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CONSISTENCY WITH ENTITLEMENT DOCUMENTS

The Parks and Open Spaces included as part of this Sub-Phase Application 2 are consistent with the Schematic Designs approved in the Major Phase 1 Application. The designs presented in this Sub-Phase Application are consistent with the Treasure Island/Yerba Buena Island Parks and Open Space Plan, except as noted in the Major Phase 1 Application.
4.1 OVERALL PARKS AND OPEN SPACE

The Treasure Island and Yerba Buena Island Parks and Open Space system and program are the culmination of over a decade of public discussion on how these extraordinary open spaces at the center of San Francisco Bay can best contribute to the City’s and region’s future. In addition to the public discussion and ongoing work with TIDA, TI/YBI Citizens Advisory Board (TI/YBI CAB), existing residents, and stakeholder organizations, the programming and design of the open spaces reflects intensive analysis of site opportunities and constraints, natural and cultural resources, Tidelands Trust, sea level rise, infrastructure, transportation, access, sustainability and habitat management.

The Islands’ diverse open space program is made up of eight distinct open space types – six on Treasure Island and two on Yerba Buena Island. Together they encompass a wide variety of programs and experiences that will contribute to the unique identity of each island.

The redevelopment of Treasure Island and Yerba Buena Island will provide approximately 290 acres of open space and parks, including 80 acres on YBI and 210 acres on Treasure Island. Consistent with the principle of adjacency described in the DDA, open space and parks will be developed in conjunction with development blocks. Chapter 4 – Parks & Open Space of this Sub-Phase application provides detailed descriptions of the location, boundary and character of each open space and park that will developed as part of Sub-Phases 1B, 1C and 1E.

TREASURE ISLAND

Shoreline Park
A series of waterfront parks that wrap western, northern and eastern edges of Treasure Island, characterized by the Waterfront Plaza at the transit hub, Pier 1, a continuous waterfront promenade, water access, and sculpted topography.

Sports and Recreation Park
An active park designed specifically for sports recreation.

Urban Agriculture Park
A park devoted to the production of food and/or nursery stock and with opportunities that provide an educational outreach program. Northern Shoreline and The Wilds, constructed habitats that integrate stormwater management, education and passive recreation.

Northern Shoreline Park and Wilds
Constructed habitats that integrate stormwater management, education and limited passive recreation

Urban Core
A series of plazas and open spaces that help activate the retail core and the transit hub. These areas include Waterfront Plaza, Clipper Cove Promenade, Marina Plaza and the Cultural Park.

Pedestrian Network & Neighborhood Parks
Social spaces and amenities specifically designed for residents.

YERBA BUENA ISLAND

Hilltop Park
A regional and neighborhood serving park with passive recreational areas, overlooks, and picnic areas.

Regional Open Space - Habitat Management Areas
The majority of the island’s open space is dedicated to habitat management and associated recreational uses such as hiking, biking, and picnicking.

Trails and Overlooks
A continuous network of rustic hiking trails will provide access to the island’s open space areas and overlooks.

Senior Officers’ Quarters Historic District
Existing gardens surrounding the historic Senior Officers Quarters.
OPEN SPACE AND PARK TYPOLOGIES

OPEN SPACE + PARK TYPOLOGIES

1. Shoreline Park
2. Sports + Recreation Park
3. Urban Agricultural Park
4. Northern Shoreline Park + Wilds
5. Urban Core
6. Pedestrian Network + Neighborhood Parks
7. YBI Habitat Management Protection Areas
8. YBI Hilltop Park
9. Senior Officer Quarters Historic District (Great Whites)

FIGURE 4.1 OPEN SPACE AND PARK TYPOLOGIES

SUB-PHASE APPLICATION 2: SUB-PHASES 1B, 1C & 1E
SUB-PHASE PROPOSED PARKS AND OPEN SPACE

1. WATERFRONT PLAZA
2. BUILDING 1 PLAZA
3. MARINA PLAZA
4. CULTURAL PARK
5A. CITYSIDE WATERFRONT PARK 1
5B. CITYSIDE WATERFRONT PARK 2
6. CLIPPER COVE PROMENADE 1
7. NEIGHBORHOOD PARK

FIGURE 4.2 SUB-PHASE PROPOSED PARKS AND OPEN SPACE

PROPOSED PARKS AND OPEN SPACE
TREASURE ISLAND : SUBPHASES 1B, 1C + 1E

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<tr>
<td><strong>TOTAL</strong></td>
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</tr>
</tbody>
</table>

TABLE 4.1 TI SUB-PHASE PARKS AND OPEN SPACE ACREAGE
4.2 SUB-PHASE PARKS AND OPEN SPACE OVERVIEW

Located in the middle of San Francisco Bay, the two islands share an incredible water bound landscape with sweeping views of the entire Bay area, proximity to downtown San Francisco and Oakland. Both islands are exposed to wind that play a major role in shaping parks and open space program and design. But within these shared circumstances, different parts of the islands have very different characters. This Sub-Phase area focuses on the western edge of Treasure Island that looks directly back to the skyline of San Francisco, one of the great prospects in the world, yet does so in the face of persistent afternoon winds that sweep in through the Golden Gate. The southern and eastern edges of Treasure Island are more protected, and have the East Bay and the new Bay Bridge as their backdrop.

Each park and open space has been programmed and designed to exploit and emphasize these differences in order to enhance the diversity and memorable qualities that are hallmarks of great regional and world destinations alike. The Parks and Open Space chapter provides illustrative material that highlights the Sub-Phase parks and open spaces and describes how they contribute to the creation of a unique island community and a truly regional destination.

Sub-Phases 1B, 1C and 1E on Treasure Island include approximately 15.5 acres of parks and open space. Consistent with the principle of adjacency described in the DDA, open space and parks will be developed in conjunction with development blocks. The following goals and principals have guided the design of each park and open space.

SAFE AND ACCESSIBLE

Ensure that parks and open spaces are easily accessible by transit, universally accessible to all and safe for both pedestrians and bicyclists.

DIVERSE PROGRAMS

Sub-Phases 1B, 1C and 1E parks and open space programs are consistent with the Standards and Guidelines included in the Design for Development Document and the Open Space Plan approved as part of the Disposition and Development Agreement. The creation of an authentic San Francisco neighborhood and regional destination that will draw visitors from around the Bay Area and beyond are central to the vision set forth in those documents. The parks and open space program has been developed to reach a wide demographic of residents and visitors with a diversity of uses and opportunities for social and cultural events, passive and active recreation, hiking, biking, and natural areas. As part of the design process the design team has worked with park management specialists to address the programing, operations, and maintenance of each park and to ensure that they will function as part of a holistic network; will have the necessary infrastructure in place to support the program; and can be maintained and operated sustainably.

UNIQUE PLACES

Each park has been designed to reveal and magnify the natural and cultural forces that influences its unique role in the community and its place in the landscape, and each has its own visual character and experiential qualities, specific to location, context and program. Taken as a whole, Treasure Island’s parks support a cohesive vision that contributes to the identity of the island and is greater than the sum of parts.

ENGAGE THE WATERFRONT

Take advantage of the waterfront, visually, experientially, and ecologically, and bring people to the water’s edge to fully appreciate the Bay.

CONNECTED AND INTEGRATED WITH DEVELOPMENT

Create strong connections between parks, streets, and public open spaces and design for indoor-outdoor relationships with both historic buildings and new development. Integrate park, open space, and habitat concepts with adjacent uses, private development, and street design.

SUSTAINABILITY AND ECOLOGICAL INFRASTRUCTURE

Storm water management, food production, habitat creation, water conservation, and integrated pest management are the focus of parks and open space sustainability. In addition, the park and open space design is integrated with the new island infrastructure and natural processes to support urban sustainability.

INTERPRETATION AND EDUCATION

Provide park facilities and opportunities that support learning about cultural history, ecology, and urban sustainability, and provide for discovery and personal connection with the natural and cultural resources of the Bay Area.

ADAPTABILITY

As a long-term redevelopment project, the construction of Treasure Island and Yerba Buena Island will happen in multiple phases over many years. With that in mind, a philosophy of adaptive management and flexibility has guided each park design to allow for ongoing public participation in an evolving community; changing needs and uses; varying design approaches; and sustainable management and operations.
4.2.1 WATERFRONT PLAZA

OVERVIEW

The proposed public plaza, ferry shelter, and associated coastal landscape is located on the waterfront opposite historic Building One. The approximately 400 foot by 100 foot plaza will serve as an intermodal hub connecting multiple modes of transit including cyclists, pedestrians, ferries, shuttles, and buses.

The Bay Trail is a key component of the waterfront design and extends through the plaza to allow continuous public access. The waterfront in this location has been designed to allow pedestrian access close to the existing riprap edge to take full advantage of the views to the Bay and the San Francisco skyline.

It is anticipated that many people will move from the Waterfront Plaza up to Building One so the crossing on Palm Avenue has been designed to channel people safely to the signalized crossing. In addition, a 20-25 foot wide pedestrian promenade has been designed to accommodate North/South movement for those migrating to and from the plaza. The Bay Trail is accommodated within this generous promenade at the Waterfront Plaza. The most intimate coastal access is provided by the skyline esplanade which hugs the existing rip-rap edge to provide spectacular views of San Francisco. Numerous pathways connect the esplanade to the main promenade and create a network spaces in between.

Given the expected volumes of various transit riders who will be traversing the plaza, a dismount zone has been identified for bicyclists to insure pedestrian safety. Bike facilities including city bike share and public bike storage have been provided on the north and south edges of the plaza to encourage bike trips to start and end outside the busy plaza core.

Numerous seating nodes and terraces radiate from the central Ferry Shelter, creating a porous landscape with many different scales of space. Given the direct exposure to prevailing winds, the outdoor gathering nodes on the plaza have been designed to buffer the wind using raised planters to insulate the seating areas from the elements.

SUB-PHASE UPDATES

The bike dismount zone at the Waterfront Plaza has been reduced in length to improve connectivity. Public bike parking has been relocated closer to the Ferry Shelter, adjacent to the seating cubes, thus giving bike commuters a more convenient arrival to the Ferry Shelter. The bike parking available along the promenade both on the north and south ends of the plaza has moved slighting west, into the rain garden zones in order to increase the width of the Bay Trail. This shift allows for unobstructed views along the promenade. City Bike Share has also been moved closer to the ferry shelter and increased in quantity. The Bay Area Bike Share racks are located closest to the shelter so that they are highly visible to the public.

The current design allows for the flexibility of building future long-term bike storage facilities if they are needed in later phases of the project. The outermost seating cubes have been redesigned as planted landforms with site benches. These landscape areas can be easily removed and replaced with bike storage facilities if/when user demand requires such facilities. The two seating cubes adjacent to the Ferry Shelter remain as seating nodes that provide wind protection.

The Promenade and City View Esplanade have been slightly widened as a result of a change in the dimensions and number of bays of the Ferry Shelter shelter.
WATERFRONT PLAZA

FIGURE 4.3 WATERFRONT PLAZA ILLUSTRATIVE PLAN

1. FERRY SHELTER
2. SHUTTLE LOADING/UNLOADING
3. BUS LOADING
4. PROMENADE
5. CITY VIEW ESPLANADE
6. SEATING CUBES
7. WATERFRONT LOUNGE
8. RAIN GARDEN
9. HISTORIC BUILDING 1

SUB-PHASE APPLICATION 2: SUB-PHASES 1B, 1C & 1E
SUSTAINABILITY

SOILS

The Waterfront Plaza includes three types of planting soils. At the seating cubes, by extruding the planters from the ground plane, a sufficient depth of soil of 60 inches is achieved above the groundwater table to support large-growing trees: transplanted Monterey Cypress trees. The soil type in these seating cubes should match the existing conditions of the trees’ current locations.

In the Rain Gardens, a special bioretention soil mix of 48 inches in depth will be used to ensure adequate percolation rates and filtration during storm events. The Rain Gardens constitute the majority of the planted areas of the Waterfront Plaza.

Other areas planted with groundcover and grasses will require planting soil of 24 inches deep. These softscape areas will be at grade and are not raised planters.

PLANTING

The Waterfront Plaza’s planting palette is made up of California native and drought tolerant plants that will thrive in the climatic conditions of Treasure Island.

The raised planters within the seating cubes contain Monterey Cypress trees that will match the grand scale of Building One and frame views to and from the water. At the same time, the tree canopies provide additional habitat and shade for the plaza below. These existing trees will be transplanted from various locations on Treasure Island. The ground cover within the seating cubes and the planted cubes is a native meadow palette of California grasses and flowering plants. Specific zones of the planted cubes will provide a lawn area for visitors to sit and lounge on.

Within the Rain Gardens, the selection of bioretention plants include native California grasses and water-loving, though drought tolerant, flowering species. The plant variety is needed as the bioretention areas have sloped edges and basin zones that require different characteristics from the plants.

Along the City View Esplanade, the shoreline will be revegetated with coastal native species and native grasses. New Monterey Cypress trees are proposed throughout this coastal edge.

STORMWATER MANAGEMENT

The northern Rain Garden landscape extending from the plaza manages the stormwater from the roof of the ferry shelter and the paved plaza. Native and adaptive plantings take advantage of this water resource and provide additional habitat in a series of detention basins. Set within these basins are additional seating nodes which are accessed from the waterfront esplanade.

The souther Rain Garden will treat stormwater from The Causeway and will perform a critical role in the overall stormwater strategy.

IRRIGATION

The irrigation system includes water efficient measures such as bubblers, subsurface drip irrigation, controllers, flow sensors and rain sensors. In addition, the irrigation system would switch to using recycled water, once the service is available on Treasure Island. An adequate mulch layer with cover the irrigation lines, thus reducing evaporation.
FIGURE 4.5 WATERFRONT PLAZA BIRD’S EYE VIEW

SUB-PHASE APPLICATION 2: SUB-PHASES 1B, 1C & 1E

4 - PARKS AND OPEN SPACE
4.2.2 FERRY TERMINAL

FERRY TERMINAL

Located at the southwest corner of Treasure Island, a new ferry terminal will be constructed to provide service to downtown San Francisco.

As used herein, “ferry terminal” refers to all of the waterside and landside improvements associated with the accommodation of new ferry service to Treasure Island. Waterside improvements include all the functions of ferry service that will occur on or over the water including pier, gangway, float, and breakwater. Landside improvements include the passenger Ferry Shelter in the Waterfront Plaza.

The original schedule for the ferry terminal improvements considered implementation of improvements in two phases; interim improvements to support initial service needs, followed by permanent improvements after the ferry service frequency increased. The current approach does not include any interim improvements and instead provides a ferry shelter that will support and sustain full ferry service operations.

The ferry service will be operated with initial runs at approximately 60-minute intervals. At full build-out of the Project, the goal will be to provide service to downtown San Francisco at 20-minute intervals at peak periods from 5 a.m. to 9 p.m. The ferry terminal will include two side-loading ferry slips (where ferry boat loads passengers) with the capacity to accommodate future full build-out demand (15%-20% of commuters or 930 passengers in the morning and 1,210 passengers in the evening). The land access to the ferry slip includes an access pier, ADA-compliant gangway and float.

Pier
The Pier will provide access from the shore to the gangway and float for passengers arriving and departing Treasure Island by the Ferry. The Pier will be a fixed structure supported on piles embedded deep into the seafloor to the lower soil layers beneath the weak upper layer. The Pier will serve as a waiting area for passengers disembarking from Treasure Island and will have a canopy roof and wind protection as necessary. The Pier will be open to pedestrians walking on the shore promenade to allow over water access and viewing. There will be door on end of the pier where it connects to the gangway to allow loading and unloading passengers. There will be an automated ticket card reader on the pier passengers to tag pay the fare prior to boarding the ferry.

Gangway
The gangway will serve passengers loading and unloading but will only operate in one direction at a time. When the ferry arrives, all passengers will disembark the ferry and clear the gangway before the passengers awaiting to board will be allowed onto the gangway and float. This common practice allows clearing of the vessel prior to loading for the next trip. The gangway will be 90 feet long and a minimum of 8 feet wide and will be either aluminum or steel construction. The gangway will be fixed to the pier and will allow a maximum slope of 1:16 over tides from -0.9 feet (MLLW datum) to 8.3 feet.

Float
The float provides mooring of the ferry boat and access onto the ferry for the passengers. The float will be either steel or concrete, anchored by up to six guide piles and mooring dolphin/fenders. There will be adjustable ramps on the float to provide access onto the ferry. The float will have mooring fittings and access platforms on each side to allow two ferries to moor at the float at the same time.

Breakwaters
To protect the ferry slips and allow ferry service to continue in the exposed wave climate of SF Bay, the Project includes an approximately 200- to 300- foot-wide west-facing basin with angled breakwaters. An approximately 760-foot-long breakwater to the north will be constructed, and an approximately 350-foot-long breakwater to the south will be constructed, at a later date if deemed necessary based upon evaluation of ferry operations with the new pier, gangway, float and north breakwater. For example, if ferry service is interrupted during extremely severe storm events, it may provide no added value to ferry service operations to construct the south breakwater. In addition, the analysis of the value of a south breakwater may need to include consideration of maintenance dredging requirements over several seasons. The breakwaters will terminate on the east side (shore) at the toe of the slope of the existing rock revetment on TI. Both breakwaters will have navigation lights to mark the harbor entrance. Due to potential high waves overtopping the breakwaters, no public access along the breakwaters is proposed. Between 50 and 60 concrete or steel batter piles will support the north breakwater, and 20 to 30 batter piles will support the south breakwater, if built.

Shelter
An open air shelter structure will be located on shore to provide weather protection for passengers waiting to board arriving ferries. This area will serve as overflow for the waiting area on the pier. The Ferry Shelter is described in greater detail in Section 4.2.3. The waiting area accommodates 399 passengers, to accommodate full build out.
1. FLOAT
2. GANGWAY
3. PIER
4. PLAZA
5. SHELTER
6. NORTH BREAKWATER
7. SOUTH BREAKWATER
8. SHORELINE IMPROVEMENTS

FIGURE 4.6 FERRY TERMINAL BIRD’S EYE VIEW
4.2.3 FERRY SHELTER

OVERVIEW
The Treasure Island Ferry Shelter will be located on the central axis of historic Building 1, to which it will act as a welcoming gateway. This location on the island’s western and city-facing shore will afford ferry passengers (residents, tourists, those who work on the island) spectacular views as they wait for the ferry. Its design is inspired by the rigor of Building 1’s architecture and is a site specific response to the marine environment. The Ferry Shelter has been conceived as a light structure which is extremely transparent within the panorama of sea and sky to maintain extraordinary views of the City and Bay Bridge, and in the opposite direction, it clearly differentiates itself from the opacity of Building 1’s Deco-era architecture.

SUB-PHASE UPDATES
The main roof canopy continues to be shown clad in ipe wood and beveled on the underside in all four directions. The roof is now gently sloped to the middle of the structure, allowing hidden drainage and utilities to run down through the nonstructural central row of columns. Skylights have been reduced in number, but made wider, providing a more even pattern of daylight to the patron area. Drainage scuppers punctuating the skylight aperture are obscured by the central structural beam. Ferry Shelter identity signage with the words “Treasure Island” is shown within the fritted pattern of the windscreen glass on the southern end of the west-facing windscreen (versus previous northern location) to increase visibility upon approach from San Francisco. The entire shelter has been shifted further east from the water’s edge. While remaining aligned with the adjacent seating cubes, this provides additional space for circulation and recreation along the city view esplanade.

Ferry passengers and visitors are accommodated behind the windscreen where protection from inclement weather is the greatest. The previously shown interior-facing seating has been modified to provide a concrete ledge cast into the windscreen wall, instead offering a leaning surface for viewing the city skyline. Weather-protected seating is now furnished in the form of freestanding ipe wood benches that articulate the circulation of the covered area. Perimeter seating, previously shown as ipe wood, now exists as formed concrete with inset under-seat lighting. The ticket kiosk enclosures located on either end of the eastern edge of the shelter now feature monitors showing real-time ferry schedule information.
FIGURE 4.7 FERRY SHELTER ILLUSTRATIVE FLOOR PLAN

1. PIER STRUCTURE
2. CITY VIEW ESPALANDE
3. THRESHOLD TO PIER
4. WIND SCREENS
5. PERIMETER SEATING
6. FREESTANDING SEATING
7. TICKETING KIOSK
8. ELECTRICAL PANEL ENCLOSURE
9. WEATHER PROTECTED AREA

FIGURE 4.7 FERRY SHELTER ILLUSTRATIVE FLOOR PLAN

SUB-PHASE APPLICATION 2: SUB-PHASES 1B, 1C & 1E
SUSTAINABILITY

FERRY SHELTER

Given that the Ferry Shelter is an open structure, it is by its nature very operationally sustainable, with energy consumption limited to high output LED recessed lighting in the shelter canopy and under the seating areas at the shelter perimeter, all concealed sources with full cut-off to limit light pollution during the evening hours.

The main structure and cladding materials have been specified for their high durability, low maintenance and resource efficiency. The long lifespan of the zinc roofing system will reduce material waste as its longevity is roughly double that of a typical metal roofing product. Underneath and creating the shelter’s distinctive wood canopy, sustainably harvested ipe hardwood will be allowed to weather naturally. The low concrete wall which supports the laminated and fritted glass windscreen along the north, south and west sides of the shelter will be constructed of locally sourced aggregate and with low fly-ash. Lastly the kiosk enclosure system at each end of the shelter will utilize Trespa panels, which contain up to 70% of softwood cellulose fibers that originate from sustainable forests. Trespa significantly contributes to carbon sequestration due to its wood fiber content, high density and product longevity.
4.2.4 BUILDING 1 PLAZA

OVERVIEW

Building 1 Plaza remains the context and forecourt for Historic Building 1, complementing and respecting the site history, celebrating breathtaking views, and enhancing the use and prominence of one of the most architecturally significant buildings on Treasure Island. Built on an existing parking lot, where the upper portion of the parking area covers an underground garage, the upper tier of the Building 1 runs parallel to the edge of the building, at which point the ground slopes eight feet down to Avenue of the Palms. The elevated plaza remains a world-class destination to enjoy expansive views towards the Bay Bridge across the San Francisco skyline towards the Golden Gate and hills of Marin beyond. The plaza acts as the civic focal point of Treasure Island, designating the site as an “urban hub” and linking the new Ferry Shelter up and through Historic Building 1 to Marina Plaza on the eastern side of the building, and through to the future retail street.

From the Waterfront Plaza, a broad central walkway flanked by historic sculptures is aligned with the axis of the building, drawing visitors towards the upper plaza. The space up towards the plaza is articulated by a grid of date palms that echo the symmetrical organization of the terraces and draw a clear connection to the axes of the building beyond. Where it meets Avenue of the Palms, the first terrace is a stormwater treatment basin filled with lush and productive plant life. Pedestrians continue along the entry towards a second terrace of soft planted lawn, then to a third, crushed stone plaza space with fixed urban benches.

PROGRAM AND ACCESS

Building 1 Plaza invites the public to spectacular views, and provides a range of settings for the user including lawns, benches, urban café tables and moveable chairs. The upper plaza provides a large flexible urban space for civic gatherings as well as a mix of seating for smaller gatherings or individual use, shaded by large umbrellas and palms to protect from glare and define and scale the space. At night, landscape lights will accent these strong geometries of the stairs and sloped walkways and highlight the grid of palm trees, while architectural accent lighting will illuminate the existing structure.

The primary pedestrian route is through the plaza along the walkway, connecting the Avenue of the Palms to the Ferry terminal. Additionally, accessible routes along the two historic walls connect the Avenue of the Palms to the building entrance. Vehicular access is provided via the U-shaped one-way drive aisle, while passenger drop-off is provided at the upper plaza and parallel parking is provided along a portion of the drive aisle. At the upper plaza, pedestrian and vehicular circulation is delineated by a detectable warning edge, while along the historic wall, the plaza is separated from the drive by a four inch curb. Service vehicles will access the basement through existing entries at the building, the entries of which will be re-aligned for safe entry from Clipper Cove Drive and California Avenue, respectively.

SUB-PHASE UPDATES

The organization and purposes of the Building 1 landscape have remained largely the same, emphasizing the strong symmetrical organization of the building and proposed landscape, along with flexible use. A few significant changes have occurred in this design development phase. Whereas the overstructure plaza formerly had a four inch curb to separate vehicular areas, it is now curbless with a detectable warning edge and bollards. This change accommodates the existing slab construction and retains the enhanced paving in that area, simultaneously providing a seamless pedestrian experience and calming traffic. This change serves to better protect the existing slab within the boundaries of the historic condition. In addition to the curb change, runnels are removed to simplify the conveyance of stormwater, and to eliminate redundancy along the historic walls. This removal accommodated the provision of new planters to buffer between pedestrian and vehicular areas.

In the northwest corner of the site, concrete is replaced with an expanded planting area, to guide pedestrian traffic through the northern garden and enhance the user’s experience and safety. Nearby, a bike lane is added and cyclists are separated from the roadway with a planted buffer. This addition is coupled with a planting area along the northern sidewalks, to discourage pedestrians from jaywalking and to enhance the aesthetic value of the sidewalk area.
BUILDING 1 PLAZA

LEGEND
1. ENTRY GARDEN
2. GARAGE ACCESS DRIVEWAY
3. ADA-ACCESSIBLE RAMP
4. VEHICULAR ACCESS + PARKING
5. STORMWATER TREATMENT AREA
6. LAWN TERRACE
7. DECOMPRESSED GRADE TERRACE
8. PEDESTRIAN PATH
9. WATER FEATURE
10. UPPER PLAZA
11. CROSSWALK
12. PLANTER
13. SITE WALL
14. (E) LANDSCAPE WALL TO REMAIN
15. (E) PALMS TO REMAIN
16. PALM GARDEN
17. GRID OF WIND SOCKS
18. LARGE UMBRELLAS
19. STATUES
20. NEW BIKE PATH

FIGURE 4.13 BUILDING 1 PLAZA ILLUSTRATIVE PLAN

SUB-PHASE APPLICATION 2: SUB-PHASES 1B, 1C & 1E

4 - PARKS AND OPEN SPACE 85
STORMWATER MANAGEMENT

The conveyance and treatment of stormwater are integrated directly into the geometry of the site layout, making use of the site condition to practically undergo treatment and narrate the story of water with stormwater planters. A gravity-drained system will run downhill to the west, spilling into a biofiltration swale located at the lowest terrace, and at the main pedestrian entrance for the plaza. Planting will be comprised of native and acclimated species that are adapted to the seasonal variation of rainfall, and will be composed of rushes, reeds, grasses and wildflowers, providing habitat for birds and insects. Along the landscape terraces, grasses replace existing impervious surfaces to reduce runoff volumes, while the remaining runoff is collected.

IRRIGATION

Irrigation water on the site will be provided by island-wide recycled water infrastructure. The need for irrigation will be decreased through the selection of non-invasive, drought tolerant vegetation and landscaping materials that require minimal irrigation. A high efficiency irrigation system, programmed to detect moisture and weather, will respond to need in real-time with a highly sensitive smart controller. An inline drip system will apply water directly to the soil, avoiding overspray and maintaining plant health.

SUSTAINABILITY

SOILS

The existing soil at Building 1 is to be retained and amended where possible to reduce site disturbance, preserve the existing microbiotic structure and subsequent benefits for existing flora, and to reduce the need for off-site import. A carefully designed biofiltration soil will be used in the stormwater garden at the front of the plaza to improve efficiency of the stormwater treatment at the basin. Sand-based structural soil will be used to support the hardscape areas, in order to improve the health and longevity of the plant material. In all instances where it is applicable and feasible, the existing topsoil will be reused on site.

PLANTING

Building 1 is surrounded by a landscape of mature palm trees along Avenue of the Palms, in addition to large eucalyptus, pine and cypress trees along the perimeter and throughout the site. Existing notable plantings are retained where possible to mitigate wind, offer shade, and frame the building. The existing trees add visual value, lend a mature character, decrease the need for imported plant material, and offer habitat at the site. The design preserves large palms along Avenue of the Palms, and anchors the plaza with a new palm grid. If possible, Canary Island Palms will be sourced from the existing island stock.

The planting is to be a selection of non-invasive, drought tolerant vegetation that require minimal irrigation. Placement of these species will enhance the seamless integration of the ground plane with the building, using sculptural massings of plants in the historic and art gardens to frame and scale the building. Additionally, planters along the edges of the sloped plaza orient to the façade of the building and reinforce the central focus of the terraces and plaza.
4.2.5 MARINA PLAZA

OVERVIEW

Considered key in the overall Treasure Island development, Marina Plaza retains its purpose as an area for large and small gatherings, as well as a central passage through the site. Located on the eastern side of Building I, the site transforms an existing parking lot and landscape buffer zone by negotiating the seven foot grade change along the main north-south axis of the site. On any given day, the site experiences large amounts of afternoon shade and wind. The design mitigates these site conditions, optimizing usable space.

A generous open plaza unfolds at the rear doors of Building 1 to reinforce the central spine from the upper terrace, and is framed and defined by masses of Monterey Cypress on either side of the main stair. The design enhances the large expanse of blank façade on the back of Building 1 by providing open café seating along the perimeter of the building and streamlining access and entry points to the building.

At either side of the grade change, garden spaces anchor the axis in the north-south direction, drawing visitors from the street into the Marina Plaza. To the south, a large event space with stage and terraced lawn seating allows for views out to Clipper Cove and Yerba Buena Island, while a sunken terrace garden with ramp access provides a more intimate gathering space. To the north, a stormwater garden echoes the formal geometries of the event space and provides an intimate space for smaller gatherings. A combination of ramps and stairs flank these gardens, allowing easy access from the sidewalk to the main plaza space.

PROGRAM + ACCESS

Marina Plaza provides a number of opportunities for gathering, recreation, and entertainment while protecting existing mature vegetation, mitigating wind, and enhancing the use and prominence of the building. The event space provides a large, sunny area within broad terraced lawns with flexible recreational uses such as concerts and picnicking. Nearby, the sunken terrace garden provides a moment of respite under the canopy of trees, acting as a more intimate space, with flexible furnishing and stunning views out to Clipper Cove.

Movable café tables along Building 1 extend the building program into the landscape, and provide elevated views over the plaza. The design considers the future development of the area, which envisions a patio with broad steps and café seating wrapping around the southern corner of the site adjacent to the event space, providing another desirable area for outdoor dining with southern exposure.

Most pedestrian traffic will flow through Building 1 along the central circulation spine, with visitors coming from the Ferry Terminal through the doors to an overview of the Marina Plaza. Marina Plaza will be accessible from all four corners, with sloped ramps connecting the plaza to the sidewalk at north, south, and east edges of the site and extending from either side of the Building 1 doors to the main plaza space. Future connections are envisioned east towards Avenue C.
MARINA PLAZA

LEGEND
1. POTENTIAL EXTERIOR CHILDCARE AREA
2. EVENT SPACE
3. RAISED PLATFORM
4. FUTURE DEVELOPMENT
5. MAIN PLAZA
6. CAFE SEATING
7. SUNKEN GARDEN W/RAMP
8. STORMWATER GARDEN
9. ADA-ACCESSIBLE RAMP
10. MONUMENTAL STAIR
11. UPPER TERRACE
12. CONCRETE STAIR

FIGURE 4.16 MARINA PLAZA ILLUSTRATIVE PLAN

SUB-PHASE APPLICATION 2: SUB-PHASES 1B, 1C & 1E
SUB-PHASE UPDATES AND SUSTAINABILITY

SUB-PHASE UPDATES

Marina plaza retains its position as a focal point for the Treasure Island development, acting as the main connection between Building 1 and the future retail street, and providing north-south access from Clipper Cove to other island destinations. The stormwater garden at the northern edge of the plaza space has been simplified and retains its functional and programmatic purpose to filter water and provide more intimate garden space for visitors. The sunken garden adjacent to the event space has been modified to offer an accessible sloped walkway, retaining its function as a smaller intimate space with flexible seating, shaded by the filtered canopy. The raised platform, the focal point of the event space, has been modified to define the space and provide access via a sloped walkway. The plaza to the east of the parcel will now be developed during a later phase, and therefore has been removed. In addition to these changes, enhanced pavement is removed to simplify the hardscape palette.

SOILS

A carefully designed biofiltration soil will be used in the stormwater garden at the front of the plaza, to improve efficiency of the stormwater treatment at the basin. Sand-based structural soil will be used to support the hardscape areas, in order to improve the health and longevity of the plant material. In all instances where it is applicable and feasible, the existing topsoil will be reused on site.

PLANTING

The building casts the northern portion of the site in the afternoon shade and can funnel the island’s prevailing westerly wind through the plaza space. Trees are strategically placed to interrupt wind tunnel and provide shelter from the winds. Large eucalyptus, pine and cypress trees remain where possible to mitigate wind, offer shade, and add visual value. They lend mature character to Marina Plaza, offer habitat and decrease the need for imported plant material. Non-invasive, drought tolerant vegetation and landscaping materials that require minimal irrigation are to be used.

STORMWATER MANAGEMENT

A gravity-drained system will be conveyed to the north in the stormwater garden. The planting within the treatment area will be comprised of native and acclimated species that are adapted to the seasonal variation in rainfall and are composed of rushes, reeds, grasses and wildflowers, providing habitat for birds and insects. Landscape areas will replace existing impervious surfaces with permeable surface, and reducing runoff volumes. The majority of the stormwater will be treated on-site, while portions of the runoff will be directed to other stormwater treatment areas.

IRRIGATION

Irrigation water on the site will be provided by island-wide recycled water infrastructure. The need for irrigation will be decreased through the selection of non-invasive, drought tolerant vegetation that require minimal irrigation. A high efficiency irrigation system, programmed to detect moisture and weather, will respond to need in real-time with a highly sensitive controller. An inline drip system will apply water directly to the soil, avoiding overspray and maintaining plant health.
FIGURE 4.18 MARINA PLAZA SOUTH BIRD’S EYE VIEW
4.2.6 CLIPPER COVE PROMENADE

OVERVIEW

On the south side of Treasure Island, the Clipper Cove Promenade will provide access along the marina waterfront, and create a linear open space oriented toward the water and marina activities. The promenade is part of the Bay Trail and will connect on either end to future continuations of the trail system. The promenade ranges in width from 35 to 40 feet and would include a designated two-way cycle track (a protected lane dedicated for bicycles) and a continuous pedestrian promenade. The surface of the promenade would be paved using different materials to visually differentiate the pedestrian zone from the cycle track. Palm trees and planting have been added in a band between the cycle track and the pedestrian promenade to further mark the separation. The proposed grades take into account sea level rise projections. Clipper Cove has reduced wave run-up due to its proximity to Yerba Buena island so the proposed grades are very similar to the existing condition.

Along the nearly half mile long promenade are a series of nodes which relate to the city grid. These areas have been identified for bulb outs in the Treasure Island Streetscape Master Plan to make crossing Clipper Cove Avenue more safe.

SUB-PHASE UPDATES

The extents of the Sub-Phase for the Clipper Cove Promenade are from Palm Ave to Avenue C. This first block of the project highlights some key revisions to ensure a successful, functional and beautiful promenade experience.

In addition to a waterside pedestrian promenade and a cycle track, a continuous sidewalk has been added along the south side of Clipper Cove Avenue. Designated automobile loading zones and short-term parking provide access to the waterfront and to the marina. Ample long-term parking is located nearby.

New bulb outs with access ramps ensure pedestrian safety and convenience. Pedestrian crossing points are located in key locations across the cycle track and have distinctive paving that give the pedestrian the right of way.

The cycle track is now depressed, except at the pedestrian crossing locations, another way to differentiate it from the pedestrian promenade. The median planting between the cycle track and the promenade now doubles as bioretention area, in addition to the planting zones in the bulb outs.
CLIPEPER COVE PROMENADE

1. BUS DROP OFF
2. CITY VIEW BALCONY
3. MARINA OVERLOOK
4. PROMENADE
5. CYCLE TRACK
6. MARINA ACCESS
SUSTAINABILITY

SOILS
The design requires various planting soils. The palms will be provided with a palm soil mix within planted areas and with a structural soil mix within the paving areas. The bioretention areas, at the bulb outs and median will perform with efficient percolation rates and filtration during storm events.

Other areas planted with groundcover and grasses will require planting soil of 24 inches deep. These softscape areas will be at grade and are not raised planters.

PLANTING
The planting palette is made up of California native and drought tolerant plants to promote efficient water use and waterfront habitat. The shoreline edge will be vegetated with coastal native planting that includes small and medium shrubs. This zone is found between the edge of the promenade and the existing riprap where iceplant is currently found.

Large Mexican Fan Palms are proposed along the promenade to continue with the existing identity of the island. This species is also being proposed throughout Treasure Island in other park areas.

STORMWATER MANAGEMENT
The proposed landscape creates green nodes at the bulb outs and a bioretention zone in the promenade’s median using native and adaptive planting species to manage the stormwater locally. These bioretention zones represent the majority of the planted areas on the promenade.

IRRIGATION
The irrigation system includes water efficient measures such as bubblers, subsurface drip irrigation, controllers, flow sensors and rain sensors. In addition, the irrigation system would switch to using recycled water once the service is available on Treasure Island. An adequate mulch layer with cover the irrigation lines, thus reducing evaporation.
FIGURE 4.21 CLIPPER COVE PROMENADE VIEW TOWARDS THE WEST
CULTURAL PARK

OVERVIEW

A ‘cultural park’ seeks to reflect the values and desires of its place: protecting the history and heritage unique to its site; providing activities well-suited for its visitors; and offering opportunities for expression of the local neighborhood’s ever-evolving identity.

The Cultural Park will be a focal point and civic gathering space for the Treasure Island community, providing an idyllic setting for the existing Chapel, as well as a place of refuge in its urban context for both sightseers and Island dwellers alike. The Cultural Park offers flexible open spaces that will stand up to the evolving urban character of later development phases.

As part of a network of proximal open spaces, the Cultural Park shares visual and functional connections with Building 1 and Marina Plaza facilities across California Avenue, a proposed ferry terminal and its associated arrival plaza, and a Cityside Waterfront Park activating the length of the Cultural Park’s western edge, while anticipating the future development urban-scale residential and hotel buildings adjacent to the site. A coincidence of axial connections—north-south along Cityside Avenue, and east-west from the ferry gangway to future residential tower—locate the Cultural Park’s Chapel as central to the Island’s programmatic heart. A spectacular view of the San Francisco skyline, spanning from the Golden Gate to the Bay Bridges, is highlighted throughout the Park’s design.

This community park has great potential for any number of events and activities, given its flexible programming and streamlined functional adjacencies. Given the scale and openness of the central lawn and bosque areas, the Cultural Park can accommodate small or large events, performances, festivals, fitness events, or other local programs. This approach allows the Cultural Park to have the potential to continue its role as an evolving neighborhood’s central gathering place.

SUB-PHASE UPDATES

Further clarity on the functional details of the Cultural Park has streamlined the site’s amenities, fixtures, and materials, while keeping the intent of the initial design intact.

Program areas have adjusted in dimension as required for anticipated scale and use—the deck, in particular, has been modified to improve visitor access and conserve material resources. An iconic signage opportunity is now provided at the central walkway and Chapel entry, allowing the Cultural Park to further serve as a regional destination and community gathering place. Clusters of seating areas enliven the bosque and provide ample opportunities to enjoy the Cultural Park’s incredible views in both sun and shade, whether alone or in group.

The design configuration and material applications of site edges respond to evolving circulation networks, connecting the Cultural Park to the Shared Public Way, Waterfront Promenade, and cycleway and vehicular programs along California Avenue. The Cultural Park’s perimeter also accommodates anticipated future building phases and their requisite access criteria.

Surface materials, lighting, furnishings, and utilities have received careful consideration to ensure project-wide consistency, minimization of environmental impacts, and extended lifespans. Likewise, a greater specificity of plant species enhances the expansive, coastal character of the Park.
CULTURAL PARK

1. EXISTING CHAPEL
2. POTENTIAL CHAPEL TERRACE DECK
3. LAWN
4. PERIMETER WALL
5. PUBLIC WALK WITH SEATING BAYS
6. RAMPED ACCESS TO CHAPEL
7. TERRACED PLANTING
8. SEATING BAYS ALONG WATERFRONT PROMENADE
9. SERVICING AND UTILITIES
10. FUTURE HOTEL SITE - ILLUSTRATIVE INTERIM IMPROVEMENTS SHOWN

FIGURE 4.22 CULTURAL PARK ILLUSTRATIVE PLAN
SUSTAINABILITY

SOILS

Preliminary visual assessments have indicated that existing site soils contain beneficial organic content and are of a sandy constitution, which is ideal for optimal drainage. These soils will be protected during construction and supplemented with imported soils that achieve required quantities and levels of key chemicals and nutrients.

Uncompacted on-site and imported soils will be amended as necessary to provide a fertile, well-draining medium for vigorous plant growth.

PLANTING

A palette of California native and adaptive species that are well-suited for the waterfront climate informs plant selections across the site. Selected species are known to be tolerant of sea salt spray, low irrigation, minimal maintenance, and urban impact, yet achieve the beautifully windswept aesthetic of the Northern California coastline.

A formal bosque of Melaleuca quinquenervia (broad-leaved paperbark) trees encircles three of the site’s four sides, while an informal clustering of evergreen Cupressus macrocarpa (Monterey cypress) trees lines the fourth, creating a sense of enclosure protected against prevailing winds. Filling the Park’s central area is a flexible, open lawn—this feature offers spaces for active or passive recreation and small or large events. Broad terraces stepping down from California Avenue to the open lawn will be planted with drifts of hearty, low shrubs and groundcovers. These species are selected as companion plants to Monterey cypress to create a rich evergreen plant community evocative of the coastal bluffs to which the trees are endemic.

STORMWATER MANAGEMENT

All stormwater will be collected and treated on site. Porous surfaces—including decomposed granite, concrete unit pavers, and turf—cover the majority of the site, causing little to no impact to the broader watershed treatment area of ‘Drainage Area B.’

IRRIGATION

Water-saving devices will be used throughout the irrigation system, including bubblers, low-flow drip lines, and minimal rotary spray. Irrigation lines connect to a civic water main in the right-of-way located behind the Chapel structure. The irrigation system is linked electronically to satellite weather data so that microclimate conditions can be monitored and water use adjusted accordingly. Water use can be further reduced or, in some areas, eliminated, after an appropriate establishment period.
FIGURE 4.24 CULTURAL PARK VIEW FROM PUBLIC WALK

SUB-PHASE APPLICATION 2: SUB-PHASES 1B, 1C & 1E
4.2.8 CITYSIDE WATERFRONT PARK

OVERVIEW

Situated on the Western edge of Treasure Island with dramatic views of the Bay Bridge, downtown San Francisco and the Golden Gate, the Cityside Park is envisioned as an iconic destination that will draw visitors and residents alike to walk, run, ride and linger along this spectacular waterfront. Beginning with creation of the island and the Golden Gate International Exposition, the western shore of the island was envisioned as a place of arrival and drama with the original ferry terminal and the ‘Magic Carpet’ gardens flanking the ‘Portal of the Pacific’ gateway and opening to the Tower of the Sun. With the onset of WWII and the transition from pageant to Naval Station the waterfront remained largely open and utilitarian. Today, the waterfront is defined by its rocky shore, a large lawn area, the Avenue of the Palms, parking areas, residential areas and unoccupied Navy buildings.

When complete, the entire Cityside Waterfront Park will be a 24 acre open space, 300-feet wide from the shore to Cityside Avenue and around three quarters of a mile in length. A concept design was developed for the entire park to inform the programming and design of the areas within Sub-Phases 1B, 1C and 1E, which includes the two southern-most blocks (6.3 Acres) and will mark the return and reinvention of the waterfront as a truly magical public space.

The Cityside Waterfront Park takes its cue from several of the Bay Area’s most cherished waterfronts. Crissy Field in the Presidio National Park was also a former military base reimagined as a place that brings history, culture, ecology, and recreation together with the clarity and restraint that befits such an incredible setting. Legible at the urban scale but distinguished along its length by a variety of activities, the park is conceived as one...
landscape with many experiences. Envisioned as an open and gracious space with intimate moments of respite, the design is informed by rustic and urban qualities. Rustic in the sense that the character of the landscape is defined by its scale, its wind swept rugged shore and the goal of creating a landscape that is ecologically appropriate and sustainable. Urban in the sense that it is part of the City and needs to provide for a wide range of cultural, social and community activities and events and should reflect a contemporary vision of urban life.

A series of signature windrows extend from the waterfront promenade to the northeast through the Cityside neighborhood to the Urban Farm and parklands beyond. Oriented to deflect and reduce the prevailing northwesterly winds, the double rows of Blue Gum trees are both utilitarian and formal, structuring space, framing views and defining a series of large rooms, each of which has a specific program and identity. A row of palms flanks Cityside Avenue at the back edge of the park, recalling the historic Avenue of the Palms, while the waterside edge is defined by a generous promenade that undulates gently along the shore, providing a variety of experiences and subtle shifts of view as one moves along the waterfront. Small overlook areas with a variety of seating types are set within the coastal strand between the promenade and shore.

The first windrow space is envisioned as a flexible event plaza with a simple, open paved area and a double row of trees. The plaza will be designed to support small to medium sized events and will include site furnishings, lighting and seating areas along with power and water for events. Moving north, The Bowl is distinguished by a large open lawn with native coastal scrub plantings along its back edge. The scale and simplicity of the space will allow for a wide range of activities including light recreation, on-leash dog walking, picnicking, and larger community events and gatherings. A paved area situated along the promenade will provide a space for temporary stages, movie nights, etc. The second windrow plaza at the terminus of 6th street is programed as a BBQ and large group picnic area. Set in the lee of the windrow trees and adjacent to the lawn, the picnic plaza will include groups of picnic tables, BBQ facilities and seating areas with wonderful waterfront views.

SUB-PHASE UPDATES

The following updates, additions and revisions to the Cityside Park Design have been made based on comments received during the Major Phase Application review; development of the design and integration with shoreline design and geotechnical improvements. All of the programmatic elements and park circulation included as part of the Major Phase submittal have been retained and enhanced.

Stormwater Treatment: The most notable refinement is related to the integration and development of stormwater treatment requirements for the Cityside neighborhood. For more information regarding the function and design of the stormwater treatment areas refer to the description below and the Stormwater Control Plan submitted as an appendix to this Sub-Phase Application.

Promenade Overlook: A modest scaled overlook composed of a series of terraces has been added slightly north of the 4th Street event plaza where the promenade shifts closer to the waterfront. As a distinct element the overlook will be both a
destination and a landmark that defines space and frames views. At approximately six feet in height the overlook will create a wonderful spot for people watching, and an opportunity to get up above the promenade and the Bay.

Promenade Design: The width, layout and design of the waterfront promenade has been further refined and coordinated with the City's access coordinators. A dedicated bike path from the Waterfront Plaza will connect diagonally across the south edge of the park with the Class 1 bike path along Cityside Avenue and will be separated from the pedestrian zone by a contrasting and textured paving band. As part of the Bay Trail, the promenade will be a generous multi-use path that includes a mixed bike/pedestrian zone and a dedicated pedestrian only zone. The areas will be demarcated with markers and signage integrated with the paving.

Shoreline Design: The shoreline design has been refined and coordinated to create a more intricate and inviting waterfront edge while addressing shoreline protection and engineering requirements. A small open area has been provided at the interface with the Waterfront Plaza to provide for a potential Bike Rental concession.

Infrastructure and Utilities: Screened utility areas have been incorporated in the vicinity of the 5th and 6th Street plaza areas to accommodate island-wide and park electrical services, irrigation equipment, sanitary, and stormwater infrastructure. The areas have been carefully integrated with the park design and will include a 5 – 7 foot mesh panel system that will screen and secure the utilities.

The Event Plaza, BBQ Plaza, site furnishings, lighting, signage and other park programs have been further developed and refined.

**SUSTAINABILITY**

In addition to the stormwater management functions described below, Cityside Park will contribute to the overall sustainability of Treasure Island by providing recreational and community space, reducing water use with the use of drought tolerant and climate adapted plant species and water efficient irrigation systems. The infrastructure plan includes provisions for recycled water for use in the landscape thereby eliminating the use of potable water for irrigation. The park is composed of a diverse palette of native species in combinations that are uniquely adapted to the soil and climate of Treasure Island and is designed to provide habitat for migratory songbirds and pollinators. Long-term maintenance considerations including waste reduction and organic landscape management are an integral part of the design.

**SOILS**

Much of the park area is currently paved or includes existing structures and a modest amount of fill is required to establish final park elevations. Topsoil from the existing lawn area will be stripped, stockpiled and reused and new landscape soils will be provided as required for each planting area and type. The soils will be pre-blended and designed to reduce the need for future inputs or fertilizers. Refer to the soils plan included with the park design documents for more information regarding soil types and depths.

**PLANTING**

As the first of four phases within Cityside Waterfront Park this is an opportunity to showcase sustainable landscape planting strategies. The proposed design includes a range of plant typologies for people to use and experience, creating habitat for migratory birds, and filtering stormwater. Cityside Waterfront Park celebrates resiliency through the selection drought tolerant plants to reduce water consumption, native species that will attract butterflies and birds, and vegetation with manageable scale and habit that require little maintenance – all of which are potential public educational opportunities. Treasure Island’s unique climate calls for corresponding plant species that will thrive in the conditions of wind, fog, and exposure to salt-spray. Climate adapted tree species including Monterey Cypress, Coast Live Oak, White Alder and Blue Gum are located strategically to block wind and frame views. The understory planting is divided into distinct zones based on proximity to the waterfront, use, and ecological benefit and maintenance requirements. Exemplary species for each zone are included in the technical appendix of the Sub-Phase application.

**STORMWATER MANAGEMENT**

A holistic design approach that includes a series of seasonal wetland/rain gardens has been carefully integrated into the back edge and southern area of the park. As a type of seasonal wetland the stormwater gardens will provide a naturalistic backdrop to the more formal and programed areas within the park and will create habitat for migratory songbirds and pollinators. Lift stations will lift the required treatment flows to the park elevation from the storm drain system. The treatment flows will then be distributed to two primary treatment areas and that are composed of a forebay distribution and flow control structure, a channel, and a series of biofiltration areas. Water will pool within the treatment areas for 24-48 hours and will filter through the soil profile and a sub-drainage system before flowing back to the storm drain system and discharging to the Bay. The stormwater gardens will be enclosed with a low 3-foot mesh panel fence system set within planting areas.

**IRRIGATION**

A new irrigation system will be provided throughout the park. The system will be designed to use recycled water and the majority of the system will utilize drip irrigation, with the exception being the recreational/event lawn. The system will utilize centrally controlled water efficient technology including soil moisture sensors and smart controllers to reduce and manage water use.
FIGURE 4.27 CITYSIDE WATERFRONT PARK VIEW TOWARDS BAY BRIDGE