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1 Executive Summary

1.1 Introduction

The Candlestick Point and Hunters Point Shipyard Phase II Development Plan contemplates a new, mixed-use community in southeastern San Francisco. Lennar, the lead developer of the community, is working in partnership with various City agencies and departments to define the Development Plan. The Development Plan is subject to environmental review and approval by various city, state, and federal authorities.

This Transportation Plan is one of several plans and reports describing the proposed Development Plan. The Transportation Plan presents goals, principles, and strategies to meet the travel demand needs of an emerging mixed-use, urban neighborhood in southeast San Francisco. Incorporating innovative practices and sustainable development principles, the Plan seeks to provide residents, employees, and visitors of the two neighborhoods with high-quality transportation infrastructure and services.
Goals & Principles

The Transportation Plan’s (referred to throughout as “the Plan”) elements prioritize walking, bicycling, and transit travel, making these attractive and practical transportation options. At full build-out, the project targets a weekday PM peak hour work trip mode split of not more than 45 percent auto, and not less than 30 percent transit, 20 percent walk, and 5 percent bike, as shown in Table 1. This aspirational goal compares with an existing PM peak hour work trip mode split in Superdistrict 3 (SD 3) of 66 percent auto, 16 percent transit, 16 percent walk, and 2 percent bike. Integrating transportation and land use, providing new and improved transit options, an effective Transportation Demand Management (TDM) Program, and properly designed streets will help achieve this goal. The project also enhances the self-sufficiency and sustainability of adjacent neighborhoods (such as the Bayview, Executive Park/Visitacion Valley, the Central Waterfront, India Basin and across the border in Brisbane) by linking these areas to the project’s strong transit, bicycle and pedestrian networks, and neighborhood services within close proximity while providing seamless transit to regional employment center and destinations. This linkage should also serve to reduce overall trips and vehicle miles traveled in the area.

<table>
<thead>
<tr>
<th>Mode</th>
<th>SD-3 Mode Split1</th>
<th>Project Travel Behavior Goal2</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto/Carpool</td>
<td>66%</td>
<td>45%</td>
<td>-21%</td>
</tr>
<tr>
<td>Transit</td>
<td>16%</td>
<td>30%</td>
<td>+14%</td>
</tr>
<tr>
<td>Walk</td>
<td>16%</td>
<td>20%</td>
<td>+4%</td>
</tr>
<tr>
<td>Bike</td>
<td>2%</td>
<td>5%</td>
<td>+3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Fehr & Peers – May 2009

It is important to note that even small differences in the current SD-3 mode split and the project travel behavior goal will have a large effect due to the scale of the Project.

In addition, the project aims to create a community with all of the services necessary to achieve self-sufficiency, and serve as a model of sustainable development and transportation.

Integration of Transportation & Land Use

The land use plan incorporates a dense, compact development pattern centered around mixed-use transit nodes. The following illustrate a few features of the plan designed to promote pedestrian, bicycle, and transit travel:

- The development pattern is designed to facilitate walking and cycling for internal trips, and bus service for internal trips, trips downtown and to regional transit hubs;
- Significant portions of the project area are preserved as open space;
- Streets are designed to support a variety of travel modes at moderate to low speeds, and are arranged in a pedestrian-oriented grid of small blocks;
- All of the homes within each community are within a 15-minute walk of a transit stop, where frequent service will be available;
- Neighborhood services and retail are integrated into residential blocks;
- The mixed-use center of each community will serve as an arrival point and activity hub, and provide a source of identity; and
- The phasing of development and supporting transportation infrastructure is designed to support the goals above at each major increment.
Integration of Transportation Improvements with Surrounding Bayview Neighborhood

The proposed street and transit improvements would be integrated with the surrounding transportation network and facilities to benefit the entire Bayview/Hunters Point neighborhood, in addition to serving the proposed project demands.

1.2 Project Definition

The proposed land use program for the redevelopment of Candlestick Point and Hunters Point Shipyard, summarized in Table 2, includes residential, regional and local-serving retail, research and development space, office, hotel, and open space.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Candlestick Point</th>
<th>Hunters Point Shipyard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>6,225 homes</td>
<td>4,275 homes</td>
</tr>
<tr>
<td>Regional-Serving Retail</td>
<td>635,000 sq. ft.</td>
<td>---</td>
</tr>
<tr>
<td>Neighborhood-Serving Retail</td>
<td>125,000 sq. ft.</td>
<td>125,000 sq. ft.</td>
</tr>
<tr>
<td>Office</td>
<td>150,000 sq. ft.</td>
<td>---</td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>---</td>
<td>3,000,000 sq. ft.</td>
</tr>
<tr>
<td>Hotel</td>
<td>220 rooms</td>
<td>---</td>
</tr>
<tr>
<td>Arena</td>
<td>10,000 seats</td>
<td>---</td>
</tr>
<tr>
<td>Parks &amp; Open Space</td>
<td>147 acres</td>
<td>238 acres</td>
</tr>
<tr>
<td>Artist Studios</td>
<td>---</td>
<td>255,000 sq. ft.</td>
</tr>
<tr>
<td>Community Services</td>
<td>50,000 sq. ft.</td>
<td>50,000 sq. ft.</td>
</tr>
</tbody>
</table>

Source: Lennar Urban – October 2009

The density and arrangement of land uses at Candlestick Point and Hunters Point Shipyard are designed to actively encourage the use of walking and bicycling as primary travel modes within the project area. The street network is intended to better manage vehicle access while supporting transit ridership, public character, and sustainability.

A comprehensive set of roadway improvements, shown with transit improvements in Figure 1, have been identified to meet the project’s increase in auto travel demand. These include, but are not limited to:
• Major roadway access improvements that would provide four to six lanes from US 101 / Harney Way to Candlestick Point and four lanes from US 101 / Cesar Chavez Street to Hunters Point Boulevard;

• A new Yosemite Slough Bridge to provide a Bus Rapid Transit (BRT) and pedestrian/bicycle connection between Hunters Point Shipyard and Candlestick Point; and

• Various location-specific improvements discussed later in this document.

### 1.3 Transportation Program

The Transportation Program consists of strategies to contain as many trips as possible within Candlestick Point and Hunters Point Shipyard, maximize the usefulness of walking and bicycling, and discourage the overall use of private automobiles through a parking plan, increased transit service, and a Transportation Demand Management (TDM) Program. The Transportation Program is shown in Figure 1 and described below.

**Internal Trip Capture & Pedestrian and Bicycle Facilities**

The mixed-use neighborhoods proposed by the Development Plan will include office, retail, recreation, and entertainment centers designed to meet residents' and employee needs, and reduce the demand for off-site trips. Travel within the project will be facilitated by a network of pedestrian and bicycle routes, secure bike parking, traffic-calmed streets, and urban design that makes walking and bicycling comfortable and convenient.

**New and Improved Transit**
Current Muni service to Candlestick Point and Hunters Point Shipyard is limited, and no circulation is provided between the two areas. Connections to major employment centers in Downtown San Francisco and the Peninsula are inefficient. To maximize the effectiveness and convenience of transit service to and within the project site, the following strategies have been developed:

- Extensions of existing Muni routes to Candlestick Point and Hunters Point Shipyard, and new express buses providing direct service to Downtown San Francisco;
- New BRT (Muni Line 28L) service operating between Candlestick Point and Hunters Point Shipyard, and connecting to SamTrans, BART, Caltrain, and the T-Third Metro line at the Bayshore Caltrain station and Balboa Park BART station;
- A transit center at Hunters Point Shipyard to enable efficient and convenient transfers;
- Bus service throughout the day, evening, and weekends at high levels of service to provide convenient connections to employment and activity centers and the regional transit network; and
- Other areawide improvements associated with the Transit Effectiveness Project (TEP) and Muni’s Service Plan

**Transportation Demand Management Program**

Also included in the Plan is a comprehensive TDM program that will include elements to facilitate carpools and vanpools, encourage carsharing, increase the convenience of transit services, and create a walkable and bikeable community. Specific components of the TDM program include:

- A full-time Transportation Coordinator to manage the real-time transportation needs of residents, employees and visitors to Candlestick Point and Hunters Point Shipyard;
- Residential parking sold or leased separately from units\(^1\);
- Bicycle support facilities to encourage bicycling, including parking facilities (racks, lockers and showers), stations at key locations with attended bicycle parking and repair facilities, and potentially participation in the City’s bike sharing program;
- The inclusion of a transit pass with monthly homeowner’s dues; and
- Visitor parking charges at variable market rates to encourage transit use. This can be accomplished by increasing parking rates during the peak period when transit service is most frequent, or increasing parking rates progressively to favor short-term parking over long-term parking, discouraging commuter parking.

**Implementation and Monitoring**

A phasing strategy has been developed for the transportation improvements and programs to coincide with the project’s development. Some specific components of the monitoring plan include:

- The Plan will be implemented at the earliest stages of development and specific phasing of the programs and services will be adopted;
- Outreach to residents, employees and visitors will inform them of all available transportation options; and
- The impact of events at the performance venue will be monitored to determine the opportunities for applying TDM to encourage the use of non-auto modes.

---

\(^1\) This arrangement would not apply to the 1,655 “Agency Affordable” units, which are limited by tax-credit financing requirements.
### 1.4 Analogies

#### Comparison to other San Francisco Neighborhoods

The project’s mode split goals have been compared with 2000 U.S. Census data on existing travel behavior in other San Francisco neighborhoods. As shown in Table 3, at least eight other neighborhoods in San Francisco exhibit travel behavior comparable to the project’s goals.

The auto mode share goal of 45 percent is a desired maximum share, while the transit, walk and bike mode share goals are desired minimum mode shares.

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>PM Peak Hour Residential Work Trips</th>
<th>% That Would Achieve Project Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transit</td>
<td>Walk/Bike</td>
</tr>
<tr>
<td>Marina</td>
<td>40%</td>
<td>11%</td>
</tr>
<tr>
<td>Mission</td>
<td>39%</td>
<td>14%</td>
</tr>
<tr>
<td>Nob Hill</td>
<td>39%</td>
<td>32%</td>
</tr>
<tr>
<td>North Beach</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>Parkmerced</td>
<td>31%</td>
<td>4%</td>
</tr>
<tr>
<td>Russian Hill</td>
<td>35%</td>
<td>15%</td>
</tr>
<tr>
<td>Telegraph Hill</td>
<td>31%</td>
<td>29%</td>
</tr>
<tr>
<td>Western Addition</td>
<td>45%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau – 2000

### TDM Program Case Studies

In an effort to evaluate the effectiveness of the TDM measures proposed by the project, other projects that have implemented similar programs and conducted post-implementation monitoring and analysis have been reviewed.

Case studies from northern California (including San Jose, Stanford University, Berkeley, and Sacramento), Oregon, British Columbia, and Florida have been identified that evaluate the effectiveness of TDM measures, such as transit passes and improved bus service, that are similar to those proposed for this project. These TDM case studies are presented in detail in Section 7.2 of this Plan. Since the TDM case studies relate primarily to employers at office or campus uses, additional strategies and innovations for large scale residential and retail will be needed.

While it is difficult to isolate the effectiveness of any one of the TDM elements described in the Plan, it is clear from these case studies that comprehensive, multi-faceted TDM plans can achieve dramatic shifts in mode choice.
2 Introduction

2.1 The Development Plan

The Candlestick Point and Hunters Point Shipyard Phase II Development Plan (the Development Plan, referred to throughout as “the project”) contemplates a new, mixed-use community within the Bayview/Hunters Point Redevelopment Area. The project consists of 10,500 homes; over 4 million square feet of retail, office, and research and development uses; one hotel; over 300 acres of new and restored parklands and recreational open spaces; and civic and community uses. This Transportation Plan (referred to throughout as “the Plan”) is one of several plans and reports (including a Sustainability Plan and Urban Design Plan) describing the project and the existing and future circumstances of the project site and surrounding areas.
Lennar is the lead developer for the Development Plan. Lennar is working in partnership with various City agencies and departments to define the project and plan for its implementation, including, among others, the Mayor’s Office of Economic and Workforce Development, the Office of Community Investment and Infrastructure (the successor to the Redevelopment Agency), the Planning Department, and the Municipal Transportation Agency (SFMTA). The project’s components and design have been informed by feedback obtained at over 200 public meetings and workshops with the Bayview/Hunters Point communities and presentations before the Bayview Project Area Committee (PAC) and Shipyard Citizens Advisory Committee (CAC).

The project is subject to environmental review under the California Environmental Quality Act, and the approval of the Commission on Community Investment and Infrastructure (the successor to the Redevelopment Commission), the Planning Commission, and the Board of Supervisors as well as other city, state, and federal permitting authorities. The Project’s EIR was certified by the San Francisco Planning Commission and the San Francisco Redevelopment Agency in June 2010. Since that time, the Transportation Plan has been refined through discussions with City representatives to ensure that it responds to the most recent City best practices. Implementation of the final Transportation Plan will require commitments from Lennar, the City (including SFMTA), and other transportation agencies.

2.2 Project Location

The Candlestick Point and Hunters Point Shipyard Phase II Development Plan site is located along the San Francisco Bay waterfront in the Bayview/Hunters Point neighborhood in southeastern San Francisco, as shown in Figure 2. The neighborhood is generally bounded by Cesar Chavez Street to the north, US 101 to the west, the San Mateo County line and the City of Brisbane to the south, and San Francisco Bay to the east.
The project site includes Candlestick Point, a 267-acre site within the Bayview/Hunters Point Redevelopment Plan Area; and Hunters Point Shipyard Phase II, a 421-acre site within the Hunters Point Shipyard Redevelopment Plan Area. Phase I of the Hunters Point Shipyard is a 75-acre site within the Shipyard Redevelopment Plan Area and is under development with 1,600 new homes and approximately 20,000 square feet of retail uses.

2.3 Goals, Principles & Strategies

The Candlestick Point and Hunters Point Shipyard Phase II Transportation Plan presents goals, principles, and strategies to meet the travel demand needs of an emerging mixed-use, urban neighborhood in southeast San Francisco. Incorporating innovative practices and sustainable development principles, the Plan seeks to provide residents, employees, and visitors of the two neighborhoods with high-quality transportation infrastructure and services.

The Plan’s elements prioritize walking, bicycling, and transit, making these attractive and practical transportation options, which are consistent with the City’s Climate Action Plan (CAP) (September 2004). The CAP outlined a number of transportation strategies, which, when combined with other strategies, will help the City reduce its overall greenhouse gas emissions to 20 percent below 1990 levels by the year 2012. The CAP’s recommended transportation actions are grouped into six categories:

- Increase the use of public transit as an alternative to driving
- Increase the use of ridesharing as an alternative to single occupancy driving
- Increase bicycling and walking as an alternative to driving
- Support trip reduction through employer based programs
- Discourage driving
- Increase the use of clean air vehicles and improve fleet efficiency

The goals, principles, and strategies in this Transportation Plan are centered around these six themes, and are supported by investment in infrastructure and services that provide alternatives to private auto travel. Also included in the Plan are travel demand management strategies designed to encourage the use of transit and alternative modes of travel.

Another objective of the project is to integrate the proposed roadway and transit improvements with the surrounding neighborhood, as many of these improvements will have impacts on adjacent communities. The Plan seeks to create transportation solutions that benefit the entire Bayview/ Hunters Point neighborhood in addition to serving the proposed project demands.

Goals

- The project targets a weekday PM peak hour mode split for work trips of not more than 45 percent auto travel, and not less than 30 percent transit, 20 percent walk and 5 percent bike;
- The project will create a lively community with a strong sense of place and the services necessary to help achieve self-sufficiency;
- The project proposes a balance of uses that will enable residents to meet their daily needs with reduced automobile dependency;
- The project will serve as a model for the region and the nation of sustainable development and transportation and land use integration; and
- The project will reduce vehicle miles traveled and carbon emissions compared to traditional development patterns.
Principles

- Transportation systems should be fully integrated with existing networks to provide seamless connections and service;
- The development pattern is designed to facilitate walking, cycling, and transit trips;
- Internal streets are designed to support a variety of travel modes at moderate to low speeds (between 15 and 25 mph), arranged within a pedestrian-oriented grid of small blocks;
- Arterials have a design speed of 35 mph to allow for rapid transit service competitive with the private car;
- The mixed-use center of each community should serve as an arrival point and activity hub, and provide a source of identity;
- All of the homes within each community should be within a quarter mile of a transit stop, where frequent bus service will be available;
- All residences should also be within walking distance of basic neighborhood retail;
- Transit service to and from Candlestick Point and Hunters Point Shipyard should operate throughout the day, evening, and weekends at high levels of service to provide convenient connections to employment and activity centers and the regional transit network;
- Auto access should be discouraged through traffic calming, parking management, and other policies;
- Transportation demand measures should support transit, pedestrian, and bicycle travel and will be directed at residents, employees, and visitors; and
- Phasing of development and transportation infrastructure shall be coordinated to support the achievement of the goals above in each major increment of development.

Strategies

To achieve the project goals according to the above principles, the Plan includes the following elements:

- Homeowners’ dues will include the cost of a transit pass that can be used on Muni, Caltrain, or BART services;
- Residential parking will be “unbundled”, i.e., sold or leased separately from units2;
- All non-residential parking will be unbundled from residential and visitor uses, and incur a parking charge at variable market rates to encourage transit use (potentially with increased rates during peak periods and/or for long-term parking);
- A full-time Transportation Coordinator will be employed to manage the real-time transportation needs of residents, employees, and visitors;
- Travel within the development areas will be facilitated by bike lanes and frequent bus rapid transit service operating in dedicated lanes and with signal priority;
- Elements of the Transportation Demand Management (TDM) Program will be implemented at the earliest stages of development and specific phasing of the measures and services will be adopted;
- The TDM program will be monitored for its effectiveness in meeting the Plan’s objectives. Outreach to residents, employees, and visitors will inform them of all available transportation options. The TDM Plan is an Appendix to this Transportation Plan;
- The impact of events held at the performance venue will be monitored to determine opportunities for applying TDM to encourage the use of non-auto modes; and
- Development controls and design guidelines will require that public and private spaces be designed to create a high quality pedestrian environment.

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2 This arrangement would not apply to the 1,655 “Agency Affordable” units, which are limited by tax-credit financing requirements.
2.4 Outreach & Community Feedback

This plan relies extensively on community outreach and input. Input and guidance from City agencies and long-standing agreements with members of the Bayview/Hunters Point community have been carried into this Plan, ranging from the high-level (e.g., San Francisco’s “Transit First” policy and SFMTA’s policies supporting safe pedestrian and bicycle circulation) to specific neighborhood-related transportation goals and objectives of the Bayview/Hunters Point area.

To complement the broader policies and agreements, input and feedback reflecting the most current conditions informed by new developments in the transportation system is included. An extensive multi-agency series of workshops, panels, hearings, and presentations were conducted between 2008 and 2010 to update and refine information for this Transportation Plan.

Community-Based Outreach & Input

The specially-formed, community-staffed, Project-based Policy Advisory Committee (PAC) and Citizens Advisory Committee (CAC) presided over numerous meetings focused on transportation and were held in the project area. In the spring and summer of 2009, a transportation workshop series with a brainstorming/report-back format was held with three focus areas:

- India Basin Roundtable (specific focus on the India Basin area);
- Northern Connections Workshop (brainstorming/report-back, broad scope with special focus on Hunters Point);
- Southern Connections Workshop (brainstorming/report-back, broad scope with special focus on Candlestick Point and Yosemite Slough);

To complement these workshops and broaden the discussion to adjoining neighborhoods and regional connections, other specific community meetings were held with these areas of focus:

- Adjoining neighborhoods: Visitacion Valley, India Basin, and Bayview;
- Environmental sustainability;
- The San Francisco Bay Trail;
- The San Francisco Bicycle Plan;
- Bi-County Study (San Francisco County/San Mateo County transportation & land use coordination).

Community Priorities

These community-based workshops informed a set of goals to guide the decisions, multi-modal balance, and phasing/implementation strategies of this Plan, and expressed the following priorities and focus areas:

- **Safety**: to address perceived safety concerns as well as incidents;
• **Equity:** to avoid a “gated community” effect;
• **Connectivity:** to ensure efficient and fast transit to other city neighborhoods and the region, and for seamless travel for all modes between neighborhoods;
• **Community:** to create a walkable “village” context;
• **Sustainability:** to emphasize transit, pedestrian, and bicycle circulation;
• **Vitality:** to promote economic and aesthetic health of the area;
• **Quality of Life:** to address noise and other impacts to residential areas;
• **Adaptability:** to ensure “complete” communities in all phases.

The community also provided specific direction related to the design of key arterials such as Harney Way, Innes Avenue, and Palou Avenue, defining alternative transportation paths and routes (including over and around Yosemite Slough and India Basin), managing impacts on residential areas, refining transit and bicycle route extensions and service plans, protecting the on-street parking supply, integrating the safety and design enhancements of the San Francisco Better Streets Plan, and implementing development and infrastructure in phases.

### Public Agency Review

Input and feedback from the public agencies involved in the development of the Transportation Plan was obtained from a series of technical meetings to focus on transportation engineering issues such as emergency vehicle access, Muni service planning needs, land use and transportation coordination and phasing, street greening, truck route circulation, highway and interchange design, waterfront transportation access and parks access.

The agencies engaged include, among others:

• San Francisco Planning Department and Commission
• SF Redevelopment Agency and Commission/Office of Community Investment and Infrastructure
• Board of Supervisors and its various committees
• SF Municipal Transportation Agency (SFMTA Board, Board CAC, Traffic Engineering, Muni Capital and Service Planning)
• San Francisco County Transportation Authority: Bi-County project and CAC
• Bayview Transportation Improvements Project
• TASC (includes SFMTA, DPW, SF Police Department and SF Fire Department)
• Mayor’s Office on Disability
• SF Public Utilities Commission
• SF Environment and Commission
• SF Department of Public Health
• SF Greening
• City/County Association of Governments for San Mateo County
• City of Brisbane
• Caltrain/SamTrans
• Association of Bay Area Governments
• Metropolitan Transportation Commission
• Water Emergency Transportation Authority
• California Department of Transportation
• California State Parks Foundation

Through these processes, the Plan incorporates community priorities, coordination between local and regional networks and between transportation and land use phases, and recommendations following technical review and refinements from responsible agencies. The outreach and input also assisted in accommodating a variety of goals, reconciling conflicts, and ensuring the over-arching accommodation of safety and sustainability in the Project area.
3 Existing Conditions

The Project site is located in the southeastern portion of San Francisco along the Bayview Waterfront. The Candlestick Point and Hunters Point Shipyard Phase II portions of the project lie within the Bayview/Hunters Point Redevelopment Plan Area and the Hunters Point Shipyard Redevelopment Plan Area, respectively.

The site is relatively isolated from the rest of the City. The surrounding topography of hills and Yosemite Slough create a context with limited connections to the existing regional transportation network. Essentially, only two main roads serve the site, Harney Way on the south and Innes Avenue on the north, and many intermediate streets do not connect through to other neighborhoods. These conditions create challenges with respect to providing convenient transit service and accommodating traffic demand.
3.1 Transit Challenges

In the existing transit network, shown on Figure 3, two Muni lines currently reach the edge of the project area: 19-Polk and 29-Sunset. This is inadequate to serve the project, as the lines do not provide any circulation within the project area, nor do they directly serve employment centers in San Francisco or the Peninsula. Both lines provide access to Downtown San Francisco via a transfer to the T-Third Metro line. Although the 29-Sunset connects to the regional rail system at Balboa Park BART station, it is accessed via a circuitous route that is subject to congestion. Further, neither the 19-Polk nor the 29-Sunset connects to Caltrain, which operates in the project’s vicinity and serves as the primary connection to the major employment centers on the Peninsula and in the South Bay.

Bayshore remains the only Caltrain Station in the project area after the closure of Paul Avenue Station in 2005. No other transit services connect directly to Bayshore Station, which is served only by local trains running on an hourly basis during peak periods. An average of only 171 weekday boardings was recorded at the station in 2007. Without convenient transit connections from Candlestick Point and Hunters Point Shipyard and with limited service, the existing Bayshore Station is insufficient to serve the project area. In addition to the two lines previously mentioned, four additional Muni lines – 23-Monterey, 24-Divisadero, 44-O’Shaughnessy and 54-Felton – serve the greater Bayview neighborhood west of Candlestick Point and Hunters Point Shipyard.

Muni has recently conducted a comprehensive review of its services in an effort to improve its performance and efficiency. This “Transit Effectiveness Project” (TEP) specifies changes to several of the lines that would serve Candlestick Point and Hunters Point Shipyard. One of the proposals from the TEP involved replacing the 19-Polk line with the 48-Quintara line in the study area. These changes would improve service to the Bayview/Hunters Point neighborhood, but additional improvements beyond the TEP proposals would be needed to serve the project.
3.2 Traffic Challenges

The existing street network at Hunters Point Shipyard has served relatively little traffic since the shipyard that occupied the site closed. The street network within Candlestick Point also sees comparatively low levels of traffic, except on game days at Candlestick Park, where the 49ers currently play home games. Streets in both areas have been only marginally maintained and are not sufficient for the high-density development of the proposed land use plan.

Further outside the project boundaries, the arterial streets in the area – Third Street, Cesar Chavez Street, and Harney Way – lack the capacity needed to accommodate frequent transit service and the level of auto traffic expected to be generated by the project. Hunters Point Shipyard in particular has only two access points and an indirect route to the freeway network. Access to Candlestick Point is currently constrained by the narrow right-of-way between Executive Park and San Francisco Bay. East-west access is inhibited by the limited number of streets that cross the Caltrain tracks, some of which are narrow or have steep grades. Current Candlestick Park game-day and special event conditions present additional challenges related to street traffic and on-street parking prohibitions. These include use of sidewalks for parking, private automobiles on streets designated for transit and taxis only, overcrowded buses delayed on congested streets, and numerous automobile/pedestrian/bicycle conflict points.

Other transportation challenges that exist in the area include:

- Third Street cuts across the street grid at an angle, with no direct alternate routes;
- Industrial and residential land uses are mixed together in Bayview, resulting in truck traffic in some residential areas; and
- Streets are relatively wide, potentially encouraging higher vehicular speeds.

For regional access to the project area, the project is near US 101, part of the regional freeway network. The US 101 interchanges that serve the project area (at Harney Way, Third Street, Paul Avenue, Silver Avenue, Alemany Boulevard / Industrial Avenue, and Cesar Chavez Street / Jerrold Avenue) will likely lack the capacity to accommodate the additional auto travel demand for a project of this size in the future. There is no direct on-ramp from westbound Cesar Chavez Street to southbound US 101 or from southbound Third Street to northbound US 101. In contrast to congested US 101 interchanges, the interchanges on I-280 that serve the project area (Silver Avenue / Alemany Boulevard / Industrial Street, and Cesar Chavez / 25th Street) are underutilized. The existing roadway network is shown in Figure 4.
3.3 Pedestrian & Bicycle Challenges

Pedestrian access throughout the project site is limited due to topographic constraints and minimal connectivity within the street network. Existing land uses are primarily industrial and not conducive to pedestrian activity. Currently waterfront access is limited to a portion of the Bay Trail, a Class I facility that provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians, which extends along the southern shoreline of the Candlestick Point State Recreation Area.

Currently, bicycle facilities within the project area include Class III bicycle routes, which provide for a right-of-way designated by signs and pavement markings for shared use with motor vehicles. Existing Class III bicycle facilities are located on Carroll Avenue, Fitch Street, Hunters Point Expressway and Jamestown Avenue. The existing bicycle facilities provide minimal access to the proposed project site. There are no Class II on-street bicycle facilities separating vehicular traffic from bicycles within the project site.
3.4 Other Proposed Developments in the Project Area

There are also a number of other new development projects underway or at the planning stage in the area of the project site that will increase transit demand and automobile traffic. These proposed developments are summarized below, in terms of their net overall increases. Figure 5 shows the location of these proposed developments in relation to the two project areas and to major transportation facilities.
Executive Park
3,400 homes
90,000 sq. ft. of retail/restaurant

Hunters View
800 homes
6,400 sq. ft. of retail
21,600 sq. ft. of community services

India Basin Shoreline Area C
1,240 homes
100,000 sq. ft. of retail
1,365,000 sq. ft. of commercial space

Hunters Point Shipyard Phase I
1,600 homes
20,000 sq. ft. of retail

Brisbane Baylands
8,400,000 sq. ft. of development

Cow Palace Redevelopment
1,700 homes
550,000 sq. ft. of commercial/research & development

Jamestown
approximately 200 homes

Visitacion Valley
1,600 homes
170,000 sq. ft. of retail
25,000 sq. ft. of community services
4.1 Land Use Program

The proposed Candlestick Point and Hunters Point Shipyard Phase II Development Plan land use program includes 10,500 homes; 885,000 square feet of retail uses; 150,000 square feet of office space; a research and development campus; one hotel; and a 10,000-seat performance venue. The Plan also includes a number of city parks, sports fields, and new and restored open space in the Candlestick Point Recreation Area. A total of 385 acres are designated for recreational uses, including sports fields, and as open space. Table 4 summarizes the proposed land use program for Candlestick Point and Hunters Point Shipyard Phase II. The locations of the project’s proposed land uses are shown in Figure 6.
Table 4: Land Use Program

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Candlestick Point</th>
<th>Hunters Point Shipyard</th>
<th>Project Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>6,225 homes</td>
<td>4,275 homes</td>
<td>10,500 homes</td>
</tr>
<tr>
<td>Regional-Serving Retail</td>
<td>635,000 sq. ft.</td>
<td>-</td>
<td>635,000 sq. ft.</td>
</tr>
<tr>
<td>Neighborhood-Serving Retail</td>
<td>125,000 sq. ft.</td>
<td>125,000 sq. ft.</td>
<td>250,000 sq. ft.</td>
</tr>
<tr>
<td>Office</td>
<td>150,000 sq. ft.</td>
<td>-</td>
<td>150,000 sq. ft.</td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>-</td>
<td>3,000,000 sq. ft.</td>
<td>3,000,000 sq. ft.</td>
</tr>
<tr>
<td>Hotel</td>
<td>220 rooms</td>
<td>-</td>
<td>220 rooms</td>
</tr>
<tr>
<td>Community Facilities</td>
<td>50,000 sq. ft.</td>
<td>50,000 sq. ft.</td>
<td>100,000 sq. ft.</td>
</tr>
<tr>
<td>Arena</td>
<td>10,000 seats</td>
<td>-</td>
<td>10,000 seats</td>
</tr>
<tr>
<td>Parks &amp; Open Space</td>
<td>147 acres</td>
<td>238 acres</td>
<td>385 acres</td>
</tr>
<tr>
<td>Artists Studios</td>
<td>-</td>
<td>255,000 sq. ft.</td>
<td>255,000 sq. ft.</td>
</tr>
</tbody>
</table>

Source: Lennar Urban – October 2009

1 The Project includes 225,000 sq. ft. of existing artist studio space that would be renovated and replaced.

Candlestick Point

At Candlestick Point, 6,225 new residential units are proposed. These units would be developed as two-story townhomes, four-to-eight-story mid-rise buildings, and high-rise towers. Some residential buildings will be mixed-use with residential units above ground-floor retail or office uses. Other residential buildings may include corner-store retail.

The housing program includes the redevelopment of the San Francisco Housing Authority’s Alice Griffith site (also known as “Double Rock”), replacing the 263 existing units with a total of about 1,000 townhomes and four-story stacked flats. These new units will be made available to existing residents before the existing units are removed, so that no residents will have to be relocated.

A 635,000-square foot regional retail center is also envisioned at Candlestick Point. The proposed retail program is anticipated to include large-format shopping venues, restaurants, and entertainment uses such as a multi-screen movie theater and clubs with live music. The retail center is also proposed to include a 75,000-square foot performance venue seating 8,000 to 10,000. In addition, a hotel with 220 rooms would be located at the regional-serving retail center. A parking structure adjacent to the regional retail center would accommodate approximately 2,600 vehicles.

An additional 125,000 square feet of neighborhood-serving retail space, such as grocers or coffee shops, and 150,000 square feet of office uses, is planned for Candlestick Point.

Hunters Point Shipyard Phase II

Hunters Point Shipyard Phase II includes 4,275 new residential units. These units would be developed as a mix of housing types including townhomes, four-story flats over parking, and residential towers. Some residential buildings will be mixed-use with residential units above ground-floor retail or office uses. Other residential buildings may include corner-store retail.

In addition, 125,000 square feet of neighborhood-serving commercial development would also be located at Hunters Point Shipyard, adjacent to an approximately three million square-foot research and development campus, focused on “clean/green technology.”
Figure 6: Land Use Program

LAND USE
- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space
4.2 Street Network & Urban Form

As noted earlier, Candlestick Point and Hunters Point Shipyard are relatively isolated and currently have limited connections to the existing roadway network and US 101 interchanges in the immediate vicinity. The condition of the existing streets is insufficient to meet the travel demand that the project will generate and there is no existing direct connection between Hunters Point Shipyard and Candlestick Point.

Both Candlestick Point and Hunters Point Shipyard have extensive waterfronts; however, access to the waterfront is currently limited to a portion of the Bay Trail at the southern end of Candlestick State Recreation Area. This project prioritizes multimodal access to the waterfront, which has been coordinated with Executive Park and other local developments.

The street network proposed for Hunters Point Shipyard and Candlestick Point is an extension of the existing grid of the adjacent Bayview neighborhood, using typical Bayview block sizes. This street pattern allows the axes of most streets to lie perpendicular to the Bay Shore with terminating vistas of the bay.

The proposed internal street network is intended to provide improved vehicular access while supporting transit ridership, public character, and sustainability. Streets are designed to emphasize non-auto travel and moderate the speed of auto traffic where required, successfully facilitating all movements. Proposed techniques include driveway access management; traffic calming features such as signage and striping, pedestrian bulbouts at intersections, and refuge islands; streetscape amenities including street furniture, lighting, and plantings; and other features that will assist in creating a high-quality pedestrian and bicycle network. Streets are designed to reflect their roles as the community’s organizing framework while providing a safe and comfortable environment for all users.

The guidelines of San Francisco’s Better Streets Plan (BSP) were consulted throughout the planning of the project streets and sidewalks. In some cases, constraints in topography, transportation engineering, and abutting land uses resulted in proposed sidewalk widths narrower than the idealized suggestions of the BSP. In extreme cases, constraints resulted in proposed sidewalks that, while ADA-complying, are narrower than the suggested BSP minimums.

Street Typologies

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

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 Arelious 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 Arelious Walker Boulevard and Harney Way, near Executive Park move significant volumes of people across
longer 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 Streets: 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 commons. 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.
**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. The sidewalk throughway’s zone shall be at minimum, 6 feet. At the time a Sub-Phase Application is submitted, OCII 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-foot throughway.

**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. Further, in some locations, lane widths have been adjusted through a collaborative process between Lennar, OCII, SFMTA, DPW, and the SF Fire Department to ensure adequate clearance is provided for fire access. In these cases, some dimensions may be increased from the minimums described above.

The locations of each street type and sections for the various applications in each neighborhood are presented in **Figures 7A through 7M** on the following pages:

- Figure 7A: Overview of Street Typologies
- Figure 7B: Alice Griffith
- Figure 7C: Alice Griffith
- Figure 7D: Alice Griffith
- Figure 7E: Arelious Walker Drive and Jamestown
- Figure 7F: Harney Way
- Figure 7G: Candlestick North
- Figure 7H: Candlestick North
- Figure 7I: Candlestick South
- Figure 7J: Candlestick South
- Figure 7K: Yosemite Slough Arterials
- Figure 7L: Yosemite Slough Arterials
- Figure 7M: External Street Improvements
- Figure 7N: Hunters Point Shipyards

The project’s street network consists of a variety of roadway types, designed to be consistent with the Better Streets Plan and to reflect the diverse character of the project itself. The street types are shown on **Figure 7A**.

The spine of the project’s street network is a continuous arterial beginning in the northwest of Hunters Point and traveling south to Candlestick Point that connects the two project sites. The spine travels on Innes Avenue, Donahue Street, Lockwood Street, Fischer Street, and Crisp Avenue.
in Hunters Point Shipyard. It continues south to Candlestick Point and incorporates an improved Griffith Street, Thomas Avenue, Ingalls Street, and Carroll Avenue. The final portion, within Candlestick Point, continues on Arelious Walker Drive and connects to an improved Harney Way at the southernmost point of Candlestick Point.

Most locations on the project site would be within four to five blocks of this roadway spine, affording convenient access to residences and offices. The arterial skirts the edge of the two mixed-use “village centers” at Hunters Point Shipyard and Candlestick Point, providing access to their parking facilities and to transit services. The arterial is intended to provide extra capacity for truck traffic, which would use interior streets only as a direct connection from the arterial to a particular destination.

Within Candlestick Point, the streets are designed to reflect the unique character of the different neighborhoods, but also to form a continuous and connected street grid. The Alice Griffith neighborhood streets (Figures 7B, 7C, and 7D) would connect to and extend the existing Bayview neighborhood street grid into the Alice Griffith neighborhood. This will enhance the walkability of that neighborhood, and also improve access between that neighborhood, the existing Bayview neighborhood, and the new development at Candlestick Point. The central east-west corridor of the Alice Griffith neighborhood would feature a 75-foot wide linear park, which will calm traffic and provide neighborhood green space.

To the east of the Alice Griffith neighborhood is the southern portion of the project’s transportation spine, Arelious Walker Drive (Figure 7E). Arelious Walker Drive will form the primary north-south arterial through the Candlestick Point site, serving vehicular and truck traffic, as well as a portion of the BRT route, north of Egbert Avenue. Arelious Walker Drive, along with Harney Way, will also serve as the primary truck access route between US 101 and the Candlestick Point site.

The Candlestick North neighborhood street network is designed as a further extension of the Bayview neighborhood street grid. Roadways in this neighborhood are designed to further enhance the porosity of the project site, and encourage connections between the proposed and existing neighborhoods, as well as accommodate a large central park/open space and a linear park along Earl Street (Figures 7F, 7G). Additionally, the BRT route will traverse the Candlestick North neighborhood along Egbert Avenue.

The Candlestick South neighborhood is a primarily residential neighborhood on the southern and eastern edges of the Candlestick Point development. Because this neighborhood sits on the edge of the project area, there is not likely to be substantial traffic on the neighborhood streets, other than traffic specifically destined for uses within the neighborhood. Thus, roadways in this neighborhood are designed to be calm, low-speed, and low-volume (Figures 7H, 7I, and 7J).

In addition to the streets within Candlestick Point, the project includes improvements to external streets as well. Specifically, the project will improve the portions of the project’s “spine” that connect the Candlestick Point and Hunters Point Shipyard sites. These streets consist of improvements to Griffith Street, Thomas Avenue, Ingalls Street, and Carroll Avenue which will provide primary auto and truck access between the sites, as well as construction of the Yosemite Slough Bridge, which will provide transit, bicycle, and pedestrian access over Yosemite Slough (Figure 7K). The Yosemite Slough Bridge will be closed to cars.

The project will also improve streets outside of the project boundary that provide primary access to the site (Figure 7L). Improvements to Gilman Avenue and Jamestown Avenue will ensure connections between the site and the adjacent neighborhoods are attractive and provide a high functionality for all modes.

Harney Way will also be improved to provide the primary access between the site and US 101. Initially, Harney Way would be designed with a two-way cycletrack between the general-purpose roadway and the State Park along the waterfront. If needed, a portion of this cycletrack would be rebuilt as part of the Bay Trail to the south to provide an additional auto lane from the proposed Harney interchange to the East to Arelious Walker Drive. Refinements to this configuration (number, locations, and design of right turn lanes, for example) may
be necessary following completion of ongoing studies related to the Executive Park development site and the Harney Way interchange project.

For maximum flexibility, the grades, width, and turning radii for the BRT lanes are designed to be consistent with SFMTA design standards for light rail operations. However, no light rail is proposed as part of this project.

The project has proposed a similar approach to developing street designs for the Hunters Point Shipyard site. However, the detailed roadway cross-sections remain under discussion and will be finalized following more discussion with City agencies.
Figure 7A: **Overview of Street Typologies**
Alternative to private alley could include auto access. Private alleys fronting state parks do not include building frontages on State Parks property.

NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.
NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.
NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.
Figure 7E: Arelious Walker Drive and Jamestown

NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.
Figure 7F: Hamey Way

Alternative to private alley could include auto access. Private alleys fronting state parks do not include building frontages on State Parks property.

- Cross-sections for alleys include 10’ landscaping between buildings and multi-use paths as required in D4D for informational purposes only. This same setbacks required, but not shown, in other sections, per the D4D.

NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.
NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.
Figure 7H: Candlestick North

NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.
NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

Figure 7i: Candlestick North

* Street typology based on typology developed in the City of San Francisco Draft Better Streets Plan. June 2008.
NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.
Figure 7K: **Candlestick South**

NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.
Alternative to private alley could include auto access. Private alleys fronting state parks do not include building frontages on State Parks property.

NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.
### Project Definition

**Residential Density**
- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV

**Regional Retail**
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

* Street type based on typology developed in the City of San Francisco Draft Better Streets Plan, June 2008.

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**Figure 7M: External Street Improvements**

NOTE: For buildings where on-street loading is not possible on primary access routes, loading will be accommodated on other adjacent streets or on-site.

*CROSS SECTIONS NOT TO SCALE*
Cross sections at Hunters Point Shipyard to be determined in consultation with City agencies
4.3 Proposed Roadway Improvements

Existing roadways will be expanded and new facilities built to serve Candlestick Point and Hunters Point Shipyard and the surrounding Bayview neighborhoods. This expansion will include a new special-access bridge, widening of existing streets, and other improvements, as shown in Figure 8 and described below.

1. Harney Way Widening
Harney Way, with its access to the US 101 Freeway, will function as the southern gateway to the project. The existing four-lane facility would be rebuilt as a new five-lane auto facility with right-of-way reserved for an additional auto lane to be built in the future as needed to serve increased traffic levels. In addition, a left turn lane on eastbound Harney Way would be incorporated at both the Thomas Mellon Drive and Executive Park East Boulevard intersections to provide access to Executive Park. A westbound right turn lane will be provided at Executive Park East Boulevard to provide access to Executive Park. New traffic signals will be installed at Thomas Mellon Drive and Executive Park East Boulevard. In addition to the auto lanes, two lanes would be constructed adjacent to the roadway to accommodate exclusive BRT operations and a two-way Class I cycletrack would be provided on the south side of the roadway.

2. New Primary Roadway through Candlestick Point
Candlestick Point will be served by a new four-lane roadway approximately following the current path of Giants Drive and Arelius Walker Drive. The roadway would also have a 12-foot median to accommodate left turn lanes at major intersections. Sidewalks, curb ramps, and streetlights would be upgraded. New traffic signals will be installed at the Harney Way/Arelius Walker Drive intersection and at the Jamestown, Ingerson, Gilman, Egbert, and Carroll Avenue intersections. Portions of the roadway would accommodate exclusive BRT operations.

3. New Connecting Roadways
Roadway connections between Hunters Point Shipyard and Candlestick Point will be served by Ingalls Street, connecting to Crisp Road via Thomas Avenue and Griffith Street. Ingalls Street and Griffith Street would contain two travel lanes and on-street parking/loading on both sides of the roadway. Thomas Avenue will be converted from a two-lane to four-lane facility with on-street parking retained on both sides of the roadway. During the evening peak period, on-street parking would be prohibited on Griffith Street and Ingalls Street, such that there would be four travel lanes connecting the entire auto route around Yosemite Slough (Carroll Avenue, Ingalls Street, Thomas Avenue, Griffith Street, and Crisp Avenue). New signals will be installed at the intersections of Thomas Avenue/Ingalls Street and Palou Avenue/Crisp Road.

4. Streetscape Improvements
Streetscape improvements are planned for several key Bayview/Hunters Point roadways: Innes, Palou, Carroll and Gilman Avenues. These streets will serve as primary routes for pedestrians, bicyclists, transit riders, and drivers. They are proposed to enhance the safety and experience of road users and existing residents.

Enhanced streetscape design, including street trees, sidewalk plantings, furnishings, and paving treatments will be designed to visually tie together the proposed project with the greater Bayview neighborhood. Specific streetscape treatments will vary depending on existing right-of-way and traffic demands. Careful consideration will be given to improving visibility at all four-way stops.

5. Yosemite Slough Bridge
A new Yosemite Slough bridge would extend Arelius Walker Drive from Candlestick Point to Hunters Point Shipyard. The bridge would have a 45-foot wide right-of-way and would contain two 11-foot wide BRT lanes, and an 8-foot, one-way Class I bicycle/pedestrian path on each side.

The Class I bicycle/pedestrian paths would provide the most direct connection between Candlestick Point and Hunters Point Shipyard for pedestrians, bicyclists, and BRT service.
New Roadway Improvements Under Study

Additional roadway improvements have been identified that may serve the project site and surrounding development. These improvements, requiring approval by the City of Brisbane, will be studied through the environmental review process required by the California Environmental Quality Act (CEQA). The improvements are shown on Figure 8 and described below.

6. Geneva Avenue Extension
Geneva Avenue, which currently ends at Bayshore Boulevard, would be extended east to meet Harney Way, improving east-west access in the area. As currently envisioned, the Geneva Avenue Extension would have three eastbound and three westbound travel lanes between Bayshore Boulevard and a new interchange with U.S. 101. Currently, the nearest east-west access road is Blanken Avenue, which is designed as a neighborhood collector roadway and could not accommodate the additional east-west traffic generated by area projects. The lead agency for this project is the City of Brisbane.

7. Geneva/Harney/US 101 Interchange
In conjunction with the extension of Geneva Avenue east, the existing Harney Way interchange would be redesigned as a typical diamond interchange. Caltrans and the City of Brisbane are the lead agencies for this project, and a PSR is currently being prepared. Two alternatives are currently being assessed; one with Geneva Avenue/Harney Way crossing under U.S. 101, and one with Geneva Avenue/Harney Way crossing over U.S. 101. A separate environmental review and approvals by Caltrans, the City of Brisbane, SFCFA, and the City of San Francisco will be required to implement this improvement, supported by analysis from the San Francisco County Transportation Authority’s Bi-County study.

8. Geneva Avenue to Balboa Park BART
In conjunction with the projects above, specific transit-preferential treatments along Geneva Avenue and related roadway improvements (including signal work, street design, and safety improvements) would be implemented.
5 Transportation Program

5.1 Introduction

Currently, about two-thirds of all trips in the southeast quadrant of San Francisco are car trips. If the trips generated by the project exhibit this level of automobile use, the existing vehicular transportation facilities in this area would be insufficient to handle the projected demand. Thus, the policies and programs outlined in this chapter target a significant redistribution of trips from auto to transit and non-motorized modes. The following sections outline the specific means designed to encourage the use of modes other than private automobile, achieve the project mode split goal, as well as enhance alternatives to transportation in surrounding neighborhoods by developing a stronger transit, bicycle, and pedestrian network.

The Candlestick Point and Hunters Point Shipyard Phase II Development Plan Environmental Impact Report (EIR), has been prepared independently from this Plan, and models and evaluates the travel demand of this project.
Existing Travel Behavior

Within the City and County of San Francisco, travel behavior for new developments is typically estimated using the SF Guidelines\(^4\), which contains detailed survey data used to forecast trip generation, mode split, and origins/destinations based on land use and trip type. The data is organized by superdistricts (SD), one in each quadrant of San Francisco. Candlestick Point and Hunters Point Shipyard are located in SD-3, the southeastern quadrant of the City. According to historical data from the SF Guidelines, the modal split of travel demand for a new project located in SD-3 would be expected to exhibit the modal split shown in Table 5.

<table>
<thead>
<tr>
<th>Mode</th>
<th>SD-3 Mode Split(^1) (Inbound and Outbound Trips)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto/Carpool</td>
<td>66%</td>
</tr>
<tr>
<td>Transit</td>
<td>16%</td>
</tr>
<tr>
<td>Walk</td>
<td>16%</td>
</tr>
<tr>
<td>Bike</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

\(^1\) AECOM – October 2008

The mode split above reflects data collected in the 1990s for land uses and transit service within a large area of San Francisco that has since undergone significant change. It is also based on much less dense development and a different mix of uses than what is proposed for the project area. Therefore, the data from the SF Guidelines alone is not a sufficient estimator for mode split for a project of this size and character.

Project Travel Behavior Goal

Although past travel behavior can be a useful tool to forecast future mode splits, many factors can result in changes to travel patterns. The Candlestick Point and Hunters Point Shipyard Phase II project aspires to a mode share of not more than 45 percent of person-trips by auto, and not less than 30 percent by transit, 20 percent on foot, and 5 percent as bike trips for work trips during the weekday PM peak hour. Table 6 shows that to achieve this mode split goal, approximately 21 percent of peak hour work trips would need to shift from private auto to either transit, walk or bike based on historical travel behavior data. The project is also linked to surrounding neighborhoods by its strong transit, bicycle and pedestrian networks, and neighborhood services which should serve to reduce overall trips and vehicle miles traveled in the area.

<table>
<thead>
<tr>
<th>Mode</th>
<th>SD-3 Mode Split</th>
<th>Project Travel Behavior Goal</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto/Carpool</td>
<td>66%</td>
<td>45%</td>
<td>-21%</td>
</tr>
<tr>
<td>Transit</td>
<td>16%</td>
<td>30%</td>
<td>+14%</td>
</tr>
<tr>
<td>Walk</td>
<td>16%</td>
<td>20%</td>
<td>+4%</td>
</tr>
<tr>
<td>Bike</td>
<td>2%</td>
<td>5%</td>
<td>+3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

\(^4\) 2002 Transportation Impact Analysis Guidelines for Environmental Review. Planning Department, City and County of San Francisco. October, 2002.
5.2 Strategies

The strategies outlined in this section, which include new and improved transit options as well as a comprehensive package of TDM measures, would help achieve the desired mode shift.

Maximize Internal Trips

The Development Plan envisions mixed-use neighborhoods that will incorporate new office, retail, and entertainment centers. These will allow trips that might be otherwise attracted to external destinations to remain within the project area. Internal trips are shorter and are thus more likely to shift from auto to non-auto modes.

Internal trips will be maximized by the following strategies:

- Support services will be included in the commercial land use program. These uses will be designed and located in a manner that minimizes the need to use automobiles;
- Neighborhood-serving retail and a market will be located within a half mile of every household;
- Opportunities for residents to work within the project site will be encouraged; and
- Appropriate street design that accommodates pedestrian-friendly design speeds and levels of congestion.

Maximize Pedestrian Travel

The density and configuration of the project are designed to actively encourage the use of walking as a primary travel mode. The project will be served by a network of pedestrian routes as illustrated in Figure 9. The following concepts will encourage pedestrian travel:

- The proposed residential densities are consistent with other dense and walkable San Francisco neighborhoods, such as North Beach, the Mission and the Marina, and are comparable to successful walkable and transit-oriented communities elsewhere;
- The highest residential densities will be within a five-minute walk of the Hunters Point Shipyard Transit Center and the Candlestick Point BRT Stops, and all residences will be within a 15-minute walk;
- The community-oriented land uses – markets, schools, and other public facilities – are located within short walking distances of project residents;
- Site design elements such as the configuration and orientation of buildings, landscaping and streets will be designed to provide a comfortable walking environment;
- Sidewalks conforming as closely as possible to the Better Streets Plan will be provided on all streets;
- A comprehensive wayfinding signage program will support the network of walkways and shared-use paths;
- The project will be designed and built to be ADA-accessible to residents and visitors;
- Pathways will be provided between residential areas and to key entrances of parks and open space;
Figure 9: Pedestrian Circulation Plan

- **Bay Trail**
- **Pedestrian Access into Site**
- **Pedestrian Access to Parks/Open Space**
• Many residences in the adjacent neighborhoods of Bayview, Hunters View, India Basin, Executive Park, and the City of Brisbane will also be within a 15-minute walk of the improved transit facilities and new neighborhood services and retail; and

• Streets will be designed to be pedestrian-friendly and incorporate the following characteristics:
  » Separate pedestrians from moving traffic through the use of wide sidewalks, on-street parking, and landscaping;
  » Facilitate pedestrian circulation with continuous pedestrian paths of travel and short block distances;
  » Enhance safety at crossings with shorter crossing distances, clearly marked crosswalks, and pedestrian crosswalk signals. Intersections should be designed with curb extensions where possible and tight corner radii (except on streets with delivery trucks or buses);
  » Install vibrant streetscape elements including street trees, continuous “street wall”, openings for activity and gathering space; and street furniture and lighting.

Maximize Bicycle Travel

The existing bicycle routes in the project vicinity, illustrated in Figure 10, are not sufficient to accommodate the level of bicycle activity expected in the area after the proposed project is built. To facilitate bicycle travel, the project will be served by an expanded network of bicycle routes, as proposed in Figure 11. The following concepts have been developed to facilitate bicycle travel in a safe and convenient manner:

• Bicycle routes will be established within a quarter mile of all residences and employment, consistent with the City’s current guidelines and bicycle plans;

• A two-way, dedicated cycle track will be provided through the project, connecting the Candlestick Point and Hunters Point Shipyard sites, and providing a high-quality route for commuters and complimenting the recreational nature of Bay Trail

• The development’s roadways or adjacent roadways will incorporate Class II bicycle lanes for safe and efficient bike mobility through the project site. Appropriate signage and pavement markings (sharrows) will also be included for Class III bicycle routes;

• Shared-use paths will provide safe, direct, convenient and attractive routes between all of the development’s major destinations. The project’s bicycle route network will connect to the Bay Trail and to recreational paths on the project site;

• Internal streets will be designed to be low-speed (15-25mph), creating an environment that is attractive and safe for bicycling. Arterials will have a design speed of 35 mph;

• Directional signage along the bicycle routes and shared-use paths will point out key destinations;

• Bicycle routes will be designed to improve connectivity from within the project area to surrounding neighborhoods, and to increase bicycle access from outside the area to new destinations and regional transit hubs within;

• Safe and secure bicycle parking will be provided within each residential garage or within each residential building, with a minimum of 25 parking spaces for the first 50 dwelling units plus one space for every four dwelling units thereafter. Each commercial parking facility will provide bicycle parking at a minimum rate of 15 percent of car spaces;

• Supplemental bicycle parking racks will be provided near major destinations, and a bike parking station will be included at the Hunters Point Shipyard Transit Center;

• Showers and locker facilities will be provided within each new commercial building with greater than 10,000 square feet of uses; and
Figure 11: Proposed Bicycle Routes

Note: Bicycle facility on Palou Avenue may be relocated to Quesada Avenue as part of a City Green Connection project.

Note: Potential Class I facility on Hudson Street as part of separate project.

Note: Potential to combine SF Bay Trail and Project - proposed multi-use path.
• Discounted space will be provided to encourage a bicycle station offering rentals, repairs, and storage to locate at Candlestick Point/Hunters Point Shipyard.

**Expand & Improve Transit Services**

The Plan targets a near doubling of the current mode share of transit in the vicinity of Candlestick Point and Hunters Point Shipyard. Reaching this goal depends upon maximizing the effectiveness and convenience of transit service to and within the project site.

Ongoing dialogue with the San Francisco Municipal Transportation Agency (SFMTA) has identified new transit services to serve the project site. The ultimate network of new and improved transit services will be implemented by SFMTA. In addition, the City has initiated discussions to ensure complementary and mutually-reinforcing system connections with SamTrans and Caltrain.

In order to attain the project’s transit usage goal, the strategies below have been developed. Rather than proposing a single major transportation facility, such as a new BRT, the strategies build upon the existing transit network and infrastructure. The following strategies will also benefit the surrounding Bayview and Hunters Point Shipyard neighborhoods:

- Extend existing Muni routes in coordination with phases of development to better serve the project area, with local and rapid transit service within a quarter or half mile of all residences and employment, respectively;
- Increase frequencies on existing routes to provide more capacity and increase the capacity of key routes, such as the T-Third;
- Complement these routes with new transit facilities and routes in coordination with phases of development in order to reduce transfers and better serve the project’s proposed land use program and transit demand;
- Increase connections to the regional transit network (BART, Caltrain) to help reduce the current perception of the area’s transit isolation;
- Specifically create a new BRT (Muni Line 28L) connecting Balboa BART Station, Bayshore Caltrain Station and T-Third Muni with several bus lines; and
- Ensure that new regional transit hubs within the project area are accessible by local transit, bicycle, pedestrians, shuttles, and taxis from adjacent neighborhoods on both sides of the City limits.

The need for new transit vehicles to serve the project presents an opportunity to introduce low- or zero-emission buses. SFMTA has targeted a reduction in greenhouse gas emissions from its vehicles to 30 percent below 1990 levels by 2012, and plans to become 100 percent emission-free by 2020.

**Proposed Transit Improvements**

New direct one-seat transit service is proposed to serve the high employment concentration of Downtown San Francisco. Fast and efficient connections to the regional transit network (BART, Caltrain, T-Third/Central Subway) also serve these destinations, as well as the employment centers of the Airport, the East Bay, the Peninsula, and the South Bay. BART and Caltrain stations south of the project site are generally well-served by local bus routes and shuttles that would provide connections to Peninsula workplaces.

The proposed transit improvements, illustrated in Figure 12, are described in the list to follow.

**Transportation Program**
A. New and Expanded Bus Lines

Existing Muni lines 24-Divisadero, 44-O’Shaughnessy, and the 48-Quintara would be extended to Hunters Point Shipyard; line 29-Sunset would be extended into Candlestick Point. Service frequencies on these lines would be increased to accommodate greater demand. New Downtown Express routes would connect both Candlestick Point and Hunters Point Shipyard with Downtown San Francisco, possibly at or near the Transbay Terminal. As transit-preferential elements are implemented on Palou Avenue, as well as Harney Way to support BRT (Muni Line 28L) service, new lines would be introduced to serve these corridors as well (see D and E below). The proposed expansion is summarized in Table 7.

B. Harney/Geneva BRT/Transit Preferential Street

To facilitate access to the regional transit system, BRT and transit preferential improvements will be implemented in the Harney Way / Geneva Avenue corridor. Exclusive bus lanes and BRT elements will be installed along the route connecting Hunters Point Shipyard Transit Center and Bayshore Caltrain Station through Candlestick Point. These lanes will be designed to be “rail ready” in that they will be able to accommodate the geometric curves, grades, and widths that support light rail operation, although light rail is not proposed as part of this project. Transit preferential elements would be implemented along Geneva Avenue between Bayshore Caltrain Station and Naples Street, and BRT elements from Naples Street to Balboa Park BART Station. BRT service in this corridor would connect Hunters Point Shipyard and Candlestick Point to Caltrain, T-Third Metro, and BART service. In addition, transfers to SamTrans will be facilitated at the Bayshore Boulevard and Geneva Avenue intersection.
C. Hunters Point Shipyard Transit Center

The Hunters Point Shipyard Transit Center will serve the northern half of the project and would be located along two blocks adjacent to the Hunters Point Shipyard Village Center. Along with bus bays, the facility will include shelters, ticketing kiosks, real-time transit information technology and operator restrooms. Most of the bus lines serving Hunters Point Shipyard will stop at the transit center allowing quick and immediate transfers to other lines. The transit center will be located just one block away from the Hunters Point Shipyard Village Center retail street.

The intention of the Transit Center is to consolidate the terminus of all transit lines in one location to allow for convenient transfers and bus layovers. It is located at the nexus of residential, retail, and research and development land uses.

D. BRT Stops

BRT (Muni Line 28L) stops will be located at Hunters Point Shipyard Transit Center, three locations within Candlestick Point and at three intermediate locations in Hunters Point Shipyard. At the BRT stops, platforms would be provided or curbsite space could be specifically designated for BRT stops. The stops will include shelters, ticketing kiosks, real-time transit information and other amenities.

E. Palou Avenue Transit Preferential Street

One Muni line will be extended along Palou Avenue to serve the Hunters Point Shipyard Transit Center. In addition, two other lines will operate along Palou Avenue with service near the project. In order to provide efficient, attractive service on these lines, transit preferential treatments including transit-priority technology would be implemented, including installation of up to six new traffic signals along Palou Avenue. To improve pedestrian comfort and the accessibility of transit in this corridor, new bus shelters will be installed and the street will be upgraded with ADA ramps, bulbouts, and crosswalks.

Other Potential Transit System Improvements Under Study

A number of additional transit projects under study have been identified that would facilitate access to the project but are not part of this Plan.

F. Bayshore Transit Center

The Harney/Geneva bus rapid transit corridor intersects Caltrain at the Bayshore Station, which would allow for convenient intermodal connections between Candlestick Point, Hunters Point Shipyard, and Peninsula destinations. A vertical circulation connection would be introduced to seamlessly connect the two services. The connection would include elevators and stairs, and a potential extension of the station platform. Consideration will be given to include a bicycle station to facilitate Intermodal connections.
Until 2005, the Bayview District was served by the Paul Avenue Station, which has since been closed. San Francisco County Transportation Authority (SFCTA) is considering a new station serving this area at Oakdale Avenue. If implemented, bus services on Palou Avenue would intersect Caltrain at this location, creating an intermodal station. This would forge a second connection from Hunters Point Shipyard and Candlestick Point to Caltrain, offering a fast, convenient connection to the South of Market District.

### H. SamTrans

The City of San Francisco is currently working with SamTrans to facilitate new shared routes to directly serve South San Francisco employment centers.

#### Muni Transit Effectiveness Project

Muni has proposed changes to several of the lines that would serve Candlestick Point and Hunters Point Shipyard as part of its Transit Effectiveness Project (TEP). Service extensions and modifications beyond the TEP proposals would be required to serve the project site. **Table 7** presents each existing line proposed to serve Candlestick Point and Hunters Point Shipyard, the line’s equivalent under the TEP proposals, and the modification to the existing or equivalent line that would be required to provide service to the project.

<table>
<thead>
<tr>
<th>Existing Muni Line</th>
<th>Equivalent under TEP Proposals and Summary of Changes</th>
<th>Additional Proposed Service Enhancements</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 – Monterey</td>
<td>18 – 46th Ave: would be combined with Line 23, providing direct service to the Outer Sunset and Outer Richmond</td>
<td>Same as proposed TEP service</td>
</tr>
<tr>
<td>24 – Divisadero</td>
<td>24 – Divisadero: would be modified to serve the Mission and the Marina Districts</td>
<td>Extension along Palou, Crisp and Spear Aves. to Hunters Point Shipyard Transit Center</td>
</tr>
<tr>
<td>28L – 19th Ave/ Geneva Limited (BRT)</td>
<td>28L – 19th Ave Limited: would be modified to serve Balboa Park BART. Service would extend to 9 PM.</td>
<td>Extension along Geneva Ave through Candlestick Point with terminus in Hunters Point Shipyard. Conversion to BRT in the project area, with enhancements along Geneva Ave as supported in the Bi-County Study</td>
</tr>
<tr>
<td>29 – Sunset</td>
<td>29 – Sunset: minor changes only</td>
<td>Extension along Gilman Ave to Harney Way</td>
</tr>
<tr>
<td>44 – O’Shaughnessy</td>
<td>44 – O’Shaughnessy: no changes</td>
<td>Extension along Innes Ave to Hunters Point Shipyard Transit Center</td>
</tr>
<tr>
<td>48 – Quintara to 24th St</td>
<td>48 – Quintara to 24th St: would cover portion of Line 19 on Evans and Innes</td>
<td>Extension to Hunters Point Shipyard Transit Center</td>
</tr>
<tr>
<td>54 – Felton</td>
<td>54 – Felton: minor changes only</td>
<td>Same as proposed TEP service</td>
</tr>
<tr>
<td>T – Third (light rail)</td>
<td>T – Third: increase frequency and capacity and extend into Chinatown via the Central Subway</td>
<td>Same as proposed TEP service</td>
</tr>
<tr>
<td>Candlestick Point Express (CPX)</td>
<td>Not proposed in TEP</td>
<td>Provide new express bus service between Candlestick Point and Downtown San Francisco</td>
</tr>
<tr>
<td>Hunters Point Express (HPX)</td>
<td>Not proposed in TEP</td>
<td>Provide new express bus service between Hunters Point Shipyard and Downtown San Francisco</td>
</tr>
</tbody>
</table>

*Source: San Francisco Municipal Transportation Agency and Fehr & Peers – March 2009*
Regional Transit Efficiency

The new and stronger Muni links to local trunk lines and regional transit corridors helps provide multiple options for transit riders heading to Mission Bay and Downtown San Francisco via connections to the T-Third/Central Subway, BART, Caltrain, and the one-seat Muni express ride. Furthermore, the development of mixed uses in the project area will help to create “reverse commute” job and recreation destinations that take advantage of transit capacity in the regional networks in the serving the non-peak direction. This phenomenon will help balance the network and increase fare box revenue for corridors where capacity currently exists. These include BART to the Airport and Peninsula and Caltrain to the Peninsula and Silicon Valley.

Additional Transit Elements

In addition to the extension of Muni service to the project site, as described above, the following elements will support and encourage transit ridership:

- Real-time transit arrival information using NextBus technology and passenger waiting shelters will be provided at the transit center and key bus stops;
- All bus stops will be clearly marked on the pavement, and will include either bus bulbs or bus pull-outs if requested by Muni;
- Transit maps, schedules, on-line passes, real-time arrival information, and internet links will be provided on the Candlestick Point/Hunters Point Shipyard website for all nearby transit operators;
- A Guaranteed Ride Home program supported by employer participation would reimburse transit riders for return trip travel in the event of an emergency when an alternative means of travel is not available;
- Residents will be charged for and provided a transit pass as part of their homeowner’s dues, which would be valid for use on the various transit systems that serve the site;
- In addition to a pass for residents, opportunities to provide employees with an “EcoPass” will also be pursued, similar to the programs already underway at the University of California and the City of Berkeley. These passes would allow unlimited transit use and could be purchased on a monthly and/or annual basis, and then be made available to all employees who work on the project site.

Implement Transportation Demand Management Program

An effective Transportation Demand Management (TDM) Program will reduce the amount of auto use and encourage residents, employees, and visitors to use alternative modes of travel, such as transit, walking, and bicycling. In addition, a TDM program provides measures to reduce the demand for travel during peak times.

The TDM program for Candlestick Point and Hunters Point Shipyard project will be consistent with the policies of the various agencies within the City of San Francisco, and work...
Transportation Coordinator and Website

An on-site Transportation Coordinator (TC) will provide residents, employers, employees and visitors with the information they need to make the best use of the transportation alternatives available to them.

The TC will implement and administer the various TDM elements, and will coordinate with the City, the various transit agencies, and other nearby uses. The TC will be in regular communication with the transit agencies and will work with them to monitor transit usage and make appropriate changes to services to match demand. In addition, the TC will be responsible for operating and maintaining a website and/or smartphone app for the Candlestick Point/Hunters Point Shipyard project, which will include transportation-related data and real-time transit information.

The TC will keep residents, employees, and employers apprised of travel incentives or changes to travel options, and will be responsible for coordinating with visitors and groups holding events at Candlestick Point or Hunters Point Shipyard.

The TC will be responsible for coordinating the production and distribution of travel brochures and educational documentation to increase resident, employee and visitor awareness of the various available TDM elements and travel options. The TC will also be responsible for conducting new employee/resident orientation and education programs and performing individualized marketing of transportation alternatives.

Other responsibilities of the TC include the following:

- Managing the carpooling/vanpooling database and Guaranteed Ride Home program;
- Coordinating carsharing organizations on the project site;
- Monitoring bicycle parking provision and usage; and
- Reporting maintenance issues.

Each year, the TC will be responsible for conducting surveys of residents, employees, and visitors to determine the current mode split (percentage of travelers who drive alone, carpool, ride transit, walk, or bike) and demographic information (such as location of work and commute time to and from work). This information will be used to improve the effectiveness of the TDM program if the project’s modal split goals are not being met.

Employee TDM Elements

The TDM program will include elements designed to assist employers to encourage the use of transit and facilitate walking and bicycling among their employees. All project site employers would be required to participate in the TDM program, and the TC would work with employers to monitor progress and provide support. It is expected that the TDM program will be a single document, which will cover the program monitoring to be performed by the TC. The project’s TDM program will detail what elements are required of employers of different sizes and each employer will be required to designate a single contact for transportation purposes.

In addition, employers will be expected to provide the following:

- Bicycle parking in a controlled access or secure area with showers and clothes lockers;
- Carpool and vanpool ridematching services, with allocated parking spaces and reduced parking charges;
• Guaranteed Ride Home program for registered carpool, vanpool and transit riders in emergency situations; and
• Information boards/kiosks displaying transit routes and schedules; carpooling and vanpooling information; bicycle lanes, routes, paths and facility information.

Furthermore, employers will be encouraged to offer programs to reduce auto use and support the use of alternative modes including the following:

• Alternative commute subsidies and/or parking cash-out, where employees are provided with a subsidy if they use transit or commute by alternative modes;
• Opportunities to purchase commuter checks;
• Opportunities to provide subsidized vanpool service;
• Marketing of alternative travel options, with employers encouraged to provide information to customers regarding alternative modes of travel;
• Compressed work week and flextime, where employees adjust their work schedule to reduce vehicle trips to the worksite; and
• Telecommuting options.

The TC will work with employers to ensure that employees are kept fully informed of the available programs and promotional activities, and will be available to assist with new employee orientation. In addition, the TC will be available to coordinate these services on behalf of the smaller employers.

Carpool/Vanpool Elements

Carpool and vanpool ridematching services would be offered through the TDM program, and designated spaces in parking facilities would be provided free to vanpools. A designated signed area near the transit centers would be reserved for casual carpooling.

Proposed implementation measures include the following:

• Within the commercial zone, preferential parking spaces will be reserved for carpoolers;
• A casual carpool pick-up point will be designated;
• All employees and residents who are registered carpool/vanpool users will be guaranteed a ride home when carpooling or vanpooling;
• A database of carpool/vanpool participants will be collected and maintained by the TC; and
• A real-time carpool match program will be provided on the Candlestick Point/Hunters Point Shipyards website.

Carshare Elements

The Transportation Coordinator will work with local carsharing organizations to provide a network of carshare vehicles parked in neighborhood “pods”, each within a half mile of all residences. Members will be allowed to use vehicles when needed, paying based on how much they drive, thus reducing the fixed costs associated with private automobile ownership.

It is expected that many residents would become members of the carsharing organizations, reserving a car by phone.
or online on an as-needed basis. At the carshare “pods”, members would check in with a personalized key card to gain access to the car.

This program provides an effective incentive for residents and others to opt for transit as a primary mode of travel because they know that a car is readily available when they need one. The growth and success of these programs in the Bay Area and in other cities throughout the US has shown their effectiveness in reducing auto dependency.

The carshare operators would determine the appropriate number of cars to be located at the project site, based on market demand. Parking spaces for carshare vehicles would be provided at strategic locations throughout the project site. The number of car share parking spaces is determined on the number of users as outlined in Table 8 below.

<table>
<thead>
<tr>
<th>Number of Residential Units</th>
<th>Number of Required Car Share Parking Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-49</td>
<td>0</td>
</tr>
<tr>
<td>50-200</td>
<td>1</td>
</tr>
<tr>
<td>201 or more</td>
<td>2, plus 1 for every 200 dwelling units over 200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Parking Spaces Provided for Non-Residential Uses or in a Non-Accessory Parking Facility</th>
<th>Number of Required Car Share Parking Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-24</td>
<td>0</td>
</tr>
<tr>
<td>25-49</td>
<td>1</td>
</tr>
<tr>
<td>50 or more</td>
<td>1, plus 1 for every 50 parking spaces over 50</td>
</tr>
</tbody>
</table>

Proposed implementation measures include the following:

- The TC will coordinate with carshare providers to establish long-term carshare use. This will reduce the need for private vehicle ownership for vacations or weekend trips;
- The availability of carsharing and information on the various carshare operators will be included in all rental and leasing information and on the Candlestick Point/Hunters Point Shipyard website;
- Within the commercial zones, free parking spaces will be reserved for short-term carshare parking;
- All carshare parking spaces and hub locations will be clearly identified and directional signage will be provided, and real-time availability of carshare vehicles will be provided on the Candlestick Point/Hunters Point Shipyard website (to supplement the information on the carshare operators’ websites); and
- Carshare vehicle hubs will be established throughout the project site in coordination with the design of garages and parking facilities.

Additional Elements and Implementation Strategies

The following additional TDM strategies are best implemented in conjunction with complementary strategies among the previously-described TDM elements:

- A personalized commute plan will be offered for all new residents. The TC will meet with each resident and develop a customized transit, carpool, vanpool, or bicycle program. The TC will show residents their various commute options, comparing costs and travel times, and identifying any employer-based programs.
• The TC will coordinate with major employers in San Francisco and the Peninsula to develop employer-based TDM measures. Transit usage and carpool/vanpool need to be supported on both ends to be successful. There is a higher incentive to use transit if free parking is not provided at the workplace. Employers control the ability to institute alternative work hours and telecommuting. Housing at Candlestick Point/Hunters Point Shipyard could also be marketed to new employees at these workplaces.

• The TC will institute a TDM committee staffed by residents and employees. The committee will participate in setting TDM goals and developing programs, which would give residents and employees a greater stake in its success.

• Performance goals will be set upon occupancy of each phase. Goals could be established as a given decrease in single-occupant vehicle mode split or reduction in peak hour traffic volumes at driveways.

• All TDM information will be included in rental packets and home ownership documents as well as all office, R&D, and retail lease documents.

• Surveys of residents, employers, and employees will be conducted on an annual basis to document TDM effectiveness and to develop additional program measures.

• High-speed wireless internet will be provided to encourage telecommuting.

• All deliveries to the grocery store and other high-volume commercial uses will be scheduled to avoid peak commute periods.

• Participation in San Francisco’s bike sharing program will be considered as an alternative transportation program where bike kiosks are set up at intervals along major corridors and riders can pick up and drop off bicycles in seconds.

Parking

The parking program is designed to reduce the overall usage of private automobiles through pricing, supply, new technologies, and effective monitoring programs. The following sections outline some of the key elements of the parking plan.

Residential Parking

Residential parking will be unbundled from the units and each parking space will be sold or leased separately to individual units. Residential parking rates will be set equivalent to fair market value and parking will be provided at a rate of one space per unit on average.

In areas outside of Downtown San Francisco, the Planning Code generally requires a minimum 1.0 parking ratio – one off-street parking space for each dwelling unit. However, minimum parking requirements have recently been removed for Downtown Residential (DTR) and C-3 districts – including Union Square, the Financial District, Rincon Hill, and portions of the South of Market Area (SOMA) surrounding the Transbay Terminal. Maximum parking ratios now apply in these areas, which in some cases are well below the otherwise 1.0 parking ratio minimum. The 1.0 parking ratio maximum proposed for this project would be similar.

The San Francisco General Plan discourages automobile use and encourages alternative means of travel in high-density, congested areas, and recognizes that not every resident needs parking provided with their unit. The policy of providing less than one parking space per residential unit has been incorporated in the Market and Octavia Neighborhood Plan, and is under consideration in the Eastern Neighborhoods Area Plans.

5 This arrangement would not apply to the 1,655 “Agency Affordable” units, which are limited by tax-credit financing requirements.
Unbundling takes this concept one step further and links parking requirements to auto ownership instead of home ownership. In typical units where parking is bundled, tenants pay for the unit and the parking space as a single cost. Unbundling removes the parking component from the cost of residential or commercial space and allows residents and tenants to buy or lease parking only if they need it.

There are two primary benefits to unbundling⁶:

**Reduced housing costs and greater housing affordability.** Tenants who do not intend to use off-street parking can save the expense of purchasing a parking space with their unit. Unbundling parking can thus increase the affordability of housing, which is an especially important issue in San Francisco, where the cost of housing can be beyond the means of many households.

**Induced changes in travel behavior.** Bundled off-street parking gives the impression that parking is “free”, when in reality; the cost of the unit is greater than a unit without off-street parking. Unbundling parking reveals the actual cost of parking to the tenant and can affect the perception of the cost of owning a car compared to the cost of alternative modes of travel such as transit. By increasing awareness of the hidden costs of auto ownership, unbundling parking could ultimately help to induce changes in travel behavior, such as decreasing auto dependency and encouraging more sustainable travel patterns on transit, bicycles, and by foot.

Unbundled parking is currently required in the Transbay, Rincon Hill, Central Waterfront, and Eastern Neighborhoods, and is a standard condition for any housing projects needing approval of the Planning Commission.

**Employee/Visitor Parking Elements**

- Parking will be designed to serve all commercial land uses. Where shared parking opportunities exist (e.g., a facility provides parking for service uses during the day and a restaurant during the evening), the parking requirements will be reduced accordingly;
- All on- and off-street parking in commercial areas will be paid parking;
- Parking rates will ideally be set equivalent to fair market value and not subsidized by tenants or building operators;
- No discounts will be allowed for “early bird” or “in by/out by” long-term parking, and no discounted monthly parking passes will be allowed; and
- Preferred parking spaces will be reserved for carpool/vanpool/carshare vehicles.

In addition to the above elements, off-street parking will be priced according to the following principles:

- Free or discounted parking will be available for rideshare/vanpool users;
- Parking will be more expensive than transit options;
- Parking fee structures will encourage short-term retail trips and strongly discourage long-term parking/employee parking; and
- Assessment of parking fees would begin before the morning commute period and end after the evening commute period to discourage use of automobiles for home-based work trips among project residents.

---

Retail and Hotel Parking

- Shoppers and hotel guests will not receive validation for parking;
- Parking will be more expensive than transit options;
- Hotel room rates will include a transit pass surcharge to encourage transit use among hotel guests;
- TDM programs will be instituted for retail and hotel employees; and
- TDM programs will be instituted for special events which would be expected to draw large numbers of visitors to project retail uses and hotels.

Parking Requirements

**Table 9** summarizes parking requirements calculated for the project land use program. These numbers represent maximum off-street parking spaces for uses within the project area. The Planning Department may require that parking be shared across uses. The development plan parking requirements were established through the Design for Development (D4D) process for development controls, and thus the parking and loading requirements have been tailored to this development.

![Image of a car](image)

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Rate</th>
<th>Number of Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Candlestick Point</td>
<td>Hunters Point Shipyard</td>
</tr>
<tr>
<td>Residential</td>
<td>1 per unit</td>
<td>6,225</td>
</tr>
<tr>
<td>Commercial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Retail</td>
<td>2.7 per 1,000 sq.ft.</td>
<td>1,715</td>
</tr>
<tr>
<td>Neighborhood Retail</td>
<td>1 per 1,000 sq.ft. (CP)</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>3 per 1,000 sq.ft. (HP)</td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>1 per 1,000 sq.ft.</td>
<td>150</td>
</tr>
<tr>
<td>Research and Development</td>
<td>1.3 per 1,000 sq.ft.</td>
<td>-</td>
</tr>
<tr>
<td>Hotel</td>
<td>0.25 per room</td>
<td>55</td>
</tr>
<tr>
<td>Arena</td>
<td>1 per 15 seats</td>
<td>670</td>
</tr>
<tr>
<td>Artists’ Space</td>
<td>1 per 2,000 sq.ft.</td>
<td>-</td>
</tr>
<tr>
<td>Community Uses</td>
<td>1 per 2,000 sq.ft.</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>8,965</strong></td>
</tr>
</tbody>
</table>

Source: Candlestick Point and Hunters Point Shipyard Phase II Design for Development documents 2010

These requirements present the base number for the proposed project maximum allowable spaces. It should be noted that different requirements may apply based on the type of office and research and development tenants.
Bicycle Parking

Bicycle parking will be located in a secured and convenient location that is near the garage entrance and does not conflict with autos. The standards for bicycle parking by use are listed in Table 10 and Table 11.

<table>
<thead>
<tr>
<th>Table 10: Bicycle Parking Spaces for Residential Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESIDENTIAL USE</strong></td>
</tr>
<tr>
<td>Dwelling units in all Districts</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Group Housing</td>
</tr>
<tr>
<td>Dwelling units dedicated to senior citizens or physically disabled persons</td>
</tr>
</tbody>
</table>

Loading

The loading program is designed to facilitate access required by freight vehicles (commercial delivery and moving trucks) and passenger vehicles (private vehicles, vans, and shuttles), while mitigating the negative impacts that loading and unloading activities might have on other traffic modes, particularly the pedestrian environment. The program must be managed effectively in order to prioritize pedestrians and enhance safety. The following sections outline the key elements of the loading plan.

<table>
<thead>
<tr>
<th>Table 11: Bicycle Parking Spaces for Commercial Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMMERCIAL USE</strong></td>
</tr>
<tr>
<td>New commercial buildings whose primary use consists of medical or other professional services, general business offices, financial services, business and trade schools, and development or manufacturing. Where the gross square footage of the floor area exceeds 10,000 sq ft but is no greater than 20,000 ft, 3 bicycle spaces are required, of which at least 1 must be a Class 1 space.</td>
</tr>
<tr>
<td>New commercial buildings whose primary use consists of retail, eating and drinking, or personal services. Where the gross square footage of the floor area exceeds 25,000 sq ft but is no greater than 50,000 ft, 3 bicycle spaces are required, of which at least 1 must be a Class 1 space.</td>
</tr>
<tr>
<td>New commercial buildings whose primary use consists of parking spaces for rent or other fee to the general public, and facilities which offer automobile parking space solely to building tenants, or a combination of both.</td>
</tr>
<tr>
<td>New commercial buildings whose primary use consists of parking spaces for rent or other fee to the general public, and facilities which offer automobile parking space solely to building tenants, or a combination of both. Where the number of automobile spaces is between 120 and 500, 1 bicycle space shall be provided for every 20 auto spaces. Where the number of automobile spaces is more than 500, 25 bicycle spaces shall be provided plus 1 additional space for every 40 auto spaces over 500 spaces, up to a maximum of 50 bicycle spaces.</td>
</tr>
</tbody>
</table>
On-street Loading

On-street loading spaces are designed to facilitate short-term parking near building entrances to meet the needs of disabled individuals and as a general convenience. They also allow package and other commercial deliveries to be made. Loading spaces also facilitate traffic flow by reducing the incidence of double-parking. However, even the frequent movements of vehicles in and out of loading spaces can hinder traffic, including bikes and transit service. The following guidelines will apply to the location and management of on-street loading spaces:

- The prime street frontage directly in front of building entrances will not be designated for parking but reserved for use as short-term loading zones;
- The sizes of loading zones will be tailored to the specific uses of the adjacent properties;
- Retail streets featuring angled parking on one street face will have loading spaces on the opposite street face, and include additional spaces to accommodate the needs of both sides of the street; and
- Loading spaces will not be designated on BRT streets. The loading needs of blocks adjacent to BRT streets will be accommodated on other block faces.
- For buildings where on-street loading is not possible on the primary access route, loading will be accommodated on other adjacent streets or on-site (off-street).

Off-street Loading

To provide access from the street, off-street loading spaces require curb cuts and driveways, which can be intrusive to the bicycling and pedestrian environment. In addition, the turning movements of vehicles leaving or entering the street can impede the flow of traffic, which is of particular concern with regard to transit vehicles. The following guidelines will apply to the location and design of off-street loading spaces:

- Where possible, curb cuts and driveways providing access to off-street loading spaces should be consolidated into a single location on any block face to minimize their impact;
- No curb cuts accessing off-street loading will be created on the BRT streets or on the local streets with bike lanes, where alternative frontages are available;
- Individual buildings will be limited to one opening of up to 24 feet in width to provide access to off-street loading. Shared openings for parking and loading will be encouraged, with a maximum width of 27 feet;
- Loading spaces will be designed to serve all commercial land uses. Where opportunities to share loading spaces exist (e.g., loading area for a supermarket with a peak of morning deliveries and restaurants with afternoon deliveries), the off-street loading requirements will be reduced accordingly; and
- The Planning Department or Office of Community Investment and Infrastructure may regulate truck access from arterial streets to loading docks based on development-specific loading needs.

Tables 12 and 13 present permitted and required off-street freight loading space for various project uses, based on Section 152 of the San Francisco Planning Code. The Code stipulates off-street loading space requirements that apply generally outside of the downtown commercial core and the South of Market District, but includes special conditions for Downtown Residential (DTR) districts. DTR districts are transit-oriented, high-density, mixed-use residential neighborhoods in and around downtown. Reflecting the greater pedestrian activity in such districts, off-street loading is limited to a certain number of permitted spaces, rather than a prescribed number of spaces.

The off-street loading limits of DTR districts, shown in Table 12, are proposed for the medium-density residential and high-density residential blocks, as shown in the Land Use Program presented in Figure 6. In all other areas of the project, the City’s general requirements for off-street loading spaces will apply, as presented in Table 13.
5.3 Phasing

The Plan calls for a comprehensive set of transportation solutions to serve the travel demands of residents, employees and visitors and to meet the project goals of sustainability and livability. Because of their cost and complexity, these improvements to the transit and roadway networks will be phased during the development of the project. Because the project is expected to be constructed over a relatively long period (full buildout expected by 2035), it is crucial that transportation improvements be timed to provide the optimal level of mobility relative to the amount of development throughout the buildout process.

Development of the project has been grouped into four major development phases each for Candlestick Point and Hunters Point Shipyard. Table 14 presents the anticipated land development phasing.

These development assumptions anticipate construction of Candlestick Point, including demolition of Candlestick Park and its replacement by a regional retail center will likely occur in initial Phases, with development at the Hunters Point Shipyard site occurring in later phases.

Tables 15 and 16 summarize the programmed roadway and transit improvements, respectively. Phase 1 improvements are generally expected to be built and operational to coincide with the first stage of residential development and to meet the needs of the new regional retail center in Candlestick Point. Subsequent improvements are expected to be built and operational to coincide with project build-out.
<table>
<thead>
<tr>
<th>Land Use</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hunters Point Shipyard</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing (units)</td>
<td>1,345</td>
<td>1,230</td>
<td>110</td>
<td>15%</td>
<td>4,225</td>
</tr>
<tr>
<td>Office (sf)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Research &amp; Development (sf)</td>
<td>0</td>
<td>627,000</td>
<td>1,823,000</td>
<td>550,000</td>
<td>3,000,000</td>
</tr>
<tr>
<td>Arena (seats)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hotel (rooms)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Neighborhood Retail (sf)</td>
<td>20,000</td>
<td>76,000</td>
<td>9,000</td>
<td>20,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Regional Retail (sf)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Artist's Studio/Art Centre (sf)</td>
<td>255,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>255,000</td>
</tr>
<tr>
<td>Community Facilities (sf)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>50,000</td>
<td>50,000</td>
</tr>
<tr>
<td><strong>Candlestick Point</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing (units)</td>
<td>1,529</td>
<td>1,936</td>
<td>2,055</td>
<td>705</td>
<td>6,225</td>
</tr>
<tr>
<td>Office (sf)</td>
<td>150,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>150,000</td>
</tr>
<tr>
<td>Research &amp; Development (sf)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Arena (seats)</td>
<td>10,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10,000</td>
</tr>
<tr>
<td>Hotel (rooms)</td>
<td>220</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>220</td>
</tr>
<tr>
<td>Neighborhood Retail (sf)</td>
<td>125,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>125,000</td>
</tr>
<tr>
<td>Regional Retail (sf)</td>
<td>635,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>635,000</td>
</tr>
<tr>
<td>Artist's Studio/Art Centre (sf)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community Facilities (sf)</td>
<td>50,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>50,000</td>
</tr>
</tbody>
</table>

Source: Lennar Urban, February 2010
Generally, improvements to roadways that are expected to carry traffic to and from the new regional retail center will be constructed in Phase 1. These include Harney Way, Arelious Walker Drive, and Carroll Avenue. This approach will ensure that substantial improvements are made to both auto and transit access to the Candlestick Point retail center prior to its opening. A more detailed discussion of the development-related “triggers” for roadway improvements is included in the project’s Infrastructure Plan.

A similar concept has been developed for the transit improvements, as shown in Table 15. Transit routes serving the Hunters Point Shipyard (Hunters Point Express (HPX), 23-Monterey/24-Divisadero, 44-O’Shaughnessy, and 48-Quintara) would be extended to serve the site in the early stages of Phase 2, at somewhat lower frequencies than expected with full buildout. Gradually, as development in the Hunters Point Shipyard occurs, frequencies of these routes will be increased to correspond to the level of development.

Similarly, routes serving Candlestick Point (Candlestick Point Express (CPX) and 29-Sunset) will be extended into the site in the relatively early stages of Phase 1, when the bulk of the Candlestick Point retail center development is scheduled to occur.

The Muni Line 28L/BRT route would be implemented and extended in Phase 2, with completion of the Geneva Avenue extension and US 101/Harney Way interchange reconstruction.

<table>
<thead>
<tr>
<th>Roadway Improvement</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunters Point Shipyard</td>
<td></td>
</tr>
<tr>
<td>Ingalls Avenue/Thomas Avenue/Griffith Street Improvement</td>
<td></td>
</tr>
<tr>
<td>Innes Avenue Streetscape</td>
<td></td>
</tr>
<tr>
<td>Palou Avenue Transit Preferred Street and Streetscape Improvements</td>
<td></td>
</tr>
<tr>
<td>Yosemite Slough Bridge</td>
<td></td>
</tr>
<tr>
<td>Candlestick Point</td>
<td></td>
</tr>
<tr>
<td>Harney Way Widening (Initial Configuration)</td>
<td></td>
</tr>
<tr>
<td>New Roadway through Candlestick Point</td>
<td></td>
</tr>
<tr>
<td>Carroll Avenue</td>
<td></td>
</tr>
<tr>
<td>Gilman Avenue Streetscape</td>
<td></td>
</tr>
<tr>
<td>Ingerson Avenue Repaving</td>
<td></td>
</tr>
<tr>
<td>Jamestown Avenue Streetscape</td>
<td></td>
</tr>
<tr>
<td>Geneva Avenue Extension</td>
<td></td>
</tr>
<tr>
<td>Harney Way/US 101 Interchange Reconstruction</td>
<td></td>
</tr>
</tbody>
</table>

1 Ultimate configuration based on Mitigation Measure MM TR-16 from project EIR
2 Included to indicate anticipated infrastructure development timeline; under study.
Table 16: Transit Improvement Phasing

<table>
<thead>
<tr>
<th>Transit Improvement</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New and Expanded Bus Lines</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Route</strong></td>
<td>Frequency (Minutes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hunters Point</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hunters Point Express (HPX)</td>
<td>20</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Extension of 23-Monterey (Temporary)</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extension of 24-Divisadero (23-Monterey Returns to Existing Route)</td>
<td>10-7.5</td>
<td>7.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extension of 44-O'Shaughnessy</td>
<td>7.5-6.5</td>
<td>6.5</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>Extension of 48-Quintara</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Hunters Point Shipyard Transit Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palou Avenue Transit Preferential Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Candlestick Point</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candlestick Point Express (CPX)</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Extension of 56-Rutland (temporary)</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extension of 28L/BRT</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Extension of 29-Sunset</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Harney/Geneva BRT/Transit Preferential Street²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Both</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased service on T-Third light rail</td>
<td>8-10</td>
<td>6²</td>
<td>5²</td>
<td>5²</td>
</tr>
<tr>
<td>BRT Stops</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayshore Transit Center</td>
<td>Unknown – Currently Under Study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oakdale Caltrain Station Improvements</td>
<td>Unknown – Currently Under Study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connections to SamTrans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Until construction of the Geneva Avenue extension, the BRT service may operate independently from the 28L – 19th Avenue/Geneva Avenue limited between the Hunters Point Transit Center and the Bayshore Caltrain Station via Alana Way and Beatty Avenue.
2 Increased capacity on the T-Third shown here is accommodated within the overall implementation of the Central Subway service capacity and frequency enhancements. Extension to the Bayshore Caltrain station is also proposed as part of the overall Bi-County study. In Phase 3, service will likely be provided by two-car trains.
3 Improvement currently under study – phasing shown is anticipated but subject to change.
The mode split goal of the project – 45 percent auto, 30 percent transit, 20 percent walk, and 5 percent bike are analogous to other San Francisco neighborhoods. In addition, automobile travel has declined and alternative modes have gained popularity in projects and neighborhoods in San Francisco and other cities through effective TDM strategies. The following sections draw analogies to Candlestick Point and Hunters Point Shipyard, showing that dense, mixed-use development and a comprehensive TDM program can achieve the project’s modal split goal.
6.1 Comparison to Other San Francisco Neighborhoods

With respect to current travel patterns in southeastern San Francisco, the mode split shift sought by the project goals might appear ambitious. However, many San Francisco neighborhoods currently exhibit comparable levels of auto, transit, and walk/bike travel, as shown in Table 17. Percentages of residential work trips in other San Francisco neighborhoods that meet or exceed the project modal split goal appear in the table in bold.

All of the featured neighborhoods have a level of transit use greater or equal to 30 percent for residential work trips. Areas of the City where at least a quarter of trips are made on foot or by bike include Nob Hill, North Beach, and Telegraph Hill. Private automobiles are used for 45 percent or less of residential work trips in Nob Hill, North Beach, Telegraph Hill, and the Western Addition.

With a development density, mixed-use character and level of transit service comparable to these neighborhoods, Candlestick Point and Hunters Point Shipyard will achieve a modal split similar to these transit-oriented and walkable San Francisco neighborhoods.

6.2 TDM Case Studies

While it is difficult to isolate the effectiveness of any one of the TDM elements described in Chapter 5, it is clear from the following case studies that comprehensive, multi-faceted TDM plans can achieve dramatic shifts in mode choice. The policies and programs outlined in Section 5.2.4 intend to create this synergy, achieving results comparable to the following case studies.

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>PM Peak Hour Residential Work Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transit</td>
</tr>
<tr>
<td>Marina</td>
<td>40%</td>
</tr>
<tr>
<td>Mission</td>
<td>39%</td>
</tr>
<tr>
<td>Nob Hill</td>
<td>39%</td>
</tr>
<tr>
<td>North Beach</td>
<td>30%</td>
</tr>
<tr>
<td>Parkmerced</td>
<td>31%</td>
</tr>
<tr>
<td>Russian Hill</td>
<td>35%</td>
</tr>
<tr>
<td>Telegraph Hill</td>
<td>31%</td>
</tr>
<tr>
<td>Western Addition</td>
<td>45%</td>
</tr>
</tbody>
</table>

% That Would Achieve Project Goals 30% 25% 45%

Source: U.S. Census Bureau – 2000

Stanford University, Palo Alto, California

In 2002, four percent of Stanford University employees rode Caltrain to work. By 2007, this figure jumped to nearly 18 percent. During the intervening five years, the following were implemented:

- GO Passes are provided free to all employees who live off-campus, which allow unlimited rides on Caltrain;
- Caltrain introduced “baby bullet” service, with Palo Alto as an express station; and
- “Clean Air Cash” was instituted, an incentive which pays university employees $234 (the cost of a permit) if they do not purchase a parking permit.
Intrawest Corporation developed a trip reduction program for its Station Tower, an office building where 700 people are employed. The tower is located in a suburban area, yet nearly 50 percent of the employees use transportation alternatives. This is due to the tower’s location at a SkyTrain rapid transit station, as well as TravelChoices, a TDM program including the following elements:

- Each organization in the building has a TravelChoices representative who administers the program;
- Showers and secure bike lockers are provided for cyclists;
- Free access to fitness facilities, showers and lockers are provided;
- A ride-matching service links potential carpool partners within the complex;
- Preferential parking is reserved for carpools and vanpools;
- A guaranteed ride home program is offered; and
- An incentive program awards “TravelBucks” to each employee that uses alternative transportation to and from work. Prizes include coffee, transit tickets, ski passes and rental car certificates.

The North Natomas Transportation Management Association (NNTMA) has targeted a 35 percent reduction in single-occupant vehicle trips by residents of the community. Each developer must submit a transportation management plan (TMP) prior to development, which is a commitment to a combination of trip reduction measures. The TMP must be approved by the City of Sacramento. NNTMA’s TDM program includes the following TDM elements:

- Baseline telephone survey;
- Association website;
- Online guaranteed ride home program;
- Brochure for residents;
- Subsidized bicycle program; and
- “Spare the Air” cash giveaways.

Three major medical facilities combined efforts to develop a plan to manage the daily transportation demand of 10,000 employees, students, patients and visitors. In the first year after the plan’s implementation, single-occupant vehicle trips declined by 15 percent and transit ridership increased by 46 percent. The plan included the following:

- New express buses;
- Coordinated carpool/vanpool database;
- Reduced-cost transit passes and an extensive marketing program.

The Oregon Department of Environmental Quality’s ECO program aims to reduce vehicle trips in the Portland metropolitan area. Employers with over 100 employees at a work site are required to provide incentives for alternative commute options that have a combined potential to reduce single occupant vehicle commute trips by ten percent from an established baseline. The program estimates the trip reduction potential for various TDM elements among the percentage of employees they are made available to, which are summarized in Table 18.
### Table 18: Employee Commute Options (ECO) Program

<table>
<thead>
<tr>
<th>TDM Element</th>
<th>Trip Reduction Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Telecommuting (among employees expected to participate)</strong></td>
<td></td>
</tr>
<tr>
<td>Full Time</td>
<td>82-91%</td>
</tr>
<tr>
<td>1-2 Days/Week</td>
<td>14-36%</td>
</tr>
<tr>
<td><strong>Compressed Work Week (among employees expected to participate)</strong></td>
<td></td>
</tr>
<tr>
<td>9/80 Schedule</td>
<td>7-9%</td>
</tr>
<tr>
<td>4/40 Schedule</td>
<td>16-18%</td>
</tr>
<tr>
<td>3/36 Schedule</td>
<td>32-36%</td>
</tr>
<tr>
<td><strong>Full Transit Pass Subsidy</strong></td>
<td></td>
</tr>
<tr>
<td>High Transit Service</td>
<td>19-32%</td>
</tr>
<tr>
<td>Medium Transit Service</td>
<td>4-6%</td>
</tr>
<tr>
<td>Low Transit Service</td>
<td>0.5-1%</td>
</tr>
<tr>
<td><strong>Half Transit Pass Subsidy</strong></td>
<td></td>
</tr>
<tr>
<td>High Transit Service</td>
<td>10-16%</td>
</tr>
<tr>
<td>Medium Transit Service</td>
<td>2-35%</td>
</tr>
<tr>
<td>Low Transit Service</td>
<td>0-0.5%</td>
</tr>
<tr>
<td><strong>Employee Parking Cash-Out</strong></td>
<td></td>
</tr>
<tr>
<td>High Transit Service</td>
<td>8-20%</td>
</tr>
<tr>
<td>Medium Transit Service</td>
<td>5-9%</td>
</tr>
<tr>
<td>Low Transit Service</td>
<td>2-4%</td>
</tr>
<tr>
<td><strong>Parking Subsidy Elimination</strong></td>
<td></td>
</tr>
<tr>
<td>High Transit Service</td>
<td>8-20%</td>
</tr>
<tr>
<td>Medium Transit Service</td>
<td>5-9%</td>
</tr>
<tr>
<td>Low Transit Service</td>
<td>2-4%</td>
</tr>
<tr>
<td><strong>Reduced Cost Parking for High Occupancy Vehicles (HOV)</strong></td>
<td>1-3%</td>
</tr>
<tr>
<td><strong>On-Site Services</strong></td>
<td>1-2%</td>
</tr>
</tbody>
</table>

### Table 18: Employee Commute Options (ECO) Program

<table>
<thead>
<tr>
<th>TDM Element</th>
<th>Trip Reduction Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycling Program (employees who live &lt; 6 miles from work site)</td>
<td>0-10%</td>
</tr>
<tr>
<td>Walking Program</td>
<td>0-3%</td>
</tr>
<tr>
<td>On-site Rideshare Matching</td>
<td></td>
</tr>
<tr>
<td>Without support strategies¹</td>
<td>1-2%</td>
</tr>
<tr>
<td>With support strategies</td>
<td>6-8%</td>
</tr>
<tr>
<td>Company-provided Vanpools (with fee)</td>
<td>15-25%</td>
</tr>
<tr>
<td>Company-subsidized Vanpools</td>
<td>30-40%</td>
</tr>
<tr>
<td>Gifts/Awards for Alternative Mode Use</td>
<td>0-3%</td>
</tr>
<tr>
<td>Time Off with Pay for Alternative Mode Use</td>
<td>1-2%</td>
</tr>
<tr>
<td>Company Cars for Business Travel</td>
<td>0-1%</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Environmental Quality – October 2008

¹ Support strategies include employee transportation coordinators, marketing/education campaigns, preferential HOV parking, on-site transit pass sales, pre-tax transit pass sales, employee recognition programs, and shuttles.

### Long Range TDM Plan – Hillsborough County, Florida

Researchers at the University of South Florida analyzed the potential of TDM strategies to reduce congestion and air pollution in the Tampa Bay Area. The Environmental Protection Agency’s COMMUTER Model was used to measure the effectiveness of different combinations of TDM strategies.

The analysis was applied to the activity centers of Downtown Tampa, Brandon, USF/Busch/New Tampa, and Westshore, with commuting workforces ranging from 23,000 to 58,000 in 2000. Downtown Tampa had a single occupancy vehicle (SOV) mode split of 63 percent, while the other, suburban activity centers ranged from 81 to 83 percent. The results of the analysis are summarized in Table 19.
Table 19: Hillsborough County Long Range TDM Plan

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Elements</th>
<th>Reduction of SOV Mode Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2000 Baseline</td>
</tr>
</tbody>
</table>
| Scenario A (Alternative Work Schedule) | • 1% increase in 4/40 compressed work week  
• 2% increase in 9/80 compressed work week  
• 2% increase in telecommuting | 1.0-1.1% | 4.1-4.5% |
| Scenario B (Alternative Work Schedule & Employer-based TDM Programs) | • Compressed workweek and telecommuting, as in Scenario A  
• Preferential parking program  
• Transit/vanpool subsidy  
• 10% workforce participation | 1.3% | 4.4-4.8% |
| Scenario C (Employer-based TDM Program II) | • Same as Scenario B, but with 35% workforce participation and greater employer support levels | 2.4-2.5% | 5.5-5.9% |
| Scenario D (Employer-based TDM Program III) | • Same as Scenario B, but with 50% workforce participation and greater employer support levels | 3.8-3.9% | 6.6-7.0% |

An employer-level baseline was also analyzed, using Hillsborough County Government as the employer. In 2000, the county employed 2,860 in downtown Tampa. The model found that a reduction of SOV mode split of up to 11.7 percent could be achieved under the most aggressive scenario.

Table 20: Santa Clara Valley Transportation Authority Trip Reductions

<table>
<thead>
<tr>
<th>Project Element</th>
<th>Maximum Trip Reduction Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed-use Development Project</td>
<td></td>
</tr>
<tr>
<td>With housing and retail components</td>
<td>13%</td>
</tr>
<tr>
<td>With hotel and retail components</td>
<td>10%</td>
</tr>
<tr>
<td>With housing and employment</td>
<td>3%</td>
</tr>
<tr>
<td>With employment and employee-serving retail</td>
<td>3%</td>
</tr>
<tr>
<td>Location within 2,000-foot walk of a transit facility</td>
<td></td>
</tr>
<tr>
<td>Housing near Light Rail or Caltrain station</td>
<td>9%</td>
</tr>
<tr>
<td>Housing near a major bus stop (≥10 min service)</td>
<td>2%</td>
</tr>
<tr>
<td>Employment near Light Rail or Caltrain station</td>
<td>3%</td>
</tr>
<tr>
<td>Employment near a major bus stop (≥10 min service)</td>
<td>2%</td>
</tr>
<tr>
<td>Effective TDM Program</td>
<td></td>
</tr>
<tr>
<td>Financial Incentives</td>
<td>5%</td>
</tr>
<tr>
<td>Project-funded dedicated shuttle, not combined with employment</td>
<td>3%</td>
</tr>
<tr>
<td>Project-funded dedicated shuttle, combined with employment</td>
<td>1.5%</td>
</tr>
<tr>
<td>Partially-funded multi-site shuttle, near Light Rail or Caltrain station</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: Santa Clara Valley Transportation Authority – October 2008

1 Baseline assumes expected telecommuting growth and existing and committed transit improvements.

Santa Clara Valley Transportation Authority (VTA), San Jose, California

Transportation Impact Fee (TIF) credits are offered to developers in Santa Clara County, California, based on the maximum trip reduction potential of the given project elements. Table 20 summarizes the accepted maximum trip reduction potential for various project elements.
City of Berkeley, California Employee TDM Programs

The City has implemented a number of programs benefiting its 1,500 employees. As a result, single-occupant vehicle use has dropped 25% (from 47 percent to 36 percent) between 2001 and 2005. These programs include:

- Annual EcoPasses are purchased for all employees, at a cost of $60 each ($84,000 total);
- Pre-Tax Commute Benefits;
- Fleet of ten bicycles for employee use;
- Two secure bike parking locations at City Hall;
- Shower facilities available through deeply discounted YMCA membership (adjacent to City Hall);
- Carpool/vanpool parking is discounted 70%;
- City vehicle fleet has been partially replaced with carshare vehicles, saving $87,000 - $130,000 annually; and
- Guaranteed ride home program.

City of Boulder and the University of Colorado

The City of Boulder’s 1996 Transportation Master Plan sought to hold traffic to 1994 levels and reduce single-occupant vehicle mode share to 25 percent. As a result of the Plan, the number of trips on transit doubled between 1990 and 2000; 17.4 percent of work trips shifted from SOV to bike (10.6 percent) and transit (5.8 percent); and transit pass holders jumped from 4,000 in 1994 to 60,000 in 2001. The following strategies have been implemented in conjunction with the Plan:

- A “Community Transit Network” of small buses has been developed with identity and amenities shaped with community input and direction;
- University of Colorado provides transit passes for 29,000 students and 6,000 employees (students pay a mandatory fee, while staff passes paid through parking revenues, general fund and head tax);
- 65,000 people have access to a transit pass;
- City matches 25 percent of the cost of bus passes for neighborhood residents, who cover the balance through voluntary contributions or through a General Improvement District (GID). With a GID, all residents are eligible for passes, which are paid for through annual property tax assessments;
- Developers of new residential subdivisions are required to buy each household three years’ worth of unlimited transit passes. After the third year, residents pay to HOA or through rent to continue;
- Downtown parking revenues pay for marketing of business area, maintenance of pedestrian area and for employee transit passes;
- Bike routes, paths and lanes have been added; bike-actuated and grade-separated crossings have been implemented; bike racks have been installed on all buses; and CU has a free bicycle check-out program; and
- A “safe ride home” service is funded with $2 of each $50 transit pass.
Candlestick Point & Hunters Point Shipyard Phase II
Transportation Plan Appendix
Revised July 2014
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   - 4.1 Conclusion

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- **Table 2:** Transit Vehicle Capital Costs
- **Table 3:** Effective PM Peak Hour Transit Trip Generation Rates - Candlestick Point
- **Table 4:** Effective PM Peak Hour Transit Trip Generation Rates - Hunters Point Shipyard Phase II
This report describes the transit service plan for the Candlestick Point / Hunters Point Shipyard Phase II (CP/HPS) project, including elements of the plan and the expected costs associated with operating that service. This analysis and the resulting transit service plan is the product of close collaboration between the Mayor’s Office of Economic and Workforce Development, the Office of Community Investment and Infrastructure, the Planning Department, and SFMTA. There has been general consensus regarding the suitability and financial feasibility of this plan to provide robust transit service to the southeastern portion of San Francisco. SFMTA service planning staff will retain the discretion to implement the most appropriate transit service as conditions in the area warrant. However, this transit service plan represents the currently-anticipated transit service improvements.

This report is divided into four chapters. This chapter provides a brief introduction to the report and describes its purpose. The second chapter provides a brief summary of the proposed transit plan. The third chapter describes the costs associated with operating the proposed service plan at completion of the project, and the fourth chapter describes the anticipated phasing of transit service increases (and associated costs) relative to project buildout.

Fehr & Peers has worked collaboratively with staff from the Planning Department, the Mayor’s Office of Economic and Workforce Development, the Office of Community Investment and Infrastructure, the San Francisco County Transportation Authority, and SFMTA to develop reliable projections of transit ridership associated not just with the proposed project, but with other proposed and planned projects in the area. These detailed, route-specific ridership projections were used to develop and refine transit service plan for buildout conditions. Specifically, the transit operation plan would include the following peak period service improvements at buildout:

- Extension of the 24-Divisadero, the 44-O’Shaughnessy, and the 48-Quintara-24th Street into Hunters Point Shipyard, with increased frequency on the 24-Divisadero to 6 minutes in the AM and PM peak periods.
- Extension of the 29-Sunset from its current terminus near the Alice Griffith housing development, near Gilman Avenue and Giants Drive, into the proposed Candlestick Point retail area. The 29-Sunset would operate a short line between Candlestick Point and the Balboa Park BART station. This would increase frequencies on the 29-Sunset by reducing headways between buses from 10 minutes to 5 minutes during the AM and PM peak periods between Candlestick Point and the Balboa BART station. Every other bus would continue to serve the Sunset District at 10-minute headways.

1 Initially, the 23-Monterey would be extended into the Hunters Point Shipyard instead of the 24-Divisadero. Approximately during Major Phase 3, the 23-Monterey would return to its existing route and the 24-Divisadero would be extended into the site.
• Convert T-Third service between Bayview and Chinatown via the Central Subway from one-car to two-car trains or comparable service improvement².

• Extension of the 28L-19th Avenue Limited from its TEP-proposed terminus on Geneva Avenue, just east of Mission Street, into the Hunters Point Shipyard transit center. The 28L-19th Avenue Limited would travel along Geneva Avenue across U.S. 101 via the proposed Geneva Avenue extension and new interchange with U.S. 101, to Harney Way. East of Bayshore Boulevard, the 28L-19th Avenue Limited would operate as BRT, traveling in exclusive bus lanes into the Candlestick Point area. The BRT route would travel through the Candlestick Point retail corridor, and cross over Yosemite Slough into the Hunters Point Shipyard transit center. The 28L-19th Avenue Limited would operate a short line to the Balboa Park BART station. This would increase frequencies on the 28L-19th Avenue Limited by reducing headways between buses from 10 minutes to 5 minutes for the segment between Hunters Point Shipyard and the Balboa Park BART station, traveling in exclusive lanes throughout the project site. Every other bus would continue to the Sunset District at 10-minute headways³.

• New CPX-Candlestick Express to downtown serving the Candlestick Point site, traveling along Harney Way (with potential stops at Executive Park), before traveling on U.S. 101 toward downtown, terminating at the Transbay Terminal⁴.

• New HPX-Hunters Point Shipyard Express to downtown serving the Hunters Point Shipyard site, traveling from the Hunters Point Shipyard Transit Center, along Innes Avenue, with stops at the India Basin and Hunters View areas. The HPX would continue non-stop to the Transbay Terminal in Downtown San Francisco.

This new transit service would be complimented by the provision of a new transit center in the Hunters Point Shipyard site, which would include space for bus stops, bus layovers, transit operator restrooms, customer information, and other amenities as described in the Candlestick Point & Hunters Point Shipyard Phase II Transportation Plan and the project’s Infrastructure Plan.

As noted in Chapter 1, the proposed transit service would compliment service changes proposed by the Transit Effectiveness Project (TEP), and is illustrated on Figure 1. As currently contemplated, the relative difference between off-peak and peak period transit service would be similar to the relative differences proposed as part of the TEP.

---

² Improvements to service on the T-Third light rail line are not expected to be phased based on project development; instead, improvements on the T-Third will be phased according to construction on the Central Subway project and regional demand needs.

³ As an intern supplement to transit service in the Candlestick Point area, prior to implementation of the 28L-19th Avenue BRT extension the 56-Rutland would be temporarily extended to teh Candlestick Point retail center and its frequency increased from 20-minute headways to 15-minute headways. Additionally, the retail center operator will operate a free shuttle from the regional retail center to nearby regional transit connections. The shuttle will operate at approximately 7.5-minute frequency.

⁴ Although preliminary routes between the project area and the Transbay Terminal have been identified, SFMTA staff will ultimately determine precise routing at the time the routes are initiated.
Transit Operating Costs

Fehr & Peers worked with SFMTA staff to develop cost estimates for operating and maintaining the proposed transit service and for capital costs associated with additional rolling stock. These costs are increases over the proposed TEP operating scenario and include extensions of transit routes into the project site and increased frequencies on some routes.

Table 1 provides the percentage of ridership increases between existing conditions and year 2030 conditions (project buildout) on each route that is attributable to the CP/HPS project. Table 1 also provides the annual operations and maintenance costs and the capital costs for providing the proposed service on each route. Finally, by multiplying the CP/HPS project’s percentage contribution to transit ridership by the capital costs and operations and maintenance costs, the CP/HPS fair-share contribution to the proposed transit service improvements can be determined.

The method used in the analysis summarized on Table 1 is based on the project’s contribution of ridership at the maximum load point of each route. This is reasonable, since the maximum load point is usually the controlling point in determining route frequency and capacity (and therefore, operating cost). However, another way to look at ridership contribution is based on the project’s contribution to overall growth in total number of boardings along each route. This method may be better suited to indicate the proportion of riders realizing benefits to improved frequencies and running times. The method of determining a cost contribution from a project is a policy decision; however, both methods produced similar fair-share contributions for the CP/HPS project. The analysis described in this report is based solely on the maximum load method.
3.1 Operations & Maintenance Costs

The annual costs associated with operating the proposed service were determined using SFMTA’s cost estimation model, originally developed for the TEP. This document only discusses costs and does not account for increased revenue to the City associated with farebox recovery. Those offsetting revenues are discussed separately in the project’s fiscal analysis.

3.2 Capital Costs

The number of new transit vehicles required to operate the proposed transit plan was also determined using SFMTA’s cost estimation model. SFMTA staff have reviewed and concurred with the projections from this model. The unit costs for new rolling stock were also provided by SFMTA, and are summarized in Table 2. The total capital costs do not include extension of trolley wires into the project site to serve the 24-Divisadero trolley bus route (approximately $30.4 Million), facilities associated with vehicle maintenance and storage, or the transit center described in the Transportation Plan and the Infrastructure Plan.

As shown, the total additional cost to operate the proposed transit service includes over $167 million in capital costs for rolling stock and will require an annual operations and maintenance cost of over $43 million. Based on the portion of ridership increases attributable to the CP/HPS project between now and full project buildout, the CP/HPS project’s share includes over $67 million in capital costs for rolling stock and nearly $19 million annually for operations and maintenance.

### Table 1: Transit Service Proposal Costs at Project Buildout

<table>
<thead>
<tr>
<th>Route</th>
<th>Project Contributions</th>
<th>Proposed Service Plan Total Costs</th>
<th>Total Costs</th>
<th>CP-HPS Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Annual O&amp;M Costs</td>
<td>Capital Costs</td>
<td>Annual O&amp;M Costs</td>
</tr>
<tr>
<td>CPX</td>
<td>92%</td>
<td>$2,912,038</td>
<td>$10,800,000</td>
<td>$2,679,075</td>
</tr>
<tr>
<td>HPX</td>
<td>56%</td>
<td>$2,293,626</td>
<td>$9,000,000</td>
<td>$1,284,431</td>
</tr>
<tr>
<td>Route 48</td>
<td>20%</td>
<td>$2,536,082</td>
<td>$6,300,000</td>
<td>$507,216</td>
</tr>
<tr>
<td>Route 28L</td>
<td>51%</td>
<td>$9,691,345</td>
<td>$15,300,000</td>
<td>$4,942,586</td>
</tr>
<tr>
<td>Route 29</td>
<td>27%</td>
<td>$3,710,068</td>
<td>$9,900,000</td>
<td>$1,001,718</td>
</tr>
<tr>
<td>Route 44</td>
<td>44%</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>T-Third</td>
<td>34%</td>
<td>$15,059,469</td>
<td>$104,500,000</td>
<td>$5,120,219</td>
</tr>
<tr>
<td>Route 243</td>
<td>46%</td>
<td>$7,332,922</td>
<td>$12,000,000</td>
<td>$3,373,144</td>
</tr>
<tr>
<td>Others</td>
<td>100%</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43,535,550</strong></td>
<td><strong>167,780,000</strong></td>
<td><strong>18,908,390</strong></td>
<td><strong>67,762,000</strong></td>
</tr>
</tbody>
</table>

Notes:
1. Operating costs shown are in Fiscal Year 2006-2007 dollars. Capital costs are in Fiscal Year 2010 dollars.
2. Does not include additional service that may be required as part of EIR mitigation measures associated with the project’s contribution to cumulative delays.
3. Capital costs for Route 24 do not include $30,390,000 for installation of overhead catenary electric wires at $17M per mile.

### Table 2: Transit Vehicle Capital Costs

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Cost Provided by MTA (FY 2010 Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRV</td>
<td>$5.5 Million</td>
</tr>
<tr>
<td>Trolley Coaches</td>
<td>$1.2 Million</td>
</tr>
<tr>
<td>Motor Coaches</td>
<td>$0.9 Million</td>
</tr>
</tbody>
</table>

Source: SFMTA, 2010

The transit phasing plan has been designed to ensure that the level of transit service provided generally anticipates the CP/HPS project's transit demand. This will ensure that the Project maintains its “transit orientation” throughout the development horizon.

Table 3 presents the various levels of transit service expected to be provided at the site throughout various points of development.

To serve the retail center, the 29 Sunset would be extended to the retail center and its frequency would be increased from 10 minutes to its ultimate frequency of 5 minutes upon opening of the center. However, because of the substantial amount of development proposed in early phases of the project, SFMTA has indicated that operating the other routes ultimately planned to serve Candlestick Point, including the CPX Candlestick Point Express and the 28L BRT route, is not possible in the near term. The CPX Candlestick Point Express is not likely to be particularly effective for non-residential uses, which account for the majority of travel-demand generating uses in the early phases of development in Candlestick Point. Similarly, the 28L BRT would not be desirable in early years because the infrastructure connecting it to Geneva Avenue to the west would not be in place.

Instead of the 28L BRT and the CPX, SFMTA has indicated that it will instead extend the 56 Rutland route as an interim measure until the 28L BRT and/or the CPX are implemented. In addition, the 56 Rutland would increase its frequency from every 20 minutes as proposed under the Transit Effectiveness Project (TEP) to every 15 minutes. The 56 Rutland provides service to regional transit facilities, including the T-Third Street light rail, the Bayshore Caltrain station, and the 9 San Bruno bus lines, which serve Downtown San Francisco. Once the CPX and/or the 28L BRT are implemented, the 56 Rutland may be returned to its TEP-proposed route and frequency.

In addition Lennar Urban will include a complimentary shuttle, available for shopping center patrons and employees, to provide service between the project site and the Balboa Park BART station, replicating service that will ultimately be offered by the 28L BRT route. Service will be offered at 7.5 minute frequency with approximately 30-passenger vehicles. This service will be interim service until the 28L BRT route, the CPX, or other comparable transit service is implemented. Although the shuttle service will initially be oriented to the Balboa Park BART Station, the site’s TDM coordinator will retain the ability to reroute the shuttle to other regional transit hubs to better match patron and employee demand, with mutual agreement of the city.

Phasing of other transit service, relative to development phasing, has been established in cooperation with SFMTA and the Planning Department.

The phasing levels were selected to ensure that there was some level of ridership demand at the time service is initiated, but to ensure that the initiation of service is relatively early in the overall development timeline. Service would be gradually increased up to full buildout service frequencies to maintain robust and attractive transit service throughout the Project phasing. The service frequency increases would be managed by SFMTA to maintain ridership conditions below SFMTA’s 85% capacity utilization standard, a PM peak period external transit mode split of approximately 20% or higher, and an overall transportation system where vehicle traffic congestion (i.e., intersection level of service) along the major transit corridors would be similar to or better than conditions identified in the EIR at study intersections.

Improvements to service on the T-Third light rail line are not expected to be phased based on project development; instead, improvements on the T-Third will be phased according
to construction on the Central Subway project and regional demand needs.

Preliminary development schedules provided by the project applicant forecast occupancy of the first building by year 2017 and completion of the final development by year 2035. Table 3 presents the annual capital and operating and maintenance costs expected to accrue based on the projected project buildout and projected implementation of transit service by year.

| Table 3: Transit Phasing |

<table>
<thead>
<tr>
<th>Route</th>
<th>Frequency</th>
<th>Major Phase/Subphase</th>
<th>Approx. Year</th>
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</thead>
<tbody>
<tr>
<td><strong>Hunters Point Shipyard</strong></td>
<td></td>
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<tr>
<td>Hunters Point Express</td>
<td>20/12</td>
<td>2/HP-04/05</td>
<td>2023/2024</td>
</tr>
<tr>
<td>23 Monterey</td>
<td>15</td>
<td>2/HP-04</td>
<td>2023</td>
</tr>
<tr>
<td>24 Divisadero</td>
<td>10/7.5</td>
<td>3/HP-09/12</td>
<td>2029/2030</td>
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<td>48 Quintara</td>
<td>15/10</td>
<td>1/HP-01/05</td>
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<tr>
<td>44 O’Shaughnessy</td>
<td>7.5/6.5</td>
<td>2/HP-04/05</td>
<td>2023/2024</td>
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<tr>
<td><strong>Candlestick Point</strong></td>
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<td></td>
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<tr>
<td>56 Rutland</td>
<td>15</td>
<td>1/CP-02</td>
<td>2017</td>
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<tr>
<td>Private Shopping Center</td>
<td>7.5</td>
<td>1/CP-02</td>
<td>2017</td>
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<td>20/15/10</td>
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<td>2/CP-06/3-14</td>
<td>N/A/2020/2030</td>
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<td><strong>29 Sunset</strong></td>
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<tr>
<td>10/5</td>
<td></td>
<td>N/A/1/CP-02</td>
<td>N/A/2017</td>
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<td><strong>Routes Serving Both Sites</strong></td>
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<td>28L/BRT (Includes Construction of Yosemite Slough Bridge)</td>
<td>8/5</td>
<td>2/CP-07 and HP-04/3-12 and HP-07</td>
<td>2023/2028</td>
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<td><strong>T Third</strong></td>
<td>6/5</td>
<td>No Change-Not triggered by project development</td>
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## Table 4: Transit Phasing and Associated Costs by Year

### Annual Costs Based on Hunters Point Development

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Headway (min.)</th>
<th>One-Way Capacity (pax/hr)</th>
<th>Major Phase</th>
<th>Yearly O&amp;M Costs</th>
<th>Capital Costs</th>
<th>Summary</th>
<th>Notes</th>
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**Notes:** Costs in early years do not include the temporary extension of the 56 Rutland. However, these costs are expected to be relatively small and temporary.

### Annual Costs Based on Candlestick Point Development

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Headway (min.)</th>
<th>One-Way Capacity (pax/hr)</th>
<th>Major Phase</th>
<th>Yearly O&amp;M Costs</th>
<th>Capital Costs</th>
<th>Summary</th>
<th>Notes</th>
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### Annual Costs Based on Total Development

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Headway (min.)</th>
<th>One-Way Capacity (pax/hr)</th>
<th>Major Phase</th>
<th>Yearly O&amp;M Costs</th>
<th>Capital Costs</th>
<th>Summary</th>
<th>Notes</th>
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**Notes:** Costs in early years do not include the temporary extension of the 56 Rutland. However, these costs are expected to be relatively small and temporary.
4.1 CONCLUSION

As noted earlier, SFMTA service planning staff will retain the discretion to implement transit service at a time and type based on their best judgment over the course of buildout of the CP/HPS project and other development projects in the southeast portion of San Francisco. However, this analysis represents a reasonable forecast based on the information available at this time.
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The Candlestick Point – Hunters Point Shipyard (CP-HPS) Phase II Transportation Plan included a commitment to develop and implement a Transportation Demand Management (TDM) Program designed to reduce use of single-occupant vehicles and to increase the use of rideshare, transit, bicycle, and walk modes for trips to and from, as well as within, the Development Plan Area. The TDM Program was envisioned to highlight and support the demand management qualities of the overall Development Plan, including:

- **Jobs-Housing linkage.** By providing a range of job types (retail, research, hospitality, office, etc.) and a range of housing types from affordable apartments to single family homes, the Development Plan will maximize the potential jobs/housing “matches” on site. Each match reduces the number of vehicle trips that will enter/leave the Development Plan Area during peak hours.

- **Streets designed for low speed and safe crossings.** In addition to new residential and commercial buildings, the Development Plan will provide significant infrastructure, including streets. All new streets and intersection upgrades will consider the needs of pedestrians.

- **Land uses and transit located to encourage walking.** People walk more when destinations are within close proximity, along flat routes with easy street crossings, and through interesting areas with storefronts, street trees, street furniture and other pedestrian-oriented amenities. The Development Plan embraces these principles, with all homes located within a 15-minute walk of transit and neighborhood retail services integrated into residential blocks. Many existing neighborhoods will also benefit from their proximity to enhanced transit service, schools, retail locations, and jobs with the Development.

The TDM Program includes a menu of tools that, when employed, will make the most of the above design qualities of the Development Plan. This document further refines the tool menu and sets forth a funding and implementation plan for the TDM Program.
The TDM Program includes a comprehensive menu of strategies that support and complement each other and provide “carrots” and “sticks” to incentivize multi-modal travel by residents, employees, and visitors to the Plan area. This chapter summarizes the elements of the TDM Program. A general description of many of the strategies is also presented in the Candlestick Point – Hunters Point Shipyard (CP-HPS) Phase II Transportation Plan.

Following the list of strategies, Figures 2-1 and 2-2 present maps detailing the location of transit, bicycle, and parking, TDM strategies within the project site. Appendix A documents assumptions for the three figures.

### Transit Strategies

- **Central Transit Hub and Ferry Terminal.** A transit center at Hunters Point Shipyard will enable efficient and convenient transfers while providing a central location for transportation brochures and other information to be distributed and for attended bicycle parking. Major bus rapid transit (BRT) stops throughout the Plan Area will also include information kiosks and real-time transit updates. A ferry terminal at Hunters Point Shipyard to accommodate ferry service from the project site to Downtown San Francisco is envisioned as a potential transit expansion for the future.

- **Enhanced Transit Service.** Frequent BRT service, operating in dedicated lanes with signal priority, will offer convenient alternatives to driving to, from, and within the Plan Area. Additional transit service will include extended Muni routes, increased Muni frequencies, and enhanced connections to the regional network (BART and Caltrain).

- **Transit Preferential Street.** Three bus lines serving the site will operate along Palou Avenue. Transit preferential treatments include transit-priority technology and installation of up to thirteen new traffic signals along Palou Avenue. To improve pedestrian comfort and the accessibility of transit in this corridor, new bus shelters will be installed and the street will be upgraded with ADA ramps, bulbouts, and crosswalks.

- **BRT, Bicycle, and Pedestrian Bridge.** A new bridge will be built over Yosemite Slough to connect Hunters Point Shipyard and Candlestick Point. The bridge will accommodate two transit-only lanes for the BRT route and one-way multi-use paths on either side.
Bicycle Improvement Strategies

**Enhanced Bicycle Facilities.** Bicycle routes will be established within a quarter mile of all residences and employment. There will be Class II bicycle lanes and shared-use paths throughout site, as well as a Class I two-way cycletrack traversing the heart of the Development Area.

**Bicycle Support Facilities.** Bicycle support facilities to encourage bicycling will include bicycle parking facilities in both residential and commercial developments (such as racks, indoor/long-term parking, lockers, and showers), attended bicycle parking and repair facilities at major destinations (with discounted rental space for a bike station at the Hunters Point Shipyard Transit Center), and potentially participating in the City’s bike sharing or rental program.

TDM Support Strategies

**Employee TDM Programs.** All employers in the Development Plan Area will be required to participate in TDM programs that will encourage the use of transit and facilitate walking and bicycling among their employees through both incentives and disincentives. Elements of the TDM programs will include:

» **Information Boards/Kiosks.** Employers will display transit routes and schedules; carpooling and vanpooling information; and bicycle lanes, routes, paths and facility information on information boards/kiosks or direct employees to web resources.

» **Commuter Benefits.** The TDM program will include participation in the Commuter Benefits program for tax-free paycheck deductions of transit and bicycle commuter expenses (a program mandatory for San Francisco employers of 20 or more employees: [www.commuterbenefits.org](http://www.commuterbenefits.org)).

» **Employee EcoPass.** Pending agency agreements, an employee “EcoPass” will be implemented similar to the programs already underway at the University of California and the City of Berkeley. These passes will allow unlimited transit use at a discount bulk rate. As discussed later in this document, the price of the Pass will include a TDM surcharge to cover the TDM support programs. The per-employee EcoPass cost will be charged to employers on an annual basis.

» **Carpool/Vanpools.** Through their TDM program and in collaboration with the On-Site Transportation Coordinator, employers will offer carpool and vanpool matching services, subsidies, and priority accommodation. Designated and convenient spaces in parking facilities will be provided free to vanpools and carpools. Casual carpooling information will be provided through the On-Site Coordinator’s TDM website, brochures, and targeted marketing.

» **Guaranteed Ride Home Program.** The San Francisco Department of the Environment provides an Emergency Ride Home program ([www.sferh.org](http://www.sferh.org)) to reimburse transit riders for return trip travel in the event of an emergency when an alternative means of travel is not available. Reimbursement is available up to $700 per year for each enrolled San Francisco employer, with additional costs paid by the employer. The On-Site Coordinator will ensure all employers are enrolled in this program for their employees.

» **Compressed Work Weeks, Flex Time, and Telecommuting.** Through these strategies, employees will adjust their work schedule to reduce vehicle trips to the worksite.

**Wayfinding.** A comprehensive wayfinding signage program will support the network of walkways and shared-use paths, encouraging pedestrian and bicycle trips.

**Resident EcoPass.** All residents will be required to purchase a transit pass and pay a TDM “fee,” as discussed later in this memo. The transit pass or “EcoPass” will offer significant benefits including: a monthly subsidy towards transit usage, a steady funding stream for enhanced transit service, and a “self selection” incentive – whereby more transit-inclined residents will be attracted to live in the Plan Area.
• **Wireless Internet.** High speed wireless internet access will be provided within the common areas of the Plan Area to encourage telecommuting and provide easy and efficient access to transit, carpool, vanpool, and car share data.

• **Carpool Pickup Points.** The development will provide signage and dedicated areas for a carpool pick-up/drop-off point to encourage carpooling (including casual carpooling).

• **Off-Peak Commercial Deliveries.** All grocery and high-volume commercial deliveries will be required to avoid peak commute periods.

• **Carshare Services.** Local carshare organizations will be encouraged to provide carshare vehicles throughout the Plan Area with complimentary off-street parking spaces. Carshare services, such as City CarShare and ZipCar, allow members to use vehicles when needed, paying based on how much they drive. Employers may include carshare memberships for their employees as an element of their mandatory TDM Program. For larger housing developments, carshare vehicles may be provided in residential garages.

• **Visitor Variable, Market-Rate Parking Pricing.** Visitor parking charges at variable market rates will encourage transit use. This will be accomplished by increasing parking rates during the peak period when transit service is most frequent, or increasing parking rates progressively to favor short term parking over long-term parking, discouraging commuter parking.

• **Parking Maximum Ratio.** The Development Plan includes one off-street parking space per residential unit ratio as a maximum (as well as maximums for other development types), with consideration for a lower ratio based on the results of unbundled parking in earlier development phases.

• **Shared Parking.** Parking will be designed to serve all commercial uses. An example of shared parking is where an office has high use during the day and a restaurant uses the same spaces in the evening. This will reduce the number of required parking spaces on the project site.

• **Preferential Parking for Carpoolers.** Preferential parking spaces will be reserved for carpoolers in commercial zones and near transit centers.

• **Free Parking for Vanpools and Carshare Vehicles.** Parking facilities will have free designated parking spaces for vanpools. In commercial zones, parking spaces will be reserved for free shortterm parking for carshare vehicles.

• **Flexible Parking Management Strategies.** Additional parking management strategies such as residential permit parking, time of day restrictions, parking technologies, and parking wayfinding will also be considered as needed to supplement other parking strategies based on the results of the On-Site Coordinator’s annual monitoring program.

---

**Parking Strategies**

**Unbundled Residential Parking.** Residential parking will be “unbundled” and sold or leased separately from units. Unbundling parking makes the cost of parking visible to households, and may encourage some residents to save money by opting for a single off-street space or no dedicated parking, when two spaces per dwelling unit may otherwise be the norm. Unbundled parking will also serve as a “self selection” incentive for residents who prefer to live in car-free or car-reduced neighborhoods.
Implementation and Monitoring Strategies

- **On-Site Transportation Coordinator and Website.** An on-site Transportation Coordinator will provide residents, employers, employees, and visitors with information regarding available transportation alternatives. The Coordinator will maintain a website to include transportation-related data and real-time transit information. He/she will serve as a liaison to City staff for all transportation concerns/communication needs, and will be responsible for ongoing monitoring and identifying revised or additional measures for the TDM Plan.

- **Targeted Marketing.** From the day that the first employee comes to work and the first family moves in, a plan will be in place to help people discover alternatives to driving alone in a car. The On-Site Coordinator will be available to help people plan their trips and work with transportation agencies and others to promote transit, vanpooling, carpooling and carsharing, bicycling, and walking. TDM brochures and a website will be available on an ongoing basis. To support carpool and vanpooling, the Transportation Coordinator will manage a carpool/vanpool database and provide ridesharing/ridematching services within the Plan Area. A yearly transportation options "fair" will also be scheduled for the neighborhood, with smaller outreach efforts available to employers and other organizations.

- **Monitoring of Transportation Demand.** The transportation measures and programs will be monitored on an annual basis to determine the success of the programs and to allow the On-Site Coordinator to make decisions about the allocation of resources or changes in the services that may be needed to better address the needs of the Plan Area. The objective of the monitoring will be to maximize the use of alternatives to the single occupant automobile and reduce peak hour congestion. A monitoring program will include user surveys, automobile counts, transit ridership, and bicycle and car share usage and costs.

- **Monitoring Effectiveness of Congestion-Reducing and Traffic Calming Efforts.** As part of annual monitoring, the On-site Coordinator would, in cooperation with SFMTA, review the effectiveness of the Project’s transportation measures and other traffic calming measures implemented in the area to reduce congestion due to Project vehicle trips and minimize traffic spillover to neighboring residential streets. If warranted, the On-Site Coordinator and SFMTA would consider implementation of additional traffic-calming and congestion-alleviating measures, potentially including neighborhood traffic calming coupled with increasing capacity on arterial roadways from Third Street to deter use of other neighborhood roads.
Figure 2-1: Transit TDM Improvements
Figure 2-2: Bicycle and Parking TDM Improvements
To move forward with the TDM Program outlined in the Transportation Plan and summarized in Chapter 2, an implementation and funding plan is needed. This chapter summarizes the anticipated funding source and implementation lead for each TDM strategy to be provided inherently with the Development and through other sources. Subsequent chapters in this Plan will go into further detail for the funding and implementation of strategies that will not be inherent to the Development and/or will require ongoing maintenance and monitoring to ensure their effectiveness.

Strategies to be implemented and funded with the Development include: transit infrastructure and operations, parking strategies, pedestrian infrastructure, and a majority of the bicycle improvement strategies, as shown in Table 3-1.

Of the strategies listed below in Table 3-1, those requiring TDM funds as their funding source will be discussed in detail in Chapter 4. TDM support strategies for residents are typically implemented or supported by the On-Site Transportation Coordinator (TC) with TDM funds (paid by all residents and employers). Employee TDM strategies will be funded by the employers but the TC will provide the employer with support in implementing the programs. The TC will also implement and fund monitoring strategies with TDM funds.
The transit and parking revenues associated with the above strategies have been calculated separately and are not addressed in this Plan as they are largely meant to offset costs incurred by SFMTA of operating increased transit service to the site. The EcoPass transit pass will also help to subsidize the cost of enhancing transit service to the Project area. All residents will be required to purchase an EcoPass, and employers will be encouraged to participate as well.

<table>
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<tr>
<th>Implementation Strategy</th>
<th>Implementation Source</th>
<th>Funding Source</th>
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<td>Bundled Residential Parking</td>
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<td>Visitor Variable, Market Rate Parking Pricing</td>
<td>TC, SFMTA, Project Development, and Private Parking Operator</td>
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<td>Parking Maximum Ratio</td>
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<td>Preferential parking spaces reserved for carpoolers in commercial zone and near transit centers</td>
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<td>Free designated spaces in parking facilities to vanpools, Free short-term parking spaces in commercial zones reserved for carshare parking</td>
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<td>TDM funds (subsidy)</td>
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<td>Carshare vehicles hubs</td>
<td>Carshare company</td>
<td>TDM funds (subsidy)</td>
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### 6. Ongoing Implementation and Monitoring

#### 6.a On-Site Transportation Coordinator (TC)

- Salary + Rent: TDM funds
- Transportation Website: TDM funds
- Rideshare + Ridematching, Carpool/Vanpool Database: TDM funds
- Marketing of TDM programs: TDM funds
- Monitoring of Transportation Demand: TDM funds
- Monitoring Effectiveness of Congestion Reducing Traffic Calming: TDM funds

1. Project development will fund the capital costs of the bike station. TDM funds will subsidize rent and provide a partial operating subsidy. The bike-sharing station will provide the remaining operating costs for staffing and running the station and the Candlestick Point bicycle kiosk.

2. Bicycle parking space to be funded by the Project Development. Operations of the valet parking for game days assumed to be provided by the San Francisco Bicycle Coalition volunteers, similar to the current arrangement at AT&T Park for San Francisco Giants home games.

This chapter discusses the role of the Transportation Coordinator (TC), the associated logistics and organization of the TC’s office, the estimated costs of all strategies requiring TDM funds, and proposed funding sources to cover these strategies.

Implementation

Roles

The role of the Transportation Coordinator is extensive, as shown by all the strategies with a “TC” label under the Implementation Source column in Table 3-1. At full build-out, the Development may require at least one and up to three full-time positions to implement the TDM strategies. This estimate is based on other TDM plans in the San Francisco Bay Area (see Appendix B for detail). For three full-time positions, the roles would be: one Transportation Liaison in charge of working with other entities; one Technical Coordinator managing website, car/vanpool database, rideshare; and one Marketing Coordinator managing TDM marketing to residents and employers (hereafter known as the TC team). The Transportation Liaison will be the bridge between residents and employers and the transportation agencies and the City of San Francisco. The Liaison will also be working with carshare companies, homeowners associations, and other entities involved with the relevant TDM strategies. The Marketing Coordinator will be the contact person and informational resource to support the project goal of providing residents and employees with alternatives to using a single-occupancy vehicle. Implementation and support of all Transportation Coordinator related TDM strategies will be covered by one of the three positions.

Logistics

The TDM office will house the TC team and will be located next to the bike station at the project transit center. The location is appropriate as the TDM office and bike station will have the option to be within a shared space, since rent for both are supported through the TDM funds. The TDM office will be the location where residents can pick up EcoPasses (if lost, etc.) and obtain general TDM support.

Organization

The TC team will act as staff to the Candlestick Point-Hunters Point Shipyard Transportation Management Association (CPHPSTMA). CPHPSTMA will be formed to develop, implement, operate and administer strategies and programs to manage transportation resources in Candlestick Point-Hunters Point Shipyard (including Phase I and Phase II) in accordance with the Transportation Demand Management Plan for Candlestick Point – Hunters Point Shipyard. The Board of Directors of CPHPSTMA representing private property owners will be initially appointed by Lennar Urban (the Project Applicant). At least one seat on the Board shall be reserved for the appointment by Lennar Urban, one seat on the Board shall be reserved for the appointment by the Commercial Property Owners, and one seat on the Board shall be reserved for the appointment by the Residential Property Owners. CPHPSTMA will enter into Participation Agreements with each and every owner of real property in CP-HPS Phase I and Phase II, setting forth the rights and obligations of each such owner relating to the programs and fees imposed by CPHPSTMA.
Monitoring

The TDM programs will be monitored by the TC team on an annual basis to determine the success of the programs and to allow the TC team and the CPHPSTMA Board of Directors to make decisions about the allocation of resources and/or changes in the services that may be needed.

Costs And Funding

The costs for each TDM strategy supported by TDM funds are estimated in Table 4-1. See Appendix B for detailed assumptions and calculations of TDM strategies costs.

Implementation of the above strategies costs an estimated total of approximately $1,400,000 annually. An annual TDM fee for all residents and employees in the Plan Area including an additional 1,600 homes in Junters Point Shipyard Phase I, will cover the annual costs. The fee will be assessed as an add-on to the mandatory EcoPass (transit pass) fee discussed in Chapters 2 and 3. The project is expected to have a residential population of 24,465, with 10,500 housing units, and 11,980 employees at full build-out. This population would be in addition to a residential population of 3,728 in 1,600 housing units associated with Phase I, for a total residential population of 28,193. Based on these estimates, an annual TDM fee of $103 per household (assessed through rents or HOA dues) and $44 per employee (incorporated into employer leases) will be able to cover the costs of implementing these TDM strategies. This fee will increase over time as the operating costs increase with inflation and/or with any significant changes in the TDM tool menu.

### Table 4-1: TDM Strategies Costs

<table>
<thead>
<tr>
<th>Implementation Strategy</th>
<th>Funding Source</th>
<th>Annual Operating Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle Station (attended parking, repair facilities)</td>
<td>Project Development and TDM funds</td>
<td>$200,000</td>
</tr>
<tr>
<td>Preferential parking spaces reserved for carpoolers in commercial zone and near transit</td>
<td>TDM funds</td>
<td>Assume carpool spaces pay same parking rate</td>
</tr>
<tr>
<td>Free designated spaces in parking facilities to vanpools; Free short-term parking spaces in commercial zones reserved for carshare parking</td>
<td>TDM funds</td>
<td>$350,500</td>
</tr>
<tr>
<td>Carshare vehicle hubs</td>
<td>TDM funds</td>
<td>$305,000</td>
</tr>
</tbody>
</table>

### 7. Ongoing Implementation and Monitoring

#### 7.a On-Site Transportation Coordinator (TC)

| Strategy | TDM funds | $420,000 |

| Rent | TDM funds | $26,500 |
| Transportation Website | TDM funds | $10,000 |
| Ride Sharing and Ride Matching, Carpool/Vanpool Database | TDM funds | $5,000 |
| Administrative costs, expenses, printing, etc. | TDM funds | $50,000 |
| Tech Consulting | TDM funds | $10,000 |
| Marketing of TDM programs | TDM funds | Assume included in TC's salary and administrative costs |
| Monitoring of Transportation Demand | TDM funds | Assume included in TC's salary and administrative costs |
| Monitoring Effectiveness of Congestion Reducing/Traffic Calming | TDM funds | Assume included in TC's salary and administrative costs |

**Total Cost:** $1,384,996

1. This cost estimate is only from TDM funds and represents a rent and partial operating subsidy for the Bicycle Station
2. Amount of lost revenue assuming the parking spaces were used for market-rate parking


### Table 4-2: TDM Strategies Funding

<table>
<thead>
<tr>
<th>Funding Strategy</th>
<th>Applicable To</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual TDM fee</td>
<td>All households within the project site, all employees within project site</td>
<td>$97/ household, $41/ employee</td>
</tr>
<tr>
<td>Monthly TDM fee¹</td>
<td>All households within the project site, all employees within project site</td>
<td>$8.69/ household, $3.42/ employee</td>
</tr>
</tbody>
</table>

¹ To be paid in addition to the monthly transit pass, assumes 60% of employees participate

Figures 2-1, 2-2, and 2-3 were meant to illustrate the various TDM strategies at CPHPS. They do not represent exact locations or counts of the strategies. Please see the table below for detailed assumptions for mapping out these strategies.

### Table A-1: Assumptions for TDM Figures

<table>
<thead>
<tr>
<th>Strategy Detail (from Transportation Plan)</th>
<th>Notes for Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Showers and locker facilities will be provided within each new commercial building with greater than 20,000 square feet of uses</td>
<td>Placed a showers/lockers symbol at every block which had office/commercial/retail use (from BWP Transportation Study document)</td>
</tr>
<tr>
<td>Bike sharing program will be considered where bike kiosks are set up at intervals along major corridors and riders can pick up and drop off bicycle in seconds</td>
<td>Assumed there would be two kiosks serving the project site. One would be located at the transit center in HP near the bicycle station. This will allow for assistance from station employees to bike riders and would be the location for bike riders to buy or refill bike cards. Another kiosk would be located near the BRT stop in the commercial center of CP. This kiosk would be a self-service station.</td>
</tr>
<tr>
<td>Bicycle parking will be provided within each commercial parking facility, residential garage or within each residential building. Supplemental racks at major destinations</td>
<td>Placed a bike parking symbol on every block of project site that had commercial parking, or residential or was a major destination (from BWP Transportation Study document)</td>
</tr>
<tr>
<td>A designated signed area near the transit centers would be reserved for casual carpooling.</td>
<td>Assumed there would be one carpool point at CP (near the BRT stop in the commercial center) and one at HP near the transit center</td>
</tr>
<tr>
<td>Free designated spaces in parking facilities to vanpools; Free short-term parking spaces in commercial zones reserved for carshare parking; Preferential parking spaces reserved for carpoolers in commercial zone and near transit centers</td>
<td>Placed a symbol at every block with commercial/office parking facilities or on a commercial block. This includes parking at the stadium. (from BWP Transportation Study document)</td>
</tr>
</tbody>
</table>

Appendix B: TDM Strategies Costs Calculations

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Annual Operating Costs</th>
<th>Operating Cost Assumptions</th>
<th>Assumption Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle Station (attended parking, repair facilities)</td>
<td>$200,000</td>
<td>Estimate of annual operating expenses (not including personnel) based on Downtown Berkeley BART bike station.</td>
<td>Downtown Berkeley BART Bikestation - Economic Analysis for Facility Expansion; September 2005; Strategic Economics.</td>
</tr>
</tbody>
</table>

5. Parking

| Preferential parking spaces reserved for carpools in commercial zone and near transit centers | N/A | Assume capital costs, such as signage, would be included in the garage cost; assume no enforcement costs if employed; assume carpool spaces pay same parking rate |

| Free designated spaces in parking facilities to vanpools; Free short-term parking spaces in commercial zones reserved for carshare parking | $358,500 | Lost parking revenue. 1% of parking dedicated to vanpool and carshare. Assume $20/day, 5 days/week, 50 weeks/year. | Per transportation plan (proposed parking supply figure), 7,170 commercial structure parking. |
### Appendix B: TDM Strategies Costs Calculations (continued)

#### Table B-1: TDM Strategies Cost Detail

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Annual Operating Costs</th>
<th>Operating Cost Assumptions</th>
<th>Assumption Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carshare vehicles hubs</td>
<td>$305,000</td>
<td>Lost parking revenue. 1 carshare vehicle for every 200 dwelling units (53 total spaces for Phase II and 8 spaces for Phase I). Assume $20/day, 5 days/week, 80 weeks/year.</td>
<td>From citycareshare report, planning code requires 1 carshare space for 201+ units, plus 1 for every 200 dwelling units over 200. (<a href="http://www.citycareshare.org/download/CtyCarShare2009BestPracticesReport.pdf">http://www.citycareshare.org/download/CtyCarShare2009BestPracticesReport.pdf</a>) Per fiscal report (Table 3), 10,500 dwelling units at build out.</td>
</tr>
</tbody>
</table>

#### 7. Ongoing Implementation and Monitoring

7a On-Site Transportation Coordinator (TC)

<table>
<thead>
<tr>
<th></th>
<th>Salary</th>
<th>3 staff with salary of $70,000 (x2 for benefits)</th>
<th>Assuming one Transportation Liaison in charge of working with other entities; one Technical Coordinator managing website, car/vanpool database, rideshare; one Marketing Coordinator managing TDM marketing to residents and employers. Alameda Point will have 1 TC for 4,503 residential units and 3,532 ksf commercial. Thus will assume candlestick needs 3 with 10,500 residential units, 3,700 ksf commercial, 69,000 seat stadium, and 10,000 seat arena.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>$26,496</td>
<td>Rent at $2/sq ft/month. 276 sq ft per job. Conservative estimate of 4 staff for this calculation.</td>
<td>Rent estimate from typical craigslist office lease postings (for SOMA/south beach area) Fiscal report estimates 276 sq ft per job.</td>
</tr>
<tr>
<td>Transportation Website</td>
<td>$10,000</td>
<td>Assume administrative costs included in TC’s salary.</td>
<td></td>
</tr>
</tbody>
</table>
### Table B-1: TDM Strategies Cost Detail (continued)

<table>
<thead>
<tr>
<th>Implementation Strategies</th>
<th>Annual Operating Costs</th>
<th>Operating Cost Assumptions</th>
<th>Assumption Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative costs, expenses, printing, materials, etc.</td>
<td>$50,000</td>
<td>Costs include marketing expenses, flyers, brochures. Total population of 35,000 at project site. Flyers for all residents and employees at $1/flyer. Additional costs for brochures and events.</td>
<td>Per fiscal report (Table 3), residential population of 24,465 and 10,461 employees at buildout.</td>
</tr>
<tr>
<td>Tech consulting</td>
<td>$10,000</td>
<td>Assume periodic tech support needed throughout the year</td>
<td></td>
</tr>
<tr>
<td>Marketing of TDM programs</td>
<td>N/A</td>
<td>Assume admin included in TC’s salary and administrative costs</td>
<td></td>
</tr>
<tr>
<td>Monitoring and Testing of Transportation Demand</td>
<td>N/A</td>
<td>Assume admin included in TC’s salary and administrative costs</td>
<td></td>
</tr>
<tr>
<td>Monitoring Effectiveness of Congestion-Reducing/Traffic Calming</td>
<td>N/A</td>
<td>Assume admin included in TC’s salary and administrative costs</td>
<td></td>
</tr>
</tbody>
</table>
