8. TRANSPORTATION

8.1 TRANSPORTATION SUMMARY
8.2 STREET CROSS SECTIONS
8.3 PEDESTRIAN NETWORK
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8. TRANSPORTATION

8.1 TRANSPORTATION SUMMARY

Off-Site Street Improvements
Major Phase 1 CP will involve off-site improvements to two of the primary access points into Candlestick Point. First, Major Phase 1 CP will include “refreshing” the existing portion of Gilman Avenue between Third Street and Arelious Walker to include new pavement, restriping to include two travel lanes in each direction and on-street parking on both sides, and new sidewalks with landscaping.

Additionally, Major Phase 1 CP will reconstruct Harney Way, between Thomas Mellon Drive and Arelious Walker Drive. With its access to the Highway 101, Harney Way will function as the southern gateway to the Project. The existing four-lane facility will be rebuilt as a new five-lane auto facility with right-of-way for an additional auto lane to be built in the future as needed to serve increased traffic levels.

New On-Site Streets
Internal to the site, Candlestick Point will be served by a new four-lane roadway – Arelious Walker Drive - approximately following the current path of Giants Drive and Arelious Walker Drive. This roadway will provide access to parking for the regional retail center and an auto connection between the Alice Griffith neighborhood and US 101.

Parking
The parking program is designed to reduce the overall usage of private automobiles through pricing, supply, new technologies, and effective monitoring programs. All on- and off-street parking will be paid parking. Most residential parking will be located in structures embedded within the buildings. Parking for the regional retail is located in a large structure that is wrapped on the pedestrian side by store fronts and on the Arelious Walker Drive side by a combination of sloping terrain and landscape buffers.

Additional convenience parking for retail is located on many streets adjacent to shops and services.

Street and Block Pattern
The overall urban form – the pattern of streets, blocks, and open spaces – is configured to physically and visually link the existing Bayview neighborhood, and the centers of the Candlestick Point to the shoreline’s open space and views.

The street and block pattern is an extension of the existing Bayview grid. This street pattern allows the axes of most streets to lie perpendicular to the Bay shoreline with terminating vistas of the Bay. At Candlestick, physical and visual linkages are achieved by providing new, wedge-shaped parks that connect the waterfront of the CPSRA to the center of the site and through the perpendicular orientation of the streets to the shoreline. The pattern of streets and blocks, similar to other San Francisco neighborhoods, will be augmented by mid-block breaks (pedestrian mews and shared public ways) to create a finer, pedestrian scale of blocks and buildings while increasing mobility and protecting or improving sightlines.

Transportation Demand Management
The TDM program for this Major Phase will include many of the physical and programmatic TDM components proposed as part of the overall Project’s TDM program. The TDM elements that will be incorporated into the Major Phase fall into two categories. The first category of TDM elements that will be incorporated are those specifically oriented around the physical design of the project, including car and bike parking policies and strategies, carpool matching services and transit trip planning would likely be implemented coincident with the regional retail shopping center.
8. TRANSPORTATION

8.1 TRANSPORTATION SUMMARY

Figure 8.1 – Primary Streets
8. TRANSPORTATION

8.1 TRANSPORTATION SUMMARY

Street Typologies

The following street types (and their associated description from the Better Streets Plan, adapted to this project) are included in this Major Phase:

Commercial Streets – Two types of commercial street typologies have been developed.

- Neighborhood Commercial Street – Neighborhood commercial streets, such as Harney Way, near Ingerson, and Ingerson between Arelous Walker and Harney are modeled after many of San Francisco’s most vibrant streets, handling continuous activity throughout the day. They are the streets where residents do their daily errands, meet with friends, and shop and play on the weekends. Short-term parking for customers and space for loading facilities are essential components of commercial districts. However, parking and loading facilities often compete for the same space as desired features such as corner bulbouts or pedestrian plazas. Managing parking and loading facilities efficiently and effectively can serve both the needs of local businesses while enabling improvements to the public realm.

- Commercial Throughway – Commercial throughways such as Arelous Walker Boulevard and Harney Way, near Executive Park move significant volumes of people across larger areas in a variety of travel modes and attract them to shop, eat, and play from across the city. Vehicular traffic on these throughways tends to be relatively fast and continuous and transit service is often frequent. These streets should have a comfortable pedestrian realm with significant pedestrian amenities and public spaces.

Residential Street – Two types of residential streets have been developed.

- Neighborhood Residential Street – Neighborhood residential streets are quieter residential streets with relatively low traffic volumes and speeds. Though they have low levels of activity relative to other street types, they play a key role to support the social life of the neighborhood. Residential streets should feel safe, comfortable, and cared for. Residents may think of the street outside their home as an extension of their home or a neighborhood common. Improvements should focus on slowing traffic, providing useable space and amenities, and making improvements that encourage residents to take pride and ownership of the streetscape outside their front door.

- Residential Throughway – Residential throughways such as Innes Avenue and Donohue Avenue have higher levels of faster-moving traffic with residential land uses. As such, in many locations elsewhere in the City, they are often not designed to serve residential uses, and can be unpleasant to walk or live along. For this project, Residential Throughways include streetscape improvements that focus on buffering the sidewalk and adjacent homes from vehicles passing in the street and providing a generous, useable public realm through landscaping, curb extensions, or widened sidewalks where roadway space allows.

Industrial Mixed-Use Street – Mixed-use streets such as those adjacent to Production, Distribution, and Repair (PDR) uses in the Bayview serve a variety of low-intensity industrial uses, as well as a growing number of residences, shops, and services. Their use and character are frequently in a state of change, and streets must reflect this changing character and serve a variety of needs. Mixed-use streets are often wide streets, with high volumes of fast-moving traffic. Streetscape treatments should include landscaping, pedestrian safety elements, public space uses, and other amenities to complement current and future land use.

Park Streets – Two types of Park Streets have been developed.

- Parkway – Parkways, such as Egbert Avenue within the Alice Griffith neighborhood have broad well-landscaped medians and sidewalks that provide recreational paths, while moving vehicles, bikes, and pedestrians across the city. These streets can function not only as transportation corridors, but also as linear parks, creating a green network. The green spaces can often be more effectively used for pedestrian, open space, and ecological functions, by providing multi-use trails, seating, open space, and storm water management.

- Park Edge Street – Streets that border major parks or the waterfront have one set of conditions on one side of the street and a distinctly different set of conditions on the other. Park edge streets often have fewer spatial constraints on the park edge side but unique demands of high pedestrian volumes or special activities associated with them. These streets should have a generous park edge with landscaping, lighting, furnishings, and multi-use trails.

Shared Public Way – Shared public ways are small scale, single-surface streets that prioritize pedestrian use, but permit vehicles and bicycles to share the open space. Shared public ways should be designed to emphasize their pedestrian scale and calm traffic. They enable a generous pedestrian realm on narrow streets, and they create pockets of usable open space to act as front yards in open space-deficient neighborhoods.

Pedestrian Network

The Project is designed to actively encourage the use of walking as a primary travel mode. Provision of smaller blocks, as proposed, will decrease the average distance that pedestrians are required to walk, thereby increasing the likelihood that local trips will be made by foot, rather than by car. Further, the sidewalk system within the project site has been designed to provide generous 12-sidewalks throughout, increasing to 15-foot sidewalks near busier retail areas.

Design Principles

A consistent set of design principles for street facilities was developed to ensure a logical and rational approach to street design. Those principles are as follows.

Travel Lanes - Streets Without Transit

- 10' Standard
- 11' Adjacent to raised curb, except in exclusively residential areas where 10' may be proposed adjacent to a curb

On-street Parking

- 8' Standard
- 9' when adjacent to a Class II bike facility

Bike Lanes

- 6' Standard when adjacent to curb
- 5' when adjacent to (9') on-street parking
- 13' two-way cycletrack (6.5' in each direction)

Sidewalks

All sidewalks either 12’ or 15’, with a few exceptions near linear parks

Other Exceptions

Some street segments may require different dimensions: [e.g., streets carrying transit on one or two blocks may require 12’ travel lanes on those blocks, but 10’ travel lanes on the rest of the street]. In other cases, strict application of the design principles would result in streets that are either offset, or inconsistent rights of way, both of which are undesirable consequences. In these cases, some dimensions may be increased from the minimums described above to ensure that roadways align across intersections and that building frontages are consistent along the street.
8. TRANSPORTATION

8.1 TRANSPORTATION SUMMARY

<table>
<thead>
<tr>
<th>ADJACENT USE TO RIGHT SIDE OF VEHICLE</th>
<th>ADJACENT TO TRAFFIC LANE OPERATING IN OPPOSING DIRECTION</th>
<th>ADJACENT TO TRAFFIC LANE OPERATING IN SAME DIRECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curb with no parking</td>
<td>12'</td>
<td>12'</td>
</tr>
<tr>
<td>8' parking lane</td>
<td>12'</td>
<td>11'</td>
</tr>
<tr>
<td>Bike lane</td>
<td>11'</td>
<td>11'</td>
</tr>
</tbody>
</table>

Table 8.1 - Travel Lanes - Streets with Transit

Figure 8.2 - Street Network

LEGEND
- Neighborhood Commercial
- Neighborhood Residential
- Commercial Throughway
- Park Edge
- Parkway
- Mixed-Use
- External Street Improvements
- Shared Public Way
8. TRANSPORTATION

8.2 STREET CROSS SECTIONS

Neighborhood Residential - 40.5' Min Row

Neighborhood Residential - 52' Min Row

Neighborhood Residential - 60' Min Row

Neighborhood Commercial - 78' Min Row

Neighborhood Commercial - 93' Min Row

Park Edge - Min Row Varies
8. TRANSPORTATION

8.2 STREET CROSS SECTIONS

Mixed-Use - 80' Min Row

Commercial Throughway - 122' Min Row

Commercial Throughway - 109' Min Row

Neighborhood Commercial - Min Row Varies

Neighborhood Commercial - 93' Min Row
8. TRANSPORTATION

8.2 STREET CROSS SECTIONS

Shared Public Way - 40' Min Row

Commercial Throughway - 75' Min Row

Commercial Throughway - 83' Min Row

Park Edge - 92' Min Row

Commercial Throughway - 83' Min Row

Parkway - 156' Min Row
8. TRANSPORTATION

8.2 STREET CROSS SECTIONS

Parkway - 156' Min Row
8. TRANSPORTATION

8.3 PEDESTRIAN NETWORK

All streets within Major Phase 1 will provide sidewalks at either 12-feet or 15-feet wide, consistent with guidance from the Better Streets Plan. Streets feature short block sizes, bulb-outs and crosswalks at intersections, slow and narrow traffic lanes, street trees, sidewalk plantings, lighting, seating and furnishings, and wayfinding signage. Boulevard Park Streets and Retail Streets provide additional interest and activities for pedestrians, while the park system includes miles of paths for strolling. Pedestrian mews – mid-block breaks with pedestrian only access offer quiet, car-free walks connecting the heart of the neighborhoods and connect with the park system. Off-site street improvements along Gilman Avenue and Harney Way will enhance pedestrian mobility throughout the Bayview neighborhood.

Figure 8.3 – Pedestrian Circulation

<table>
<thead>
<tr>
<th>LEGEND</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF Bay Trail</td>
</tr>
<tr>
<td>SF Bay Trail - Outside of Project Boundary</td>
</tr>
<tr>
<td>Pedestrian/Multi-use Path</td>
</tr>
<tr>
<td>Shared Public Way</td>
</tr>
<tr>
<td>Project Boundary</td>
</tr>
<tr>
<td>Major Transit Stops</td>
</tr>
</tbody>
</table>
At the heart of Major Phase 1 CP is the construction of the first segment of a new two-way cycletrack along Harney Way through the wedge park, where cyclists can connect to the new retail center. The cycletrack will connect to the San Francisco Bay Trail and to recreational paths on the Project site.

Bikeways are typically classified as Class I, Class II, or Class III facilities. Class I bikeways are bike paths with exclusive right-of-way for use by cyclists or pedestrians. Class II bikeways are bike lanes striped with the paved areas of roadways and established for the preferential use of bicycles, while Class III bikeways are signed bike routes that allow bicycles to share travel lanes with vehicles.

Class II bicycle lanes will be provided around the central park in the Alice Griffith neighborhood. Additionally, Gilman Avenue, from Arelious Walker to Third Street will be designated and designed as a Class III bicycle route in the City’s bicycle network with appropriate signage and pavement markings (arrows).

The proposed bicycle network is illustrated in Figure 8.4.
8. TRANSPORTATION

8.5 PUBLIC TRANSIT

Major Phase 1 CP will construct the first portion of the infrastructure for the BRT, including Harney Way and West Harney Way. Although, the BRT may not operate as part of buildout of Major Phase 1 CP, shorter-haul shuttles may provide a connection between the retail site and regional transit such as BART and Caltrain.

Additionally, Major Phase 1 CP would make improvements on Gilman between Third Street and Arelious Walker, as well as construct Ingerson Avenue adjacent to the retail center. Ultimately, the 29-Sunset, which currently terminates near Gilman and Arelious Walker, is intended to serve Candlestick Point via Gilman Avenue, Earl Street, Ingerson Avenue, and West Harney Way. However, the infrastructure provided as part of Major Phase 1 CP could accommodate this extension to the retail center with an interim route along Arelious Walker and Ingerson Avenue. (The decision as to when this service should be initiated is currently uncertain).
9. UTILITIES

9.1 STORM WATER TREATMENT
9.2 STORM DRAIN
9.3 SANITARY SEWER
9.4 LOW PRESSURE WATER
9.5 AUXILIARY WATER SUPPLY
9.6 RECYCLED WATER
9.7 JOINT TRENCH
9.8 AUTOMATED WASTE COLLECTION
9.9 EXISTING CONDITIONS - GEOLOGY AND SOILS
9. UTILITIES

9.1 STORM WATER TREATMENT

The storm water runoff from the City right-of-way will be treated using Best Management Practice (BMP) measures. The BMPs will consist of bioretention facilities such as flow-through planters and high flow-rate tree well filters, and vegetated swales. BMPs within the parks will be maintained through a Community Finance District (CFD). BMPs in the public right-of-way will be maintained by the City.

The BMPs will be located either in the public right-of-way or in the public open space parks. There will be three typical BMP layouts as follows:

- **Flow-Through Planters within the City Right-of-Way** – The majority of the storm water runoff in Candlestick Point will be treated using flow-through planters within the City right-of-way. Depending on the street section, the flow-through planters will be located either in the median or in the landscape zone adjacent to sidewalks.

- **High Flow-Rate Tree Well Filters within the City Right-of-Way** – High flow-rate tree well filters will be used to treat storm water runoff from the streets along the retail parcels. Streets along the retail parcels are Ingerson Avenue between Arelious Walker, Harney Way between P Street and 8th Street, and West Harney Way between 8th Street and Ingerson Avenue. The available sidewalk width is maximized in these streets to accommodate possible outdoor seating and higher pedestrian traffic.

- **Flow-Through Planters or High Flow-Rate Tree Well Filters in the Public Open Space Parks** – The storm water runoff from streets adjacent to public open space parks will be treated in flow through planters in the street right of way, or flow-through planters or high flow-rate tree well filters in the park. Storm water BMPs to treat storm water from roofs and hardscape in the parks will consist of landscape dispersion, vegetated swales, and flow-through planters.
9. UTILITIES

9.1 STORM WATER TREATMENT

Figure 9.2 – Storm Water Treatment in Streets

Figure 9.3 – Storm Water Treatment in Open Space