

# CARGO WAY/BAY TRAIL

## CONCEPTUAL DESIGN STUDY



## FINAL REPORT

San Francisco Redevelopment Agency  
Port of San Francisco

Prepared by:  
Robin Chiang & Company

May 2008



# TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION AND PLANNING PROCESS OVERVIEW</b>	<b>6</b>
1.1	Context.....	6
1.2	Community Planning Process.....	7
1.3	Report Overview.....	9
<b>2.0</b>	<b>EXISTING CONDITIONS, CONSTRAINTS &amp; OPPORTUNITIES</b>	<b>12</b>
2.1	Overview.....	12
2.2	Cargo Way Location.....	13
2.3	Open Space and Recreation at Heron’s Head Park and Islais Creek.....	13
2.4	The Port’s Backlands.....	14
2.5	India Basin Industrial Park.....	14
2.6	Third Street and The “Gateway”.....	15
2.7	Transit and Circulation.....	15
2.8	The Bay Trail & The Blue Greenway.....	16
2.9	Better Streets Plan.....	16
2.10	Utilities.....	17
2.11	Geotechnical Characteristics.....	18
2.12	Stormwater Management.....	18
2.13	Constraints and Opportunities.....	19
2.14	Conclusion: A Model of Sustainable Mixed-Use Streetscape Design.....	20
<b>3.0</b>	<b>ALTERNATIVE DESIGN CONCEPTS</b>	<b>22</b>
3.1	Alternative A.....	22
3.2	Alternative B.....	22
3.3	Alternative C.....	22
3.4	Intersections.....	22
<b>4.0</b>	<b>PREFERRED DESIGN CONCEPT</b>	<b>28</b>
4.1	Conceptual Renderings.....	29
4.2	The Preferred Design.....	30
4.3	Preferred Design: Constrained ROW.....	32
4.4	On-Street Parking Option.....	32

4.5.....	Intersections and Segment at Third/ Illinois/ Amador Streets.....	34
4.6.....	Alternative Design for Segment at Third/ Illinois/ Amador Streets.....	35
4.7.....	Intersection at Mendell.....	36
4.8.....	Intersection at Jennings.....	37
4.9.....	Greening: Tree & Plant Species.....	38
4.10.....	Greening: Stormwater Strategy.....	39
4.11.....	Hardscape Elements: Lighting, Seating, Custom Elements.....	41
<b>5.0</b>	<b>FUNDING SOURCES</b>	<b>44</b>
5.1.....	Funding Opportunities.....	44
<b>A.</b>	<b>APPENDICES</b>	<b>47</b>
A.1.....	Cost Estimates.....	47
A.2.....	Workshop Summaries.....	47

# ACKNOWLEDGEMENTS

**Project Funded by:**

Association of Bay Area Governments (ABAG)

**Special Thanks to:**

Bayview Hunters Point (BVHP) Project Area Committee (PAC)

Maritime Commerce Advisory Committee (MCAC)

Southern Waterfront Advisory Committee (SWAC)

San Francisco Department of Public Works  
San Francisco Municipal Transportation Agency  
San Francisco Public Utilities Commission  
San Francisco Planning Department  
The Better Streets Plan

**Prepared for:**

San Francisco Redevelopment Agency

Port of San Francisco

**Prepared by:**

Robin Chiang & Company (RCCo)

Livable City

Merrill Morris Partners

KCA Engineers Inc.

CHS Consulting Group



# **CHAPTER 1**

## **INTRODUCTION AND PLANNING PROCESS OVERVIEW**

## 1.0 INTRODUCTION AND PLANNING PROCESS OVERVIEW

In March 2006, the San Francisco Redevelopment Agency (SFRA or the Agency) coordinating with the Port of San Francisco (Port) applied for and received a \$75,000 grant to study improving a segment of the Bay Trail along Cargo Way in the Bayview Hunters Point neighborhood. The goal of the study was to create a design for Cargo Way that makes it safe and attractive for pedestrians and cyclists while ensuring that the street serves the City's industrial and cargo freight transportation needs.

The grant was funded by the Association of Bay Area Government's (ABAG) Bay Trail Project, which designated Cargo Way as the alignment in the regional Bay Trail. Cargo Way links an existing segment of the Bay Trail along the India Basin Shoreline including Heron's Head Park to other waterfront open spaces along the San Francisco Bay.

The Redevelopment Agency used the grant funds to hire a consultant team headed by Robin Chiang & Company (RCCo) to prepare a conceptual design for Cargo Way. RCCo was awarded the contract to conduct the study through a competitive bid process.

The consultant team included firms with expertise in landscape architecture (Merrill Morris), civil engineering (KCA), transportation planning (CHS) and urban planning (Livable City & RCCo). An intern from the Bayview community was hired to help RCCo with the project.

Since Cargo Way is located within the Port's jurisdiction and serves its operations, the Port has coordinated closely with the SFRA on the community planning process. The planning process included two public workshops and ongoing oversight by the Bayview Hunters Point (BVHP) Project Advisory Committee (PAC) and other existing community groups including the Port's Southern Waterfront Advisory Committee (SWAC) and the Maritime Commerce Advisory Committee (MCAC).

A community based working group was also established to provide input into the planning process and attend all workshops. In addition, a citywide inter-departmental technical advisory committee provided technical input.

### 1.1 Context

As the image below shows, Cargo Way is located in San Francisco's Bayview Hunters Point neighborhood, connecting Third Street to Heron's Head Park. To the south, Cargo Way borders India Basin Industrial Park, a redevelopment project area established in 1969.



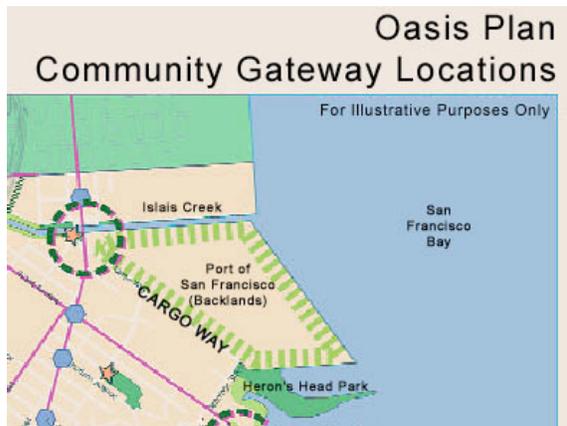
Cargo Way is located near San Francisco's Southeast Waterfront

## CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

The Port of San Francisco owns the land north of Cargo Way, an area referred to as the “Piers 90-96 terminals and Backlands area.”

In November 2000, the Bayview Hunters Point Project Area Committee, an advisory group formed to oversee redevelopment efforts in the larger Bayview Hunters Point neighborhood, approved the *Bayview Hunters Point Community Revitalization Concept Plan (Concept Plan)*. Published in 2002, the Concept Plan serves as the community’s vision statement, guiding redevelopment planning and expressing the community’s goals and objectives for the revitalization of the Bayview Hunters Point area.

The Concept Plan includes a number of community goals related to waterfront access and open space, such as: establishing a network of public open spaces and recreational areas, restoring ecological health to the environment, and reclaiming the heritage of its waterfront as a significant part of the community revitalization efforts. The plan’s ultimate goal is to create a waterfront and an open space system that will help further cultural, community and economic development efforts in the Bayview Hunters Point.



*The proposal for a gateway and open space along Cargo Way & the Backlands*

A 1999 grant received by the BVHP PAC was used to create an exploratory document called “Bayview Hunters Point Open Space and Gateway Proposal.” The proposal set a “green” tone by establishing five “community gateways” identified with design concepts and options for a large-scale park. Issues related to the creation of a comprehensive open space network were also studied. One of the five gateways defined is the Northern Gateway, referred to as the “Art Center Gateway,” located at Third Street

adjacent to Islais Creek and India Basin Industrial Park. It is also the western terminus of Cargo Way.

ABAG’s Bay Trail Project fits nicely into the environmental and waterfront goals contained of the Concept Plan and the Gateway Project.

In 2005, Mayor Gavin Newsom directed attention to San Francisco’s southern part of the Bay Trail by envisioning it as a 13-mile continuous greenway called the Blue Greenway. Along with the previous initiatives, the Blue Greenway provides the context for development of Cargo Way into a “green” and sustainable streetscape that welcomes pedestrians and bicycles as well as cars and trucks.

### 1.2 Community Planning Process

This Cargo Way/Bay Trail Conceptual Design Study was the result of an inclusive community planning process.

#### Public Workshops



The first public workshop to discuss improvements to Cargo Way was held on Wednesday, November 7, 2007. Approximately 35 people attended the workshop. Following an overview of existing conditions in the area by Port and Agency staff, workshop participants considered three different conceptual design alternatives for improving Cargo Way and creating a new segment of the Bay Trail. Participants reviewed each alternative in detail by rotating through stations featuring each alternative. Participants then reconvened for a group discussion about the design alternatives.

## CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY



The second public workshop was held on February 6, 2008. Approximately 50 people attended the workshop.

Following a summary of the input received at the previous workshop, the consultant team presented a draft preferred design alternative based on the areas of consensus from the first workshop. The consultants then presented different options for design amenities, including street furniture (lighting and benches), street trees and median landscaping, and signage and fencing.



Following the presentation, attendees were asked for their opinion about the design amenities presented, and for general comments about the preferred alternatives. The workshop attendees were generally supportive of the conceptual design for a two-way bike path and the different design amenities presented. However, a number of attendees raised concerns about the loss of on-street parking on Cargo Way.

Generally, attendees preferred a dedicated, two-way bike path on the south side of Cargo Way. There was also consensus for maintaining a median on the middle of the roadway, improving sidewalks, and creating landscaped areas to provide sustainable stormwater management and an attractive visual buffer.



Complete summaries of the public workshops are included in Appendix 2.



## Community and Technical Oversight

A community based Working Group was also established to provide input into the planning process and attend all public workshops. A citywide interdepartmental Technical Advisory Committee was also established to provide technical oversight to the planning process.

The Community Working Group included representatives from the Port's Southern Waterfront Advisory Committee and the Maritime Commerce Committee, as well as from the Bayview Hunters Point Project Area Committee, Literacy for Environmental Justice, the Bicycle Coalition and the Neighborhood Parks Council.

The inter-agency Technical Advisory Committee included staff from the Port, the Agency, Supervisor Maxwell's office, the Municipal Transportation Agency, the City's Planning Department, the Department of Public Works and the Public Utilities Commission.

The following goals for Cargo Way were distilled from discussions with the working group and the technical advisory group:

1. Cargo Way should be retained as a throughway for cargo freight transport;
2. the existing capacity of Cargo Way for through traffic should not be impacted unless determined to be acceptable;
3. landscape and pedestrian improvements are the priority improvements;
4. improvements for bicycle mobility are important; and
5. any new design should include sustainable building and design practices including the use of natural storm water management systems.

## 1.3 Report Overview

This report constitutes the final work product for the Cargo Way/Bay Trail Conceptual Design Study. It contains conceptual designs for improving the Bay Trail along Cargo Way in the Bayview Hunters Point. Additional design detailing and engineering will occur during the preparation of design development and construction documents, once capital funding is secured.

This report includes the following chapters:

### Chapter 1.0: Introduction

This introduction provides background about the project and an overview of the planning process that led to the preferred design concept.

### Chapter 2.0: Existing Conditions, Constraints and Opportunities.

This chapter describes the existing conditions along and around Cargo Way, and describes the opportunities and constraints that inform the designs for Cargo Way.

### Chapter 3.0: Alternative Design Concepts

This chapter describes the three design alternatives that informed and led to the choice of the preferred design concept.

### Chapter 4.0: Preferred Design Concept

This chapter includes detailed information about the preferred design concept for Cargo Way, including perspectives, plans and sections. It also includes information about the recommended landscaping and street trees, street furnishings, and approaches to storm water management.

### Chapter 5.0: Funding Sources

This chapter includes a summary of potential capital funding sources.

### Appendices

The appendices include cost estimates for the proposed improvements as well as summaries of the two public workshops.



# **CHAPTER 2**

## **EXISTING CONDITIONS, CONSTRAINTS & OPPORTUNITIES**



**2.0 EXISTING CONDITIONS, CONSTRAINTS & OPPORTUNITIES**

This chapter describes the existing conditions along Cargo Way and in the surrounding area. It identifies constraints and opportunities for future improvements.

**2.1 Overview**

Cargo Way was constructed by the City’s Department of Public Works as a component of the India Basin Industrial Park Redevelopment Area in the early 1970’s. Currently, Cargo Way functions as a vital industrial arterial for trucks and commercial vehicles serving the cargo and maritime needs of the adjacent Port lands and India Basin Industrial Park. The Port and other industrial users in southeast San Francisco rely on Cargo Way as a fundamental component to the success of their ongoing operations.

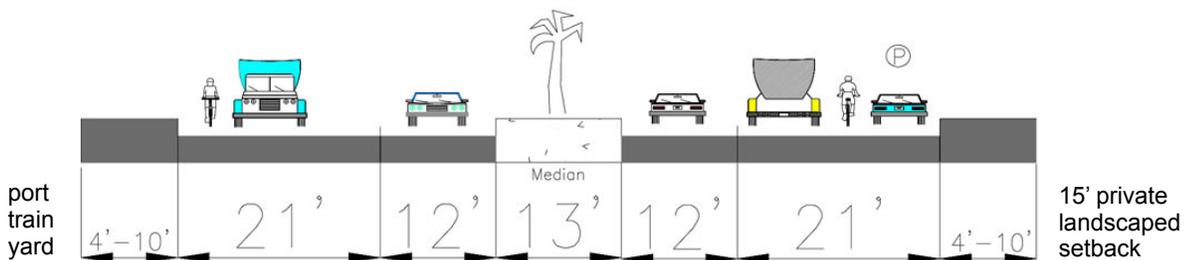
The existing right-of-way (ROW) of Cargo Way includes two wide traffic lanes in either direction

(four lanes total) with a landscaped median approximately 13 feet wide. A fifteen feet private landscaped setback is required on the south side. Parking is currently allowed on the south side only. On-street parking is currently allowed on the south side of the street only, from 6 am to midnight. These restrictions were in response to community concerns over abandoned cars in the area. The parking on the south side is currently under-utilized.

As seen in the existing street section below, bikes share the roadway with vehicular traffic. The travel lanes are 33 feet wide without striping, and the sidewalks range from 4 to 10 feet wide. At a few pinch points the sidewalk is quite constricted to non-existent.

These discontinuous and narrow sidewalks make the boulevard uninviting and unsafe for pedestrians and bicycles and limit access to the Bay and associated open spaces.

In addition, the landscaping along Cargo Way lacks cohesiveness; it is sporadic, overgrown, and



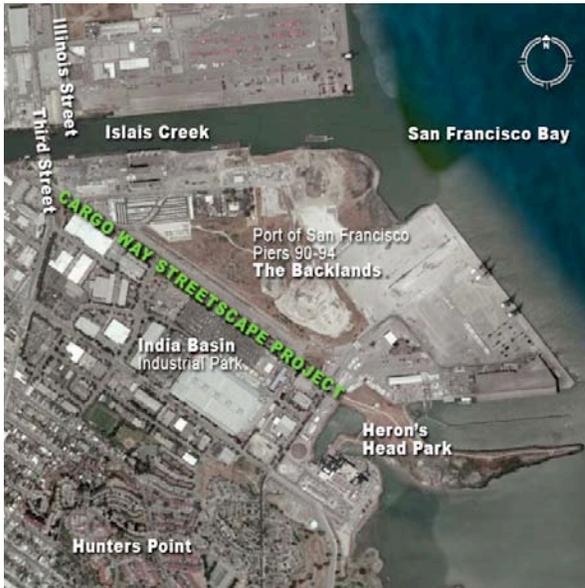
SFMTA drawing of the ROW section typical on Cargo Way.

difficult to maintain. The current street configuration with wide lanes and long straight distances between intersections permit, and even encourage, excessive vehicular speed. An initial analysis by the City's Department of Parking and Traffic (now MTA) noted that the generous ROW could accommodate improvements for pedestrians and bicycles.

While SFRA and Port staff recognize the opportunity for pedestrian, cyclist and landscape improvements to Cargo Way, the planning process recognized the needs of the existing Port tenants and future Port growth in the area. The challenge of this planning study was to develop a concept that meets the needs of all the various users of Cargo Way in a safe and sustainable way.

## 2.2 Cargo Way Location

Cargo Way is three-quarter mile long industrial boulevard that runs between Third Street and Jennings Street and terminates at Heron's Head Park. Cargo Way also intersects Mendell Street, which lies between Third and Jennings streets.



*Cargo Way (in green) and its surrounding area*

Cargo Way is located in the Bayview Hunters Point neighborhood. It borders the India Basin Industrial Park, a redevelopment project area established in 1969, to the south. Tenants in the India Basin Industrial Park include a large United States Post office facility, a large San Francisco MUNI facility and various warehouses and light

industrial businesses. The Port of San Francisco owns all of the land north of Cargo Way, an area referred to as the Port's Piers 90-96 and "Backlands" areas.

## 2.3 Open Space and Recreation at Heron's Head Park and Islais Creek

Cargo Way helps connect two open space resources: Islais Creek and the India Basin Shoreline Parks including Heron's Head Park.

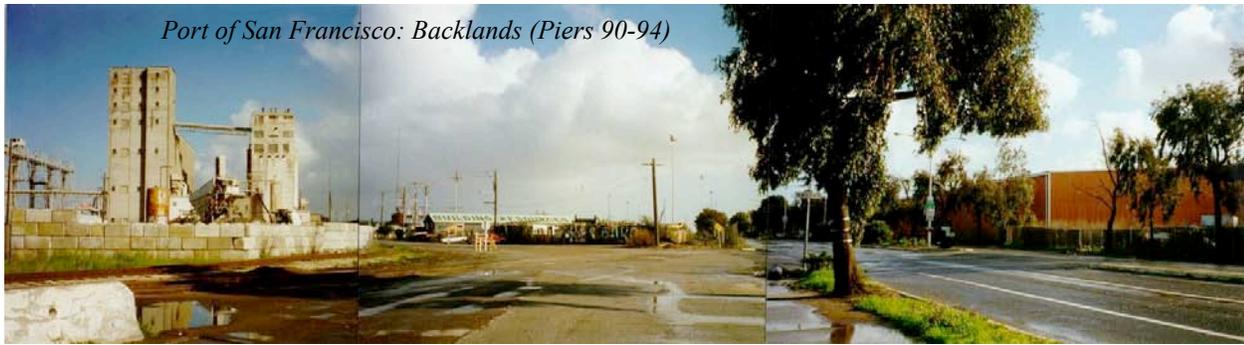
In the mid-1990s, the Port of San Francisco developed an open space strategy for the area adjacent to the Port's maritime facilities from Piers 80 to 98. One of the Port's early projects was to turn Pier 98 (bay fill that was not utilized for anything) into Heron's Head Park, a dedicated wetlands habitat. Owned and maintained by the Port, it provides a sanctuary for 78 different species of birds and is an ideal place to study the shoreline ecology of the south waterfront.



*The tidal marsh at Heron's Head Park*

Each year, more than 1,200 student volunteers serve as caretakers of the park. They help to plant native plant species, weed non-natives, and clean and maintain the park's wild areas. Future plans exist for a "Eco-Center" in Heron's Head park, developed by Literacy for Environmental Justice (LEJ) where youth from the area can come to an off-the-grid building to study wetland ecology and habitat restoration, solar energy, ecological design and other sustainability issues.

At the end of Islais Creek, west of Third Street, there is a burgeoning public access area. Existing facilities include the Native Plant Park and small boat gangway and dock on the south shore. A kayak club stores and launches their vessels from



the Native Plant Park. Along the north shore there is a box sewer promenade that has become a popular skateboard park. Muni's future bus coach facility at the north-west end of the creek will include additional shoreline, wetlands and park improvements.

## 2.4 The Port's Backlands

To the North of Cargo Way is the Port's Pier 90-96, Backlands property and its intermodal freight rail yard. The entire complex includes the Port's primary bulk cargo terminals including Hanson Aggregates, the Bode and CEMEX concrete batch plants and Norcal's San Francisco recycling plant at Pier 96. Each of these uses strive to incorporate sustainable and green business practices. Their open hard surface lots are paved in permeable concrete. Stormwater runoff is addressed by either being recycled and used in their product or operations or is utilized and treated in the surrounding open areas.

The Port is currently preparing a master plan for Piers 90-94 and the Backlands. The plan is considering a range of different users, including proposals for a biodiesel manufacturing center, food waste digesters, solar power generation, or the relocation of portions of the City's Southeast Wastewater Treatment Plant. The Port is also exploring an eco-industrial park concept. One of the key goals of the backlands planning process is to find uses that are compatible with the existing maritime uses and consistent with California's public trust doctrine.

## 2.5 India Basin Industrial Park

Cargo Way borders the India Basin Industrial Park on its south. The India Basin Industrial Park is a redevelopment project area that was adopted by the Redevelopment Commission and the Board of Supervisors in 1969.

The objective of the redevelopment area was to preserve land and create sites well-suited for light industrial businesses and to create a cluster of industrial businesses. Many chose to locate in the redevelopment area because it offered an opportunity to remain in the City in buildings suitable for their needs.

As a result of redevelopment, 33 new industrial buildings were constructed in the area. The project added 9,000 jobs with an annual payroll of \$300,000,000. The India Basin Redevelopment Plan, adopted in 1969, will expire in 2009 at which time jurisdiction will be handed over the City's Planning Department.



Development standards for India Basin Industrial Park currently require a 15-foot landscaped setback for all properties fronting the south side of Cargo Way. The setback creates a distinct buffer between these private properties and the right-of-way.

## 2.6 Third Street and The “Gateway”

The west end of Cargo Way terminates at Third Street, near Islais Creek where the Third Street light rail is accessible. In the 1999 Gateway Project, the PAC identified the Third Street and Cargo Way intersection as one of five “Community Gateways” to mark a significant transition from north San Francisco into the Bayview Hunters Point district. This Gateway is also known as the “Art Center Gateway.” It is described as a gateway that is nature-focused, reflective, and emphasizes connections to the ecological habitat and open space available at the waterfront.

A group of Port tenants initiated and installed an initial gateway open space landscape improvement project at this intersection. It is anticipated that this project could be expanded and improved.

## 2.7 Transit and Circulation

Cargo Way enjoys good multi-modal transportation access in San Francisco. It will have easy truck access via the soon-to-be completed Illinois Street Bridge to Cesar Chavez Street and U.S. 101/I-80 and I- 280. Cargo Way is adjacent to the Port’s Intermodal Cargo Transfer Facility and has direct freight rail access to the Caltrain Joint Powers Board/Union Pacific line. Water access is available via the adjacent Piers 90-96 Cargo Terminal.

### Third Street Light Rail



*The light rail on Third Street at the intersection of Cargo Way*

In 2006, the Third Street light rail project opened, linking the Bayview Hunters Point to downtown and other parts of San Francisco. The Third Street light rail, or the “T-Line,” has two stops in the vicinity of Cargo Way and Third Street. The T-Line largely follows the proposed Bay Trail and Blue Greenway through the southeast section of the San Francisco, linking transit to the City’s open space assets.

### Illinois Street Bridge

Another important component of the area’s circulation network is the new Illinois Street Bridge. The Port of San Francisco will soon complete the Illinois Street Multi-modal Bridge over Islais Creek; the bridge will provide on-dock rail service to the Port’s cargo terminal at Pier 80 as well as an alternative route for trucks leaving the cargo terminals in the Southern part of the city. When completed, the bridge will provide access for pedestrians and bicycles and will be the Bay Trail alignment connecting directly to the Cargo Way Bay Trail segment.



*The Illinois Street Bridge during construction*

The bridge will improve rail and truck access for cargo transport between the Port’s northern and southern terminals and reduce industrial traffic from Port activities on Third Street, particularly truck trips that are projected to congest the intersection of Third Street and Cargo Way.

The light rail line eliminated one traffic lane in each direction on Third Street, reducing vehicle capacity. Construction of the bridge will create a second crossing for Islais Creek that will reduce industrial vehicular traffic that otherwise would continue on Third Street.

The bridge to Pier 80 will accommodate cargos that do not stay in the Bay Area. Steel and other cargos destined for inland construction projects

will be able to unload their cargo in San Francisco and deliver it directly by rail to their final destinations.

## 2.8 The Bay Trail & The Blue Greenway

The Bay Trail, sponsored by ABAG, is a 500-mile waterfront walking and bicycling paths circling the nine counties of San Francisco Bay. Many segments of the Bay Trail are under development throughout the Bay Area.



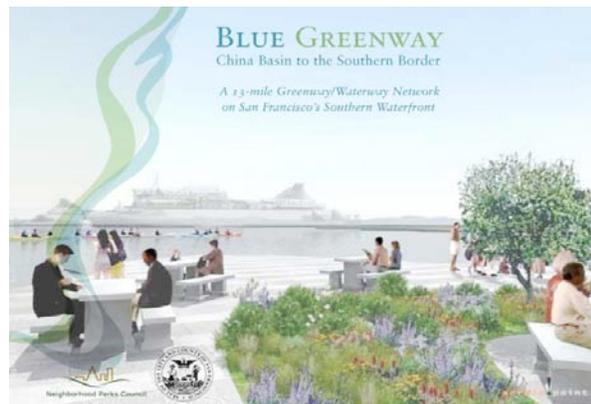
The Bay Trail Project designates Cargo Way as the access route to the Bay in this area, connecting Heron's Head Park with other waterfront open spaces.

Senate Bill 100, authored by then-state Senator Bill Lockyer and passed into law in 1987, directed the ABAG to develop a plan for this "ring around the Bay," including a specific alignment for the Bay Trail. The Bay Trail Plan, adopted by ABAG in July 1989, includes a proposed alignment; a set of policies to guide the future selection, design and implementation of routes; and strategies for implementation and financing.

The goal of the Bay Trail is to provide easy access to recreational opportunities for outdoor enthusiasts, including hikers, joggers, bicyclists and skaters. It also offers a setting for wildlife viewing and environmental education, and it increases public respect and appreciation for the Bay. The Trail provides important transportation benefits such as providing cyclists with an alternative commute and connecting to numerous public transportation facilities, including ferry terminals, light-rail lines, bus stops and Caltrain, Amtrak, and BART stations. Eventually, the Bay Trail will eventually cross all the major toll bridges in the Bay Area.

To carry out its mission, ABAG and the Bay Trail Project award funds for trail construction and maintenance. The Bay Trail Project participates in planning efforts and encourages compliance with the adopted Bay Trail Plan. Through maps and other informative materials the Bay Trail Project educates the public and decision-makers about the merits and benefits of the Bay Trail and disseminates information about progress on its development.

In 2006, the Mayor of San Francisco launched the Blue Greenway task force, a San Francisco-based project to implement the Bay Trail, as well as create a network of open spaces and water access points, along the City's southern waterfront. The Blue Greenway project will link established open spaces; create new recreational opportunities and green infrastructure; provide public access to the water, and create, green corridors in surrounding neighborhoods. It will install public art and interpretive elements, support stewardship, and advocate for waterfront access as an element of all planning and development processes over time.



*Blue Greenway: A 13-mile Greenway/Waterway Network on San Francisco's Southern Waterfront*

## 2.9 Better Streets Plan

The City of San Francisco is in the process of finalizing The Better Streets Plan (BSP), a citywide master plan that will provide a unified set of standards and guidelines for the sustainable design of all city streets.

The City's approach to the design, construction, and maintenance of public rights-of-way will emphasize transit, cycling and walking. The BSP acknowledges that public spaces are about much more than just transportation and that streets

serve a multitude of social, recreational and ecological needs that must be considered when deciding on the most appropriate design. The BSP will provide the opportunity to integrate all these considerations into a single framework.



Below is a list of the key goals and considerations of the Better Streets Program.

- Keeping families in San Francisco. Streets protected from fast-moving traffic, that are clean, well-maintained, and have spaces for neighbors to gather or children to play will help to keep families in San Francisco. Their role is as important as affordable housing or good public schools.
- Supporting MUNI and a transit-first city: Every transit trip begins and ends with a walking trip. Well-designed streets that are safe for pedestrians, have amenities that people need, and connect to important transit lines will encourage greater use of the MUNI system.
- Promoting public safety: Streets that are active and have 'eyes on the street' will enhance residents' sense of safety.
- Minimizing impact on global climate change and local air pollution:
- Minimizing sewer/ stormwater overflows into the Bay.
- Decreasing the likelihood of pedestrian injuries and fatalities.
- Increasing accessibility for all street users.
- Providing open space in areas that are lacking.
- Supporting neighborliness, civic interaction, and identity.
- Enhancing the everyday quality of life for San Francisco's residents.

The BSP includes model designs for different types of streets in San Francisco, including industrial streets like Cargo Way. Illustrations for each street type provide a typical existing condition, a set of basic improvements such as street trees, curb ramps, and pedestrian lighting, and a set of additional options that could be applied depending on the circumstance of a particular street.

The Better Streets Program identifies measures such as consistent street trees and planters, pedestrian-scale lighting, and center medians for industrial mixed-use streets like Cargo Way.

## 2.10 Utilities

This section is based on a set of utility occupancy drawings prepared by Jordan Associates in 1978. The information was transferred by the Jordan firm to their improvement plans, but they left out crucial parts that make it difficult today to locate utility systems in relation to current curbs and islands. Final design concepts will need to be based on an updated underground utility reconnaissance referenced to above ground features.

*Interferences:* In other low-lying areas of San Francisco, the location of the sewer box and pipes makes changes to streetscapes difficult because these interferences are so close to the surface. These issues could present challenges to landscaping choices and roadway crowning. A future utility reconnaissance will clarify these issues.

*Domestic Water:* Except for a short section of 8" diameter main near Third Street, the Jordan plans do not show any low-pressure water lines elsewhere in the street. A line in Amador Street appears to be crossed out on the plan sheet. It is unclear where or how the landscaped areas were to be irrigated. A complete utility reconnaissance will clarify these issues.

*High Pressure (AWSS) Water:* The Jordan plans show the planned installation of a 12" diameter high-pressure system. It is unknown if this system is in place. The city's AWSS system's function is for fire-fighting purposes only. No services are attached to these lines – only high pressure hydrants.

*PG&E Facility:* A significant PG&E facility is shown along the northerly street right-of-way on

# CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

the Jordan plans. For most of the length of the north side of the street this consists of a 12" diameter fuel line, an 8" diameter flush line and a 3" conduit. Based on experience of engineers from the Consulting team with fuel lines in Mission Bay, there should be some concern regarding possible fuel contamination along this line. PG&E has initiated plans to begin to remove the pipeline in the near future. Prior to construction, discussions with PG&E should occur to discuss the facility and its removal and remediation schedule.



Temporarily exposed utilities in existing median along Cargo Way

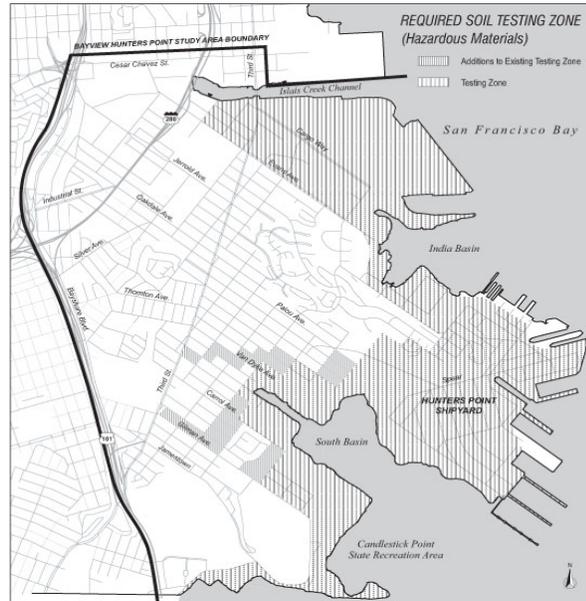
## 2.11 Geotechnical Characteristics

The entire Cargo Way area is landfill likely made of earthquake debris and other demolition materials that fill the lowest of this low lying area and extend to the shoreline. Soft bay mud and sand deposits then underlie the landfill.

Final engineering plans will need to take into consideration the total and differential settlement due to consolidation, settlement of landfill debris, and liquefaction. The San Francisco Planning Department's Area Plan for BVHP locates the Cargo Way strip in an area of Major Potential Liquefaction Hazard. The same plan also places the Cargo Way project area within the Required Soil Testing Zone (Hazardous Materials), which will have to be taken into consideration during construction.

Cargo Way may be subject to Article 20 of the San Francisco Public Works Code, "Analyzing the Soil for Hazardous Wastes." This article mandates testing of Bayside soils found in the areas designated on a map included with the ordinance.

Any project that anticipates moving 50 cubic yards of earth or more will need to comply with the testing procedures outlined in the ordinance.



Required Soil Test Zone (Hazardous Materials) for the Bayview Hunters Point. Source: San Francisco Planning Department

## 2.12 Stormwater Management

Before its settlement and subsequent development, the San Francisco peninsula was composed of sand dunes, deposits of sandstone, a few grasslands, and wetlands that absorbed rainwater, which replenished groundwater and streams. Today, impervious surfaces such as buildings, streets, and parking lots have covered most of these areas and prevent rainfall infiltration. Runoff from impervious surfaces picks up pollutants like oil and debris that are washed into the sewer system or into the San Francisco Bay. Under heavy rain events, this runoff can contribute to localized flooding and combined sewer overflow discharges to the Bay.

Unlike many cities, most of San Francisco sends its wastewater and storm runoff through the same treatment process. Although the combined system is beneficial for treating stormwater in light rains, during large storms, the high volume of water overloads the capacity of the combined sewer systems, causing overflows that pose significant environmental and public health problems. Urban stormwater runoff also poses a significant risk of localized flooding.

This is a particularly important issue in the Bayview community because the water treatment plant is located here. Storm overflows directly impact this community and its adjacent bay and creek waters.

Since it is prohibitively expensive to build infrastructure to handle the capacity required by occasional large storms from San Francisco’s highly variable rainfall, the sensible alternative would be to prevent water from entering the system in the first place, or to retain it prior to entering the combined system. Were this the case, overburdening the system during peak rain events would not occur and the likelihood of flooding and overflows would be reduced, and the water could be used beneficially.

A number of techniques to better manage stormwater without using conventional piping and storage exist, as do methods for treating the water before it enters the system. Cities around the world are taking advantage of sustainable stormwater management technologies, often called Best Management Practices (BMPs), and Low Impact Design (LID) approaches that can help mitigate the effects of urbanization on stormwater. These strategies inform the design for Cargo Way.



*“Sunset Swales” is a SFPUC demonstration project, pictured here during construction*

The Port and the San Francisco PUC are in the process of adopting Storm Water Design Guidelines, which will be used for those areas of the City where the stormwater and sewer system utilities are separated. These design guidelines will be used to help better define how Cargo Way can be designed to help reduce the impact of storm water flows to the southeast treatment facility.

## 2.13 Constraints and Opportunities

Even though Cargo Way is primarily used by industrial traffic including large trucks, it also needs amenities for pedestrians and bicycles. The proposed design concept insures safe access to open space and the waterfront for pedestrians and cyclists, while maintaining necessary access to Port operations and other industrial land uses.

Listed here are a summary of the main constraints and opportunities for the improvement of Cargo Way that have informed the preferred design.

### Constraints:

- Cargo Way is surrounded by industrial facilities and must provide access for cargo truck traffic. There is an inherent conflict between on-street industrial traffic and bicycles and pedestrians. Because of the lack of pedestrian and bicycle facilities, the area does not currently attract many visitors.
- Adjacent to Port’s Intermodal Freight Yard is the pinch point on Cargo Way. There is very limited space for bicycles and pedestrians going west bound towards Third Street.
- There is existing infrastructure along Cargo Way that will be costly to move or change, such as the existing sewer system.
- Since the site is made of landfill added to a marsh, it may have unstable soil conditions from improper filling that could increase the cost of improvements.
- Because the site is also in an area of Potential Major Liquefaction, as defined in the BVHP General Plan, a geotechnical study on settlement conditions of “Bay Mud” may be necessary.
- Although Cargo Way is under the jurisdiction of the Port, the roadway was developed and improved by DPW through a MOU with the Port and the Agency. Presently, there is confusion regarding maintenance responsibility. A successful project there will depend on the integrated stewardship of many city agencies, community organizations, and private owners in the area.



*Narrow & discontinuous existing sidewalk conditions*

**Opportunities:**

- Wide ROW on Cargo Way allows development of safe circulation for trucks, cars, pedestrians, and bicycles.
- Potential to improve a three-quarter mile strip of the regional Bay Trail and San Francisco’s Blue Greenway linking the Illinois Street Bridge to Heron’s Head Park.
- Potential to provide better access to existing open space at Heron’s Head Park and Islais Creek.
- Potential to create a continuous greenway from Islais Creek to the India Basin Shoreline open spaces including Heron’s Head Park that takes advantage of the required landscaped setbacks that currently exist along Cargo Way on its south side.
- Potential to create an attractive entryway into Bayview Hunters Point, India Basin Industrial Park and the Port’s Pier 90 -96 and Backlands
- Potential to apply concepts for basic improvements such as street trees, curb ramps, etc. that are consistent with the new Better Streets Plan (BSP) for San Francisco.
- Potential to create a model of sustainable, green streetscape design in an industrial area that can guide the design of subsequent parts of the Bay Trail and Blue Greenway.
- Potential to design landscaping for the filtering and treatment of storm flows using Sustainable Stormwater Guidelines and Best Management Practices (BMP) established by the SFPUC.

**2.14 Conclusion: A Model of Sustainable Mixed-Use Streetscape Design**

The development of Cargo Way as a sustainable industrial multi-use streetscape would be consistent with the BVHP PAC Concept Plan and Gateway Project, the Better Streets Plan, and best stormwater management practices. A landscaped boulevard would provide safe and efficient routes for pedestrians and bicycles as well as for trucks and cars, access to open space and the waterfront, and a sense of arrival for Heron’s Head Park and Third Street at Islais Creek. Cargo Way has the opportunity to serve as a model of sustainable design for other sections of the Bay Trail and San Francisco’s Blue Greenway.



*Bioswale in Portland*

# **CHAPTER 3**

## **ALTERNATIVE DESIGN CONCEPTS**

### 3.0 ALTERNATIVE DESIGN CONCEPTS

Based upon the Existing Conditions analysis and insight gained from the Technical Advisory Committee, the Blue Greenway Task Force Report and public workshops, the consultant team developed three concepts for improving landscape, pedestrian and bicycle improvements on Cargo Way. The concepts were based upon the goals previously identified and took cost into consideration ranging from very affordable to expensive.

These alternatives were presented at a Community Workshop on November 7, 2007, which was attended by approximately 35 people including members of the Community Working Group and Technical Working Group. This section summarizes the three alternatives and the drawings are shown on the next few pages.

#### 3.1 Alternative A

Alternative A presented a very basic set of improvements to Cargo Way. The alternative called for a striped bike lane on each side of the street, as well as simple roadway repairs to make the street safe for pedestrians and cyclists. Overgrown and unwanted vegetation along the sidewalks and on the street would be removed. The streetlights on the median would be retained and new pedestrian lights would be installed on sidewalks. These relatively minor changes would result in the lowest cost scenario.

#### 3.2 Alternative B

Alternative B narrows the existing 13 foot median, creating an opportunity for a bi-directional class 1 bike path on the south side of Cargo Way. Locating the bike path on the south side of the street takes advantage of the 15 -foot private landscaped setbacks required along the south side of Cargo Way. Maintaining the median allows existing utilities, such as street lights, to remain in place, which reduces costs. Green rainwater retention buffer zones would be introduced to both sides of the street, between travel lanes and bike path and sidewalk. Together, the bike path, improved sidewalks, landscaped buffers and pre-existing private landscaped setbacks would create a park-like environment on the southern side of Cargo Way. Art and local history installations would be

added along the northern sidewalk, and new pedestrian level streetlights would be added to both sidewalks. The travel lanes along Cargo would all be 12 feet wide.

#### 3.3 Alternative C

Alternative C would completely reconfigure the roadway and eliminate the median. Removal of the median would allow for a wider bi-directional bike path, wider sidewalks and wider landscaped buffers. This alternative would be the most expensive, and would remove the landscaping opportunities and the buffer between on-coming lanes of traffic that come with a center median. Removing the median could significantly impact underground utilities, which could result in prohibitive costs.

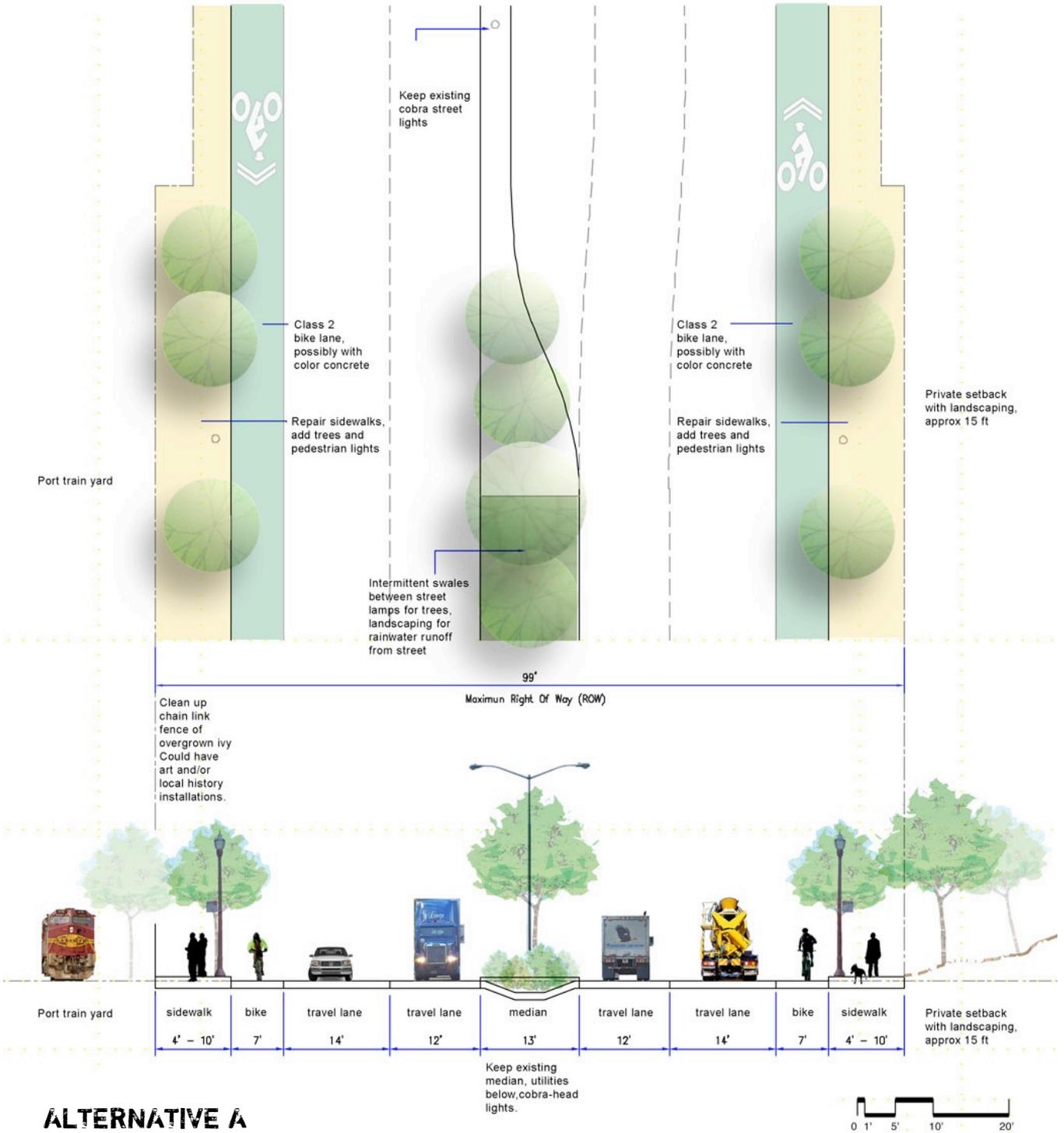
#### 3.4 Intersections

One of the key intersections informing the design of Cargo Way is the intersection of Cargo Way and Jennings Street. This intersection connects bicyclists and pedestrians to the Bay Trail segment that exists in Heron's Head Park. It is also a key intersection providing access to the Port's industrial and maritime-oriented backlands properties to the north, including a major recycling plant. These uses create much truck traffic. As shown in the intersection diagram on page 26, keeping pedestrians and cyclists on the south side of Cargo Way allows a more direct connection across Jennings to Heron's Head park, with fewer potential conflicts points with the truck traffic entering the backlands.

# CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

NORTH  
THE PORT BACKLANDS (Piers 90-94)

SOUTH  
INDIA BASIN INDUSTRIAL PARK

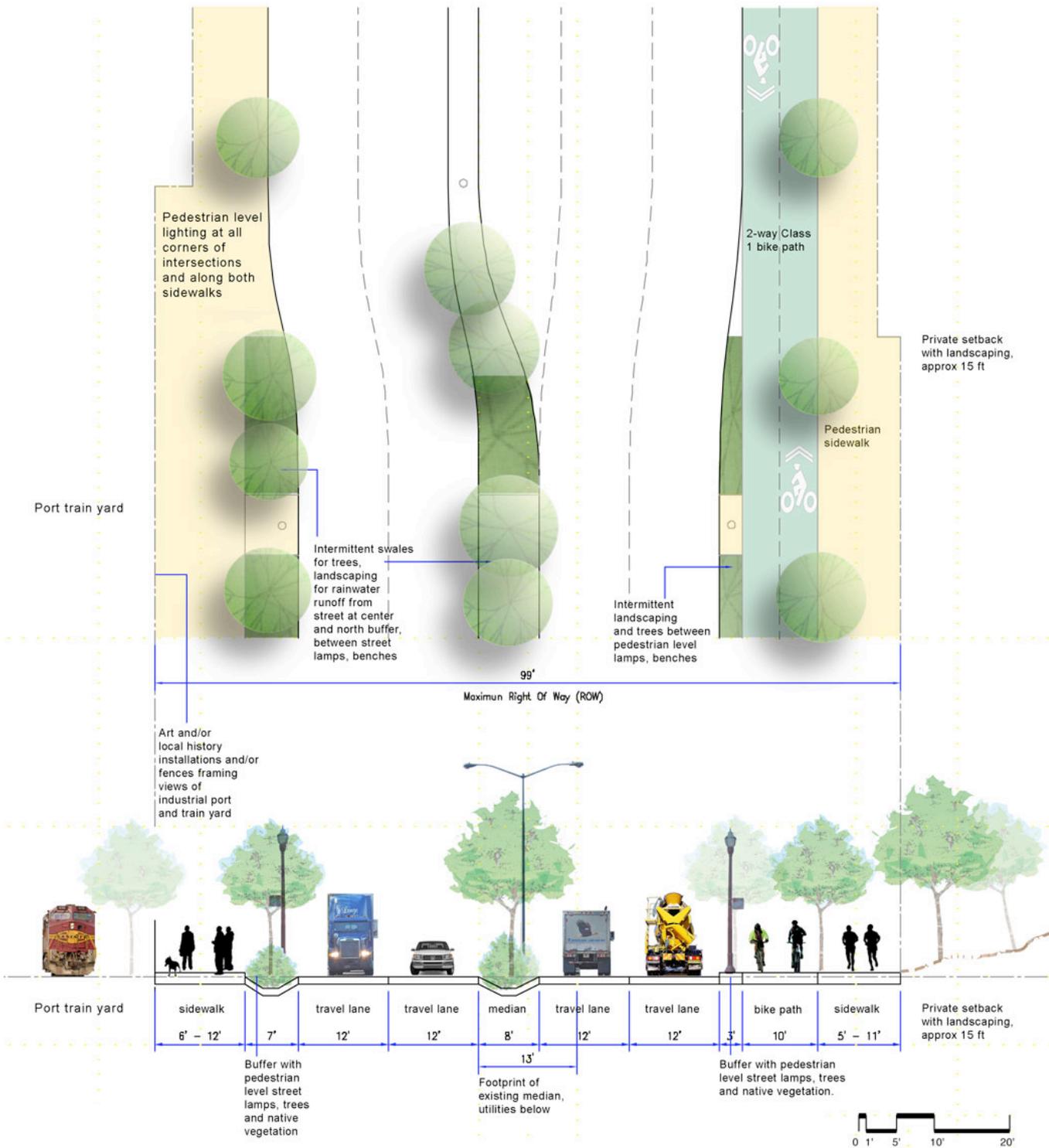


**ALTERNATIVE A**

# CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

NORTH  
THE ART & HISTORY WALK

SOUTH  
THE PARK WALK

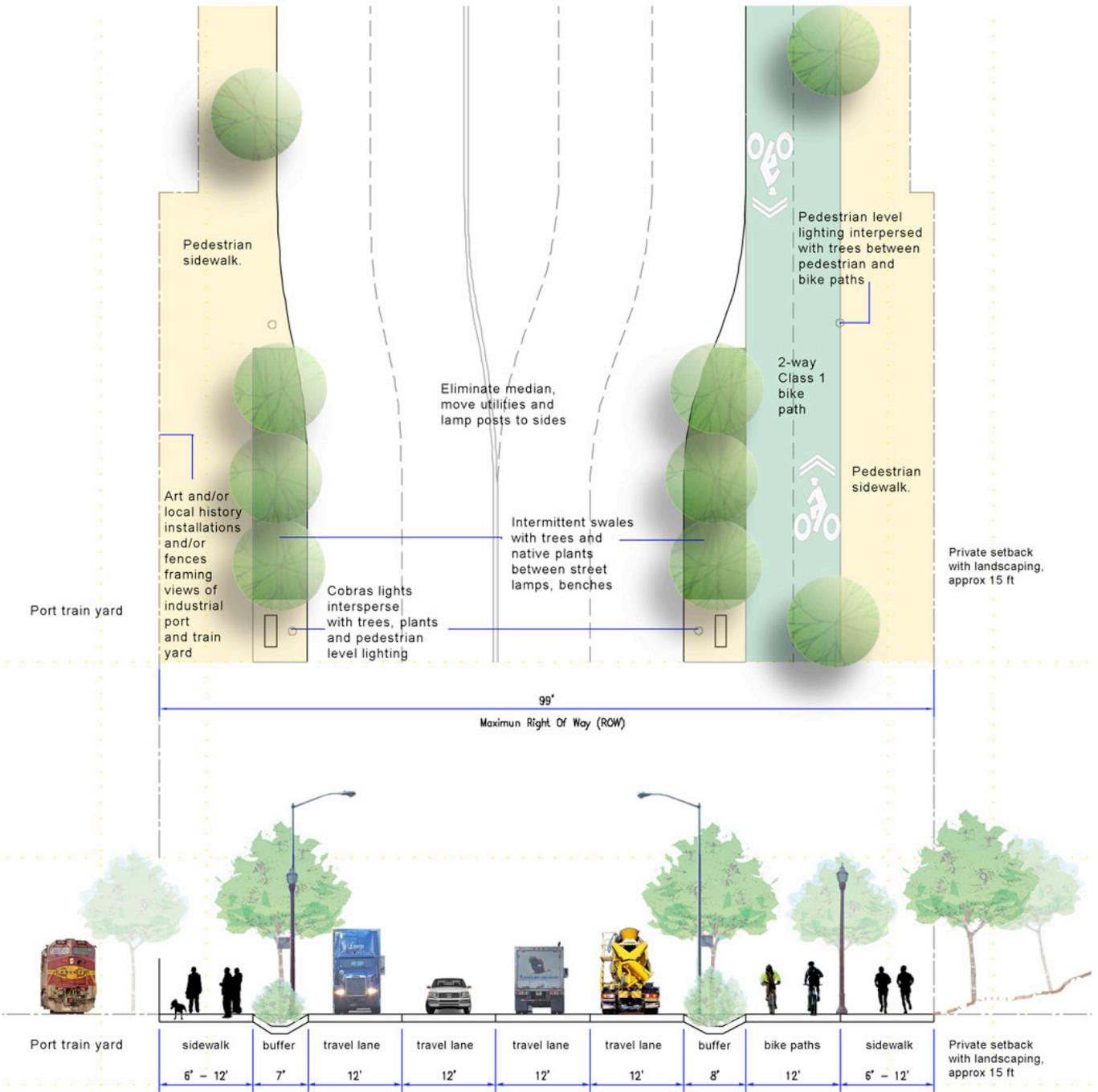


**ALTERNATIVE B**

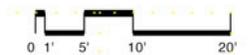
# CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

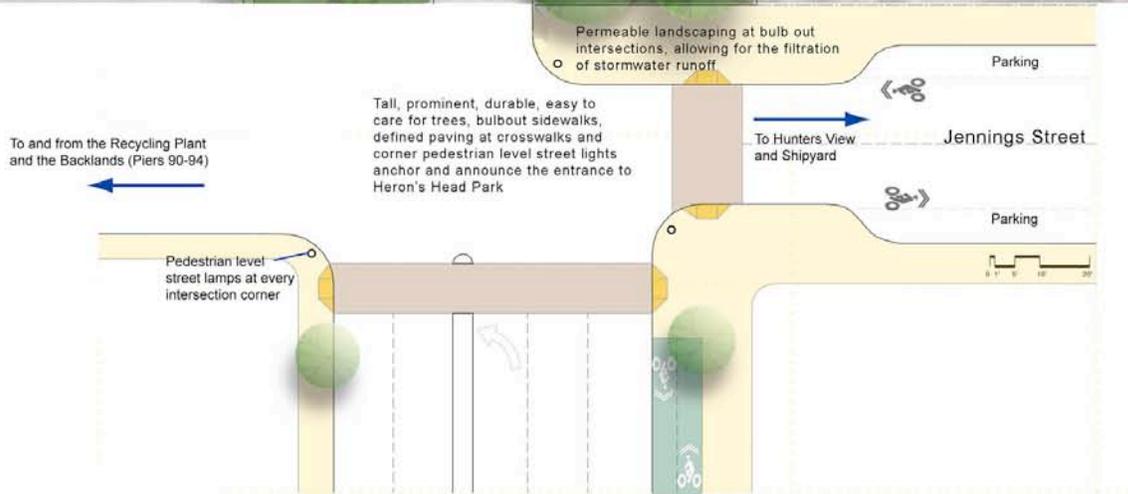
NORTH  
THE ART & HISTORY WALK

SOUTH  
THE PARK WALK

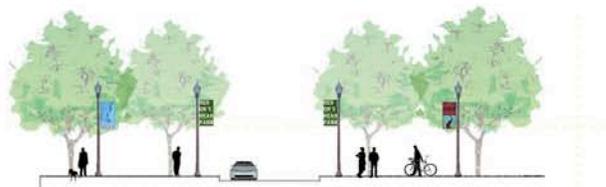


## ALTERNATIVE C





**INTERSECTION AT JENNINGS**



Sidewalks, driveway and lamp posts with colorful banners to create a sense of place for Heron's Head Park

# **CHAPTER 4**

## **PREFERRED DESIGN CONCEPT**

#### 4.0 PREFERRED DESIGN CONCEPT

This chapter presents the preferred concept design for Cargo Way. The preferred design responds to the input received at the two workshops and is informed by discussions with the Bayview Hunters Point PAC, the Port's Advisory Committees, the Community Working Group, the Technical Working Group and other stakeholders.

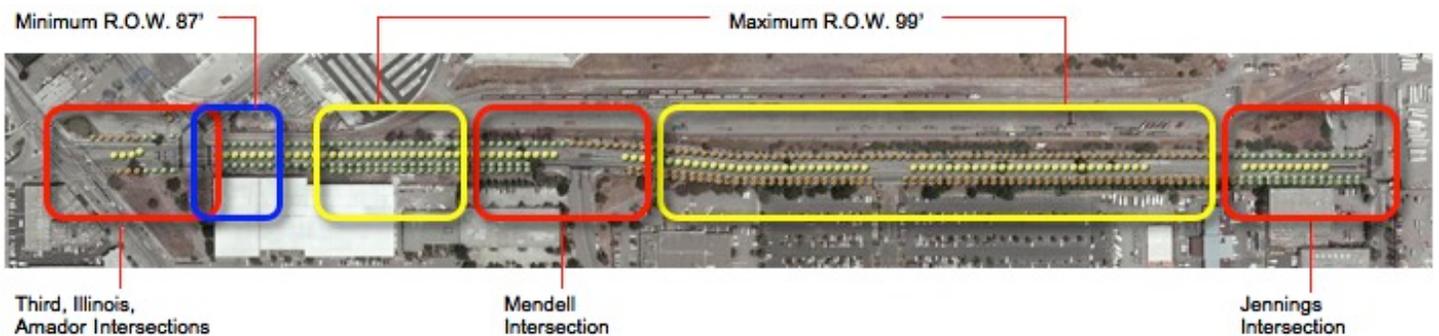
The preferred concept is based on Alternative B concept described in the previous chapter. Generally, the design includes a dedicated, two-way bike path on the south of Cargo Way, widened sidewalks, a slightly reduced center median, and landscaped buffer areas. A portion of the south side landscaped and pedestrian area may include decomposed granite (DG). The DG buffer provides a home for street furnishings and accommodates stormwater runoff.

As illustrated in this chapter, the preferred design has been fleshed out to include more detailed designs for Cargo Way itself, and the key intersections at Third, Mendell and Jennings Streets. This chapter also includes recommendations for streetscape furnishings, trees and plant species, and more detailed strategies for stormwater management.

This chapter includes the following sections:

- 4.1 Conceptual Renderings of South side (Phase 1) and the North side (Phase 2) of Cargo Way
- 4.2 Preferred Design: Maximum ROW
- 4.3 Preferred Design: Minimum ROW
- 4.4 Parking Option for North Side
- 4.5 Intersections at segment between Third/ Illinois/ Amador
- 4.6 Alternative Concept for Cargo Way segment at Third/ Illinois/ Amador
- 4.7 Intersection at Mendell
- 4.8 Intersection at Jennings
- 4.9 Greening: Trees & Plant Species
- 4.10 Greening: Stormwater Management
- 4.11 Hardscape Elements: Lighting, Seating, Custom Elements

#### KEY LOCATIONS ON CARGO WAY



#### 4.1 Conceptual Renderings



The proposed south side of Cargo Way will have a two-way, dedicated bike path for the Bay Trail/Blue Greenway within a park-like environment. A strip of DG “separates” the sidewalk from bike path. Additional trees and landscaping, Bay Trail signage, pedestrian level light fixtures, a local history installations and a par course complete the scene.



The proposed north side of Cargo Way looking from the median. A new fence made from old rails has portholes to frame views of the adjacent port train yard and the Backlands beyond. Additional trees and landscaping, pedestrian lighting and signage will be added and possibly with art, local plant and/or local history installations.

## 4.2 The Preferred Design

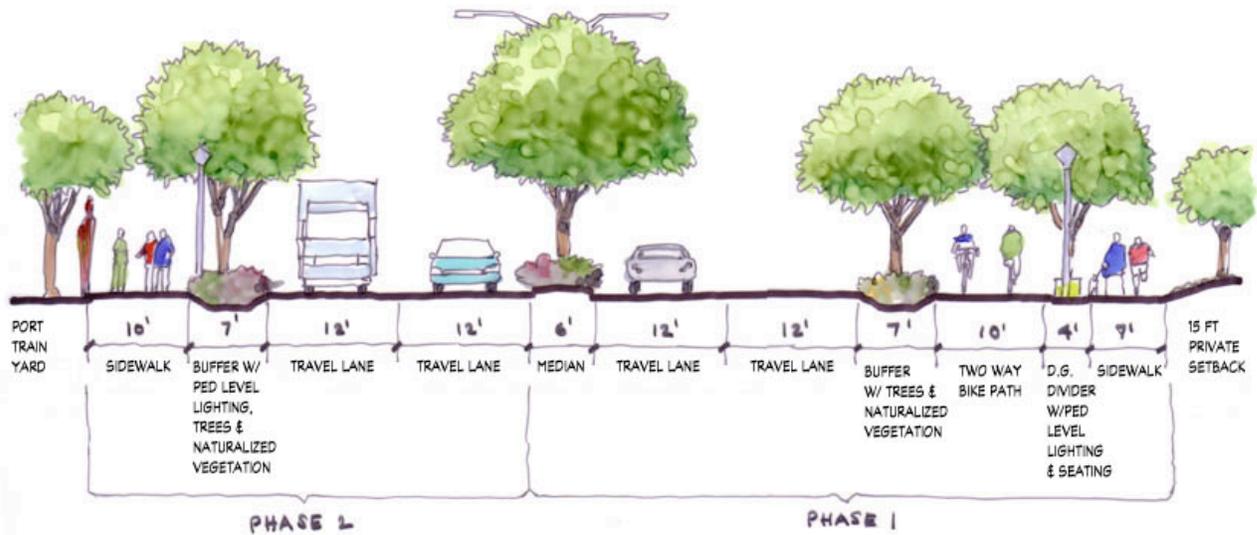
The preferred design is shown in plan view and cross section on the next page. This section and plan applies to the most typical condition along Cargo Way, which is a 99 foot ROW. The next section of this chapter shows a revised cross section for the portions of Cargo Way that have a more constrained ROW. The actual construction drawings of the preferred design will need to consider the transitions between these varying ROW widths.

The preferred concept was developed in a manner that could allow the improvements to occur in phases, including constructing all of the south side improvements first, which includes the bi-directional bicycle path, the new sidewalk, the landscaping and median improvements. The second phase would then be the north side improvements, including a new sidewalk. The cross-section on the next page shows the proposed phasing. The cost estimates contained in the Appendix also break out costs by phase.

Below is a summary of the key elements of the preferred design, as illustrated in the cross section on the next page.

- A ten foot sidewalk on the north side of the street and a 7 foot sidewalk on the south.
- Seven foot landscaped buffers on both sides of street (along the vehicular travel lanes) containing bio-retention filter strips and bio-swales for stormwater management. On the north side of the street, the buffer will also house new pedestrian lighting and pockets for seating. More detail about proposed stormwater detention strategies are included in section 4.10.
- Four travel lanes that are 12 feet each
- A reduced median that is six feet wide to maintain a visual amenity in the middle of the roadway, and provide a buffer between opposing lanes of traffic. The median will contain existing trees where appropriate and new trees and shrubs interspersed with existing double cobra head streetlights
- Two-way, dedicated bike path made of colored concrete to distinguish it from the sidewalk. The bike path is at the same level as the sidewalk, separated by the decomposed granite buffer.
- Trees will be planted at 20 feet intervals and pedestrian level light fixtures will be spaced at 40 feet intervals. Along with the private setbacks on the south, these elements reinforce the separation of bikes and pedestrians while creating a park-like environment.

PREFERRED DESIGN: MAXIMUM ROW



**4.3 Preferred Design: Constrained ROW**

Limited portions of Cargo Way have a constrained ROW, where the preferred design will need to be modified slightly. The cross-section below illustrates this condition. This cross-section applies to areas of Cargo Way that have total right-of-way widths of approximately 87 to 90 feet. Construction drawings for the implementation will need to ensure a smooth transition between the changing ROW conditions.

In this constrained condition, shown below, the decomposed granite buffer on the south side is removed. The landscaped buffers along the lanes of travel are reduced several feet. In addition, the sidewalks on the north side are reduced to no less than six feet.

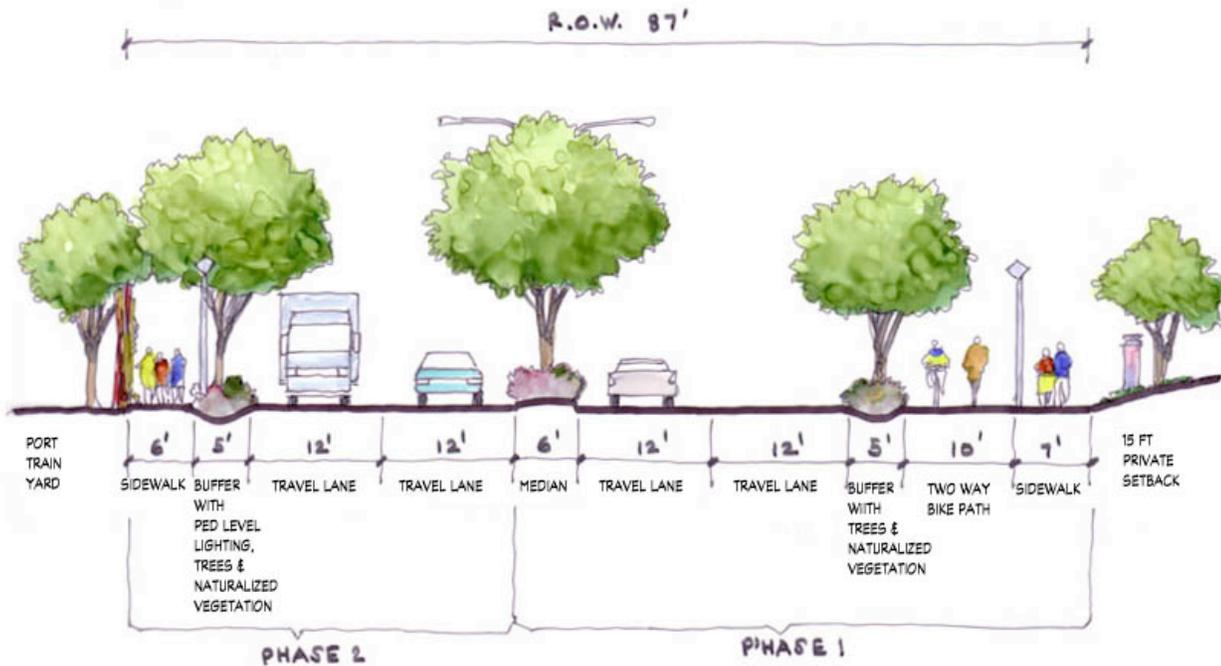
**4.4 On-Street Parking Option**

In response to concerns about the loss of all on-street parking on Cargo Way, it was determined that parking could be accommodated on the north side of Cargo Way with limited changes to the overall design concept. The drawing on the next page shows the design for an on-street parking option for the north side of Cargo Way in plan view and cross section. The design includes landscaped bulb-outs between pairs of parked cars, providing an attractive buffer between the sidewalk and lanes of travel.

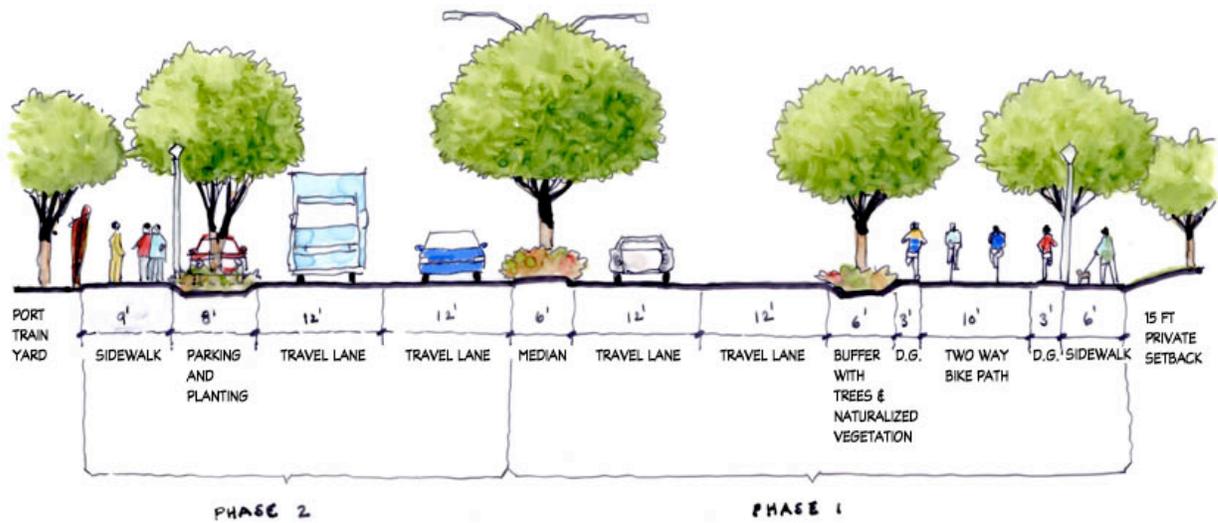
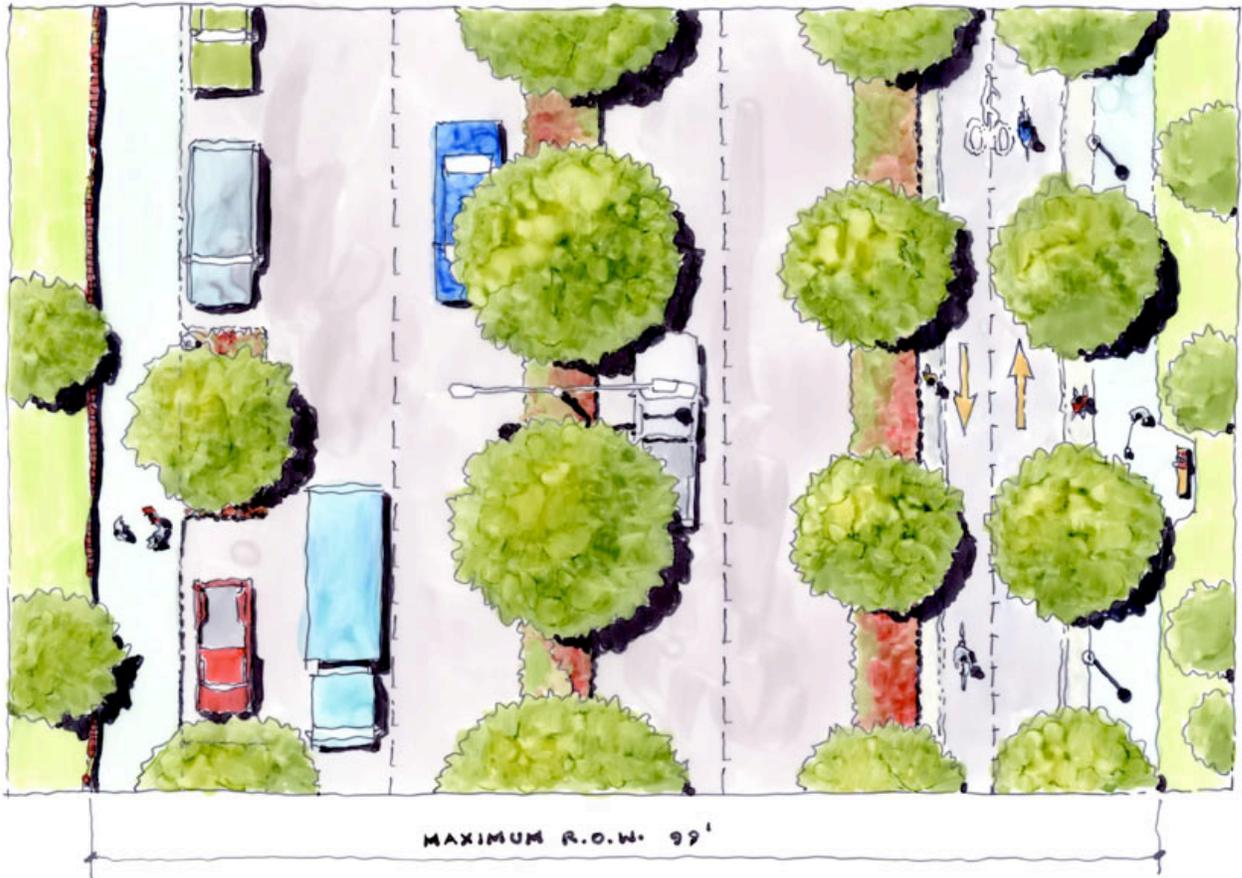
The design of the south side of Cargo Way, with the bi-directional bike path, can remain the same. The parking option drawing on the next page suggests an alternative design on the south side where the bi-directional bike path is flanked on either side by 3 ft decomposed granite running strips. In addition to providing space for joggers, the strip provides a buffer between the bike path and the bioswale.

The implementation of the on-street parking alternative will be considered during future phases of the project.

**CONSTRAINED ROW IN PREFERRED DESIGN**



ON-STREET PARKING OPTION



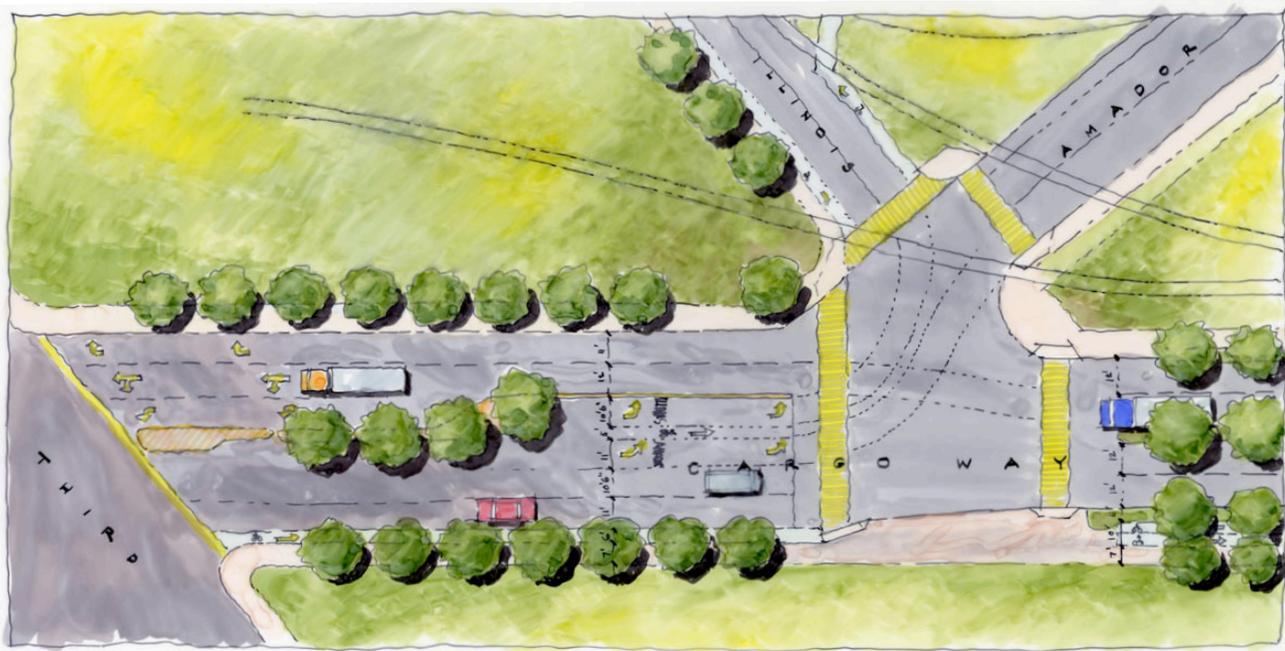
**4.5 Intersections and Segment at Third/ Illinois/ Amador Streets**

The proposed segment at Third, Illinois Street and Amador Street is consistent with a street striping design prepared by the City’s Municipal Transportation Authority (SFMTA) as part of the Illinois Street bridge project. Key elements of the proposed design are described and shown in plan view below.

- A six-foot bike lane on the south side of Cargo Way between Third and Illinois Street joins the bi-directional bike path once it crosses Illinois Street.
- Bicyclists traveling east on Cargo from Third Street will have a dedicated bike turn-lane for left turns on to the Illinois Street Bridge.
- On the north side of Cargo between the Illinois Street Bridge and Third Street, there will be a dedicated bike path bringing bicyclists from the bridge onto Cargo Way and to Third Street. Cyclists on the bridge who want to travel east on Cargo Way towards Heron’s Head park will use the crosswalks to connect with the bi-directional bike path on the south side.

- There is a single dedicated bike path going north across the Illinois Street Bridge. Pedestrians are on the west side of the street.
- Bikes coming towards Cargo Way from Illinois Street are on the west side of the bridge, same side as the pedestrians. The bike lanes splits into two. One lane is on the street and stops to cross Cargo Way. The other turns and heads towards Third Street. The bike lane shares the pedestrian sidewalk until it ends at Third. Bicycle commuters pick up other bike routes that goes further south.
- The Illinois, Amador, Cargo Way intersection will have a three-phase signal. One of the phases will be dedicated bike and pedestrian signals at both crosswalks on Cargo Way. Bikes will merge with and yield to pedestrians at intersections and will cross at the same time using crosswalks.

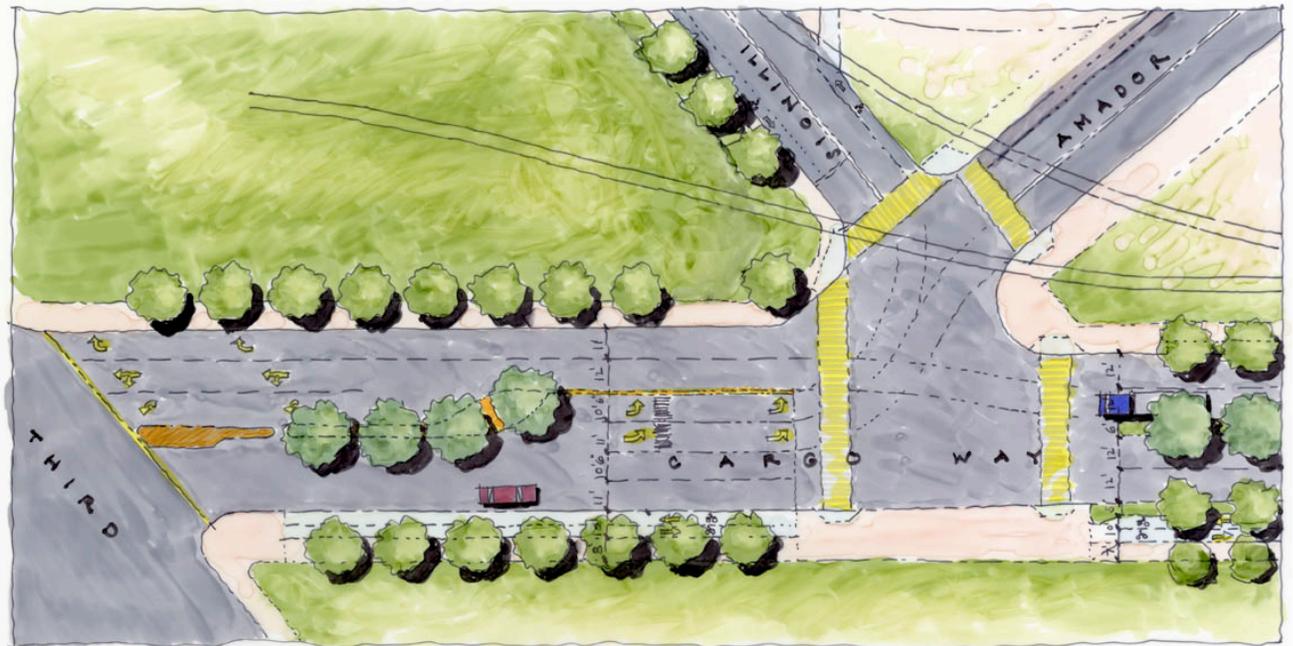
This intersection will contain clear signage showing the path of Bay Trail, as well as clearly marked bicycle facilities to make paths of travel obvious.



**INTERSECTIONS @ THIRD/ ILLINOIS/ AMADOR**

#### 4.6 Alternative Design for Segment at Third/ Illinois/ Amador Streets

In the future, there may be the desire to extend the bi-directional bike path on the south side of Cargo Way all the way to Third Street (rather than only connecting to the Illinois Street Bridge as part of the Bay Trail). This would allow the bike path to link with possible future Bay Trail segments along Third Street. The plan below illustrates this option. It would require the elimination of the bike left turn lane from Cargo Way onto Illinois to gain additional right of way for the bike path. The plan below illustrates this option. It would require the elimination of the bike left turn lane from Cargo Way onto Illinois to gain additional right of way for the bike path.



**ALTERNATIVE INTERSECTION DESIGN @ THIRD/ ILLINOIS/ AMADOR**

**4.7 Intersection at Mendell**

Cargo Way’s intersection with Mendell occurs approximately half way between the Third Street and Jennings Street intersections. The preferred design ensures that both bicyclists and pedestrians can cross safely through this intersection. The intersection design is shown in the figure below. The key design elements include:

- Bike lanes will end and begin at least 40 feet before the intersection.
- A three-phase signal at Mendell will ensure safety at this intersection. Vehicular traffic and pedestrians will cross Cargo on the first phase. On the second phase, through-traffic auto and pedestrians and bikes on Cargo will cross Mendell. On the third phase, vehicles traveling west on Cargo can make a left turn onto Mendell. In addition, vehicles traveling east can make a right turn onto Mendell. In this phase all pedestrians and bikes will stop.

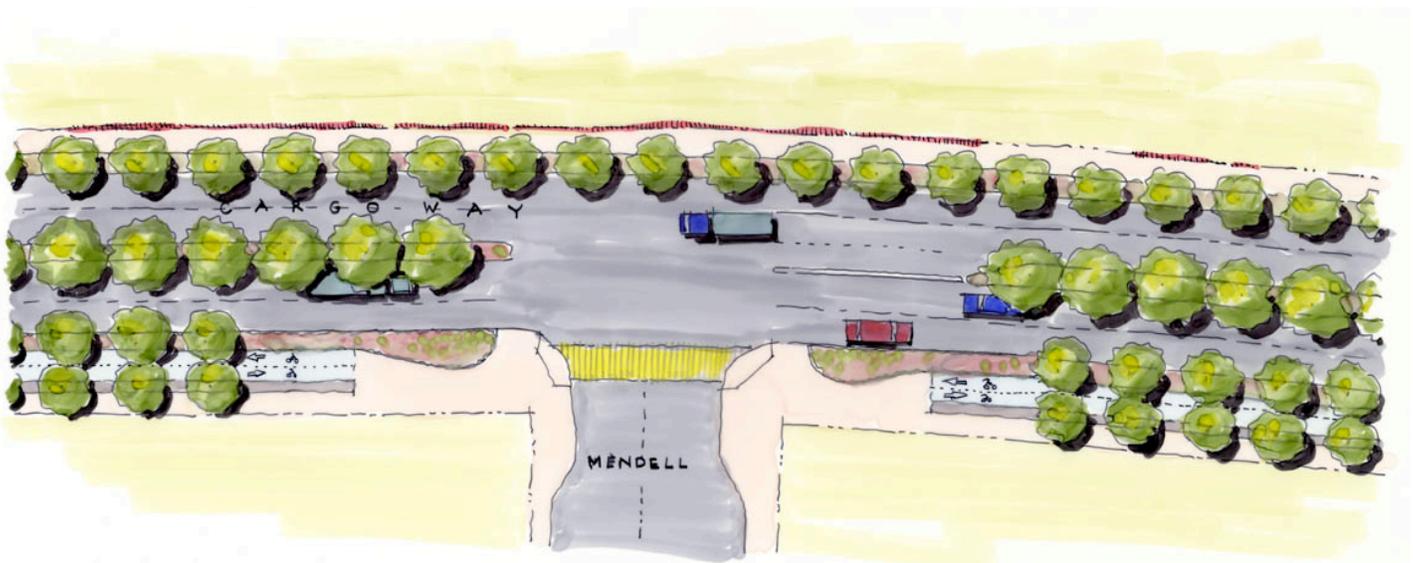
In addition, the signal would "rest" in green for Cargo which means the Mendell Street approach and turns from Cargo would have to be actuated by a detection system. This way, pedestrians/bikes would only have to stop when a vehicle approaches northbound on Mendell, or when a vehicle on Cargo enters the left or right turn pocket which at this point is not often.

- Bike and pedestrian signals will be installed to cross Mendell.



*Signals at bicycle crossing*

- Clear signage and end of colored pavement indicates to bikes to stop and share intersection with pedestrians.
- Landscape buffer bulbs out gradually into bike lanes near intersection to signal and encourage cyclists to stop and share space with pedestrians.
- Bulb out sidewalks at Mendell to slow traffic and increase shared space.



**INTERSECTION @ MENDELL**

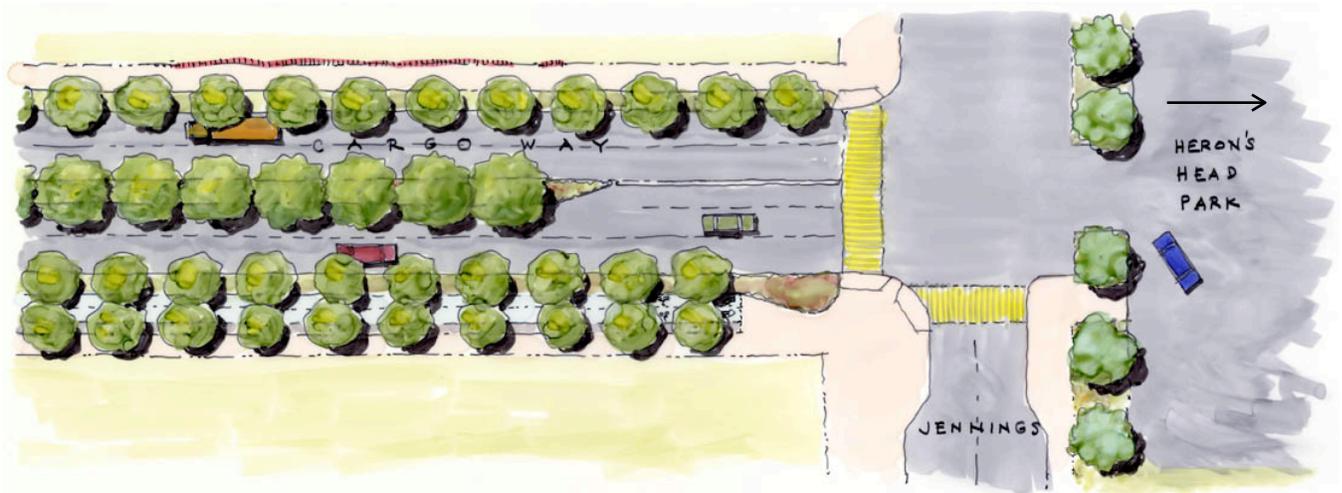
#### 4.8 Intersection at Jennings

This intersection connects bicyclists and pedestrians to the Bay Trail segment that exists in Heron's Head Park. It is also a key intersection providing access to the Port's industrial and maritime-oriented backlands properties to the north, including a major recycling plant. As shown in the intersection diagram below, keeping pedestrians and cyclists on the south side of Cargo Way allows a more direct connection across Jennings to Heron's Head park, while avoiding potential conflicts points with heavy truck traffic entering the backlands. The plan below illustrates the concept for the design and is also described below.

- Bulb out sidewalk at Jennings to slow traffic and claim more shared bike/pedestrian area.
- Narrow the driveway into Heron's Head parking lot by extending the south sidewalk and creating a new island to the north with landscaping and trees in both. This anchors the area and defines a terminus at the parking lot of the Park.
- Banners and directional signage should direct people to the continuation of the Bay Trail in Heron's Head Park.
- Stripe the parking lot to define parking spaces and allow a bike lane connecting Cargo Way to the entrance of the Park.
- Bike lanes will end approximately 40 feet before intersection to signal to bicyclists the

need to merge with pedestrians in a shared space near the crosswalk. Landscaping bulb outs will create a visual cue for bikes to stop and share intersection with pedestrians.

- Most turns at the Jennings intersection are north into the Recycling Center. Remove median on Cargo Way and add left turn pocket with striping. There may be a need to expand width of street at turn pocket by reducing curb to accommodate enough room for travel lanes. Another possibility is to reduce Cargo Way travel lanes to 11 feet each with the left turn lane at 10 feet. Narrowing travel lanes could aid in slowing down traffic at the intersection.
- Keep at least 12 feet each for travel lanes on Jennings.



**INTERSECTION @ JENNINGS**

### 4.9 Greening: Tree & Plant Species

Trees are one of the primary features of the Cargo Way Streetscape. It is recommended that the existing trees on Cargo Way be formally inspected by SFDPW to determine which trees should be retained and which are in decline and should be removed.

For the new streetscape, trees are proposed along four rows at 20 feet intervals with light fixtures in between where applicable. The following new tree species are recommended:

- California Bay (*Umbellularia californica*),
- Japanese Zelkova (*Zelkova serrata*),
- Jacaranda (*Jacaranda mimosifolia*),
- Willow Oak (*Quercus phellos*),
- Pacific Madrone (*Arbutus menziesii*),
- Western Redbud (*Cercis occidentalis*) for accent

The following large native shrubs are proposed for the median, to be interspersed with trees

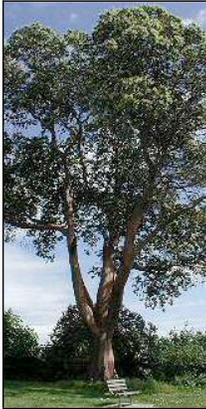
- Pacific Wax Myrtle (*Myrica californica*),
- Silktassel (*Garrya elliptica*),
- Coffeeberry (*Rhamnus californica*)

Low native shrubs and grasses are proposed for the landscaped buffer areas, swales and portions of the median where maintaining visibility is important:

- Hooker Manzanita “Pacific Mist” (*Arctostaphylos hookeri*)
- Coast Buckwheat (*Eriogonum latifolium*)
- California Lilac (*Ceanothus hearstiorum*)
- Sedum spathulifolium “Cape Blanco”
- Douglas iris (*Iris douglasiana*): use in clusters as accents.

All recommended species should be re-examined for durability, changed if need be and specified in construction drawing stages.

There may be an opportunity to incorporate trees into a public art project, such as naming new trees after historical figures from the Bayview Hunters Point or with names related to the area’s maritime and industrial past.

New Tree Species for Cargo Way		
		
<i>California Bay</i> ( <i>Umbellularia californica</i> )	<i>Japanese Zelkova</i> ( <i>Zelkova serrata</i> )	<i>Jacaranda</i> ( <i>Jacaranda mimosifolia</i> )
		
<i>Willow Oak</i> ( <i>Quercus phellos</i> )	<i>Pacific Madrone</i> ( <i>Arbutus menziesii</i> )	<i>Western Redbud</i> ( <i>Cercis occidentalis</i> )

Large Native Shrubs for Median		
		
<i>Pacific Wax Myrtle</i> ( <i>Myrica californica</i> )	<i>Silktassel</i> ( <i>Garrya elliptica</i> )	<i>Coffeeberry</i> ( <i>Rhamnus californica</i> )

#### 4.10 Greening: Stormwater Strategy

This section summarizes the recommended approach for the design of sustainable stormwater retention and treatment along Cargo Way.

Low Impact Development (LID) is a comprehensive approach to handling rainwater in ways that reduce runoff & improve water quality. The chief LID strategies are infiltration (allowing rainwater to infiltrate into the soil) and detention (slowing the rate at which rainwater flows into sewers and drains to prevent flooding and sewage releases during large storms).

As the Cargo Way consultant team explored LID strategies for the project, it became apparent that large-scale infiltration on Cargo Way, which rests on poorly consolidated urban fill is not desirable due to potential leeching of toxic materials in the fill, and to the danger of liquefaction. Therefore, the recommended stormwater solution is the types of flow-through detention system that slows the peak flow while it treats surface runoff commonly used in other cities.

The extensive landscaped areas in the recommended Cargo Way plan will serve as bioretention areas that will slow peak flows during large rainstorms, filter runoff and remove pollutant loads.



*Tree canopies have big benefits*

The increased number of street trees will expand canopy coverage and shade impervious surfaces. Tree canopies retain a significant amount of rainwater that will reduce peak flows into the stormwater system. Moreover, trees that shade adjacent pavements will mitigate their heat island effect.

According to the American Forests organization ([www.americanforests.org](http://www.americanforests.org)), a healthy tree canopy can tremendously reduce stormwater runoff, saving its host city millions of dollars in infrastructure costs.

Characteristics of trees for maximizing stormwater management benefits include broad and dense canopy, year-round foliage, and rapid growth. Desirable tree species would have long life expectancy. They would be drought tolerant in summer and tolerant of water saturation in winter as well as tolerant of poor soil.



*Landscaped bioswale as street buffer*

The landscaped swales lying north and south of the roadway will act as the primary stormwater treatment. A slotted curb with openings every 4 feet will allow runoff from the roadway to enter the swales, and the sidewalk on the north side of Cargo Way and the bicycle path on the south side of the street will be graded so that water will enter the swales.



*Bio-retention filter strip and swale*

Seven foot wide bioswales will be constructed between the back of curb lines and the adjacent paths parallel to the north and south curbs of

# CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

Cargo Way. Storm drain inlets will be relocated to the center of the bioswales. The sides of the bioswales slope down at a maximum of 4:1 creating a shallow basin lined with grassy vegetation. The street trees will be planted on mounds in the bioswales creating check dams that will increase the capacity of the bioswales to retain rainwater on site.



lanes and pedestrian sidewalk on the south side of Cargo Way. This strip will include a row of trees at 20 feet interval with pedestrian level light fixtures at 40 feet interval, and will serve as additional area for bioretention.



*Decomposed Granite (DG) as ground cover*

Finally, the landscaped median will be designed for bioretention and modest infiltration.



*Slotted curbs allow surface runoff into swales*

The trees, shrubs, and grasses in the swales will reduce runoff and remove sediment and organic pollutants from the stormwater. A sub-surface drain will collect the stormwater, which may then be delivered to the treatment plant for tertiary treatment, or delivered if appropriate directly to the San Francisco Bay.

The combination of bioretention and provide other benefits, including revitalizing nearby aquatic systems with seasonal freshwater flows, and providing habitat for plants and animals.

A four foot strip of decomposed granite (DG) is proposed as a divider between bicycle path

#### 4.11 Hardscape Elements: Lighting, Seating, Custom Elements

This section summarizes the palette of street furnishings recommended for Cargo Way.

##### Lighting

- As mentioned in Section 4.2, new pedestrian level lighting should be installed at intervals of approximately 40 feet.
- The Better Streets San Francisco Program is in the process of finalizing their selections of street furnishings and light fixtures. It is recommended that these are considered first. The examples below show typical light fixtures found in San Francisco.



*Different light fixtures in San Francisco*

- Should adequate funding be in place, consider custom pedestrian level lighting fixtures that add to the sense of place along Cargo Way, as seen in the examples below.



*Custom light fixtures*

##### Seating

- Use standard seating fixtures from selections in the Better Streets San Francisco Program as seen below.



*Standard park bench*

- Consider using public art funding to commission artists and designers to create custom benches and other street furnishings.



*Art as public furnishings*

**Custom Elements**

The preferred concept includes incorporating custom fencing and art pieces that celebrate and describe the industrial and maritime-related uses in the area.

**Fence**

Commission artists to create a fence made from old train rails and/or ties to replace the existing chain-link fence between Cargo Way and the Port train yard on the north side. Below is an example from Tanner Park in Portland, Oregon.



*Fence made of old rails at Tanner Park*

Create portholes in the fence to frame views of the Port train yard and the Backlands.



*Portholes in fence*

**Art Installations**

Art installations are a key component of the Blue Greenway. The Cargo Way streetscape would be an ideal location for art, local plants and/or local history installations.



*Art installation*

Local Port artifacts can be turned into displays along Cargo Way.



*Local artifact at Port of San Francisco*

**Par course**

There is also the opportunity to install a par course on south side of Cargo Way as a community building element.



# **CHAPTER 5**

## **FUNDING SOURCES**

## 5.0 FUNDING SOURCES

Moving forward, the Cargo Way/Bay Trail Conceptual Design Study will be used to help secure capital funding to construct the proposed improvements. Once capital funding is secured, the conceptual design described in this report will be developed in more detail during the design development and construction drawing phases. This section identifies possible capital funding sources that could be used to finance the construction of the proposed Cargo Way improvements.

### 5.1 Funding Opportunities

Because the Cargo Way project addresses so many objectives – enhancing waterfront access, completing a link in the Bay Trail, closing a gap in the city's bicycle network, improving pedestrian safety and accessibility for people with disabilities, beautifying the neighborhood, and providing opportunities for storm water detention and native plantings, it is potentially eligible for funding from a variety of sources. Large projects like Cargo Way often receive funding from multiple sources, and the proposed project also includes options for phasing construction of the project, which affords greater flexibility in incrementally implementing the complete project as funds become available.

Possible funding sources include:

- **Transportation for Livable Communities (TLC) Capital Grant Program:** The Metropolitan Transportation Commission's TLC program funds community-based transportation projects that provide a range of transportation choices and link land use to transportation investments. TLC capital program grants have ranged in size from approximately \$250,000 to nearly \$3 million. A call for projects is expected in spring or Summer 2008.
- **Bay Trail Grants:** The Association of Bay Area Governments (ABAG) has offered capital grants to close gaps in the Bay Trail, subject to appropriations by the state legislature or availability of general obligation bond funding.
- **FOCUS Grants for Community Participation in Equitable Development:** The Association of Bay Area Governments awards grants to public agencies and nonprofits to encourage housing development in Priority Development Areas, including Southeastern San Francisco,

while conserving natural resources and maintaining livability. Grant applications are due in June 2008.

- **Transportation Fund for Clean Air (TFCA):** The TFCA program provides grants to the most cost-effective projects that improve air quality in the Bay Area by reducing motor vehicle emissions. The program is funded by a \$4 fee on motor vehicle registration in the Bay Area, and administered by the Bay Area Air Quality Management District (BAAQMD). Grants are awarded yearly through a variety of programs, and no local match is required. Cargo Way is eligible for grants from two programs. The Bicycle Facility Program, which is awarded directly by the BAAQMD. Grants range from a minimum of \$10,000 to a maximum of approximately \$200,000. The deadline for the 2008/2009 grant cycle has not been announced, but in past years the grant deadline is in the spring, and grants are awarded in early summer.
- **The TFCA County Program Manager Fund** is awarded through the San Francisco County Transportation Authority (SFCTA). Grants range from a minimum of \$10,000 to approximately \$1 million. The Transportation Authority's call for projects is typically in late winter, and grants are awarded in the spring.
- **The California Coastal Conservancy's San Francisco Bay Area Conservancy Program** awards grants for planning, design, and construction of regional trails and habitat restoration projects. No local match is required, but matching funds are encouraged. Grants typically range from \$100,000 to \$1 million. The Coastal Conservancy accepts grant requests continuously, and grants are awarded up to 8 times per year.
- **Grants from the City's Transportation Sales Tax (Proposition K):** The Cargo Way project is eligible for grants from several programs funded by San Francisco's half-cent sales tax for transportation, including its bicycle program, pedestrian program, and enhancements program. Funds can be used for planning, design, and construction. No local match is required, although Proposition K funds are often used to leverage other grants. Individual projects must meet the eligibility requirements for the specific Proposition K program, and minimum and maximum grant awards depend on the size of the program and

its available funding. Proposition K grants are typically awarded in the late spring.

- Tax increment financing or developer contributions: The San Francisco Redevelopment Agency can issue bonds against future tax revenues to finance public improvements within redevelopment areas, and may fund projects outside redevelopment areas if those improvements serve the project area. While the India Basin Industrial Park Redevelopment Area expires in 2009, the Cargo Way Project may be eligible for tax increment funds from the Hunters Point Shipyard Redevelopment or BVHP Project Areas if the improvements are found to benefit those areas. Through development agreements for projects on the Shipyard or elsewhere in the Bayview Hunters Point, infrastructure improvements such as streetscape improvements could be negotiated.
- Infrastructure Financing District: A provision of state law allows the Port of San Francisco to borrow against future lease and local tax revenue to fund infrastructure improvements to Port property. The Cargo Way project may be eligible infrastructure finance district funding should the Port adopt such a district for the Southern Waterfront.



# APPENDICES

**A. APPENDICES**

- A.1 Cost Estimates
- A.2 Workshop Summaries

**A.1 Cost Estimates**

Provided in this section are two cost estimate versions, Basic and Deluxe. The Deluxe version uses concrete sidewalk compared to asphalt paving for the Basic. Deluxe also adds project specific costs for custom furnishings, a custom fence and allocates additional funding for art, local plants and local history installations.

Both versions also take into account the possibility of a two phase approach to implementation.

**Notes:**

These estimates are prepared as a guide only, are based on preliminary and incomplete information, and are subject to change. The consulting team makes no warranty, either express or implied, that actual costs, quantities, or items of work will not vary from the data shown and assumes no liability for such variances.

The estimates do not include:

- a. Cost of access easements for public utilities or open space.
- b. Environmental documentation, public agency fees or financing costs except where otherwise noted.

Pavement design is contingent on detailed soils evaluation.

Adjustments for other time periods should be based on the Construction Cost Index published by the "Engineering News-Record" for the San Francisco Bay Area.

**A.2 Workshop Summaries**

Following the cost estimates are summaries from Community Workshop 1, held on November 7, 2007 and Workshop 2, held on February 6, 2008.

**CONCEPTUAL CONSTRUCTION COST ESTIMATE (BASIC)  
CARGO WAY STREETScape DESIGN**

<i>Item</i>	<i>-- PHASE 1 --</i>				<i>-- PHASE 2 --</i>				
	<i>Quant.</i>	<i>Unit</i>	<i>Price</i>	<i>Total</i>	<i>Quant.</i>	<i>Unit</i>	<i>Price</i>	<i>Total</i>	
<b>MOBILIZATION, DEMOLITION &amp; GRADING</b>									
Mobilization	1	LS	\$35,000.00	\$35,000	1	LS	\$25,000.00	\$25,000	
Demo existing curb & gutter	3,356	LF	5.00	16,780	3,060	LF	5.00	15,300	
Demo existing sidewalk	25,130	LF	3.00	75,390	20,376	LF	3.00	61,128	
Sawcut existing pavement	3,356	LF	2.00	6,712	3,060	LF	2.00	6,120	
Grading	5,000	CY	15.00	75,000	5,000	CY	15.00	75,000	
<b>Subtotal, Mobil., Demo, Grading</b>				<b>\$208,882</b>	<b>Subtotal, Mobil. Demo, Grading</b>				<b>\$182,548</b>
<b>STREET IMPROVEMENTS</b>									
Geofabric	130,832	SF	0.20	26,166	119,013	SF	0.20	23,803	
AC overlay	130,832	SF	3.00	392,496	119,013	SF	3.00	357,039	
Vertical conc. curb (median)	2,976	LF	10.00	29,760	2,976	LF	10.00	29,760	
Curb & gutter	3,556	LF	16.00	56,896	3,160	LF	16.00	50,560	
AC sidewalk (ave width = 8')		SF	5.00		25,130	SF	5.00	125,650	
AC sidewalk (ave width = 12')	29,207	SF	5.00	146,035			5.00		
AC bicycle trail (12' wide)	29,207	SF	5.00	146,035	29,207	SF	5.00	146,035	
Handicap ramp	18	EA	1,500.00	27,000	18	EA	1,500.00	27,000	
Driveway approach (commercial)	500	SF	10.00	5,000	500	SF	10.00	5,000	
Striping & pavement markers	1	LS	20,000.00	20,000	1	LS	20,000.00	20,000	
Signage	1	LS	5,000.00	5,000	1	LS	5,000.00	5,000	
Survey monuments	4	EA	5,000.00	20,000	4	EA	5,000.00	20,000	
Chain Link Fence (along Backlands)	1,500	LF	20.00	30,000	1,500	LF	20.00	30,000	
<b>Subtotal, Street Improvements</b>				<b>\$904,388</b>	<b>Subtotal, Street Improvements</b>				<b>\$839,847</b>

**CONCEPTUAL CONSTRUCTION COST ESTIMATE (BASIC)  
CARGO WAY STREETScape DESIGN**

<u>Item</u>	<u>Quant.</u>	<u>Unit</u>	<u>-- PHASE 1 --</u>		<u>Total</u>	<u>Quant.</u>	<u>Unit</u>	<u>-- PHASE 2 --</u>		<u>Total</u>	
			<u>Price</u>					<u>Price</u>			
<b>DRAINAGE IMPROVEMENTS</b>											
Grassy swales	1,668	LF	30.00		50,025	2,043	LF	30.00		61,275	
Inlets within grassy swales	8	EA	1,500.00		12,506	10	EA	1,500.00		15,000	
Curb inlets	3	EA	1,500.00		4,500	2	EA	1,500.00		3,000	
Relocate curb inlets	3	EA	1,500.00		4,500	2	EA	1,500.00		3,000	
Storm drain lateral	350	LF	60.00		21,000	400	LF	60.00		24,000	
Combined sewer MH	6	EA	3,000.00		18,000	6	EA	3,000.00		18,000	
Adjust structures to grade	20	EA	750.00		15,000	20	EA	750.00		15,000	
<b>Subtotal, Drainage Improvements</b>					<b>\$125,531</b>	<b>Subtotal, Drainage Improvements</b>					<b>\$139,275</b>
<b>STREET LIGHTING</b>											
Relocate median lighting fixtures	46	EA	2,500.00		115,000		EA	2,500.00			
Curbside lighting	68	EA	2,000.00		136,000	65	EA	2,000.00		130,000	
Street lighting conduit/conductors	5,000	LF	15.00		75,000	1,800	LF	15.00		27,000	
Bike & ped signal at Amador	1	EA	75,000.00		75,000		EA	75,000.00			
Rehab signal at Mendell, incl bike/ped	1	EA	100,000.00		100,000		EA	100,000.00			
<b>Subtotal, Lighting Improvements</b>					<b>\$501,000</b>	<b>Subtotal, Lighting Improvements</b>					<b>\$157,000</b>
<b>LANDSCAPING &amp; IRRIGATION (from Merrill Morris, Landscape Architects)</b>											
Trees-street trees @ curb, 25' oc	134	EA	400.00		53,600	112	EA	400.00		44,800	
Trees-median trees	98	EA	400.00		39,200		EA	400.00			
Trees-pathway trees	94	EA	400.00		37,600		EA	400.00			
Root barriers	4,600	LF	7.00		32,200	1,400	LF	7.00		9,800	
Decomposed granite paving @ trees	4,300	SF	2.00		8,600		SF	2.00			
Soil prep and mulch	30,000	SF	1.00		30,000	20,000	SF	1.00		20,000	

**CONCEPTUAL CONSTRUCTION COST ESTIMATE (BASIC)  
CARGO WAY STREETScape DESIGN**

<i>Item</i>	<i>-- PHASE 1 --</i>				<i>-- PHASE 2 --</i>			
	<i>Quant.</i>	<i>Unit</i>	<i>Price</i>	<i>Total</i>	<i>Quant.</i>	<i>Unit</i>	<i>Price</i>	<i>Total</i>
Ground covers	15,000	SF	1.00	15,000	10,000	SF	1.00	10,000
Shrubs-median	300	EA	25.00	7,500		EA	25.00	
Shrubs-planters	100	EA	25.00	2,500	300	EA	25.00	7,500
Irrigation, connect to exist. water	30,000	SF	2.00	60,000	20,000	SF	2.00	40,000
Irrigation, controller	1	EA	10,000.00	10,000	1	EA	10,000.00	10,000
Rehabilitate exist. irrigation system	1	LS	5,000.00	5,000	1	LS	5,000.00	5,000
<b>Subtotal, Landscaping &amp; Irrigation</b>				<b>\$301,200</b>	<b>Subtotal, Landscaping &amp; Irrigation</b>			<b>\$147,100</b>
<b>STREET FURNITURE &amp; AMENITIES</b>								
Benches	12	EA	1,500.00	18,000	12	EA	1,500.00	18,000
Trash containers	12	EA	800.00	9,600	12	EA	800.00	9,600
Public art allocation		LS			1	LS	85,000.00	85,000
<b>Subtotal, Street Furniture &amp; Amenities</b>				<b>\$27,600</b>	<b>Subtotal, Street Furniture &amp; Amenities</b>			<b>\$112,600</b>
<b>MISCELLANEOUS</b>								
Winterization	1	LS	10,000.00	10,000	1	LS	10,000.00	10,000
<b>Subtotal, Miscellaneous</b>				<b>\$10,000</b>	<b>Subtotal, Miscellaneous</b>			<b>\$10,000</b>
<b>SUBTOTAL</b>				<b>\$2,078,602</b>	<b>SUBTOTAL</b>			<b>\$1,588,370</b>
<b>CONTINGENCY &amp; INCIDENTALS (20%)</b>				<b>\$415,720</b>	<b>CONTINGENCY &amp; INCIDENTALS (20%)</b>			<b>\$317,674</b>
<b>TOTAL, CONSTRUCTION COST</b>				<b>\$2,494,322</b>	<b>TOTAL</b>			<b>\$1,906,044</b>

**CONCEPTUAL CONSTRUCTION COST ESTIMATE (BASIC)  
CARGO WAY STREETScape DESIGN**

<u>Item</u>	<u>Quant.</u>	<u>-- PHASE 1 --</u>			<u>Total</u>	<u>Quant.</u>	<u>-- PHASE 2 --</u>			<u>Total</u>
		<u>Unit</u>	<u>Price</u>				<u>Unit</u>	<u>Price</u>		
<b>SOFT COSTS (Rounded)</b>										
Civil Design	6.5%	(of civil items less landscape)		\$138,637						\$112,419
Landscape Design	6.5%	(of landscape only)		\$23,494						\$112,419
Geotechnical Engineering	2.0%	(of total construction cost)		\$49,886						\$34,590
Construction Surveying	4.0%	(of total construction cost)		\$99,773						\$69,181
Construction Management	5.0%	(of total construction cost)		\$124,716						\$86,476
Materials and Soils Testing	1.5%	(of total construction cost)		\$37,415						\$25,943
	25.5%			<b>\$473,921</b>						<b>\$441,028</b>
<b>TOTAL, PROJECT COST</b>				<b>\$2,968,243</b>		<b>TOTAL, PROJECT COST</b>				<b>\$2,347,072</b>
<b>TOTAL, PROJECT COST PHASE 1 &amp; PHASE 2 (Rounded)</b>				<b>\$5,320,000</b>						

**-- NOTES --**

1. This estimate is prepared as a guide only, is based on preliminary and incomplete information, and is subject to possible change. KCA Engineers, Inc. makes no warranty, either express or implied, that actual costs, quantities, or items of work will not vary from the data shown and assumes no liability for such variances.
2. The estimate does not include:
  - a. Environmental documentation, public agency fees or financing costs except where otherwise noted.
  - b. Cost of access easements for public utilities or open space.
3. Pavement design is contingent on detailed soils evaluation.
4. Adjustments for other time periods should be based on the Construction Cost Index published by the "Engineering News-Record" for the San Francisco Bay Area.

KCA Engineers 5441 12/06/07 Rev 3/25/08

Y:\...Cargo Way Concept Cost Est (Basic).xls

**CONCEPTUAL CONSTRUCTION COST ESTIMATE (DELUXE)  
CARGO WAY STREETScape DESIGN**

<u>Item</u>	<u>-- PHASE 1 --</u>				<u>-- PHASE 2 --</u>				
	<u>Quant.</u>	<u>Unit</u>	<u>Price</u>	<u>Total</u>	<u>Quant.</u>	<u>Unit</u>	<u>Price</u>	<u>Total</u>	
<b>MOBILIZATION, DEMOLITION &amp; GRADING</b>									
Mobilization	1	LS	\$35,000.00	\$35,000	1	LS	\$25,000.00	\$25,000	
Demo existing curb & gutter	3,356	LF	5.00	16,780	3,060	LF	5.00	15,300	
Demo existing sidewalk	25,130	LF	3.00	75,390	20,376	LF	3.00	61,128	
Sawcut existing pavement	3,356	LF	2.00	6,712	3,060	LF	2.00	6,120	
Grading	5,000	CY	15.00	75,000	5,000	CY	15.00	75,000	
<b>Subtotal, Mobil., Demo, Grading</b>				<b>\$208,882</b>	<b>Subtotal, Mobil. Demo, Grading</b>				<b>\$182,548</b>
<b>STREET IMPROVEMENTS</b>									
Geofabric	130,832	SF	0.20	26,166	119,013	SF	0.20	23,803	
AC overlay	130,832	SF	3.00	392,496	119,013	SF	3.00	357,039	
Vertical conc. curb (median)	2,976	LF	10.00	29,760	2,976	LF	10.00	29,760	
Curb & gutter	3,556	LF	16.00	56,896	3,160	LF	16.00	50,560	
Concrete sidewalk (ave width = 8')		SF	8.00		25,130	SF	8.00	201,040	
Concrete sidewalk (ave width = 12')	29,207	SF	8.00	233,656			8.00		
AC bicycle trail (12' wide)	29,207	SF	5.00	146,035	29,207	SF	5.00	146,035	
Decomposed granite paving along S/W	14,224	SF	2.00	28,448	12,640	EA	2.00	25,280	
Handicap ramp	18	EA	1,500.00	27,000	18	EA	1,500.00	27,000	
Driveway approach (commercial)	500	SF	10.00	5,000	500	SF	10.00	5,000	
Striping & pavement markers	1	LS	20,000.00	20,000	1	LS	20,000.00	20,000	
Signage	1	LS	5,000.00	5,000	1	LS	5,000.00	5,000	
Survey monuments	4	EA	5,000.00	20,000	4	EA	5,000.00	20,000	
Art fence	1,500	LF	100.00	150,000	1,500	LF	100.00	150,000	
<b>Subtotal, Street Improvements</b>				<b>\$1,140,457</b>	<b>Subtotal, Street Improvements</b>				<b>\$1,060,517</b>

**CONCEPTUAL CONSTRUCTION COST ESTIMATE (DELUXE)  
CARGO WAY STREETScape DESIGN**

<u>Item</u>	<u>Quant.</u>	<u>Unit</u>	<u>-- PHASE 1 --</u>		<u>Total</u>	<u>Quant.</u>	<u>Unit</u>	<u>-- PHASE 2 --</u>		<u>Total</u>	
			<u>Price</u>					<u>Price</u>			
<b>DRAINAGE IMPROVEMENTS</b>											
Grassy swales	1,668	LF	30.00		50,025	2,043	LF	30.00		61,275	
Inlets within grassy swales	8	EA	1,500.00		12,506	10	EA	1,500.00		15,000	
Curb inlets	3	EA	1,500.00		4,500	2	EA	1,500.00		3,000	
Relocate curb inlets	3	EA	1,500.00		4,500	2	EA	1,500.00		3,000	
Storm drain lateral	350	LF	60.00		21,000	400	LF	60.00		24,000	
Combined sewer MH	6	EA	3,000.00		18,000	6	EA	3,000.00		18,000	
Adjust structures to grade	20	EA	750.00		15,000	20	EA	750.00		15,000	
<b>Subtotal, Drainage Improvements</b>					<b>\$125,531</b>	<b>Subtotal, Drainage Improvements</b>					<b>\$139,275</b>
<b>STREET LIGHTING</b>											
Relocate median lighting fixtures	46	EA	2,500.00		115,000		EA	2,500.00			
Curbside lighting	68	EA	2,000.00		136,000	65	EA	2,000.00		130,000	
Street lighting conduit/conductors	5,000	LF	15.00		75,000	1,800	LF	15.00		27,000	
Bike & ped signal at Amador	1	EA	75,000.00		75,000		EA	75,000.00			
Rehab signal at Mendell, incl bike/ped	1	EA	100,000.00		100,000		EA	100,000.00			
<b>Subtotal, Lighting Improvements</b>					<b>\$501,000</b>	<b>Subtotal, Lighting Improvements</b>					<b>\$157,000</b>
<b>LANDSCAPING &amp; IRRIGATION (from Merrill Morris, Landscape Architects)</b>											
Trees-street trees @ curb, 25' oc	134	EA	400.00		53,600	112	EA	400.00		44,800	
Trees-median trees	98	EA	400.00		39,200		EA	400.00			
Trees-pathway trees	94	EA	400.00		37,600		EA	400.00			
Root barriers	4,600	LF	7.00		32,200	1,400	LF	7.00		9,800	
Decomposed granite paving @ trees	4,300	SF	2.00		8,600		SF	2.00			
Soil prep and mulch	30,000	SF	1.00		30,000	20,000	SF	1.00		20,000	
Ground covers	15,000	SF	1.00		15,000	10,000	SF	1.00		10,000	

**CONCEPTUAL CONSTRUCTION COST ESTIMATE (DELUXE)  
CARGO WAY STREETScape DESIGN**

<i>Item</i>	<i>Quant.</i>	<i>Unit</i>	<i>-- PHASE 1 --</i>	
			<i>Price</i>	<i>Total</i>
Shrubs-median	300	EA	25.00	7,500
Shrubs-planters	100	EA	25.00	2,500
Irrigation, connect to exist. water	30,000	SF	2.00	60,000
Irrigation, controller	1	EA	10,000.00	10,000
Rehabilitate exist. irrigation system	1	LS	5,000.00	5,000
<b>Subtotal, Landscaping &amp; Irrigation</b>				<b>\$301,200</b>

<i>Quant.</i>	<i>Unit</i>	<i>-- PHASE 2 --</i>	
		<i>Price</i>	<i>Total</i>
	EA	25.00	
300	EA	25.00	7,500
20,000	SF	2.00	40,000
1	EA	10,000.00	10,000
1	LS	5,000.00	5,000
<b>Subtotal, Landscaping &amp; Irrigation</b>			<b>\$147,100</b>

**STREET FURNITURE & AMENITIES**

Benches (Art as Furnishings)	12	EA	4,000.00	48,000
Trash containers	12	EA	800.00	9,600
Par course	1	LS	25,000.00	25,000
Rail Fence & Installations	1	LS	100,000.00	100,000
				<b>\$182,600</b>

12	EA	1,500.00	18,000
12	EA	800.00	9,600
1	LS	80,000.00	80,000
1	LS	100,000.00	100,000
			<b>\$207,600</b>

**MISCELLANEOUS**

Winterization	1	LS	10,000.00	10,000
<b>Subtotal, Miscellaneous</b>				<b>\$10,000</b>

1	LS	10,000.00	10,000
<b>Subtotal, Miscellaneous</b>			<b>\$10,000</b>

**SUBTOTAL \$2,469,671**

**CONTINGENCY & INCIDENTALS (20%) \$493,934**

**TOTAL, CONSTRUCTION COST TOTAL \$2,963,605**

**SUBTOTAL \$1,904,040**

**CONTINGENCY & INCIDENTALS (20%) \$380,808**

**TOTAL \$2,284,848**

**CONCEPTUAL CONSTRUCTION COST ESTIMATE (DELUXE)  
CARGO WAY STREETScape DESIGN**

<u>Item</u>	<u>-- PHASE 1 --</u>				<u>-- PHASE 2 --</u>			
	<u>Quant.</u>	<u>Unit</u>	<u>Price</u>	<u>Total</u>	<u>Quant.</u>	<u>Unit</u>	<u>Price</u>	<u>Total</u>
<b>SOFT COSTS (Rounded)</b>								
Civil Design	6.5%	(of civil items less landscape)		\$169,141				\$137,041
Landscape Design	6.5%	(of landscape only)		\$23,494				\$137,041
Geotechnical Engineering	2.0%	(of total construction cost)		\$59,272				\$42,167
Construction Surveying	4.0%	(of total construction cost)		\$118,544				\$84,333
Construction Management	5.0%	(of total construction cost)		\$148,180				\$105,416
Materials and Soils Testing	1.5%	(of total construction cost)		\$44,454				\$31,625
	25.5%			<b>\$563,085</b>				<b>\$537,624</b>
<b>TOTAL, PROJECT COST</b>				<b>\$3,526,690</b>	<b>TOTAL, PROJECT COST</b>			<b>\$2,822,471</b>
<b>TOTAL, PROJECT COST PHASE 1 &amp; PHASE 2 (Rounded)</b>				<b>\$6,350,000</b>				

**-- NOTES --**

1. This estimate is prepared as a guide only, is based on preliminary and incomplete information, and is subject to possible change. KCA Engineers, Inc. makes no warranty, either express or implied, that actual costs, quantities, or items of work will not vary from the data shown and assumes no liability for such variances.
2. The estimate does not include:
  - a. Environmental documentation, public agency fees or financing costs except where otherwise noted.
  - b. Cost of access easements for public utilities or open space.
3. Pavement design is contingent on detailed soils evaluation.
4. Adjustments for other time periods should be based on the Construction Cost Index published by the "Engineering News-Record" for the San Francisco Bay Area.

KCA Engineers 5441 12/06/07 Rev 3/25/08

Y:\...\Cargo Way Concept Cost Est (Deluxe).xls

**Cargo Way Streetscape Project  
Workshop #1  
November 7, 2007**

**Meeting Summary**

The first public workshop to discuss improvements to Cargo Way in Bayview Hunters Point was held on Wednesday, November 7<sup>th</sup> at the San Francisco City College Evans Campus. Approximately 35 people attended the workshop. Following an overview of existing conditions in the area, workshop participants considered three different conceptual design alternatives for improving Cargo Way and creating a new segment of the Bay Trail. Participants reviewed each alternative in detail by rotating through stations featuring each alternative. Participants then reconvened for a group discussion about the design alternatives. The notes below include comments received during the group discussion, as well as notes that were written on the alternatives themselves at each station.

Generally, attendees preferred Alternative B, which includes a dedicated, two-way bike path on the south side of Cargo Way. Alternative B also proposes maintaining a median on the middle of the roadway, improved sidewalks on both sides of the street, and landscaped areas to provide sustainable stormwater management and an attractive visual buffer.

**Group Discussion**

**Alternative Preferences**

- B is first choice
- B, with 2 bike lanes, is best
- Like Alternative B&C, C has more buffer for bikes
- Like Alternative B the best; use color on path

**Medians and sidewalks**

- Keep median
- Golden Gate Bridge feels dangerous without a median
- SF nicest streets have medians – ie. Dolores, Van Ness, Innes
- Median “softens” the landscape
- Can Port fence be moved to create wider sidewalks?
- Make sure sidewalks are wheelchair friendly

**Bike Paths**

- Bike lanes should go across Illinois St. bridge
- Concerned about connection to Illinois
- Jennings link to Evans, HP Boulevard important – people traveling through the area
- Why not 2-way on north? (Answer: fewer truck conflicts on the South; existing landscaped setback on the south)
- Separate bike path allows alternative materials to be used
- Pay attention to post office entrance
- Southside flows through India Basin to Hunter’s Point Shipyard – remember this connection

**Trees and Landscaping**

- Work w/ grassy knoll to create more space
- Existing trees on 3<sup>rd</sup> intended to create a relationship with knoll
- Trees on Cargo not healthy because of truck traffic
- Keep mature trees if possible, new trees on 3<sup>rd</sup> not surviving

**North Side (relationship to Port activities)**

- North side – interesting look at Port History
- Open up fence to rail yard to see activity
- Is replacing the fence along Port property in scope of this project?

# CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

## General Comments

- Why keep 14ft lanes on Alternative A? (Answer: size of existing lanes – A represents cheapest alternative with fewest changes)
- Important to understand how PG&E & Heron's Head parking lot interact
- Integrate planning with Area C
- A little attention now is worthwhile over long wait – anything would be an improvement
- City Hall promised sewer plant would be moved.

## Notes Written on Alternatives (at each station)

### Alternative A

#### *Bike lanes*

- Having bike lanes on the South side better to support truck traffic
- No bikes on North side because lots of traffic at Jennings and Cargo means not good for bikes
- Give an extra two feet to bike lanes on the Southside and reduce travel lane to 12 feet
- Separate bike lanes aren't as safe

#### *Signage and Art*

- Have signage reflect history - what are the industries? what are the buildings?
- Like the interpretive signage- ie. Exploratorium
- Please no public bad art; juried art would be better

#### *Landscaping*

- Make the permeable landscapes into artistic rosettes or mazes on the ground

#### *Pedestrians*

- Peds on north side could impede with trucks coming from Amador
- Could cause back-ups while peds cross

### Alternative B

- Best option – like bike path + median

#### *Median*

- Important to keep median

#### *Bike Path*

- Green lanes are good/color is good
- Keep on South side instead of North
- Make bike lane a permeable material
- Elevated bike trail could allow permeable concrete pavers

#### *Trees*

- No trees to be cut down unless dead or diseased
- Need for good maintenance for trees
- If possible keep existing trees and fill in Jacaranda where trees are needed- weather in Bayview is perfect for Jacaranda
- Plant Evergreen trees

#### *Sidewalks and lighting*

- Improved and level sidewalks- consider wheelchair needs
- Pedestrian height lighting has a better atmosphere
- Uplights on trees are great

#### *Left Turn Lane*

## CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

- Review function of left turn lane
- Keep left turn lane at Jennings; trucks going to SF Port

### *Other comments*

- Shift change at USPS is when there is the most traffic
- 3<sup>rd</sup> and Cargo should be a Gateway
- Can we get café or Plaza at 3<sup>rd</sup> and Cargo?

### **Alternative C**

#### *General*

- Consider how long construction will take
- Is left turn necessary? Street seems over capacity

#### *Bike path*

- I like this one best because it provides safest bike access to Illinois St. bridge.
- A two-lane bike path in Illinois Bridge would be great – anything not to use the 3<sup>rd</sup> St. bridge
- Make bike path wider!

#### *Median*

- Without medians, would cars would be head-on with trucks = bad
- Being head-on with trucks not so bad, but having a median is visually safer.
- Keep median! (Don't like this alternative)
- Don't like loss of median – creates large zone of terror to cross
- Keep median

**Cargo Way Streetscape Project  
Workshop #2  
February 6, 2008**

**Meeting Summary**

The second public workshop to discuss conceptual design ideas for Cargo Way was held on February 6, 2008 at the San Francisco City College Evans Campus. Approximately 50 people attended the workshop. Workshop attendees included local residents, business owners, property owners, members of the San Francisco Bicycle Coalition and 30 members of the Local 22 Carpenters Union.

Following a summary of the input received at the previous workshop, the consultant team presented a draft preferred design alternative based on the areas of consensus from the first workshop. The draft concept included a two-way, dedicated bike path on the south side of Cargo Way, widened sidewalks, retention of the roadway median, and landscaped buffers to protect bicyclists and pedestrians and provide sustainable stormwater infrastructure. The consultants then presented different options for design amenities, including street furniture (lighting, benches), planting palettes for street trees and median landscaping, and options for signage and fencing.

Following the presentation, attendees were asked for their opinion about the design amenities presented, and for general comments about the preferred alternatives. The notes below reflect comments made during the discussion. The workshop attendees were generally supportive of the conceptual design for a two-way bike path and the different design amenities presented. However, a number of attendees raised concerns about the loss of on-street parking on Cargo Way.

**Bicycle Path and Sidewalks**

- Important link in bike network! Good idea.
- Need to make citywide bike network robust enough to get people here from other parts of city.
- The amount of paving seems excessive (path + sidewalk). Consider alternatives.
- Reduce sidewalk width on north side.
- Great model of sustainable design. Do consider permeable pavers. Other stormwater alternatives too!!
- Like separation of bikes, pedestrians and trucks – good design. Consider signage that bikes are prohibited on north side to encourage them to use the south side.
- Increase use of DG to reduce amount of pavement.
- Design looks great, but why not put bikes on north side? However, might get too complicated at Illinois St. bridge to have bikes on north.
- Ensure safe designs at each intersection, where bike lane crosses an intersection.
- Show a lane of parking along bike path.

**Street Design**

- Consider not adding left turn pocket @ Jennings. Will there be parking at Heron's Head?
- Anticipate future traffic and parking needs i.e. Octavia.
- Remove sidewalk to allow for parking.
- If all parking eliminated, how will handicapped people with health problems access interpretive art? Need some parking.
- Where will people park if their car breaks down and they need to pull over?
- Good design, but does it make sense to eliminate parking when businesses might need it?
  - Answer: IBIP Redevelopment Plan requires parking on-site. Port accommodates parking on-site too for its tenants.
  - Answer: parking throughout area – on Burke, Mendell, Jennings, Third etc.
- 100 + union workers will use the future union hall and will need to park. Need on-street parking.
- Need to study slowing traffic on Cargo, to make biking and walking more comfortable
- Avoid parking on pavers on bike path.
- Add parking on the north side?
- Eliminating parking could make it hard to attract new tenants to the area.

# CARGO WAY / BAY TRAIL CONCEPTUAL DESIGN STUDY

## Fence Design

- Can the Port fence move?
- Railroad tie fence is very beautiful.

## Trees and Landscaping

- Design is very good, but plan shows too many trees, too close together. Be thoughtful about spacing to make sure enough sun gets in.
- Many trees dead due to diesel fumes.
- Need trees to mitigate truck diesel.
- Leaf sweeping necessary.
- Need for more trees. Consider evergreens. Victoria box and Jacarandas do well in this environment – don't leave a lot of debris on sidewalk.
- Trees are important for public health.
- Plan shows approximate location of trees only – not an exact amount. Conceptual.
- Median should have fewer trees and more bushes (lower landscaping).

## General Comments

- Peds shouldn't be on Cargo – too many trucks.
- Who will maintain road??
  - Answer – Collaboration among city agencies & IBIP maintenance group
- Make maintenance strategy official so in 20 years not a problem!
- Why isn't Bay trail along the water? Why on Cargo?
  - Answer – need to connect Illinois Street directly to Heron's Head
- Does this design require moving utilities?
  - Answer – since concept calls for keeping the median, utilities will be protected
- How does one get involved in TAC?
  - Answer: The TAC is City-staff – engineers from DPW, MTA and PUC – to bring technical expertise.