Candlestick Point Streetscape Master Plan

FINAL FOR APPROVAL

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1. INTRODUCTION
1. INTRODUCTION

Purpose Of This Document

This Streetscape Master Plan presents an overall vision for the streetscape and public realm in Candlestick Point. A complementary Streetscape Master Plan for Hunters Point Shipyard will be prepared and submitted to the City at the same time that the first Major Phase application for development of Hunters Point Shipyard is submitted to the City for approval.

The Streetscape Master Plan furthers place-making and identity building for the project master plan, the surrounding community, and the City as a whole. The plan also positions the streetscape as an integral component of an innovative, performing landscape, and welcoming public realm by establishing guidelines for furnishings, paving, landscaping, stormwater management, sidewalk built-outs and other streetscape elements.

Where applicable, guidelines from the Better Streets Plan and City standards have been incorporated into this document.

Project Background

The Candlestick Point and Hunters Point Shipyard areas along the Bayview waterfront total 702 acres of land in the southeast portion of San Francisco. Redevelopment of these two areas, which are largely underdeveloped and separated from the urban grid of the city, represents a rare opportunity to create an entirely new shoreline community within the Bayview Hunters Point community featuring: waterfront parks, a number of distinctive residential neighborhoods and a much needed injection of commercial and retail uses.

The combined project areas include: the Candlestick Point State Recreation Area; an aging NFL stadium owned by the City and County and home to the San Francisco 49ers; the Alice Griffith public housing development; and a decommissioned Naval Shipyard with dilapidated structures for ship repair, piers and drydocks, and storage and administrative spaces. A number of former Navy buildings are currently being used as artist studios and by light industrial tenants.

Bayview residents have been long at work in establishing the overall vision and goals for revitalization for the Bayview Hunters Point area, which includes both of these sites, beginning with the 1969 Hunters Point Redevelopment Plan, the 1997 Hunters Point Shipyard Redevelopment Plan, and the 2006 Bayview Hunters Point Redevelopment Plan. In 2007, the San Francisco Board of Supervisors endorsed a Conceptual Framework that set forth goals and principles to govern the development of the Candlestick Point - Hunters Point Shipyard Phase 2 Plan. Implementation of the Project included amendments to the Bayview Hunters Point and Hunters Point Shipyard Redevelopment Plans, the San Francisco General Plan and the San Francisco Planning Code. City staff prepared an Environmental Impact Report (EIR) on the proposed Project that was certified by the Planning and Redevelopment Commissions on June 3, 2010. The Planning Commission also approved Design for Development (D4D) documents to serve as the Project zoning code. The D4D includes specific standards and guidelines, including site coverage, building height and bulk, setbacks.

On August 3, 2010, the Board of Supervisors adopted Redevelopment Plan Amendments, General Plan Amendments, amendments to the Planning Code, Zoning Map and others necessary plans and implementing tools for Project implementation, including Design Review and Document Approval Procedures (DRDAP).

Requirements of the DRDAP include the preparation of Streetscape and Signage Plans to guide design of the public realm and the submission of Major Phase and Sub-Phase Applications that detail project design for specific geographic areas at each step of the development’s progress.

Project goals first articulated in the Conceptual Framework, including the development of job-creating uses, improvement of existing parks, as well as tangible physical and economic benefits to the Bayview Hunters Point community, a long underserved and physically isolated part of San Francisco, may now be realized.

Site Location and Context

The Candlestick Point and Hunters Point Shipyard project sites are located approximately five miles south of downtown San Francisco in the southeastern part of the City. The total acreage of the two sites is approximately 702 acres, excluding the Yosemite Slough restoration lands.

As indicated to the right, both sites have extensive shoreline frontage along the San Francisco Bay to the east and south, the South Basin and Yosemite Slough watershed which separates them, and India Basin to the north of the Shipyard. Hunters Point Hill and Bayview Hill Park provide natural geographic limits to development and while it was operational. Subsequent to its closure in 2001, the Shipyard provided the major source of employment for the Bayview / Hunters Point neighborhood while it was operational. Subsequent to its closure in 2001, the Shipyard provided the major source of employment for the Bayview / Hunters Point neighborhood while it was operational. Subsequent to its closure in 2001, the Shipyard provided the major source of employment for the Bayview / Hunters Point neighborhood while it was operational.

The Candlestick Point and Hunters Point Shipyard project sites are separated from the urban grid of the city, represents a rare opportunity to create an entirely new shoreline community within the Bayview Hunters Point community featuring: waterfront parks, a number of distinctive residential neighborhoods and a much needed injection of commercial and retail uses.

Bayview Hill Park creates a natural geographic limit to development and a buffer to Highway 101 to the west of the Candlestick Point site. This City park has trails which overlook the entire Candlestick Point site and provide panoramic views of the Bay. Part of Hunters Point Hill is currently being developed as both the Hilltop and Hillside Phase I developments of the Hunters Point Shipyard project. The southeastern portion of the Hunters Point Hill is being developed as a park, which will link into the proposed Shipyard Phase II development.

Candlestick Point is the current location of Candlestick Park (the home stadium of the San Francisco 49ers NFL team), the Candlestick Park State Recreation Area (CPSRA) and the Alice Griffith public housing development. The Shipyard is a former U.S. Naval Shipyard, which was operational between World War II and 1974, and is currently accommodating some artist studios and light industrial uses on a portion of the site.
1. INTRODUCTION

The Hunters Point Shipyard provided the major source of employment for the Bayview / Hunters Point neighborhood while it was operational. Subsequent to its closure, economic opportunity has declined in this part of the city as the site has remained largely unused since. Both the Candlestick Point and Hunters Point Shipyard projects will bring improved street and transit connections to the area, along with new employment uses that will substantially increase the community’s economic activity.

To take advantage of this waterfront location, which provides the potential for some of the most significant open space area in the City, a major shoreline park will be created. New public connections to the waterfront will be provided. Further, a plan to restore the Yosemite Slough watershed, which feeds into the South Basin, will allow for an integrated park area to be created which extends from the CPSRA and includes the South Basin, Yosemite Slough and the southern shoreline of the Shipyard.

Project Overview

The Hunters Point Shipyard and Candlestick Point areas will rejuvenate and integrate with the existing Bayview / Hunters Point neighborhood to create a vibrant mixed-use district that provides a major focal point to the shoreline area of southeast San Francisco.

Development will be compact, provide a mix of land uses and be oriented to the transit stops along the new bus rapid transit (BRT) line which will serve the area with frequent transit service. There will be market-rate and affordable homes, community services, regional and neighborhood commercial retail, research and development space (R&D), a hotel, a performance arena, and an expansive waterfront park system that extends along the entire shoreline of Candlestick and the Shipyard.

Identifiable neighborhood districts will be created that will each have distinctive characteristics. These neighborhoods will be woven together to Bayview / Hunters Point by an open space network, pedestrian pathways and landscaped streets that connect to the existing Bayview / Hunters Point street grid. Thus, convenient access will be provided between the new neighborhoods, Bayview / Hunters Point and the waterfront park system. All development will be based on the principles of sustainable building.

The illustrative site plan and overall development program that emerges from this vision are shown to the right. The program for the two sites includes 10,500 residential homes, 250,000 sq ft of neighborhood retail, 635,000 sq ft of regional retail, 3.15 million sq ft of office and R&D space, a hotel, arena, artists’ studios, community facilities, and a 328 acre open space network.
2. CONCEPTUAL FRAMEWORK
2. CONCEPTUAL FRAMEWORK

2.1 SITE INFLUENCES

Site Influences

Every site in the city is affected by an arrangement of influences that evoke memories, give character, and define possibilities. Such influences might be subtle or overt, physical or symbolic, specific or subtle, but together they tell a story of place that can inspire design that is truly rooted in place, responsive to history, and open to future.

Candlestick Point is rich in history and culture, ecology, and physical influences, offering touchstones for creating a unique streetscape design.

Combining these site influences with the development master plan for Candlestick Point creates a distinctive conceptual framework for the public streets on the site. This framework underlies a unique story of place and identity that is expressed with identifiable neighborhoods, opportunities for special moments, and integrated infrastructure systems.
2. CONCEPTUAL FRAMEWORK

2.2 NEIGHBORHOOD CHARACTER

Neighborhood Character
Defining neighborhoods and creating a legible urban environment that creates a sense of place is a particular challenge in large redevelopments. Given its scale, it is critical that Candlestick Point be perceived as a cluster of neighborhoods, each with its own character yet part of a cohesive whole.

There are four distinct neighborhoods within the Candlestick site: Alice Griffith, Candlestick North, Candlestick Center and Candlestick South. A unique physical character is envisioned for each neighborhood, which will be defined through building scale and massing, architectural design, parks and public space, including the streets.

Alice Griffith
Alice Griffith will be a predominantly residential neighborhood serving mixed-income households with a diverse range of housing types. Buildings will generally be four to five stories along streets, and two and three story townhomes along shared public ways. Building façades will be articulated in order to maintain a fine-grained scale.

The focus of the community is the centrally located community park that stretches almost the length of the neighborhood. The existing grid of streets will be extended through the site, thereby connecting the Candlestick Point community back into the larger Bayview fabric and linking the Bayview community to the water. The streetscape in Alice Griffith will reinforce the connections between the new and existing communities, and introduce natural elements to build connections to the expansive bayside open spaces.

Candlestick North
Candlestick North is a compact mixed-use community with the greatest number of homes in Candlestick, animated neighborhood streets, engaging parks, and a main street filled with shops and services.

The neighborhood contains a mix of low-rise, mid-rise and high-rise mixed-use and residential buildings that frame and focus civic life on the parks and streets. Mixed-use buildings along the main street (Ingerson Avenue) create an animated retail atmosphere. Eight to ten story residential buildings frame the Bayview Gardens Wedge Park, while shorter residential buildings line both park streets (Egbert Avenue and Earl Street) and the central Candlestick Community Park.

A tower at the corner of Ingerson and Harney is strategically located to overlook the Candlestick Community and Wedge Parks, and to emphasize key intersections within the plan. Low-rise residential buildings make up the majority of remaining buildings, including two and three story townhomes along mid-block breaks that establish a more intimate pedestrian scale. Additional retail opportunities are located in the bases of buildings at the BRT stops on both ends of the community and along the Wedge Park.
2. CONCEPTUAL FRAMEWORK

2.2 NEIGHBORHOOD CHARACTER

Parks and open spaces are plentiful in Candlestick North; almost all blocks are adjacent to open space. The Bayview Gardens Wedge Park and State Recreation Area surround the bay sides of the neighborhood and a three-acre Candlestick Community Park will be located near its center. Two “Park Streets”, Egbert Avenue and Earl Street, run perpendicular through the neighborhood. The park streets provide breathing room within the plan, while serving as sustainable elements. The parks meet the needs of residents and visitors, and offer a distinctly urban character compared to the more naturalized character of the State Recreation Area.

Candlestick North streets vary considerably in character. The dynamic main street (Ingerson Avenue) has on-street parking and broad sidewalks with plaza zones. Ingerson is designed to accommodate high pedestrian and bicycle traffic, in addition to automobile uses. The Egbert Avenue and Earl Street parkways run through the center of the neighborhood, linking the adjacent communities of Alice Griffith and Candlestick Center and providing views to the Bay. Aerialus Walker Drive is the main truck and auto route through the development. It has large sidewalks, medians, bike lanes, and parallel parking to buffer residential uses. A BRT street runs on Harney Way along the edge of the north edge of the Wedge Park then northward on Egbert Avenue to Aerialus Walker Drive, linking Candlestick to the Shipyard and the Bayshore Coltrain Station.

Local streets have bulb-outs, ample pedestrian crossings, and other traffic calming measures. Generous, tree-lined sidewalks and building setbacks provide a stoop or terrace transition between homes and the street. Share public ways at mid-block create additional linkages to the Bay. The streetscape in Candlestick North will provide havens for pedestrians and extend the park to every door.

Candlestick Center

Candlestick Center is the heart and focus of activity for Candlestick. It is a mixed-use neighborhood with regional shops and services, offices, hotel, public uses and residential low-rises.

Candlestick Center is comprised of 635,000 sq ft of mixed-use regional retail in a variety of forms ranging from small commercial retail units (CRU’s) along the two main streets – Ingerson Avenue and Harney Way – with secondary uses above, to larger format stores accessed by internal streets and pedestrian mews. The scale of the large format stores will be reduced through wrapping with other uses and / or fenestration. Above retail, uses may include residential, office space, a hotel or additional commercial space.

A performance arena is envisioned to anchor the neighborhood, sitting at the corner of Ingerson Avenue and Harney Way. This important corner will have a public plaza reinforced by surrounding buildings with distinguishing architectural features and / or scale.

The public realm will have a very urban flavor. Comprised of pedestrian oriented sidewalks and mews, plazas and courts, these spaces will offer a range of scales and characters. Those along the main streets and at key intersections will be larger and livelier, while others at the interior of the site and along pedestrian mews will have a more intimate scale and character. A BRT plaza is included as an extension of the Bayview Gardens Wedge Park into the neighborhood. The plaza may have kiosks and small vendors, as well as ample seating, public art, and landscaping. All plazas will be fully accessible to the public, as are streets.

Two mixed-use main streets, Ingerson Avenue and Harney Way, wrap the edge of the site. On the eastern edge, Ingerson Avenue has 2 travel lanes and 2 lanes of parking. On the southern edge, Harney Way is a boulevard with 2 vehicle travel lanes and parking on the south side and 2 BRT travel lanes on the north side. Internal retail streets have 2 travel lanes and 2 parking lanes. Most service access points are located on these streets. Aerialus Walker Drive, an arterial street, lines the western edge of the neighborhood and is anchored primarily by a multi-level parking structure, which will be screened and made visually interesting.

Both a local and regional destination, Candlestick Center will be an active place, defined by authentic urban streets, not contrived “lifestyle” environments. Streetscapes will reinforce the streets as the core of the public realm and settings for both lively programs and unexpected encounters.

Candlestick South

Candlestick South derives its character primarily from the surrounding Candlestick Point State Recreation Area (CPSRA). A mix of low-rise and high-rise buildings are complemented by a fine grained streets and lanes system that links residents to the Mini-wedge Community Park, Bayview Gardens Wedge Destination Park, and the surrounding CPSRA.

Mixed-use buildings define the southern half of Harney Way creating a vibrant retail street. The bulk of the neighborhood is comprised of low-rise flats and townhomes. Both wedge parks are framed with strong street walls to help define the spaces, while townhomes or flats border the CPSRA. Up to five high-rise towers punctuate the neighborhood with extraordinary views to the Bay, while serving as visual landmarks.

The Mini-wedge Community Park forms the heart of the community and complements the larger Bayview Gardens Wedge Park within Candlestick North. The Mini-wedge is oriented to focus views to the CPSRA beach and the point of land that gives Candlestick its name. The community’s eastern and southern edges are wrapped by the CPSRA, creating views to the bay and easy access to recreation.

A defining element of this community is its mixed-use main street, Harney Way. This primary commercial street for this community will be a retail boulevard with dedicated bus rapid transit (BRT) lanes in each direction and a vehicle travel lane in each direction. Other streets in the community are local serving, and at mid-block there are shared public ways offering greater connectivity to the parks and water’s edge.

Surrounded by green on three sides, Candlestick South will be a neighborhood set within the shoreline park. It is imagined as place defined by its green setting, one in which non-traditional streets promote ecological balance and prioritize community over cars.
2. CONCEPTUAL FRAMEWORK

2.3 HISTORY AND CULTURE: SPECIAL MOMENTS

Each neighborhood will have a special place (e.g., neighborhood park) and an important street (or streets) which lead to the water. The interconnected network of public spaces is a connective tissue and a tool to develop the character for each neighborhood.

Each place becomes the opportunity to develop narratives (historic, cultural, etc.) through wayfinding or artwork installations.

Special places, neighborhood parks, important streets, such as The Spine and retail streets, view corridors and points of contact with the waterfront become potential locations and opportunities for art installations to be embedded in the overall streetscape plan. These special moments will further be designed in Sub-Phase submittals.

Expressions of special moments may include:

- Sculpture
- Narratives (historical, cultural, etc.)
- Wayfinding devices
- Site artifacts and “found objects”
- Landscape installations and environment
- Lighting
- Public pedestrian infrastructure
- Bridge opportunities

LEGEND

- Neighborhood Parks
- Recreational Areas
- Waterfront Parks
- Dockside Waterfront
- Special Streets
- Retail Streets
- Waterfront Walk
- Special Open Space Moments
- Special Waterfront Moments

Figure 2.2 – Special Moments

<insert diagram here>
3. STREET TYPOLOGIES
3. STREET TYPOLOGIES

3.1 STREET TYPOLOGIES

A framework of streetscape typologies establishes order and hierarchy in Candlestick Point’s streetscape by relating streets of similar character and function together.

In many cases, the CPHPS2 streetscape typologies directly overlap with typologies in the Better Streets Plan, but in cases such as The Spine, multiple Better Streets Plan categories will exist in the single street typology, as it is the role of The Spine to have a singular and consistent character through Candlestick Point and Hunters Point Shipyard. Specific references to Better Streets categories are made on the following Streetscape Matrix.

As outlined on the next page, Street typology design narratives inform how streetscape elements are selected, arranged, and detailed. Each streetscape typology has unique characteristics that relate to the overall neighborhood vision and are rooted in unique site influences.
3. STREET TYPOLOGIES

3.1 STREET TYPOLOGIES

THE SPINE
Iconic and Civic Scaled

The Spine is comprised of several typologies (Residential, Commercial, Park), which are unified as a main thoroughfare by a distinctive design. The Spine is a place “to see and be seen” and provides a special identity for Candlestick Point and Hunters Point Shipyard.

Better Streets Plan Typology Analogs:
- Civic (Ceremonial)
- Boulevard

RESIDENTIAL STREET
Consistent and Calm

Residential streets are calm streets to set neighborhood life and engagement. Each neighborhood will have unique landscaping, paving details, and other streetscape elements that will create distinctive neighborhood streetscapes.

Better Streets Plan Typology Analogs:
- Residential Throughway
- Neighborhood Residential

COMMERCIAL
Energetic, Colorful, and Engaging

Embedded with the rich sports history of Candlestick Park, a collection of flexible spaces, programmed for a multitude of activities, commercial streets and open spaces can provide spaces for concerts, outdoor films, and other community events.

Better Streets Plan Typology Analogs:
- Commercial Throughway
- Neighborhood Commercial

PARK STREETS
Diverse, Expressive, and Active

Park Streets are special landscape corridors to connect parks and lead the public to the waterfront. Wide swaths of landscaping along Park Streets provide opportunities for recreation and stormwater management.

Better Streets Plan Typology Analogs:
- Parkway
- Park Edge

PERIMETER STREETS
Visually Porous and Pedestrian

Evening walks, a jog or a bike ride, the place to relax and “watch the water”. Perimeter Streets are another design opportunity; to blend the built and natural environments.

Better Streets Plan Typology Analogs:
- Neighborhood Residential
- Park Edge
- Shared Public Way

SHARED PUBLIC WAYS
Intimate, Privately Designed

Privately developed, with a public easement, shared public ways may have flower stands, small cafes, and other amenities. Predominately a pedestrian only street, shared public ways also provide vehicular access when built as a mid-block laneway.

Better Streets Plan Typology Analogs:
- Shared Public Way
3. STREET TYPOLogIES

3.2 THE SPINE CHARACTER

The Spine is the civic backbone of the new neighborhoods, a city-scale street that connects to the surrounding community and provides a unifying link between Hunters Point Shipyard and Candlestick Point. Akin to Market Street and Van Ness Avenue in the center of the City, The Spine visually creates consistency and makes connections with iconic and bold design elements. Using streetscape elements that are engaging, dynamic and exclusive to The Spine, the street becomes an instantly recognizable and organizing element in the public realm.

Functionally, the Spine links the major open spaces and special places, and defines the northern and southern gateways, making it the most travelled street. The Spine is also the most multi-modal street in Candlestick Point with BRT, cars, bus, bike and pedestrian networks all uniquely designed to help way-finding between the multiple neighborhoods and special places.

Streetscape elements on The Spine reflect the civic importance of the street. The lighting, landscaping, paving, and furniture are bold and instantly recognizable as unique in the overall public realm. The coniferous trees are the tallest and the most unique, punctuated by lights that are similarly scaled. Together, they make The Spine immediately visible in the landscape of the community.

Complementing this verticality is a potential special materials treatment for The Spine, a patterned paving with a unique and special graphic inspired by the Dazzle painting schemes from pre-radar era Navy ships. Streetscape elements such as landscape planters, furniture and biofiltration basins along The Spine could also take on the curves and contours of the Dazzle patterns thereby reinforcing the street’s unique visual identity. Elements of The Spine will also be incorporated in the future Slough bridge design, further supporting the connection between Candlestick Point and Hunters Point Shipyard.

Spine Intensities

The Spine has varying degrees of intensity. “Spine Full” applies to segments of The Spine within denser, more active areas of the development, such as commercial corridors. “Spine Light” applies to the project entry roads and less-developed areas between Candlestick Point and Hunters Point Shipyard. “Spine Light” may have different and/or fewer streetscape elements than “Spine Full”. Lights, trees and other design elements may remain unchanged between typologies to provide consistent and uniform character along the length of The Spine.
3. STREET TYPOLOGIES

3.2 THE SPINE CHARACTER

Figure 3.2 - Spine Intensities

LEGEND
- The Spine Full
- The Spine Light
- Slough Bridge
- Special Moment
- Gateway
4. STREETSCAPE ZONES
4. **STREETSCAPE ZONES**

4.1 **SIDEWALK ZONES**

**Sidewalk Zones**

The sidewalk consists of 3 primary zones: Frontage Zone, Throughway Zone, Furnishing Zone, Edge Zone. Each zone has a distinct functional role and set of design considerations.

1. **Throughway Zone**: The portion of the sidewalk for pedestrian travel along the street. The sidewalk throughway’s zone shall be at minimum, 6’. At the time a Sub-Phase Application is submitted, OCCI may request that the developer grant a public easement up to a maximum of 2 feet within the 10’ residential setback to create an 8’ throughway. Widths vary between 6’ and 12’.

2. **Furnishing Zone**: The portion of the sidewalk used for street trees, landscaping, biofiltration, transit stops, street lights, and street furniture. Widths vary between 4’ and 8’.

3. **Edge Zone**: The area used by people getting in and out of vehicles parked at the curbside. The edge zone may have streetscape elements, given 4’ access area remains from curb to throughway near the centerline of each street parking space. The edge zone includes a courtesy strip and is 24” in width for parallel parking and 32” for angled parking.

**Bulb-outs**

Streets in neighborhoods are both connections between places and the setting for community. Bulb-outs create more sidewalk space at selected locations and provide an opportunity to enhance the street as an important public space in the neighborhood, while also creating a safer pedestrian environment.

Furnished bulb-outs in Candlestick Point are organized in typologies that respond to their streets or relationship to the Bay. Bulb-outs on paths to the water may incorporate elements that reinforce connection to the water, without necessarily using water. Bulb-out design should create special moments in the streetscape and provide visitors with memorable walks to the Bay.

Unfurnished bulb-outs in commercial areas should be developed by adjacent retailers to enhance surrounding food and beverage provisions, and provide places for enjoying the City’s street life.

Figure 4.1 – Sidewalk Zones
4. **STREETSCAPE ZONES**

4.1 **SIDEWALK ZONES**

**Bulb-Out Location and Sizing**

Conceptual bulb-out sizes and locations are shown to the right. Standard bulb-outs are the length of 1 parking space, while extended bulb-outs are the length of 2 spaces.

Corner bulb-outs are recommended for pedestrian safety at key intersections and along three pedestrian routes to the waterfront where they function as an extension of the waterfront park into the neighborhood.

Specific location and sizing of bulb-outs will be determined at Sub-Phase submittal phases.

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**Figure 4.2 - Bulb-out Map**

[Map showing bulb-out locations and sizing]
4. STREETSCAPE ZONES

4.2 STREET ZONES

BRT Lanes & Cycle Track

The BRT and cycle track will have distinctive colors, with painting or colored concrete, to increase pedestrian safety and for ease of navigation. Exact color and application method to be determined at Sub-Phase submittal phases.

Figure 4.3 – BRT and Cycle Track Networks

LEGEND

- BRT route
- BRT stop
- Cycle track
4. STREETSCAPE ZONES
5. STREETSCAPE ELEMENTS
5. STREETSCAPE ELEMENTS

Streetscape elements create comfortable, interesting, and usable spaces in the public realm, and the unique design at Candlestick Point supports the creation of distinct neighborhood identity and streetscape typologies.

Included in sidewalk elements are the following:

- Paving materials
- Street trees
- Stormwater treatment
- Landscape planting
- Benches
- Bike racks
- Newsracks
- Trash / recycling receptacles
- Street lights
- Utility covers

The plans and guidelines provided in this section are based on concept level design. Streetscape designs will be further developed and submitted for review for each Sub-Phase.
5. STREETSCAPE ELEMENTS

5.1 PAVING MATERIALS

Throughway Zone Material

A zone for pedestrian travel along the street, the throughway zones will provide a consistent and uniform path of travel in the sidewalk.

Special paving may occur on Candlestick Center commercial frontages, and along parts of The Spine, to reinforce neighborhood character and enhance special moments.

The design of all pavers and cobble will address accessibility, maintenance, and comfort considerations. Concrete finishes should be saw-cut and smooth finish concrete. Curb ramps will be paved with contrasting color concrete to enhance visibility.

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<th>POTENTIAL SPECIAL MATERIAL</th>
</tr>
</thead>
<tbody>
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<td><strong>THE SPINE</strong></td>
<td></td>
</tr>
<tr>
<td>Concrete with silicon carbide sparkle</td>
<td></td>
</tr>
<tr>
<td>Smooth pavers</td>
<td></td>
</tr>
</tbody>
</table>

| **RESIDENTIAL** |
| Standard concrete |
| Concrete with silicon carbide sparkle |

| **PARK** |
| Standard concrete |
| Concrete with silicon carbide sparkle |

| **PERIMETER** |
| Standard concrete |
| Concrete with silicon carbide sparkle |

| **COMMERCIAL** |
| Concrete with silicon carbide sparkle |
| Smooth pavers |
5. STREETSCAPE ELEMENTS

5.1 PAVING MATERIALS

Furnishing Zone Material

Furnishing zones have materials and patterning that will help define neighborhood identity and special streets across Candlestick Point.

In the base case, each neighborhood will have a unique pattern and/or color scheme in the paver design that supports the notion of neighborhood differentiation. Residential, Park and Perimeter streets in Candlestick Point will have cobble pavers in the furnishing zone and The Spine and Commercial street will have smooth pavers.

General Note

Except for standard concrete sidewalks, all paving materials will be field-tested to ensure accessibility compliance. Pavers in the Furnishing Zone and Edge Zone may be soft set in landscape areas to facilitate drainage as outlined in the San Francisco DPW Sidewalk Landscape Standards. Other areas will be installed with a concrete or similar sub-base to ensure consistent and smooth joints (1/4” max).

THE SPINE

Iconic and Civic-Scale
A repetitive, and slightly random, pattern of large pavers and bold colors to reinforce the role of the Spine as an iconic civic and ceremonial street.

COMMERCIAL

Animated and Engaging
Paver patterns with integration of contrasting colors or potential integration of solar pavers or ground lighting create a lively commercial sidewalk zone.
5. STREETSCAPE ELEMENTS

5.1 PAVING MATERIALS

Textural and Patterned
Changes in paver patterns and textures create subtle, yet distinct, differences between each residential neighborhood. Slight changes in paver color may also be used to distinguish paver design between neighborhoods.

Consistent and Domestic
Paver patterns that relate to adjacent sidewalks, yet have smaller scale or more residential patterning.

Placemaking
Entries to parks and other special moments along Perimeter and Park Streets are marked by variations in paver pattern, scale, texture, or color.

Potential Paving Textures

Potential Paving Patterns

Figure 5.1 - Open Space Entries and Other Special Moments for Potential Special Paving
5. STREETSCAPE ELEMENTS

5.2 STREET TREES

Street trees are the most memorable and visible elements in the streetscape. As such, their differentiation is critical to creating unique character among Candlestick Point’s various street typologies and neighborhoods.

In coordination with the San Francisco Department of Urban Forestry and HortScience, an expert local arborist, a collection of street trees have been identified for their character and potential to thrive in the unique Candlestick Point climate.

Additional tree selections that maintain character, scale, and site suitability may be considered at Sub-Phases submittals. A full list of recommendations and planting details can be found in chapter 7.

**STREET TREES**

**BASE CASE**

As the most prevalent street type in Candlestick Point, residential street trees will reinforce the diversity of neighborhoods by allowing a variety of species, similar in size and function. Generally, residential street trees have been selected based on the following criteria:

- Bark, foliage or flower interest
- Medium to large size
- Multiple species
- Mix of broadleaf evergreen & deciduous species

**RESIDENTIAL Neighborhood specific with unique features**

### Residential

**Alice Griffith**

Large shade trees to provide full canopies

- Southern Magnolia*
- Chinese Scholar Tree
- Victorian Box
- Allee Chinese Elm
- White Ironbark

**Candlestick North**

Deciduous, great fall color

- Chinese Pistache
- Fruitless Sweetgum
- Autumn Gold
- Maidenhair Tree
- Golden Rain Tree*

**Candlestick South**

Distinctive trunks and bark support eco-village character

- Cajeput Tree
- Chinese Evergreen Elm
- Brisbane Box
- Marina Strawberry Tree

*Only recommended for sites protected from the wind
5. STREETSCAPE ELEMENTS

5.2 STREET TREES

**THE SPINE**
Monumental, tall and columnar
Visually dominant, the wind-blocking evergreen trees will have a tall and narrow form to reinforce the Spine Streets’ character as the main iconic and civic-scaled boulevards within Candlestick Point.
- Coniferous evergreen
- Narrow columnar form
- Taller than 45’ high at maturity
- Multiple species, similar in look & form
- Wind tolerant

**PARK**
Expressive and active blooms
Formal and uniform, suitable for planting in double-row allees. Species will reinforce the character of these park edge boulevard streets, intended to provide additional open space and to frame views out to the Bay waterfront.
- Mix of broad canopy trees with smaller ornamental accent trees
- Seasonal interest in flowers & leaves
- Multiple species
- Broadleaf evergreen or deciduous
- Multiple species, similar in look & form

**COMMERCIAL**
Light, hardy and high canopies
Taller, high canopy street trees suitable for retail and commercial frontages.
- High, narrow or open canopy
- Taller than 40’ high at maturity
- Evergreen or deciduous
- Multiple species

**PERIMETER**
Showing and breezy
Typically located at park edge perimeters near the waterfront, Perimeter street trees will be visually open and porous, with weeping foliage, ‘breezy’ in appearance, and wind tolerant.
- Foliage that moves in the wind
- Broadleaf evergreen species
- Single species or alternate species
- Wind tolerant

**SHARED PUBLIC WAYS**
Smaller, ornamental and offer seasonal changes
A variety of compact ornamental flowering trees offering seasonal interest and pedestrian scale. To help define neighborhoods, the tree species used should be neighborhood specific.
- Seasonal color in flowers & leaves
- Narrow compact canopy
- Small to medium size
- Multiple species, similar in look & form

Potential Broad Canopy Species
- Deodar Cedar
- Monterey Cypress
- Canary Island Pine

Potential Ornamental Accent Species
- Ginkgo ‘Autumn Gold’
- White Alder
- Red Flowering Gum

Potential Ornamental Accent Species
- Catalina Ironwood
- Golden Rain Tree*
- Victorian Box
- Brisbane Box
- Bronze Loquat
- Olive Tree ‘Swan Hill’
- Kwanzan Cherry

Potential Ornamental Accent Species
- Kautervesuvius Plum
- Weeping Bottlebrush
- Olive Tree

*Note: Species marked with an * are native to the California coastline.
5. STREETSCAPE ELEMENTS

5.3 STORMWATER TREATMENT

Stormwater biofiltration is a landscaping tool used to sustainably treat stormwater runoff and to create distinctive streetscape character. The biofiltration features are designed to filter stormwater through landscaped planters in the streetscape, cleaning the water of pollutants and reducing harmful runoff into downstream water sources. The types of stormwater treatment facilities include flow-through planters, semi-structured bioretention within medians, rain gardens and bioswales. The biofiltration system’s flow-through planters and vegetated areas will reinforce special neighborhood character and street typologies by aligning plant selection and enclosure design with neighborhood and street typology design narratives. Monochromatic plantings, wooden boardwalks, built-in seating and special materials are some of the features that may be employed to create this variation in design.

Approximate percentage of frontage required for these biofiltration facilities is shown on the following page. Final percentages will be determined with the final design of streets for each Sub-Phase.

### Biofiltration Facilities

<table>
<thead>
<tr>
<th>THE SPINE</th>
<th>RESIDENTIAL</th>
<th>PARK</th>
<th>PERIMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flow-Through Planters</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The majority of the storm water runoff in Candlestick Point will be treated using flow-through planters within the City sidewalks. The flow-through planters will typically be designed with concrete sidewalls, bioretention planting within amended soils to provide water quality treatment, and either open bottoms to allow for infiltration, or closed bottoms with undertains depending on the location and the quality of the underlying native soils. The flow-through planters will have slightly different design elements depending on adjacent parking or travel lane conditions.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Median Bioretention

Within the medians, similar bioretention facilities can be created. These areas will have linear concrete sidewalks to maintain necessary separation between the bioretention areas and the roadway subgrade. However, these areas will not need to have concrete sidewalks on all four edges, allowing for a less expensive and more flexible design. These can also be used to differentiate character between neighborhoods and allow for more pedestrian space within the sidewalk and building frontage zones.

### Extensive Biofiltration Facilities

Extensive biofiltration facilities are not desirable along Commercial Streets because of their high volumes of pedestrian traffic and role as active gathering places. If necessary, flow-through planters may be included on Commercial Streets, however, the preferred method of treating stormwater from Commercial Streets will be to treat it in a centralized facility.

More specifically, it is envisioned that runoff from the Commercial Streets will be collected and piped to the Wedge Park along Hamey Way between Ingerion Ave. and Gilman Ave. The treatment flow will then be pumped to the ground surface using a simple pump station (no back-up power required) and treated by a centralized biofiltration facility in the landscape area of the Park. Centralized biofiltration facilities in the park may include rain gardens and bioswales described to the right. These systems will be further developed during Sub-Phase design and will be subject to City approval.

In addition to flow-through planters, Park Streets may also feature other approved types of biofiltration within their wide medians and park-like landscaped areas.

### Rain Gardens

Rain gardens are shallow landscape areas that can collect, slow, filter, and absorb large volumes of water, delaying discharge into the watershed system and providing water quality treatment. They are similar to flow-through planters but with soil, not concrete, sidewalls. This technique is generally less expensive, but can only be used in areas which are set-back a sufficient distance from the roadway and building foundations. Linear parks within the street right-of-way or larger medians may have good opportunities for this style of bioretention.

### Bioswales

Bioswales are shallow landscaped areas designed to capture, convey, and potentially infiltrate storm water runoff as it moves downstream. They are primarily used to convey stormwater runoff on the land’s surface while also providing water quality treatment. As water flows through a vegetated swale, it is slowed by the interaction with plants and soil, allowing sediments and associated pollutants to settle out. Some water seeps into the soil and is taken up by plants, and some may infiltrate further if native soils are well drained. The remaining water that continues to flow downstream travels more slowly than it would through pipes in a traditional stormwater conveyance system. Bioswales can be employed within medians and linear parks.
5. STREETSCAPE ELEMENTS

5.3 STORMWATER TREATMENT

Typical Biofiltration Plant Palettes

Biofiltration Plant Palette A
- Baumea rubiginosa / striped Rush (1-3 ft)
- Chondropetalum tectorum/ Dwarf Cape Rush (2-3 ft)
- Juncus patens/ California Gray Rush (2 ft)
- Carex comosa/ Bristly Sedge

Biofiltration Plant Palette B
- Carex tumulicola/ Berkeley Sedge (1/2 ft)
- Fragaria chiloensis/ Beach Strawberry
- Sisyrinchium bellum grass/ Blue-Eyed Grass (4 in - 2 ft)
- Sesleria autumnalis/ Autumn Moor Grass (8–18 in)
- Mimulus aurantiacus/ Sticky Monkey-flower (1-4 ft)

Biofiltration Plant Palette C
- Carex tumulicola/ Berkeley Sedge (1/2 ft)
- Sisyrinchium bellum grass/ Blue-Eyed Grass (4 in - 2 ft)
- Juncus effusua/ Pacific Rush

Biofiltration Plant Palette D
- Juncus Leseurii/ Common rush
- Fragaria chiloensis/ Beach Strawberry
- Rhamnus californica/ ‘Seaview’ Dwarf Coffeeberry (3-4 ft)
- Polypodium munitum/ Western Sword Fern (2-4 ft)

Figure 5.2 - Approximate Percent of Linear Street Frontage Required for Biofiltration Facilities

LEGEND

Approximate percent of linear street frontage required for biofiltration facilities:
- 40-49%
- 30-39%
- 20-29%
- 10-19%
- 0%
- Centralized Treatment Site

Stormwater runoff from commercial streets will be piped to centralized bioretention facility.

Candlestick Point Streetscape Master Plan
FINAL FOR APPROVAL JANUARY 7, 2014
5. STREETSCAPE ELEMENTS

5.4 LANDSCAPE PLANTING

Landscaping in sidewalks and stormwater facilities will support unique neighborhood character and add variety and softness to the Candlestick Point streetscape. Each neighborhood will vary planting colors, forms, and textures to reinforce its special character. In addition to neighborhood specific palettes, 2 street typologies will have unique planting palettes across multiple neighborhoods: The Spine and Shared Public Ways. The Spine will have bold and monochromatic plantings, supporting its role as Candlestick Point’s iconic and civic street. Shared Public Way planting will be more community oriented, and could include small-scale flower and vegetable gardens.

Sidewalk plant palettes have been developed to include a mix of locally-adapted Mediterranean plants, succulents from various arid climates and native California plants noted for their interesting form, flowers, and/or foliage. These plants are well-adapted to local San Francisco microclimates and most are also recommended for sidewalk landscaping by the SFPUC’s San Francisco Stormwater Design Guidelines.

ELEMENTS

<table>
<thead>
<tr>
<th>BASE CASE</th>
<th>Landscape Planting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>THE SPINE</strong></td>
<td>Bold, distinctive and colorful plant forms</td>
</tr>
<tr>
<td>Ceanothus griseus horizontalis 'Yankee Point' / Yankee Point Ceanothus (2-3 ft.)</td>
<td></td>
</tr>
<tr>
<td>Nepeta x faassenii / Ornamental Catmint (1 ft.)</td>
<td></td>
</tr>
<tr>
<td>Dietes 'bicolor' / Fortnight Lily (2-3 ft.)</td>
<td></td>
</tr>
<tr>
<td>Salvia gregii Autumn Sage (3 ft.)</td>
<td></td>
</tr>
<tr>
<td><strong>SHARED PUBLIC WAYS</strong></td>
<td>Community gardens</td>
</tr>
<tr>
<td>Limonium perezii / Sea Lavender (18 in.)</td>
<td></td>
</tr>
<tr>
<td>Eschscholzia californica California Poppy</td>
<td></td>
</tr>
<tr>
<td>Anigozanthos hybrids / Kangaroo Paw</td>
<td></td>
</tr>
<tr>
<td>Echium fastuosum Pride of Madiera</td>
<td></td>
</tr>
</tbody>
</table>
Typical sidewalk planting selections, palettes calibrated by neighborhood:

**Alice Griffith**
Ornamental grasses and flowering perennials

- Carex 'Dusky Bells' / Australian Fescue (2 to 2 1/2 ft.)
- Fuschia (2 to 2 1/2 ft.)
- Correa 'Dusky Bells' / Australian Bear's Foot
- Miscanthus sinensis 'Morning Light' Silver Grass

**Candlestick North**
Flowering shrubs, perennials and ground covers, with year-round seasonal interest

- Fragaria chiloensis Beach Strawberry
- Heuchera maxima Island Alum Root
- Polydiscum muniburn/ Western Sword Fern (2-4 ft.)
- Heuchera micrantha Coral Bells (8 in. - 2 ft.)
- Helleborus orientalis Lenten Rose
- Helleborus foetidus Bear's Foot
- Logetakum Chineese Chinese Fringe Flower (6-10ft.)
- Heuchera micrantha Daylily varieties
- Ceanothus griseus horizontalis Yankee
- Erigeron karvinskianus 'Tiny Tiger' Dieties iridioides / African Iris
- Tulbaghia violacea 'Silver Lace'
- Variegated Society Garlic
- Lavendula intermedia 'Provence'
- Aeonium arboreum varieties Tree Aeonium
- Anigozanthos hybrids Kangaroo Paw
- Senicio serpens Blue Chalksticks
- Mahonia repens dwarf Creeping Oregon Grape Dwarf

**Candlestick South**
Sun-loving and drought-tolerant plants with visually striking forms, flowers and foliage

- Erigeron glaucus Beach Aster
- Graptoveria 'Debbi'
- Aeonium arboreum varieties Tree Aeonium
- Anigozanthos hybrids Kangaroo Paw
- Phormium tenax hybrids 'Jack Spratt' New Zealand Flax (dwarf varieties) 1ft.
- Agave attenuata 'Nova Foltai Agave
- Erigeron karvinskianus Santa Barbara Daisy
- Senicio serpens Blue Chalksticks
- Mahonia repens dwarf Creeping Oregon Grape Dwarf
- Fire Power Nandina (1-2 ft.)
- Lenten Rose
- Correa 'Dusky Bells' / Australian Fuschia (2 to 2 1/2 ft.)
- Island Alum Root
- Pheonix 'Tiny Tiger' Dieties iridioides / African Iris
- Phormium tenax hybrids 'Jack Spratt' New Zealand Flax (dwarf varieties) 1ft.
- Anigozanthos hybrids Kangaroo Paw
- Senicio serpens Blue Chalksticks
- Mahonia repens dwarf Creeping Oregon Grape Dwarf

**Candlestick Center**
Colorful flowering shrubs, ground covers and perennials that enliven the streetscape

- Erigeron karvinskianus Santa Barbara Daisy
- Fragaria chiloensis Beach Strawberry
- Ceanothus griseus horizontalis Yankee
- Erigeron karvinskianus Santa Barbara Daisy
- Mahonia repens dwarf Creeping Oregon Grape Dwarf
- Fire Power Nandina (1-2 ft.)
- Lenten Rose
- Correa 'Dusky Bells' / Australian Fuschia (2 to 2 1/2 ft.)
- Island Alum Root
- Pheonix 'Tiny Tiger' Dieties iridioides / African Iris
- Phormium tenax hybrids 'Jack Spratt' New Zealand Flax (dwarf varieties) 1ft.
- Anigozanthos hybrids Kangaroo Paw
- Senicio serpens Blue Chalksticks
- Mahonia repens dwarf Creeping Oregon Grape Dwarf

**Candlestick Point Streetscape Master Plan**
**FINAL FOR APPROVAL JANUARY 7, 2014**
5. STREETSCAPE ELEMENTS

5.5 STREET FURNITURE

Inspired by the site’s maritime history, unique physical setting, and distinct ecology, Candlestick Point’s street furniture will support neighborhood identity through variation, respond to specific site influences, and create a consistent design palette.

Variation in street furniture will include form, materially and scale, and be designed to retain the notion that all the elements belong to the same streetscape family.

Manufactured and custom designed street furniture options continue to be explored in concert with City staff, with specific consideration being made for accessibility, durability, and maintenance issues. Specific selections will be made for Sub-Phase submittals.

The following pages illustrate base case and special alternate options for a broad range of street furniture elements:

- Bench
- Bike rack
- Newsrack
- Trash / recycling receptacle
- Automatic waster collection enclosure

### BENCHED

<table>
<thead>
<tr>
<th>ALL STREETS</th>
<th>Manufactured Bench Options</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>S Bench by Lab23</td>
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<tr>
<td></td>
<td>Portiqoa by MM Cite</td>
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<tr>
<td></td>
<td>Parallel 43 by Landscapeforms</td>
</tr>
<tr>
<td></td>
<td>Preva Urbana by MM Cite</td>
</tr>
<tr>
<td></td>
<td>Bench by Lab 23</td>
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</table>

### POTENTIAL SPECIAL BENCHES

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<th>ALL STREETS</th>
<th>Manufactured Bench Options</th>
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<td>Rough &amp; Ready by Streetlife</td>
</tr>
<tr>
<td></td>
<td>Woody by MM Cite</td>
</tr>
<tr>
<td></td>
<td>CorTen Seat Strips by Streetlife</td>
</tr>
</tbody>
</table>
Candlestick Point Streetscape Master Plan

**Social and Civic-Scaled**

Large scale benches shaped for social interaction, made of primarily of concrete and other monolithic materials.

**Flexible and Durable**

Places to sit, lean on, eat over, and engage with the public realm in a multitude of ways. A wide range of materials and finishes support the flexible nature of these benches.

**PERIMETER**

**Clustered and Comfortable**

Grouped around main entries to parks and special moments in the streetscape, these primarily wooden benches will have backs, arm rests, and other comfort features to accommodate extended sitting time.

**RESIDENTIAL**

**Neighborhood Specific**

Made primarily of wood, these benches relate to other street furniture by subtly incorporating metal, concrete and other materials.

**Alice Griffith**

Welcoming and more domestic in form and style than other neighborhoods

**Candlestick North**

Clean lines, slightly larger and more communal in configuration than other neighborhoods, these benches respond to the higher residential densities and adjacent commercial uses.

**FIND FINAL FOR APPROVAL JANUARY 7, 2014**

**Informal and private**

Lightweight and moveable chairs, benches, and stools make these more informal spaces private garden streets for local residents.

**Candlestick South**

Softer and with more free-form shapes that relate to the adjacent State park and organic forms of the coastline.

**Times Square Bench, by Snohetta**

**S Bench by Lab 23**

**Park chair by Neuland IndustrieDesign**

**Preva Urbana by MM Cite**

**Portiqoa by MM Cite**

**Bench by Lab 23**

**Parallel 43 by Landscapeforms**
5. STREETSCAPE ELEMENTS

5.5 STREET FURNITURE

Bike racks, newsracks, and other street furniture should have a consistent palette and visual relationship to minimize visual clutter in the streetscape.

To the right are examples of city approved and custom street furniture inspired by the area’s naval history and shipmaking heritage, constructed of folded and treated corten steel. Detailed patterns could be incorporated in the design of elements to reflect neighborhood character and sense of place. Corten steel street furniture will be treated to minimize bleeding and staining of paving.

OTHER STREET FURNITURE

Installations larger than 3 racks shall be placed “Bike Corral” in the parking zone of the street.
5. **STREETSCAPE ELEMENTS**

5.5 **STREET FURNITURE**

**Furniture Locations**

Street furniture locations respond to specific street typologies, adjacent land uses and transit stops. General locations are shown to the right. Specific locations will be determined on a block-by-block basis at Sub-Phase submittal phases of design and all sidewalk furniture should be installed as per the dimensional and clearance requirements and accessibility guidelines established by the City of San Francisco in the Better Streets Plan, SFDPW Sidewalk Landscape Guidelines, and applicable DPW orders, unless otherwise noted.

**Benchs:** All seating areas will include accessible elements including a minimum of 36” level surface area adjacent to each bench to allow for companion seating. Smaller benches may be oriented perpendicular to the path of travel to allow for companion seating space. Accessible seating locations are to be identified with a permanent sign. Seating must be set back at minimum 2 feet and tables set back at minimum 2.5 feet from the throughway zone.

**Bike racks:** Bike rack installations up to 3 racks may be located in the Furnishing Zone outside of the Corner Clear Zone. Installations near corners should be designed as an “alcove” with diverting elements such as a trashcan, tree, or planter (min. 42” in height) between the racks and corner. Installations larger than 3 racks shall be placed “Bike Corrals” in the parking zone of the street.

**Figure 5.3 – Street Furniture in Alice Griffith and Candlestick North**

---

**LEGEND**

- Transvac public collection point
- Trash / Recycling receptacle*
- 3 Newsracks
- 3 Bike Racks
- Bench
- BRT Stop

* Not shown: Trash / Recycling receptacles at primary entrances to parks.
5. STREETSCAPE ELEMENTS

5.5 STREET FURNITURE

Figure 5.4 - Street Furniture in Candlestick Center and Candlestick South

Figure 5.5 - Street Furniture on Harney Way

LEGEND

- † UNFURNISHED Bulb-Out
- ‡ Furnished Bulb-Out (PATH to WATER)
- BRT Stop
- Transvac public collection point
- Trash / Recycling receptacle*
- 3 Newsracks
- 3 Bike Racks
- Bench

* Not shown: Trash / recycling receptacles at primary entrances to parks.
5. STREETSCAPE ELEMENTS

5.6 STREET LIGHTS

Street lights are one common element uniting many different typologies and neighborhoods in Candlestick Point. The Spine is the only typology that receives a special lighting condition. Street lights have bee selected from the catalogue of standards provided in SFPUC’s “A Guide to San Francisco Street Lights”.

Street lights along The Spine support its role as a singular and unifying element by use of the tallest roadway and pedestrian lights in Candlestick Point. The shared public ways and internal streets at Candlestick Center may have the smallest lighting, including bollards and building mounted fixtures.

Conceptual spacing and optic assumptions are outlined in this section. LED optics will be utilized on all street lights, per City standards. Spacing to be refined at Sub-Phase submittal phase. All street lighting will be designed to ensure that the overall light levels conform to SF DPW standards. Higher foot-candle standards should be developed for bus stops and other areas of significant pedestrian activity.

Street lights should typically be located away from the curb and the area between two parking spaces (typically within a 4’ area generally defined as the last 2’ of two adjacent spaces).

### BASE CASE

The base case street lights scheme for Candlestick Point utilizes the following poles and fixtures:

**Figure 5.6 – LS102**

- **THE SPINE**
- SFPUC’s “A Guide to San Francisco Street Lights” Type: LS102
- Pole: Valmont 22’ height
- Fixture: Philips Roadstar GPLM
- See SFPUC’s “A Guide to San Francisco Street Lights” for pole and fixture details

**Figure 5.7 – LS100**

- SFPUC’s “A Guide to San Francisco Street Lights” Type: LS100
- Pole: Valmont 22’ height
- Fixture: Philips Roadstar
- See SFPUC’s “A Guide to San Francisco Street Lights” for pole and fixture details

**Figure 5.8 – LS101**

- SFPUC’s “A Guide to San Francisco Street Lights” Type: LS101
- Pole: Valmont 16’ height
- Fixture: Philips Roadstar
- See SFPUC’s “A Guide to San Francisco Street Lights” for pole and fixture details
5.6  STREET LIGHTS

Custom Street Light

Custom street lights may be designed and used in lieu of City standards. Custom street lights used in San Francisco, pictured below, provide a unique and unifying element to the streetscape that instantly contributes to the sense of place. Designs will be in concert with the street furniture materials and forms. Initial custom pole concepts include simple tapered profiles with corten steel, wood, and powder coated finishes. Attached light fixtures will be positioned and calibrated to achieve maximum efficiency with a minimum of elements.

Figure 5.9 - Base Case Street Light Spacing Assumptions

**LEGEND**

- **Large:** 28.5' tall lights, spaced every 130-‘150’
- **Medium:** 22' tall, spaced every 100’-120’
- **Small / Building mounted / Ground, space as needed**
- **16’ pedestrian light spaced between roadlights in base case (shown on previous page), or attached to roadlights in special case (shown to left in Rincon Hill).**

Mission Bay

Rincon Hill
Using uniform utility vault materials across Candlestick Point will minimize the variety of materials and ground plane textures in the streetscape. Custom utility covers may be used in special areas.

All utility covers will have a smooth slip-resistant surface treatment. Traffic signal boxes, utility boxes, and backflow preventers will be painted a uniform color.

The sidewalk at the curb returns should not contain any pull boxes or utility vaults and should be free of vertical elements.

### 5.7 UTILITY COVERS

#### BASE CASE

- **SF standard Utility Box**
- **Typical Backflow Preventer Covers**

#### POTENTIAL SPECIAL COVER

- **Mission Bay Custom Utility Vault**

---

**5.7 STREETSCAPE ELEMENTS**
## 5. Streetscape Elements Matrix

<table>
<thead>
<tr>
<th></th>
<th>The Spine: Iconic and Civic Scaled</th>
<th>Residential Streets: Consistent and Calm</th>
<th>Commercial: Energetic, Colorful, and Engaging</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potential Street Trees</strong></td>
<td>Deodar Cedar</td>
<td>Monterey Cypress</td>
<td>Canary Island Pine</td>
</tr>
<tr>
<td><strong>Landscape Planting</strong></td>
<td>Bold monochromatic planting palette potentially designed to be integrated into the overall design of The Spine</td>
<td>Neighborhood specific palettes</td>
<td>Neighborhood specific palettes</td>
</tr>
<tr>
<td><strong>Curb and Edge Zone</strong></td>
<td>Concrete with silicon carbide sparkle</td>
<td>Standard concrete</td>
<td>Concrete with silicon carbide sparkle</td>
</tr>
<tr>
<td><strong>Sidewalk Throughway Zone</strong></td>
<td>Concrete with silicon carbide sparkle</td>
<td>Smooth pavers</td>
<td>Concrete with silicon carbide sparkle</td>
</tr>
<tr>
<td><strong>Sidewalk Furnishing Zone</strong></td>
<td>Smooth pavers</td>
<td>Cobble pavers</td>
<td>Smooth pavers</td>
</tr>
<tr>
<td><strong>Street Furniture</strong></td>
<td>Manufactured Benches / Custom furniture</td>
<td>Manufactured Benches / Custom furniture</td>
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<td>San Francisco Street Light Plan type: LS100 / LS101</td>
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**Final for approval January 7, 2014**
## 5. STREETSCAPE ELEMENTS

### 5.8 STREETSCAPE ELEMENTS MATRIX

<table>
<thead>
<tr>
<th>PARK STREETS</th>
<th>PERIMETER STREETS</th>
<th>SHARED PUBLIC WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXPRESSIVE AND ACTIVE BLOOMS</strong></td>
<td><strong>SHOWING AND BREEZY</strong></td>
<td><strong>SMALLER, ORNAMENTAL AND OFFER SEASONAL CHANGES</strong></td>
</tr>
<tr>
<td>Potential Broad Canopy Species</td>
<td>Holly Oak</td>
<td>Kwanzan Cherry</td>
</tr>
<tr>
<td>White Alder</td>
<td>Native Willow</td>
<td>WEEPING BOTTLEBRUSH</td>
</tr>
<tr>
<td>Red Flowering Gum</td>
<td>Primrose Tree</td>
<td>OLIVE TREE</td>
</tr>
<tr>
<td>Olive Tree 'Swan Hill'</td>
<td>Willowleaf Peppermint</td>
<td></td>
</tr>
<tr>
<td><strong>NEIGHBORHOOD SPECIFIC PALETTES</strong></td>
<td><strong>NEIGHBORHOOD SPECIFIC PALETTES</strong></td>
<td><strong>COMMUNITY GARDENS</strong></td>
</tr>
<tr>
<td><strong>BASE MATERIALS</strong></td>
<td><strong>BASE MATERIALS</strong></td>
<td><strong>BASE MATERIALS</strong></td>
</tr>
<tr>
<td>Standard concrete</td>
<td>Concrete with silicon carbide sparkle</td>
<td>Standard concrete</td>
</tr>
<tr>
<td>Standard concrete</td>
<td>Concrete with silicon carbide sparkle</td>
<td>Concrete with silicon carbide sparkle</td>
</tr>
<tr>
<td>Cobble pavers</td>
<td>Concrete with silicon carbide sparkle</td>
<td>Cobble pavers</td>
</tr>
<tr>
<td>Manufactured Benches/Custom furniture</td>
<td>Cobble pavers</td>
<td>Cobble pavers</td>
</tr>
<tr>
<td>San Francisco Street Light Plan type: LS100 / LS101</td>
<td>Pole: Custom</td>
<td>Potential special furniture</td>
</tr>
<tr>
<td></td>
<td>Fixture: Custom</td>
<td>San Francisco Street Light Plan type: LS100 / LS101</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pole: Custom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fixture: Custom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pedestrian, building mounted, ground lighting</td>
</tr>
</tbody>
</table>
6. TYPICAL STREET LAYOUTS
## 6.1 Streetscape Element Placement Matrix

### Table 6.1 - Placement Guidelines Summary Chart

<table>
<thead>
<tr>
<th>Streetscape Element</th>
<th>The Spine</th>
<th>Residential Street</th>
<th>Park Street</th>
<th>Commercial</th>
<th>Perimeter Street</th>
<th>Shared Public Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benches</td>
<td>In furnishing zone, at mid-blocks or corners, set back from throughway zone to maintain clear passage</td>
<td>In furnishing zone or bulb-outs, at mid-blocks or corners, set back from throughway zone to maintain clear passage</td>
<td>In furnishing zone, at mid-blocks or corners, set back from throughway zone to maintain clear passage</td>
<td>In furnishing zone, at mid-blocks, set back from throughway zone to maintain clear passage</td>
<td>In furnishing zone or bulb-outs, clustered near intersections, and near building entrances</td>
<td>Permitted</td>
</tr>
<tr>
<td>Bike Racks</td>
<td>In furnishing zone, at transit stops, entries to open spaces, and near building entrances</td>
<td>In furnishing zone or bulb-outs, clustered near intersections and building entrances</td>
<td>In furnishing zone or bulb-outs, clustered near intersections, and near building entrances</td>
<td>In furnishing zone or bulb-outs, clustered near intersections, and near building entrances</td>
<td>In furnishing zone or bulb-outs, clustered near intersections, building entrances and access to open spaces</td>
<td>Permitted</td>
</tr>
<tr>
<td>Newsracks</td>
<td>In furnishing zone, at transit stops and high-traffic pedestrian areas</td>
<td>At transit stops in furnishing zone</td>
<td>Discouraged</td>
<td>In furnishing zones, at transit stops and high-traffic pedestrian areas</td>
<td>Discouraged</td>
<td>Discouraged</td>
</tr>
<tr>
<td>Trash / Recycling Receptacles</td>
<td>In furnishing zone, at transit stops, at entries to open spaces and high-traffic pedestrian areas. Per Better Streets Plan, every 200' of commercial frontage</td>
<td>In furnishing zone near intersections</td>
<td>In furnishing zone, at primary entries to parks and near intersections</td>
<td>In furnishing zone or bulb-outs, clustered near intersection and every 200' as outlined in Better Streets Plan</td>
<td>In furnishing zones, at primary entries to parks and near intersections</td>
<td>Permitted</td>
</tr>
<tr>
<td>Utility Vaults</td>
<td>Permitted in all sidewalk zones, preferred location is edge zone, followed by throughway</td>
<td>Permitted in all sidewalk zones, preferred location is edge zone, followed by throughway</td>
<td>Permitted in all sidewalk zones, preferred location is edge zone, followed by throughway</td>
<td>Permitted in all sidewalk zones, preferred location is edge zone, followed by throughway</td>
<td>Permitted in all sidewalk zones, preferred location is edge zone, followed by throughway</td>
<td>Discouraged</td>
</tr>
<tr>
<td>Utility Boxes</td>
<td>In furnishing zone, preferably away from high-traffic areas</td>
<td>In furnishing zone, preferably away from high-traffic areas</td>
<td>In furnishing zone, preferably away from high-traffic areas</td>
<td>In furnishing zone, preferably away from high-traffic areas</td>
<td>In furnishing zone, preferably away from high-traffic areas</td>
<td>Discouraged</td>
</tr>
<tr>
<td>Street Lights</td>
<td>In furnishing zone and medians, at standard spacing</td>
<td>In furnishing zone, at standard spacing</td>
<td>In furnishing zone and medians, at standard spacing</td>
<td>In furnishing zone and medians, at standard spacing</td>
<td>In furnishing zone, at standard spacing</td>
<td>Small scale, bollards and building mounted</td>
</tr>
<tr>
<td>Street Trees</td>
<td>In furnishing zone and medians, at standard spacing</td>
<td>In furnishing zone, at standard spacing</td>
<td>In furnishing zone and medians, at standard spacing</td>
<td>In furnishing zone, at standard spacing</td>
<td>In furnishing zone, at standard spacing</td>
<td>Permitted</td>
</tr>
<tr>
<td>Landscape Planting</td>
<td>Permitted in sidewalk furnishing zone, curb extensions and medians</td>
<td>Permitted in sidewalk furnishing zone, curb extensions and medians</td>
<td>Permitted in sidewalk furnishing zone, curb extensions and medians</td>
<td>Permitted in sidewalk furnishing zone, curb extensions and medians</td>
<td>Discouraged</td>
<td>Permitted</td>
</tr>
<tr>
<td>Stormwater Treatment</td>
<td>Flow-through planters in furnishing zone, median bioretention</td>
<td>Flow-through planters in furnishing zone and median bioretention</td>
<td>Flow-through planters in furnishing zone and median bioretention</td>
<td>Centralized treatment facilities for retail frontages</td>
<td>Flow-through planters in furnishing zone</td>
<td>N/A</td>
</tr>
</tbody>
</table>
6. **TYPICAL STREET LAYOUTS**

6.2 **TYPICAL STREET CORNER LAYOUT**

Typical street corners are the preferred location for clustering some utilities, furnishings, and other streetscape elements.

No sidewalk furnishings shall be within the Corner Clear Zone, except as required for pedestrian or vehicular safety. The first sidewalk furnishing element adjacent to the Corner Clear Zone shall be a minimum of 42” in height to divert pedestrian traffic to the sidewalk throughway Zone.

The conceptual layout to the right shows the placement of typical furnishings, biofiltration, lighting, and signage. Exact location of these elements to be determined as each sub-phase of the project is designed.

A representative sample of typical street layouts and sections are shown on the following pages. Cross-sections for all streets can be found in the CPHPS2 Infrastructure Plan.
6. **TYPICAL STREET LAYOUTS**

6.3 **THE SPINE (FULL) : HARNEY WAY (NORTH OF ARELIous WALKER)**

Neighborhood specific streetscape elements:

- Sparkle concrete in furnishing zone
- Potential special material: Dazzle pattern in furnishing zone (as shown)
- Furniture and landscape areas shaped to contours of Dazzle pattern.

Potential special paving shown in furnishing zones
6. **TYPICAL STREET LAYOUTS**

6.4 THE SPINE (FULL) : EGBERT AVENUE

Neighborhood specific streetscape elements:

- Sparkle concrete in furnishing zone
- Furniture detailing/materials
- Landscape (trees and biofiltration)
- Potential special material : Dazzle pattern in furnishing zone (as shown)
- Furniture and landscape areas shaped to contours of Dazzle pattern. (as shown)
6. **TYPICAL STREET LAYOUTS**

6.5 **RESIDENTIAL STREET: P STREET**

Neighborhood specific streetscape elements:
- Paving pattern in furnishing zone
- Furniture detailing/materials
- Landscape (trees and biofiltration)

Note: Candlestick Point Recreation Area circulation and landscape designs to be developed in later phases by State Parks.
6. **TYPICAL STREET LAYOUTS**

6.6 **RESIDENTIAL STREET: TYPICAL**

Neighborhood specific streetscape elements:
- Paving pattern in furnishing zone
- Furniture detailing/materials
- Landscape (trees and biofiltration)
6. **TYPICAL STREET LAYOUTS**

6.7 **RESIDENTIAL STREET: FITZGERALD AVENUE**

Neighborhood specific streetscape elements:

- Paving pattern in furnishing zone
- Potential special material: Concrete with silicon carbide sparkle in throughway (as shown)
- Furniture detailing/materials
- Landscape (trees and biofiltration)
6. TYPICAL STREET LAYOUTS

6.8 COMMERCIAL: ARELIOUS WALKER (SOUTH OF INGERSON AV)

Neighborhood specific streetscape elements:
- Paving pattern in furnishing zone
- Furniture detailing/materials
- Landscape (trees and biofiltration)

FINAL FOR APPROVAL JANUARY 7, 2014
6. TYPICAL STREET LAYOUTS

6.9 COMMERCIAL STREET: INGERSON AVENUE (WEST OF HARNEY WAY)

Neighborhood specific streetscape elements:
- Paving pattern in furnishing zone
- Furniture detailing/materials
- Landscape (trees and biofiltration)
6. **TYPICAL STREET LAYOUTS**

6.10 **PARK STREET: EARL STREET**

Neighborhood specific streetscape elements:
- Paving pattern in furnishing zone
- Potential special material: Concrete with silicon carbide sparkle in throughway (as shown)
- Furniture detailing/materials
- Landscape (trees and biofiltration)

Potential special sparkle concrete shown in throughway zones
6. **TYPICAL STREET LAYOUTS**

6.1.1 **PARK STREET: EGBERT AVENUE (WEST OF ARELIOUS WALKER)**

Neighborhood specific streetscape elements:
- Paving pattern in furnishing zone
- Furniture detailing/materials
- Landscape (trees and biofiltration)

![Diagram of typical street layout with symbols for tree, road, light, bike lane, park, bench, and bike rack.](image)
6. TYPICAL STREET LAYOUTS

6.12 PARK STREET: EARL STREET (NORTH OF GILMAN AV.)

Neighborhood specific streetscape elements:
- Paving pattern in furnishing zone
- Furniture detailing/materials
- Landscape (trees and biofiltration)
7. GUIDELINES AND DETAILS
7. GUIDELINES AND DETAILS

7.1 STREET TREE PLANTING GUIDELINES & DETAILS

General Guidelines
A list of preferred street trees for each street type has been assembled with the help of an expert team of horticulturists including HortScience, renowned and well respected California based consulting arborists. Review by the SFDPW’s Division of Urban Forestry was also part of the selection process. Recommended tree species were selected using the following criteria:

- Character
- Scale
- Micro-climate, especially the frequent periodic cold and salt-laden wind and fog
- Native and acclimated species that are water-conserving
- Moisture tolerance
- Density
- Urban performance
- Soils
- Management and maintenance
- Visibility guidelines

Street Tree Planting

Tree Spacing:
Tree spacing shall be consistent and appropriate for the scale of the selected tree species. Typical street tree spacing will meet San Francisco Planning Code guidelines by providing 1 tree of minimum 36” box size for each 20’ of street frontage. Medium and large trees may be spaced every 20-35’, per Better Streets Plan spacing guidelines. Typically, street trees shall be planted on both sides of the street and in medians 5 feet or greater in width. Tree size, height and canopy form shall be regular and consistent in each street type unless otherwise noted. Approximately 2,500 street trees are estimated to be planted in Candlestick Point.

Visibility at Intersections:
At intersections, trees shall be planted in accordance with the Department of Public Works Director’s Order No. 169,946; or a minimum of 25 feet on the approach side, and 5 feet from the crosswalk on the far side of any intersection. Trees and plantings located in the sidewalk area shall not obscure traffic signals, signs or street lights.

Tree Size:
Typical tree size at planting shall be 36” box size minimum, unless otherwise noted.

Tree Wells:
Tree wells should be 4 feet wide by 4 feet long, minimum. A larger typical tree well size of 5 feet wide by 5 feet long is recommended. The minimum tree well size should also be determined based on the sidewalk width. This is in accordance with the DPW Director’s Order 169,946.

Planting & Installation:
Planting and installation techniques shall be in accordance with the highest level of horticultural practice and are to meet City standards. This includes conformance with the urban greening requirements and guidelines of the SF Better Streets Plan. All planting pits are to include underdrainage and horticulturally excellent planting medium. All new trees shall be irrigated and robustly staked to support the trees against the strong prevailing winds. A high level of attention to horticultural best practices will promote the long term viability and sustainability of the street trees.

Preferred and Alternative Tree Species:
The Plan encourages street tree species to be selected from the proposed preferred list for each respective street type. Street tree species not included in the proposed list are permissible as substitutions, if they meet the listed formal, character, and horticultural criteria and, if selected by a certified arborist and approved by the SFDPW Department of Urban Forestry. The selection of alternative tree species shall comply with the requirements of this Master Streetscape Plan and must follow the street tree characteristics listed for street trees in Section 5, ‘Streetscape Elements’ for each particular street type.

It is intended that a single tree species or species mix be planted the entire length of a named street. Once a specific species or species mix has been planted on a portion of a street, the same species must be installed on the remainder of the blocks in order to provide a consistent horticultural theme. For streets that, by virtue of their length, significantly change character, street width or typology along their length (for example: Arelius Walker Drive, Haney Way, Egbert Avenue, Crisp Avenue and Fischer Street), the street typology shall govern the tree species selection.
7. GUIDELINES AND DETAILS

7.1 STREET TREE PLANTING GUIDELINES & DETAILS

Soil Volume & Tree Growth

A street tree’s ability to grow and stay healthy is largely dependent on the amount of rooting space provided. Larger soil volumes will generally yield larger trees. Provide sufficient soil volumes for tree species planted. For use as a general guideline, a minimum soil volume of 8 cubic yards per tree is recommended with at least 3 feet 6 inches of soil depth. However, it will be advantageous to exceed this minimum to ensure the long term health and viability of newly planted street trees. Illustrations to this point are on the following pages.

Several design methods can be used to achieve adequate soil volumes:

• Continuous Planting Trench:

Wherever possible, trees should be installed in a continuous planting trench with at least 3 feet 6 inches of soil depth. Where there is no sidewalk paving, such as in open landscape and median areas, this is easily achieved. In paved areas, alternate methods must be used to support the sidewalk areas between the tree wells. (This method is compatible with Planting Condition 1: Open Planters/Parkway Strips described on the following pages).

• Open Soil Areas:

Open soil areas are unpaved areas surrounding a tree, typically open planting areas or ornamental gravel mulch areas. (This method is compatible with Planting Condition 1: Open Planters/Parkway Strips).

• Structural Soils:

Use of structural soils is only recommended when other alternatives are not available. They support sidewalk pavements while also preventing excess compaction and allowing adequate void spaces for needed oxygen exchange, water drainage and root growth. By allowing the penetration of the roots into the structural soil level, rather than above the surface, pavement heaving will also be inhibited. Structural soils have the additional benefit of being highly permeable and free-draining. (This method is compatible with Planting Condition 2: Tree Wells).

• Tree Cells:

‘Silva Cell’ type tree cells support sidewalk pavements via a modular cellular frame and deck structure while also preventing compaction and allowing adequate porosity in a manner similar to structural soils, but using conventional planting soil as backfill. (This method is compatible with Planting Condition 2: Tree Wells).

• Root Paths:

Root paths are constructed paths that use aeration or drainage strips to give roots a way to grow under paving and connect to adjacent green spaces or open planting areas. (This method is compatible with Planting Condition 2: Tree Wells).

Soil Volume =± 4 Cubic Yards
Soil Volume =± 12 Cubic Yards
Soil Volume =± 20 Cubic Yards

Figure 7.1 - Soil Volume & Tree Growth

Street Tree Planting Guidelines & Details

Planting and installation techniques for street trees are to be in accordance with the highest level of good horticultural practice. This includes, in addition to providing adequate volumes of high-quality planting soil medium, providing: 1) continuous underdrains (typically 4-inch diameter perforated pipe in a 12-inch by 12-inch bed of drain rock wrapped in filter fabric); 2) heavy-duty tree staking or guying to deal with the Candlestick Point’s strong prevailing winds; and 3) high-efficiency, water-conserving drip irrigation.

• Storm Water Management:

Many of the streetscape plantings at Candlestick Point will perform a vital role in capturing, treating and retaining storm water runoff from adjacent streets and sidewalks. To achieve this, many streets will incorporate bioswales, flow-through biofiltration tree well planters and bioretention areas. The prevalence of these features will require the use of sandy loam soil mixes with high percolation rates, structural soils and underdrains to ensure soil permeability and adequate infiltration rates. It will also require the use of trees, shrubs and ground covers that can tolerate seasonal inundation and saturated soil conditions.
7. GUIDELINES AND DETAILS

7.1 STREET TREE PLANTING GUIDELINES & DETAILS

General planting guidelines and details for three typical street tree planting scenarios are presented on the following pages:

- Condition 1: Open Planters/Parkway Strips
- Condition 2: Tree Wells

Planting Condition 1 - Street Trees in Open Planting Areas / Parkway strips

On residential and non-commercial streets where the curbside sidewalk landscape zone (also referred to as the ‘parkway strip’ or ‘furnishing zone’) is not being used for flow-through biofiltration, street trees may be planted in open planting areas. These parkway strips will typically feature shrub, perennial and ground cover plantings to add visual interest and richness to the streetscape.

The length and width of the parkway strips will vary, but a width of 4 to 5 feet is typical. The planted areas will generally be extended to include the end block and mid block bulb-outs. On streets where there is parallel parking, a 2 foot curbside stepout will be provided and the parkway strip will need to be interrupted with walkway passages. Providing one walkway passage per parallel parking stall is recommended. On streets where there is no curbside parking, the stepout can be omitted and the parkway strips can be longer, without interruption.

Tree planting soil volumes should be maximized by providing continuous planting trenches a minimum of 3'-6" deep and underdrainage should be provided. (Figure 7.2, Section B-B).

Median Plantings: On streets with medians, a general guideline is to provide street trees in open planted areas on any median that is 5 feet or greater in width. On narrower medians, it is generally recommended to provide a paved surface and omit trees and other landscape plantings. Site visibility at uncontrolled intersections should be analyzed to determine the maximum height of the shrubs.

Compatibility with Stormwater Treatment & Bioswales: This planting condition is generally compatible with streets where a percentage of the frontage will be required for stormwater management flow-through biofiltration facilities. When bioswales or other open storm water management features are incorporated into parkway strips or medians, trees and understory plants that can tolerate seasonal inundation should be specified.

*Maintenance of underdrain - SFPUC will not maintain the underdrains.
7. GUIDELINES AND DETAILS

7.1 STREET TREE PLANTING GUIDELINES & DETAILS

Section B-B *Maintenance of underdrain - SFPUC will not maintain the underdrains
7. GUIDELINES AND DETAILS

7.1 STREET TREE PLANTING GUIDELINES & DETAILS

**Planting condition 2 - Street Trees in Tree Wells**

On commercial and retail streets, accommodating higher volumes of pedestrian traffic moving to and from curbside parking will often require that the curbside sidewalk landscape zone is minimized. Street tree plantings in these areas will typically be in tree wells. The understory of the wells can be treated in a variety of ways: either planted, paved with ornamental gravel or unit pavers.

The size of tree wells can vary; however, a minimum size of 4 feet by 4 feet is required. In order to optimize the health of the street trees, the use of larger, 5 feet by 5 feet tree wells is recommended.

As elsewhere, tree planting soil volumes should be maximized. In tree well planting situations, the recommended approach is to provide extended trenches of structural soil, a minimum of 5 feet wide by 5 feet long and 3'-6" deep, under the adjacent pavement areas on either side of the open tree well.

Undertory Plantings: Undertory plantings in tree wells should generally be limited to lower-growing species, no more than 3 feet in height.

Compatibility with Stormwater Treatment & Bioswales: This planting condition is generally not compatible with stormwater management improvements such as bioswales or flow-through biofiltration facilities. For this reason, on commercial/retail streets, centralized treatment facilities are proposed.

*Maintenance of underdrain - SFPUC will not maintain the underdrains*
7. GUIDELINES AND DETAILS

7.1 STREET TREE PLANTING GUIDELINES & DETAILS

- Maintenance of underdrain - SFPUC will not maintain the underdrains

NOTES:
- Irrigation - For trees, provide min. two (2) bubblers per tree. For shrub and ground cover areas provide water efficient subsurface drip irrigation.
- Tree Staking - Provide heavy-duty staking system, consisting of four (4) 3" dia. stakes per tree, stabilized with cross-bracing and a min. of four (4) cored rubber tree ties per tree.
- Root Barriers - Provide 24" deep panel style root barriers at all street trees.

*Maintenance of underdrain - SFPUC will not maintain the underdrains
7. GUIDELINES AND DETAILS

7.2 PLANT MATERIALS PALETTE

Street Trees

The following trees are adapted to tough urban conditions, and are tolerant of wind and fog, poor soils and bayfront/coastal conditions. Most are also recommended for San Francisco’s streets by the SFDPW and the Friends of the Urban Forest.

<table>
<thead>
<tr>
<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesculus x carnea</td>
<td>Ruby Red Horsechestnut</td>
</tr>
<tr>
<td>Arbutus x ‘Marina’</td>
<td>Marina Strawberry Tree**#</td>
</tr>
<tr>
<td>Arbutus unedo</td>
<td>Strawberry Tree</td>
</tr>
<tr>
<td>Betula jacquemontii</td>
<td>Himalayan Birch</td>
</tr>
<tr>
<td>Callistemon viminalis</td>
<td>Weeping Bottlebrush**</td>
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<tr>
<td>Cupaniopsis anacardioides</td>
<td>Camphorwood</td>
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<tr>
<td>Cupressus macrocarpa</td>
<td>Monterey Cypress**#</td>
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<tr>
<td>Eriobotrya deflexa</td>
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<td>Eucalyptus citriodora</td>
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<td>Eucalyptus micrhothea</td>
<td>Coolibah Gum#</td>
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<td>Eucalyptus nicothi</td>
<td>Willow-Leaved Peppermint**#</td>
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<td>Eucalyptus polyanthemos</td>
<td>Silver Dollar Gum#</td>
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<td>Fraxinus americana</td>
<td>Swamp Gum#</td>
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<td>Fraxinus latifolia</td>
<td>White Ash#</td>
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<td>Geijiro parkiflo</td>
<td>Oregon Ash#</td>
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<tr>
<td>Ginkgo biloba ‘Autumn Gold’</td>
<td>Australian Willow**</td>
</tr>
<tr>
<td>Ginkgo biloba ‘Princeton Sentry’</td>
<td>Autumn Gold Maidenhair Tree**</td>
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<td>Koelreuteria paniculata</td>
<td>Columnar Maidenhair Tree**</td>
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<td>Laurus nobilis ‘Saratoga’</td>
<td>Golden Rain Tree**^</td>
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<tr>
<td>Lagunaria patersonia</td>
<td>Bay Laurel</td>
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<td>Liquidambar styrax ‘Rotundiloba’</td>
<td>Pinnom Tree</td>
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<td>Lophostemon confertus</td>
<td>American Sweetgum**#</td>
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<td>Lyconothamus floribundus asplenifolius</td>
<td>Catalina Ironwood**</td>
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<td>Magnolia grandiflora ‘Samuel Sommers’</td>
<td>Southern Magnolia**^</td>
</tr>
<tr>
<td>Magnolia grandiflora ‘Little Gem’</td>
<td>Dwarf Southern Magnolia ^</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melaleuca linariifolia</td>
<td>Flaxleaf Paperbark</td>
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<tr>
<td>Melaleuca quinquenervia</td>
<td>Cajeput Tree**</td>
</tr>
<tr>
<td>Metrosideros excelsus</td>
<td>New Zealand Christmas Tree**</td>
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<tr>
<td>Olea europea ‘Swan Hill’</td>
<td>Fruitless European Olive**</td>
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<td>Pinus canariensis</td>
<td>Canary Island Pine**</td>
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<td>Pinus contorta</td>
<td>Shore Pine</td>
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<td>Pinus pinea</td>
<td>Italian Stone Pine**#</td>
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<td>Tomy Pine</td>
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<td>Pittosporum undulatum</td>
<td>Chinese Pistache**</td>
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<td>Victorian Box**</td>
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<td>Platanus acerifolia ‘Columbia’</td>
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<tr>
<td>Podocarpus gracilior</td>
<td>Columbia London Plane Tree</td>
</tr>
<tr>
<td>Prunus cerasifera ‘Krauter Veanus’</td>
<td>Fern Pine**</td>
</tr>
<tr>
<td>Prunus serulata ‘Kwanzan’</td>
<td>Purpleleaf Plum**</td>
</tr>
<tr>
<td>Quercus ilex</td>
<td>Kwanan Flowering Cherry</td>
</tr>
<tr>
<td>Quercus virginiana</td>
<td>Holly Oak</td>
</tr>
<tr>
<td>Rhus lancea</td>
<td>Southern Live Oak</td>
</tr>
<tr>
<td>Sequoia sempervirens var.</td>
<td>African Sumac</td>
</tr>
<tr>
<td>Sophora japonica</td>
<td>Coast Redwood**</td>
</tr>
<tr>
<td>Tristania laulina ‘Elegant’</td>
<td>Chinese Scholar Tree</td>
</tr>
<tr>
<td>Ulmus x ‘Frontier’</td>
<td>Little Leaf Tilia</td>
</tr>
<tr>
<td>Ulmus parvifolia ‘Emer II’</td>
<td>Frontier Elm</td>
</tr>
<tr>
<td>Ulmus parvifolia ‘Drake’</td>
<td>Alle Chinese Elm**</td>
</tr>
<tr>
<td></td>
<td>Chinese Evergreen Elm**</td>
</tr>
</tbody>
</table>

** = First tier street tree recommendation
^ = Only recommended for sites protected from the wind
# = Only recommended for larger areas and medians where there is sufficient setback from curb or pedestrian thoroughway to accommodate branching structure and trunk/root growth.
7. GUIDELINES AND DETAILS

7.2 PLANT MATERIALS PALETTE

Trees For Park Areas

The following trees are larger in scale, are coniferous evergreens, have unique form or foliage, are adapted to the project’s site conditions and are suitable for use in park sites and other larger open space areas.

- Aesculus x carnea
- Casuarina stricta
- Cedrus deodara
- Cupressus macrocarpa
- Eucalyptus ciliata
- Eucalyptus ficifolia
- Eucalyptus leucodermis
- Eucalyptus maculata
- Eucalyptus microtheca
- Eucalyptus nitens
- Eucalyptus saligna
- Phoenix canariensis
- Pinus canariensis
- Pinus contorta
- Pinus pinea
- Pinus strobus
- Platanus acerifolia ‘Bloodgood’
- Platanus acerifolia ‘Columbia’
- Platanus racemosa
- Populus fremontii ‘Nevada Male’
- Populus nigra ‘Afghanica’
- Quercus agrifolia
- Quercus ilex
- Schinus molle
- Sequoia sempervirens var.
- Washingtonia robusta

Ruby Red Horsechestnut
Drooping She-Oak
Deodar Cedar
Monterey Cypress
Lemon-Scented Gum
Red Gum
White Ironbark
Spotted Gum
Coolbah Gum
Willow-Leafed Peppermint
Silver Dollar Gum
Swamp Gum
Sydney Blue Gum
Canary Island Date Palm
Canary Island Pine
Shore Pine
Italian Stone Pine
Tory Pine
Bloodgood London Plane Tree
Columbia London Plane Tree
California Sycamore
Fremont Cottonwood
Theves Poplar
Coast Live Oak
Holy Oak
California Pepper
Coast Redwood
Mexican Fan Palm

Understory Plantings

The following plant palette represents a mix of locally-adapted, Mediterranean plants, succulents from various arid climates and native California plants noted for their interesting form, flower, and/or foliage. These plants are well-adapted to local San Francisco microclimates and most are also recommended for sidewalk landscaping by the SFDPW’s Division of Urban Forestry.

- Acanthus mollis
- Achillea filipendulina
- Achillea millefolium var.
- Aeonium arboreum var.
- Aeonium decorum ‘Sunburst’
- Agave attenuata ‘Noma’
- Agapanthus hybridus
- Agave attenuata ‘Noma’
- Anigozanthos hybridus
- Anemone x hybridra
- Arctostaphylos e ‘Emerald Carpet’
- Arctostaphylos u ‘uni
- Amerlia maritima
- Artemisia ‘Powis Castle’
- Baccharis pilularis ‘Twin Peaks’
- Calamagrostis x acutiflora ‘Karl Foerster’
- Ceanothus hermosus var.
- Ceanothus griseus var.
- Ceanothus g.h. ‘Yankee Point’
- Ceanothus thyrsiflorus repens
- Chondropetalum tectorum
- Cistus salviifolius ‘Frostratus’
- Clivia miniata hybrid
- Coleonema pulchrum
- Correa ‘Dusky Bells’
- Correa ‘Ivory Bells’
- Caryas revoluta
- Dicksonia antartica
- Deloerpema cooperi
- Dieterichia bicolour
- Dieterichia idahoensis
- Dodonaea viscosa ‘Pupurea’
- Echeveria agavoides
- Echium fastuosum

Bear’s Breeches
Fernies Yellow
Common Yam
Tree Aeonium
Sunburst Aeonium
Foxtail Agave
Dwarf Lily-of-the-Nile
Dwarf Foxtail Agave
Kangaroo Paw
Japanese Anemone
Groundcover Manzanita
Radiant Bearberry
Sea Thrift / Sea Pink
Silver Sage
Dwarf Coyote Brush
Pacific Reed Grass
Point Reyes Ceanothus
Camel Creeper
Yankee Point Ceanothus
Low Blue Blossom
Dwarf Cape Rush
Sageleaf Rockrose
Cwia - Yellow Hybrids
Pink Breath of Heaven
Pink Australian Fuschia
White Australian Fuschia
Sago Palm
Tasmanian Tree Fern
Hardy Impatiens
Fortnight Lily
African Iris
Purple Hopsed Bush
Hens and Chicks
Pride of Madiera
7. GUIDELINES AND DETAILS

7.2 PLANT MATERIALS PALETTE

Understory Plantings (cont.)

<table>
<thead>
<tr>
<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
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</thead>
<tbody>
<tr>
<td>Elymus magellanicus</td>
<td>Blue Wheatgrass, Magellan Wheatgrass</td>
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<tr>
<td>Erigeron glaucus</td>
<td>Beach Aster</td>
</tr>
<tr>
<td>Erigeron karvinskianus</td>
<td>Santa Barbara Daisy</td>
</tr>
<tr>
<td>Eriogonum fasciculatum</td>
<td>California Buckwheat</td>
</tr>
<tr>
<td>Escallonia ‘Newport Dwarf’</td>
<td>Dwarfd Escallonia</td>
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<td>Eschscholzia californica</td>
<td>Santa Barbara Daisy</td>
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<tr>
<td>Equisetum hyemale</td>
<td>California Poppy</td>
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<td>Euphorbia characias wulfenii</td>
<td>Horsetail</td>
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<td>Festuca californica</td>
<td>California Fescue</td>
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<td>Festuca glauca ‘Siskiyou Blue’</td>
<td>Blue Fescue var.</td>
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<td>Ficus pumila</td>
<td>Common Blue Fescue</td>
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<td>Fragaria chilensis</td>
<td>Creeping Fig</td>
</tr>
<tr>
<td>Graptovera ‘Debbie’</td>
<td>Sand Strawberry</td>
</tr>
<tr>
<td>Helleborus foetidus</td>
<td>Graptovera</td>
</tr>
<tr>
<td>Helleborus orientalis</td>
<td>Bear’s Foot Hellebor</td>
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<tr>
<td>Hemerocallis var.</td>
<td>Lenten Rose</td>
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<tr>
<td>Heuchera maxima var.</td>
<td>Daylily varieties</td>
</tr>
<tr>
<td>Heuchera micrantha</td>
<td>Island Alum Root</td>
</tr>
<tr>
<td>Iris douglasii var.</td>
<td>Coral Bells</td>
</tr>
<tr>
<td>Jasminum polyanthum</td>
<td>Pacific Coast Hybrid Iris</td>
</tr>
<tr>
<td>Kniphofia uvaria ‘Dwarf Yellow’</td>
<td>Pink Jasmine</td>
</tr>
<tr>
<td>Kniphofia galpin</td>
<td>Yellow Poker</td>
</tr>
<tr>
<td>Lavandula stoechas ‘Otto Quad’</td>
<td>Orange Flame</td>
</tr>
<tr>
<td>Lavandula dentata ‘Candicans’</td>
<td>Spanish Lavender</td>
</tr>
<tr>
<td>Lavandula x intermedia ‘Grosso’</td>
<td>French Lavender</td>
</tr>
<tr>
<td>Limonium perezi</td>
<td>Fat Bud French Lavender</td>
</tr>
<tr>
<td>Loeselia chinensis</td>
<td>Sea Lavender</td>
</tr>
<tr>
<td>Mahonia repens</td>
<td>Chinese Fringe Flower</td>
</tr>
<tr>
<td>Miscanthus ‘Moming Light’</td>
<td>Creeping Oregon Grape</td>
</tr>
<tr>
<td>Muhlenbergia rigens</td>
<td>Morning Light Silver Grass</td>
</tr>
<tr>
<td>Myrtus communis ‘Compacta’</td>
<td>Deergrass</td>
</tr>
<tr>
<td>Nandina domestica ‘Fire Power’</td>
<td>Dwarf Myrtle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nandina domestica ‘Harbor Dwarf’</td>
<td>Dwarf Heavenly Bamboo</td>
</tr>
<tr>
<td>Nasella pulchra</td>
<td>Purple Needlegrass</td>
</tr>
<tr>
<td>Nepeta x faassenii</td>
<td>Ornamental Catmint</td>
</tr>
<tr>
<td>Olea europea ‘Montra’</td>
<td>Little Ollie Dwarf Olive</td>
</tr>
<tr>
<td>Ophopogon japonicus</td>
<td>Mondo Grass</td>
</tr>
<tr>
<td>Osteospermum fruticosum</td>
<td>Tailing African Daisy</td>
</tr>
<tr>
<td>Pennisetum ‘Eaton Canyon’</td>
<td>Dwarf Red Fountain Grass</td>
</tr>
<tr>
<td>Penstemon heterophyllus var.</td>
<td>Penstemon varieties</td>
</tr>
<tr>
<td>Phormium tenax hybrids</td>
<td>New Zealand Flax (dwarf varieties)</td>
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<tr>
<td>Pittosporum crassifolium</td>
<td>Karo</td>
</tr>
<tr>
<td>Pittosporum toba ‘Varlegata’</td>
<td>Variegated Tobira</td>
</tr>
<tr>
<td>Pittosporum toba ‘Wheeler’s Dwarf’</td>
<td>Wheeler’s Dwarf Tobia</td>
</tr>
<tr>
<td>Polydichium muninum</td>
<td>Western Sword Fern</td>
</tr>
<tr>
<td>Rhamnus californica ‘Sea view’</td>
<td>Dwarf Coffeeberry</td>
</tr>
<tr>
<td>Rosmarinus officinalis var.</td>
<td>Rosemary var.</td>
</tr>
<tr>
<td>Rubus pentalobus</td>
<td>Creeping Bomsile</td>
</tr>
<tr>
<td>Salvia clevelandii</td>
<td>Cleveland Sage</td>
</tr>
<tr>
<td>Salvia gregii</td>
<td>Autumn Sage</td>
</tr>
<tr>
<td>Salvia leucantha</td>
<td>Mexican Sage</td>
</tr>
<tr>
<td>Salvia sonomensis</td>
<td>Creeping Sage</td>
</tr>
<tr>
<td>Santolina chamaecyparissus</td>
<td>Lavender Cotton</td>
</tr>
<tr>
<td>Senecio cineria</td>
<td>Dudy Miller</td>
</tr>
<tr>
<td>Senecio serpentis</td>
<td>Blue Chalksticks</td>
</tr>
<tr>
<td>Seslaria autumnalis</td>
<td>Autumn Moor Grass</td>
</tr>
<tr>
<td>Sollya heterophylla</td>
<td>Australian Bluebell Creeper</td>
</tr>
<tr>
<td>Stipa tenuissima</td>
<td>Mexican Feather Grass</td>
</tr>
<tr>
<td>Symphoricarpus albus</td>
<td>Common Snowberry</td>
</tr>
<tr>
<td>Teucrium chamaedrys</td>
<td>Princess Flower</td>
</tr>
<tr>
<td>Teucrium fruticans ‘Compactum’</td>
<td>Wall Gernander</td>
</tr>
<tr>
<td>Tulbaghia violacea ‘Silver Lace’</td>
<td>Bush Gernander</td>
</tr>
<tr>
<td>Variegated Society Garlic</td>
<td>Variegated Society Garlic</td>
</tr>
</tbody>
</table>
7. GUIDELINES AND DETAILS

7.2 PLANT MATERIALS PALETTE

Biofiltration / L.I.D. Understory Plantings

The following understory (shrub, ground cover & perennial) plantings are adapted to wetter circumstances and seasonal inundation conditions associated with biofiltration and storm water management areas. Most are also recommended for low impact design (L.I.D.) by the San Francisco Public Utility Commission’s (SFPUC’s) San Francisco Stormwater Design Guidelines.

<table>
<thead>
<tr>
<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baumea rubiginosa</td>
<td>Striped Rush</td>
</tr>
<tr>
<td>Bouteloua dactyloides</td>
<td>Buffa Grass</td>
</tr>
<tr>
<td>Calamagrostis nutkaensis</td>
<td>Bristy Sedge; Longhair Sedge</td>
</tr>
<tr>
<td>Carex comosa</td>
<td>Dense Sedge</td>
</tr>
<tr>
<td>Carex densa</td>
<td>Berkeley Sedge</td>
</tr>
<tr>
<td>Carex tumulicoa</td>
<td>Dwarf Cape Rush</td>
</tr>
<tr>
<td>Chondropetalum tectorum</td>
<td>Salt Grass</td>
</tr>
<tr>
<td>Distichlis spicata</td>
<td>Blue Wild Rye</td>
</tr>
<tr>
<td>Epilobium canum sp. Canum</td>
<td>California Fuchsia</td>
</tr>
<tr>
<td>Equisetum hyemale</td>
<td>Scourgrush Horse tail</td>
</tr>
<tr>
<td>Erigeron glaucus</td>
<td>Seaside Daisy</td>
</tr>
<tr>
<td>Festuca idahoensis</td>
<td>Idaho Fescue</td>
</tr>
<tr>
<td>Festuca rubra</td>
<td>Red Fescue</td>
</tr>
<tr>
<td>Fragaria chiloensis</td>
<td>Sand Strawberry</td>
</tr>
<tr>
<td>Fragaria vesca</td>
<td>Mountain Strawberry</td>
</tr>
<tr>
<td>Juncus effusus</td>
<td>Pacific Rush</td>
</tr>
<tr>
<td>Juncus lesequili</td>
<td>Common Rush</td>
</tr>
<tr>
<td>Juncus patens</td>
<td>California Grey Rush</td>
</tr>
<tr>
<td>Juncus xiphoides</td>
<td>Idaho Leaf Rush</td>
</tr>
<tr>
<td>Mimulus aurantiacus</td>
<td>Sticky Monkeyflower</td>
</tr>
<tr>
<td>Mimulus guttatus</td>
<td>Creek Monkeyflower</td>
</tr>
<tr>
<td>Miscanthus sinensis ‘Morning Light’</td>
<td>Morning Light Silver Grass</td>
</tr>
<tr>
<td>Muhlenbergia rigens</td>
<td>Deergrass</td>
</tr>
<tr>
<td>Nassella pulchra</td>
<td>Purple Needlegrass</td>
</tr>
<tr>
<td>Polystichum munitum</td>
<td>Western Sword Fern</td>
</tr>
<tr>
<td>Rhamnus californica ‘Seaview’</td>
<td>Dwarf Coffeeberry</td>
</tr>
<tr>
<td>Sesleria autumnallis</td>
<td>Autumn Moor Grass</td>
</tr>
<tr>
<td>Sisyrinchium bellum</td>
<td>Blue-Eyed Grass</td>
</tr>
<tr>
<td>Sisyrinchium californicum</td>
<td>Yellow-Eyed Grass</td>
</tr>
<tr>
<td>Symphoricarpos albus</td>
<td>Common Snowberry</td>
</tr>
</tbody>
</table>

The following plant palette represents a mix of native plants recommended by the ‘SF Green Connections Route Ecology Guides’ intended to maximize habitat value for local wildlife and to encourage park and open space and street designs that enhance ecology within the City’s urban neighborhoods. Many are water’s edge plants or halophytes that are characteristic of the bayfront’s beaches and tidal salt water marshes.

<table>
<thead>
<tr>
<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abronia umbellata</td>
<td>Pink Sand Verbena</td>
</tr>
<tr>
<td>Acmispon glaber</td>
<td>Deer Weed</td>
</tr>
<tr>
<td>Baccharis pilularis ‘Twin Peaks’</td>
<td>Dwarf Coyote Brush</td>
</tr>
<tr>
<td>Camissonia cheiranthifolia</td>
<td>Beach Evening Primrose</td>
</tr>
<tr>
<td>Danthonia californica</td>
<td>California Oatgrass</td>
</tr>
<tr>
<td>Distichlis spicata</td>
<td>Saltgrass</td>
</tr>
<tr>
<td>Festuca californica</td>
<td>California Fescue</td>
</tr>
<tr>
<td>Fragaria chiloensis</td>
<td>Sand Strawberry</td>
</tr>
<tr>
<td>Frankenia salina</td>
<td>Alkali Heath</td>
</tr>
<tr>
<td>Sarcocornia pacifica</td>
<td>Pickleweed</td>
</tr>
<tr>
<td>(Salicornia virginica)</td>
<td></td>
</tr>
</tbody>
</table>
7. GUIDELINES AND DETAILS

7.3 DISABLED PARKING AND LOADING DETAILS

Disabled parking stalls and Passenger Loading Zones will be located on the public streets throughout the project. The number of disabled stalls and passenger loading zones within the blocks designated to include these spaces are shown to the right. The typical layout details for the disabled parking and passenger loading zones are shown on the opposite page.
7. GUIDELINES AND DETAILS

7.3 DISABLED PARKING AND LOADING DETAILS
7. GUIDELINES AND DETAILS

7.4 STREETSCAPE ELEMENT DETAILS

SW Treatment Type 1

Treatment in sidewalks adjacent to parking should be estimated using 4 ft by 16 ft long treatment boxes on average.

Figure 7.4 - SW Treatment Type 1: Flow-through planter w/ hard edge, adjacent to street parking 4ft X 16ft, nts.
7. GUIDELINES AND DETAILS

7.4 STREETSCAPE ELEMENT DETAILS

**SW Treatment Type 2**

Treatment in sidewalks where parking is not planned can have wider boxes. These are 6 ft. wide by 16 ft. long on average (i.e. 6 ft. of planted width).

**Figure 7.5 - SW Treatment Type 2:**
Flow-through planter w/ hard edge, with no street parking 6 ft. X 16 ft, nts.
7. GUIDELINES AND DETAILS

7.4 STREETSCAPE ELEMENT DETAILS

Figure 7.6 – Typical infiltrating flow-through planter, nts

Note: Dimensions shown are examples only. Final dimensions and sizes to be reviewed and approved with the Improvement Plans and Stormwater Control Plans.

Figure 7.7 – Infiltrating Flow-through planter option for treatment type 1 and 2, nts
7. GUIDELINES AND DETAILS

7.4 STREETSCAPE ELEMENT DETAILS

Details for Potential Custom Furniture

![Diagram of Custom Bike Rack Details]

- 3/4" Corten Steel Fabricated Bike Rack, Glass Bead Blasted and Coated with Two Layers of Carbonate 980 Cleargard
- 1/2" EPDM Bearing Pad—Continuous
- 3/8" Hilti HY-150 Epoxy Bolt, 3 1/2" Embedment—1 1/2" Reveal
- 4" [D] x 4" [L] x 3" [H] Granite Paver
- Joint Filler
- 6" Concrete Curb/Gutter Per City of San Francisco Standard Plans
- 1 1/2" Sand Setting Bed
- 9" Compacted Aggregate Base Course # 002 Approved or Equal
- Asphalt Concrete Wearing Surface
- Concrete Roadway Base
- 4000 PSI Cast in Place Concrete Footing
- Existing Substrate

Figure 7.8 - Figure 6.45 - Custom bike rack details, nts
7. GUIDELINES AND DETAILS

7.4 STREETSCAPE ELEMENT DETAILS

Details for Potential Custom Furniture

Figure 7.9 – Custom newsrack details, nts

1/8" Corten Steel fabricated newsstand, glass (lead blasted and coated) with two layers of carboys, clearcoat

1/2" EPDM bearing pad—continuous
1 1/2" reveal
4" (D) x 8" (L) x 3" (H) granite paver
Joint filler
1 1/2" sand setting bed
6" concrete curb/cutout per city of San Francisco standard plans
95% compacted aggregate base course, #002 approved or equal
Asphalt concrete wearing surface
Concrete roadway base
4000 psi cast-in-place concrete footing
Existing substrate

Spring hinge
Corten door with glass reveal

3/8" H/L HY-150 epoxy bolt, 3 1/2" embedment
#4 epoxy coated rebar, continuous
1/2" (D) x 5" (H) epoxy coated dowel
7. GUIDELINES AND DETAILS

7.4 STREETSCAPE ELEMENT DETAILS

Figure 7.10 - Automatic pneumatic trash system custom enclosure details, nts
7. GUIDELINES AND DETAILS

7.5 STREETSCAPE MAINTENANCE

The streetscape improvements shown in this document will be implemented over time incrementally, through both private and public mechanisms and funding sources. Potential maintenance responsibilities for streetscape elements are shown on the table to the right.

Some minor variations in streetscape elements may be necessary or desirable due to unique or unforeseen circumstances, as well as to accommodate piecemeal and gradual build out of the streetscapes over time. All streetscape improvement designs submitted in Major Phase and Sub-Phase Applications are subject to a finding of consistency and approval by OCII.

The Department of Public Works is the permitting agency for improvements within the public right-of-way. All technical specifications not described in this document must meet pertinent Better Streets Plan guidelines and other applicable City standards and are subject to detailed design review and approval by DPW and other relevant agencies. Maintenance of any streetscape elements by City department is subject to City approval and acceptance.

### Streetscape Routine Maintenance Responsibility Matrix

<table>
<thead>
<tr>
<th>Streetscape Element</th>
<th>Master HOA/ Fronting Property Owner</th>
<th>SFUC</th>
<th>Utility Provider (e.g., PG&amp;G, Recology)</th>
<th>DPW</th>
<th>SFMTA</th>
<th>Park Owner/ CFD/BID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalks</td>
<td>X</td>
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<tr>
<td>Street Trees</td>
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<tr>
<td>Landscape Planting</td>
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<td>Benches</td>
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<td>Bike Racks</td>
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<td>Bulb-outs</td>
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<tr>
<td>Storm Water Treatment Facilities in Public Right-of-Way</td>
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</tr>
<tr>
<td>Medians</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utility Vaults/Utility Boxes</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus Stop Shelters</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Special Pedestrian and Vehicular Directional Signage in the Public Right-of-Way</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretive Signage</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street Lights</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Elements in Parks (e.g., Stormwater Treatment Facilities, Furnishings, Signage)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The streetscape improvements shown in this document will be implemented over time incrementally, through both private and public mechanisms and funding sources. Potential maintenance responsibilities for streetscape elements are shown on the table to the right.

Some minor variations in streetscape elements may be necessary or desirable due to unique or unforeseen circumstances, as well as to accommodate piecemeal and gradual build out of the streetscapes over time. All streetscape improvement designs submitted in Major Phase and Sub-Phase Applications are subject to a finding of consistency and approval by OCII.

The Department of Public Works is the permitting agency for improvements within the public right-of-way. All technical specifications not described in this document must meet pertinent Better Streets Plan guidelines and other applicable City standards and are subject to detailed design review and approval by DPW and other relevant agencies. Maintenance of any streetscape elements by City department is subject to City approval and acceptance.

FINAL FOR APPROVAL JANUARY 7, 2014
7. GUIDELINES AND DETAILS

7.5  STREETSCAPE MAINTENANCE

Funding Sources for Private Streetscape Maintenance

The maintenance of streetscape improvements located in the public right-of-way may be managed and funded through various assessments that will likely be sourced from community facilities districts (CFDs), master homeowner associations (MHAs), and, possibly, business improvement districts (BIDs).

Community Facility Districts

The Developer and the OCII (Successor to the Redevelopment Agency) have agreed to propose specifications for a Maintenance Community Finance District (CFD) to finance ongoing park maintenance within the Project Site. The CFD will be supported by Maintenance Special Taxes for Taxable Residential Units will be equal to one tenth of one percent (0.1%) of the projected sales price of those Taxable Residential Units. The OCII and Developer will determine the amount of Maintenance Special Taxes to be levied on Taxable Parcels that are not Taxable Residential Units based on Developer's development plans and the market for CFD-encumbered non-residential property. Developer and the Agency anticipate that the proceeds of Maintenance Special Taxes levied in a Maintenance CFD will pay all costs of ongoing Park Maintenance.

Master Homeowner Associations for Residential Use

One or more master homeowner (or property) associations will be established as a private master community association. Membership in the master associations will be mandated for only those residences currently within the established boundaries of the master association and will include a monthly assessment to offset the operating, reserve and administrative costs associated with the areas owned and maintained by the master association.

The Master Association will own and maintain common area property, and can also be responsible for providing oversight and funding for the association websites, monumentation, monumentation lights, concrete within the association, public art, irrigation controllers, bio filtration planters, tree grates, tree replacement, and landscaping, and any other property deemed to be under the maintenance obligations of the association(s).

Business Improvement Districts for Commercial and Office Use

A business improvement district (BID) is a defined area within which businesses pay an additional tax (or levy) in order to fund projects within the district's boundaries. The BID is often funded primarily through the levy but can also draw on other public and private funding streams. BIDs provide services, such as cleaning streets, providing security, making capital improvements, construction of pedestrian and streetscape enhancements, and marketing the area. The services provided by BIDs are supplemental to those already provided by the municipality. BIDs would be most appropriately located in the commercial areas of the project.