

Grand Canal

City of Los Angeles, California

Public Access Pre-Design Report November 8, 2007

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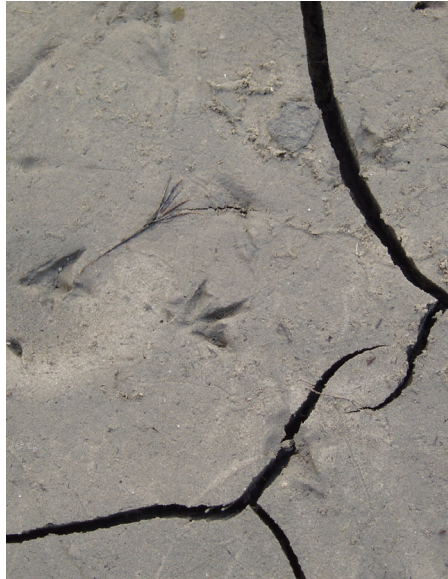


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Exhibit 1: Regional Landmarks and Recreation

Landmarks

- Venice (Venice canals)
- Beach
- Ballona Lagoon Marine Preserve
- Marina Del Rey Harbor
- California Least Tern Nesting Site
- Lennar Urban
- Mother's Beach

Recreation

- A Venice:** Biking, walking, birdwatching, running, site seeing
- B Grand Canal:** Walking, running, birdwatching, nature walks
- C Ballona Lagoon Marine Preserve:** Walking, Jogging, dog walking, birdwatching
- D Beaches:** Walking, jogging, pickniking, volleyball, birdwatching, swimming, kyteing
- E Marina Del Rey Harbor:** Boating, fishing, dining, kayaking, walking, jogging, outdoor concerts, biking

Existing Conditions & Analysis

BACKGROUND

Grand Canal, which is the northernmost terminus of what was once a vast coastal marsh and lagoon system created historically by the confluence of the Los Angeles River, Walnut Creek, Centinela Creek, Ballona Creek and Santa Monica Bay – is now known as being part of the greater Ballona Wetlands ecosystem (See Exhibit 1). North of this natural lagoon is an extension of Grand Canal, but while fed by tidal waters and having some natural features, it is part of the less natural, more highly managed Venice Canals. Three of the tidally influenced lagoons, including the Grand Canal, which are part of this ecosystem are owned by the City of Los Angeles (a fourth tidally influenced lagoon, known as Oxford Lagoon, is owned by the County of Los Angeles), whereas the 600+ acres of estuary, saltmarsh, freshwater marsh and prairie grassland known as the Ballona Wetlands Ecological Reserve is owned by the State of California. The lagoon areas are being acknowledged in the wetlands planning process for the state-owned Ballona Wetlands.

HISTORIC LANDSCAPE

Historically Grand Canal was a natural coastal lagoon nestled between large sand dunes. The site was a mix of unimaginable beauty and contrast. To the west of the lagoon the Pacific Ocean would feed the lagoon with diverse marine life. To the east, the Los Angeles River, fed by tributary streams, ran unconcealed through the coastal landscape (now Washington Boulevard) of wetlands, meeting the small lagoon (Grand Canal) at the end of its journey before it reached the ocean. During the beginning of the 1900s fresh and salt water marshlands, located where the canals are currently situated today, became part of “Venice of America” a subdivision project. During the same period Grand Canal, known formally as part of the Ballona

Lagoon ecosystem, was subdivided into small parcels of land for beach cottages. Sidewalks were constructed along the banks on Venice canals, including Grand Canal (See Figures 1-4).

Due to the great depression of the 1930s the original “Venice of America” canals system fell into disrepair. In the early 1920s the City of Venice initiated plans to fill the canals and convert them into roadways. Maintenance of the canals was costly and demanding. Twenty years after the canals were originally built the automobile had become the American way of life and narrow alleys and steep bridges of the canal area had become liability. Lack of maintenance had left the canals in a state of disrepair. The annexation of Venice into Los Angeles postponed the project to fill the canals until 1927 when the Los Angeles Board of Public Works solicited bids from contractors for commencement of the work. The residents in the canal area have been attempting to restore the remaining canals since the 1960s. The Venice Canals, located north of Washington Boulevard were rehabilitated in 1993. The segment of Grand Canal that is currently proposed to be rehabilitated is the only segment of the historic canal system that has not been improved.



Figure 1: Port of Ballona, now Playa del Rey, Early 1900's



Figure 2: Dredging out marshlands, 1905



Figure 3: Filling of canals, 1927



Figure 4: Historic aerial view, 1947

INTRODUCTION

In analyzing and identifying public access opportunities for Grand Canal, it was imperative for the public access team to understand the significance and impact of circulation throughout the site. The first step in the process was to define public access. Given the biological and urban characteristics of the site, public access was defined in two distinctive frameworks, urban and habitat (See Exhibit 2). The urban framework for public access includes pedestrian, cycling and vehicular circulation, including cars, public transportation (buses, shuttles and taxis), the habitat framework includes the existing biological corridor, Grand Canal, in which estuarine water conditions and the banks of the lagoon define a specific area for wildlife movement. Thus, Grand Canal is a unique environment where the combination of an urban community interfacing with natural habitat provides enhanced opportunities for potential interpretive learning. Grand Canal is located immediately to the north of the Ballona Lagoon Marine Preserve (BLMP) and connected via tidal waters, which enter the BLMP through a tide gate at the Marina del Rey boating channel. The 405 (San Diego) and 90 (Marina) freeways are the two main nearby freeways located to the east of Grand Canal. The region is home to a landscape of unique ecological, social and cultural diversity.



PLANNING CONTEXT

To understand the context of the Pre-Design for the Grand Canal, an overview of some of the relevant plans and planning concepts related to open space, water quality, biodiversity and public access have been reviewed. The Pre-Design for the Grand Canal may build upon, complement, or further advance the following plans and concepts.

Parks, Playgrounds and Beaches for the Los Angeles Region

The Olmsted Brothers and Harland Bartholomew and Associates proposed the most significant historical open space plan in the Los Angeles Basin in 1930. The Olmsted-Bartholomew plan, entitled Parks, Playgrounds and Beaches for the Los Angeles Region, recommended a network of parkways that would link the mountains, rivers, parks and beaches. Among the extensive recommendations for several areas within the Los Angeles Basin, the plan intended to link coastal communities, such as El Segundo, Playa Del Rey and Venice, to an integrated park system that would run along the coast. Due to the Great Depression in the 1930s, and concerns raised by the Chamber of Commerce, the plan was abandoned and never implemented (Hise, Deverell, Olin, 2000).

Ballona Creek Watershed Management Plan

In 2001, the Los Angeles County Department of Public Works, the City of Los Angeles, Santa Monica Restoration Commission, and Ballona Renaissance formed the Ballona Creek Watershed Task Force (BCWTF), which created the Ballona Creek Watershed Management Plan (2004). The plan identifies several objectives, such as



Exhibit 2: Existing land use on the Grand Canal

biological restoration within the watershed, target areas for source of pollutants, and preserving and conserving open space for recreation, habitat restoration, and water conservation.

Baldwin Hills Park Master Plan

In 2000, the Baldwin Hills Conservancy was established to preserve and enhance the Baldwin Hills area. In May 2002, the Baldwin Hills Conservancy completed and published the Baldwin Hills Park Master Plan. The master plan serve as a reference guide with recommendations for future natural space and parkland acquisition and improvements, development of amenities, habitat restoration, and trail connections to Ballona Creek and other public facilities (Baldwin Hills Conservancy, 2002).

Lower Ballona Creek Reconnaissance Study

In 2002, the United States Army Corps of Engineers initiated the Lower Ballona Creek Ecosystem Restoration 905(b) Los Angeles County Reconnaissance Study. The study seeks to identify issues and objectives for the restoration of the lower Ballona Creek watershed. The Corps of Engineers is currently working to complete the study (Ballona Creek Renaissance).

Ballona Creek and Trail Focused Special Study

In 2001, the Coastal Conservancy awarded a grant to the City of Culver City. Based on the input from the community workshops, a refined concept plan was developed to determine the potential for enhancing Ballona Creek as a recreational resource while recognizing its function as a flood protection channel. The project area is focused on the portion of the Ballona Creek channel within Culver City (Ballona Creek Trail Focused Special Study).

Green Visions Plan

The Green Visions Plan for 21st Century Southern California is a joint venture between the University of Southern California and the region's land conservancies, including the Rivers and Mountains Conservancy, Santa Monica Mountains Conservancy, Coastal Conservancy, and Baldwin Hills Conservancy. The focus of the plan is to provide a guide to habitat conservation, watershed health and recreational open space for the Los Angeles metropolitan region, and to design planning and decision-support tools to nurture a living green matrix for southern California. The goals of the plan are to protect and restore natural areas, restore natural hydrological function, promote equitable access to open space, and maximize support via multiple-use facilities. The plan highlights the opportunities and constraints that may arise as habitat conservation and restoration projects, open space acquisitions and recreation improvements, and efforts to protect watersheds are proposed and implemented (USC, 2005).

Los Angeles Coast National Recreation Area Campaign

Environmental leaders, open space advocates, elected officials and tourism professionals are uniting to propose the establishment of the Los Angeles Coast Recreation Area, an extension of the Santa Monica Mountains National Recreation Area southward to include parts of the Los Angeles coastline, which would include

this Grand Canal Lagoon area. A bill will be introduced in Congress that, if passed, will direct the National Park Service to study the feasibility and appropriate boundaries for such a destination.

City of Los Angeles General Plan

The City of Los Angeles General Plan is a document that is prepared and maintained by the Department of City Planning. It is a comprehensive, long-range declaration of purposes, policies and programs for the development of the City of Los Angeles. The General Plan consists of 11 Elements including Framework, Transportation, Infrastructure, Land Use, Housing, Noise, Air Quality, Conservation, Open Space, Historic Preservation and Cultural Resources, Safety, and Public Facilities and Service. The original General Plan was adopted April 3, 1974. Since then, several individual Elements have been updated

Specific Plans

The study area for the Grand Canal Pre-Design falls under two specific plans. The first is the Venice Coastal Zone, which adopted by the Los Angeles City Council on December 2, 2003 and has been in effect since January 19, 2004. The second specific plan is the Coastal Transportation Corridor, which includes all or parts of the Westchester-Playa Del Rey Community Plan Area, the Palms-Mar Vista-Del Rey Community Plan Area, the Venice Community Plan Area and the Los Angeles International Airport Interim Plan Area, generally bounded by the City of Santa Monica on the north, Imperial Highway on the south, San Diego Freeway on the east, and the Pacific Ocean on the west and has been in effect since September 22, 1993.



RECREATION AND LANDMARKS

Grand Canal is nestled between the Marina Harbor to the east, the historic Venice Canals to the north, Ballona Lagoon Marine Preserve to the south and county beaches, including the Venice Pier to the west (see Exhibit 1). A variety of historical landmarks and recreational facilities exist around Grand Canal and surrounding communities. Washington Boulevard, which is the main street adjacent to Grand Canal, serves as a major attraction point given that its western terminus is at the county beach parking lot and many commercial and retail activities, such as restaurants and clothing shops are located on both the north and south side of the street. High-density residential buildings and single-family homes surround the entire length of Grand Canal. During extensive site visits to Grand Canal the public access team noticed that a range of activities occur within and around the lagoon, such as dog walking, sun bathing, jogging, cycling, bird watching and bird feeding. The nearby county beaches provide activities, such as volleyball, picnicking and fishing at the local pier. The Marina del Rey Harbor provides residents and visitors with a variety of water activities, such as motor-boating, kayaking, and sailing, and also including outdoor concerts during the summer months. The adjacent Venice Canals and the famous Venice Boardwalk attract hundreds of national and international visitors every year. Although residents and visitors constantly experience the area surrounding Grand Canal the public access team noticed that few of them actually walk in or around Grand Canal. The lack of a proper walking path, signage and overall accessibility to the site, as well as neglected maintenance, deter most visitors. A variety of animal feces along the edges of the lagoon was noticed in addition to a variety of left over trash on the banks (See Figure 5). This area, however, provides invaluable recreational resources for local and international communities, particularly with the proximity of the site to Los Angeles International Airport (LAX) only a few short miles to the south of Grand Canal.





Figure 5: Trash left along Grand Canal

PEDESTRIAN CIRCULATION

In order to provide circulation throughout Grand Canal it was important to identify and prioritize the type of public access that was appropriate at the scale of such a confined, relatively small site. Currently residents and visitors access the site through a variety of ways, including walking, cycling and vehicular (both automobiles and public transportation.) Pedestrians utilize the west and east side of the lagoon banks to walk from Grand Canal to Ballona Lagoon, the beach or the marina. The east side of the bank is currently under construction, however, the former pathway, which is now being re-installed, connects the east bank of Grand Canal from Washington Boulevard to Driftwood Street onto Via Dolce (See Exhibit 3).



Exhibit 3: Existing pedestrian circulation

East Bank

The east side of Grand Canal from Driftwood Street, house 3511, to the end of Grand Canal, house 3815, where Ballona Lagoon Marine Preserve starts, includes the existence of a concrete walkway of approximately five feet in length, running above the lagoon bank (See Figure 6, Exhibit 4) that dead ends at a wall, house 3621 (See Figure 7), and then continues from the wall to a historical concrete walkway of approximately ten feet, (See Figure 8, Exhibit 5). The historical concrete sidewalk also exists from house 3511 to the wall at house 3621, however, this portion of the



Figure 6 (right): Walkway along east bank



Figure 7 (left): Walkway dead ends on east bank

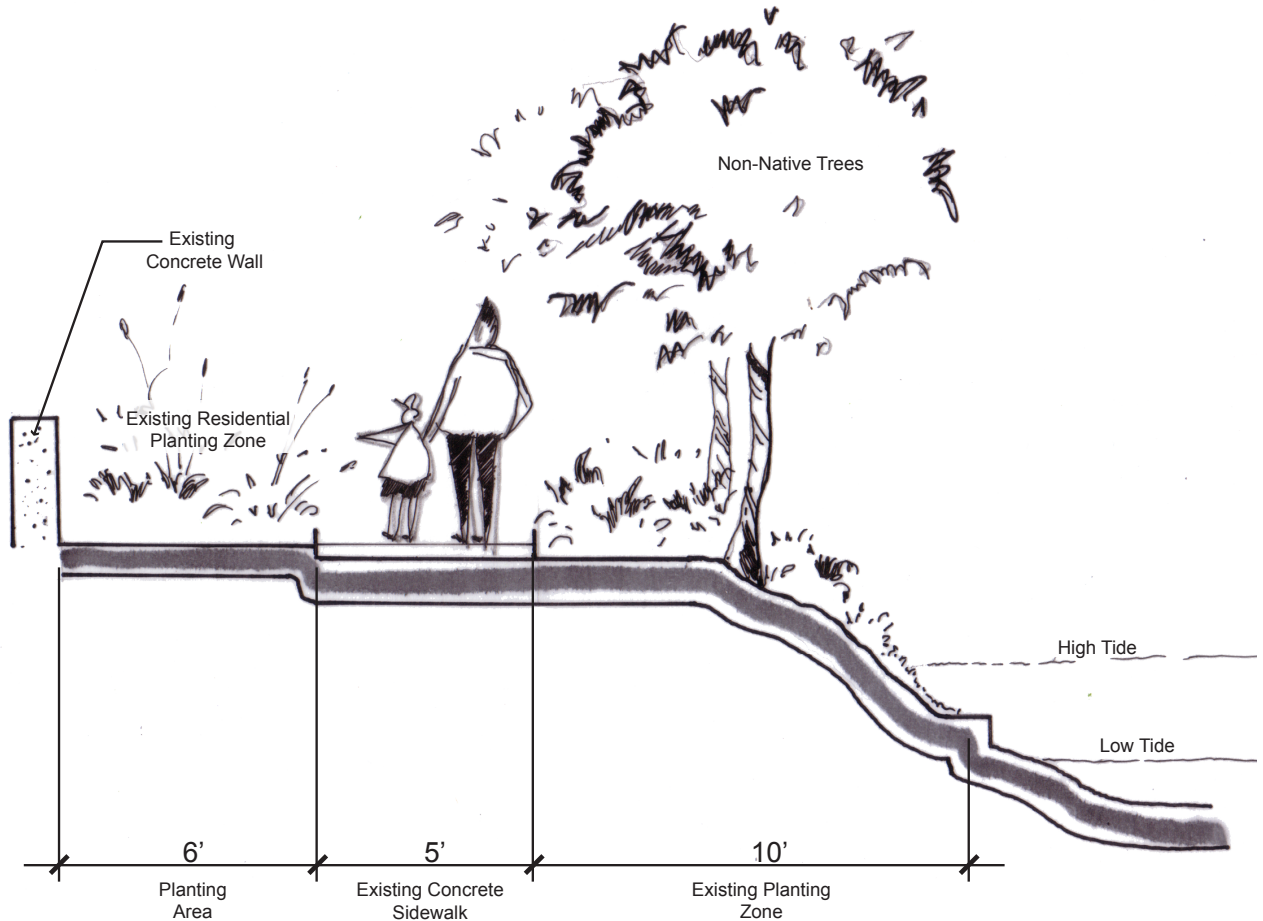


Exhibit 4: Section of the walkway along the east bank

sidewalk is buried underneath soil that currently acts as a bank, approximately four feet high where natural estuarine vegetation grows (See Figure 9). Given that the historical walkway, from house 3621 to the end of Grand Canal, house 3815, is below the high tide level, several times during the year this walkway is submerged (See Figure 10). In addition, the public access team noticed that since this sidewalk does not connect to anything, it is rarely used, although it is designated as public access.



Figure 8 (right): Historic walkway along east bank

Figure 9 (left): Vegetation along historic walk



Figure 10: High tide level shown on wall along historic walkway

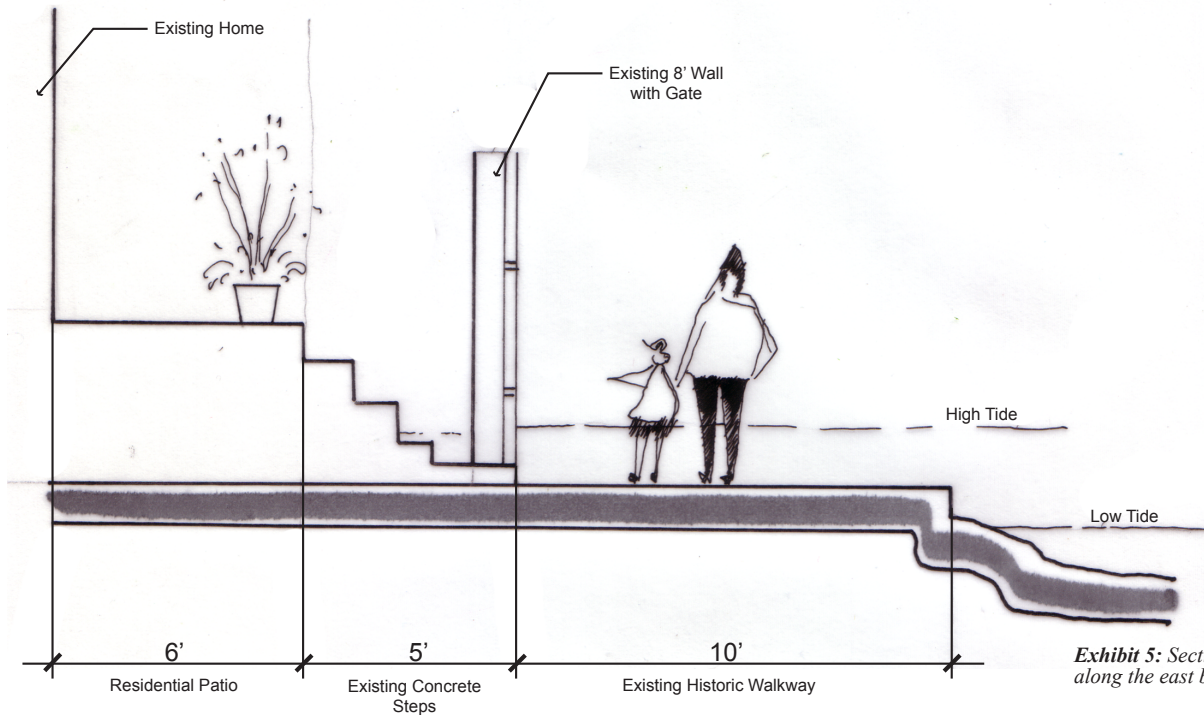


Exhibit 5: Section of the historic walkway along the east bank

West Bank

The west bank of Grand Canal from Washington Boulevard to Driftwood Street, running along Strongs Drive, does not have an official walking path, therefore, pedestrians walk on the upper edge of the lagoon bank, trampling over vegetation and eroding the upper edge of the bank (See Figure 11, Exhibit 6). A concrete walkway starting from Driftwood Street and Strongs Drive runs along the entire west side of Grand Canal on the upper edges of the bank. This walkway ends at the Venice pumping plant at the beginning of Ballona Lagoon Marine Preserve (See Figure 12).



Figure 11: Undefined pedestrian path along Strong Drive



Figure 12: Concrete walkway along west bank

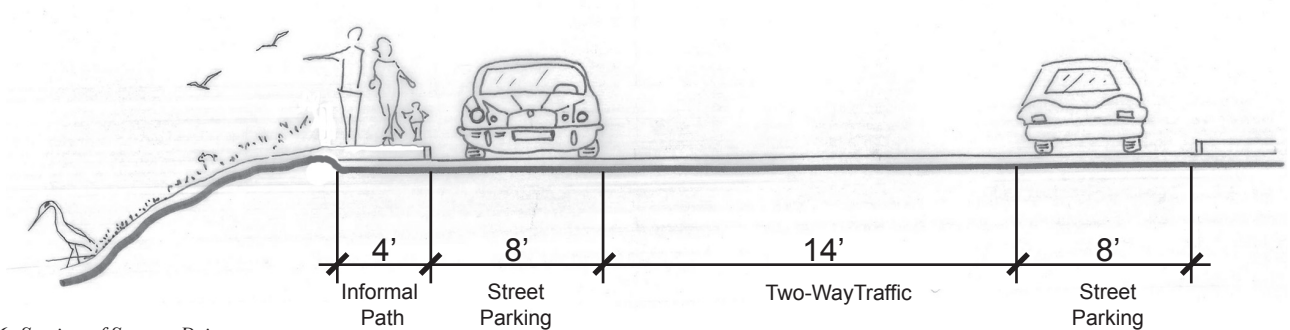


Exhibit 6: Section of Strongs Drive

CYCLING CIRCULATION

A designated bike path is located on both the north and south edges of Washington Boulevard, starting from the intersection of Washington and Lincoln Boulevards and ending at the beginning of the twenty-five mile beach trail in Santa Monica to the north, and the Palos Verdes Peninsula past Torrance to the south. The coastal bike trail continues on Washington Boulevard and loops around the Marina Harbor, in Marina del Rey, and reconnects to the South Bay beaches through Ballona Creek. Many residents and visitors use the bike path as an alternative to vehicular transportation. The public access team noticed extensive cycling activity in and around the streets adjacent to Grand Canal, most cyclists seeming to come from Washington Boulevard (See Figure 13). The public access team also noticed that despite extensive cycling activity, there are no official parking spaces designated for bicycles. Thus, cyclists often utilize urban amenities, locking their bikes to light poles, sign posts, benches and fences.



Figure 13: Cyclist on Washington Blvd.

VEHICULAR CIRCULATION

Washington Boulevard

Washington Boulevard, a major commercial street located north of Grand Canal serves as a major arterial street connecting communities from east to west, including Culver City, Mar Vista, and Palms (See Exhibit 7). Washington Boulevard ends at a county parking lot at Venice Beach. On several visits conducted to Grand Canal, the public access team noticed that during weekly rush hour and weekends, this major street becomes difficult to navigate. Traffic congestion spots accumulate in major intersections such as Pacific Avenue (See Figure 14), to the west, and Lincoln Boulevard to the east, causing what should be a typical ten-minute vehicular ride from Lincoln Boulevard to the beach to sometimes take as long as twenty-five minutes. During several visits in peak summer months the public access team noticed that local traffic enforcement closed off Washington Boulevard to beach traffic from Pacific Avenue to the beach, redirecting traffic back to Washington Boulevard heading east to Lincoln Boulevard, causing even more traffic congestion. Washington Boulevard also serves as a major public transportation route. In addition, the public access team noticed that there is a lack of a formal crosswalk linking Grand Canal with the adjacent Venice Canals. Washington Boulevard currently serves as the main public entrance point to Grand Canal (See Figure 15).

Stongs Drive

Stongs Drive, a residential street between Washington Boulevard and Driftwood Street, is a thirty-foot, two-way street with parking on both sides (See Figure 16). On the west side of the street, there are twelve non-metered parking spaces, seven 15-minute spaces and two that allow parking from 5pm to 7am. On the east side of the street, adjacent to the canal, there are six metered parking spaces and 35 non-

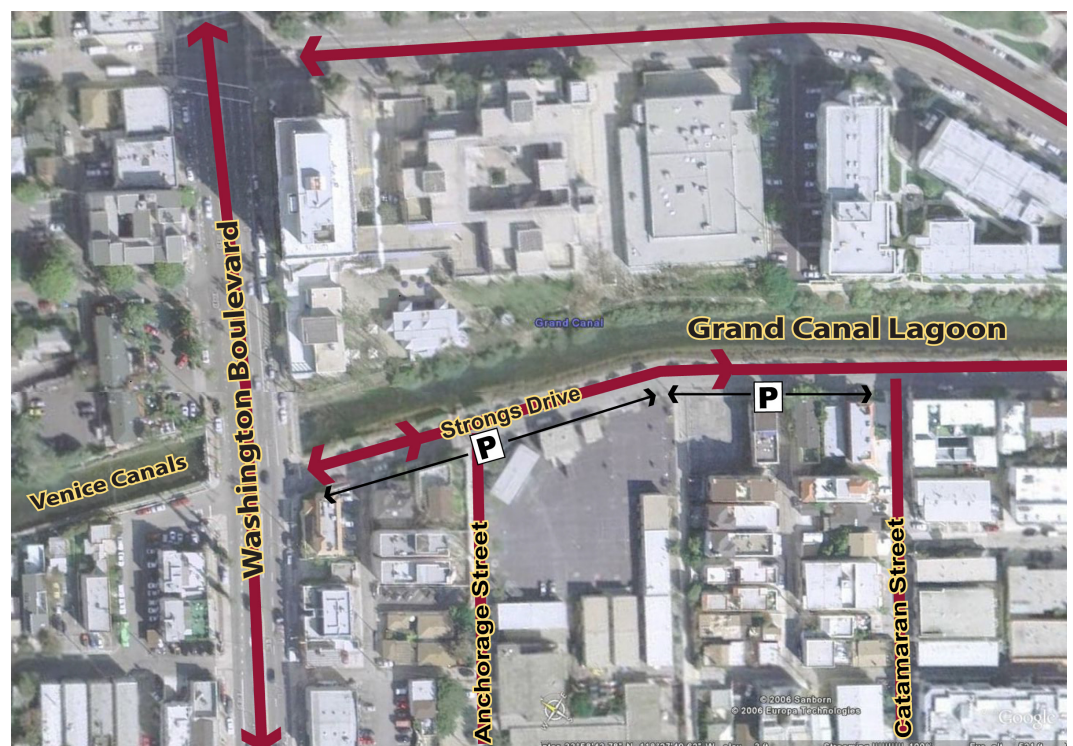


Exhibit 7: Existing vehicular circulation



Figure 14 (right): Traffic congestion on Washington Blvd.

Figure 15 (left): Entrance to Grand Canal along Washington Blvd.



Figure 16: Street parking along Strongs Drive



metered parking spaces. On several visits conducted at Grand Canal, the public access team noticed that the amount of vehicular and pedestrian traffic circulation on the narrow street, posed a safety concern for both pedestrians and vehicular traffic. Additional questioning of residents and frequent visitors underscored for the public access team that this safety concern is serious. Vehicles entering or existing the street, in addition to those parking, have on many occasions interfered with pedestrian mobility. Vehicular traffic enters and exits the street either by turning from Washington Boulevard or Driftwood Street. The narrowness of the street, along with the current parking arrangement creates blind spots for drivers, impeding visibility towards the street causing concerns for potential accidents. Residents, in cooperation with the elementary school, which has a playground immediately adjacent to Strongs, have made attempts to create one-way vehicular traffic along Strongs Drive to increase safety in this area.

Additionally, Section 59.09.02-Fire Department Access of the Los Angeles Fire Code Division 9 states that:

“fire lanes shall have a minimum clear roadway width of 20 feet when no parking



Figure 17: Via Dolce looking north



Figure 18: Via Dolce looking north

is allowed on either side,” and “where parallel parking is allowed on either side of a fire lane, the roadway width shall be increased eight feet for each parking lane. (Amended by Ord. No. 167,326, Eff. 11/16/91.)” Under current conditions, Strongs drive does not comply with this code.

Via Dolce

Via Dolce, a major residential street between Washington Boulevard and the Marina Harbor is a sixty-foot two-way four-lane street with parking and sidewalks on both sides, located east of Grand Canal (See Figures 17-18). The public access team noticed that despite the wideness of Via Dolce and the extensive parking spaces, approximately sixty-six on the east side and forty-one on the west side (between Washington Boulevard and Marquesas Way), very little foot and vehicular traffic circulates through this street, causing the few vehicles that utilize the street to circulate at very high speeds. The overall pedestrian qualities of this street that the public access team experienced were positive, given the existing mix of modern and traditional architecture located on the edges of the sidewalks and the fact that the street provides an easy entry point to Ballona Lagoon Marine Preserve (See Figures 19-20)



Figure 19: Walkway along Via Dolce



Figure 20: Via Dolce adjacent to Ballona Lagoon Marine Preserve

PUBLIC TRANSPORTATION

An extensive transit system serving the area of Grand Canal currently operates weekly and on the weekends. The Southern California Rapid Transit District serves the City of Los Angeles and its outskirts. The Santa Monica Big Blue Bus and Culver City bus lines, serve their respective cities and link to all major centers of activity, including the areas in and around Grand Canal Lagoon. In addition, Playa Vista and the County of Los Angeles currently operate a free shuttle service (See Exhibit 5) that circulates from Lincoln and Jefferson Boulevards (Playa Vista development) to Marina del Rey, through Admiralty Way, Washington Boulevard, Via Dolce and Pacific Avenue, all streets that run along and around Grand Canal. The Playa Vista shuttle runs during the heavy summer traffic time from July 1 to September 4. On several site visits, especially during the weekends, the public access team noticed many travelers waiting and departing the existing buses. Although extensive bus routes exist in and around the community, the current bus stop locations lack appropriate shelter from the environment, needing amenities such as lighting, shade and appropriate seating.



Exhibit 8: Playa Vista Beach Shuttle route

COUNTY PARKING LOTS

Two major county parking lots (one of which is underutilized, either due to inadequate “welcoming” signage, parking fees or other unknown reasons) are located walking distance to and from Grand Canal. These lots allow for significant parking accommodations, in addition to parking spaces on Strongs Drive, Via Dolce and seven smaller residential streets (Anchorage, Catamaran, Driftwood, Eastwind, Fleet, Galleon and Hurricane Street). Of the two county parking lots, one is located at the end of Washington Boulevard and the beach, three blocks away from Grand Canal. The other parking lot is located on Admiralty and Palawan Way, in front of Mother’s Beach, (See Figures 21-23) a major attraction point for residents and visitors (see Exhibit 1). This lot is six blocks away from Grand Canal and is currently under threat of development, given lack of use. Los Angeles County Services Chief Dusty Crane explains, in an interview with the Daily Breeze, published on October 3, 2007, that marina parking lots are empty most of the time. Their proximity to Grand Canal and the beach provide a significant opportunity for parking without interfering with biological restoration. All that is needed is appropriate directional signage and other effective communication with the automobile-using public.



Figure 21 (right): County parking lot

Figure 22 (left): View from County parking lot



Figure 23: County parking lot

PUBLIC ACCESS ISSUES

To identify key issues impacting Grand Canal current public access and circulation systems were researched, catalogued and evaluated at the site scale. An initial community meeting, in addition to meetings with key organizations, conversations with residents and other high-propensity site-users and extensive site visits contributed to the understanding of issues within Grand Canal. Through this process the following issues were identified:

- Limited pedestrian walking space along west side of Grand Canal
- Lack of disability access
- Lack of pedestrian bridge connecting east and west side of lagoon
- Lack of park space defining entrance to Grand Canal
- Lack of demonstration areas for interpretive learning
- Lack of gathering areas
- Lack of recreation amenities and signage
- Lack of connections to landmarks within the regional scale

The major issue preventing appropriate pedestrian access within Grand Canal is the lack of pedestrian mobility throughout the site. No indications exist of the identification of the site or its ecological importance. Such indications might include signage, street design, or park entrances, none of this exist at this site. During weekdays many residents and visitors utilize the edges of Grand Canal Lagoon as their backyards, constantly feeding wildlife and setting their dogs loose. Trash is left behind, which washes into the lagoons water and eventually into the Pacific Ocean.



Disability access issues along the West bank

PUBLIC ACCESS OBJECTIVES

The following objectives were identified by the City of Los Angeles, Department of Public Works:

- Provide public access
- Enhance low impact access and connectivity with adjacent rights-of-way
- Provide interpretive and instructive signage, guiding public paths

The public access team followed the following recommendations identified by the City of Los Angeles, Department of Public Works, in order to identify opportunities and create appropriate design guidelines:

- Recommendations for the city property opposite Driftwood Street
- Recommendations for east bank of Grand Canal from house 3511 to Ballona Lagoon. Evaluate the best option for public access while considering wildlife protection.
- Recommendations for west bank of Grand Canal from Washington Boulevard to Driftwood Street. Given regulations from the Department of Transportation, could the path be within or outside the Strongs Drive roadway?



Lennar Building from Venice Canals, 2007

OPPORTUNITIES

Extending walking and other passive recreation opportunities within Grand Canal will help alleviate some of the dense traffic congestion, in addition to providing the community with important gathering areas. Grand Canal would become a transitional landscape between major historical and regional landmarks, providing residents and visitors an opportunity to view wildlife and learn the importance of this functional ecosystem and important coastal resource through interpretive signage. The following are some of the opportunities that have been identified to improve access:

- Major streets can serve as connecting points to Grand Canal and other recreation sites
- Physically experience the site through appropriate recreation walkways
- Provide interpretive walking trails that link Grand Canal with Ballona Lagoon Marine Preserve
- Provide an access bridge that may connect both east and west side of lagoon
- Provide defined park entrances
- Provide gathering areas where local schools can gather to commence nature tours and stewardship activities
- Define pedestrian access, particularly along Strongs Drive
- Provide ADA access project site
- Encourage slower vehicular traffic along Strongs Drive and Via Dolce
- Create connections to existing public transportation routes
- Define access to existing, under-utilized county parking areas
- Create new opportunities for parking in areas that do not interfere with biological restoration



Urban and Natural Zones

Grand Canal and its surrounding areas provide a unique design opportunity. Given its strategic location, adjacent to the Marina del Rey Harbor, the Venice Canals, the Ballona Lagoon Marine Preserve, the Ballona Wetlands Ecological Reserve and most importantly to the Southern California coast, Grand Canal is interpreted by the access team as a transitional landscape, nestled between commercial, retail and recreational activity.

The public access team divided Grand Canal in two distinct zones, the urban and natural zone. The urban zone, running from Washington Boulevard to Driftwood Street, is characterized by high-density residential and commercial areas. Vertical and horizontal structures define the urban landscape. Higher pedestrian and vehicular activity occurs in this zone given its proximity to Washington Boulevard and the existing elementary school. The natural zone, running from Driftwood to the end of Grand Canal, is characterized by low-density single-family residential housing. The homes in this zone are located closer to the lagoon, forming an enclosed and quieter space, fewer pedestrians access this zone and very little vehicular traffic utilizes the adjacent streets. The public access team noticed a larger variety of birds gathering at the edges of the banks in this area, possibly due to less pedestrian and vehicular traffic, and to its proximity to Ballona Marine Preserve (See Exhibit 9). Identifying these two zones set the stage for the public access team to define the type of appropriate design solutions within the Grand Canal.



Exhibit 9: Urban and natural zones

Design

INTRODUCTION

Open space allows for many types of active and passive recreational opportunities. In terms of passive recreational space, some people prefer large areas and others require small quiet niches for reflection and enjoyment of the natural environment. Linear spaces, such as in Grand Canal Lagoon, play an intricate role within the community, creating a sense of continuity throughout the landscape. Carefully developed corridors serve to preserve and protect the natural environment, and these corridors act as sustainably designed greenbelts, which offer inviting refuge to birds and other animals, while also integrating the human community with nature.

The conceptual design of Grand Canal seeks to celebrate the beauty surrounding the regional scale, highlighting its natural and cultural environment. Building upon the issues and opportunities described in the previous section, the design concept proposes appropriate strategies for uniting the needs of the regional ecosystem with those of the community. Visitors to Grand Canal will feel invited to participate in a variety of recreational and cultural experiences, as they move through and within each of the lagoon's recreation and conservation spaces.

Restoring appropriate public access will improve views along the lagoon's biological corridor, offering a variety of integrated recreation opportunities, and most importantly, offering the region with a significant open space resource. The restoration of Grand Canal symbolizes a collective effort to address and enhance residents' and visitor needs. Grand Canal's conceptual design seeks to become a physical representation of a collective identity within the greater Ballona Creek Watershed.

PEDESTRIAN CIRCULATION

The automobile is a predominant feature within and around Grand Canal, however, reducing automobile dependence can work toward achieving improved air quality and reducing traffic congestion. One way to reduce automobile dependence is to encourage the use of non-motorized forms of transportation. To do so, pedestrian routes must be accessible, safe, clearly marked, communicated properly to the target publics, and well connected.

Initial research and site visits from the public access team revealed connectivity within and around Grand Canal to be a significant issue. Concerns over pedestrian circulation were expressed by the community and noticed during visits to the site. Thus, the development of a safe and accessible walkway network was to become an important element in the formulation of the Grand Canal conceptual plan. In order to address pedestrian access within Grand Canal the public access team created two alternatives for improved pedestrian circulation.

WASHINGTON BOULEVARD CROSSWALK

Currently, no pedestrian crosswalk exists on Washington Boulevard and Strongs Drive. The closest crosswalk on Washington Boulevard is at Pacific, however the public access team observed many pedestrians crossing at Strongs Drive amidst heavy vehicular traffic. For this reason, a crosswalk at Strongs Drive to cross busy Washington Blvd. is proposed for both pedestrian alternatives. Not only will this new crosswalk increase pedestrian safety, it will increase public access to the site and thereby increase awareness and interpretive opportunities.

BRIDGE

During analysis of the existing conditions, two locations were considered for a pedestrian bridge over the lagoon. The first location was at the terminus of Hurricane Street, connecting the west side of the lagoon to the open lot on the east bank of the canal, and the second location was at the terminus of Driftwood Street, connecting the west side of the lagoon to the open lot adjacent to the County housing on the east side of the lagoon. The location at Driftwood Street proved to be more beneficial to both wildlife and public access. With regard to wildlife, placing the bridge at Hurricane Street would create a barrier for wildlife between the Grand Canal and the Ballona Lagoon Marine Preserve, as many species will not pass under a bridge due to the shadow cast on the water. Although locating a bridge at Driftwood Street would create a similar type of barrier, the ecological benefits of extending the wildlife habitat of an already thriving ecosystem in Ballona Lagoon Marine Preserve are greater than the benefits of creating contiguous habitat within the relatively small Grand Canal. In terms of access, placement of the bridge at Driftwood Street maximizes pedestrian flow by keeping this key connection point within the urban zone, which experiences higher pedestrian traffic flow than the



Figure 24: Pedestrian bridge example from the Venice Canals





natural zone. Additionally, maintaining the bridge within the urban zone directs the majority of pedestrian traffic away from the more sensitive ecological areas.

Therefore, in both alternatives, the public access team proposes the installation of a pedestrian bridge at the intersection of Strongs Drive and Driftwood Street. The proposed bridge consists of a pre-engineered structure that mirrors the style seen throughout the Ballona area. In order to avoid disturbance to the lagoon's fragile ecosystem, the footings of the proposed bridge should be located at the lagoon's outer edges (See Figure 24). The concave shape of the bridge blends well with other pedestrian bridges in the regional scale, such as historic bridges located in the Venice Canals, Ballona Lagoon Marine Preserve and Ballona Creek.

ALTERNATIVE 1

In alternative one, pedestrians will be able to access Grand Canal through a walking trail on both the east and west side of the lagoon banks. The west side (Strongs Drive) of the lagoon bank, beginning at Washington Blvd. and extending southward will have a defined six-foot wide pedestrian trail adjacent to a three-foot high fence that will provide shelter to proposed biological restoration. The fence will be installed adjacent to all walking paths within the lagoon area in order to avoid trampling of vegetation. This trail will connect with the existing concrete pathway at

LEGEND

-  Pedestrian Route
-  Fencing
-  Pedestrian Bridge
-  **Naturalize Area:** Existing sidewalk in this area to be broken up; no pedestrian traffic to encourage wildlife and plant material to flourish

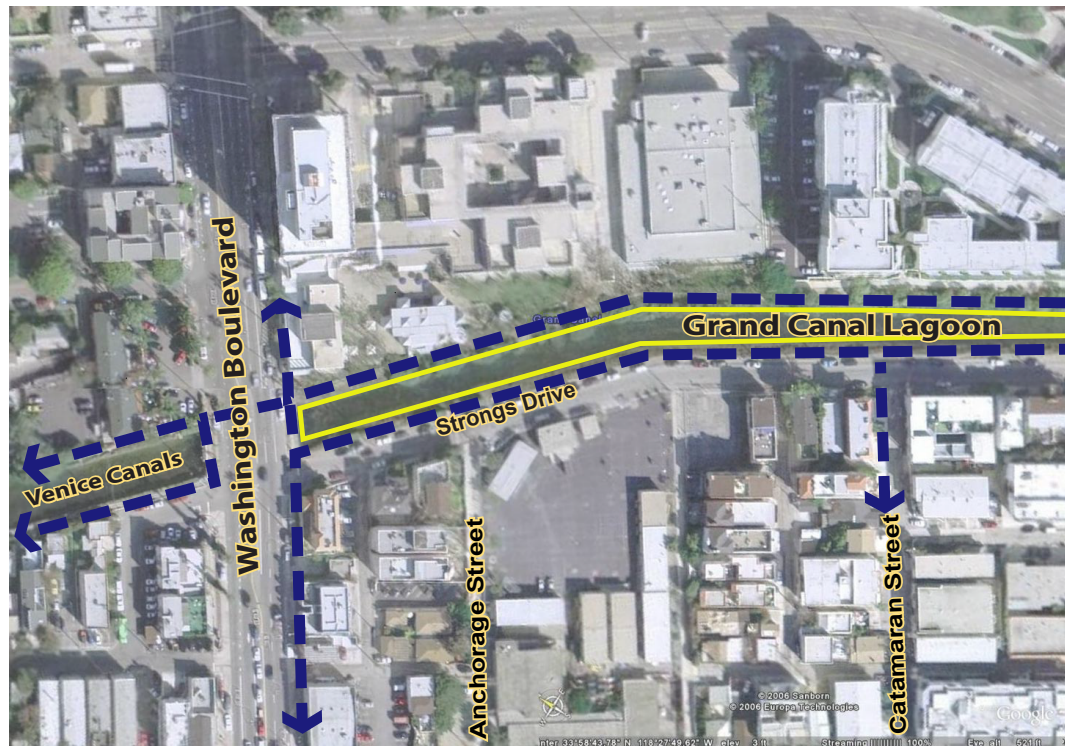


Exhibit 10: Pedestrian alternative 1

Strong's Drive and Driftwood Street, leading to the southern end of Grand Canal. A pedestrian bridge will be located at the intersection of Strong's Drive and Driftwood, providing pedestrians the ability to cross over to the east side of Grand Canal. The bridge will lead visitors into one of the three proposed entrance parks. Pedestrians will continue their journey onto Via Dolce, which will lead them, through signage, onto the entrance of the sand dune park, the second park, or onto the entrance of Ballona Lagoon Marine Preserve (See Exhibit 10)

Strong's Drive

Alternative one provides a formalized pedestrian path and fencing to protect bank vegetation. However, this alternative places the walkway where parking currently exists on the east side of Strong Drive. Current parking configurations lead to vehicle passengers stepping out of their cars directly onto the west bank of the lagoon, causing more trampling, destruction of vegetation and erosion. In this alternative, the bank would be restored all the way to the existing curb, increasing

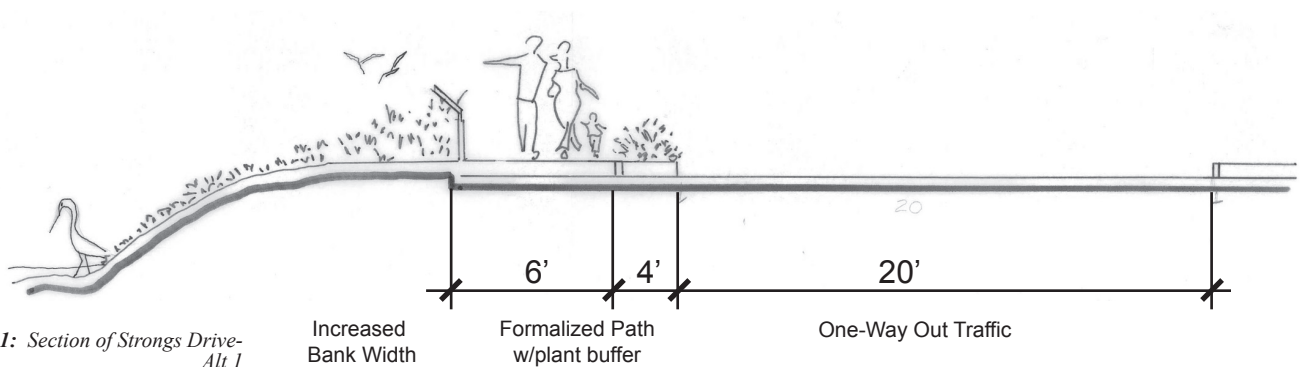


Exhibit 11: Section of Strong's Drive-Alt 1



the restoration area by six feet compared to alternative two. Additionally, a four foot vegetated buffer bio swale is proposed between the pedestrian trail and the roadway. This buffer will not only create a more relaxed pedestrian experience and provide noise attenuation for wildlife, it will also increase pedestrian safety (See Exhibit 11).

East Bank-House 3511 to Beginning of Ballona Lagoon

Based on visits to Grand Canal, community meeting input and consideration of habitat protection, the public access team determined that this area, from house 3511 to the end of Grand Canal, house 3815, would be the best location for habitat restoration without pedestrian interference. Pedestrians are not currently utilizing this area. Additionally, with the installation of a bridge at Strongs Drive and Driftwood Street, any possible public access can be re-directed onto Via Dolce, which in addition to offering a pleasant walking experience (shade trees, architecture, parking, etc.) connects to the entrance of Ballona Lagoon Marine Preserve (while the portion of the west bank which floods does not connect directly to BLMP and has a private yard area impeding complete public access), thus, maximizing public access and providing enhanced, quality opportunities for wildlife viewing from the west side of Grand Canal (See Exhibit 10, 12, 13). Furthermore, homeowners in the area are willing to give up their own access rights to this area in order to improve quality habitat for birds and other wildlife. In fact, in the initial community meeting homeowners suggested giving up their access right-of-way to create a habitat zone. Turning this area into a natural habitat zone would require the following:

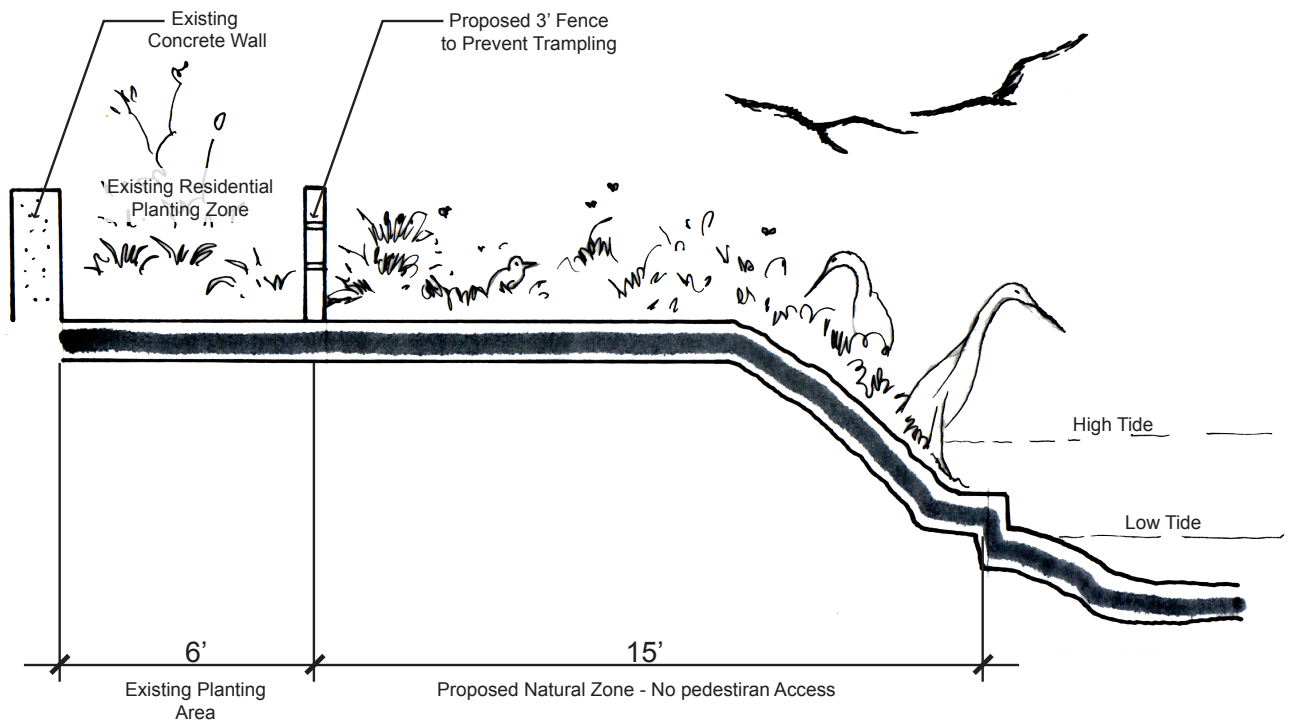
- Removing the existing five-foot sidewalk above the lagoon bank (located from house 3511 to existing wall, house 3621) and planting native

vegetation, such as high elevation salt marsh species (wetland indicators), where existing sidewalk is located.

- Breaking up edges of historic concrete sidewalk (house 3621 to 3815) to create habitat for appropriate plant and animal species (see biology section of report)
- Adding a three-foot high fence between the adjacent homes and the restored bank in order to avoid trampling from residents into restored habitat

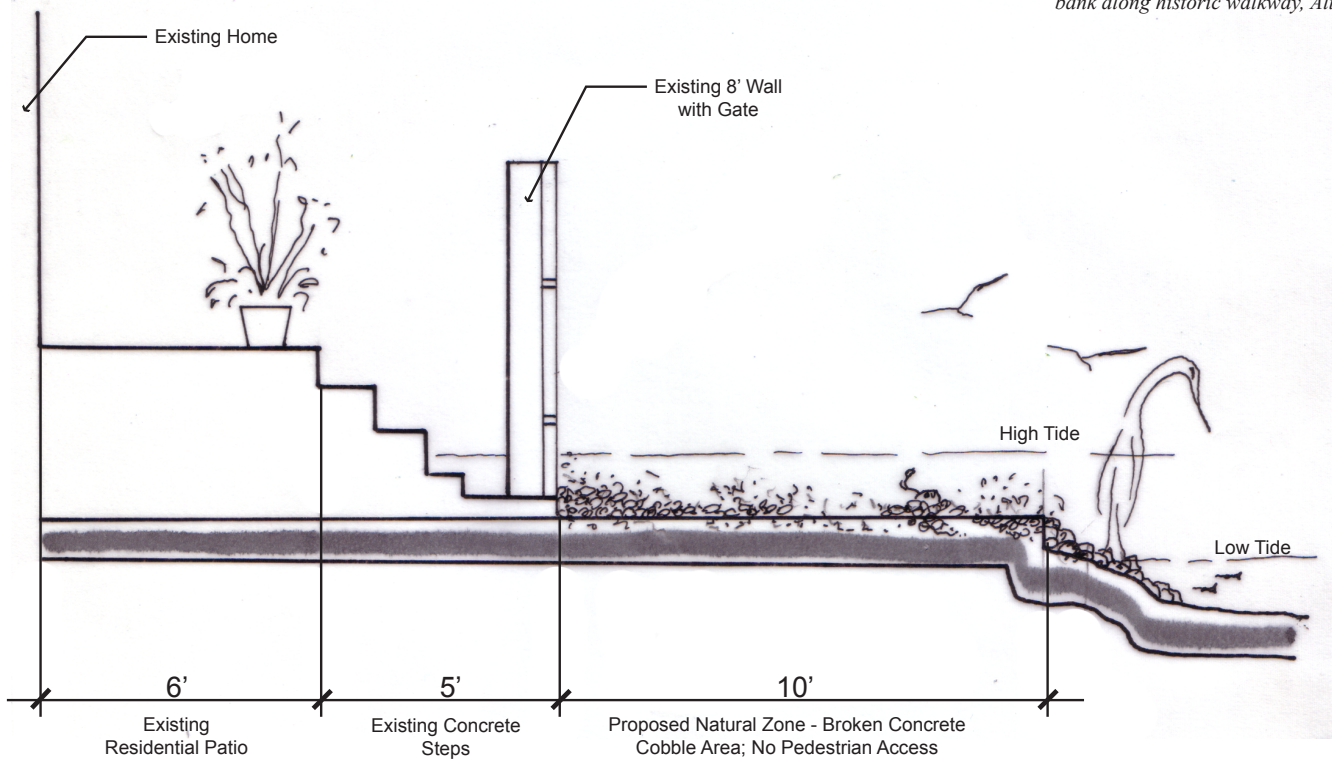
This alternative provides the best option for public access while considering wildlife protection. Alternative one is only re-routing access so that it does not interfere with the only space in the entire length of the lagoon where wildlife may thrive without pedestrian interference, given that the rest of Grand Canal has walkways and a bridge. Those pedestrians walking on the west bank of the lagoon will have

Exhibit 12: Proposed section of east bank from house 3511 to 3621, Alt 1



an enhanced, quality of public access, as more birds will be visible and using the eastern area of the lagoon for feeding since human intrusion will not be added into this area. Biologists and observant residents have opined that wading birds and shorebirds need some space between areas where humans walk and where these birds feed. The relief from stress the birds will experience will allow more of them to congregate so that the visual access from the west bank is improved for pedestrians. This option also ties in well with the option for parking along Via Dolce and enhanced pedestrian activity along this street. In addition, this option maximizes the pedestrian experience by guiding them to walk through the proposed park, which provides interpretive signage, seating and a place to view wildlife.

Exhibit 13: Proposed section of east bank along historic walkway, Alt 1

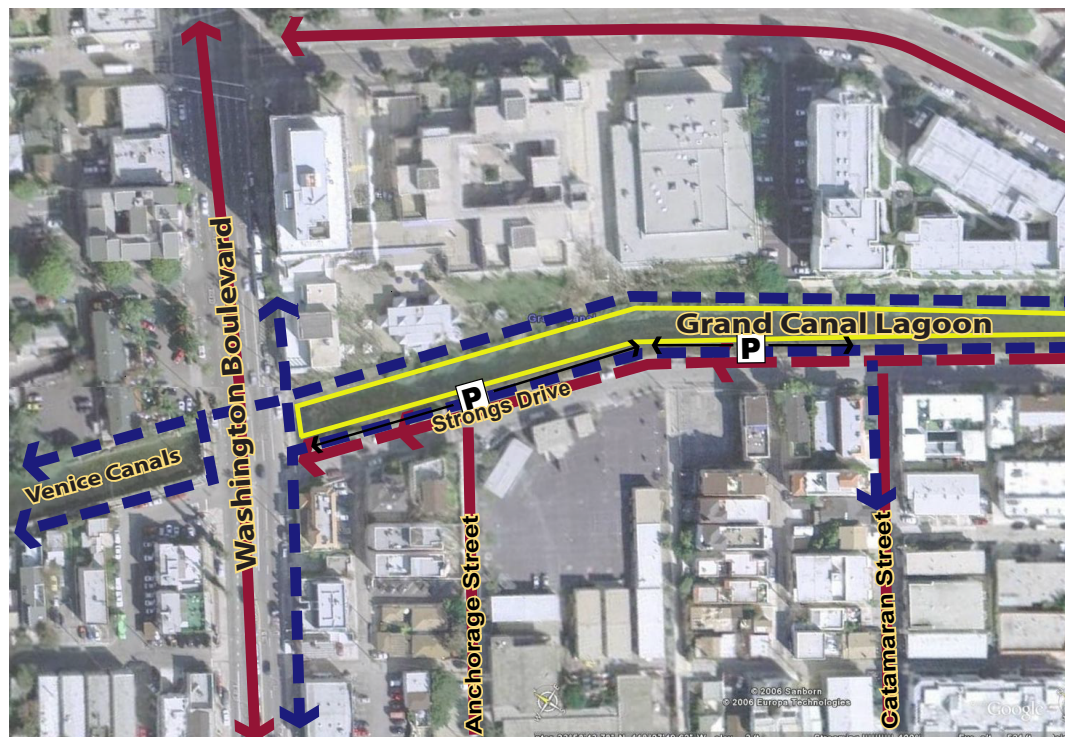


ALTERNATIVE 2

In alternative two, pedestrians will be able to access Grand Canal through a walking trail on both the east and west side of the banks. The west side (Strongs Drive) of the lagoon bank, beginning at Washington Blvd. and extending southward will have a defined six-foot wide pedestrian trail adjacent to a three-foot high fence. The fence will provide shelter to proposed biological restoration and will be installed adjacent to all walking paths within the lagoon area in order to avoid trampling of vegetation. This trail will connect with the existing concrete pathway at Strongs Drive and Driftwood Street, leading to the southern end of Grand Canal. A pedestrian bridge will be located at the intersection of Strongs Drive and Driftwood, providing pedestrians the ability to cross over to the east side of Grand Canal. The bridge will lead visitors into one of the three proposed entrance parks. Pedestrians will continue their journey onto Via Dolce, which will lead them, through signage, onto the entrance of the Sand Dune Park, the second park, or to the entrance to Ballona Lagoon Marine Preserve. In this alternative pedestrians will also have access to the east side of the bank through a walkway from house 3511 to the end of Grand Canal (See Exhibit 14).

LEGEND

-  Pedestrian Route
-  Fencing
-  Pedestrian Bridge



Strongs Drive

Alternative 2 provides a six feet wide formalized pedestrian trail along the east side of Strongs Drive. This pathway would be located where the current trail exists, separated from the bank by fencing to discourage trampling of the bank vegetation (See Exhibit 15). Not only does the proposed walkway increase pedestrian safety and experiential quality, it will provide protection for the bank restoration proposed by the biology team.

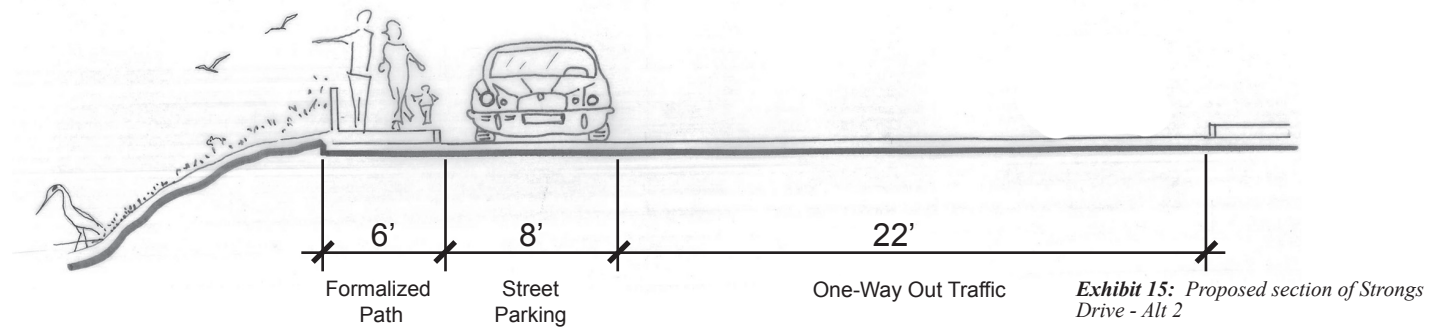
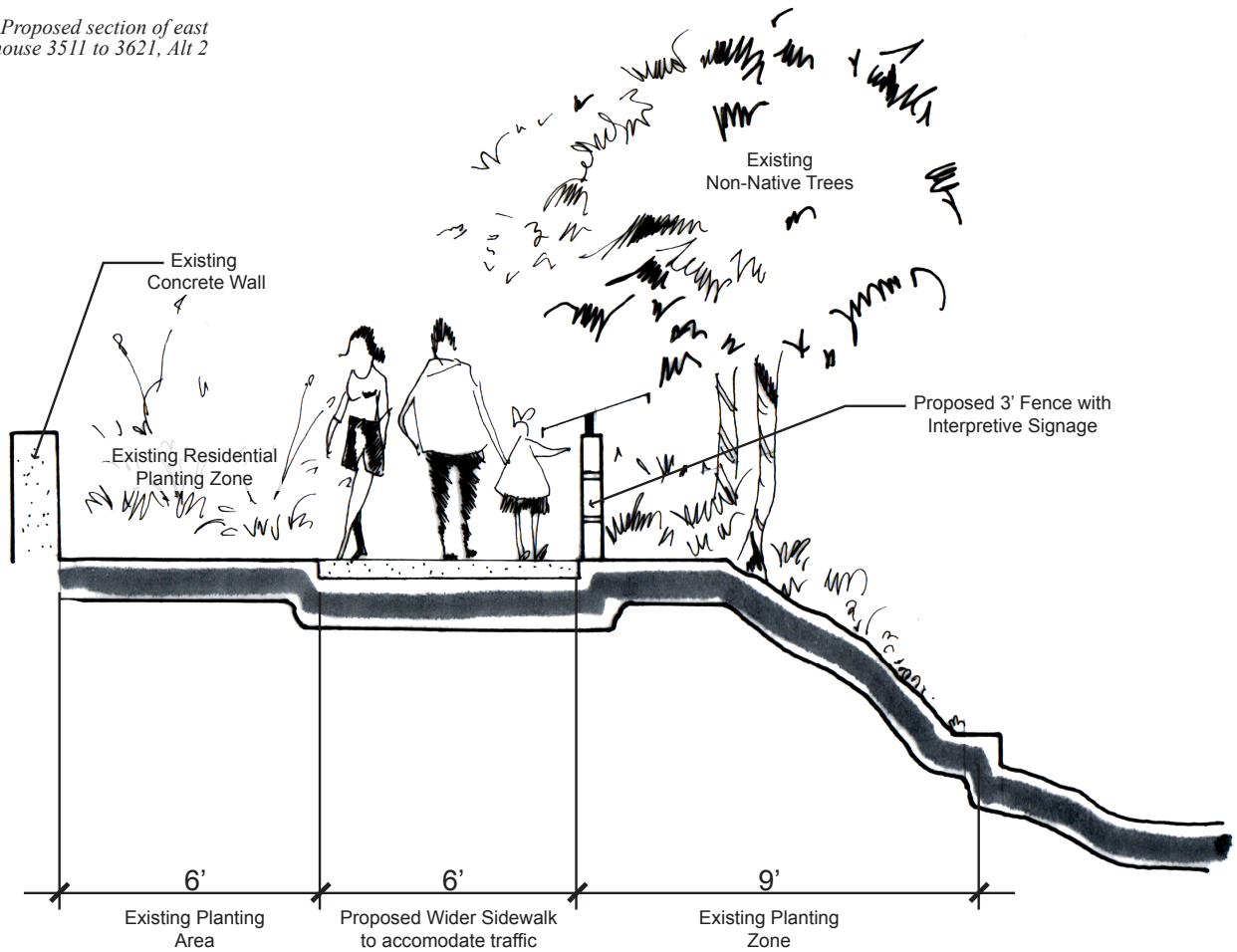


Exhibit 14: Pedestrian alternative 2

East Bank-House 3511 to Beginning of Ballona Lagoon

Alternative two maximizes public access at its full capacity by providing a designated pedestrian walkway along the entire stretch of the east bank, from house 3511 to the beginning of Ballona Lagoon Marine Preserve, house 3815 (See Exhibit 16). Both residents and visitors will have access to two sides of Grand Canal. The existing concrete walkway (from block wall, house 3621, to end of Grand Canal, house 3815) will have to be raised to above high tide levels by either, pouring soil and constructing a six-foot sidewalk, or by re-designing the entire walkway (See Exhibit 17). Pedestrians will be able to walk across the bridge from the west side of Grand Canal onto the east side of the lagoon or onto the proposed park. Pedestrians will also be directed towards Via Dolce. The walkway on the east side of the lagoon will loop back into Via Dolce at the end of Grand Canal before Ballona Lagoon Marine Preserve starts. Turning this area into this type of access zone would require the following:

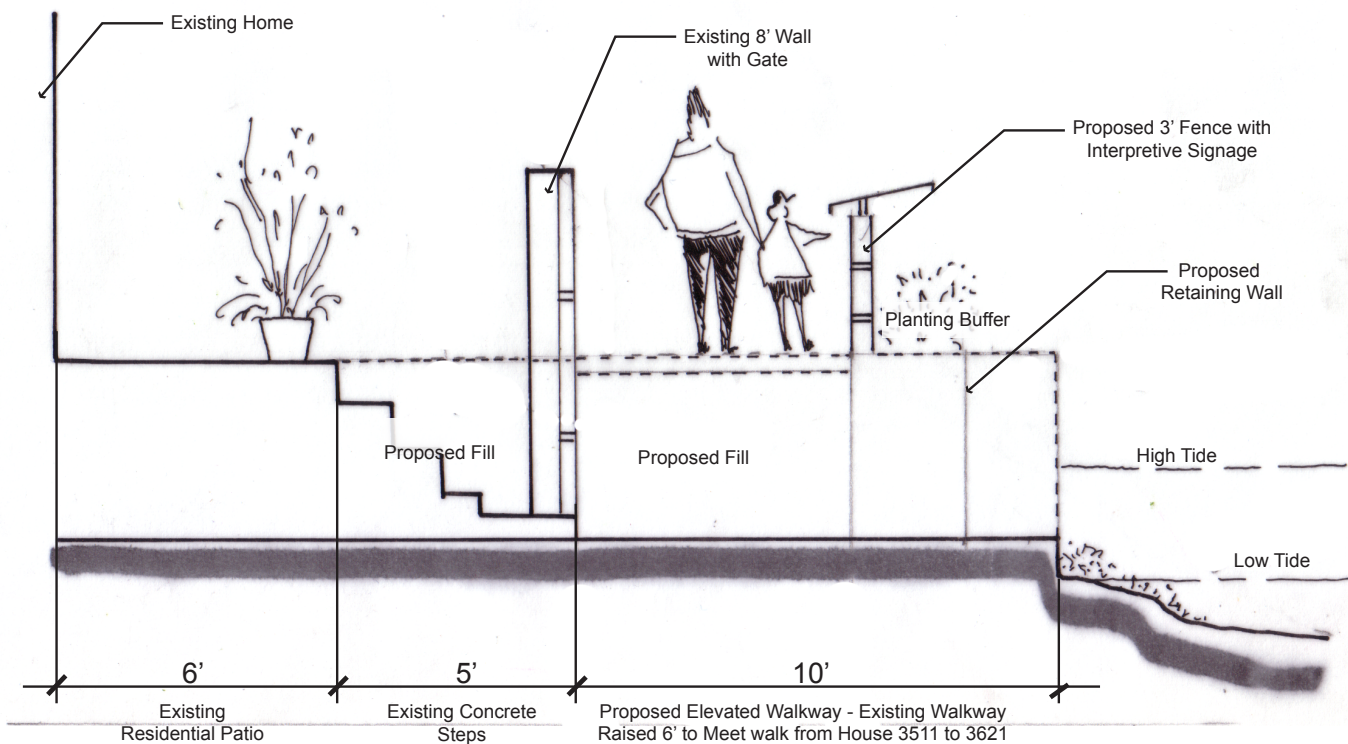
Exhibit 16: Proposed section of east bank from house 3511 to 3621, Alt 2



- Providing high impact public access on both sides of Grand Canal
- Providing opportunities to restore habitat only on the lower bank edges
- Connecting existing five-foot sidewalk (from house 3511 to wall, house 3621) to raised concrete pathway through the construction of a platform or the removal of the wall, if appropriate
- Installing more detailed directional and interpretive signage
- Installing a fence at the edge of the walkway to avoid trampling

This alternative protects existing public access, thus, maximizing public access to its full capacity and diminishing existing wildlife gathering areas. Pedestrians will have views to Grand Canal from both the west and east side of the banks. In addition, pedestrians will have the option to utilize Via Dolce as an alternative mode of circulation through the site. This alternative does not meet the low-impact access recommendations set by the city.

Exhibit 17: Proposed section of east bank along historic walkway, Alt 2



VEHICULAR CIRCULATION

Despite transportation alternatives, the automobile plays a central role in the local vehicular system. Within and around Grand Canal area, the streets become clogged during rush hour and weekends. Aging, inadequate or non-existing sidewalks pose a hazard to pedestrians and motorists alike. Visitors and residents stream through congested streets, wandering through busy intersections. These, among other hazardous conditions, illustrate the need for organized and safe travel alternatives within the community.

ALTERNATIVE 1

Vehicular Circulation

One-way out vehicular traffic is proposed for Strongs Drive (See Exhibit 18). This element addresses safety issues for vehicular traffic, pedestrians, cyclists and elementary school students. The one-way out configuration will decrease congestion along Strongs Drive by discouraging congested traffic and directing vehicular flow from a smaller street onto Washington Boulevard, which accommodates more traffic. If the configuration were to be reversed, one-way in, large traffic volumes would be funneled onto Strongs Drive, creating a bottleneck at the intersection and increasing traffic volume into the neighborhood and the sensitive lagoon area. During the next design stages of this project, this traffic configuration should be investigated by a traffic engineer, who will ultimately make recommendations regarding which direction the one-way traffic will flow on Strongs Drive (See Exhibit 19).

LEGEND



-  Vehicular Route
-  One-Way Vehicular Route



Exhibit 18: Vehicular alternative 1

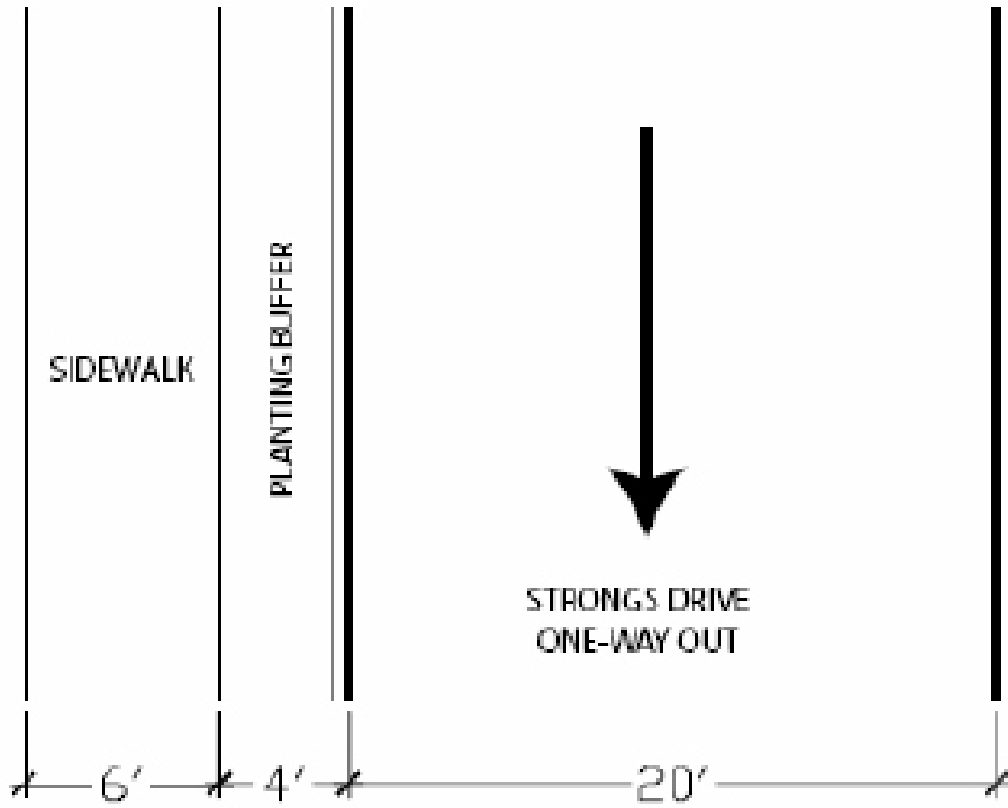


Exhibit 19: Plan view of Strong's Drive - Alt 1



Parking

Due to the location of the pedestrian path in alternative 2, no parking can be located along Strongs Drive because it will not meet the Fire Code requirements for street widths (See Exhibit 18). The opportunities to mitigate the loss of parking are two-fold. First, the width of Via Dolce (60') provides opportunity for increased parking. This option is enhanced by the desire to decrease speeds along this street. Parking along both sides of the street will remain, however additionally parking may be added in the center median, creating one lane traffic in both directions. Using downtown Claremont as a model (See figures 25-27), approximately 40-45 new parking spaces can be placed along Via Dolce. Not only will this increase parking options, the decrease in driving lanes will encourage decreased speeds. The second opportunity for increased parking is utilization of the county parking lots near Mother's Beach in conjunction with the free beach shuttle. The current route already services the Grand Canal area from the county lots.



Figure 25: Example of parking in Claremont



Figure 26: Example of parking in Claremont



Figure 27: Example of parking in Claremont

ALTERNATIVE 2

Vehicular Circulation

One-way out vehicular traffic is proposed for Strongs Drive (See Exhibit 20). This element addresses safety issues for vehicular traffic, pedestrians, cyclists and elementary school students. The one-way out configuration will decrease congestion along Strongs Drive by discouraging congested traffic and directing vehicular flow from a smaller street onto Washington Boulevard, which accommodates more traffic. If the configuration were to be reversed, one-way in, large traffic volumes would be funneled onto Strongs Drive, creating a bottleneck at the intersection and increasing traffic volume into the neighborhood and the sensitive lagoon area. During the next design stages of this project, this traffic configuration should be investigated by a traffic engineer, who will ultimately make recommendations regarding which direction the one-way traffic will flow on Strongs Drive.

Parking

This alternative allows for parallel parking along the east side of the street only (See Exhibit 21). This will accommodate the Fire Code by allowing a 20' drive aisle and 8'-10' for street parking. By keeping parking on the east side, only twelve full use and nine restricted use parking spaces are lost from the west side, rather than 41 spaces that would be lost if parking were moved only to the west side of Strongs Drive.

LEGEND
— Vehicular Route
- - One-Way Vehicular Route

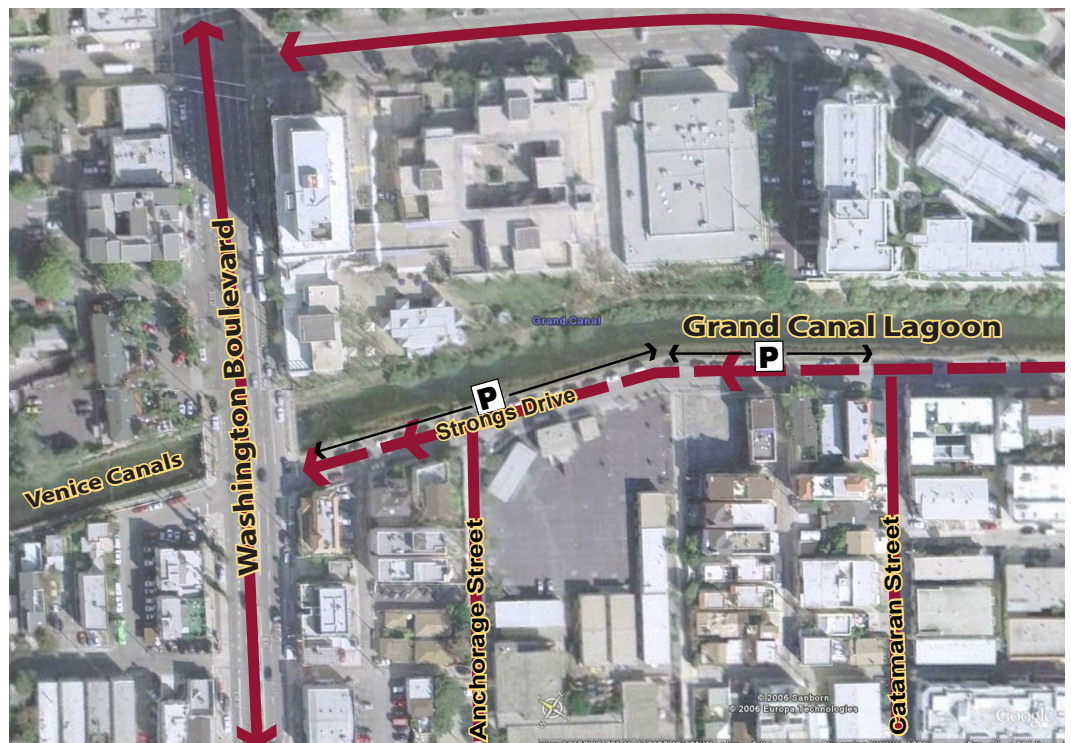


Exhibit 20: Vehicular alternative 2

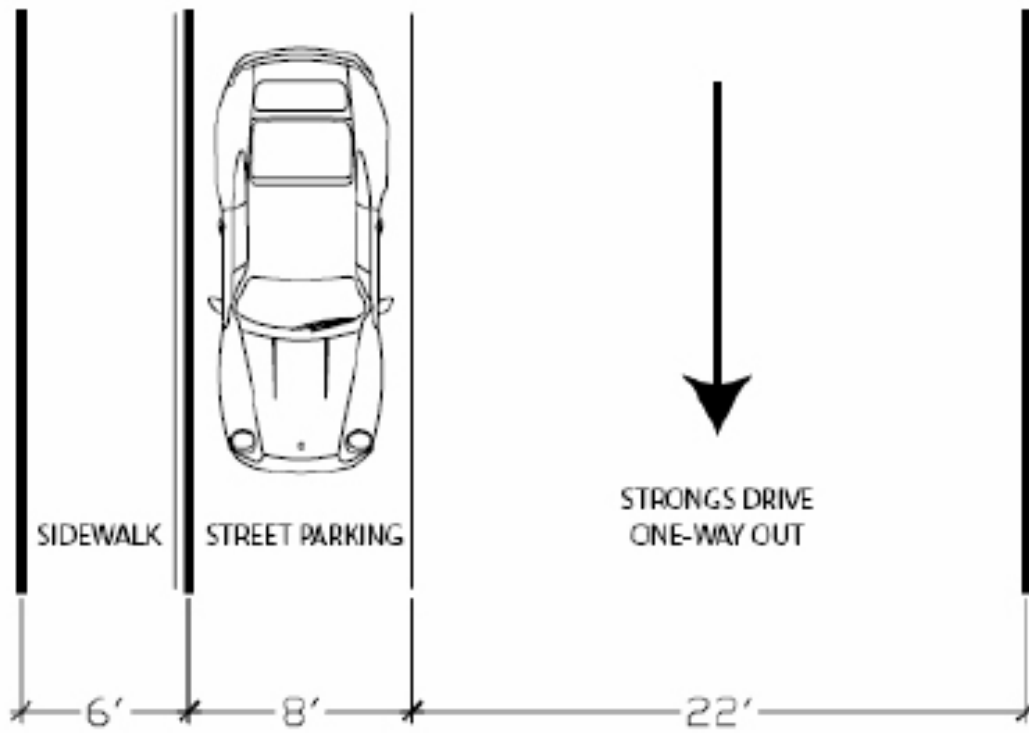


Exhibit 21: Proposed plan view of Strong's Drive - Alt 2



PARKS

ALTERNATIVE 1

Entrance Parks

Given the lack of park space within and around Grand Canal, in addition to the lack of seating and gathering areas, the public access team determined, through input received from the community meeting, in addition to the various site visits, that the three city owned lots located within the Grand Canal boundaries should be designated as public parks where residents and visitors may have an opportunity to socialize and view wildlife. In addition, there is a County-owned lot which we suggest also be designated as a park. These four lots would add three public park spaces to the area. All three proposed parks are located on publicly-owned properties. The three city lots which would create two of the parks have been designated by the city planning department as RW2-1 zones, (Two-Family Residential Waterways). City planning officials may have to re-zone these areas to become designated as public open space (OS zone). The county-owned park would require approval from the County Board of Supervisors and county planning officials.

To provide feasible park access to the greatest number of people, it is important to establish multiple entrances to Grand Canal. These entrances should be located on Washington Boulevard and Strongs Drive, on Via Dolce adjacent to the two proposed parks (Gateway and Sand Dune parks), and at the end of Hurricane Street and Grand Canal, next to the Venice pumping plant. These parks should be designed in such a way to make a visual statement as well as draw people into the space. Establishing consistency in form and style at all entrances-in tune with the natural and urban qualities of Grand Canal-will help to give the parks recognizable, cohesive identity and will contribute to a positive community identity as well.

In alternative one the access team proposes the following three parks:

- Gateway Park
- Sand Dune Park
- Hurricane Park

Gateway Park

Gateway Park will be located on the city-owned lot between the existing county housing apartment building and house 3511 (See Exhibit 22-23). The park shall have a decorative wrought iron gateway entrance, to be designed by a local artist, a rock cobble area adjacent to Grand Canal Lagoon (as suggested by biology team), spaces for benches that may serve as a gathering area for tours, interpretive signage, lighting and a bioswale treatment wetland (See Stormwater Management Recommendations). The park can be accessed through the proposed pedestrian bridge, the east side of the lagoon's bank from the Washington Boulevard entrance, or from Via Dolce. The walkway toward Washington Blvd. will continue in front of the future Lennar Urban building (See Exhibit 24).

Via Dolce

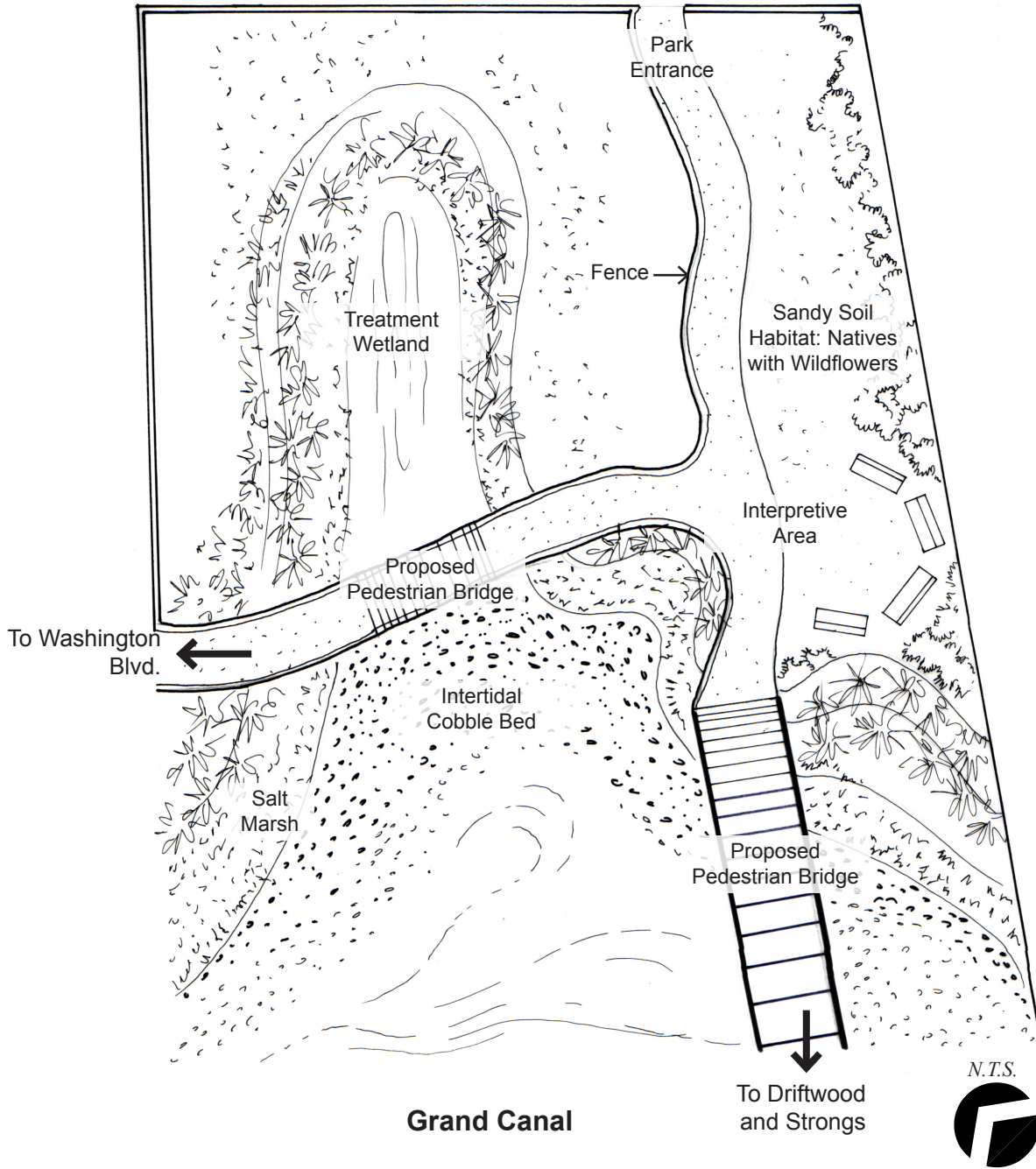
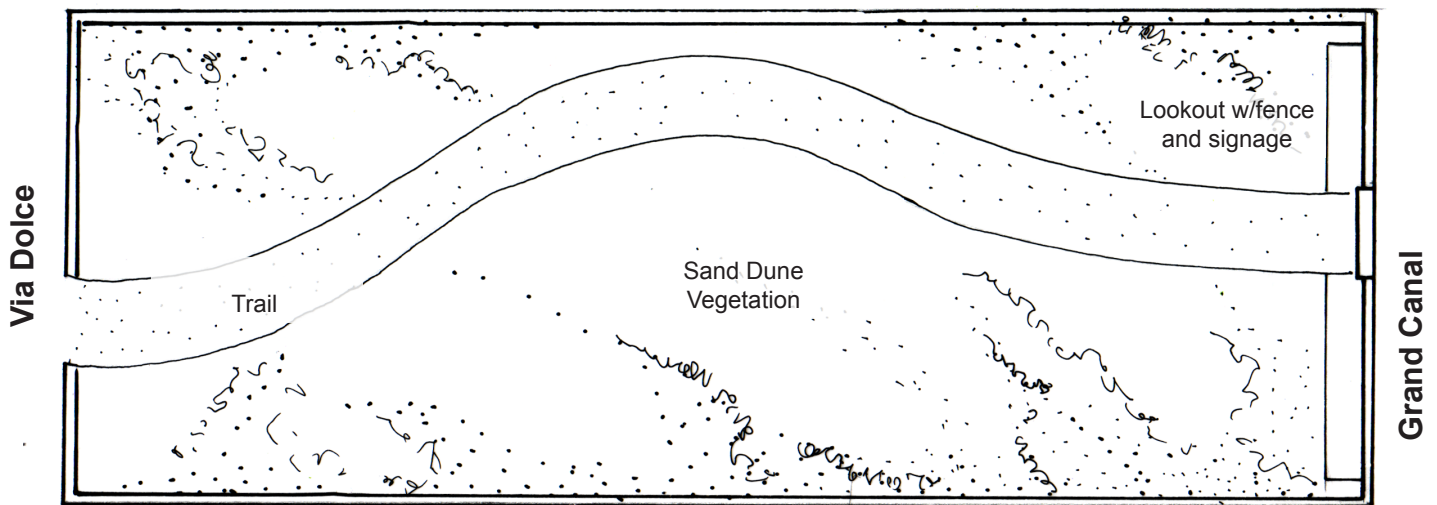


Exhibit 22: Proposed Gateway Park, Alt 1



Sand Dune Park

San Dune Park will be located on the county-owned lot at the end of Grand Canal, directly in front of Hurricane Street (See Exhibits 25-26). There is another undeveloped lot adjacent to the County-owned lot which is privately owned, but is for sale. It is possible this additional lot could be purchased to increase the size of Sand Dune Park. Given the spatial limitations, this park will have an area designated for sand dune restoration with a permeable trail running through it. Interpretive signage will guide pedestrians to the edge of the park in front of Grand Canal. An attractive, see-through view fence will be located between the park and Grand Canal in order to avoid trampling of the natural zone vegetation. Interpretive signage will be located along the fence and will include information regarding the historical importance of the area and its relationship to the greater Ballona Creek watershed.



N.T.S.



Exhibit 23 (Opposite, top):
Photosimulation of proposed Gateway Park, Alt. 1

Exhibit 24 (Opposite, bottom):
Photosimulation of proposed bank restoration along East Bank at Washington Blvd.

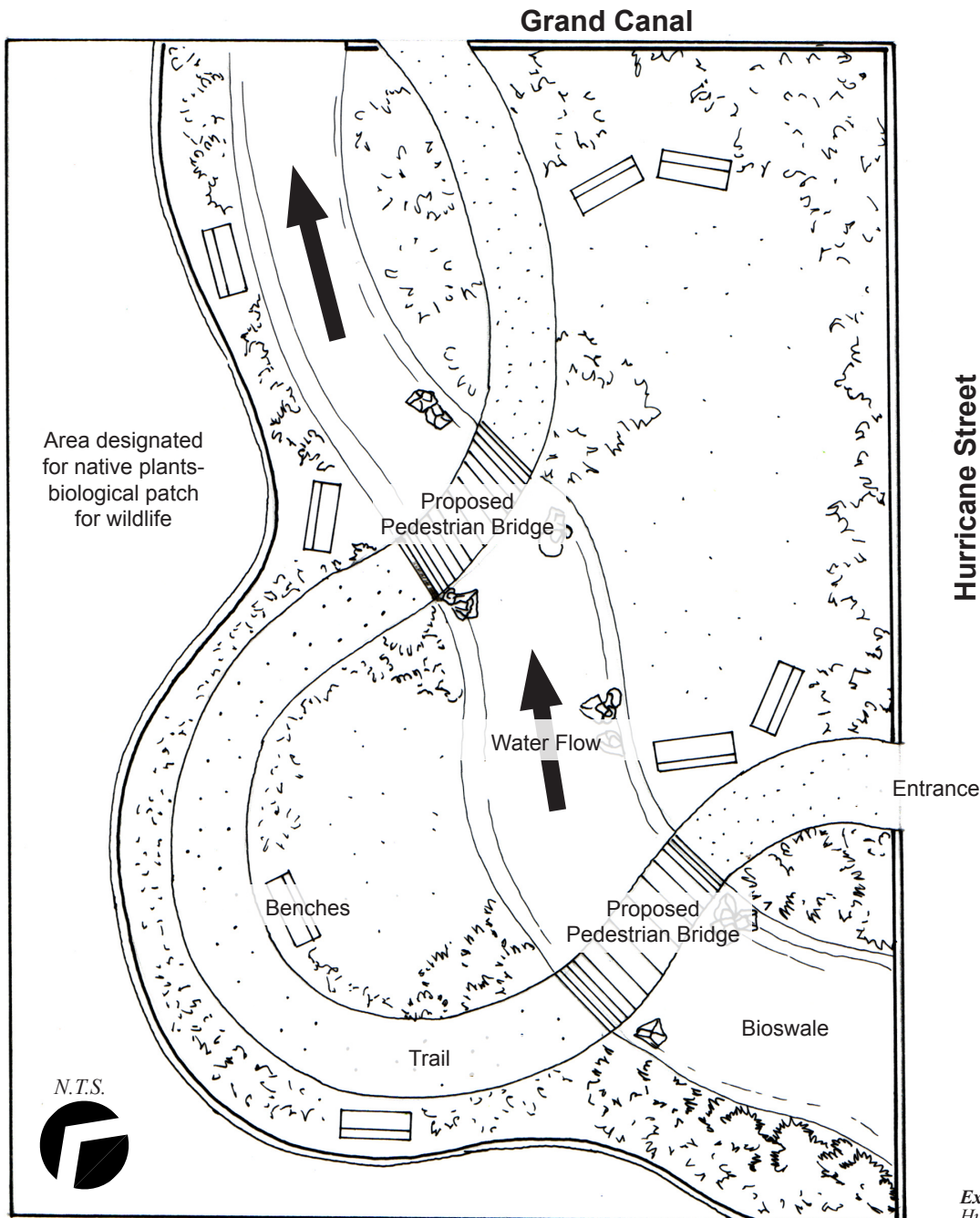
Exhibit 25 (Above): *Plan view of proposed Sand Dune Park*



Exhibit 26: Photosimulation of Proposed Sand Dune Park

Hurricane Park

Hurricane Park will be the only park located on the west side of the lagoon, at the end of Hurricane Street and Grand Canal (See Exhibit 27). This park will be a bit larger than the other two since it will be designed to include two city-owned lots. Hurricane Street will end at a viewing platform located above the existing city maintenance sewage hole. Hurricane Park will have two entrances, one off Hurricane Street and the other in front of the Grand Canal concrete walkway. The park will have a constructed bioswale that will capture and treat stormwater runoff from Hurricane Street with interpretive signage and seating, in addition to a small wandering trail that will connect both entrances, as well as an area designated for native vegetation.



Hurricane Street

Entrance

Exhibit 27: Plan view of proposed Hurricane Park, Alt 1

ALTERNATIVE 2

Entrance Parks

Given the lack of park space within and around Grand Canal, in addition to the lack of seating and gathering areas, the public access team determined, through input received from the community meeting, in addition to the various site visits, that the three city owned lots located within the Grand Canal boundaries should be designated as public parks where residents and visitors may have an opportunity to socialize, view wildlife and enjoy. . In addition, there is a County-owned lot which we suggest also be designated as a park. These four lots would add three public park spaces to the area. All three proposed parks are located on publicly-owned properties. The three city lots which would create two of the parks have been designated by the city planning department as RW2-1 zones, (Two-Family Residential Waterways). City planning officials may have to re-zone these areas to become designated as public open space (OS zone). The county-owned park would require approval from the County Board of Supervisors and county planning officials.

To provide feasible park access to the greatest number of people, it is important to establish multiple entrances to Grand Canal. These entrances should be located on Washington Boulevard and Strongs Drive, on Via Dolce adjacent to the two proposed parks (Gateway and Sand Dune Parks), and at the end of Hurricane Street and Grand Canal, next to the Venice pumping plant. These parks should be designed in such a way to make a visual statement as well as draw people into the space. Establishing consistency in form and style at all entrances-in tune with the natural and urban qualities of Grand Canal-will help to give the parks recognizable, cohesive identity and will contribute to a positive community identity as well.

In alternative two the access team proposes the following three parks:

- Gateway Park
- Sand Dune Park
- Hurricane Park

Gateway Park

Gateway Wetland Park will be located on the open city-owned lot between the existing county housing apartment building and house 3511 (see Exhibits 28-29). The park shall have a decorative wrought iron gateway to be designed by a local artist, a rock cobble area adjacent to Grand Canal (as suggested by biology team), spaces for benches that may serve as a gathering area for tours and interpretive signage. The park can be accessed through the proposed pedestrian bridge, the east side of the lagoon's bank from the Washington Boulevard entrance, or from Via Dolce. In this alternative, the park may also be accessed through the east side of the Grand Canal walking trail from house 3511 to 3815. Pedestrians crossing the bridge into Gateway Park will have the option to continue into the park or to walk on the proposed walkway on the east side of the lagoon's bank.

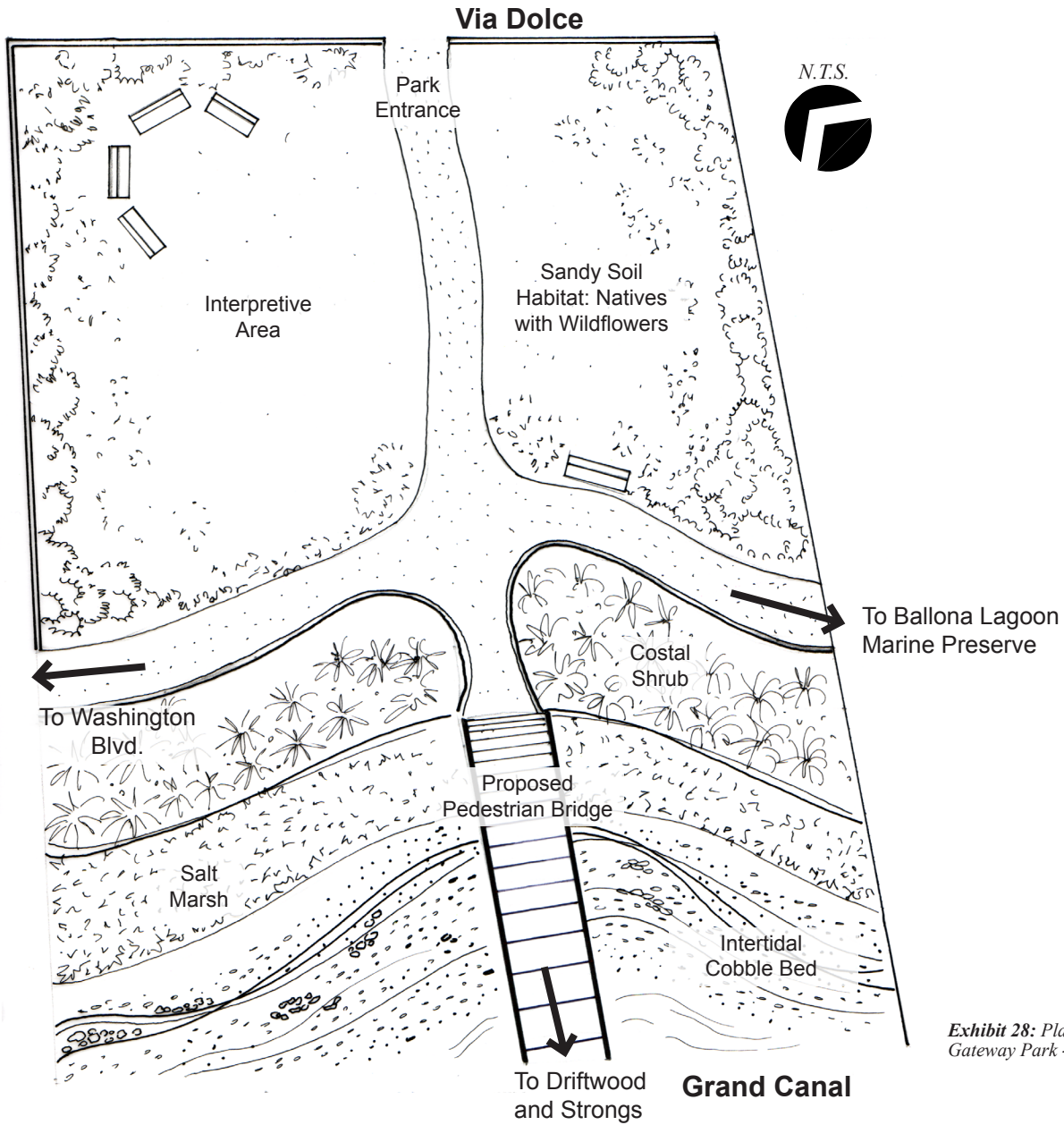


Exhibit 28: Plan view of proposed Gateway Park - Alt 2

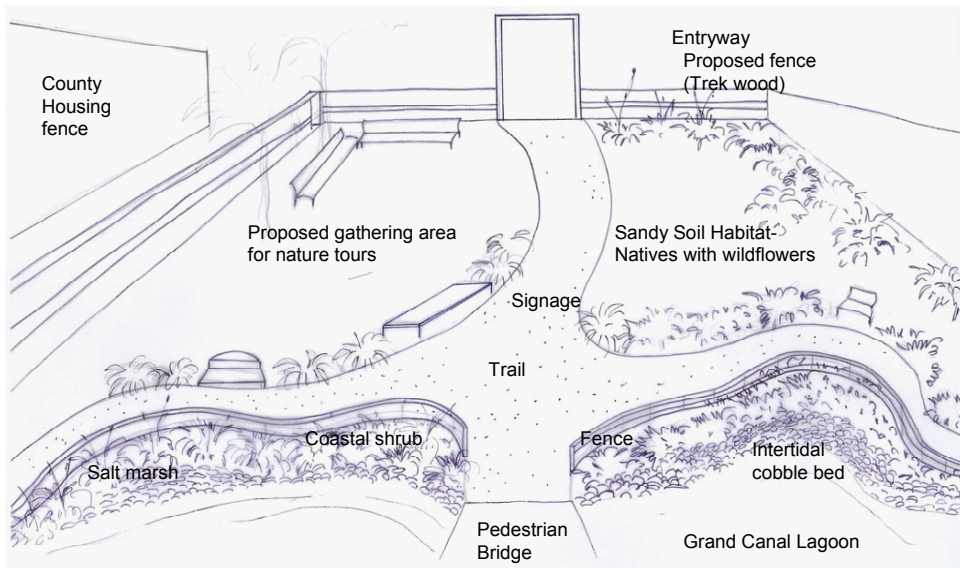


Exhibit 29: Perspective of proposed Gateway Park - Alt 2

Sand Dune Park

San Dune Park will be located on the county-owned lot at the end of Grand Canal, directly in front of Hurricane Street (See Figures 25-26, 30). There is another undeveloped lot adjacent to the County-owned lot which is privately owned, but is for sale. It is possible this additional lot could be purchased to increase the size of Sand Dune Park. Given the spatial limitations, this park will have an area designated for sand dune restoration with a permeable trail running through it. Interpretive signage will guide pedestrians to the edge of the park in front of Grand Canal. An attractive see-through view fence will be located between the park and Grand Canal in order to avoid trampling of the natural zone vegetation. Along the fence interpretive signage will be located that will include information regarding the historic importance of the area and its relationship to the greater Ballona Creek watershed.

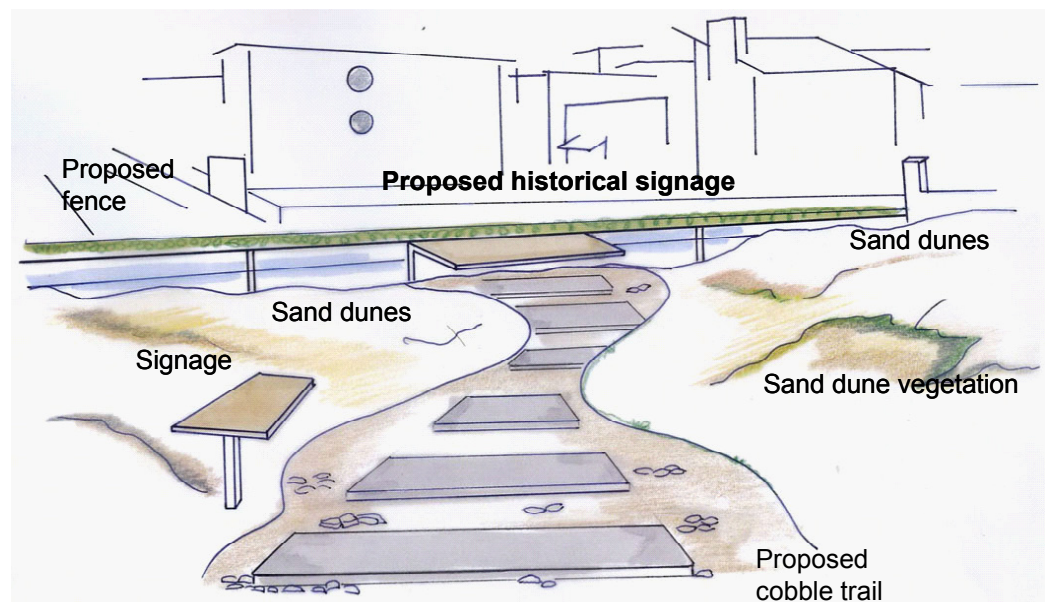


Exhibit 30: Perspective of proposed Sand Dune Park

Hurricane Park

Hurricane Park will be the only park located on the west side of the lagoon, at the end of Hurricane Street and Grand Canal. This park will be a bit larger than the other two since it will be designed to include two city-owned lots. Hurricane Street will end at a viewing platform located above existing city maintenance sewage hole. Hurricane Park will have two entrances, one off Hurricane Street and the other in front of the Grand Canal adjacent concrete walkway (See Figure 31). The park space will be designated for the installation of a small impermeable trail connecting both entrances and a native habitat garden with appropriate signage.

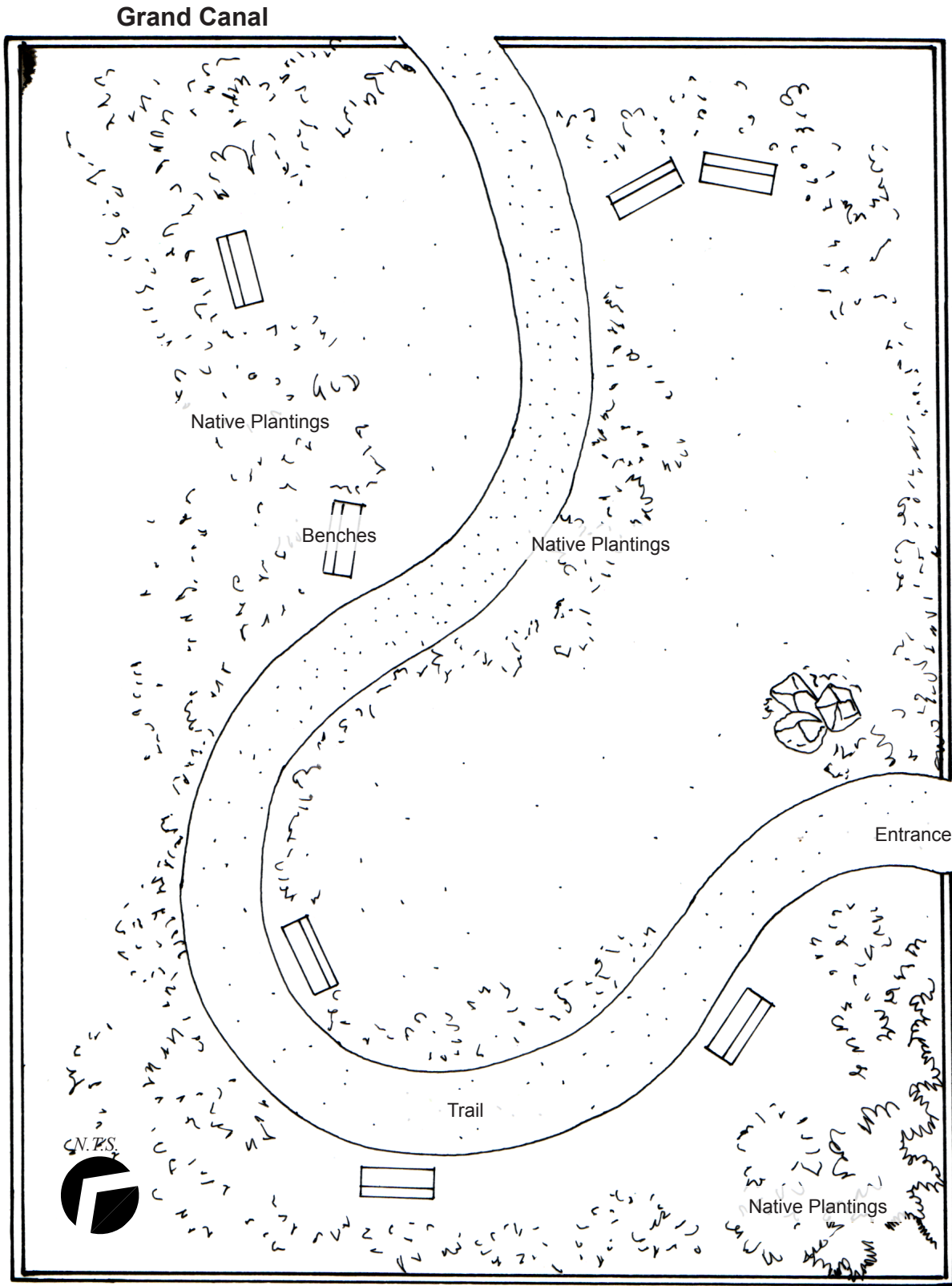


Exhibit 31: Plan view of proposed Hurricane Park - Alt 2

INTERPRETIVE SIGNAGE

Signage within and around Grand Canal is a crucial way-finding element that will be incorporated in both alternatives. Signage should be located throughout the area to ensure visibility from all directions while at the same time not dominating any views. A total of approximately twelve signs should be located at Grand Canal. The five most important signs should be located at the entrances of Grand Canal. The five entrances have been identified at the following locations (See Exhibit 32):

ENTRANCE SIGNS

Washington Boulevard and Strongs Drive

This location is important given its strategic location off a major street, extensive pedestrian, cycling and vehicular traffic circulate through this area. This sign should include a way-finding map of Grand Canal, where all three parks are marked, including walkways, bridge and connection trails to Ballona Lagoon Marine Preserve. Visual representations of types of habitat should be included in addition to a small description of the ecology of Grand Canal. This sign will entice visitors to experience the unfolding landscape ahead.

Driftwood Street and Strongs Drive

This location is important given the proposed installation of a bioswale and the bridge, which would culminate at the proposed city park. This sign should include information pertaining to the function of the bioswale treatment, through graphic and descriptive representation and should also make reference to the park on the east

LEGEND





-  Pedestrian Route
-  Entrance Signage - Wayfinding and Interpretive signage located at key entrance points throughout the site
-  Biological Interpretive Signage - Signage indicating plant and animal species throughout the Grand Canal
-  Wayfinding Signage - Signage indicating directions to adjacent landmarks including the Grand Canal



Exhibit 32: Proposed locations for signage

side of Grand Canal. In addition the sign should have a small key map indicating walking path alternatives.

Via Dolce and Driftwood Street

This location is important given that it will be the main entrance of the park coming from Via Dolce. This sign should include a way-finding map of Grand Canal, where all three parks are marked, including walkways, bridge and connection trails to Ballona Lagoon Marine Preserve. Visual representations of types of habitat should be included in addition to a small description of the ecology of Grand Canal. This sign will entice visitors to experience the unfolding landscape ahead.

Via Dolce and Hurricane Street

This location is important given that it will be the entrance to Sand Dune Park for pedestrians walking from Ballona Lagoon Marine Preserve to Grand Canal or vice versa. This sign should include historical information regarding sand dune formations, vegetation and coastal lagoon function within the region. In addition, the sign should include visual representation of wildlife that survives in coastal sand dunes. As visitors enter the park they will understand the minimalist qualities that define the park space. This sign should also have a small key map indicating walking path alternatives.

Hurricane Street and Grand Canal

This location is important given that it will guide pedestrians into the entrance of Hurricane Park. This sign should include a way-finding map of Grand Canal, where all three parks are marked, including walkways, bridge and connection trails to

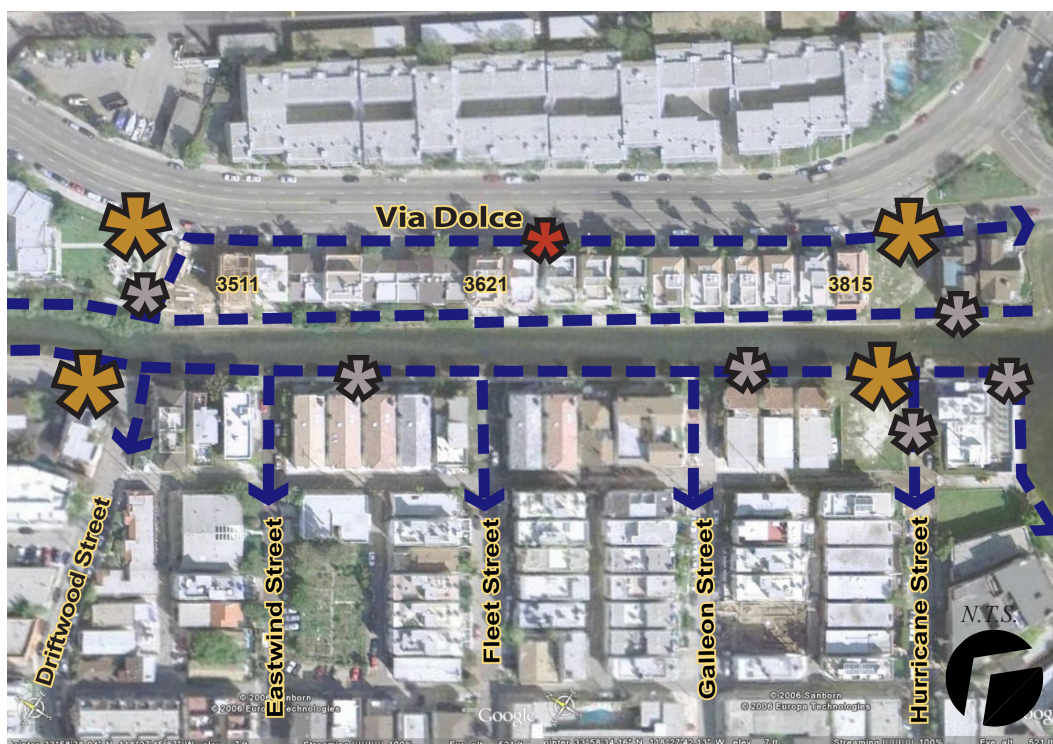


Exhibit 3: Existing pedestrian circulation

Ballona Lagoon Marine Preserve. Visual representations of types of habitat should be included in addition to a small description of the ecology of Grand Canal. This sign will entice visitors to experience the unfolding landscape ahead.

The remaining seven signs should indicate plant and animal species within the lagoon area through graphical and descriptive representations (See Figure 28). These signs should be developed with a local biologist utilizing the biology section of the report as a guideline. Materials used for signage should withstand coastal climate weather conditions in addition to extensive sun exposure.

In addition, either incorporated into the signage suggested above or included in small, separate signs sprinkled through the area, there must be included signs which explain the laws (both public safety and ecological laws) about prohibitions related to feeding wildlife and also picking up pet droppings. A brochure-holder would be installed at each park which could include US Fish & Wildlife Service brochures about the perils of feeding wild ducks and birds, and also a brochure could be included about the flora & fauna of the area. Pet dropping materials and trash receptacles are needed in a couple of locations, and regular maintenance of these items is crucial in order to keep the area clean and the ecologically important resources protected.



Figure 28: Examples of signage from Acorn Group and others

source: www.acrongroup.com

MATERIALS

PERMEABLE WALKING PATHS

Impermeable surfaces, such as concrete and asphalt, do not permit infiltration of water falling on the site during storms. In a storm event, water flows rapidly across paved surfaces, collecting pollutants such as grease and oil on its way to the lagoon, before eventually entering the Pacific Ocean. In order to avoid urban runoff into the lagoon in both alternatives the public access team proposes a permeable walking trail on Strongs Drive, between Washington Boulevard and Driftwood Street. In addition, for alternative two the proposed walking trail should also be constructed of permeable surfaces.

Suggested Permeable Surfaces:

- Permeable concrete
- Decomposed gravel
- Interlocking pavers

FENCING

Standard Fence

The three-foot high fence described under the pedestrian design section of alternative one should be constructed of trek wood, woodcrete or treated wood that will withstand coastal weather conditions without deteriorating over time. The fence design should be consistent throughout the entire length of the lagoon and should blend with the overall environment (See Figure 29).



Figures 29: Example of standard fence

Decorative Fence

The portion of the fence located on Washington Boulevard should be designed by a local artist utilizing iron, copper or some other type of flexible material, given the strategic location and public exposure, this portion of the fence can become an artistic representation of Grand Canal (See Figures 30-31).



Figure 30: Example of decorative fence



Figure 31: Example of decorative fence

SIGNAGE

Materials recommended could include the following:

Suggested Materials:

- Trex, woodcrete or treated wood
- Iron work
- Treated plywood
- Plastic or acrylic lamination (sun resistant)

Suggested Colors:

- Ocher yellows (coastal vegetation on upper bank areas)
- Blue-greens (vegetation on lower banks of lagoon)
- Pale blue (Sky)
- Weathered bronzes (dry coastal grass)
- Deep blue (lagoon water at dawn and dusk)

Suggested Form:

- Horizontal (Flows with shape of Grand Canal Lagoon)
- Low pedestals for some signs (no more than three-feet so children and wheelchair-bound can view the signs) adjacent to higher ft. signs for adults
- Near the ground (some signs that make reference to cobble bed or fiddler crabs or other types of low-mounding vegetation and wildlife, should be located at ground level, helps spot important species without distraction)



Figure 32: Example of signage

CONCLUSION

The primary purpose of the public access team is to restore and preserve public access that is capable of meeting the present and future outdoor recreational needs of the public. The public access team analyzed and designed the following two alternatives:

ALTERNATIVE ONE

This alternative provides the best option for public access while considering wildlife protection. In addition to preserving and restoring Grand Canal's unique natural habitat areas, this alternative provides passive recreation trails and parks which are respectful of the habitat being shared by wildlife (See Exhibit 33). Vegetation corridors, areas dedicated for wildlife and pedestrian mobility throughout the site are the most important factors considered in the development of this alternative. Alternative one considers re-routing access so that it does not interfere with the existing open space within the lagoon where wildlife may thrive without pedestrian interference, given that the rest of Grand Canal has walkways and a bridge. This option also ties in well with the opportunity for parking along Via Dolce and enhanced pedestrian activity along this street. In addition, this option maximizes the pedestrian experience by guiding them to walk through the proposed park. The park provides enhanced public access, with interpretive signage, seating and a place to

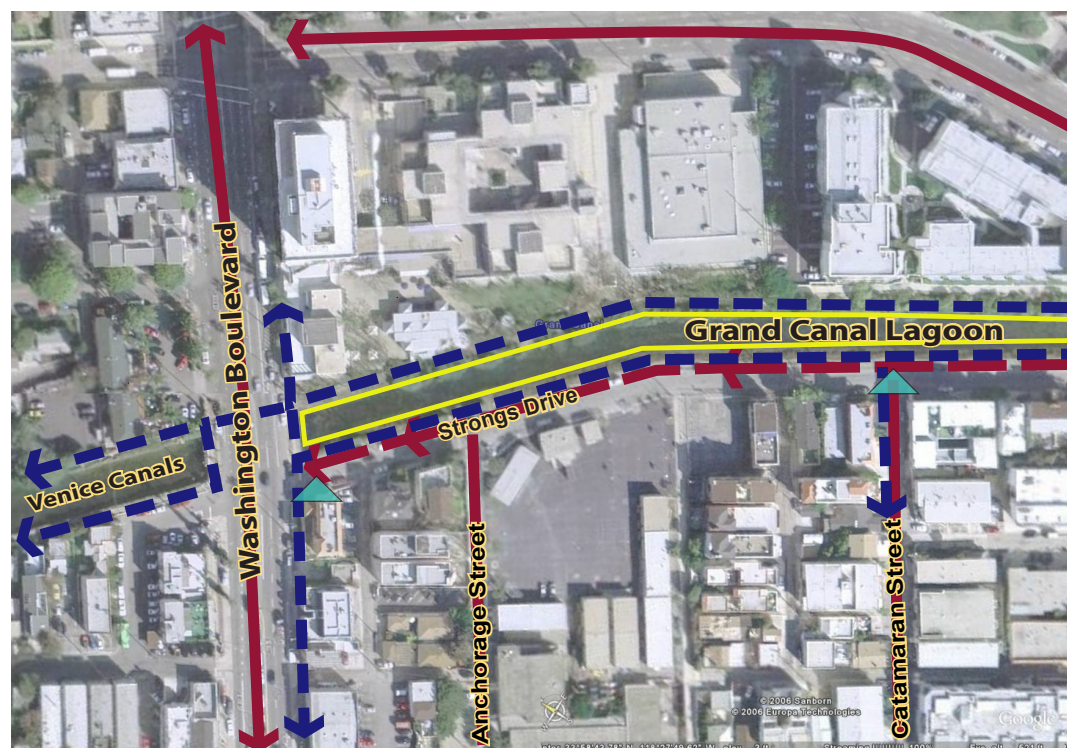
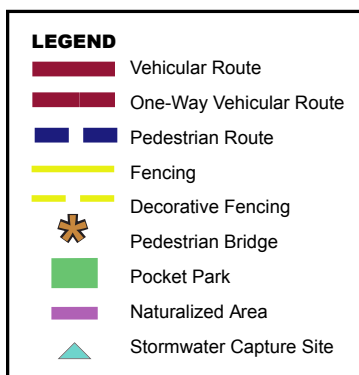


Exhibit 33: Alternative 1

view wildlife. Three entrance parks have been proposed on city and county-owned lots. The amenities of these parks, such as bio swales, wetland retention ponds, along with other park facilities will pose a greater monetary investment to the city than the parks proposed on alternative two. Considering existing and future issues with parking in sensitive areas where space is limited, this alternative maximizes parking along Via Dolce and the utilization of nearby county parking lots, thus spreading out the traffic, which will assist in alleviating some congestion.

- Meets city’s low impact access recommendations
- Preserves and enhances natural character of Grand Canal
- Increases wildlife watching opportunities
- Enhances pedestrian use of Via Dolce
- Assists with better fire access on Strongs Drive
- Protects to the greatest extent possible the ecological integrity of an important coastal resource designated as ESHA (Environmentally Sensitive Habitat Area) by the California Coastal Commission
- Maximizes use of existing city lots for public use
- Residents may not respect boundaries
- Coastal Commission may not grant permits
- Cost of removal of structures and non-natives may be elevated
- Possible dispute among home owners
- Cost of park installation may be elevated



ALTERNATIVE TWO

This alternative protects existing public access, thus, maximizing public access to its largest capacity and diminishing existing wildlife gathering areas (See Exhibit 34). Pedestrians will have views to Grand Canal from both the west and east side of the banks. In addition, pedestrians will have the option to utilize Via Dolce as an alternative mode of circulation through the site. This alternative does not meet the low-impact access recommendations set by the city. This alternative proposes the installation of three entrance parks on publicly-owned lots. These parks, however, have been designed to accommodate amenities at a lower cost than parks proposed for alternative one. Based on the initial community meeting, the public access team noticed that this alternative might cause major opposition from current residents who, along with other organizations, have stopped previous project given previous proposal to enhance public access route from house 3511 to house 3815.

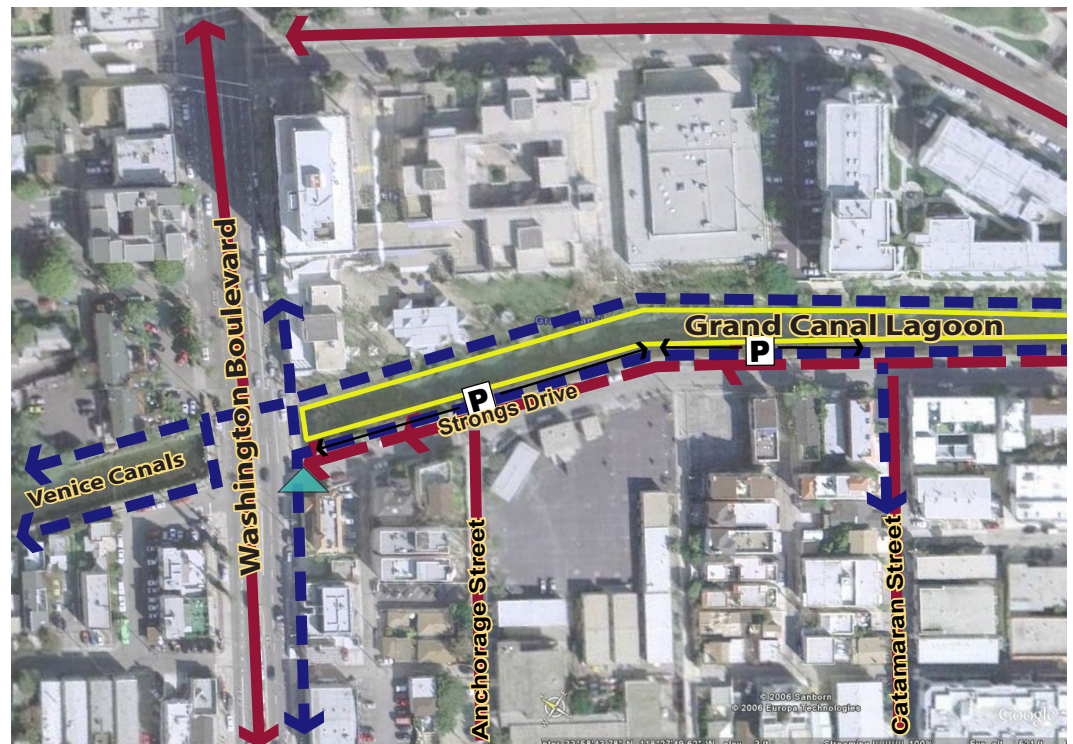
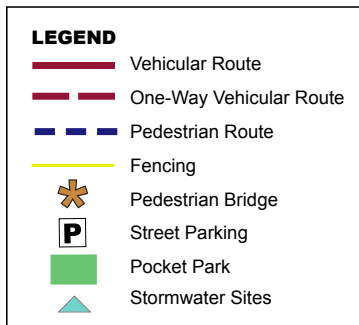


Exhibit 34: Alternative 2

- Enhanced access
- Enhanced water views for pedestrians
- Protects existing access
- Opposition from residents
- High cost associated with installation of proper walking path above high tide levels
- Decreased opportunities for wildlife gathering areas
- Decreased opportunities for wildlife watching
- Decreased protection of ESHA (Environmentally Sensitive Habitat Area) as designated by the California Coastal Commission
- Does not meet city's low impact access recommendations



EVALUATION

ALTERNATIVE 1

Strengths

- Meets city's low impact access recommendations
- Preserves and enhances natural character of Grand Canal
- Increases wildlife watching opportunities
- Enhances pedestrian use of Via Dolce
- Maximizes use of existing city lots for public use
- Assists with better fire access on Strongs Drive
- Protects to the greatest extent possible the ecological integrity of an important coastal resource designated as ESHA (Environmentally Sensitive Habitat Area) by the California Coastal Commission

Constraints

- Residents may not respect boundaries
- Coastal Commission may not grant permits
- Cost of removal of structures and non-natives may be elevated
- Possible dispute among home owners
- Cost of park installation may be elevated

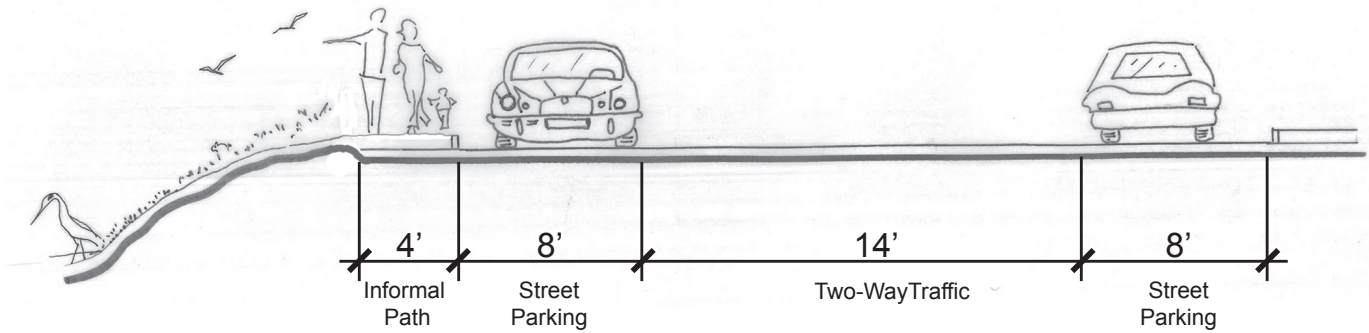
ALTERNATIVE 2

Strengths

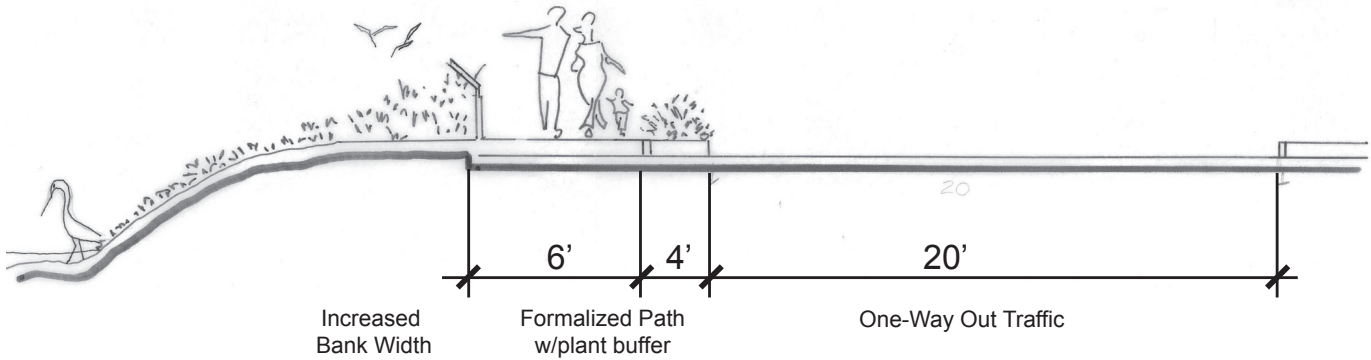
- Enhanced access
- Enhanced water views for pedestrians
- Protects existing access

Constraints

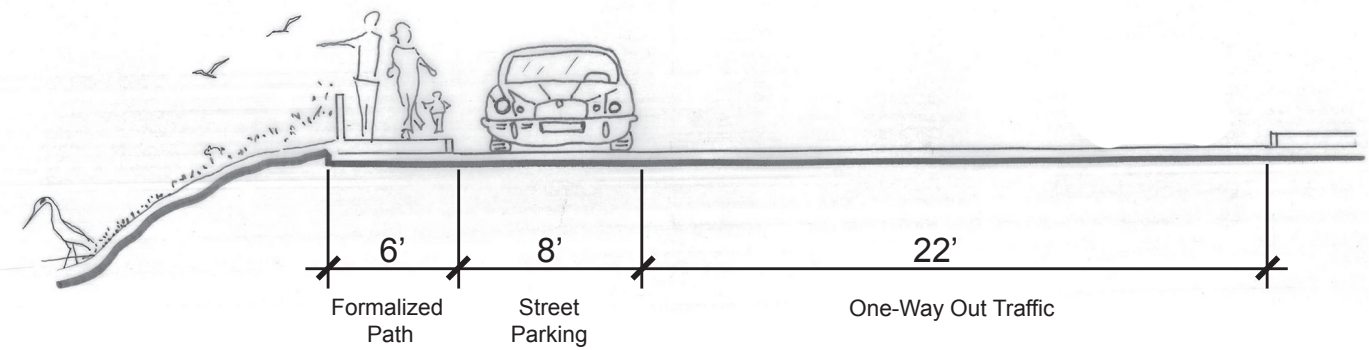
- Opposition from residents
- High cost associated with installation of proper walking path above high tide levels
- Decreased opportunities for wildlife gathering areas
- Decreased protection of ESHA (Environmentally Sensitive Habitat Area) as designated by the California Coastal Commission
- Decreased opportunities for wildlife watching
- Does not meet city's low impact access recommendations



EXISTING STRONGS DRIVE

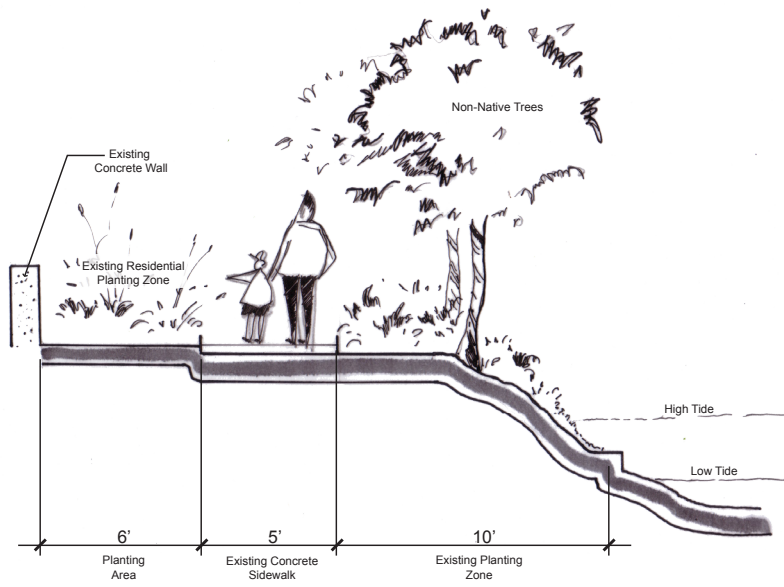


ALTERNATIVE 1

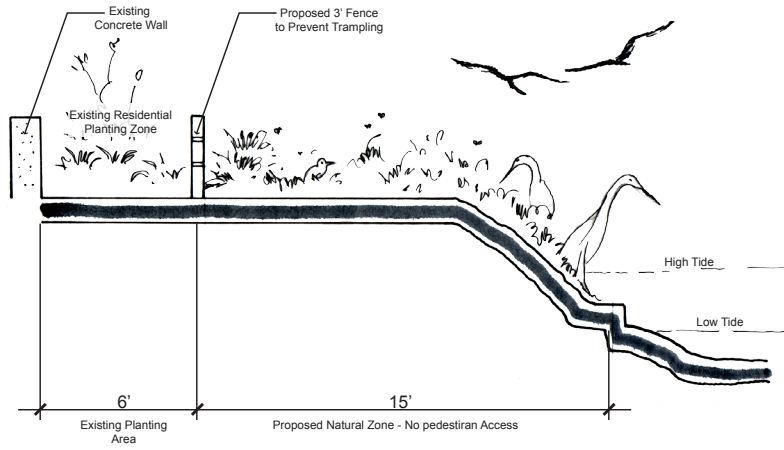


ALTERNATIVE 2

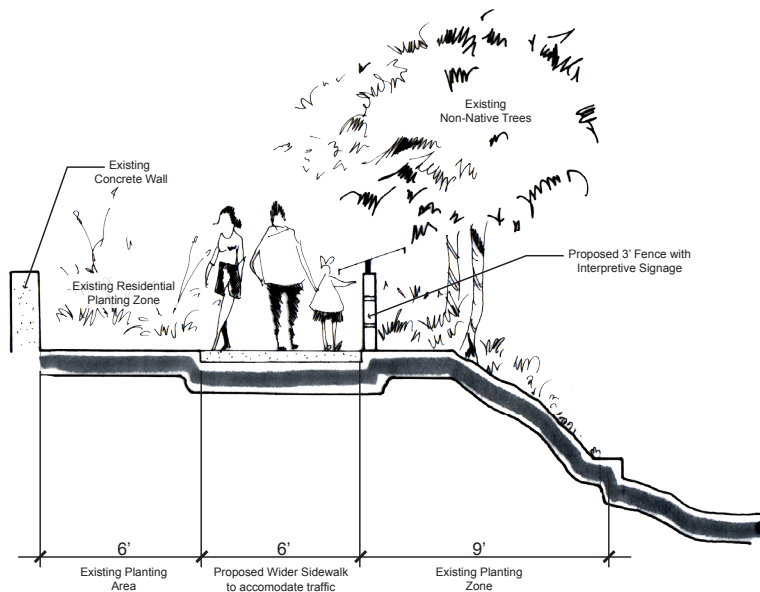
Exhibit 35: Comparison of alternatives for Strong's Drive



EXISTING EAST BANK FROM 3511 to 3621

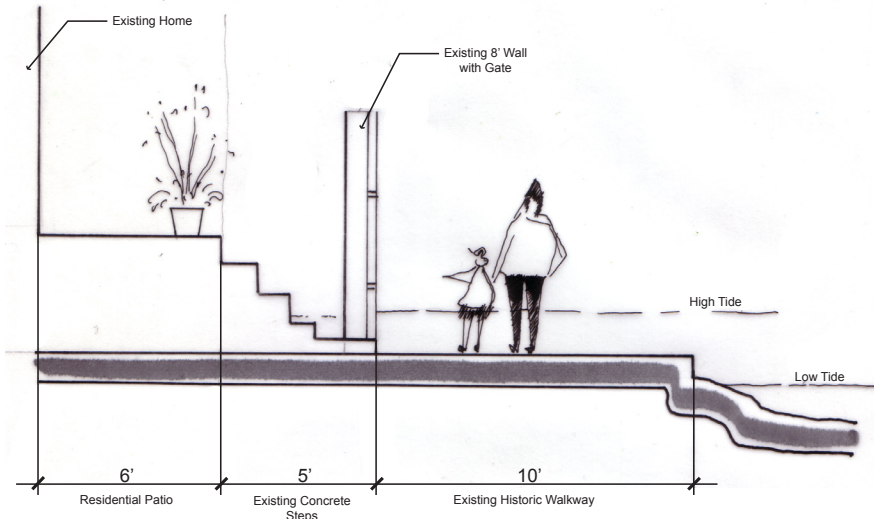


ALTERNATIVE 1 - Natural Area

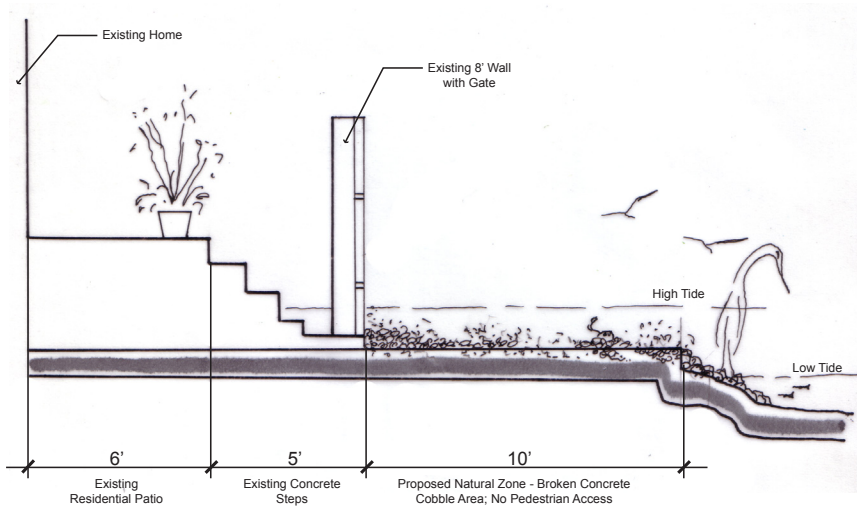


ALTERNATIVE 2 - Pedestrian Path

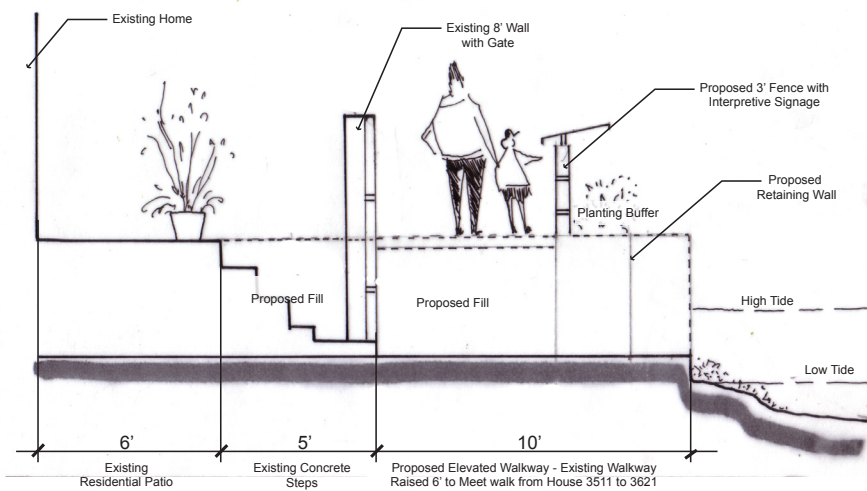
Exhibit 36: Comparison of alternatives for the east bank from house 3511 to 3621



EXISTING EAST BANK HISTORIC WALKWAY



ALTERNATIVE 1 - Natural Area



ALTERNATIVE 2 - Pedestrian Path

Exhibit 37: Comparison of alternatives for the east bank along the historic walkway

RECOMMENDATIONS

The public access team recognizes the increased capital investment and time involved in implementation of Alternative 1. However, this cost is greatly offset by the benefits to habitat restoration, user experience and long-term parking solutions offered by

Optimized use of the already existing assets, the county parking lots and the beach shuttle, will increase access to the Grand Canal and beach far more than retaining the small number of parking spaces along Strongs Drive. As the area experiences increased growth over the next several years, alternative modes of transportation to and from primary attractions like the beach will become an increasing necessity. The focus on high-quality pedestrian access and convenient shuttle service will have much further reaching long-term benefits for both the public and the agencies serving them. In addition, the best possible protection of the ESHA (Environmentally Sensitive Habitat Area) not only is what the Coastal Commission's mandate for achievement is, it is the best outcome for future generations of Los Angeles citizens and visitors to this important coastal area.



Washington Blvd. and Grand Canal, 2007

FUTURE STUDIES

During the development of the public access pre-design report, additional planning efforts were identified. Improvements to additional areas beyond and within the project site boundaries would compliment the overall public access pre-design report. The following suggestions relate to either existing or proposed conditions suggested by the access team that were not suitable for inclusion in the pre-design report.

PARKING FACILITIES

As previously mentioned, Strongs Drive poses challenging parking solutions given the narrow width of the street and the proposed side walk on the west bank of Grand Canal for Alternative 1. It is suggested that traffic engineer consultants conduct specific conceptual studies that will determine what may be the best solution to the current setbacks.

- One-way out or one-way into Strongs Drive from Washington Boulevard to Driftwood Street
- Potential solutions to move parking from Strongs Drive to Via Dolce by creating a median in the center of Via Dolce
- Type of variances and permitting requirements
- Public safety hazards in keeping parking on both sides of Strongs Drive

PUBLIC WALKWAYS

As previously mentioned in alternative 2, the east bank of Grand Canal would need to accommodate a sidewalk above high tide level. Engineer consultants should determine the following:

- Exact height of sidewalk above high tide level
- Type of construction needed to accommodate an elevated sidewalk
- Permitting requirements from coastal organizations, the City and residents
- Determine appropriate transition (Stairs, platform, ramp, etc.) where existing raised sidewalk ends in a concrete wall at house 3621 and continues onto historic sidewalk
- Determine appropriate lagoon bank restoration from house 3621 to 3815, further biology and hydrology studies may be needed
- Determine appropriate width of elevated sidewalk, given construction limitations and existing retaining wall
- Determine possible damage to be caused on existing residential wall adjacent to historic walkway

Appendix

The following two exhibits were distributed at the final presentation of the Grand Canal Ecological Restoration and Pre-Design Engineering Analysis held on December 6, 2007.

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