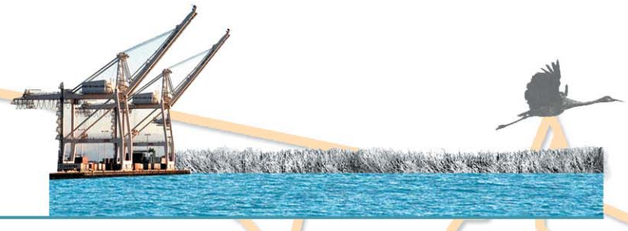
EXECUTIVE SUMMARY



OAKLAND WATERFRONT TRAIL

Bay Trail Feasibility & Design Guidelines

project funded by:

PORT OF OAKLAND

SAN FRANCISCO BAY TRAIL

Coastal Conservancy

City of Oakland

EDAW

Murakami Nelson, Hood Design, Golden Associates, Moffatt & Nichol Engineers, Treadwell & Rollo, JWD Group, and Gabriel Roche Inc.

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PROJECT DESCRIPTION

Oakland has an incredible opportunity to transform its industrial waterfront into a recreational treasure by creating a continuous Bay Trail link from Jack London Square to the Oakland International Airport for jogging, biking, and walking along the waterfront. Parks at key locations along the way will help meet the park and recreation needs of nearby residents. A comprehensive pathway system will help stimulate the development or the improvement of private property, and add to the open space jewels of Oakland.

The City of Oakland undertook a planning study to prepare a detailed feasibility study, design for public access and other open space opportunities on the Oakland Waterfront with an emphasis on demonstrating the feasibility of relocating the current Bay Trail alignment to achieve a shoreline alignment. The feasibility study and design standards provide a coordinated vision and detailed plan for development of the Oakland Estuary and Bay Trail alignment through Oakland to its full potential as a recreational corridor, integrated into the urban waterfront setting of Oakland.

In Oakland, the shoreline of San Francisco Bay extends 19 miles, from the Oakland-San Francisco Bay Bridge to the San Leandro Bay. At its northern end, the Port of Oakland's marine terminals dominate the shoreline. At the southern end lies Oakland International Airport. Between the seaport and the airport is the nine-mile Estuary shoreline. The Oakland Estuary is one of California's most diverse shores, encompassing a variety of physical environments and settings, each with its own distinct quality and character. The trail alignment and guidelines that have been developed are meant to reflect and emphasize the various character zones that exist within the Estuary.

Today, the Estuary can be viewed as a single community resource that binds together the shorelines of Alameda and Oakland. Compared to other parts of the San Francisco Bay, the Estuary is more like a river. It is linear in form and contained, rather than open and expansive like the broader bay. It creates an environment that is intimate in scale and character. It frames dramatic views to the San Francisco and Oakland downtown skylines.

Oakland's Estuary is popular with boaters, joggers, bicyclists, families, as well as commercial, industrial and residential business investors. Amidst high rise commercial office and residential buildings, the general public, residents and office workers will have access to a pedestrian/bicycle path (the Bay Trail) that one day will encircle the entire San Francisco Bay. Jack London Square has a multitude of fine restaurants, shops, high quality entertainment, hotels, kayak rentals and other businesses that are weekend attractions for Oakland and East Bay residents. Along the eastern shoreline of the Estuary are the Oakland International Airport, and several important wetland environments. At intervals along the Estuary are several neighborhood/regional parks that should be integrated, through design recommendations, into the Estuary pathway system. These include Martin Luther King Shoreline, Estuary Park, Union Point Park and Oakport Park. Linkages to these parks, and to the planned Lake Merritt Channel Greenbelt, were studied as part of the project.

Oakland Waterfront Trail near Union Point Park

Project Objective

The project area is defined by Clay Street to the north, Interstate 880 to the east, 66th Avenue to the south, and the Oakland Harbor to the west (Figure 1.2). The area extends approximately 6.6 miles along the waterfront to the west of I-880. The objective of this study - *The Oakland Waterfront Trail / Bay Trail Feasibility Study and Design Guidelines* - is to produce a detailed feasibility study, site plan and design standards for development of a Waterfront Trail/Bay Trail alignment along the Oakland Estuary shoreline wherever possible and connections to an inland route where this alignment is determined not feasible in the short-term. The design standards developed under this project will also be applicable to existing sections of the waterfront trail / Bay Trail alignment through Oakland.

Several sections of pathway associated with waterfront / Bay Trail access are complete or nearly complete. This report analyzes the cost and availability of properties associated with the shoreline and/or adjacent to the shoreline, and assign relative priority to purchasing properties, or negotiating easements or rights-of-way, and subsequent development of these properties. The plan incorporates recommendations for appropriate placement of the pathway system with respect to adjacent structures and amenities, and recommends an aesthetic treatment.

PLANNING PROCESS

The City of Oakland hired EDAW, Inc. to lead a predominantly Oakland-based consultant team to work on the project in May of 2002. The team includes Murakami Nelson (Architects), Treadwell & Rollo (Geotechnical and Environmental), Hood Design (Landscape Architects), JWD Group (Civil Engineers), Moffatt & Nichol Engineers, Golden Associates (Landscape Architects) and Gabriel Roche, Inc. (Public Outreach).

The first two months were spent on research and documentation of existing conditions. After the initial kick-off meeting, the entire team visited the site both on land and by water taxi to get an initial understanding of the site conditions.

The consultant team met with the city staff several times and with the task force members. The task force consisted of representatives from the City of Oakland, the Port of Oakland, Bay Trail, Coastal Conservancy, East Bay Regional Parks Districts and BCDC . The findings of the existing conditions, which were summarized in a memorandum outlining the physical site context, market and economic issues including property ownership patterns, shoreline conditions, geotechnical and environmental issues, were presented to the task force. These findings were then synthesized into an ***Opportunities and Constraints*** map that became the basis for the planning and design of the trail alignment.

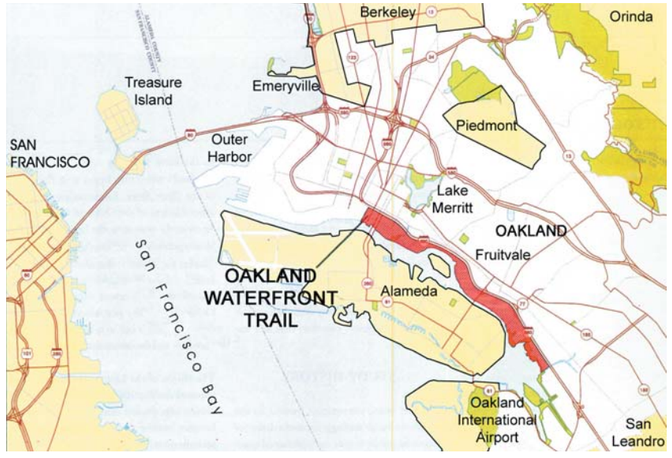
These findings were also presented at a neighborhood workshop to an audience that included the task force and property owners who own property along the waterfront. The consultant team met on a regular basis to develop alternative trail alignments as they related to phasing options. Where it was determined that a waterfront trail segment could only be developed in the long term, alternative short term trail alignments were identified.

The next step was to define the character of the trail along its entire length and consider the need to balance the identity of the trail as part of a Regional Bay Trail system and as the front door to the City of Oakland. A set of guidelines was developed to guide the design of trail segments as they are built. The trail was segmented into 40 distinct projects, each of which include an estimated cost of construction. The cost estimate matrix was then incorporated into an implementation and phasing plan that prioritized the projects over a ten year period.

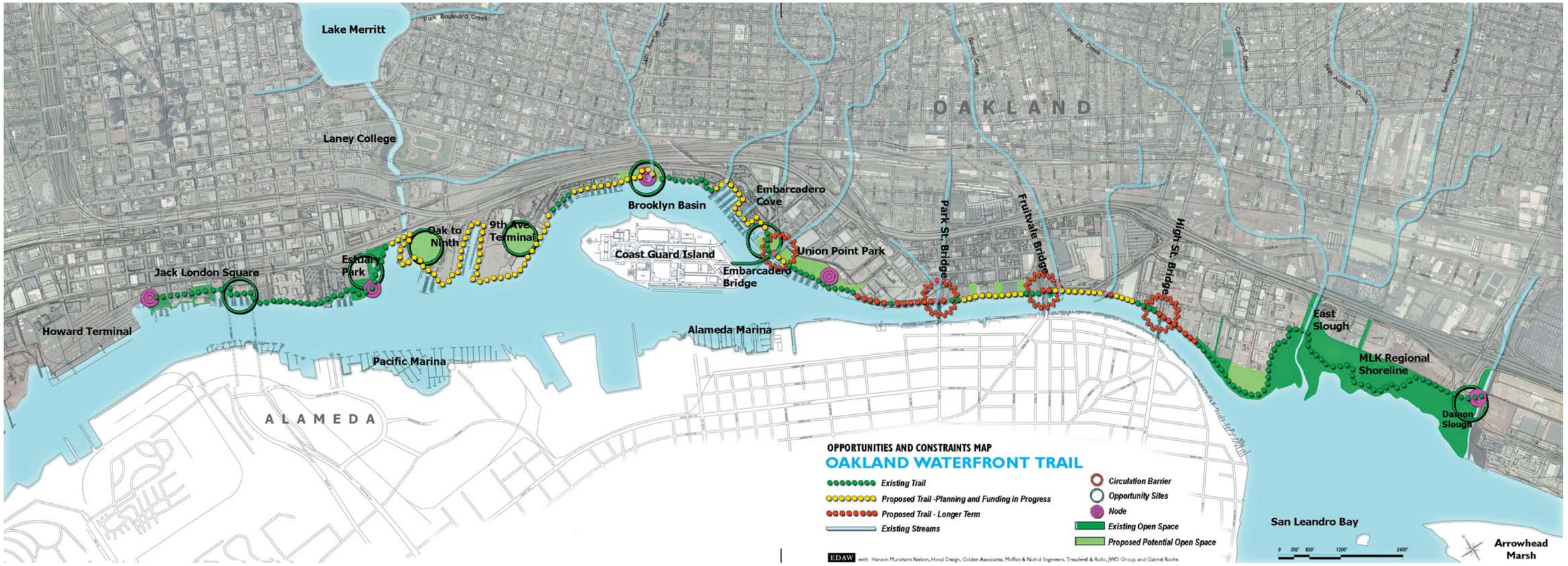
There were several presentations made to receive input from the Oakland community. The consultant and city staff made presentations to the Waterfront Coalition, East Bay Regional Parks District, Army Corps of Engineers, BCDC, Coastal Conservancy and Bay Trail, Public Art Advisory Committee, Parks and Recreation Committee, City of Alameda and the Port of Oakland.

With the completion of the draft report, city staff will make additional community presentations and post the document on its website to solicit comments and feedback. After the community outreach process, the comments will be consolidated and presented to the Planning Commission and City Council before final adoption of the Plan.

In November of 2002, the citizens of Oakland passed a voter-approved bond measure that provided a funding of $53,000,000.00 for the waterfront trail and parks along the waterfront.



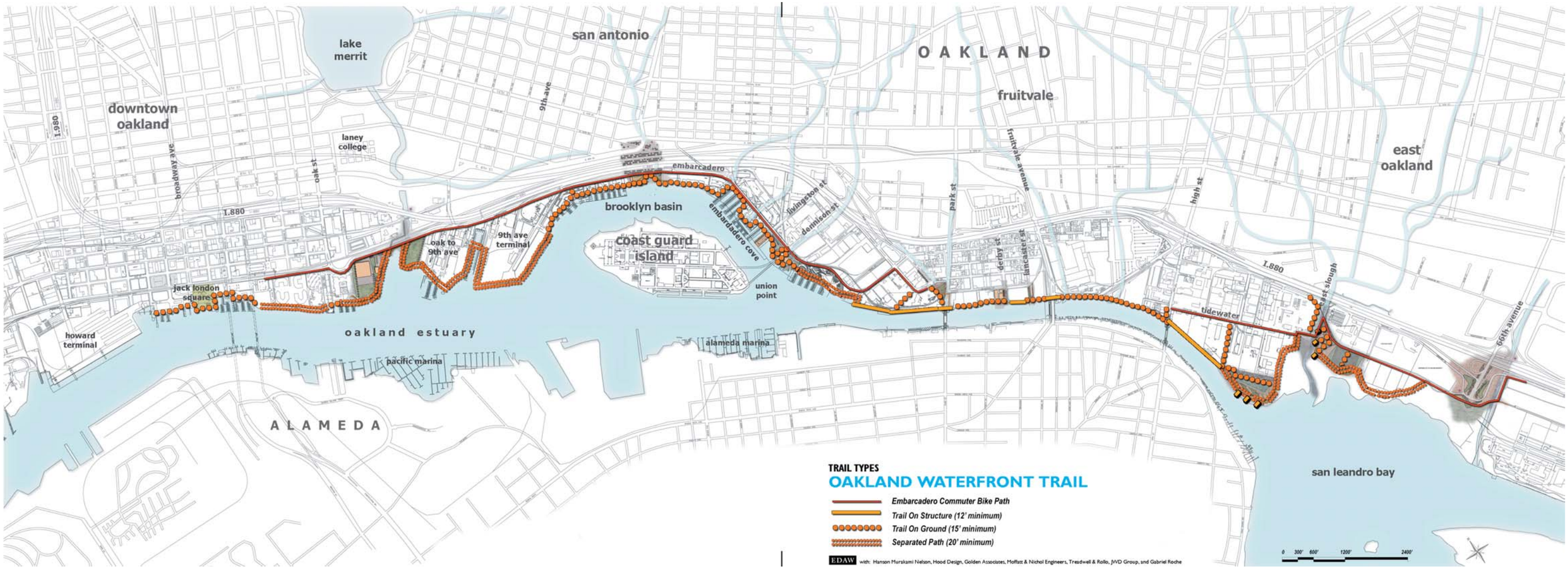
REGIONAL CONTEXT



EXISTING CONDITIONS ANALYSIS SYNTHESIS- OPPORTUNITIES AND CONSTRAINTS

The project scope included an extensive analysis of existing conditions within the study area, including: Oakland Waterfront history, Bay Trail system context, local bicycle network, land use, neighborhood connectivity, economic profile of the study area, shoreline conditions, subsurface and seismic assessment, environmental conditions and ecology.

The Opportunities and Constraints map is the synthesis of the existing conditions analysis. It indicates areas where a trail exists, areas where a waterfront trail is proposed, and the areas with constraints. The green dots in the Opportunities and Constraints map indicate areas where the trail currently exists. The yellow dots indicate segments of the trail that are proposed and are either planned as part of a development proposal or have funding allocated for its construction. The yellow and green segments constitute over 80 percent of the length of the trail in Oakland. The areas indicated in red are those where significant technical issues remain to be resolved, or where right of way acquisition may be problematic. Significant opportunity sites for new parks, trail upgrades, or major entry points are indicated by the green circles.

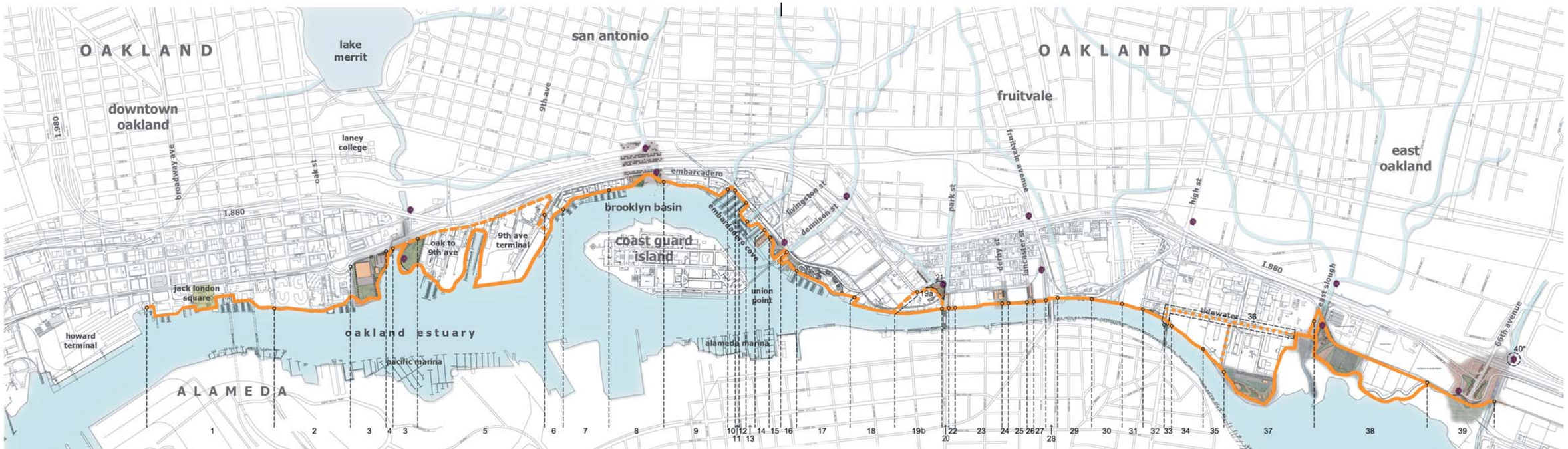


WATERFRONT TRAIL ALIGNMENT

The Oakland Waterfront trail, as part of the Regional Bay Trail, is aligned as close to the waterfront as possible along its 6.6 miles stretch. In some areas, where there is continuing heavy industrial use of the waterfront, the trail skirts inland, but with a long-term option to continue at the water's edge when conditions are suitable.

TRAIL TYPES

The trail is proposed to be a minimum of 12 feet in width, and 15-20' where site conditions will allow. The trail is proposed to be predominantly shared use, with some sections of separated pedestrian and bicycle paths where conditions are appropriate. The completed trail will link existing portions of the pathway, mostly as a paved trail on the ground, and occasionally on piling structures over the water where there is not the available suitable width, or a conflicting use of the water's edge, or to bypass bridge crossings.



1. Jack London Square (Clay St. to Alice St.)
2. Alice St. to Estuary Park
3. Estuary Park (to Channel)
4. Estuary Park / Lake Merritt Channel Bridge
5. Oak to Ninth (Meadow Park and 9th Ave Park)
6. Trail @ Oyster Reef Restaurant
7. 10th Avenue Marina
8. Brooklyn Basin / Marine Max
9. Brooklyn Basin to Embarcadero Cove
10. Trail @ Harbor Master's Office
11. Embarcadero Street (along the street)
12. Trail @ British Marine
13. Village @ Embarcadero Cove
14. Livingston Pier
15. Skate Park
16. Cryer Site
17. Union Point Park to Con Agra
18. Con Agra (to Kennedy St.)
19a. Kennedy St. to Park St. (sidewalk)
19b. Kennedy St. to Park St. (embankment)
20. Park St. Bridge
21. Park St. Triangle
22. Pier 29 Restaurant
23. Pier 29 to Derby St.
24. Derby St. Park
25. Trail @ Oakland Women's Museum
26. Lancaster St. Park
27. Lancaster St. to Fruitvale
28. Fruitvale Bridge
29. Fruitvale to Alameda Ave.
30. U.S. Audio
31. U.S. Audio to Mini-Storage
32. Mini-Storage
33. High St. Bridge
34. Gallagar & Burke Aggregate
35. Oakland Strokes
36. Tidewater Ave. Connection
37. EBRPD to East Slough
38. Oakport Park
39. 66th St. Gateway
40. Markers (Archimedes Columns) throughout Trail **(14)**

SEGMENT PLAN

OAKLAND WATERFRONT TRAIL

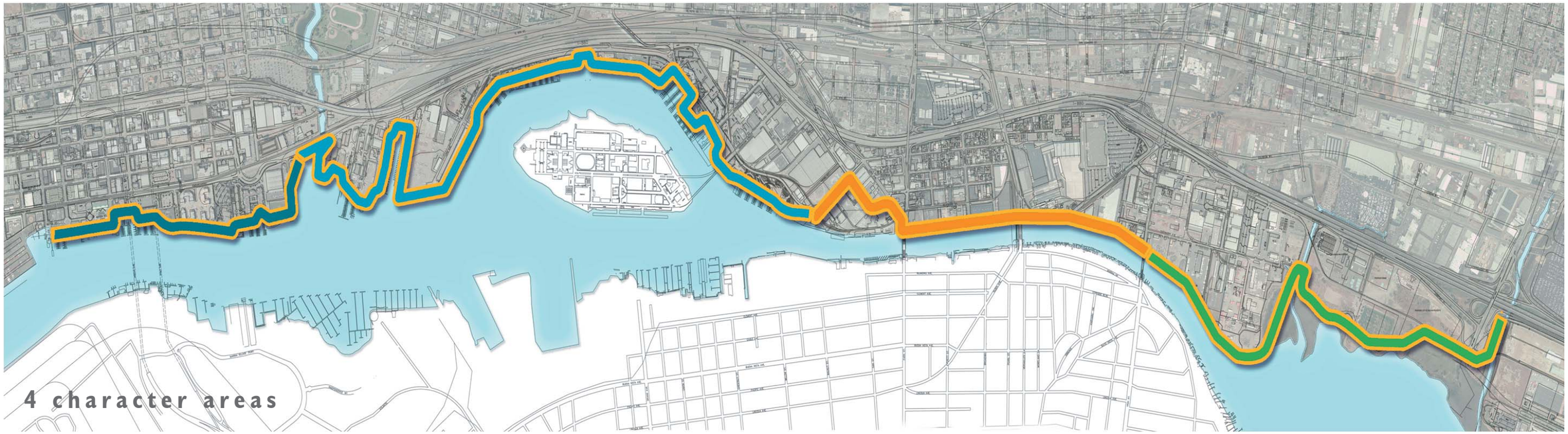
Parks
Archimedes Column
Existing Streams
Proposed Long-Term Trail Alignment
Proposed Short-Term Trail Alignment
Optional Trail Alignment

EDAW with: Hanson Murakami Nelson, Hood Design, Golden Associates, Moffatt & Nichol Engineers, Treadwell & Rollo, JWD Group, and Gabriel Roche

PROJECT SEGMENTS

To create the implementation and funding strategy, the Oakland Waterfront Trail study area was divided into 40 segments. Each of the segments was then analyzed as a separate component project. Recognizing that the completion of the trail and new proposed waterfront parks is a long term undertaking, each of the segments was assessed, costed, and prioritized in an overall implementation and funding strategy.

downtown marina industrial marshlands



DESIGN GUIDELINES

The concept for the design guidelines for the Oakland Waterfront Trail was to identify general character and materials for the trail development, using sections, descriptive text and images. Based on the existing neighborhoods and uses along the waterfront, the Oakland Waterfront Trail passes through four distinct character areas - downtown, marina, industrial and marshlands. Paving, railings, and furniture would vary along the trail to reflect the identity of the surroundings. Lighting and signage would be of a consistent language along the entire length of the trail.

See Appendix E. of Master Plan Document for further detail on specific furniture recommendations.

downtown

- downtown edge
- old city port
- grand civic gesture

ground
large scale
cobble edge
brick
concrete

furniture
urban image
large civic gesture
wood
concrete or stone

railings
concrete
stone and metal
substantial posts

industrial

- large industrial buildings
- factories
- production
- large scale
- raw materials
- assembly of parts
- relate to bridges/crossing

ground
wood docks
decomposed granite
concrete
grating

furniture
metal
concrete
stone
integrate seat/walls
welded or bolted
substantial construction

railing
metal
grating
open view

marina

- waters edge
- ramps
- piers
- gang planks
- docks
- clean lines

ground
wood docks
stone
pavers

furniture
wood
matte finish metal

railings
polished wood
matte finish metal
open view cable or rail

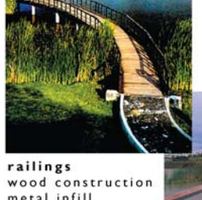
marshland

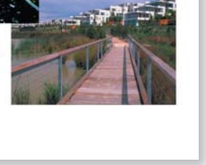
- wetlands
- undeveloped shoreline park
- native plant material
- unpaved paths
- touch ground lightly

ground
floating boardwalk
decomposed granite

native plantings

furniture
simple
substantial
wood construction
natural materials





railings
wood construction
metal infill
open views

LIGHTING AND MARKER SYSTEM

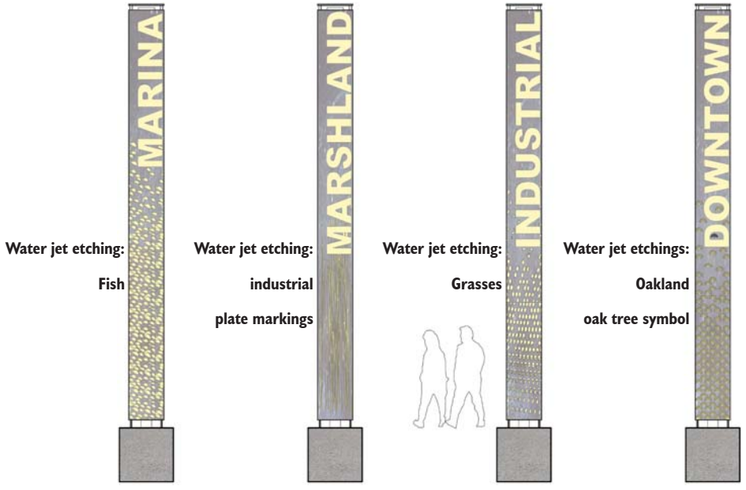
The concept for the waterfront trail lighting element is derived from the existing railroad light towers that parallel I-880 and the city's waterfront. The light towers are composed of steel, featuring a cross bracing open structural pattern with fixtures adorning their tops.

The new Oakland Waterfront Trail light elements are simple triangular towers that employ vertical TIR Systems light pipe fixtures at its center. Individual stainless steel plates are equally spaced and stacked vertically to create an open glowing light element. Each steel plate is water jet cut from a standard sheet of steel, and each plate is cut in a different pattern to visually create a cross bracing pattern. Economic benefit in fabrication is provided by producing a standard template for each light. Caps would be on all lights to prevent uplighting.

There are five different fixture types, with different finishes and etchings:
Trail light, Site light, Kiosk, Site marker, Gateway markers

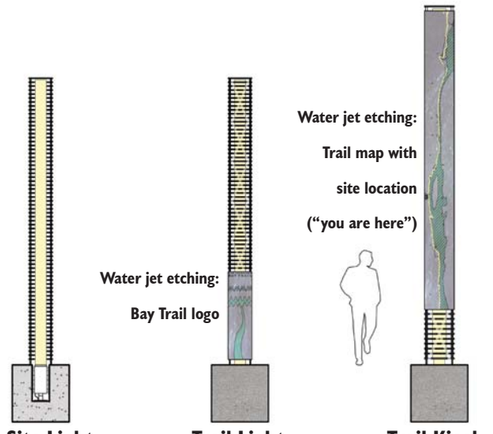
Watershed Markers - Archimedes Columns

Landscape markers composed of steel, metal mesh, and glass rise up along Oakland's major creek tributaries. The markers are beacons that announce the bay trail at a regional scale, punctuating trailhead and open space systems along the trail. They are way finders for visitors approaching from I 880 and from East Bay neighborhoods. The marker's design is derived from the Archimedes water columns. Placed at areas where the creek channels empty into the bay, they become "imageable" structures for each creek, neighborhood and place along the Bay Trail. The outer skin of the column is perforated metal that visually reveals patterns of ecological and wildlife elements. Light will be projected centrally at night illuminating the skin to create a brilliant pattern. During the day the twisting outer skin will change as light passes through the opaque surface. At the marker's center there is a lightweight acrylic spiral column. The spiral tower is wrapped around a central pin that is set within bearing housings at the marker's top and bottom allowing it to move with the changing wind patterns. The markers heights should at least be 75 to 80 feet in order to be visible in the bay front landscape. They should be tall enough to distinguish themselves from the many signs and structures along the I-880 corridor.



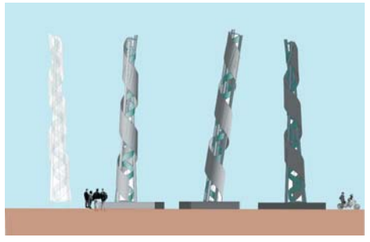
GATEWAY SIGNAGE MARKERS

For fabrication drawings and more details please refer to Appendix E. of Master Plan document.



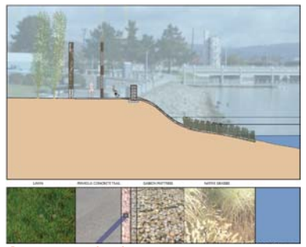
Site Light | Trail Light | Trail Kiosk

Gateway Light Marker



WATERSHED MARKERS

TRAIL CHARACTER CROSS-SECTIONS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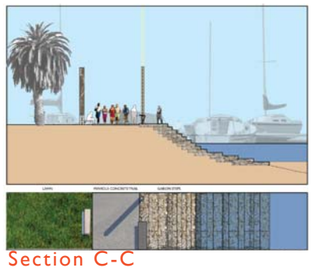
Section B-B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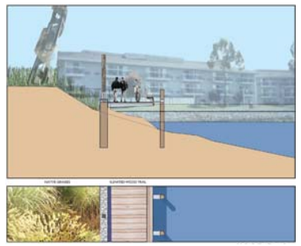
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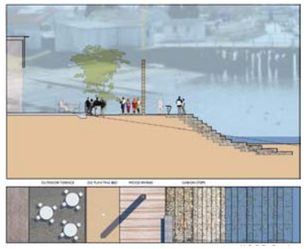
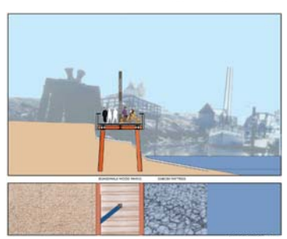
Section E-E


Section F-F


Section G-G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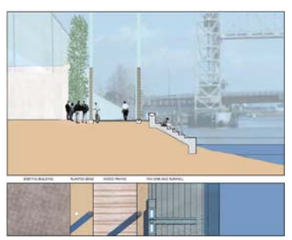
Section I-I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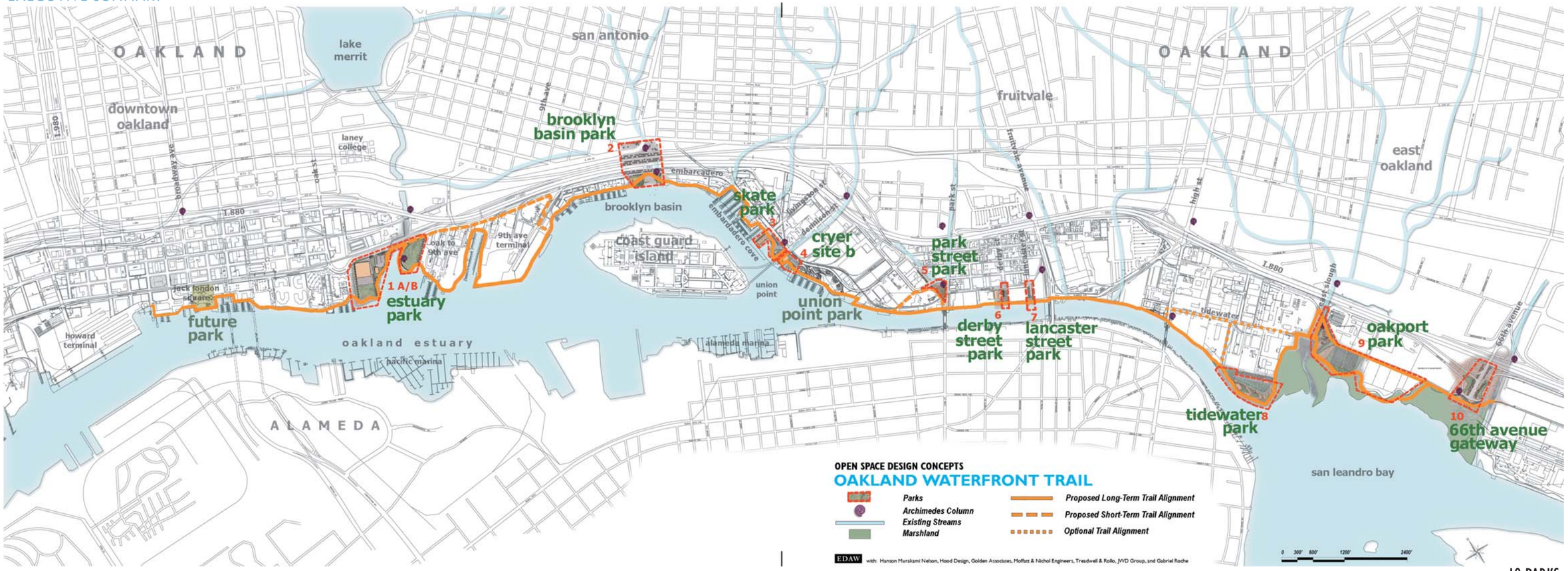
Section K-K


Section L-L



10 PARKS

OPEN SPACE CONCEPT

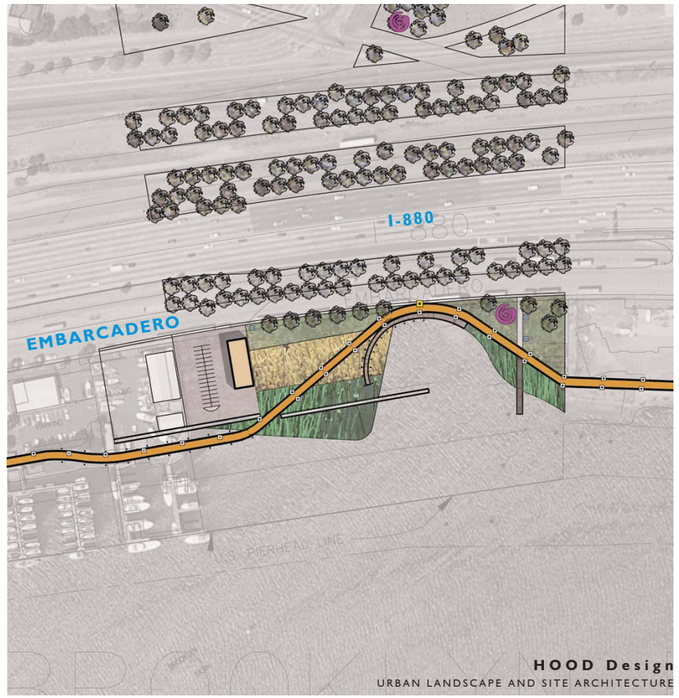
As part of this project, a series of individual parks, waterfront parks and shoreline access points are identified as pausing places along the trail. Ranging in scale from large community gathering areas to pocket parks, these provide recreational use opportunities, environmental enhancement, interpretive experiences, and increased visual character along the waterfront. All the parks include program elements necessary for existing and proposed uses. There will also be floating bridges, decks and overlooks that extend beyond the shoreline and provide a different experience of the water and the natural environment.

These elements will be sensitively designed and be environmentally friendly. Shoreline and wetland restoration will be incorporated at every available opportunity.

Conceptual designs for the waterfront parks are included as part this study. These designs are intended to only convey the vision and function for the space and not meant to indicate a final design solution.

10 PARK CONCEPTS

Aerial View of Estuary Park



Estuary Park

With its proximity to downtown, and its location where the Lake Merritt channel and Oakland Estuary join, Estuary park is envisioned as a premier gathering space for Oaklanders, and hence is a priority project for the Oakland Waterfront Trail. There are two proposed options for Estuary Park. The first assumes that the existing grocery store will be replaced by housing. The park will be redesigned as Oakland's Great Waterfront Lawn, able to host large civic events as well as continue to serve recreational uses.

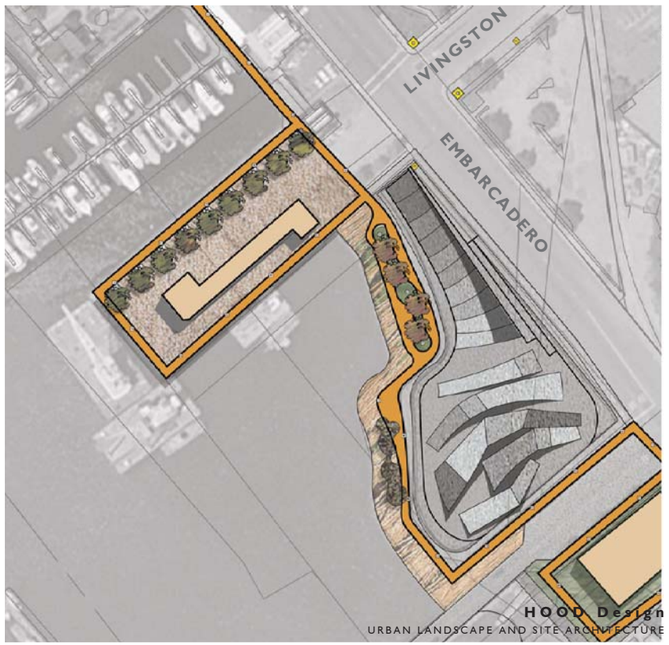
The second option assumes that the grocery store site will be replaced by open space to create a larger park. The entire surface is proposed to be turfed in order to provide an open feel and accommodate a variety of uses, including play fields, and a concert meadow for other community events. The site will be graded to gently slope down to the water from a high point adjacent to the street.

Brooklyn Basin Park from Existing Pier

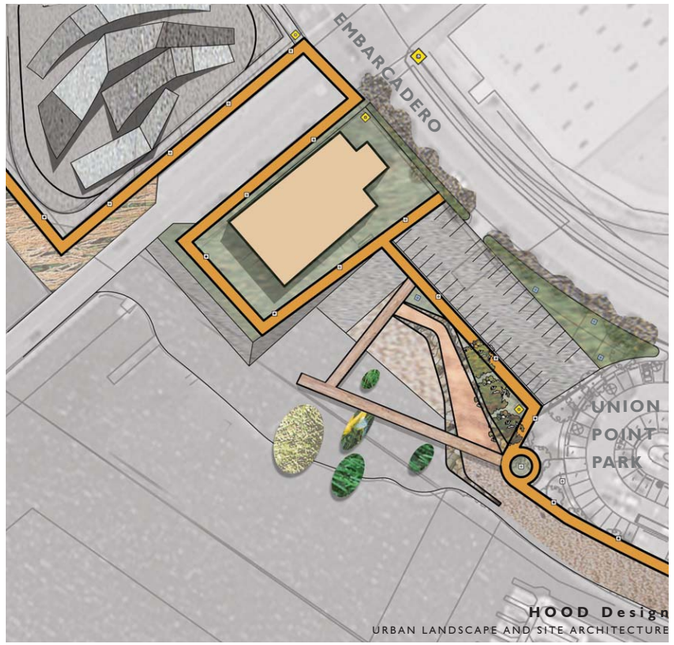
Brooklyn Basin

The Brooklyn Basin site is a vacant parcel that sits between the motels along Brooklyn Basin, and is currently a major gap in the continuity of the trial. This site provides commuters on I-880, BART riders and the neighborhood beyond with a direct visual connection to the water. It is on axis with 12th Street and 12th Avenue. A third of the site is earmarked for a retail/commercial development. Two-thirds of the site will be designed as an open space. The shoreline is modified to provide a gently curving edge along the water. The edge will include wetland vegetation and native grasses. The trail winds through the site connecting to the existing pier of the adjacent building. The area closest to the freeway will include low vegetation or turf. This space is designed as a visual amenity and as an entry point to the waterfront trail.

The connection to the neighborhood to the north is referenced by providing unifying landscaping along the Embarcadero and land adjacent to the railroad right-of-way linking to the existing triangular park on East 8th Street.



Aerial view of Cryer Site, Skate Park and Livingston Street Pier



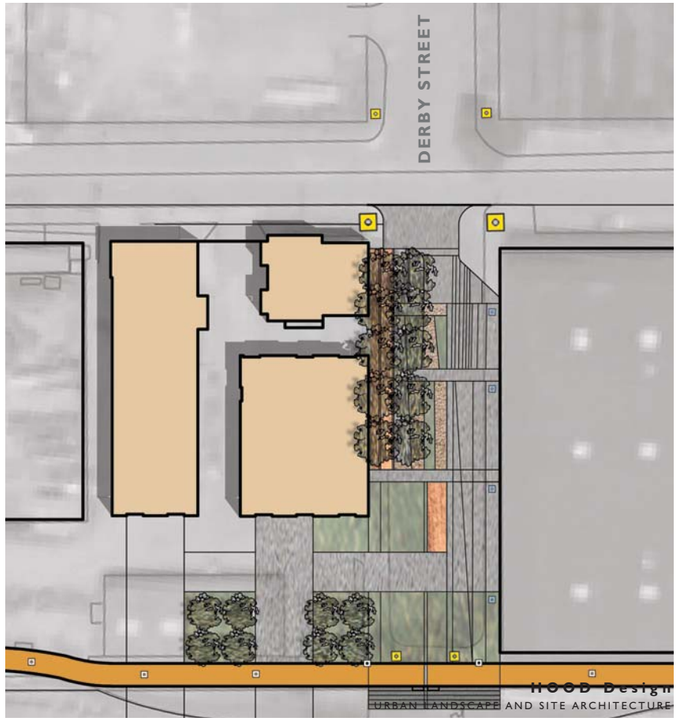
Skate Park

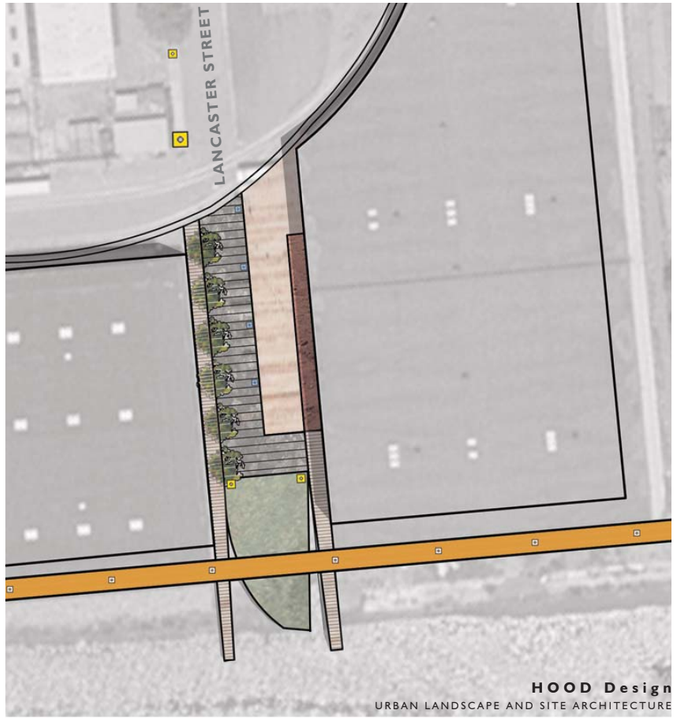
The skate park is proposed on a superfund site that is currently capped. The site is adjacent to the Livingston pier and to the west of the Coast Guard Island Bridge and Union Point Park. The space would function well as a recreation space for teens and young adults. Because of the capping, the site provides an opportunity to visually sculpt it with skateboard ramps. The trail will run along the edge of the water. The slope between the trail and the skate park will be landscaped.

The adjacent Livingston pier has buildings that are leased to a commercial diving company. In the long term, the existing building can be reused as commercial or include retail uses such as a café, providing an appropriate adjacent function to the skate park.

Cryer Site

The Cryer site is adjacent to the Union Point Park and is designated for future expansion of the park. There is an existing building on this site, which will be renovated for use as a community center as part of this project. The remainder of the site will include parking and landscaping. The site contains ramps that connect to the water instead of being separated from the water. The site will be designed as a series of sliding planes and terraces that connect to the water and provide a distinctively interesting edge to the site. Wood piers extend out into the water providing a viewing deck.





Triangle/Park Street

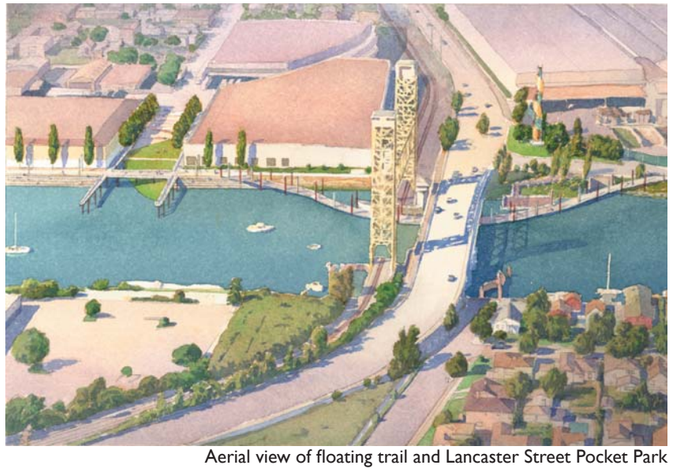
The triangle at Park Street is intended to serve as a trailhead and a visual landmark at one of the gateways to the waterfront. In addition, it provides a sense of direction and focus to bicyclists on the Embarcadero. As Embarcadero veers away from the waterfront and joins Kennedy Street, it becomes a confusing route, especially as the traffic from 23rd Avenue and Park Street converge towards the bridge.

The triangle provides a respite, both visually and physically, for traffic in all directions. An open space at the triangle can help alleviate traffic movements and circulation. It also provides a clear path connecting the waterfront trail.

The triangle is designed to include simple landforms and a screened parking area, which would include bicycle lockers. The site can accommodate a retail use such as a café/coffee shop. The north end of the site will also include an Archimedes column to reinforce the sense of gateway to the waterfront.

Pocket Parks

There are two streets between Park Street Bridge and the Fruitvale Bridge that terminate at the waterfront and provide a great opportunity for introducing pocket parks. These parks become viewing decks along the waterfront. The streets have a right-of-way of eighty feet. These streets will need to accommodate some parking, areas for loading and unloading and access to the adjacent parcels. The Lancaster Street park includes parking with specialty paving on either side. Tree lined walkways lead to the street terminus, which is landscaped. Wood piers extend the walkways over the water, again providing a viewing deck. The Derby Street Park is between the Oakland Women's Museum building and the proposed Cal Crew facility. Parking and access to both buildings are provided from Derby Street. Specialty paving, landscaping and rows of trees define this space as it leads towards the water.



Aerial view of floating trail and Lancaster Street Pocket Park

Tidewater Park

This parcel provides great views stretching from the San Francisco skyline to San Leandro Bay. The East Bay Regional Parks Districts parcel is at the gateway of the estuary as it joins the San Leandro Bay. It is also marks the beginning of the marshland vegetation that continues to the east.

The design concept emphasizes the overlooks to and beyond the water. The land forms are indicative of the flow of wind and water. A linear land form rises out of the grades to create an extended overlook area and terminates in a staging area at the eastern end. Secondary land forms meander off towards the water and imitate the flow of water. There are paths adjacent to the landforms that terminate as wood piers that extend gently over the water. The length of the wood piers is purposely kept to a minimum to avoid interfering with the wetland vegetation. Drifts of trees are integrated in an informal pattern to reflect the wind and flow. Parking is provided at the north end of the site. The access to the park off Lesser Street and Tidewater will be landscaped to reinforce a sense of entry and provide clear access to the waterfront.

Oakport Park

The Estuary Policy Plan identifies the southern part of the East Bay Municipal Utilities District (EBMUD) parcel as open space. A part of this open space, Oakport Park is located to the east of the East Slough on the East Bay. The landforms incorporated in the park design reflect those in Tidewater Park and are designed to create an overlook onto the East Slough. An Archimedes Column is included in the part to mark a gateway to the waterfront. The shoreline will include marshland vegetation and native plant material.

There are three existing soccer fields that are heavily used by the community. Two additional fields are proposed adjacent to them to the west of the parking lot. This expanded facility fulfills the active recreational needs of the adjacent neighborhoods. The existing parking lot will be refinished with the incorporation of appropriate landscape screening.

66th Avenue Gateway

66th Avenue and Damon Slough are important gateways to the waterfront and important connections between nearby neighborhoods and the marshlands along the waterfront. For many trail users, this could be the starting point of their waterfront journey. This gateway location is marked with two rows of trees that stretch towards the water. Vertical markers also symbolize the point of entry. A short wood pier, on axis with 66th Avenue, extends over the marshland. This pier could either be a purely visual feature or it could be designed to provide an opportunity to interact closely with the natural environment without intruding into it. The entire shoreline will include marshland vegetation and native plant material. Parking areas are included on either side of the ramp to provide for adequate parking for the trail and park users, in addition to accommodating overflow parking for the Coliseum. There is also a proposed road to replace the current entry drive to the soccer fields.

66th Avenue Gateway