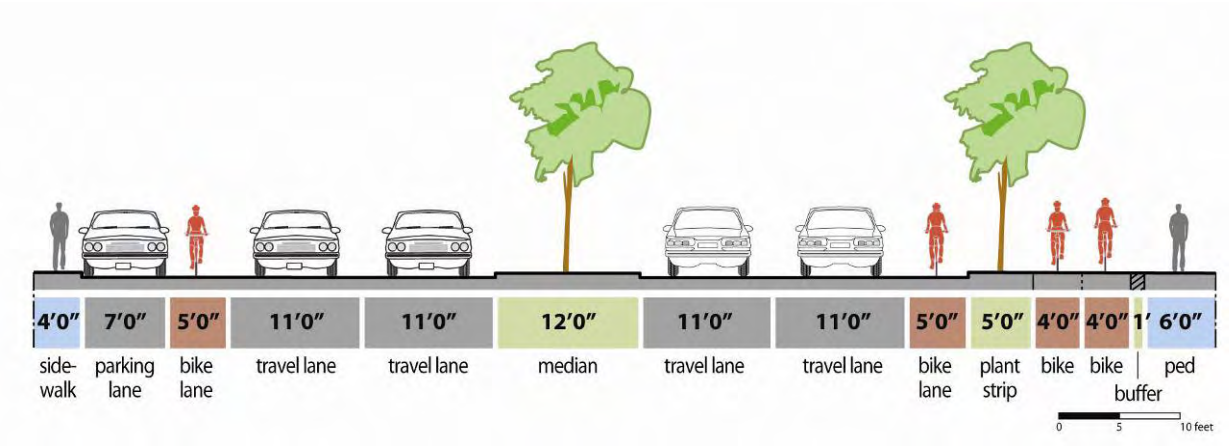


Figure 7-48 Section H Proposed Improvements

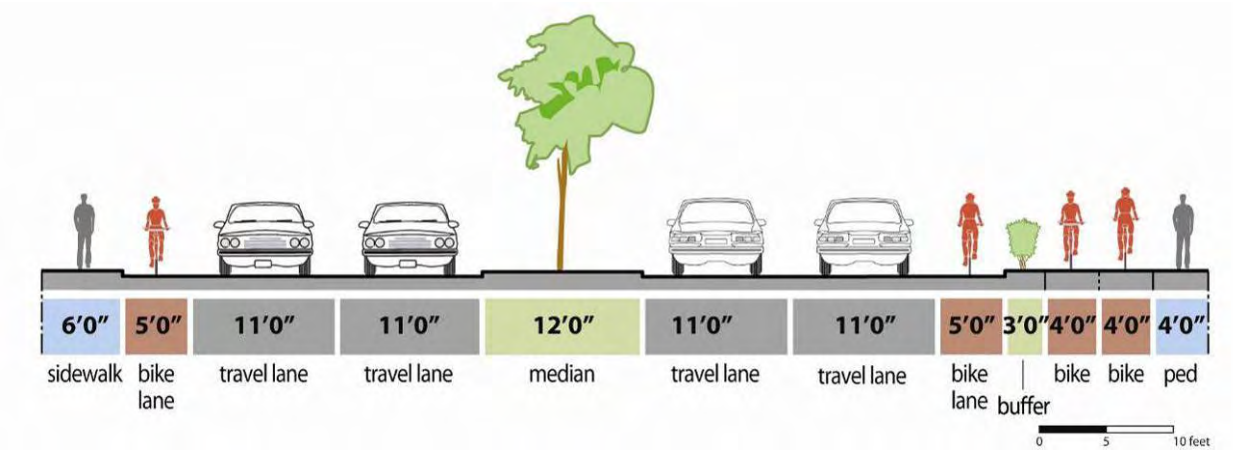


Figure 7-49 Section I Proposed Improvements

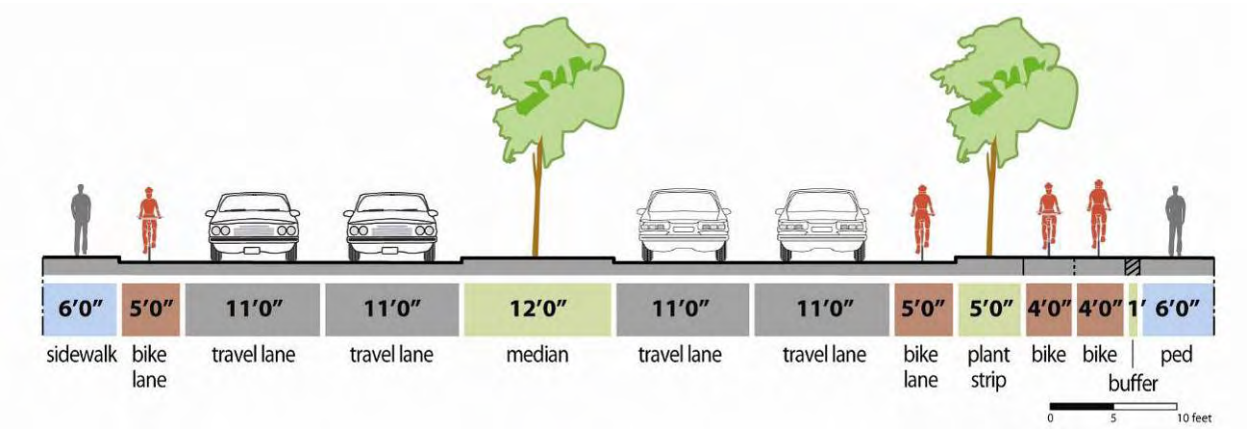


Figure 7-50 Section J Proposed Improvements

7.8.1. Gate 5 Road

The Bridgeway and Gate 5 Road intersection has an existing traffic signal and a pork-chop island on Gate 5 Road separating right turning vehicles from the left-through lane. Improvements are recommended for this intersection to provide a crossing point for bicyclists using the path in the southbound direction and connecting to the southbound Bridgeway bicycle lanes. **Figure 7-51** presents these improvements- stop controlling the right turning vehicles, not permitting right on red traffic movements, a high-visibility crosswalk, and a dedicated bicycle signal. These are all recommended if improvements described in the following section for Gate 6 Road are not achievable by the City, County, and Caltrans. To install the bicycle signal at Gate 5 Road, the City must determine if there is adequate signal time available for a dedicated bicycle and pedestrian phase. With a bicycle signal at Gate 5 Road, the existing bicycle lanes on Bridgeway would remain in both directions.

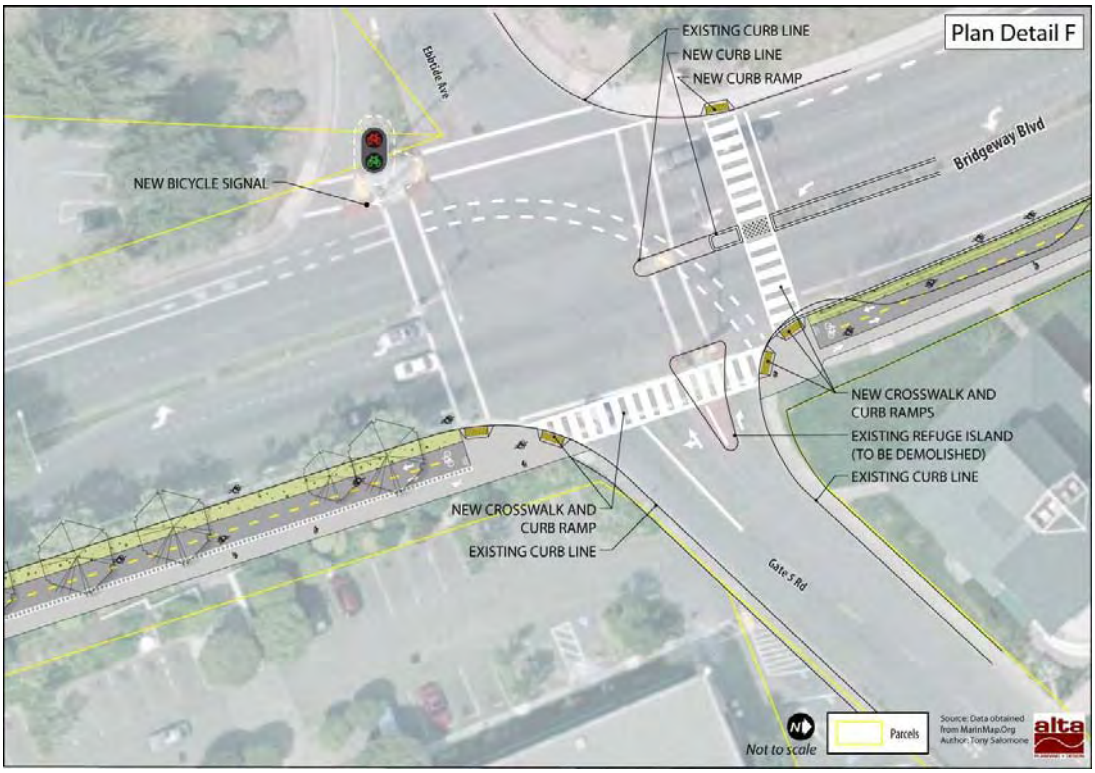


Figure 7-51 Gate 5 Road Intersection Improvement Option - Bike Signal

7.8.2. Gate 6 Road

The Bridgeway and Gate 6 Road intersection is a complex intersection and an important link for the overall success of the proposed path. This is the point of entry into Sausalito for bicyclists and pedestrians travelling south from the Mill Valley-Sausalito Path. Caltrans, the County of Marin and the City of Sausalito operate the Bridgeway and Gate 6 Road intersection. There are a series of different options in **Figure 7-52**, **Figure 7-53**, **Figure 7-54**, and **Figure 7-55** that could improve this intersection for bicyclists and pedestrians. The differences between these four options are in **Table 7-10**. With all of these options, right turns on red signals would not be permitted.

Table 7-10 Gate 6 Road Intersection Improvement Options

Option	Name	Improvements
A	Gate 6 ½ Road Connection	• Mill Valley-Sausalito Path Connection to Gate 6 ½ Road north of Shopping Plaza • Gate 6 ½ Road Shared Lane Markings
B	Bike Signal	• Dedicated Bicycle and Pedestrian Signal Phase • Bicycle Signal for southbound bicyclists exiting the path and entering Bridgeway bicycle lanes
C	Gate 6 Road Path Improvement	• Improve Gate 6 Road Path • Stop lines and stop bars on path and Gate 6 ½ Road intersection
D	Bike Box	• Bike box on east leg in advance of vehicle travel lanes

This Study recommends the installation of a bicycle signal. This device is approved by the CA MUTCD and based on a qualitative review of the intersection it would provide the most benefit for bicyclists in comparison to the other options. The three jurisdictions must determine if there is adequate time in the signal phasing to allow a dedicated bicycle and pedestrian phase.

For the Gate 6 Road improvements to occur, the City, County of Marin, and Caltrans must work together in developing the solution. However, if improvements are not possible at the Bridgeway and Gate 6 Road intersection, a bicycle signal is recommended for the Gate 5 Road intersection as shown in Figure 7-51. The Gate 6 Road intersection is preferable because bicyclists wishing to use the southbound bicycle lanes will either ride on the recommended path where there will be a slower design speed than the Bridgeway bicycle lanes or cross as they do under the existing conditions at Gate 6 Road.

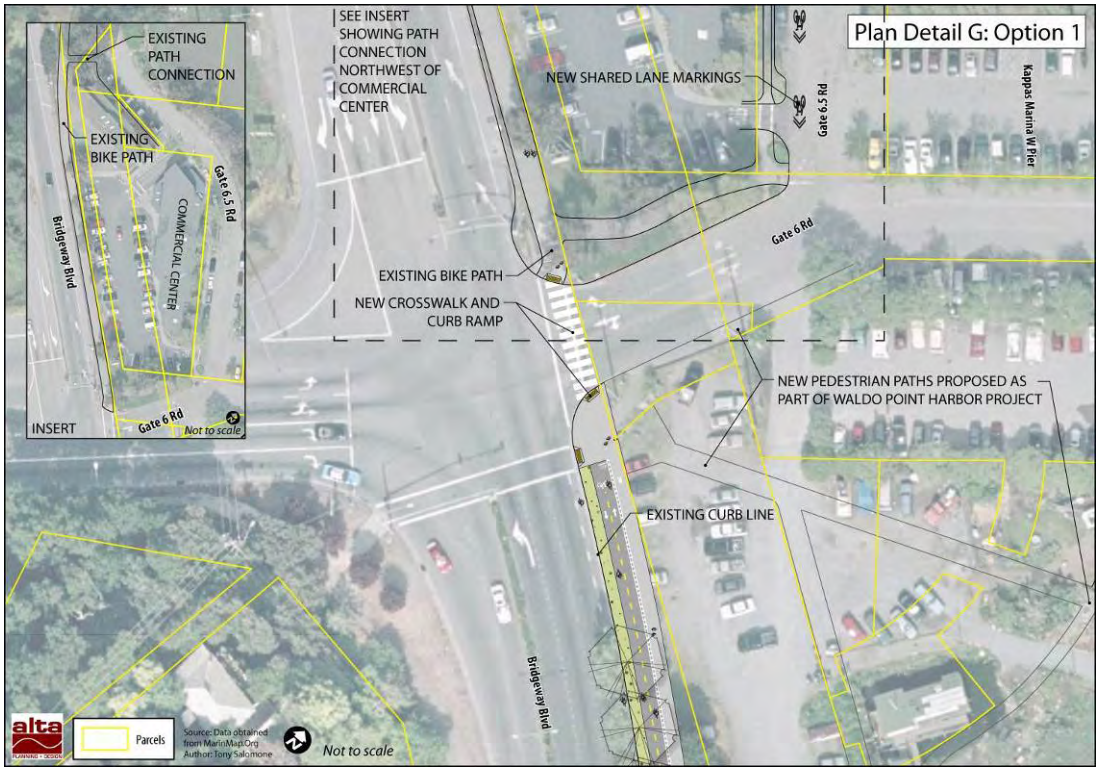


Figure 7-52 Gate 6 Road Intersection Improvement Option A
Gate 6½ Road Connection

Figure 7-53 Gate 6 Road Intersection Improvement Option B Bike Signal

Figure 7-54 Gate 6 Road Intersection Improvement Option C Gate 6 Road Path Improvement

Figure 7-55 Gate 6 Road Intersection Improvement Option D Bike Box

7.8.3. Segment 6 Cost Estimate

Table 7-11 presents the cost estimate for the completion of Segment 6, from Harbor Drive to Gate 6 Road. The cost estimate includes all construction, landscaping, and lighting improvements as well as design and permitting. For the north section of this segment, the estimate assumes a bike signal as Figure 7-53 shows, at the Gate 6 Road intersection and not at the Gate 5 Road intersection.

Table 7-11 Segment 6 Cost Estimate

Item	Cost
Construction Subtotal	$758,436
Landscaping & Lighting Subtotal	$175,645
Design and Permitting (15%)	$140,112
Contingency (20%)	$186,816
Total Cost	$1,261,000

7.9. Project Cost Estimate

The Sausalito Ferry Terminal to Gate 6 Road Path will cost approximately $4.9 million. **Table 7-12** presents the subtotal for the six project segments and the total cost of the project. Chapter 8 presents an implementation strategy for developing the path over a 15 year period.

Table 7-12 Sausalito Path Cost Estimate

Segment	Total Cost
Segment 1	$2,039,200 - $2,180,100
Segment 2	$378,600
Segment 3	$417,200
Segment 4	$147,700- $184,900
Segment 5	$6,437,700 - $7,966,100
Segment 6	$1,261,000
Project Total	$10,681,400 - $12,387,900

This page is intentionally left blank.

8. Implementation Strategy

8.1. Introduction

This chapter presents recommended phasing for the Sausalito Ferry Landing to Gate 6 Road Path corridor improvements. A key project goal is to secure major funding to implement significant path connectivity improvements in as short a timeframe as feasible. To assist with implementation, the corridor improvements have been divided between twelve projects. The projects are identified as either a short-, medium-, or long-term potential project. Definitions for these three categories are:

Short-Term Phase (0 to 5 Years): includes projects that can be completed within five years including any additional required study, engineering design development and construction. Projects in this phase include projects that the City is already working on in some capacity.

Mid-Term Phase (5 to 10 Years): includes projects that can be completed in 5 to 10 years. The projects in this phase may require more study including redevelopment, civil engineering, environmental clearance, and focused neighborhood public outreach.

Long-Term Phase (5 to 15 Years): includes projects that can be completed in 5 to 15 years. The projects in this phase require additional detailed study including master planning, major redevelopment, civil engineering, environmental clearance, and focused neighborhood public outreach. Additionally, this phase includes extensive coordination among various private and public stakeholders and requires City easements or acquisition of private property.

Phasing delineation is based on the project team's assessment. In determining phasing priorities, the project team considered:

- *Availability of the right-of-way needed.* Projects proposed within public property scored higher than projects for which private right-of-way would be required.
- *Relative level of support for each project.* Projects that received the most support during public meetings received the highest score in this category.
- *Whether the project would result in a new facility or improvements to an existing facility.* The Ferry Terminal to Gate 6 corridor includes sidewalks, bike lanes, a boardwalk and paved and unpaved paths that currently serve bicyclists and/or pedestrians. Projects that would result in a new facility in an area not currently served by a bicycle or pedestrian facility received the highest score.

Symbols were used to score the projects with the criteria ranging a low benefit or a negative impact to a high benefit or low negative impact. **Table 8-1** presents how each alternative scored according to the evaluation criteria.

Table 8-1 Project Weighing

Project Name		Segment	Availability of Right-of-Way	Community Support	Results in a New Connection
1	Parking Lot 1	1	●	◗	○
2	Parking Lot 2	1	○	◗	●
3	Parking Lots 3 and 4	1	◗	◗	◗
4	Johnson Street	1	●	◗	◗
5	Johnson Street to Napa Street	2 and 3	●	◗	○
6	Gap Closure: Johnson Street to Litho Street	2 and 3	●	●	◗
7	Napa Street to Liberty Ship Way	4	◗	●	◗
8	Gap Closure: Napa Street to Easterby Street	4	●	●	◗
9	Liberty Ship Way to Testa Street	5	○	○	●
10	Testa Street to Harbor Drive	5	○	○	●
11	Harbor Drive to Gate 6 Road	6	●	●	◗
12	Bridgeway/Gate 6 Road Intersection	6	●	●	●

○ Low ◗ Medium ● High

8.2. Phases

For project success, the twelve projects are split into the three phase categories. **Table 8-2** shows the segments and the associated phase: short-, mid-, or long-term. This Study assumes that the City of Sausalito cannot undertake construction of multiple projects at one time but can construction a project while carrying out additional planning for specific segments as needed and project design.

Table 8-2 Project Phasing

Phase	Segment	Project Name
Short-term	Segments 2 and 3	6. Gap Closure: Johnson Street to Litho Street
	Segment 4	8. Gap Closure: Napa Street to Easterby Street
	Segment 6	11. Harbor Drive to Gate 6 Road
	Segment 6	12. Bridgeway/Gate 6 Road Intersection
Mid-Term	Segment 1	2. Parking Lot 2
	Segment 1	4. Johnson Street
	Segments 2 and 3	5. Johnson Street to Napa Street
	Segment 4	7. Napa Street to Liberty Ship Way
Long-Term	Segment 1	1. Parking Lot 1
	Segment 1	3. Parking Lots 3 and 4
	Segment 5	9. Liberty Ship Way to Testa Street
	Segment 5	10. Testa Street to Harbor Drive

8.2.1. Project Descriptions by Phase

This section presents brief descriptions and planning-level cost estimates for the twelve proposed projects. Full descriptions and plan and section illustrations of the projects are provided by alignment segment in Chapter 7 of this report. Costs are rounded to the nearest $100.

Short-Term Phase

Gap Closure: Johnson Street to Litho Street (Segments 2 and 3)

The segment of Bridgeway between Johnson Street and Litho Street includes a southbound bicycle lane and no bicycle lane in the northbound direction. This gap closure project would install shared lane pavement markings along Bridgeway for bicyclists and motorists traveling northbound. **Table 8-3** shows the project cost estimate of $400.

Table 8-3 Gap Closure: Johnson Street to Litho Street Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Pavement Markings	96	SF	$3	$300
		Subtotal Construction Cost			$300
		Contingency (20%)			$57
		Design, Permitting (15%)			$43
		Total Construction Cost			$400

Gap Closure: Napa Street to Easterby Street (Segment 4)

Bridgeway between Napa Street and Easterby Street has a northbound bicycle lane but no southbound bicycle lane. This gap closure project would install shared lane pavement markings along Bridgeway for bicyclists and motorists traveling southbound. As **Table 8-4** Gap Closure: Napa Street to Easterby Street Cost Estimates presents, the project cost estimated is approximately $200.

Table 8-4 Gap Closure: Napa Street to Easterby Street Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Pavement Markings	48	SF	$3	$150
		Subtotal Construction Cost			$150
		Contingency (20%)			$29
		Design, Permitting (15%)			$21
		Total Construction Cost			$200

Harbor Drive to Gate 6 Road (Segment 6)

Proposed improvements between Harbor Drive and Gate 6 Road include an eight foot wide bicycle path and an attached sidewalk along Bridgeway. The sidewalk varies between four and six feet in width. The project cost is an estimated $1,156,400, as presented in **Table 8-5**.

Table 8-5 Harbor Drive to Gate 6 Road Cost Estimate6 Road Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$77,900	$77,900
2	Clearing and Grubbing, Tree Removal	1	LS	$45,000	$45,000
3	SWPPP & Erosion Control	1	LS	$4,500	$4,500
4	Remove Concrete, AC & other surfacing	41,456	SF	$4	$165,824
5	Utility Relocation/Allocation	1	LS	$10,000	$10,000
6	Remove Traffic Striping and Marking	1	LS	$1,500	$1,500
7	Bike Path	18,093	SF	$8	$144,744
8	ADA Ramp	11	EA	$1,000	$11,000
9	Curb and Gutter and AC Conforms	338	LF	$50	$16,900
10	Concrete Islands & Curb	1	EA	$2,500	$2,500
11	Minor Concrete (Sidewalk, Ramp)	17,944	SF	$10	$179,440
12	Pavement Stripes	2,724	LF	$1	$2,724
13	Pavement Markings	2,343	SF	$3	$7,029
14	Path & Roadside Signs	1	LS	$3,500	$3,500
15	Wayfinding Signs	3	EA	$500	$1,500
16	Unsuitable Material	23	CY	$300	$6,900
17	Landscaping, Irrigation	8,729	SF	$5	$43,645
18	Lighting	33	EA	$4,000	$132,000
		Subtotal Construction Cost			$856,606
		Contingency (20%)			$171,321
		Design, Permitting (15%)			$128,491
		Total Construction Cost			$1,156,400

Bridgeway/Gate 6 Road Intersection (Segment 6)

Proposed improvements at the Bridgeway/Gate 6 Road intersection include installation of a bicycle signal and widening of the sidewalk northeast of the intersection. As **Table 8-6** presents, the projects will cost an estimated $104,600.

Table 8-6 Bridgeway/Gate 6 Road Intersection Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$7,000	$7,000
2	Clearing and Grubbing	1	LS	$5,000	$5,000
3	SWPPP and Erosion Constrol	1	LS	$500	$500
4	Remove Concrete, AC & other surfacing	330	SF	$4	$1,320
5	Signal Modifications	1	LS	$60,000	$60,000
6	Pavement Stripes	355	LF	$1	$355
7	Minor Concrete (sidewalk)	330	SF	$10	$3,300
		Subtotal Construction Cost			$77,475
		Contingency (20%)			$15,495
		Design, Permitting (15%)			$11,621
		Total Construction Cost			$104,600

Mid-Term Phase

Parking Lot 2 (Segment 1)

A 12 foot wide multi-use path is proposed along the east side of Parking Lot 2. Implementation of this multi-use path requires the acquisition of private property and conversion of 17 parking stalls. The cost estimate for the path is presented in **Table 8-7** and estimated at $511,900 to $652,800.

Table 8-7 Parking Lot 2 Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$10,590	$10,590
2	Clearing and Grubbing, Tree Removal	1	LS	$2,000	$2,000
3	SWPPP & Erosion Control	1	LS	$750	$750
4	Remove Concrete, AC & other surfacing	3,408	SF	$4	$13,634
5	Utility Relocation/Allocation	1	LS	$1,500	$1,500
6	Import Fill	77	CY	$40	$3,080
7	Bike Path	2,135	SF	$8	$17,080
8	ADA Ramp	2	EA	$1,000	$2,000
9	Curb and Gutter and AC Conforms	187	LF	$50	$9,350
10	Minor Concrete (Sidewalk, Ramp)	164	SF	$10	$1,644
11	Path & Roadside Signs	1	LS	$500	$500
12	Unsuitable Material	2	CY	$300	$570
13	Landscaping, Irrigation	650	SF	$5	$3,250
				Subtotal Construction Cost	$65,948
				Contingency (20%)	$13,190
				Design, Permitting (15%)	$9,892
				Total Construction Cost	$89,000
14	ROW Acquisition	2,819	SF	$150 - $200	$422,850 - $563,800
				Total Parking Lot 2 Cost	$511,900 - $652,800

Johnson Street (Segment 1)

Proposed improvements to Johnson Street include installation of shared land road markings along Johnson Street and a bulb-out at the southeast corner of the Johnson Street/Bridgeway intersection. A raised crosswalk is proposed across Johnson Street in line with the existing boardwalk. With this design, pedestrians are routed to existing sidewalks and bicyclists are routed to Johnson Street. **Table 8-8** presents the cost estimate for improvements to Johnson Street.

Table 8-8 Johnson Street Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$7,413	$7,413
2	Clearing and Grubbing, Tree Removal	1	LS	$1,400	$1,400
3	SWPPP & Erosion Control	1	LS	$525	$525
4	Remove Concrete, AC & other surfacing	2,386	SF	$4	$9,544
5	Utility Relocation/Allocation	1	LS	$1,050	$1,050
6	Evacuation	528	SF	$20	$10,560
7	Raised Crosswalk	528	SF	$40	$21,120
8	ADA Ramp	2	EA	$1,000	$2,000
9	Curb and Gutter and AC Conforms	131	LF	$50	$6,545
10	Minor Concrete (Sidewalk, Ramp)	280	SF	$10	$2,800
11	Path & Roadside Signs	1	LS	$350	$350
12	Planter Island	300	SF	$8	$2,400
13	Pavement Markings	1	LS	$1,000	$1,000
14	Drainage	1	LS	$2,500	$2,500
15	Wayfinding Signs	2	EA	$500	$1,000
16	Unsuitable Material	1	CY	$300	$399
		Subtotal Construction Cost			$70,606
		Contingency (20%)			$14,121
		Design, Permitting (15%)			$10,591
		Total Construction Cost			$95,300

Johnson Street to Napa Street (Segments 2 and 3)

An eight foot wide bicycle path and six foot wide sidewalk are proposed along Bridgeway from Johnson Street to Turnery Street and from Locust Street and Napa Street. An eight foot wide bicycle path and four foot wide sidewalk are proposed along Bridgeway from Turney Street to Locust Street. **Table 8-9** presents the $795,400 cost estimate for this project.

Table 8-9 Johnson Street to Napa Street Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$53,600	$53,600
2	Clearing and Grubbing, Tree Removal	1	LS	$10,000	$10,000
3	SWPPP & Erosion Control	1	LS	$6,000	$6,000
4	Remove Concrete, AC & other surfacing	31,870	SF	$4	$127,480
5	Utility Relocation/Allocation	1	LS	$15,000	$15,000
6	Remove Traffic Striping and Marking	1	LS	$750	$750
7	Reset Parking Bumpers, Meters & Signs	1	LS	$5,000	$5,000
8	Bike Path	13,431	SF	$8	$107,448
9	ADA Ramp	8	EA	$1,000	$8,000
10	Curb and Gutter and AC Conforms	212	LF	$50	$10,600
11	Minor Concrete (Sidewalk, Ramp)	10,392	SF	$10	$103,920
12	Pavement Stripes	1,519	LF	$1	$1,519
13	Pavement Markings	2,445	SF	$3	$7,335
14	Path & Roadside Signs	1	LS	$3,000	$3,000
15	Wayfinding Signs	3	EA	$500	$1,500
16	Unsuitable Material	17	CY	$300	$5,100
17	Landscaping, Irrigation	6,987	SF	$5	$34,935
18	Lighting	22	EA	$4,000	$88,000
		Subtotal Construction Cost			$589,187
		Contingency (20%)			$117,800
		Design, Permitting (15%)			$88,400
		Total Construction Cost			$795,400

Napa Street to Liberty Ship Way (Segment 4)

Proposed improvements between Napa Street and Liberty Ship Way include construction of an approximate 85 foot long, 10 foot wide Class I bicycle path that would connect two existing paths. Project implementation would require acquisition of private property for the path right-of-way. As **Table 8-10** presents, the project is estimated to costs between $147,500 and $184,700.

Table 8-10 Napa Street to Libery Ship Way Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$2,400	$2,400
2	Clearing and Grubbing, Tree Removal	1	LS	$500	$500
3	SWPPP & Erosion Control	1	LS	$500	$500
4	Remove Concrete, AC & other surfacing	850	SF	$4	$3,400
5	Bike Path	850	SF	$8	$6,800
6	Pavement Stripes	85	LF	$1	$85
7	Pavement Markings	1	LS	$1,000	$1,000
8	Path & Roadside Signs	1	LS	$500	$500
9	Wayfinding Signs	4	EA	$500	$2,000
10	Landscaping, Irrigation	255	SF	$5	$1,275
11	Lighting	2	EA	$4,000	$8,000
		Subtotal Construction Cost			$26,460
		Contingency (20%)			$5,292
		Design, Permitting (15%)			$3,969
		Total Construction Cost			$35,700
12	ROW Acquisition	745	SF	$150 - $200	$111,750 - $149,000
		Total Napa St. to Liberty Ship Wy. Cost			$147,500- $184,700

Long-Term Phase

Parking Lot 1 (Segment 1)

Proposed improvements to Parking Lot 1 include construction of a ten foot wide Class I bicycle path from the sidewalk east of Parking Lot 1 north then northwest along the border of the parking lot to Spinnaker Drive. Pedestrians would continue to use the existing path through Gabrielson Park. Implementation of the bicycle path would require restriping of the northernmost parking aisles from 90-degree to 45-degree parking stalls and reconstruction of two planter islands. The bicycle path would not encroach into Gabrielson Park. **Table 8-4** presents the project cost estimate of $214,800.

Table 8-11 Parking Lot 1 Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$22,239	$22,239
2	Clearing and Grubbing, Tree Removal	1	LS	$4,200	$4,200
3	SWPPP & Erosion Control	1	LS	$1,575	$1,575
4	Remove Concrete, AC & other surfacing	7,158	SF	$4	$28,631
5	Utility Relocation/Allocation	1	LS	$3,150	$3,150
6	Remove Traffic Striping and Marking	1	LS	$1,250	$1,250
7	Bike Path	4,534	SF	$8	$36,272
8	ADA Ramp	1	EA	$1,000	$1,000
9	Curb and Gutter and AC Conforms	393	LF	$50	$19,635
10	Concrete Islands & Curb	2	EA	$2,500	$5,000
11	Minor Concrete (Sidewalk, Ramp)	549	SF	$10	$5,489
12	Slurry Seal Parking Lot Pavement	6,938	SF	$1	$6,938
13	Pavement Stripes	210	LF	$1	$210
14	Pavement Markings	497	SF	$3	$1,491
15	Path & Roadside Signs	1	LS	$1,050	$1,050
16	Wayfinding Signs	5	EA	$500	$2,500
17	Unsuitable Material	4	CY	$300	$1,197
18	Landscaping, Irrigation	1,063	SF	$5	$5,315
19	Lighting	3	EA	$4,000	$12,000
		Subtotal Construction Cost			$159,142
		Contingency (20%)			$31,828
		Design, Permitting (15%)			$23,871
		Total Construction Cost			$214,800

Parking Lots 3 and 4 (Segment 1)

Improvements to Parking Lots 3 and 4 include a 12 foot wide Class I bicycle path from Bay Street to Johnson Street. Pedestrians would be routed to the existing boardwalk northeast of the proposed Class I path. Project implementation would require filling in a portion of the San Francisco Bay located immediately northeast of Parking Lot 3 and restriping of Parking Lot 4. **Table 8-12** presents the cost estimate for improvements to Parking Lots 3 and 4, estimated at $1,217,200.

Table 8-12 Parking Lots 3 and 4 Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$65,658	$65,658
2	Clearing and Grubbing, Tree Removal	1	LS	$12,400	$12,400
3	SWPPP & Erosion Control	1	LS	$4,650	$4,650
4	Remove Concrete, AC & other surfacing	21,132	SF	$4	$84,528
5	Utility Relocation/Allocation	1	LS	$9,300	$9,300
6	Remove Traffic Striping and Marking	1	LS	$3,750	$3,750
7	Reset Parking Bumpers, Meters & Signs	1	LS	$7,500	$7,500
8	Earthwork	150	CY	$30	$4,500
9	Import Fill	473	CY	$40	$18,920
10	Rock Slope Protection	120	CY	$100	$12,000
11	Reinforcing Fabric	270	SY	$2	$540
12	Retaining Wall	1,920	SF	$75	$144,000
13	Wall Foundation	320	LF	$150	$48,000
14	Rail/Fence	520	LF	$40	$20,800
15	Bike Path	13,679	SF	$8	$109,432
16	ADA Ramp	2	EA	$1,000	$2,000
17	Curb and Gutter and AC Conforms	1,159	LF	$50	$57,970
18	Concrete Islands & Curb	4	EA	$2,500	$10,000
19	Minor Concrete (Sidewalk, Ramp)	1,621	SF	$10	$16,207
20	Storm Drain Inlet (New & Modified)	8	EA	$4,000	$32,000
21	Slurry Seal Parking Lot Pavement	82,453	SF	$1	$82,453
22	Pavement Stripes	8,180	LF	$1	$8,180
23	Pavement Markings	704	SF	$3	$2,112
24	Path & Roadside Signs	1	LS	$3,100	$3,100
25	Wayfinding Signs	3	EA	$500	$1,500
26	Unsuitable Material	12	CY	$300	$3,534
27	Landscaping, Irrigation	6,473	SF	$5	$32,365
28	Lighting	18	EA	$4,000	$72,000
		Subtotal Construction Cost			$869,399
		Contingency (20%)			$173,880
		Design, Permitting (20%)*			$173,880
		Total Construction Cost			$1,217,200

* Lots 3 and 4 have a 20% design and permitting cost due to the permitting requirements associated with implementing fill in San Francisco Bay.

Liberty Ship Way to Testa Street (Segment 5)

Proposed improvements between Liberty Ship Way and Testa Street include construction of a Class I bicycle

path between Marinship Way and Bridgeway and completion of the sidewalk north of Marinship Way. Project implementation would require private right-of-way acquisition. As Error! Reference source not found. presents, the project is estimated to cost between $3,659,000 and $4,464,700.

Table 8-13 Liberty Ship Way to Testa Street Cost Estimate

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$71,900	$71,900
2	Clearing and Grubbing, Tree Removal	1	LS	$4,350	$4,350
3	SWPPP & Erosion Control	1	LS	$5,000	$5,000
4	Remove Concrete, AC & other surfacing	22,155	SF	$4	$88,620
5	Utility Relocation/Allocation	1	LS	$2,175	$2,175
6	Remove Traffic Striping and Marking	1	LS	$435	$435
7	Import Fill	300	CY	$40	$12,000
8	Bike Path	8,615	SF	$8	$68,920
9	ADA Ramp	14	EA	$1,000	$14,000
10	Curb and Gutter and AC Conforms	973	LF	$50	$48,650
11	Concrete Islands & Curb	1	EA	$2,500	$2,500
12	Minor Concrete (Sidewalk, Ramp)	5,157	SF	$10	$51,570
13	Retaining Structure	4,241	SF	$75	$318,075
14	Railing/Fence	320	LF	$40	$12,800
15	Pavement Stripes	1,000	LF	$1	$1,000
16	Pavement Markings	2,047	SF	$3	$6,140
17	Path & Roadside Signs	1	LS	$1,088	$1,088
18	Wayfinding Signs	1	EA	$500	$500
19	Unsuitable Material	12	CY	$300	$3,600
20	Landscaping, Irrigation	1,940	SF	$5	$9,700
21	Lighting	17	EA	$4,000	$67,860
		Subtotal Construction Cost			$790,883
		Contingency (20%)			$158,177
		Design, Permitting (15%)			$118,632
		Total Construction Cost			$1,067,700
22	ROW Acquisition	16,102	SF	$150 - $200	$2,415,300 - $3,220,400
		Total Libertyship Wy. To Testa St. Cost			$3,659,000 - $4,464,700

Testa Street to Harbor Drive (Segment 5)

Proposed improvements between Testa Street and Harbor Drive include construction of a Class I bicycle path between Marinship Way and Bridgeway and completion of the sidewalk north of Marinship Way. Project implementation would require private right-of-way acquisition. As **Table 8-14** presents, the project is estimated to cost between $2,954,700 and $3,678,000.

Table 8-14 Testa Street to Harbor Drive

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$52,800	$52,800
2	Clearing and Grubbing, Tree Removal	1	LS	$5,650	$5,650
3	SWPPP & Erosion Control	1	LS	$5,000	$5,000
4	Remove Concrete, AC & other surfacing	22,222	SF	$4	$88,888
5	Utility Relocation/Allocation	1	LS	$2,825	$2,825
6	Remove Traffic Striping and Marking	1	LS	$565	$565
7	Earthwork	100	CY	$30	$3,000
8	Import Fill	150	CY	$40	$6,000
9	Bike Path	14,867	SF	$8	$118,936
10	ADA Ramp	10	EA	$1,000	$10,000
11	Curb and Gutter and AC Conforms	530	LF	$50	$26,500
12	Minor Concrete (Sidewalk, Ramp)	4,705	SF	$10	$47,050
13	Retaining Structure	1,160	SF	$75	$87,000
14	Railing/Fence	100	LF	$40	$4,000
15	Pavement Stripes	1,306	LF	$1	$1,306
16	Pavement Markings	2,658	SF	$3	$7,975
17	Path & Roadside Signs	1	LS	$1,413	$1,413
18	Wayfinding Signs	1	EA	$500	$500
19	Drainage Modification	1	LS	$3,000	$3,000
20	Unsuitable Material	12	CY	$300	$3,600
21	Landscaping, Irrigation	3,408	SF	$5	$17,040
22	Lighting	22	EA	$4,000	$88,140
		Subtotal Construction Cost			$581,187
		Contingency (20%)			$116,237
		Design, Permitting (15%)			$87,178
		Total Construction Cost			$784,600
23	ROW Acquisition	14,467	SF	$150 - $200	$2,170,050 - $2,893,400
		Total Testa St. to Harbor Dr. Cost			$2,954,700 - $3,678,000

8.3. Cost Estimates by Phase

Table 8-15 presents the cost for each phase, itemized by segment. The Long-Term phase is the most expensive followed by the Short-Term Phase and the then the Mid-Term Phase.

Table 8-15 Cost Estimates by Phase

Phase	Segment	Project Name	Estimated Cost	Subtotal
Short-term	Segments 2 and 3	6. Gap Closure: Johnson Street to Litho Street	$400	$1,261,600
	Segment 4	8. Gap Closure: Napa Street to Easterby Street	$200	
	Segment 6	11. Harbor Drive to Gate 6 Road	$1,156,400	
	Segment 6	12. Bridgeway/Gate 6 Road Intersection	$104,600	
Mid-Term	Segment 1	2. Parking Lot 2	$511,900 - $652,800	$1,550,000 - $1,728,200
	Segment 1	4. Johnson Street	$95,300	
	Segments 2 and 3	5. Johnson Street to Napa Street	$795,400	
	Segment 4	7. Napa Street to Liberty Ship Way	$147,500- $184,700	
Long-Term	Segment 1	1. Parking Lot 1	$214,800	$7,869,700 - $9,398,100
	Segment 1	3. Parking Lots 3 and 4	$217,200	
	Segment 5	9. Liberty Ship Way to Testa Street	$3,659,000 - $4,464,700	
	Segment 5	10. Testa Street to Harbor Drive	$2,954,700 - $3,678,000	
			Total	$10,681,300 - $12,387,900

8.4. Environmental Regulatory and Permitting Guidance

This section summarizes and provides preliminary guidance on environmental regulatory and permitting requirements for implementation of the Ferry Landing to Gate 6 Pathway project.

A California Environmental Quality Act (CEQA) Checklist (**Appendix G**) is attached. This document provides a summary explanation of the environmental concerns identified during the conceptual design phase of this project. No detailed environmental studies have been completed for this project at the time this feasibility and preliminary design study was published. Some detailed environmental studies may be necessary to fulfill the requirements of various regulatory agencies including the San Francisco Bay Conservation and Development Commission (BCDC), the San Francisco Bay Area Regional Water Quality Control Board (RWQCB) and the United States Army Corp of Engineers (USACE). Where the requirement is anticipated, these specific studies are identified. Any technical studies prepared for required permits may also be used for documentation of potentially significant impacts under CEQA.

8.4.1. Categorical Exemptions

The Project Study Area is characterized by existing urbanized areas of commercial and office development and associated parking, circulation and access streets. Much of the proposed construction recommended in this Study is Categorically Exempt under CEQA and would require no special permits or technical environmental studies. Modification of existing sidewalks and other areas of the City of Sausalito owned public right-of-way is generally exempt under CEQA and NEPA.

8.4.2. Summary of Environmental Constraints

As identified in the environmental checklist, there are three items that necessitate environmental regulatory permitting and environmental review including:

- Parking loss and requirement to legislatively approve modifications to the City of Sausalito parking

layout and quantity of parking provided in Lots 1, 2, 3 and 4.

- Requirement for minor filling of the Bay at the Sausalito Yacht Harbor boardwalk and City of Sausalito Parking Lot 3
- Requirement to acquire property for the proposed pathway or require construction and dedication of the proposed pathway as a condition of development through the privately owned areas of the Marinship Specific Plan area
- Potential impacts to traffic operations and level of service at the intersection of Bridgeway, Gate 6 Road and Highway 101; as well as other changes to intersection operations along the proposed project corridor.

The recommended CEQA documentation and required permits to address these specific area of environmental constraint are outlined below.

8.4.3. CEQA Document

Based on these summary impacts and pending findings of the required permits outlined below, a CEQA Mitigated Negative Declaration is the likely appropriate environmental document for the overall project. The cost for this level of environmental documentation, including supporting technical studies (some already incorporated in the permit requirements laid out below), is reflected in the implementation costs presented in this Study.

8.4.4. Regulatory Permits

Required regulatory permits for this Project are outlined below and organized by the responsible agency. Permits from BCDC, USACE and the RWQCB would be required. The discussion below provides a summary of the recommended approach for each agency.

8.4.5. BCDC

The City of Sausalito is required to obtain permit clearance for minor fill of San Francisco Bay from BCDC in order to implement the proposed pathway segment adjacent to the Sausalito Yacht Harbor and City Parking Lot 3. The minimum fill requirements are illustrated in this Plan in Figure 7-3 in Chapter 7. This fill is required in order to maintain the maximum amount possible of the existing City required commuter and commercial parking stalls while providing sufficient width for the proposed Class I bikeway. Pedestrians would use the existing pile supported boardwalk that is designated shoreline public access associated with the Sausalito Yacht Harbor.

The City of Sausalito and Sausalito Yacht Harbor each possess multiple BCDC permits. The most efficient and expeditious approach to obtaining approval for the additional minor fill required is to obtain an amendment to one of the existing permits held by the City of Sausalito. **Table 8-16** below summarizes the existing Bay fill permits issued to the City of Sausalito.

Table 8-16 Existing City of Sausalito BCDC Permits for Minor Fill

Permit Number	Permitted Activity	Year Issued	Geographic Proximity
M-6846	30,000 SF of fill for parking area and street connection	1968	Permit for adjacent parking area (Lot 3)
M-0135	Bulkhead repair and replacement	2001	Permit for adjacent bulkhead repair
M-7725, M-7466, M-8100	N/A	N/A	Adjacent but at further locations than above referenced permits

An Amendment of an existing BCDC permit does not legally require completion of the BCDC Abbreviated Regionwide Permit Application Form,[10] however, this approach is recommended in order to assemble all of the required project documentation into a format that BCDC staff is familiar with. In summary, an amendment to one of the City's existing permits must demonstrate the following:

- project description and site plan presenting detailed information on required fill type and dimensions
- discussion of why no upland alternative to the proposed project is feasible
- discussion of resources impacts, if any (water quality, aquatic habitats, historic resources, etc.)
- discussion of any activities or impacts within the shoreline band (100 feet zone parallel to existing shoreline)
- documentation of any local discretionary approvals required to implement the project
- property documents demonstrating City ownership of all required area including land and water
- documentation of RWQCB and USACE permits

8.4.6. U.S. Army Corp of Engineers

The USACE has jurisdiction over the project site under Section 10 and Section 404 of the Clean Water Act governing jurisdictional waters including all declared navigable water or areas reached by the ebb and flow of the tide. Section 10 covers all dredging, marinas, piers, wharves, floats, intake/outtake pipes, pilings, bulkheads, ramps, fills, and overhead transmission lines. The submittal requirements for this project would follow the less restrictive National Permit (NWP) requirements under the category of Linear Transportation Projects, defined as activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project (Sections 10 and 404).

8.4.7. Regional Water Quality Control Board

City consultation with the San Francisco Regional Water Quality Control Board (RWQCB) is required to determine the required construction phase and stormwater permits based on the area of linear facility to be constructed. Stormwater Pollution Prevention (SWPP) is included in the project cost estimates by segment.

[10] http://www.bcdc.ca.gov/media/forms/abbform.pdf

8.5. Funding

There are a variety of potential funding sources including local, state, regional and federal funding programs as well as private sector funding that can be used to construct the proposed improvements. Most of the federal, state and regional programs are competitive and involve the completion of extensive applications with clear documentation of the project need, costs and benefits. The following resources are provided to assist the City of Sausalito staff in identifying appropriate sources of funding for the projects recommended in this plan. The following should be noted:

- Funding sources are highly competitive, with many agencies competing for the same "pots" of money.
- Funding is limited; capital funding needs far outstrip available funding every year.
- Applying for funding is a time-consuming and staff-intensive process.

8.5.1. Federally-Administered Funding

The primary federal source of surface transportation funding—a portion of which can be used to fund bicycle and pedestrian facilities—is SAFETEA-LU, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. SAFETEA-LU is the fourth iteration of the transportation vision established by Congress in 1991 with the Intermodal Surface Transportation Efficiency Act. Also known as the federal transportation bill, the $286.5 billion SAFETEA-LU bill was passed in 2005 and authorizes Federal surface transportation programs until 2009. Congress approved a continuing appropriations resolution to extend funds through 2010.

Marin County bicycle advocates are actively lobbying for $50 million in funding through the reauthorization of the Federal Transportation Bill, expected in 2010. If this funding becomes available, a portion of it could be used to fund the Sausalito path project.

SAFETEA-LU funding is administered through the state (Caltrans and the State Resources Agency) and regional planning agencies. Most, but not all, of these funding programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. SAFETEA programs require a local match of between 0 percent and 20 percent. SAFETEA funding is intended for capital improvements and safety and education programs and projects must relate to the surface transportation system.

Specific funding programs under SAFETEA-LU include, but are not limited to:

Federally-Administered Funding

- Federal Lands Highway Funds – $4.5 billion nationwide from FY 2005 through FY 2009.
- Transportation, Community and System Preservation Program (TCSP) – $270 million nationwide from FY 2005 through FY 2009.
- National Scenic Byways Program – $175 million nationwide from FY 2005 through FY 2009.
- California generally receives between $800,000 and $1 million annually.

State-Administered Funding

- Safe Routes to School Program – $48.5 million statewide in FY 2009.
- Recreational Trails Program – $4.6 million statewide in FY 2009.

Regionally-Administered Funding

- Transportation Enhancements (TE) – $60 million annually statewide.
- Regional Surface Transportation Program (RSTP) – $407 million statewide in FY 2008, $76 million to the Bay Area in FY 2009
- Congestion Mitigation and Air Quality Improvement (CMAQ) Program – $8.6 billion nationwide from FY 2005 through FY 2009, $69 million to the Bay Area in FY 2009.

To be eligible for Federal transportation funds, States are required to develop a State Transportation Improvement Program (STIP) and update it at least every four years. A STIP is a multi-year capital improvement program of transportation projects, and serves to coordinate transportation-related capital improvements of the metropolitan planning organizations and the state.

In California, the STIP includes projects on and off the State Highway System and is funded with revenues from the Transportation Investment Fund and other funding sources. The California STIP is typically updated every two years. To be included in the STIP, projects must be included in the Interregional Transportation Improvement Plan (ITIP), prepared by Caltrans or the Regional Transportation Improvement Plans (RTIPs), prepared by regional agencies. Bicycle and pedestrian projects are eligible for inclusion.

The following programs are administered by the Federal government.

Transportation, Community and System Preservation (TCSP) Program

The Transportation, Community and System Preservation (TCSP) Program provides federal funding for transit oriented development, traffic calming and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services and trade centers. The program provides communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. TCSP Program funds require a 20 percent match. Congress appropriated $204 million to this program in Fiscal Year 2009. Funding has been extended under a continuing resolution for FY 2010.

Online resource: http://www.fhwa.dot.gov/tcsp/

Rivers, Trails and Conservation Assistance Program

The Rivers, Trails and Conservation Assistance Program (RTCA) is a National Parks Service program which provides technical assistance via direct staff involvement, to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation monies available. Projects are prioritized for assistance based upon criteria which include conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation and focusing on lasting

accomplishments.

Online resource: http://www.nps.gov/ncrc/programs/rtca/contactus/cu_apply.html

8.5.2. State-Administered Funding

The State of California uses both federal sources and its own budget to fund the following bicycle and pedestrian projects and programs.

Bicycle Transportation Account

The Bicycle Transportation Account (BTA) provides state funding for local projects that improve the safety and convenience of bicycling for transportation. Because of its focus on transportation, BTA projects, including trails, must provide a transportation link. Funds are available for both planning and construction. Caltrans administers BTA funds, requiring eligible cities and counties to have adopted a Bicycle Transportation Plan. City Bicycle Transportation Plans must be approved by the local MPO prior to Caltrans approval. Out of $5 million available statewide, the maximum amount available for individual projects is $1.2 million.

Online resource: www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm

Federal Safe Routes to School (SRTS) and California Safe Routes to School (SR2S

Caltrans administers funding for Safe Routes to School projects through two separate and distinct programs: the state-legislated Program (SR2S) and the federally-legislated Program (SRTS). Both programs competitively award reimbursement grants with the goal of increasing the number of children who walk or bicycle to school.

California Safe Routes to School Program expires December 21, 2012, requires a 10 percent local match, is eligible to cities and counties and targets children in grades K-12. The fund is primarily for construction, but up to 10 percent of the program funds can be used for education, encouragement, enforcement and evaluation activities. Cycle 8 provides $48 million for FY 08/09 and 09/10.

The Federal Safe Routes to School Program expired September 30, 2009 and subsequently extended through December 31, 2010. Cities, counties, school districts, non-profits, and tribal organizations are eligible for the 100 percent reimbursable funds that target children in grades K-8. Program funds can be used for construction or for education, encouragement, enforcement and evaluation activities. Construction must be within two miles of a grade school or middle school. Cycle 2 provides $46 million for FY 08/09 and 09/10.

Online resource: http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm

Congestion Mitigation and Air Quality Improvement Program

Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds are directed to transportation projects and programs that contribute to the attainment or maintenance of National Ambient Air Quality

Standards in non-attainment or air quality maintenance areas for ozone, carbon monoxide, or particulate matter under provision in the Federal Clean Air Act. Caltrans administers CMAQ funds, which may be used for bicycle and pedestrian projects and programs. About $1.7 B are available nationwide per year. The Metropolitan Transportation Commission (MTC) administers the program for the Bay Area region, which received $69 million in project funding for FY 2009.

Online resource: http://www.mtc.ca.gov/funding/STPCMAQ/

Recreational Trails Program

The Recreational Trails Program(RTP) of SAFETEA-LU allocates funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other non-motorized as well as motorized uses. The Department of Parks and Recreation administers RTP funds in California. A minimum 12 percent of local match is required. California received a $1.3 million apportionment for FY 2010. RTP projects must be ADA compliant and applicants must submit project applications by October 1, 2010. RTP 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 of easements or property for trails;
- State administrative costs related to this program (limited to seven percent of a State's funds); and
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a State's funds).

Online resource: http://www.fhwa.dot.gov/environmnet/rectrails/index.htm.

California Conservation Corps

The California Conservation Corps (CCC) is a public service program that occasionally provides assistance on construction projects. The CCC may be written into grant applications as a project partner. In order to utilize CCC labor, project sites must be public land or publicly accessible. CCC labor will not perform regular maintenance but will perform annual maintenance, such as the opening of trails in the spring.

Online resource: http://www.ccc.ca.gov/

Transportation Planning Grant Program

The Transportation Planning Grant Program, administered by Caltrans, provides two grants that can be used to construct and plan bicycle and pedestrian facilities.

The **Community-Based Transportation Planning Grant** funds projects that exemplify livable community concepts, including bicycle and pedestrian improvement projects. Eligible applicants include local

governments, MPOs and RPTAs. A 20 percent local match is required and projects must demonstrate a transportation component or objective. There are $3 million available annually statewide. Maximum grant award is $300,000.

The **Environmental Justice: Context Sensitive Planning Grants** promote context sensitive planning in diverse communities and funds planning activities that assist low-income, minority and Native American communities to become active participants in transportation planning and project development. Grants are available to transit districts, cities, counties and tribal governments. This grant is funded by the State Highway Account at $1.5 million annually state-wide. Maximum grant award is $300,000.

Online resource: www.dot.ca.gov/hq/tpp/grants.html

Petroleum Violation Escrow Account (PVEA)

In the late 1970s, a series of Federal court decisions against selected United States oil companies ordered refunds to the States for price overcharges on crude oil and refined petroleum products during a period of price control regulations. To qualify for PVEA funding, a project must save or reduce energy and provide a direct public benefit within a reasonable time frame. In the past, the PVEA has been used to fund programs based on public transportation, computerized bus routing and ride sharing, home weatherization, energy assistance and building energy audits, highway and bridge maintenance, and reducing airport user fees. In California, transportation related PVEA projects are administered by Caltrans. PVEA funds do not require a match and can be used as match for additional Federal funds.

Online resource: http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_g/g22state.pdf

8.5.3. Regional Agency-Administered Funding

Regional bicycle and pedestrian grant programs come from a variety of sources, including SAFETEA-LU, the State budget and vehicle registration fees. The following programs are administered by regional agencies.

Regional Surface Transportation Program

The Regional Surface Transportation Program (RSTP) is a block grant program that provides funding for bicycle and pedestrian projects, among many other transportation projects. Under the RSTP, Metropolitan planning organizations, such as the Metropolitan Transportation Commission's (MTC), prioritize and approve projects that will receive RSTP funds. Metropolitan planning organizations can transfer funding from other federal transportation sources to the RSTP program in order to gain more flexibility in the way the monies are allocated. In California, 76 percent of RSTP funds are allocated to urban areas with populations of at least 200,000. The remaining funds are available statewide.

Online resource: http://www.mtc.ca.gov/funding/STPCMAQ/

Transportation for Livable Communities Program

The Transportation for Livable Communities Program (TLC) provides grant monies to public agencies to

encourage land use decisions that support compact, pedestrian and bicycle friendly development near transit hubs. MTC administers the TLC program with funds from the Regional Surface Transportation Project. TLC grants are capped at $400,000. Funds may be used for capital projects or planning.

Online resource: www.mtc.ca.gov/planning/smart_growth/tlc_grants.htm

Transportation Fund for Clean Air

The Transportation Fund for Clean Air (TFCA) is a grant program funded by a $4 surcharge on motor vehicles registered in the Bay Area. This generates approximately $22 million per year in revenue. TFCA's goal is to implement the most cost-effective projects in the Bay Area that will decrease motor vehicle emissions, and therefore improve air quality. Projects must be consistent with the 1988 California Clean Air Act and the Bay Area Ozone Strategy. TFCA funds covers a wide range of project types, including bicycle facility improvements such as bike lanes, bicycle racks, and lockers; arterial management improvements to speed traffic flow on major arterials; and smart growth. TAM releases calls for projects to town, city and county public works departments and provides an application.

Online resource: http://www.baaqmd.gov/Divisions/Strategic-Incentives/Funding-Sources/TFCA.aspx

Bicycle Facilities Program

The Bay Area Air Quality Management District's (BAAMQD) Bicycle Facility Program (BFP) provides grant funding to reduce motor vehicle emissions through the implementation of new bikeways and bicycle parking facilities in the Bay Area. The BFP is funded through the Transportation Fund for Clean Air (TFCA) program. Projects must cost between $10,000 and $120,000 and the applicant must have secured 50 percent in matching funds. The BAAMQD typically releases a call for projects in June or July, requiring an application submittal in September and announcing project awards in November.

Online resource: http://www.baaqmd.gov/Divisions/Strategic-Incentives/Bicycle-Facility-Program.aspx

Regional Bicycle and Pedestrian Program

The Regional Bicycle and Pedestrian Grant Program is administered by the Metropolitan Transportation Commission (MTC) to assist in funding construction of the Regional Bicycle Network, regionally significant pedestrian projects as well as bicycle/pedestrian projects serving schools or transit. Projects are funded every three years for up to six years. Minimum grants of $250,000 are available to populations of less than 1 million and $500,000 to populations of more than one million. Local governments, transit operators, and other public agencies within the nine Bay Area counties are eligible. Projects must be part of the Regional Bicycle Network and identified in the regional transportation plan. MTC has committed $200 million in the Transportation 2030 Plan to support the regional program over a 25-year period.

Online resource: www.mtc.ca.gov/planning/bicyclespedestrians/regional.htm

Safe Routes to Transit (SR2T)

Regional Measure 2 (RM2), approved in March 2004, raised the toll on seven state-owned Bay Area bridges by one dollar for 20 years. This fee increase funds various operational improvements and capital projects which reduce congestion or improve travel in the toll bridge corridors.

Twenty million dollars of RM2 funding is allocated to the Safe Routes to Transit Program, which provides competitive grant funding for capital and planning projects that improve bicycle and pedestrian access to transit facilities. Eligible projects must be shown to reduce congestion on one or more of the Bay Area's toll bridges. The competitive grant process is administered by the Transportation and Land Use Coalition and the East Bay Bicycle Coalition. Funding is awarded in five $4 million grant cycles. The first round of funding was awarded in December 2005. Future funding cycles will be in 2009, 2011 and 2013.

Online resource: http://www.transcoalition.org/c/bikeped/bikeped_saferoutes.html

8.5.4. Local Agency-Administered Funding

TDA Article 3

Transportation Development Act (TDA) Article 3 funds are state block grants awarded annually to local jurisdictions for transit, bicycle and pedestrian projects in California. Funds for pedestrian projects originate from the Local Transportation Fund (LTF), which is derived from a ¼ cent of the general state sales tax. LTF funds are returned to each county based on sales tax revenues. Eligible pedestrian and bicycle projects include: construction and engineering for capital projects; maintenance of bikeways; bicycle safety education programs (up to five percent of funds); and development of comprehensive bicycle or pedestrian facilities plans. A city or county is allowed to apply for funding for bicycle plans not more than once every five years. These funds may be used to meet local match requirements for federal funding sources. Two percent of the total TDA apportionment is available for bicycle and pedestrian funding.

Online resource: http://www.mtc.ca.gov/funding/STA-TDA/

Measure A – Local Roads

In 2004 Marin County voters passed Measure A, which placed a half-cent increase on county sales tax. The money generated from this tax funds transportation improvements including bicycle and pedestrian facilities. The Marin Board of Supervisors created the Transportation Authority of Main (TAM) to administer Measure A funds. A Technical Advisory Committee, comprised of public works staff, local government staff and representatives with diverse interests recommend and prioritize projects to be funded. TAM distributes the funds (an estimated $332 million) on an annual basis to each city, town and to the County based on a combination of lane miles of roads and population.

TAM developed an expenditure plan, comprised of four strategies and updated every two years, to strategically administer Measure A funds. Strategy 3, Local Transportation Infrastructure, receives a 26.5 percent allocation of total funds, approximately $88 million. Strategy 3 funds roads, bikeways and pathways

of local and regional significance, with half of the funds allocated to major roads. For FY 2008-09, TAM did not allocate local transportation infrastructure funds to Sausalito, which has received $141,271 since 2004. The Expenditure Plan Update 2009 identifies the 2.97 miles of the Bridgeway Corridor, which includes Bridgeway, Richardson, 2nd, South, Alexander, as a "major road candidate" but does not identify specific improvements needed.

Online resource: http://www.tam.ca.gov/index.aspx?page=101

8.5.5. Non-Traditional Funding Sources

Community Development Block Grants

The CDBG program provides money for streetscape revitalization. Federal Community Development Block Grant Grantees may "use CDBG funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities, paying for planning and administrative expenses, such as costs related to developing a consolidated Plan and managing CDBG funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs." California received a $42.8 million allocation for all CDBG programs in FY 10. The maximum grant amount is $800,000 for up to two eligible projects or $400,000 for a public service program.

Online resource: http://www.hud.gov/offices/cpd/communitydevelopment/programs/index.cfm

Assessment Districts

Local government entities can form an assessment district to fund the construction and maintenance of public facilities, including sidewalks and paths. The process begins with property owners who want an improvement signing a petition. The proposed district includes all property owners who will benefit from the proposed improvement. A public hearing is held, and if a majority of property owners approve, the assessment district is established. Once the assessment district is approved, property owners within the assessment district are levied a special assessment in proportion to the share of the benefit they receive from the improvement. In 2009, the City of Sausalito investigated the application of assessment districts to fund utility undergrounding.

Business Improvement Districts

Business improvement districts (BIDs) are public/private partnerships used to promote individual business districts through a variety of means, including the construction and maintenance of streetscape improvements, paths, and bicycle facilities. A city, county or joint powers authority can establish a BID and levy annual assessments on businesses within its boundaries. To establish a BID, a public hearing must be held, and a majority of businesses must agree to the BID. In forming a BID, the boundaries and the improvements and activities to be financed are established. These cannot be changed once the BID is formed.

Developer Fees, Exactions and Impact Fees

With the increasing support for "routine accommodation" and "complete streets," requirements for new development, road widening and new commercial development provide opportunities to efficiently construct pedestrian facilities. If a significant nexus to justify the improvements exists, local governments can require such improvements as a condition of project approval.

One potential local source of funding is developer impact fees, typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may attempt to reduce the number of trips (and hence impacts and cost) by paying for on- and off-site pedestrian improvements designed to encourage residents, employees and visitors to the new development to walk rather than drive. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical to ensure legal soundness.

Mello-Roos Community Facilities Act

The Mello-Roos Community Facilities Act was passed by the Legislature in 1982 in response to reduced funding opportunities brought about by the passage of Proposition 13. The Mello-Roos Act allows any county, city, special district, school district or joint powers of authority to establish a Community Facility Districts (CFD) for the purpose of selling tax-exempt bonds to fund public improvements within that district. CFDs must be approved by a two-thirds margin of qualified voters in the district. Property owners within the district are responsible for paying back the bonds. Pedestrian and bicycle facilities, construction and maintenance are eligible for funding under CFD bonds.

Online resource: http://mello-roos.com/pdf/mrpdf.pdf

Volunteer and Public-Private Partnerships

Local schools or community groups may use the bikeway projects as a project for the year, possibly working with a local designer or engineer. Work parties may be formed to help clear the right-of-way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations 'adopt' a bikeway and help construct and maintain the facility.

Table 8-17 Funding Sources

Acronyms: AQMD - Air Quality Management District Caltrans - California Department of Transportation CMAQ - Congestion Mitigation and Air Quality CTC - California Transportation Commission FHWA - Federal Highway Administration RTPA - Regional Transportation Planning Agency State DPR - California Department of Parks and Recreation (under the State Resources Agency) SAFETEA – Safe Accountable Flexible, Efficient Transportation Equity Act: A Legacy for Users TAM – Transportation Authority of Marin Jurisdictions for Sausalito, California: Caltrans - Caltrans District 4 TAM – Transportation Authority of Marin Congressional District 6 Assembly District 6 Senate District 3 County District 1 and 2	Resources: Caltrans TEA-21 website - http://www.dot.ca.gov FHWA – SAFETEA-LU – website - http://www.fhwa.dot.gov/reauthorization http://www.dot.ca.gov/hq/LocalPrograms/ http://www.fhwa.dot.gov/environmnet/rectrails/index.htm http://www.ccc.ca.gov/ http://www.mtc.ca.gov/planning/smart_growth/hip.htm http://www.mtc.ca.gov/funding/STA-TDA/ http://www.baaqmd.gov/pln/grants_and_incentives/bfp/index.htm http://www.transcoalition.org/c/bikeped/bikeped_saferoutes.html http://www.tam.ca.gov/index.aspx http://www.hud.gov/offices/cpd/communitydevelopment/programs/index.cfm http://mello-roos.com/pdf/mrpdf.pdf

Grant Source	Due Date	Agency	Annual Total	Matching Requirement	Eligible Applicants	Eligible Bikeway Projects			Comments
						Commute	Recreation	Safety/Ed	
Federally-Administered Funding									
Transportation, Community and System Preservation Program	--	FHWA	$204 m nationwide	20%	state, local, MPOs	--	--	--	Projects that improve system efficiency reduce environmental impacts of transportation, etc. Contact K. Sue Kiser, Regional FHWA office, (916) 498-5009
Rivers, Trails and Conservation Assistance Program	--	NPS	--	--	Governments, communities	X	X	--	RTCA staff provide technical assistance to communities so they can conserve rivers, preserve open space, and develop trails and greenways. Contact NPS at (202) 354-6900.
State-Administered Funding									

Grant Source	Due Date	Agency	Annual Total	Matching Requirement	Eligible Applicants	Eligible Bikeway Projects			Comments
						Commute	Recreation	Safety/Ed	
Bicycle Transportation Account	December 1	Caltrans	$5 m	min. 10% local match on construction	city, county	X	--	X	State-funded. Projects that improve safety and convenience of bicycle commuters. Contact Ken McGuire, Caltrans, (916) 653-2750
Federal Safe Routes to School (SRTS)	Early 2011	Caltrans	$46 m	none	state, city, county, MPOs, RTPAs and other organizations that partner with one of the above	X	--	X	Construction, education, encouragement and enforcement program to encourage walking and bicycling to school. Contact Caltrans District 4 Transportation Planning and Local Assistance office at (510) 286-5226.
California Safe Routes to School (SR2S)	July 15	Caltrans	$48.5 m	10%	city, county	X	X	X	Primarily construction program to enhance safety of pedestrian and bicycle facilities. Contact Caltrans District 4, (510) 286-5598
Congestion Mitigation and Air Quality Program (CMAQ)	Dec. 1 yearly	RTPAs, Caltrans	$69 m for Bay region	None	Local and state governments within federally certified jurisdictions	X	--	--	Only air quality nonattainment and maintenance areas for ozone, carbon monoxide and certain PM-10 projects are eligible.
Recreational Trails Program (RTP)	Oct. 1	State DPR	$1.3 m	12% match	jurisdictions, special districts, non profits with management responsibilities over the land	--	X	--	For recreational trails to benefit bicyclists, pedestrians, and other users; contact State Dept. of Parks & Rec. , Statewide Trails Coordinator, (916) 653-8803
California Conservation Corps	On-going	California Conservation Corps	Labor	None	Federal and state agencies, city, county, school district, NPO, private industry	X	X	--	Contact the Corps at (916) 341-3100.
Community Based Transportation Planning Grant Program	Nov.	Caltrans	$4.5 m	20% local	MPO, RPTA, city, county	X	--	--	Projects that exemplify livable community concepts. Contact Leigh Levine, Caltrans, (916) 651-6012
Petroleum Violation Escrow Account (PVEA)	On-going	Caltrans	$0.5 m	--	city, county, transit operators	--	--	--	Bicycle and trail facilities have been funded with this program. Contact Caltrans Federal Resource Office, (916) 654-7287
Funding Administered by Regional Agencies									

Grant Source	Due Date	Agency	Annual Total	Matching Requirement	Eligible Applicants	Eligible Bikeway Projects			Comments
						Commute	Recreation	Safety/Ed	
Regional Surface Transportation Program (RSTP)	varies by RPTA	RTPAs, Caltrans	$320 m	11.47% non-federal match	cities, counties, transit operators, Caltrans, and MPOs	X	X	--	RSTP funds may be exchanged for local funds for non-federally certified local agencies; no match may be required if project improves safety. Contact Cathy Gomes, Caltrans, (916) 654-3271.
Transportation for Livable Communities Program	Jun. 23	MTC	$16 m	None	City, neighborhood, transit agency, NPO	X	X	--	Program provides technical assistance and capital grants. TLC grants are capped at $400,000. Contact MTC at (510) 817-5700.
Transportation Fund for Clean Air	--	TAM/BAAMQD	$22 m	None	Public agencies within TAM jurisdiction	X	--	--	Projects must provide a nexus to improving air quality. Contact TAM (Dave Chan) at 415-226-0821
Bicycle Facilities Program	Sept.	BAAMQD	--	50%	Public agencies within BAAQMD	X	--	--	Projects must cost between $10,000 and $120,000. Applicants must have secured 50% in matching funds. Contact BAAMQD (Avra Goldman) at (415) 749-5093.
Regional Bicycle Network Program (replaces the Regional Bicycle and Pedestrian Program)	--	MTC, TAM	--	--	Local governments, transit operators, other public agencies	X	X	--	Determination of the fund amount, application due date and any matching requirement is scheduled for Nov. 2009. Funding anticipated to become available in early 2010. Contact MTC at (510) 817-5733.
Safe Routes to Transit	2011	MTC	$4 m	None	Public agencies	X	X	--	Eligible projects must have a bridge nexus (i.e., reduce congestion on one or more state toll bridges). Program is run by Transform (510-740-3150) and the East Bay Bicycle Coalition (510-533-7433).
Funding Administered by Local Agencies									
Transportation Development Act (TDA) Article 3 (2% of total TDA)	Jan.	RPTA (MTC)	$746K for Marin County	None	City, county, joint powers agency	X	X	--	Projects must be included in either a detailed circulation element or plan included in a general plan or an adopted comprehensive bikeway plan and must be ready to implement within the next fiscal year. Contact MTC at (510) 817-5733.

Grant Source	Due Date	Agency	Annual Total	Matching Requirement	Eligible Applicants	Eligible Bikeway Projects			Comments
						Commute	Recreation	Safety/Ed	
Measure A – Local Roads		TAM	$43.9 m		City, town and Marin County	X	--	--	Road projects using this funding source are required to consider bicyclists and pedestrians. Contact TAM at (415) 226-0815.
Non-Traditional Funding Sources									
Community Development Block Grants	--	U.S. Dept. of Housing and Urban Development (HUD)	--	--	City, county	X	X	--	Funds local community development activities such as affordable housing, anti-poverty programs, and infrastructure development.
Assessment Districts	--	City, county, joint powers authority	--	--	Neighborhoods, communities	X	X	X	Only those who benefit from the improvement may be taxed. Taxes should be tied to the amount of benefit received.
Business Improvement Districts	--	City, county, joint powers authority	--	--	City, county, joint powers authority, private industry	X	X	--	A public-private partnership in which businesses in a defined area pay an additional tax or fee in order to fund improvements within the district's boundaries.
Developer Fees or Exactions (developer fee for street improvements - DFSI); Impact Fees	--	City, county	--	--	--	X	X	--	Mitigation required during land use approval process
Mello-Roos Community Facilities Act	--	City, county, special district, school district, joint powers authority	--	--	city, county, special district, school district, joint powers of authority	X	X	X	Property owners within the district are responsible for paying back the bonds.
Volunteer and Public-Private Partnerships	--	--	--	--	Public agency, private industry, schools, community groups	X	X	X	Community-based initiative to implement improvements.

Appendix A: Property Data

This section includes property data for properties within the Project Study Area. The information was collected from a variety of sources including the Marin County assessor's record data, Marin County Community Planning, Marin Map, and the City of Sausalito. **Table A-1** details each parcel by APN and includes ownership, estimated value, land use and zoning designations, and area listed by both square feet and acreage. Each parcel number is referenced to the study segment number maps in

Figure A-1 to **Figure A-6**. For properties that are publicly owned, the assessor's record lists $0 for the property value.

DRAFT

This page is intentionally left blank.

Table A-1 Project Area Property Data

Segment Number	Assessor Parcel No.	Ownership	Estimated Value	Land Use	Zoning	Land (Sq.Ft.)	Land (Acres)
1	065-034-10	SAUSALITO YACHT HARBOR INC	$688,024	Vacant	Commercial Waterfront	18,207	0.42
1	065-036-01	SAUSALITO YACHT HARBOR	$395,376	Commercial Recreation	Waterfront	95,832	2.20
1	065-036-02	SAUSALITO YACHT HARBOR	$48,675	Vacant	Waterfront	24,000	0.55
1	065-036-03	SAUSALITO YACHT HARBOR	$325,393	Commercial Recreation	Waterfront	95,832	2.20
1	065-037-01	SAUSALITO YACHT HARBOR	$325,343	Retail	Commercial Waterfront	7,492	0.17
1	065-037-03	SAUSALITO CITY OF	$0	Publicly Owned	Commercial Waterfront	4,200	0.10
1	065-037-05	HELENSLEA GROUP CORP	$2,140,513	General Commercial	Commercial Waterfront	8,712	0.20
1	065-037-06	JUNG FRIEDRICH TR & ETAL, JUNG MARGRET TR ETAL, JUNG THOMAS ETAL	$1,227,653	Retail	Commercial Waterfront	7,700	0.18
1	065-037-07	900 BRIDGEWAY LLC	$3,085,847	Mixed Use	Commercial Waterfront	10,000	0.23
1	065-041-01	SAUSALITO YACHT HARBOR	$52,551	Commercial Recreation	Waterfront	23,958	0.55
1	065-041-02	SAUSALITO YACHT HARBOR	$315,686	Commercial Recreation	Waterfront	95,832	2.20
1	065-041-03	SAUSALITO YACHT HARBOR	$48,675	Vacant	Waterfront	24,000	0.55
1	065-041-04	SAUSALITO YACHT HARBOR	$381,839	Commercial Recreation	Waterfront	82,764	1.90
1	065-041-05	MADDEN AND LEWIS	$100,753	Vacant	Waterfront	13,776	0.32
1	065-041-06	SAUSALITO YACHT HARBOR	$132,596	Vacant	Waterfront	16,673	0.38
1	065-042-01	SAUSALITO CITY OF	$0	Publicly Owned	Commercial Waterfront	2,700	0.06
1	065-042-02	SAUSALITO CITY OF	$0	Publicly Owned	Commercial Waterfront	14,184	0.33
1	065-042-03	SAUSALITO CITY OF	$0	Publicly Owned	Public Institutional	5,100	0.12
1	065-042-05	SAUSALITO CITY OF	$0	Publicly Owned	Public Institutional	14,160	0.33
1	065-042-06	SAUSALITO CITY OF	$0	Publicly Owned	Public Institutional	14,000	0.32
1	065-073-01	SAUSALITO CITY OF	$0	Publicly Owned	Public Institutional	7,440	0.17
1	065-073-02	SAUSALITO CITY OF	$0	Publicly Owned	Public Institutional	26,920	0.62
1	065-073-04	BANK OF AMERICA N T & S A #178	$2,855,932	General Commercial	Waterfront	4,800	0.11
1	065-073-03	SAUSALITO CITY OF	$0	Publicly Owned	Public Institutional	88,890	2.04
2	064-087-07	HOULAND LTD	$1,010,214	Privately Owned Non-taxable	Commercial Waterfront	22,253	0.51
2	064-087-08	SAUSALITO CITY	$0	Publicly Owned	Commercial Waterfront	11,134	0.26
2	065-032-03	300 TURNEY STREET PROPERTIES	$140,767	Vacant	Commercial Waterfront	13,920	0.32
2	065-034-09	RESTAURANT INVESTORS INCOME FUND V	$281,535	Vacant	Commercial Waterfront	15,080	0.35
3	064-082-01	GALILEE HARBOR COMMUNITY ASSOC	$2,748,804	General Commercial	Waterfront	40,020	0.92
3	064-082-02	POWELL ST JOINT VENTURE	$3,478,617	Industrial	Industrial	46,575	1.07
3	064-084-01	SAUSALITO CITY OF	$0	Publicly Owned	Public Parks	34,000	0.78
3	064-084-02	SAUSALITO CITY OF	$0	Publicly Owned	Public Parks	36,000	0.83
3	064-084-08	SAUSALITO CITY OF	$0	Publicly Owned	Commercial Waterfront	32,446	0.74
4	063-090-06	MARTERIE ANTHONY J & MARTERIE ROXANNE	$6,916,182	General Commercial	Industrial	167,730	3.85
4	063-090-07	PSH LLC	$13,218,645	Industrial	Industrial	156,710	3.60
4	063-100-01	BURKELL DENNIS M TR	$197,982	Industrial	Industrial	20,700	0.48
4	063-100-11	UNITED STATES OF AMERICA	$0	Publicly Owned	Public Institutional - Waterfront - Marinship Overlay District	626,828	14.39
5	063-100-10	SAUSALITO CITY OF	$0	Exempt	Open Space	21,099	0.48
5	063-110-01	MMB FIRST MORTGAGE FUND, MMB FIRST MORTGAGE FUND-II	$2,504,100	Industrial	Industrial	38,220	0.88
5	063-110-09	SWA GROUP	$4,122,994	Industrial	Industrial	46,173	1.06
5	063-110-12	GIRAUDO JOSEPH J & ETAL, GIRAUDO BEVERLY J ETAL	$1,323,552	Commercial	Industrial	12,333	0.28
5	063-110-14	SAUSALITO CITY OF	$0	Exempt	Public Institutional	345,430	7.93
5	063-110-27	MCSSM LLC	$20,604,156	Office	industrial - Waterfront - Marinship Overlay District	295,772	6.79

DRAFT

Segment Number	Assessor Parcel No.	Ownership	Estimated Value	Land Use	Zoning	Land (Sq.Ft.)	Land (Acres)
5	063-110-28	BUCKWHEAT LLC	$1,406,073	Commercial Recreation	Waterfront	102,801	2.36
5	063-110-31	SARENA LLC	$343,000	Vacant	Industrial	82,133	1.89
5	063-120-01	CLAYTON RICHARD N TR ETAL , GERHARDT ROGER C TR ETAL, ANDERSON DOROTHY C TR ETAL	$1,839,680	Industrial	Industrial	76,163	1.75
5	063-120-02	LEMON FAMILY LLC	$6,225,000	Industrial	industrial - Waterfront - Marinship Overlay District	566,280	13.00
5	063-130-01	ABBASSI MICHAEL E TR, ABBASSI KATHRYN I TR	$3,947,340	Office	Industrial	29,036	0.67
5	063-140-15	CA-0NE & THREE HARBOR DRIVE OFFICE LTD PARTNERSHIP	$37,884,840	Office	Industrial	273,992	6.29
6	052-304-07	MARIN COUNTY	$0	Publicly Owned Non-Taxable	Floating Home Marinas Commercial Planned	15,624	0.36
6	052-304-10	STECKLER-PACIFIC CO INC	$816,292	Office	Commercial Planned	12,900	0.30
6	052-304-12	MARIN COUNTY STECKLER-PACIFIC CO INC L/L	$0	Publicly Owned Non-Taxable	Bay Front Conservation Marinas Floating Home Marinas	95,696	2.20
6	052-304-13	STECKLER DOROTHY J ETAL, ESTATE OF GEORGE KAPPAS ETAL, STECKLER-PACIFIC CO INC L/L	$1,345,388	Office	Commercial Planned	15600	0.36
6	052-304-20	ECUMENICAL ASSN OF HOUSING	$64,955	Privately Owned Non-taxable	Floating Home Marinas	11,715	0.27
6	052-304-21	MARIN COUNTY	$0	Privately Owned Non-taxable	Floating Home Marinas	2,551	0.06
6	052-332-08	ECUMENICAL ASSN OF HOUSING	$0	Publicly Owned Non-Taxable	Floating Home Marinas	18,000	0.41
6	052-332-09	ECUMENICAL ASSN OF HOUSING	$0	Publicly Owned Non-Taxable	Floating Home Marinas	9,000	0.21
6	052-332-10	ECUMENICAL ASSN OF HOUSING	$9,506	Publicly Owned Non-Taxable	Bay Front Conservation Floating Home Marinas	9,000	0.21
6	063-140-18	SUN TEH C TR & SUN TEH S TR	$828,548	Retail	Industrial	17,100	0.39
6	063-140-20	WESTCORE MARIN LLC	$655,000	Office	Industrial	10,647	0.24
6	063-140-21	WESTCORE MARIN LLC	$5,192,000	Industrial	Industrial	36,566	0.84
6	063-152-01	WINBLAD ASSOCIATES LP	$1,775,607	Industrial	Industrial	100,188	2.30
6	063-152-02	WINBLAD ASSOCIATES LP	$436,914	Industrial	Industrial	46,391	1.06
6	063-162-01	4000 BRIDGEWAY LLC	$4,287,248	Industrial	Industrial	44,431	1.02
6	063-162-04	LAM JON, MARTIN GREGORY	$2,191,900	Office	Industrial	14,327	0.33
6	063-162-10	BRUCIA FRANCES M /TR/	$6,184,165	Office	Industrial	56,239	1.29
6	063-162-12	4000 BRIDGEWAY LLC	$1,735,062	Office	Industrial	17,940	0.41

Figure A-1 Parcel Boundaries: Segment 1 Ferry Terminal to Johnson Street

Figure A-2 Parcel Boundaries: Segment 2 Johnson Street to Locust Street

Figure A-3 Parcel Boundaries: Segment 3 Locust Street to Napa Street

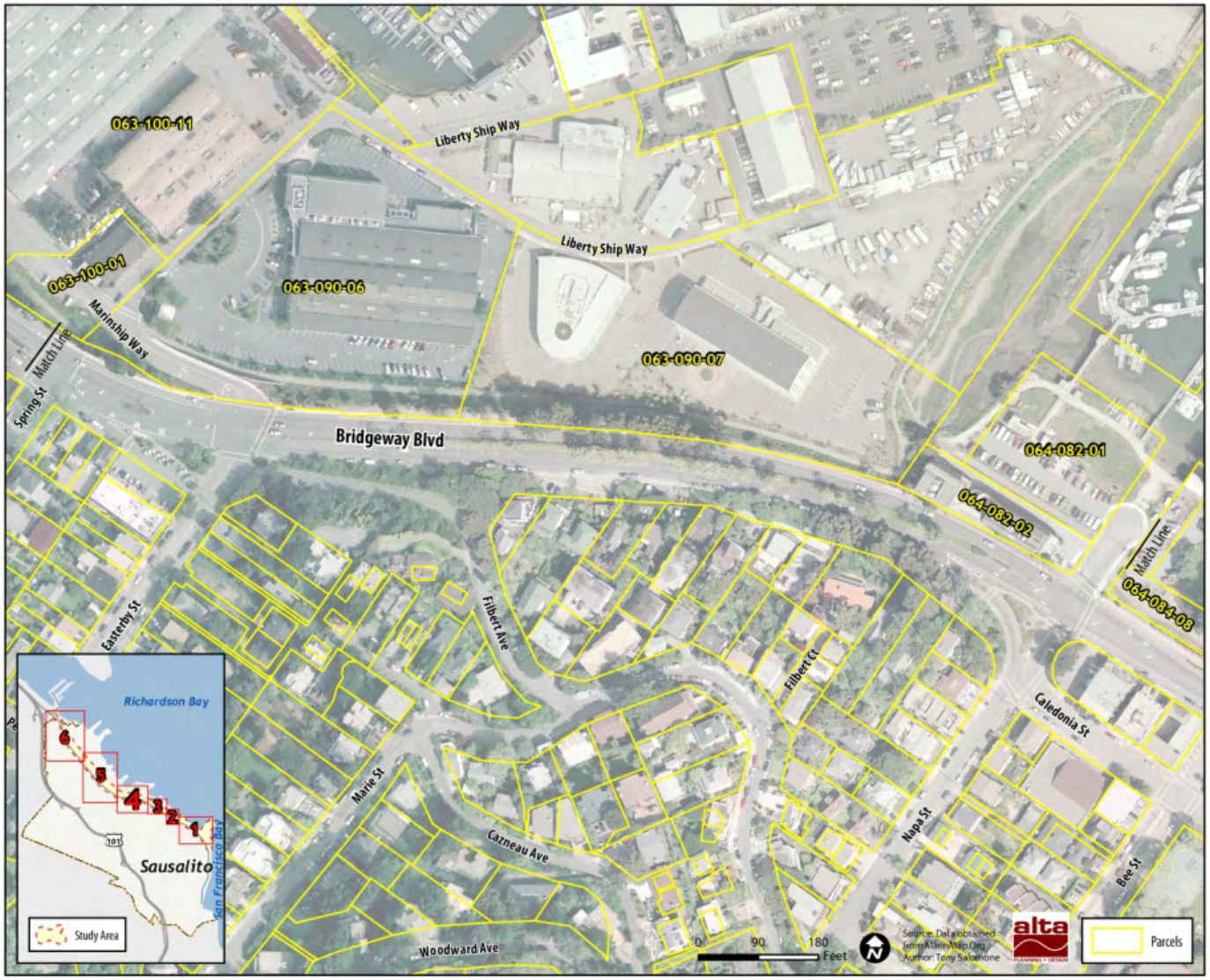


Figure A-4 Parcel Boundaries: Segment 4 Napa Street to Liberty Ship Way

Figure A-5 Parcel Boundaries: Segment 5 Liberty Ship Way to Harbor Drive

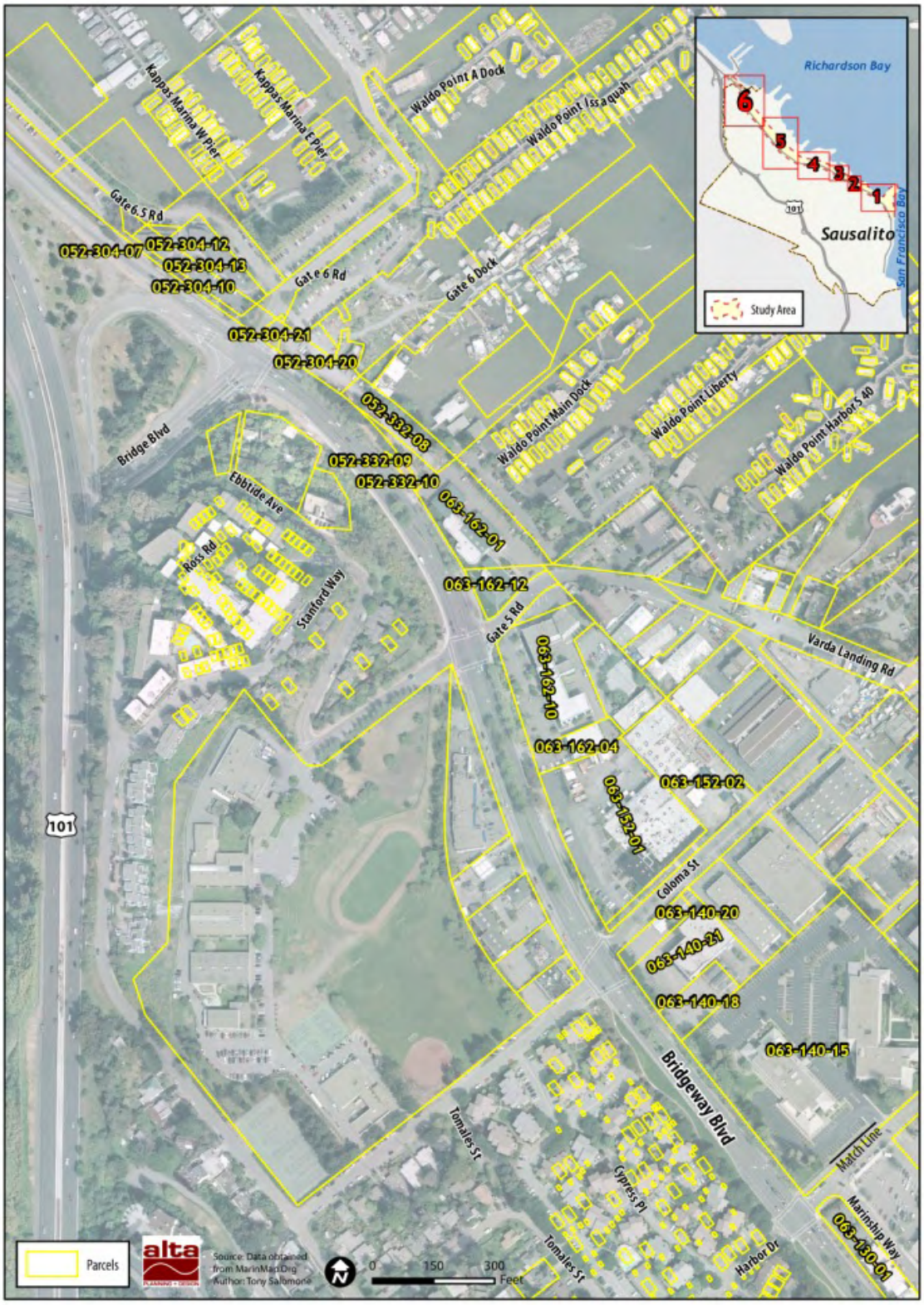


Figure A-6 Parcel Boundaries: Segment 6 Harbor Drive to Gate 6 Road

Appendix B: Cost Estimates

Appendix B includes detailed cost estimates for the project segments.

Improvement	Item	Unit	Unit Cost
Landscaping	Landscaping and irrigation[1]	sf	$5
Pedestrian-scale lighting	Lighting[2]	ea	$4,000
Other amenities	Bench	ea	$3,000
	Trash/recycling receptacle	ea	$2,000

[1] The landscaping and irrigation unit cost estimate includes the elements provided in the table below.

[2] The lighting unit cost estimate includes site electrical point of connection (POC), site conduit and conductors and pull boxes.

Improvement	Item	Unit	Unit Cost
Landscaping and irrigation elements	Landscaping and irrigation	sf	$5
	Trees (24" box)	ea	$300
	Shrubs (5 gallon)	ea	$25
	Shrubs (1 gallon)	ea	$15
	Turf from sod	sf	$0.50
	Meter/Point of Connection (POC)	ea	$5,000-$10,000
	Controller	ea	$7,500
	Backflow preventer	ea	$3,500
	Spray irrigation system	sf	$1
	Tree bubblers (2 per tree)	ea	$25

DRAFT

Segment 1, Ferry Terminal to Johnson St.

29-Sep-10

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$105,900	$105,900
2	Clearing and Grubbing, Tree Removal	1	LS	$20,000	$20,000
3	SWPPP & Erosion Control	1	LS	$7,500	$7,500
4	Drainage (Johnson St)	1	LS	$2,500	$2,500
5	Remove Concrete, AC & other surfacing	34,084	SF	$4	$136,336
6	Utility Relocation/Allocation	1	LS	$15,000	$15,000
7	Remove Traffic Striping and Marking	1	LS	$5,000	$5,000
8	Reset Parking Bumpers, Meters & Signs	1	LS	$7,500	$7,500
9	Earthwork	150	CY	$30	$4,500
10	Excavation (Johnson St)	528	SF	$20	$10,560
11	Import Fill	550	CY	$40	$22,000
12	Raised Crosswalk (Johnson St)	528	SF	$40	$21,120
13	Rock Slope Protection	120	CY	$100	$12,000
14	Reinforcing Fabric	270	SY	$2	$540
15	Retaining Wall	1,920	SF	$75	$144,000
16	Wall Foundation	320	LF	$150	$48,000
17	Rail/Fence	520	LF	$40	$20,800
18	Bike Path	20,348	SF	$8	$162,784
19	ADA Ramp	7	EA	$1,000	$7,000
20	Curb and Gutter and AC Conforms	1,870	LF	$50	$93,500
21	Concrete Islands & Curb	6	EA	$2,500	$15,000
22	Minor Concrete (Sidewalk, Ramp)	2,614	SF	$10	$26,140
23	Storm Drain Inlet (New & Modified)	8	EA	$4,000	$32,000
24	Slurry Seal Parking Lot Pavement	89,391	SF	$1	$89,391
25	Pavement Stripes	8,390	LF	$1	$8,390
26	Pavement Markings (Parking Lots)	1,201	SF	$3	$3,603
27	Pavement Markings (Johnson St)	1	LS	$1,000	$1,000
28	Path & Roadside Signs	1	LS	$5,000	$5,000
29	Wayfinding Signs	10	EA	$500	$5,000
30	Planter Island	300	SF	$8	$2,400
31	Unsuitable Material	19	CY	$300	$5,700
32	Landscaping, Irrigation	8,186	SF	$5	$40,930
33	Lighting	21	EA	$4,000	$84,000
		Subtotal Construction Cost			$1,165,094
		Contingency (20%)			$233,019
		Design, Permitting (15%)*			$218,234
		Total Construction Cost			$1,616,300
34	ROW Acquisition	2,819	SF	$150 - $200	$422,850 - $563,800
		Total Parking Lot 2 Cost			$2,039,200 - $2,180,100

* Lots 3 and 4 have a 20% design and permitting cost due to the permitting requirements associated with implementing fill in San Francisco Bay.

Segment 2, Johnson St. to Locust St.

29-Sep-10

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$25,500	$25,500
2	Clearing and Grubbing, Tree Removal	1	LS	$5,000	$5,000
3	SWPPP & Erosion Control	1	LS	$3,000	$3,000
4	Remove Concrete, AC & other surfacing	15,065	SF	$4	$60,260
5	Utility Relocation/Allocation	1	LS	$10,000	$10,000
6	Remove Traffic Striping and Marking	1	LS	$750	$750
7	Reset Parking Bumpers, Meters & Signs	1	LS	$2,500	$2,500
8	Bike Path	5,862	SF	$8	$46,896
9	ADA Ramp	6	EA	$1,000	$6,000
10	Curb and Gutter and AC Conforms	165	LF	$50	$8,250
11	Minor Concrete (Sidewalk, Ramp)	4,965	SF	$10	$49,650
12	Pavement Stripes	678	LF	$1	$678
13	Pavement Markings	1,324	SF	$3	$3,972
14	Path & Roadside Signs	1	LS	$1,500	$1,500
15	Wayfinding Signs	2	EA	$500	$1,000
16	Unsuitable Material	8	CY	$300	$2,400
17	Landscaping, Irrigation	3,413	SF	$5	$17,065
18	Lighting	9	EA	$4,000	$36,000
		Subtotal			$280,421
		Contingency (20%)			$56,084
		Design, Permitting (15%)			$42,063
		Total Cost			$378,600

DRAFT

Segment 3, Locust St. to Napa St.

29-Sep-10

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$28,100	$28,100
2	Clearing and Grubbing, Tree Removal	1	LS	$5,000	$5,000
3	SWPPP & Erosion Control	1	LS	$3,000	$3,000
4	Remove Concrete, AC & other surfacing	16,805	SF	$4	$67,220
5	Utility Relocation/Allocation	1	LS	$5,000	$5,000
6	Reset Parking Bumpers, Meters & Signs	1	LS	$2,500	$2,500
7	Bike Path	7,569	SF	$8	$60,552
8	ADA Ramp	2	EA	$1,000	$2,000
9	Curb and Gutter and AC Conforms	47	LF	$50	$2,350
10	Minor Concrete (Sidewalk, Ramp)	5,427	SF	$10	$54,270
11	Pavement Stripes	841	LF	$1	$841
12	Pavement Markings	1,217	SF	$3	$3,651
13	Path & Roadside Signs	1	LS	$1,500	$1,500
14	Wayfinding Signs	1	EA	$500	$500
15	Unsuitable Material	9	CY	$300	$2,700
16	Landscaping, Irrigation	3,574	SF	$5	$17,870
17	Lighting	13	EA	$4,000	$52,000
		Subtotal			$309,054
		Contingency (20%)			$61,811
		Design, Permitting (15%)			$46,358
		Total Construction Cost			$417,200

Segment 4, Napa St. to Liberty Ship Way

29-Sep-10

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$2,400	$2,400
2	Clearing and Grubbing, Tree Removal	1	LS	$500	$500
3	SWPPP & Erosion Control	1	LS	$500	$500
4	Remove Concrete, AC & other surfacing	850	SF	$4	$3,400
5	Bike Path	850	SF	$8	$6,800
6	Pavement Stripes	85	LF	$1	$85
7	Pavement Markings	1	LS	$1,000	$1,000
8	Pavement Markings (Bridgeway)	48	SF	$3	$144
9	Path & Roadside Signs	1	LS	$500	$500
10	Wayfinding Signs	4	EA	$500	$2,000
11	Landscaping, Irrigation	255	SF	$5	$1,275
12	Lighting	2	EA	$4,000	$8,000
		Subtotal Construction Cost			$26,604
		Contingency (20%)			$5,321
		Design, Permitting (15%)			$3,991
		Total Construction Cost			$35,900
13	ROW Acquisition	745	SF	$150 - $200	$111,750 - $149,000
		Total Napa St. to Liberty Ship Wy. Cost			$147,700- $184,900

DRAFT

Segment 5, Napa St. to Liberty Ship Way to Harbor Drive

29-Sep-10

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$124,700	$124,700
2	Clearing and Grubbing, Tree Removal	1	LS	$10,000	$10,000
3	SWPPP & Erosion Control	1	LS	$10,000	$10,000
4	Remove Concrete, AC & other surfacing	44,377	SF	$4	$177,508
5	Utility Relocation/Allocation	1	LS	$5,000	$5,000
6	Remove Traffic Striping and Marking	1	LS	$1,000	$1,000
7	Earthwork	100	CY	$30	$3,000
8	Import Fill	450	CY	$40	$18,000
9	Bike Path	23,482	SF	$8	$187,856
10	ADA Ramp	24	EA	$1,000	$24,000
11	Curb and Gutter and AC Conforms	1,503	LF	$50	$75,150
12	Concrete Islands & Curb	1	EA	$2,500	$2,500
13	Minor Concrete (Sidewalk, Ramp)	9,862	SF	$10	$98,620
14	Retaining Structure	5,401	SF	$75	$405,075
15	Railing/Fence	420	LF	$40	$16,800
16	Pavement Stripes	2,306	LF	$1	$2,306
17	Pavement Markings	4,705	SF	$3	$14,115
18	Path & Roadside Signs	1	LS	$2,500	$2,500
19	Wayfinding Signs	2	EA	$500	$1,000
20	Drainage Modification	1	LS	$3,000	$3,000
21	Unsuitable Material	24	CY	$300	$7,200
22	Landscaping, Irrigation	5,348	SF	$5	$26,740
23	Lighting	39	EA	$4,000	$156,000
		Subtotal Construction Cost			$1,372,070
		Contingency (20%)			$274,414
		Design, Permitting (15%)			$205,811
		Total Construction Cost			$1,852,300
24	ROW Acquisition	30,569	SF	$150 - $200	$2,415,300 - $3,220,400
		Total Liberty Ship Wy. To Testa St.			$6,437,700 - $7,966,100

Segment 6, Harbor Drive to Gate 6 Road

29-Sep-10

No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost	Item Total
1	Mobilization and Traffic Control	1	LS	$84,900	$84,900
2	Clearing and Grubbing, Tree Removal	1	LS	$50,000	$50,000
3	SWPPP & Erosion Control	1	LS	$5,000	$5,000
4	Remove Concrete, AC & other surfacing	41,786	SF	$4	$167,144
5	Utility Relocation/Allocation	1	LS	$10,000	$10,000
6	Remove Traffic Striping and Marking	1	LS	$1,500	$1,500
7	Bike Path	18,093	SF	$8	$144,744
8	ADA Ramp	11	EA	$1,000	$11,000
9	Curb and Gutter and AC Conforms	338	LF	$50	$16,900
10	Concrete Islands & Curb	1	EA	$2,500	$2,500
11	Minor Concrete (Sidewalk, Ramp)	18,274	SF	$10	$182,740
12	Pavement Stripes	3,079	LF	$1	$3,079
13	Pavement Markings	2,343	SF	$3	$7,029
14	Signal Modifications	1	LS	$60,000	$60,000
15	Path & Roadside Signs	1	LS	$3,500	$3,500
16	Wayfinding Signs	3	EA	$500	$1,500
17	Unsuitable Material	23	CY	$300	$6,900
18	Landscaping, Irrigation	8,729	SF	$5	$43,645
19	Lighting	33	EA	$4,000	$132,000
		Subtotal Construction Cost			$934,081
		Contingency (20%)			$186,816
		Design, Permitting (15%)			$140,112
		Total Construction Cost			$1,261,000

DRAFT

This page is intentionally left blank.

Appendix C: Path Maintenance

C.1. Routine Path Maintenance

Effective path maintenance is critical to the overall success and safety of the Ferry Terminal to Gate 6 Path. Maintenance activities typically include pavement stabilization, landscape maintenance, facility upkeep, sign replacement, litter removal and painting. A successful maintenance program requires continuity and often involves a high level of citizen participation. Routine maintenance on a year-round basis will not only improve path safety, but will also prolong the life of the path. The benefits of a good maintenance program are far-reaching and may include:

- A high standard of maintenance is an effective advertisement to promote the path as a local and regional recreational resource.
- Good maintenance can be an effective deterrent to vandalism, litter and encroachments.
- A regular maintenance routine is necessary to preserve positive public relations between the adjacent land owners.
- Good maintenance can make enforcement of regulations on the path more efficient. Local clubs and interest groups will take pride in "their" path and will be more apt to assist in protection of the path.
- A proactive maintenance policy will help improve safety along the path.

Ongoing path maintenance likely includes some, if not all, of the following activities: vegetation management, surface repair and sweeping, removal of litter and dumped materials, signage repair and debris removal after storm events.

C.1.1. Vegetation Management

In general, visibility between pathside trees and landscaping buffers should be maintained to avoid creating a feeling of enclosure. This will also give path users clear views of their surroundings, enhancing the aesthetic experience. Selection and placement of trees should minimize vegetative litter on the path as well as root uplifting of pavement. Vertical clearance along the path should be periodically checked, and any overhanging branches should be pruned to a minimum vertical clearance of eight feet.

Tree roots on the existing Bridgeway sidepath are pushing up the asphalt path

Measures should be taken to protect the path, including mowing as needed along the path to prevent invasion of plants into the pavement and shoulder areas. The recommended time of year for mowing is fall and/or spring. Wherever possible, vegetation control should be accomplished by mechanical means or hand labor. Some species may require spot application of state-approved herbicide.

DRAFT

C.1.2. Surface Repair and Sweeping

The path surface should be kept free of debris, especially broken glass and other sharp objects, loose gravel, leaves and stray branches. Path surfaces should be swept monthly or as needed. Soft shoulders should be well maintained to maximize usability. Cracks, ruts and water damage will need repair periodically. Where drainage problems exist along the path, ditches and drainage structures will need to be kept clear of debris to maintain positive drainage flow.

C.1.3. Removal of Litter and Dumped Materials

Staff or volunteers should remove litter along the path. Litter receptacles should be placed at primary access points such as at the major intersections. Neighborhood volunteers, friends groups, alternative community service crews and inmate labor should be considered in addition to maintenance staff.

C.1.4. Signage Repair

Signs should be replaced along the path on an as-needed basis.

C.1.5. Removal of Debris after Storm Events

Portions of the path may be subjected to periodic flooding. When flood waters recede, deposits of debris such as tree branches, leaves, mud and trash may remain on the path. Debris accumulated on the path surface should be removed after each recession of water.

C.1.6. Routine Trail Maintenance Frequencies

Table C-1 summarizes the maintenance recommendations. Typical maintenance vehicles for the path will likely be light pick-up trucks. A mechanical sweeper is recommended to keep the path clear of loose gravel and other debris. Care should be taken when operating heavier equipment on the path to warn path users and to avoid breaking the edge of the path surface.

Table C-1 Routine Trail Maintenance Frequencies

Item	Suggested Frequency
Lighting replacement/repair	As needed
Remove fallen trees	As needed
Water plants	As needed
Bollard replacement	As needed
Sign replacement/repair	As needed
Trash disposal	As needed, twice a week
Graffiti removal	Weekly/or as reported
Weed control	Monthly
Pavement sweeping	Monthly
Planted Tree, Shrub, trimming/fertilization	6 months - 1 year
Debris removal	Bi-annually or as needed
Clean drainage system	Annual
Maintain irrigation lines/replace sprinklers	1 year
Pavement marking replacement	1-3 years
Pruning to maintain vertical clearance	1-4 years
Pavement sealing/potholes	5-8 years
* Additional maintenance may be required.	

C.2. Long-Term Trail Maintenance

Based on observations and analysis of similar existing concrete paths, the pavement surfacing will need an extensive replacement and renovation approximately every 50 years. However, this replacement could be mitigated and the expense reduced with the routine maintenance measures described above.

Deferred maintenance projects traditionally become capital projects. These are usually eligible projects for grant funding. State and federal grant funding agencies tend not to pay for such preventative maintenance activities such as saw cutting small sections and patching with a molded slab of concrete but these same agencies will pay for reconstruction of the pathway or road when it becomes unusable.

The cost of extending the life of concrete by crack repair and patching are relatively small compared with reconstruction.

DRAFT

This page is intentionally left blank.