



CANDLESTICK POINT HUNTERS POINT SHIPYARD PHASE II

TRANSPORTATION PLAN APPENDIX APRIL 2018 (DRAFT)



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CHAPTER ONE: INTRODUCTION

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.

A photograph of a person's lower half, wearing dark pants and brown sneakers, holding a skateboard. They are standing on a sidewalk. In the background, a car is parked on a street, and the scene is lit with the warm, golden light of a sunset or sunrise.

CHAPTER TWO: PROPOSED TRANSIT PLAN

Fehr & Peers has worked collaboratively with staff from the Mayor's Office of Economic and Workforce Development, the Office of Community Investment and Infrastructure, the San Francisco County Transportation Authority, the Planning Department, 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 the transit service plan for buildout conditions. Specifically, the transit operating 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, and increased frequency in the AM and PM peak periods¹.
- 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.
- Extension of the 28R-19th Avenue Limited from its Muni Forward, formerly known as the Transit Effectiveness Program (TEP), proposed terminus on Geneva Avenue, just east of Mission Street, into the Hunters Point Shipyard transit center. Ultimately, the 28R-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. As an interim service, prior to construction of the Geneva Avenue extension and new interchange with US 101, the 28R-Geneva Avenue Limited would travel through the Little Hollywood neighborhood on an exact route to be determined. East of Bayshore Boulevard, the 28R-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,

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.

- 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 or near the Transbay Terminal³.
- 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 a destination near the Transbay Terminal in Downtown San Francisco.
- Convert T-Third service between Bayview and Chinatown via the Central Subway from one-car to two-car trains or comparable service improvement⁴.

As noted in Chapter 1, the proposed transit service would complement service changes proposed by the Muni Forward, 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 Muni Forward.

This map illustrates the proposed BRT network in San Francisco, including the following features:

- Transit Centers:** Bayshore Transit Center, Hunters Point Shipyard Transit Center, and Candlestick Point BRT Stops.
- BRT Routes:**
 - Bayshore BRT:** A red route connecting the Bayshore Transit Center to the Hunters Point Shipyard Transit Center.
 - Hunters Point Shipyard BRT:** A green route connecting the Hunters Point Shipyard Transit Center to the Candlestick Point BRT Stops.
 - Candlestick Point BRT:** A blue route connecting the Candlestick Point BRT Stops to the Hunters Point Shipyard Transit Center.
 - Harney BRT:** An orange route connecting the Hunters Point Shipyard Transit Center to the Bayshore Transit Center.
 - Palou Avenue Transit Preferential Treatment:** A yellow route connecting the Bayshore Transit Center to the Hunters Point Shipyard Transit Center.
 - Harvey BRT:** A purple route connecting the Hunters Point Shipyard Transit Center to the Bayshore Transit Center.
- Other Features:**
 - Harvey BRT:** A purple route connecting the Hunters Point Shipyard Transit Center to the Bayshore Transit Center.
 - Palou Avenue Transit Preferential Treatment:** A yellow route connecting the Bayshore Transit Center to the Hunters Point Shipyard Transit Center.
 - Harney BRT:** An orange route connecting the Hunters Point Shipyard Transit Center to the Bayshore Transit Center.
 - Candlestick Point BRT Stops:** A blue route connecting the Candlestick Point BRT Stops to the Hunters Point Shipyard Transit Center.
 - Hunters Point Shipyard BRT:** A green route connecting the Hunters Point Shipyard Transit Center to the Candlestick Point BRT Stops.
 - Bayshore BRT:** A red route connecting the Bayshore Transit Center to the Hunters Point Shipyard Transit Center.

CHAPTER TWO: PROPOSED TRANSIT PLAN



CHAPTER THREE: 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 project⁵. 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.

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 Muni Forward. This document only discusses costs and does not account for increased revenue to the City associated with farebox recovery, advertising revenue, or other revenue source. Those offsetting revenues are discussed separately in the project's fiscal analysis.⁶

⁵ 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.

⁶ Fiscal and Economic Analysis, Economic & Planning Systems, March 2018

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 Fiscal and Economic Analysis (March 2018) assume capital costs are financed over several years. Additionally, through discussions with SFMTA staff, the 24-Divisadero will eventually be served by battery electric buses; thus, trolley wires are no longer proposed.⁷

As shown, the total additional cost to operate the proposed transit service includes nearly \$194 million in capital costs for rolling stock and will require an annual operations and maintenance cost of nearly \$48 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 \$55 million in capital costs for rolling stock and nearly \$18 million annually for operations and maintenance.

⁷ The 2010 capital costs did not include the extension of trolley wires into the project site; therefore capital costs associated with the 24-Divisadero, shown in Table 1, are not affected by the removal of the trolley wires.

Table 1: Transit Service Proposal Costs at Project Buildout

Route	Number of Vehicles Added	Project Contributions	Total Costs (FY 2017 Dollars) ^{1, 2}			
			Proposed Service Plan Total Costs		CP-HPS Share	
			Annual O&M Costs	Capital Costs	Annual O&M	Capital Costs
CPX	12	92%	\$3,348,800	\$11,520,000	\$3,080,900	\$10,576,000
HPX	20	56%	\$5,275,400	\$19,200,000	\$2,954,200	\$10,729,000
Route 48	7	20%	\$2,916,500	\$6,720,000	\$583,300	\$1,341,000
Route 28R	17	51%	\$11,145,100	\$16,320,000	\$5,684,000	\$8,306,000
Route 29	11	27%	\$4,266,700	\$10,560,000	\$1,152,000	\$2,845,000
Route 24	10	46%	\$3,733,000	\$15,800,000	\$1,717,200	\$3,634,000
T-Third	19	16%	\$17,318,100	\$114,000,000	\$2,770,900	\$18,240,000
Others	-	100%	-	-	-	-
Total			\$48,003,900	\$194,120,000	\$17,942,500	\$55,671,000

Notes:

1. O&M Costs updated to reflect 2017 dollars by increasing original amounts by 15%. This was done by calculating the increase in SFMTA's Cost Per Revenue Hour from 2007 to 2017
2. Capital costs updated based on Muni cost/bus estimates from Frank Markowitz, SFMTA (2018).

Table 2: Capital Cost per Transit Vehicle¹

Vehicle Type	Cost Provided by MTA (FY 2017 Dollars)
Trolley Coaches	\$1.58 Million
Motor Coaches	\$0.96 Million
Light Rail Vehicle	\$6.00 Million

Source: SFMTA, 2017

Notes:

1. Capital costs updated based on Muni cost/bus estimates from Frank Markowitz, SFMTA (2018).



CHAPTER FOUR: PHASING

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. Additionally, due to the relatively high number of residential units expected under the first major phase, the CPX will start out at 15 minutes and increase to its ultimate frequency of 10 minutes upon opening of the retail center. The CPX would provide connections between Candlestick Point, Downtown and regional transit systems. However, the 28R/BRT would not be as useful under the early years of the Project because the infrastructure connecting it to Geneva Avenue to the west would not be in place and therefore, will be implemented later in the overall schedule.

In addition, a complimentary publicly accessible shuttle that is privately-funded, will provide service between the project site and the Balboa BART station. Service will be offered at 7.5 minute frequency with approximately 30-passenger vehicles. This service will be interim service until the 28R/ BRT route 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.

The phasing levels were selected to correspond to ridership demand and 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.

Preliminary development schedules provided by FivePoint forecast occupancy of the first building by year 2021 and completion of the final development by year 2035. **Table 4** 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.

Notes:

1 Temporary until initiation of 28R/BRT.

2 Although the anticipated development schedule calls for the first portions of HP-01 to be completed in 2019, that portion is primarily reconstruction of existing artists' studios. The first portion of new development is scheduled to be complete by approximately 2021, which is when new transit service would likely be warranted.

Table 3: Transit Phasing

Route	Frequency (Minutes)	Major Phase / Sub-Phase	Approximate Year
Hunters Point Shipyard			
Hunters Point Express (HPX)	20 10 6	1 / HP-01 2 / HP-04 3 / HP-06	2021 ² 2025 2026
23 Monterey (Temporary)	20	1 / HP-01	2021
24 Divisadero	15 10	2 / HP-04 3 / HP-06	2025 2026
44 O'Shaughnessy	10 7.5 6.5	1 / HP-02 2 / HP-03 3 / HP-06	2022 2025 2026
48 Quintara	15 10	1 / HP-01 2 / HP-03	2021 2025
Candlestick Point			
Candlestick Point Express (CPX)	15 10	1 / CP-03 1 / CP-02	2021 2022
Extension of 29-Sunset	10 5	1 / CP-03 1 / CP-02	2021 2025
Privately-Funded Complimentary Shuttle ¹	7.5	1 / CP-02	2022
Routes Serving Both Sites			
Extension of 28R/ BRT ¹	8 5	2 / HP-04 3 / CP-07	2025 2028
Increase serve on T-Third Light Rail	6 5	No Change - Not triggered by project development	

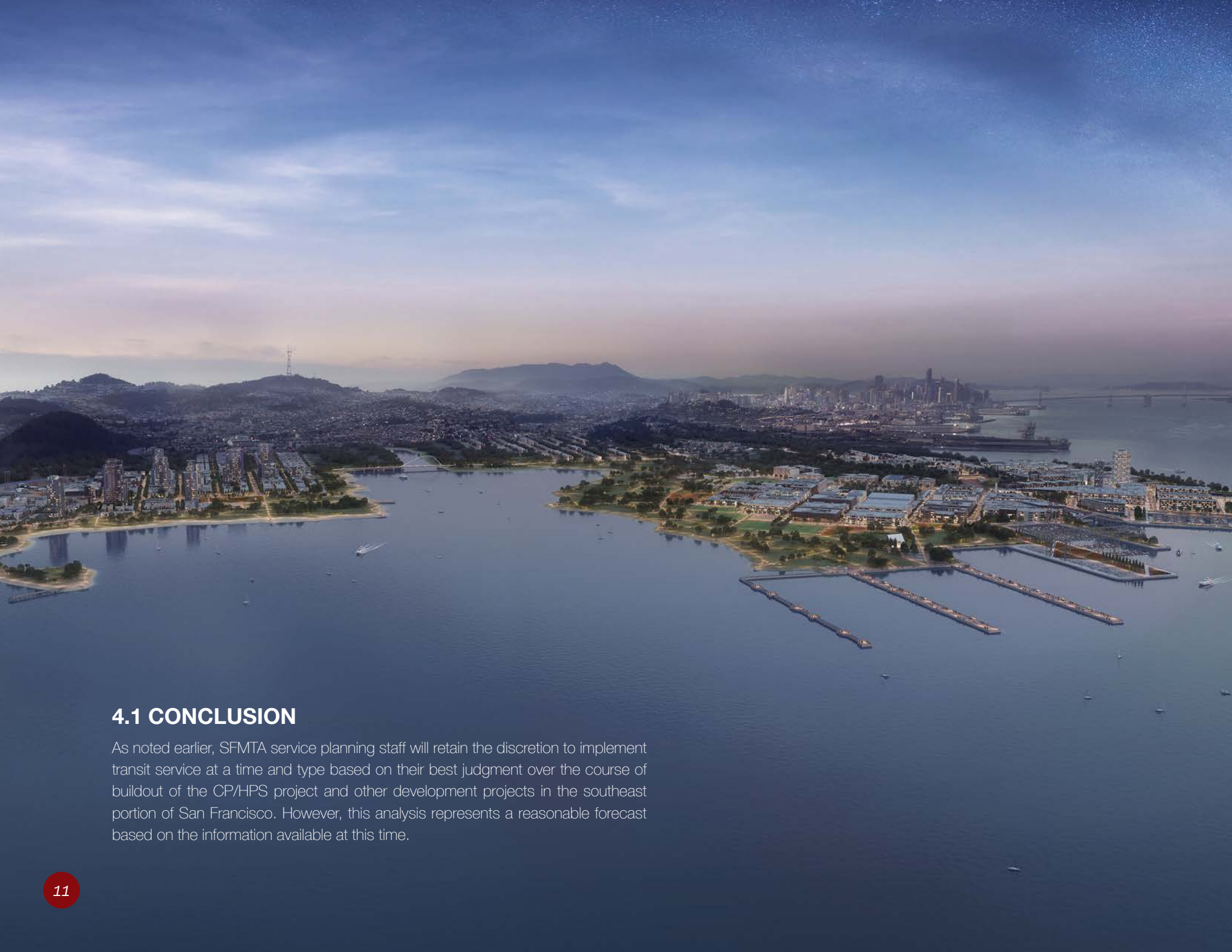
Table 4A: Transit Phasing and Associated Cost by Year

Annual Costs Based on Hunters Point Development													
Improvement	Headway (min.)	Major Phase	Yearly O&M Costs (2017)	Capital Costs (2017)	2019	2020	2021	2022	2023	2024	2025	2026	2027
Begin Hunters Point Express (HPX)	20	1	\$886,300	\$3,218,800.00	-	-	\$4,105,100	\$886,300	\$886,300	\$886,300	-	-	-
	10	2	\$1,772,600	\$6,437,600	-	-	-	-	-	-	\$4,991,400	-	-
	6	3	\$2,954,200	\$10,729,000	-	-	-	-	-	-	-	\$7,245,600	\$2,954,200
Extend 23-Monterey	20	1	\$438,700	\$545,000	-	-	\$983,700	\$438,700	\$438,700	\$438,700	-	-	-
	15	2	\$438,700	-	-	-	-	-	-	-	\$438,700	-	-
Extend 24-Divisadero	10	3	\$1,717,200	\$3,634,000	-	-	-	-	-	-	-	\$5,351,200	\$1,717,200
Extend 48-Quintara	15	1	\$146,200	\$192,000	-	-	\$338,200	\$146,200	\$146,200	\$146,200	-	-	-
	10	2	\$583,300	\$1,341,000	-	-	-	-	-	-	\$1,732,300	\$583,300	\$583,300
Total PM Transit Trips from HP Development Area					0	0	467	523	714	714	961	1342	1342
HP Generated Annual Cost					-	-	\$5,427,000	\$1,471,200	\$1,471,200	\$1,471,200	\$7,162,400	\$13,180,100	\$5,254,700
Annual Costs Based on Candlestick Point Development													
Improvement	Headway (min.)	Major Phase	Yearly O&M Costs (2017)	Capital Costs (2017)	2019	2020	2021	2022	2023	2024	2025	2026	2027
Begin Candlestick Point Express (CPX)	15	1	\$2,054,000	\$7,051,000	-	-	\$9,105,000	-	-	-	-	-	-
	10	1	\$3,080,900	\$10,576,000	-	-	-	\$6,605,900	\$3,080,900	\$3,080,900	\$3,080,900	\$3,080,900	\$3,080,900
Extend 29-Sunset	10	1	\$125,100	\$259,000	-	-	\$384,100	\$125,100	\$125,100	\$125,100	-	-	-
	5	1	\$1,152,000	\$2,845,000	-	-	-	-	-	-	\$3,738,000	\$1,152,000	\$1,152,000
Total PM Transit Trips from CP Development Area					0	48	371	1198	1198	1272	1272	1371	1398
CP Generated Annual Cost					-	-	\$9,489,100	\$6,731,000	\$3,206,000	\$3,206,000	\$6,818,900	\$4,232,900	\$4,232,900
Annual Costs Based on Total Development													
Improvement	Headway (min.)	Major Phase	Yearly O&M Costs (2017)	Capital Costs (2017)	2019	2020	2021	2022	2023	2024	2025	2026	2027
Begin/Extend 28R/BRT	8	2	\$4,520,100	\$6,840,000	-	-	-	-	-	-	\$11,360,100	\$4,520,100	\$4,520,100
	5	3	\$5,684,000	\$8,306,000	-	-	-	-	-	-	-	-	-
T-Third	6	2	-	-	-	\$10,505,450	\$1,385,450	\$1,385,450	\$1,385,450	\$1,385,450	-	-	-
	5	3	\$2,770,900	\$18,240,000	-	-	-	-	-	-	\$11,890,900	\$2,770,900	\$2,770,900
Total PM Transit Trips from HP/CP Development Area					0	48	838	1721	1912	1986	2233	2713	2740
Combined Development Costs					-	\$10,505,450	\$1,385,450	\$1,385,450	\$1,385,450	\$1,385,450	\$23,251,000	\$7,291,000	\$7,291,000
Total Operating & Maintenance Costs					-	\$1,385,450	\$5,035,750	\$6,062,650	\$6,062,650	\$6,062,650	\$14,318,500	\$16,778,600	\$16,778,600
Total Capital Costs					-	\$9,120,000	\$11,265,800	\$3,525,000	-	-	\$22,913,800	\$7,925,400	-

Table 4B: Transit Phasing and Associated Cost by Year

Annual Costs Based on Hunters Point Development												
Improvement	Headway (min.)	Major Phase	Yearly O&M Costs (2017)	Capital Costs (2017)	2028	2029	2030	2031	2032	2033	2034	2035
Begin Hunters Point Express (HPX)	20	1	\$886,300	\$3,218,800.00	-	-	-	-	-	-	-	-
	10	2	\$1,772,600	\$6,437,600	-	-	-	-	-	-	-	-
	6	3	\$2,954,200	\$10,729,000	\$2,954,200	\$2,954,200	\$2,954,200	\$2,954,200	\$2,954,200	\$2,954,200	\$2,954,200	\$2,954,200
Extend 23-Monterey	20	1	\$438,700	\$545,000	-	-	-	-	-	-	-	-
	15	2	\$438,700	-	-	-	-	-	-	-	-	-
Extend 24-Divisadero	10	3	\$1,717,200	\$3,634,000	\$1,717,200	\$1,717,200	\$1,717,200	\$1,717,200	\$1,717,200	\$1,717,200	\$1,717,200	\$1,717,200
Extend 48-Quintara	15	1	\$146,200	\$192,000	-	-	-	-	-	-	-	-
	10	2	\$583,300	\$1,341,000	\$583,300	\$583,300	\$583,300	\$583,300	\$583,300	\$583,300	\$583,300	\$583,300
Total PM Transit Trips from HP Development Area					1462	1484	1522	1522	1522	1522	1522	1522
HP Generated Annual Cost					\$13,180,100	\$5,254,700	\$5,254,700	\$5,254,700	\$5,254,700	\$5,254,700	\$5,254,700	\$5,254,700
Annual Costs Based on Candlestick Point Development												
Improvement	Headway (min.)	Major Phase	Yearly O&M Costs (2017)	Capital Costs (2017)	2028	2029	2030	2031	2032	2033	2034	2035
Begin Candlestick Point Express (CPX)	15	1	\$2,054,000	\$7,051,000	-	-	-	-	-	-	-	-
	10	1	\$3,080,900	\$10,576,000	\$3,080,900	\$3,080,900	\$3,080,900	\$3,080,900	\$3,080,900	\$3,080,900	\$3,080,900	\$3,080,900
Extend 29-Sunset	10	1	\$125,100	\$259,000	-	-	-	-	-	-	-	-
	5	1	\$1,152,000	\$2,845,000	\$1,152,000	\$1,152,000	\$1,152,000	\$1,152,000	\$1,152,000	\$1,152,000	\$1,152,000	\$1,152,000
Total PM Transit Trips from CP Development Area					1619	1823	1959	1959	1959	1959	1959	1959
CP Generated Annual Cost					\$4,232,900	\$4,232,900	\$4,232,900	\$4,232,900	\$4,232,900	\$4,232,900	\$4,232,900	\$4,232,900
Annual Costs Based on Total Development												
Improvement	Headway (min.)	Major Phase	Yearly O&M Costs (2017)	Capital Costs (2017)	2028	2029	2030	2031	2032	2033	2034	2035
Begin/Extend 28R/BRT	8	2	\$4,520,100	\$6,840,000	-	-	-	-	-	-	-	-
	5	3	\$5,684,000	\$8,306,000	\$7,150,000	\$5,684,000	\$5,684,000	\$5,684,000	\$5,684,000	\$5,684,000	\$5,684,000	\$5,684,000
T-Third	6	2	-	-	-	-	-	-	-	-	-	-
	5	3	\$2,770,900	\$18,240,000	\$2,770,900	\$2,770,900	\$2,770,900	\$2,770,900	\$2,770,900	\$2,770,900	\$2,770,900	\$2,770,900
Total PM Transit Trips from HP/CP Development Area					3081	3307	3481	3481	3481	3481	3481	3481
Combined Development Costs					\$9,920,900	\$8,454,900	\$8,454,900	\$8,454,900	\$8,454,900	\$8,454,900	\$8,454,900	\$8,454,900
Total Operating & Maintenance Costs												
Total Operating & Maintenance Costs					\$17,942,500	\$17,942,500	\$17,942,500	\$17,942,500	\$17,942,500	\$17,942,500	\$17,942,500	\$17,942,500
Total Capital Costs					\$1,466,000	-	-	-	-	-	-	-

Notes: Fiscal impact analysis assumes capital costs incurred over time and includes capital costs associated with mitigation measures.



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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CHAPTER ONE: INTRODUCTION

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.

A detailed description of the TDM Plan is included in the Transportation Plan. The purpose of this appendix is to describe the implementation and funding mechanisms used to support the TDM Plan.



CHAPTER TWO: IMPLEMENTATION STRATEGIES & FUNDING OVERVIEW

To move forward with the TDM Program outlined in the Transportation Plan, 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 on-going 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 2-1**.

Of the strategies listed in **Table 2-1**, those requiring TDM funds as their funding source will be discussed in detail in Chapter 3. 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.

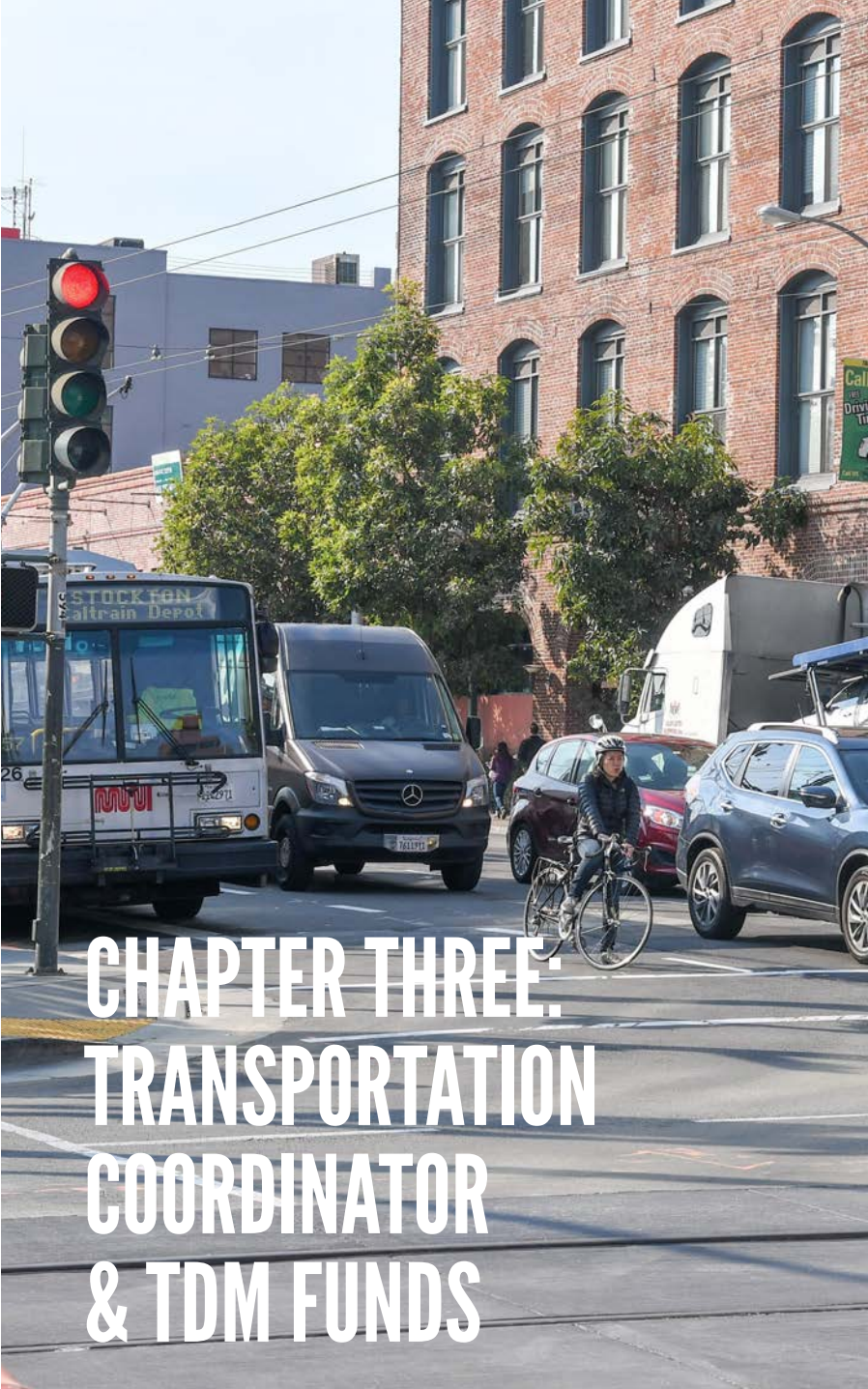
Table 2-1: TDM Strategies - Implementation and Funding

Implementation Strategy	Implementation Source	Funding Source
Overall		
Jobs-Housing Linkage	Project Development	
Streets designed for low speed and safe crossings	Project Development	
Land uses and transit located to encourage walking	Project Development	
Transit Strategies		
Central Transit Hub and Ferry Terminal	Project Development	
Enhanced Transit Service	SFMTA	Resident and Employee EcoPass (subsidy), Project Development
Transit Preferential Street (Palou Avenue)	Project Development	
BRT, Bicycle, Pedestrian Bridge over Yosemite Slough	Project Development	
Bicycle Improvement Strategies		
Enhanced Bicycle Facilities	Project Development	
Bicycle racks, indoor/long-term parking, lockers, and showers	Project Development	
Bicycle Station (attended parking, repair facilities)	Transportation Coordinator and Bicycle Station staff	Project Development and TDM funds (subsidy) ¹
Bicycle Sharing Kiosks	Bicycle Sharing Company	
TDM Support Strategies		
Employee TDM Programs		
Information boards/kiosks, marketing of alternative travel options, special event planning	Transportation Coordinator and Employer	Employers
Commute subsidies, parking cash-out, commuter checks, Ecopass	Transportation Coordinator and Employer	Employers
Carpool/Vanpools	Transportation Coordinator and Employer	Employers
Guaranteed Ride Home Program	Transportation Coordinator and Employer	City of San Francisco and Employers
Compressed work week, flex time, telecommuting options	Employer	

All Other TDM Support Strategies		
Wayfinding	Project Development	
Ecopass	Transportation Coordinator	Residents and Employers
High-speed wireless internet	Project Development	
Carshare Services	Carshare company	
Carpool pick-up points	Transportation Coordinator	Project Development
Off-Peak Commercial Deliveries	Transportation Coordinator	Project Development
Parking		
Unbundled Residential Parking	Project Development	
Visitor Variable, Market Rate Parking Pricing	Transportation Coordinator, SFMTA, Project Development, and Private Parking Operator	Project Development
Parking Maximum Ratio	Project Development	
Shared parking	Project Development	
Preferential parking spaces reserved for carpoolers in commercial zone and near transit centers	Project Development	TDM funds (subsidy)
Free designated spaces in parking facilities to vanpools; Free short-term parking spaces in commercial zones reserved for carshare parking	Project Development	TDM funds (subsidy)
Carshare vehicles hubs	Carshare company	TDM funds (subsidy)
Ongoing Implementation and Monitoring		
On-Site Transportation Coordinator		
Salary and Rent	--	TDM funds
Transportation Website	Transportation Coordinator	TDM funds
Marketing of TDM Programs	Transportation Coordinator	TDM funds
Monitoring of Transportation Demand	Transportation Coordinator	TDM funds
Monitoring Effectiveness of Congestion Reducing/Traffic Calming	Transportation Coordinator	TDM funds

Notes:

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



CHAPTER THREE: TRANSPORTATION COORDINATOR & TDM FUNDS

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.

3.1 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 2-1**. 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 Articles of Incorporation for the Candlestick Point – Hunters Point Shipyard TMA were filed with the State of California on July 18, 2016. Therein, the activities, property, and affairs of the Corporation are dictated to be spelled out by the Board of Directors, the number of which will be dictated by the filed bylaws. The bylaws establish the entity as a non-profit established to further the goals of the approved TDM Program, namely, to reduce traffic congestion, reduce air pollution, reduce commuting costs, generate public/private measures to solve transportation problems, and create a central information service for ridesharing, public transportation, and other transportation related subjects. The Board of Directors of CPHPSTMA representing private property owners will be initially appointed by FivePoint. The Board of Directors is assigned to include three (3) groups, each of whom will get to appoint their representative for a one (1) year term: CP Development Company, LP, the Commercial Property Owners, and 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.

3.2 COSTS AND FUNDING

The costs for each TDM strategy supported by TDM funds are estimated in **Table 3-1**. See Appendix B for detailed assumptions and calculations of TDM strategies costs.

Implementation of the above strategies costs an estimated total of \$1,882,219 annually. An annual TDM fee for all residents and employees in the Plan Area including an additional 1,600 homes in Hunters 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. The project is expected to have a residential population of 24,866, with 10,672 housing units, and 16,155 employees at full build-out. This population would be in addition to a residential population of 3,328 in 1,428 housing units associated with Phase I, for a total residential population of 28,193. Based on these estimates, an annual TDM fee of \$135.19 per household² (assessed through rents or HOA dues) and \$58.02 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.

² This amount does not include the cost of an EcoPass transit pass, but the two costs would likely be combined into one monthly assessment.

Table 3-1: TDM Strategies Costs

Implementation Strategy	Funding Source	Annual Operating Cost
Bicycle Improvement Strategies		
Bicycle station (attended parking, repair facilities)	Project Development and TDM funds	\$240,000 ¹
Parking		
Preferential parking spaces reserved for carpoolers in commercial zone and near transit	TDM funds	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	TDM funds	\$602,875 ²
Carshare vehicles hubs	TDM funds	\$384,344 ²
Parking		
On-Site Transportation Coordinator		
Salary	TDM funds	\$510,000.00
Rent	TDM funds	\$60,000
Transportation Website	TDM funds	\$10,000
Administrative costs, expenses, printing, etc.	TDM funds	\$60,000
Tech consulting	TDM funds	\$15,000
Marking of TDM Programs	TDM funds	Assume included in Transportation Coordinator's salary and administrative costs
Monitoring of Transportation Demand	TDM funds	Assume included in Transportation Coordinator's salary and administrative costs
Monitoring Effectiveness of Congestion Reducing / Traffic Calming	TDM funds	Assume included in Transportation Coordinator's salary and administrative costs
Total		\$1,882,219

Notes:

- 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 marking-rate parking.

Table 3-2: TDM Strategies Funding

Funding Strategy	Applicable To	Price
Annual TDM Fee	All households within the Project site ²	\$135.19
	All employees within the Project site	\$58.02
Monthly TDM Fee ¹	All households within the Project site ²	\$11.27
	All employees within the Project site	\$4.84

Notes:

- 1 Assumes 50 percent of employees participate.
- 2 BMR unit households at or below 60% of AMI will not be assessed the TDM fee and will not be required to purchase EcoPass.

APPENDIX A: TDM FIGURES DETAIL

Figures 16 and 17 of the Plan 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	
Strategy Detail (from Transportation Plan)	Notes for Figures
Showers and locker facilities will be provided within each new commercial building with greater than 20,000 square feet of uses	Placed a showers/lockers symbol at every block which had office/commercial/retail use (from BWP Transportation Study document)
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	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.
Bicycle parking will be provided within each commercial parking facility, residential garage or within each residential building. Supplemental racks at major destinations	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)
A designated signed area near the transit centers would be reserved for casual carpooling.	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
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	Placed a symbol at every block with commercial/office parking facilities or on a commercial block.

APPENDIX B: TDM STRATEGIES COSTS CALCULATIONS

Table B-1: TDM Strategies Cost Detail

Implementation Strategies	Annual Operating Costs	Operating Cost Assumptions	Assumption Sources
Bicycle Improvement Strategies			
Bicycle Station (attended parking, repair facilities)	\$240,000	Estimate of annual operating expenses (not including personnel) based on Downtown Berkeley BART bike station.	Downtown Berkeley BART Bikestation - Economic Analysis for Facility Expansion; September 2005; Strategic Economics. Costs updated to reflect 2017 value based on CPI.
Parking			
Preferential parking spaces reserved for carpoolers 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 with attended parking; 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	\$602,875	Lost parking revenue. 1% of parking dedicated to vanpool and carshare. Assume \$25/day, 5 days/week, 50 weeks/year.	Per transportation plan (proposed parking supply figure), 9,646 commercial structure parking.
Carshare vehicles hubs	\$384,344	Lost parking revenue. 1 carshare vehicle for every 200 dwelling units (61 total spaces). Assume \$25/day, 5 days/week, 50 weeks/year.	SF Planning code requires 1 carshare space for 201+ units, plus 1 for every 200 dwelling units over 200. (http://sf-planning.org/car-share-requirements-and-guidelines). 12,100 dwelling units proposed at build out (includes HPS Phase 1).

APPENDIX B: TDM STRATEGIES COSTS CALCULATIONS CONTINUED

Table B-1: TDM Strategies Cost Detail

Implementation Strategies	Annual Operating Costs	Operating Cost Assumptions	Assumption Sources
Ongoing Implementation and Monitoring			
On-Site Transportation Coordinator (TC)			
Salary	\$510,000	3 staff with salary of \$85,000 (x2 for benefits)	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.
Rent	\$60,000	Conservative estimate of 4 staff for this calculation.	Rent estimate from typical craigslist office lease postings for a four-person office (for SOMA/south beach area approximately \$5,000 a month).
Transportation Website	\$10,000	"Assume administrative costs included in TC's salary. Calculation includes start up costs and yearly maintenance."	
Ridesharing and Ridematching, Carpool and Vanpool Database	N/A	Assume administrative costs included in TC's salary. Calculation includes start up costs and yearly maintenance.	*Nelson\Nygaard. "RideNow! Evaluation Draft Report." Alameda County Congestion Management Agency. September 2006. Retrieved September 2008 from http://www.ridenow.org/4113_ACCMADynamicRidesharing.pdf

APPENDIX B: TDM STRATEGIES COSTS CALCULATIONS CONTINUED

Table B-1: TDM Strategies Cost Detail

Implementation Strategies	Annual Operating Costs	Operating Cost Assumptions	Assumption Sources
Administrative costs, expenses, printing, materials, etc.	\$60,000	Costs include marketing expenses, flyers, brochures. Total population of 43,000 at project site. Flyers for all residents and employees at \$1/flyer. Additional costs for brochures and events.	Project estimates residential population of 28,193 and 16,155 employees at buildout (includes Hunters Point Shipyard Phase 1).
Tech consulting	\$15,000	Assume periodic tech support needed throughout the year	
Marketing of TDM programs	N/A	Assume admin included in TC's salary and administrative costs	
Monitoring of Transportation Demand	N/A	Assume admin included in TC's salary and administrative costs	
Monitoring Effectiveness of Congestion-Reducing/Traffic Calming	N/A	Assume admin included in TC's salary and administrative costs	





CANDLESTICK POINT HUNTERS POINT SHIPYARD PHASE II

TRANSPORTATION PLAN
APRIL 2018 (DRAFT)



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CHAPTER ONE: 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.

This Transportation Plan is one of several plans and reports implementing the proposed Development Plan. The Transportation Plan presents goals, principles, and strategies to meet the travel demand needs: 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**. 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/Visitation 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 centers and destinations. This linkage should also serve to reduce overall trips and vehicle miles traveled in the area.

Table 1: Project Mode Split Goals - PM Peak Hour Work Trips

Mode	Project Travel Behavior Goal
Auto	45%
Transit	30%
Walk	20%
Bike	5%
Total	100%

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;
- Over 335 acres 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
- Implementation of transit corresponds to each development phase.

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 2: Land Use Program

Land Use	Candlestick Point	Hunters Point Shipyard
Residential	7,218 d.u.	3,454 d.u.
Neighborhood Retail / Makers Space ¹	125,000 sq. ft.	301,000 sq. ft.
Regional Retail	635,000 sq. ft.	100,000 sq. ft.
Hotel	220 rooms	175 rooms
Community Services	50,000 sq. ft.	50,000 sq. ft.
R&D	--	4,265,000 sq. ft.
Artists' Studios	--	255,000 sq. ft. ²
Marina	--	300 slips
Arena ³	10,000 seats	--
Office	150,000 sq. ft.	--
Institution	--	410,000 sq. ft. ⁴

Source: FivePoint – April 2018

1 75,000 square feet of the 301,000 square feet of Neighborhood Retail at HPS would be dedicated for maker space uses.

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

3 The 10,000 seat Arena is proposed to be 75,000 square feet.

4 410,000 sq. ft. equates to approximately 1,000 junior high/high school students and 1,000 high school/post-secondary students. Types of students and institutions may vary.



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 travel demand. These are depicted in blue on **Figure 1** and discussed later in this document.

Figure 1: Planned Transportation Improvements

1.3 TRANSPORTATION PROGRAM

The Transportation Program consists of strategies which build off the land use strategies to encourage internalization, 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 resident 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 28R) 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 area-wide improvements associated with Muni Forward 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 units¹;
- 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
- Public 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 roadway and transit service 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 venues will be evaluated to identify the opportunities for applying measures to encourage the use of non-auto modes.

¹ This arrangement would not apply to the 1,655 "Agency Affordable" units or to the Senior BMR Project at CP-02, which are limited by tax-credit financing requirements.





CHAPTER TWO: 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 approximately 10,700 homes, in addition to the 1,400 homes constructed under Hunters Point Shipyard Phase I; over 6 million square feet of retail, artists’ studios, maker space, entertainment, office, and research and development uses; two hotels; over 335 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 Streetscape Plan) describing the project and the existing and future circumstances of the project site and surrounding areas.

FivePoint is the lead developer for the Development Plan. FivePoint 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 245 public meetings and workshops with the Bayview/Hunters Point communities and presentations before the 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 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, the SFMTA Board, and the San Francisco Redevelopment Agency in June 2010, and refined through subsequent addenda. The 2018 Transportation Plan has been refined through discussions with City representatives to ensure that it responds to the most recent City best practices and subsequent refinements to the project. Implementation of the final Transportation Plan will require commitments from FivePoint, 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.

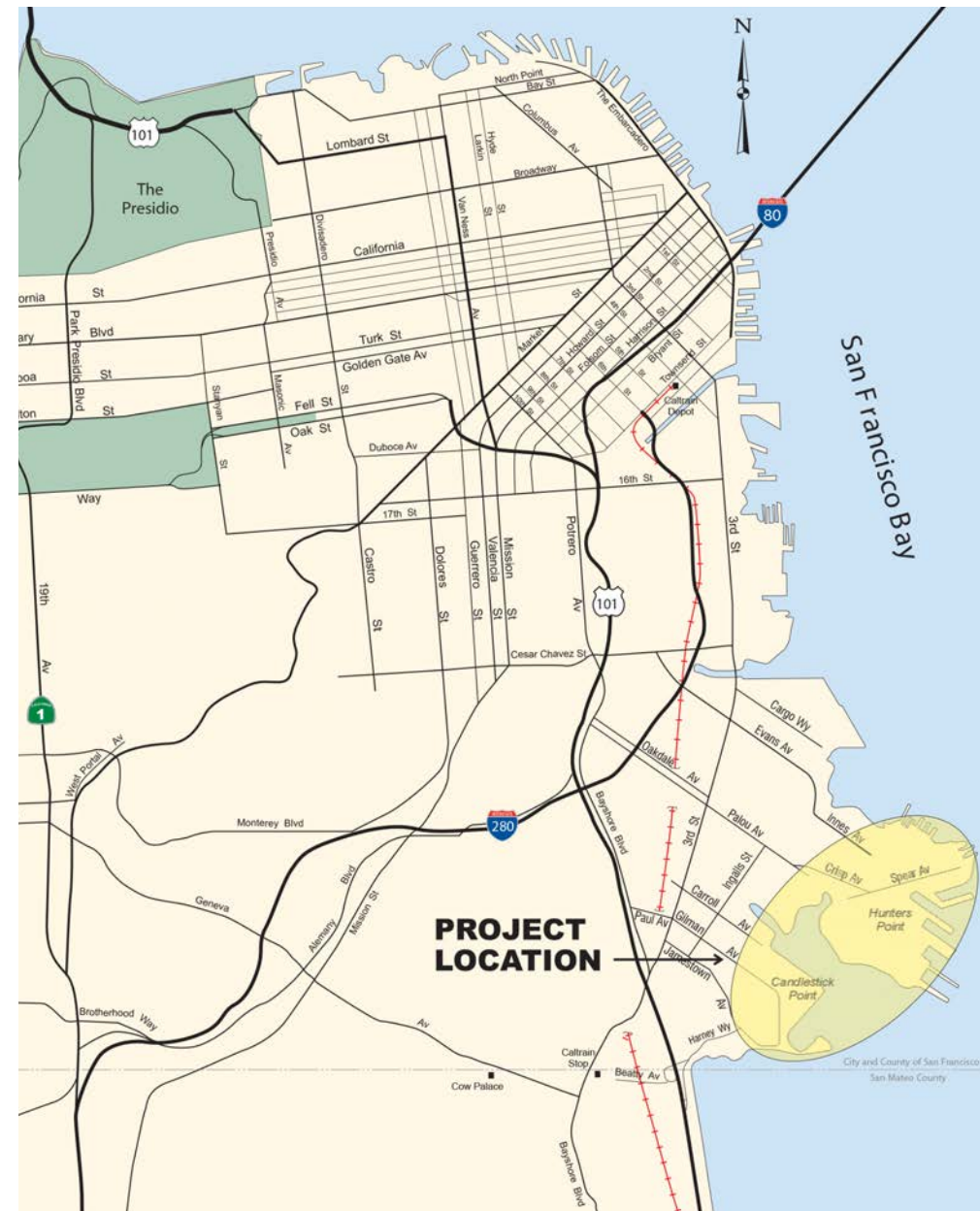
The project site includes Candlestick Point, a 267-acre site within the Bayview/Hunters Point Redevelopment Plan Area; and Hunters Point Shipyard Phase II, a 421-acre site within the Hunters Point Shipyard Redevelopment Plan Area. Phase I of the Hunters Point Shipyard is a 75-acre site within the Shipyard 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 Plan's elements prioritize walking, bicycling, and transit, making these attractive and practical transportation options, which are consistent with the City's Climate Action Strategy (CAS). The CAS outlined a number of transportation strategies, which, when combined with other strategies, will help the City reduce its overall greenhouse gas emissions to 40 percent below 1990 levels by the year 2025. The CAS'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

Figure 2: Project Location





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 the improvements will also benefit the existing community. 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 will be designed for a posted speed of 25 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 public 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 by the Transportation Coordinator 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 performance venues 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.

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 2018 to update and refine information for this Transportation Plan.

Subsequent to the initial adoption of the Transportation Plan in 2010, regular presentations have been made to the Bayview community related to implementation of the first phase of development at Candlestick Point and amendments to the Transportation Plan made in 2017-2018.

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);
- Workshop summary presentations to the CAC and the PAC.

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.





CHAPTER THREE: 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 vicinity³ 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 253 weekday boardings was recorded at the station in 2016. 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. Muni Forward, formerly known as the "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 Muni Forward 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 Muni Forward proposals would be needed to serve the project.

³ Bayshore Caltrain Station is located in San Mateo County.

Figure 3: Existing Transit Network





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. 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. Prior to the 49ers relocation, game day and special event conditions presented additional challenges related to street traffic and on-street parking prohibitions. These included 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. These challenges are no longer an issue since the 49ers relocated.

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**.

Figure 4: Existing Roadway Network





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, Aurelius Walker Drive, 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 near the Project area which will increase the transit demand and automobile traffic. These proposed developments, which are in various planning or construction stages, are summarized below. The exact project description may change; however, the following net overall increases were assumed when the plan was conceived. **Figure 5** shows the location of these proposed developments in relation to the two project areas and to major transportation facilities.

Figure 5: Proposed Nearby Developments



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

275,330 sq. ft. of commercial/retail space
50,000 sq. ft. of institutional space
829,700 sq. ft. of open 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



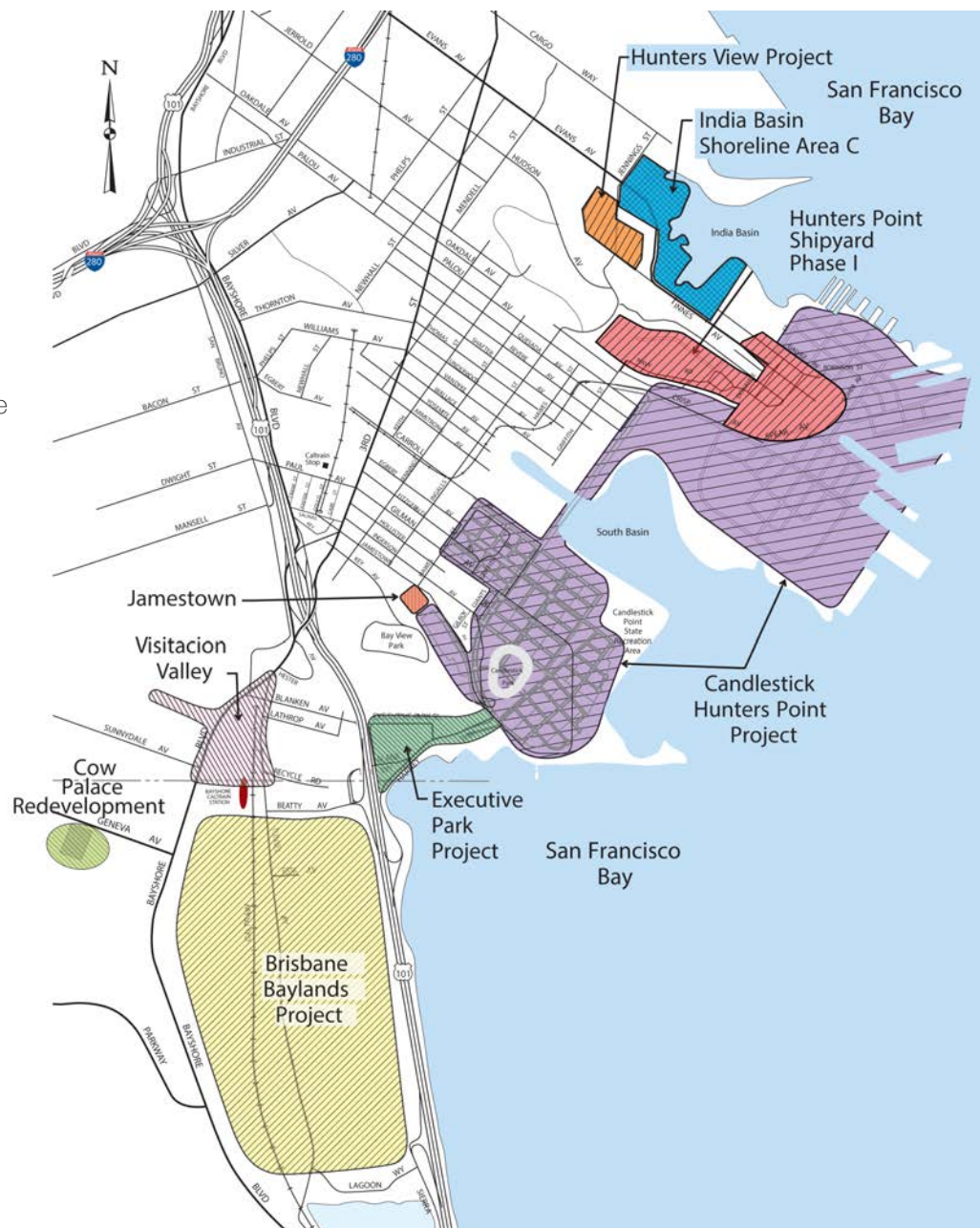
Jamestown

approximately 200 homes



Visitacion Valley

1,600 homes
170,000 sq. ft. of retail
25,000 sq. ft. of community services





CHAPTER FOUR: PROJECT DEFINITIONS

4.1 LAND USE PROGRAM

The proposed Candlestick Point and Hunters Point Shipyard Phase II Development Plan land use program includes 10,672 homes (in addition to 1,428 homes in Hunters Point Shipyard Phase I); 1,116,100 square feet of retail uses; 4,415,000 square feet of office and research and development space; two hotels; an arena, artist's studio, maker space, and schools. The Plan also includes a number of city parks, sports fields, and new and

restored open space in the Candlestick Point Recreation Area. Over 335 acres are designated for recreational uses, including sports fields, and as open space. **Table 3** 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 3: Land Use Program

Land Use	Candlestick Point	Hunters Point Shipyard	Project Total
Residential	7,218 d.u.	3,454 d.u.	10,672 d.u.
Neighborhood Retail / Maker space ¹	125,000 sq. ft.	301,000 sq. ft.	426,000 sq. ft.
Regional Retail	635,000 sq. ft.	100,000 sq. ft.	735,000 sq. ft.
Hotel	220 rooms	175 rooms	395 rooms
Community Services	50,000 sq. ft.	50,000 sq. ft.	100,000 sq. ft.
Research & Development	--	4,265,000 sq. ft.	4,265,000 sq. ft.
Artist's Studios	--	255,000 sq. ft. ²	255,000 sq. ft.
Marina	--	300 slips	300 slips
Arena ³	10,000 seats	--	10,000 seats
Office	150,000 sq. ft.	--	150,000 sq. ft.
Institution	--	410,000 sq. ft. ⁴	410,000 sq. ft.
Source: FivePoint – April 2018			

1 75,000 square feet of the 301,000 square feet of Neighborhood Retail at HPS would be dedicated for maker space uses.

2 The Project includes 225,000 square feet of existing artist studio space that would be renovated and replaced.

3 The 10,000 seat Arena is proposed to be 75,000 square feet.

4 410,000 sq. ft. equates to approximately 1,000 junior high/high school students and 1,000 high school/post-secondary students. Types of students and institutions may vary.

The Redevelopment Plans authorize the conversion of commercial square footage to other land uses permitted under the Redevelopment Plans subject to the approval of the Agency Commission and additional environmental analysis.

Candlestick Point

At Candlestick Point, 7,218 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 256 existing units with a total of about 1,000 townhomes and four-story stacked flats. These new units are being 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, and restaurants. The retail center is also proposed to include a hotel with 220 rooms and 150,000 square feet of office. A parking structure or structures may be provided for the Retail Center.

An additional 125,000 square feet of neighborhood-serving retail space, such as grocers or coffee shops, and 50,000 square feet of Community Services space is planned for Candlestick Point.

Hunters Point Shipyard Phase II

Figure 6: Land Use Program



Hunters Point Shipyard Phase II includes 3,454 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.

Up to 100,000 square feet of regional retail and 301,000 square feet of neighborhood retail, of which 75,000 square feet is proposed as maker space, would be located at Hunters Point Shipyard Phase II. In addition to retail space, the Hunters Point Shipyard Phase II includes the renovation and expansion of an existing artists' studio, a hotel, community services, institutional uses, and over four million square feet of research and development space is proposed.

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.

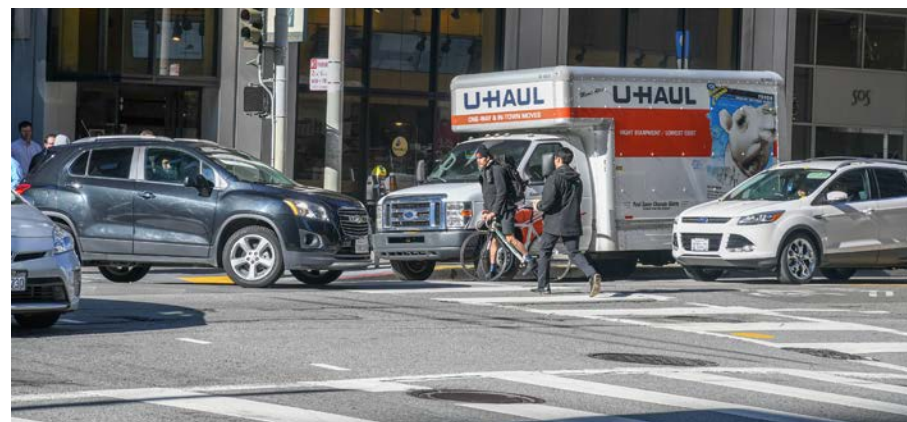
Both Candlestick Point and Hunters Point Shipyard have extensive waterfronts; however, access to the waterfront is currently limited to a portion of the Bay Trail at the southern end of Candlestick State Recreation Area. This project prioritizes multimodal access to the waterfront, which has been coordinated 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 result in a constrained cross-section; however, these cross-sections generally follow the intent of the BSP requirements.



Street Typologies

The following street types are included in this Plan. The Streetscape Plans for Candlestick Point and Hunters Point Shipyard further define street typologies.

The Spine: The Spine is the civic backbone of the new neighborhoods, a city scale street that connects to the surrounding community and provides a unifying link between Hunters Point Shipyard and Candlestick Point. The Spine is comprised of several typologies (Residential, Commercial, Park), which are unified as a main thoroughfare through the site. The Spine provides a special identity for Candlestick Point and Hunters Point Shipyard.

Commercial Streets: Commercial streets, such as Harney Way, near Ingerson, and Ingerson between Arellous 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.

Residential Street: 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.

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 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.



Primary Streets: Primary streets promote pedestrian activity with elements such as generous sidewalks, on-street parking, transit shelters and a mix of land uses on both sides. These streets are used as primary vehicular circulation for accessing neighborhood destinations.

Secondary Streets: Secondary streets are calm streets to set neighborhood life and engagement. These streets are intended to be used for local access.

Mid-block Breaks: Mid-block Breaks are privately owned, publicly accessible travel-ways 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.

Multi-use Paths: Multi-use Paths (pedestrians, bicycles) are closed to vehicle traffic, except emergency vehicles. Ownership of these areas has yet to be determined and will be addressed at the time of development.



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 zone shall be at minimum, 6 feet.

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 FivePoint, 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 7Z** on the following pages:

Figure 7A: Overview of Street Typologies

Figure 7B-7C: Candlestick Point Emergency Vehicle Access & Mid-Block Break Widths

Figure 7D-7E: Hunters Point Shipyard Emergency Vehicle Access & Mid-Block Break Widths

Figure 7F - 7Q: Candlestick Point

Figure 7R - 7Z: Hunters Point Shipyard

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**. Additionally, included is **Figure 7B and 7E**, which illustrates Emergency Vehicle Access and Mid-Block Break Widths for Candlestick Point and Hunters Point Shipyard.

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, Fisher 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 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 (**Figure 7I**) 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 7G and 7H**). 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. 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.



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 7S**). 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. 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.

The project has proposed a similar approach to developing street designs for the Hunters Point Shipyard site.

The Shipyard North neighborhood adopts a grid like street network. East-west arterials, such as Robinson Street and Lockwood Street, serve as primary access points to and from the site. Robinson Street is designated to include bicycle facilities while Lockwood Street is designated to include transit facilities.

The Shipyard South neighborhood has a similar grid network approach. North-south collectors such as H Street and Cochrane Street operate as the main roadway connecting the Shipyard South neighborhood to the main spine along Crisp Road. Bicycle facilities are provided along these corridors as well as along Manseau Street, which connects the east and west sides of the Shipyard neighborhood.

The Crisp Road spine continues north into the Project site to connect to Spear Street, which bisects the Shipyard R&D neighborhood, located on the most eastern side of the Hunters Points Shipyard site. Streets are kept as two lanes with some on-street parking. There is not likely to be substantial traffic in this neighborhood beyond the traffic that is destined to this location.

Figure 7A: Overview of Street Typologies

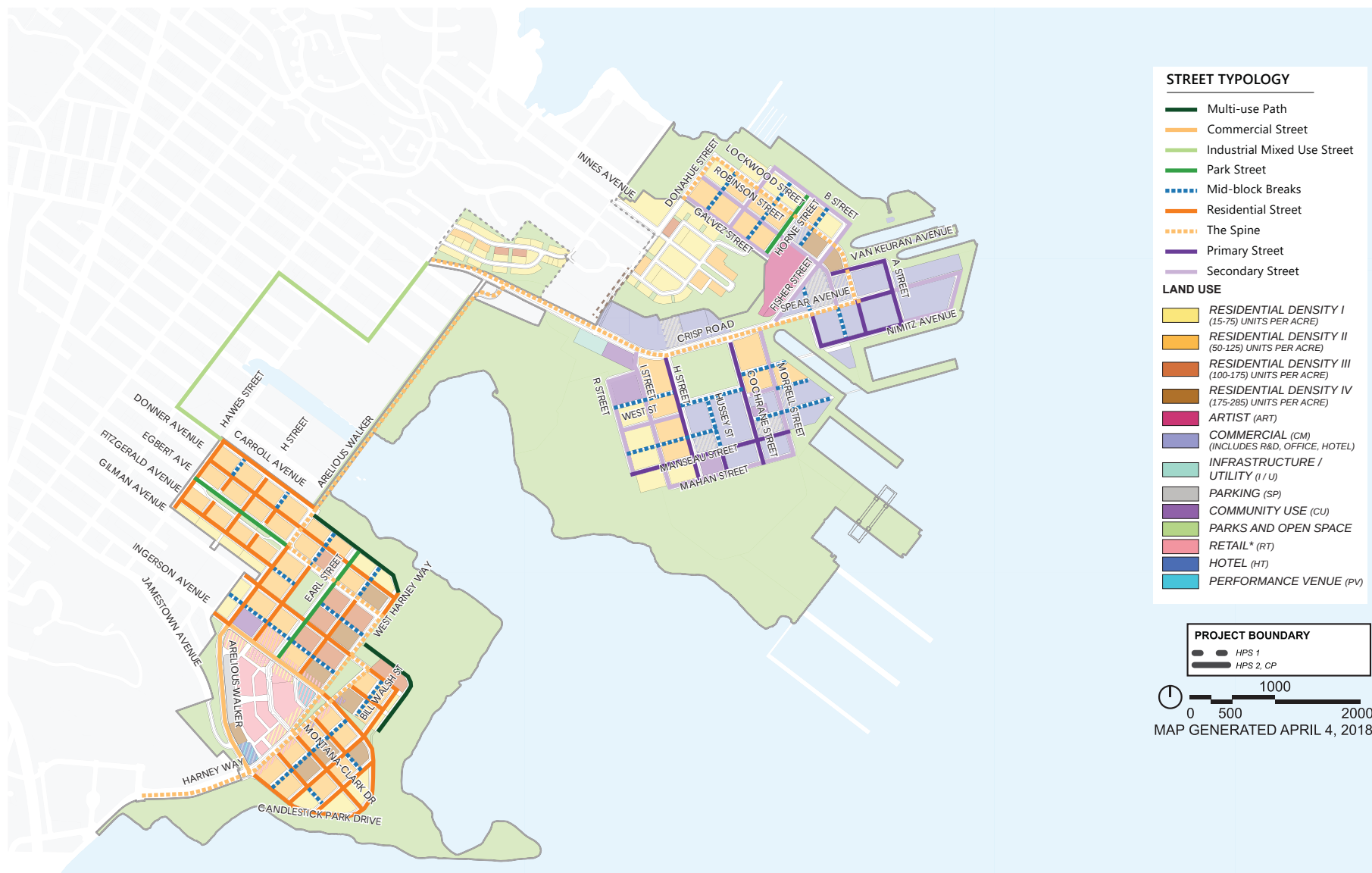


Figure 7B: Candlestick Point Emergency Vehicle Access

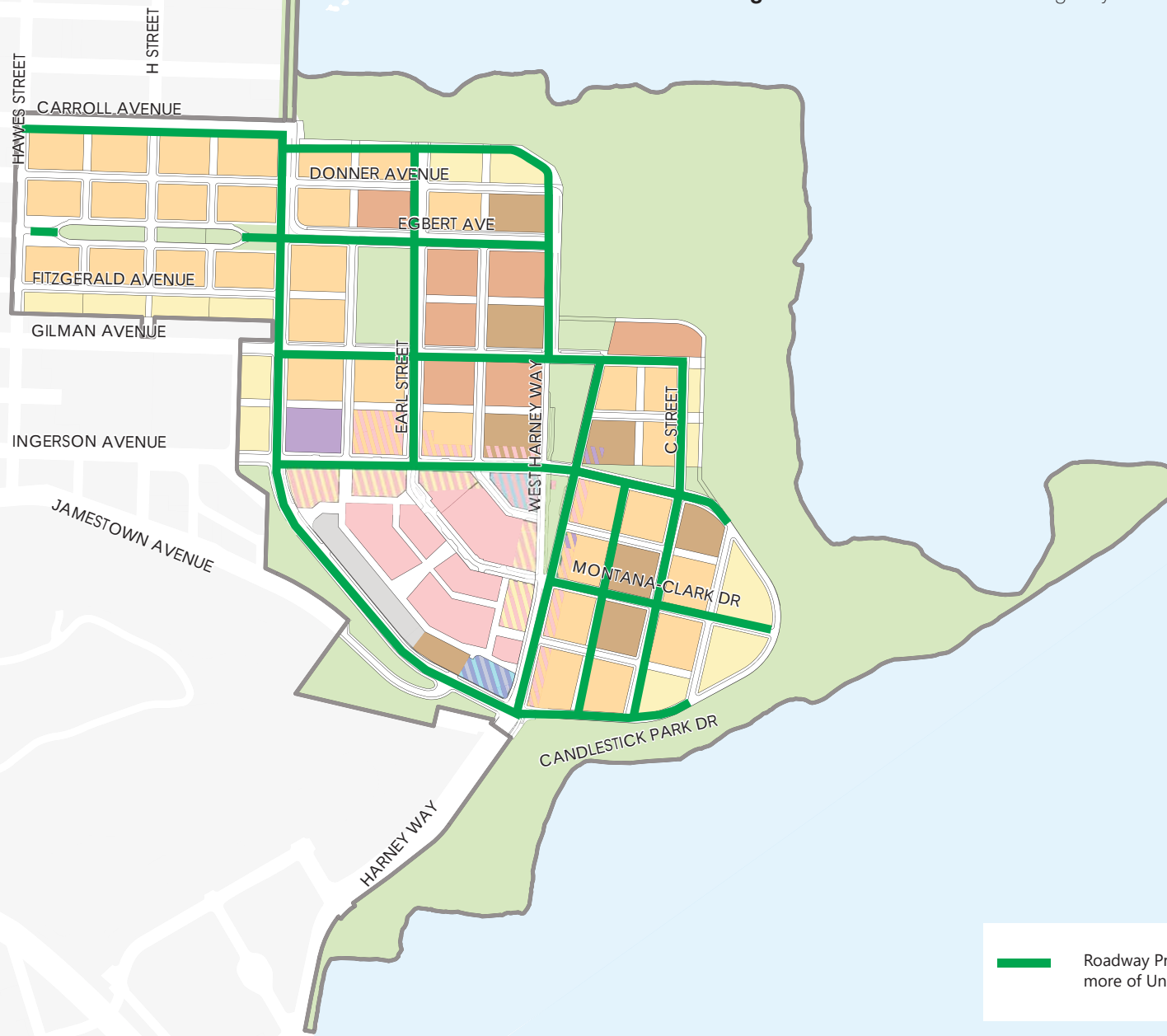
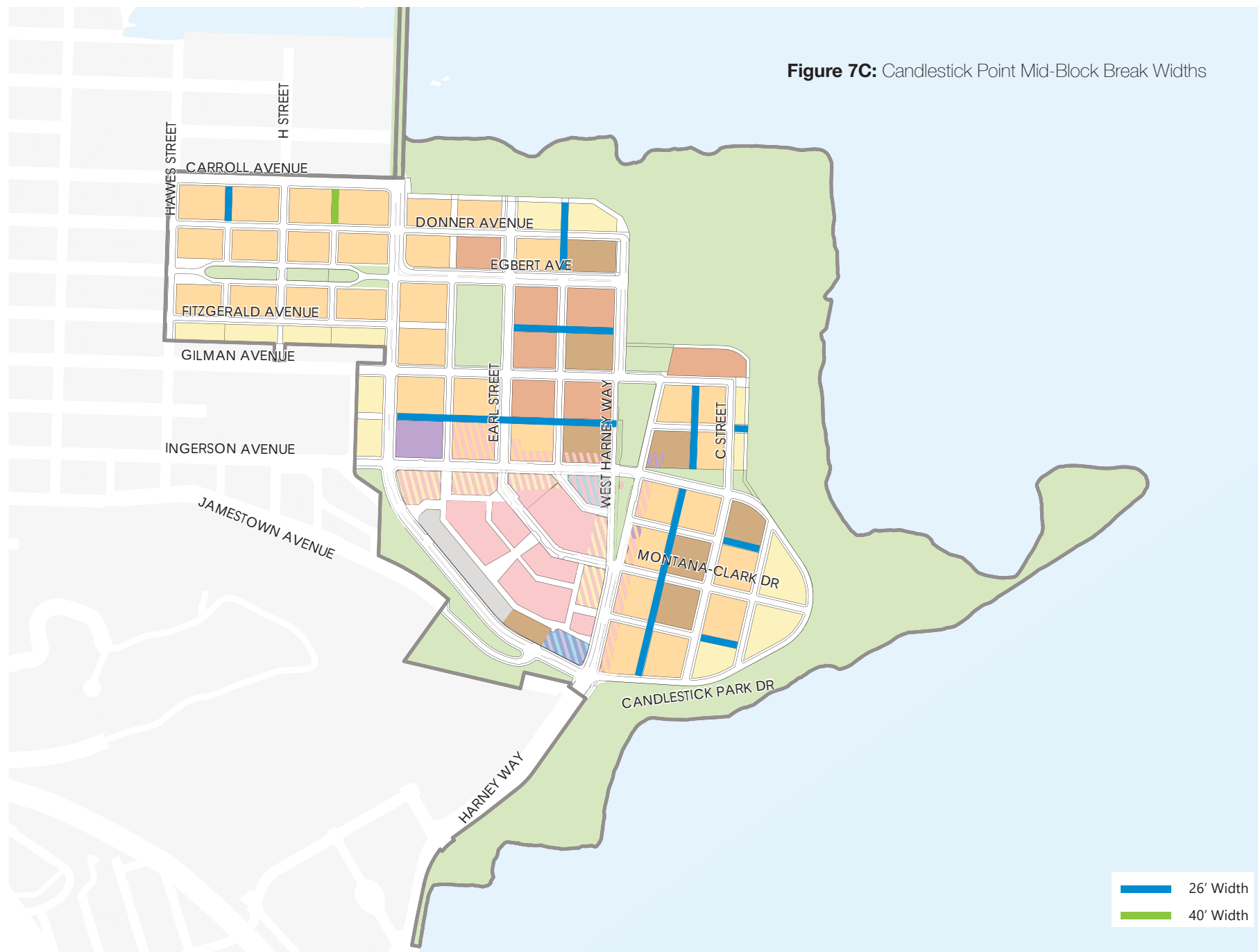
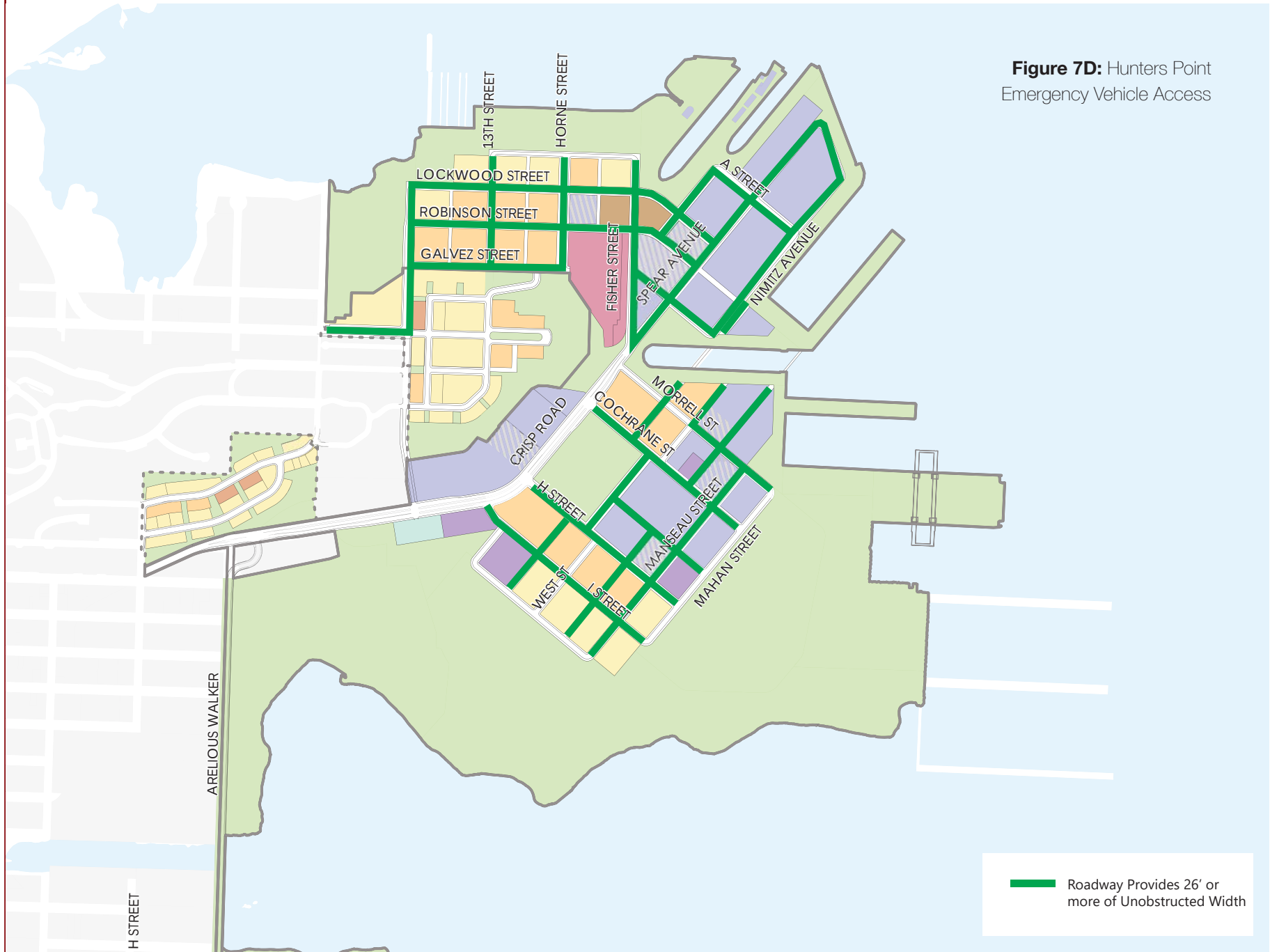


Figure 7C: Candlestick Point Mid-Block Break Widths





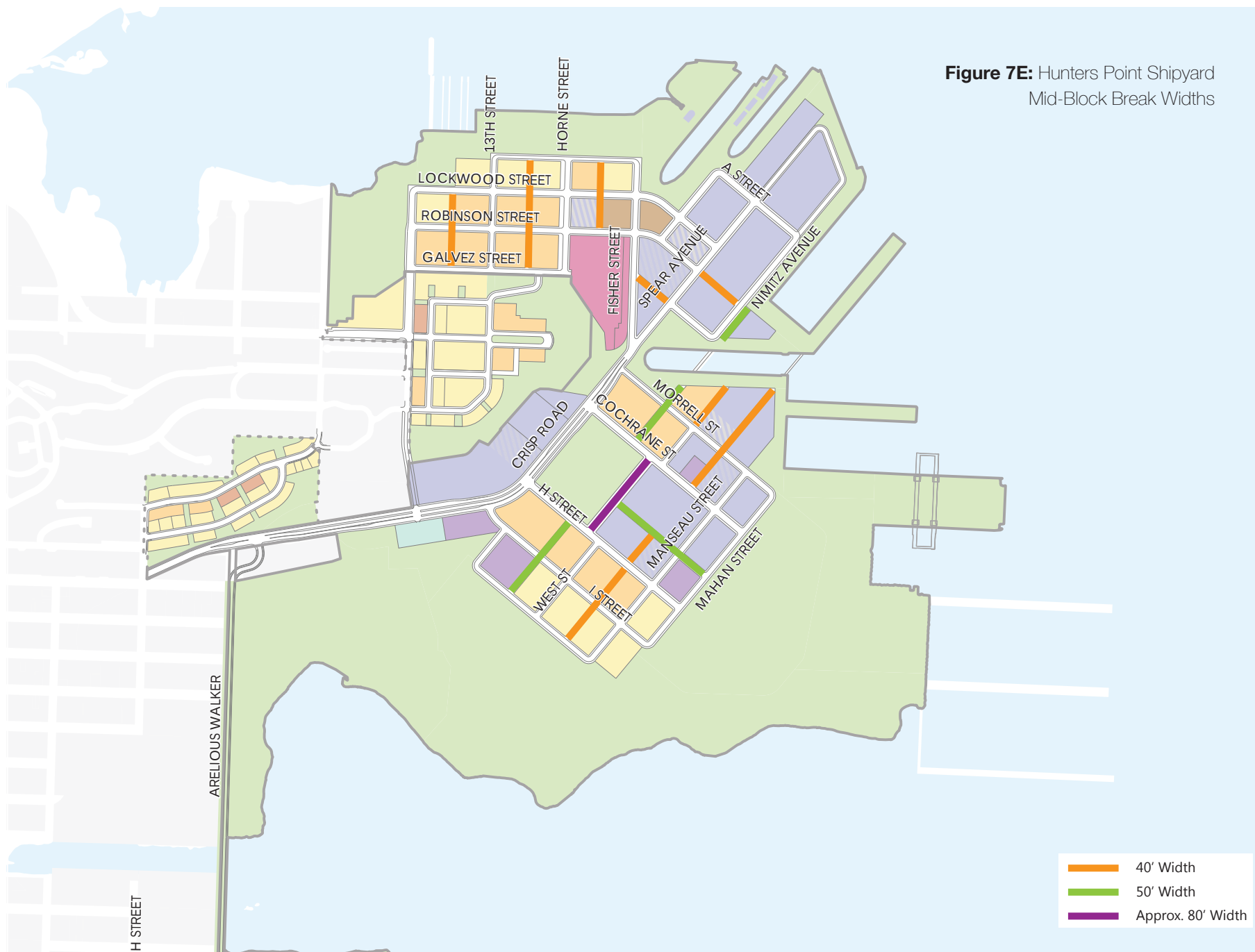


Figure 7F: Candlestick Point



LAND USE

- | | |
|---|---|
| RESIDENTIAL DENSITY I
(15-75) UNITS PER ACRE | INFRASTRUCTURE /
UTILITY (I / U) |
| RESIDENTIAL DENSITY II
(50-125) UNITS PER ACRE | PARKING (SP) |
| RESIDENTIAL DENSITY III
(100-175) UNITS PER ACRE | COMMUNITY USE (CU) |
| RESIDENTIAL DENSITY IV
(175-285) UNITS PER ACRE | PARKS AND OPEN SPACE |
| ARTIST (ART) | RETAIL* (RT) |
| COMMERCIAL (CM)
(INCLUDES R&D, OFFICE, HOTEL) | HOTEL (HT) |
| | PERFORMANCE VENUE (PV) |

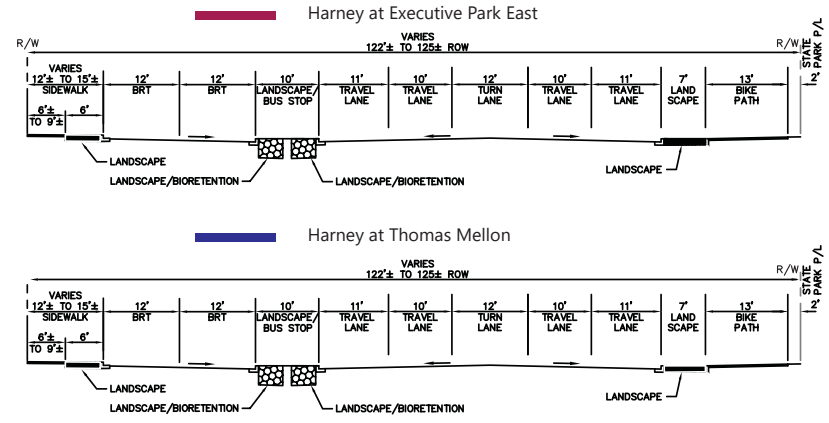
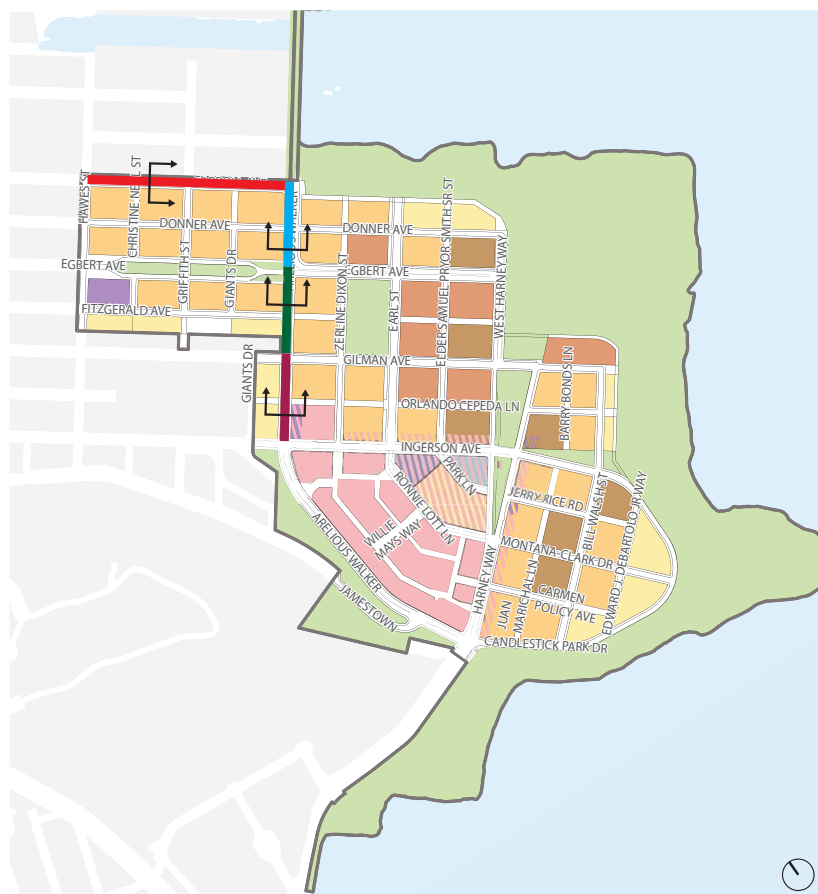


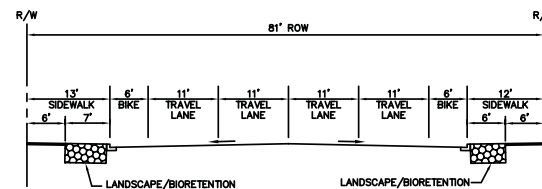
Figure 7G: Candlestick Point



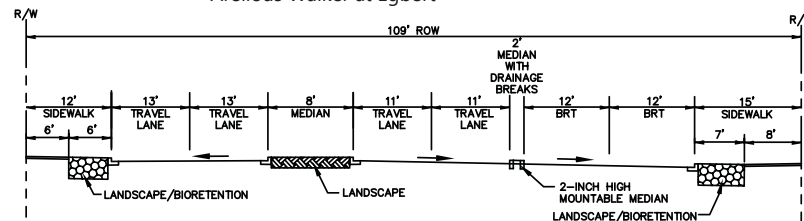
LAND USE

RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	INFRASTRUCTURE / UTILITY (I / U)
RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	PARKING (SP)
RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	COMMUNITY USE (CU)
RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	PARKS AND OPEN SPACE
ARTIST (ART)	RETAIL* (RT)
COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	HOTEL (HT)
	PERFORMANCE VENUE (PV)

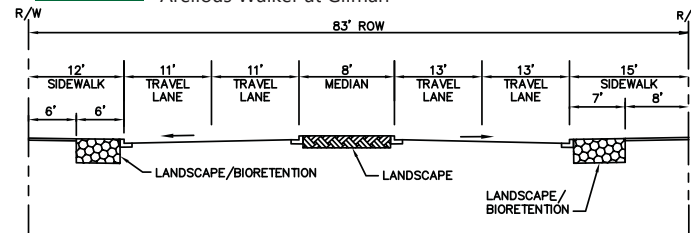
Carroll at Ingalls



Arelous Walker at Egbert



Arelous Walker at Gilman



Arelous Walker at Ingerson

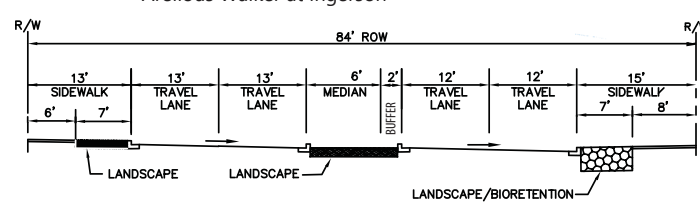
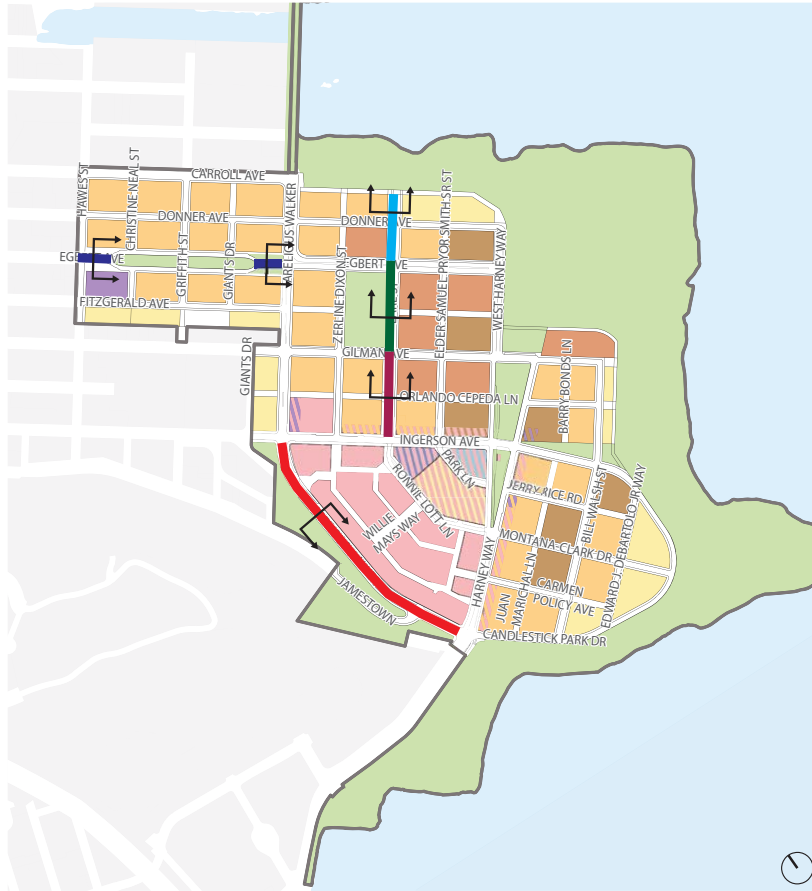


Figure 7H: Candlestick Point



LAND USE	
 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE)	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

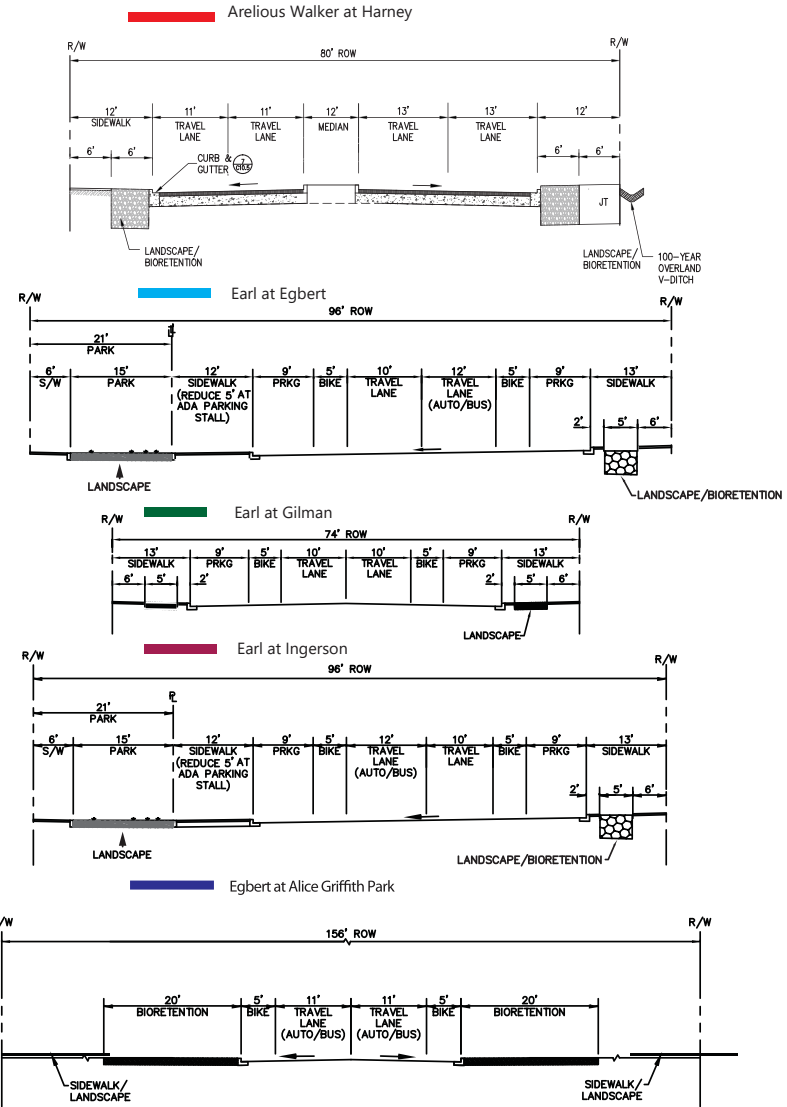
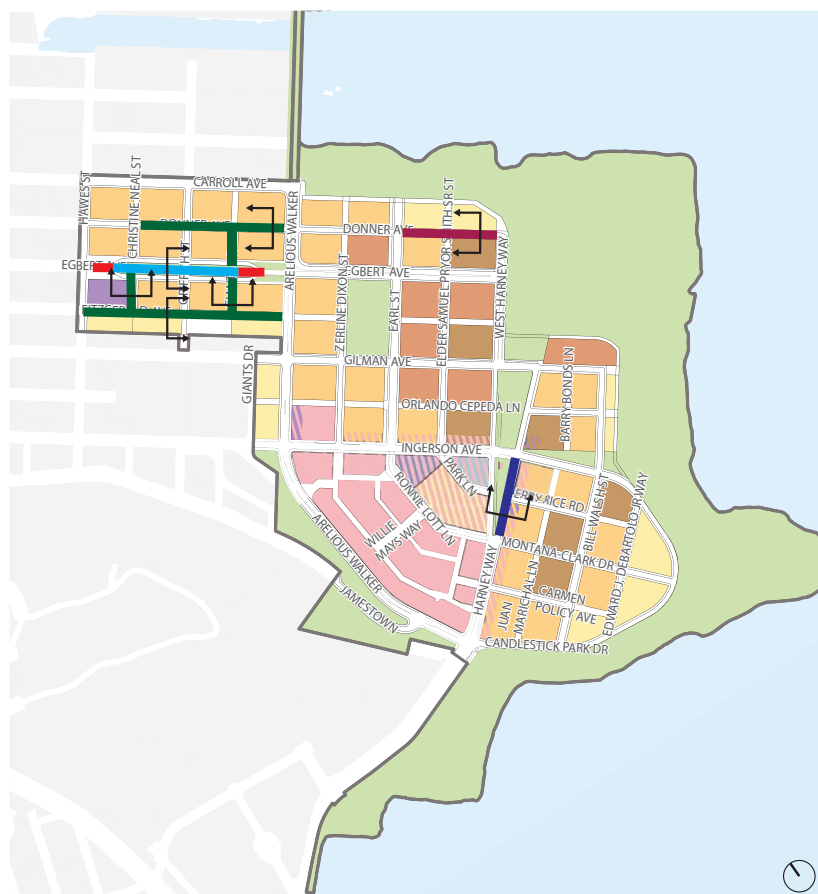


Figure 7I: Candlestick Point



LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

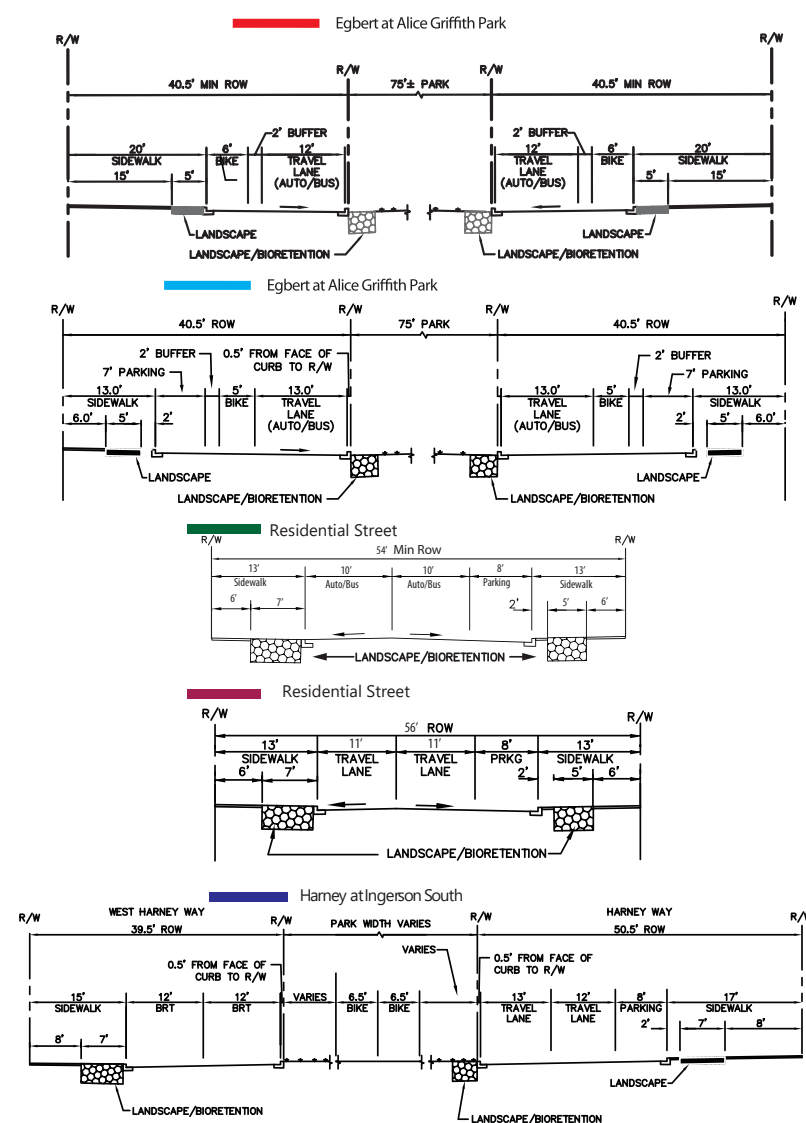
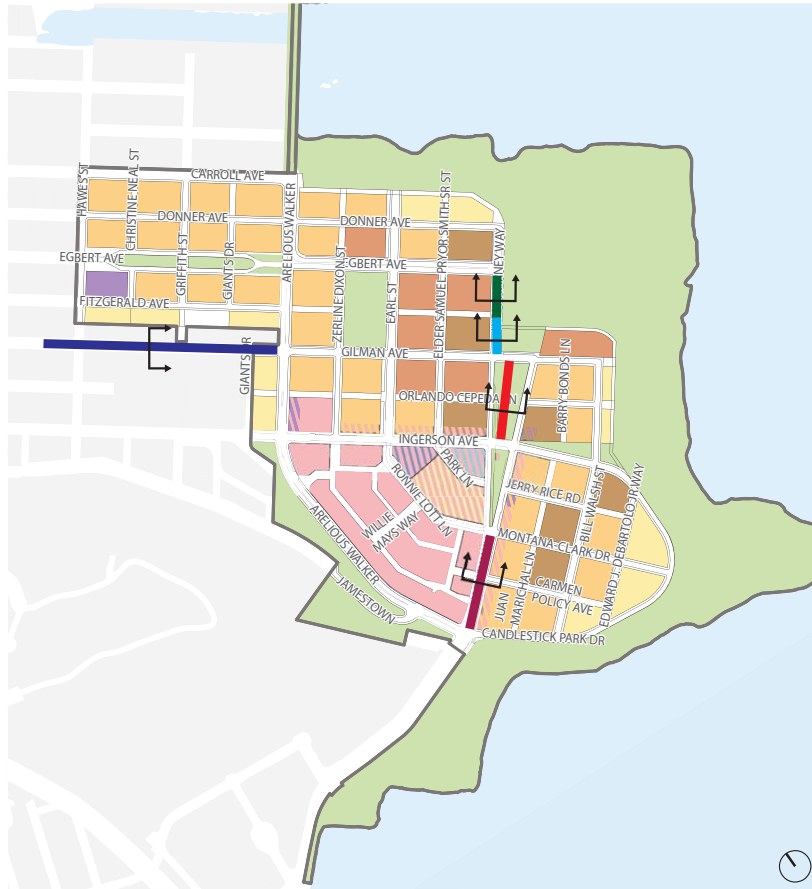


Figure 7J: Candlestick Point



LAND USE

RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	INFRASTRUCTURE / UTILITY (I / U)
RESIDENTIAL DENSITY II (80-125) UNITS PER ACRE	PARKING (SP)
RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	COMMUNITY USE (CU)
RESIDENTIAL DENSITY IV (175-280) UNITS PER ACRE	PARKS AND OPEN SPACE
ARTIST (ART)	RETAIL* (RT)
COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	HOTEL (HT)
	PERFORMANCE VENUE (PV)

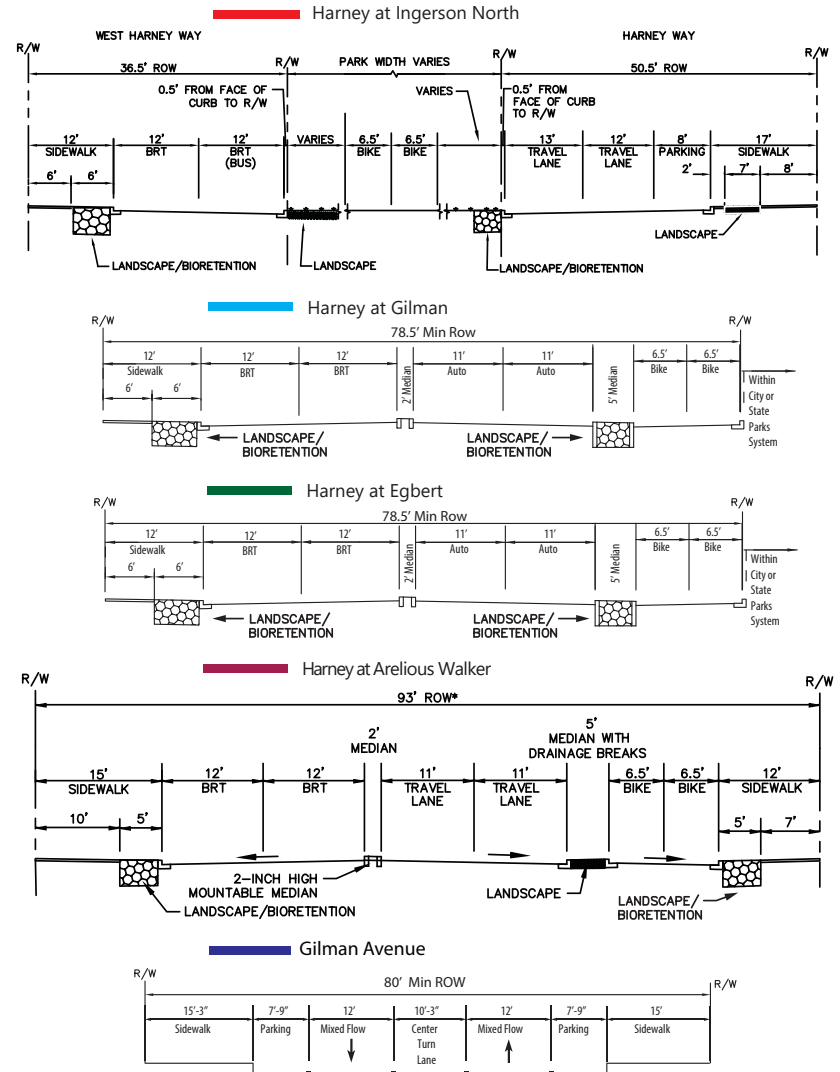
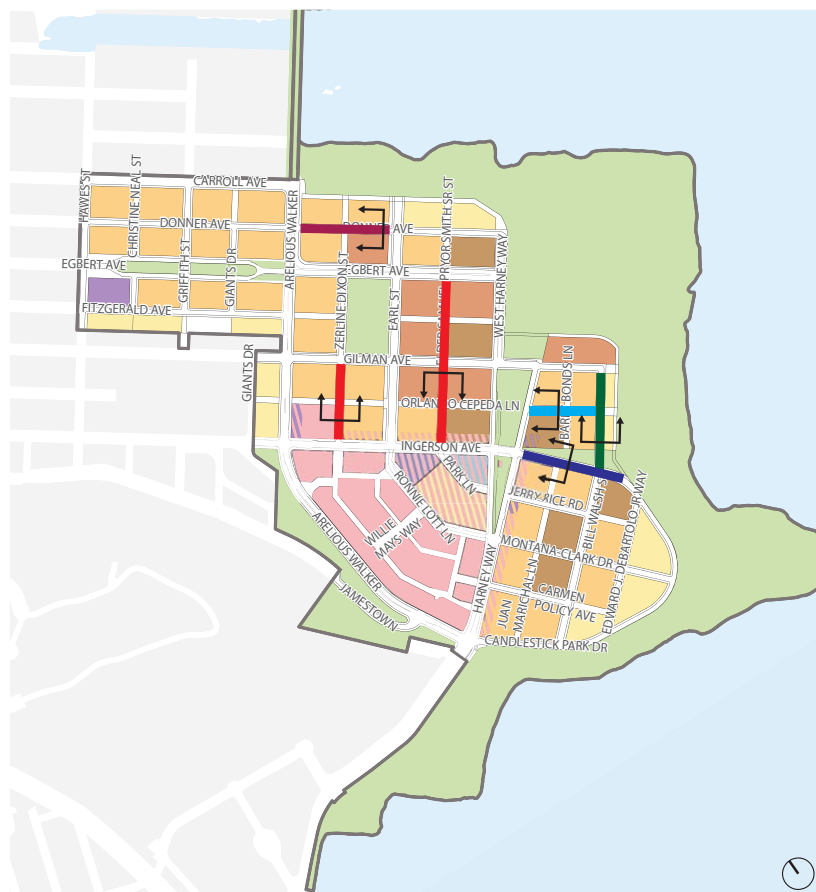


Figure 7K: Candlestick Point



LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE)	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

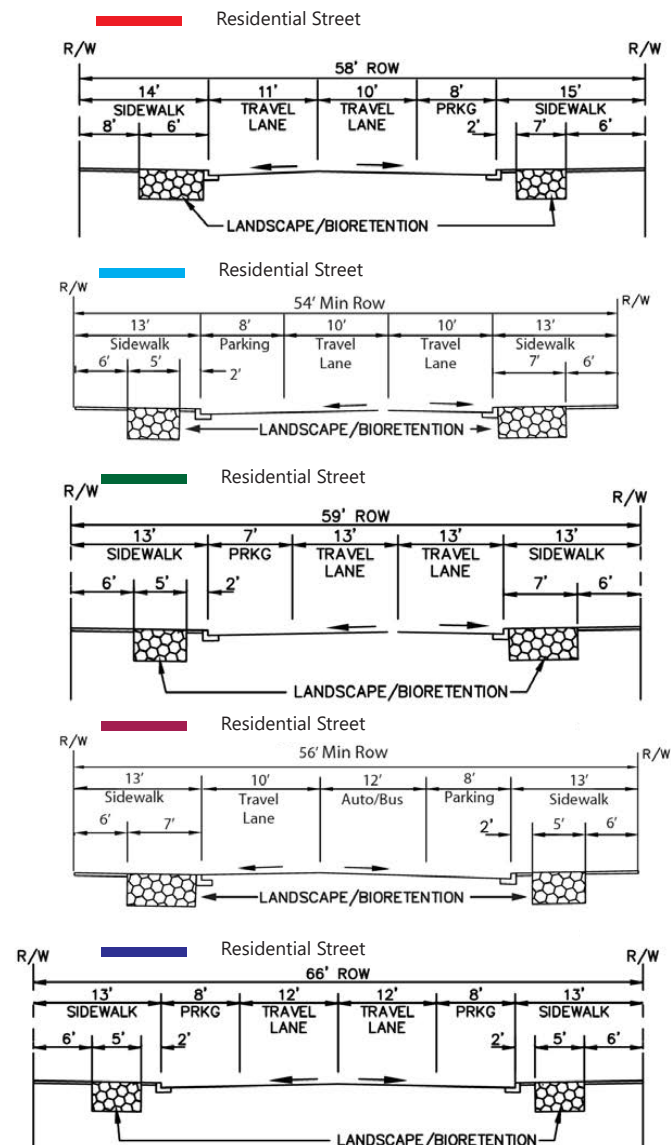
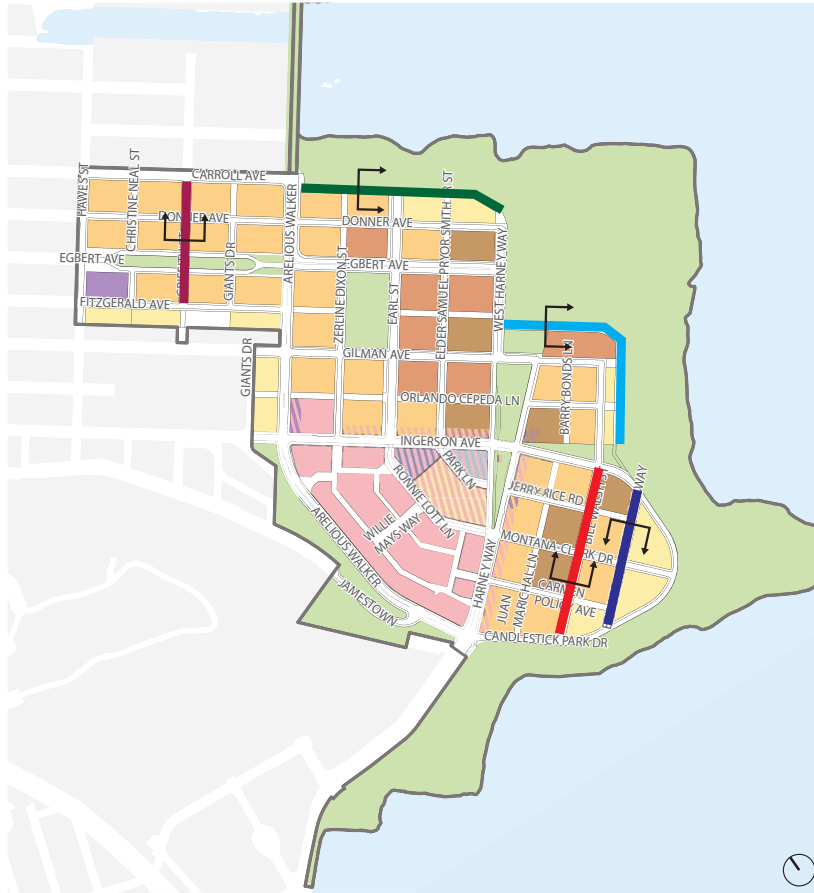


Figure 7L: Candlestick Point



LAND USE	
 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE)	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

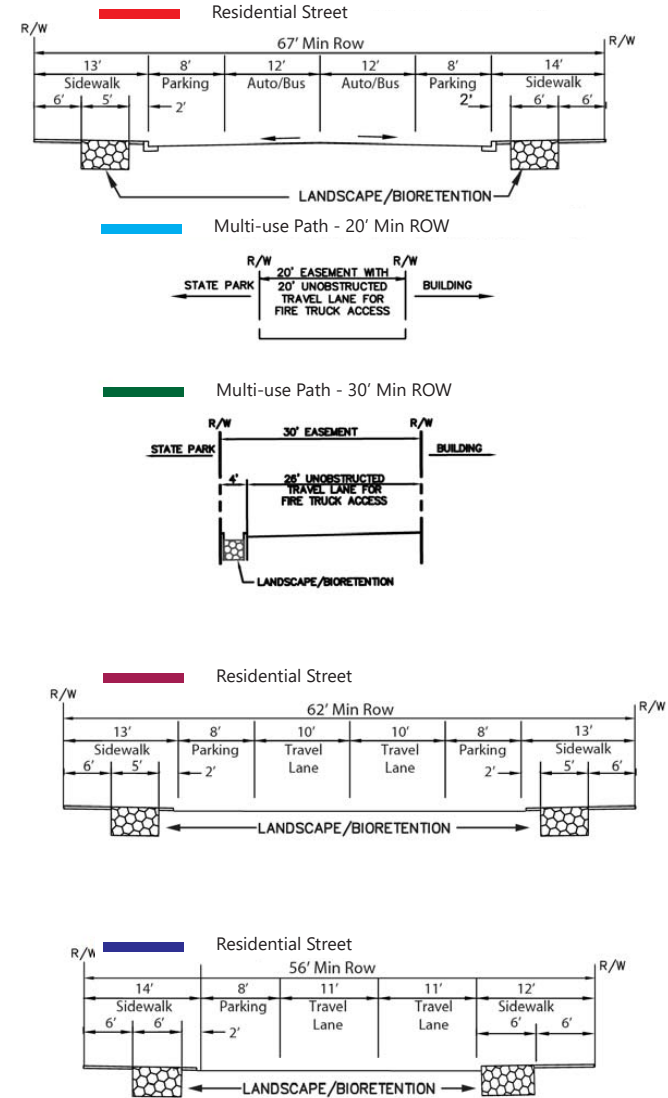
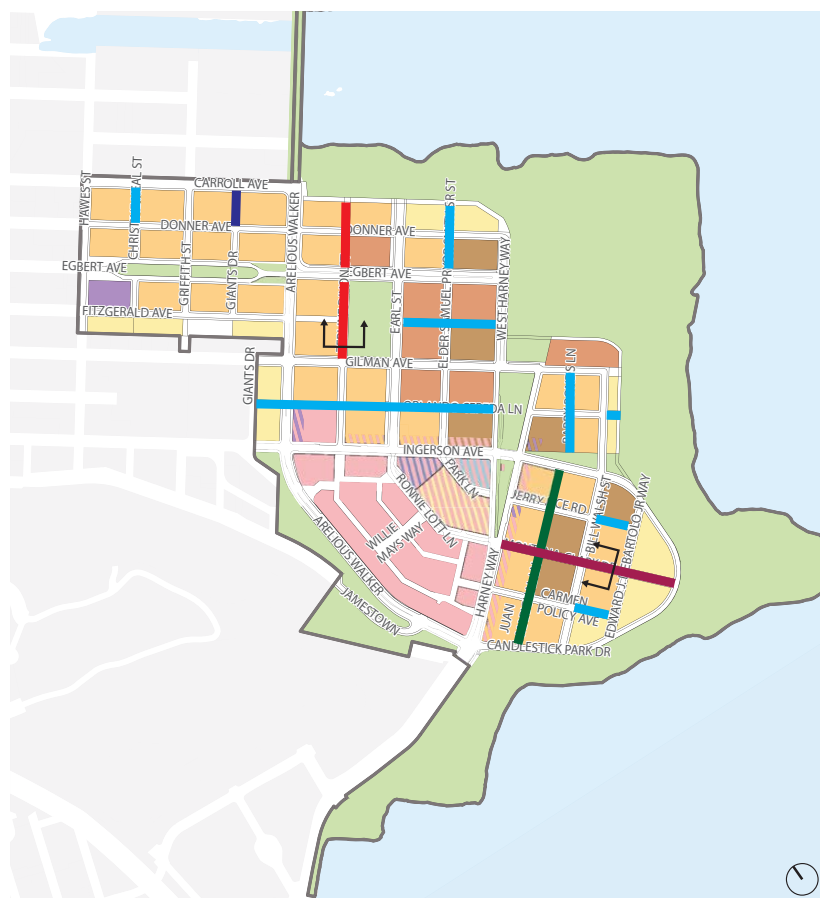
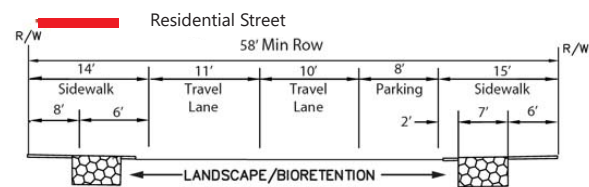


Figure 7M: Candlestick Point

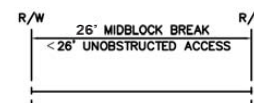


LAND USE

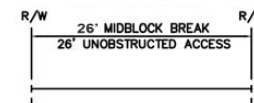
 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)



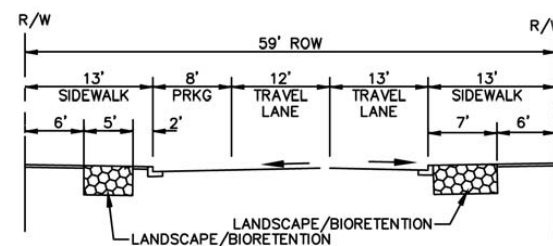
Mid-Block Break - 26' Min ROW



Mid-Block Break - 26' Min ROW



Residential Street



Mid-Block Break - 40' Min ROW

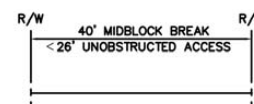


Figure 7N: Candlestick Point

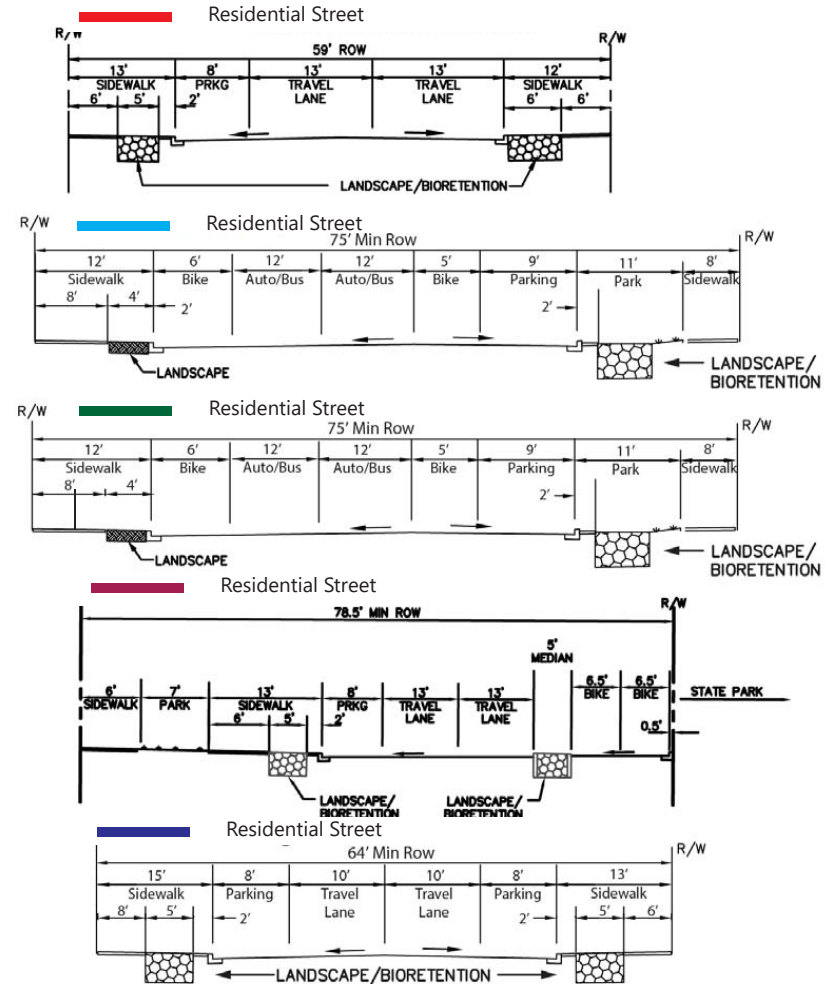
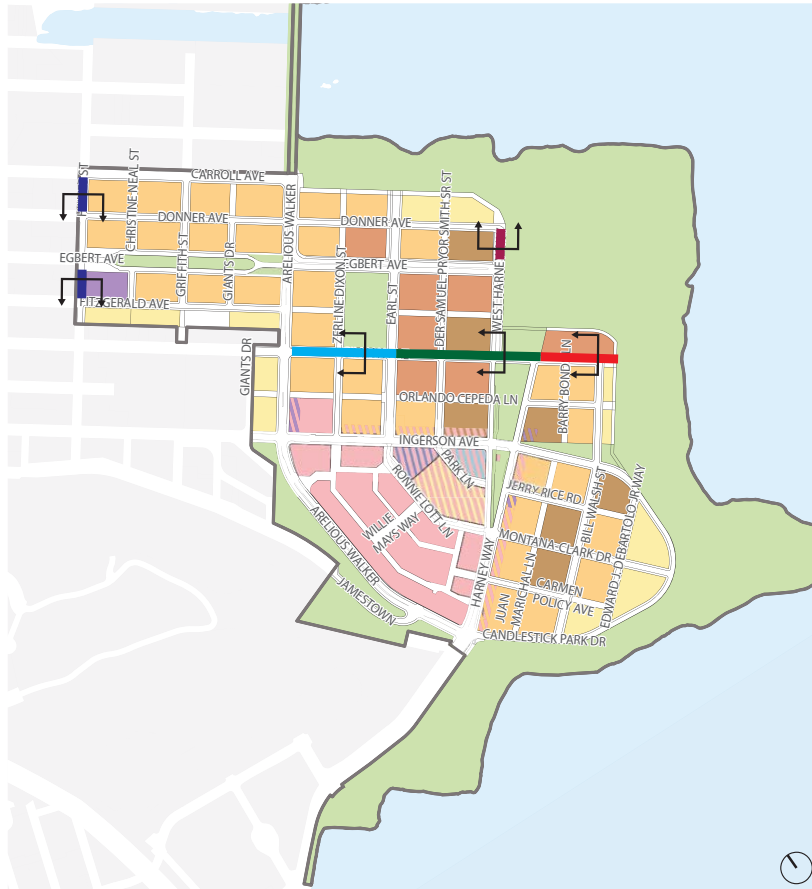
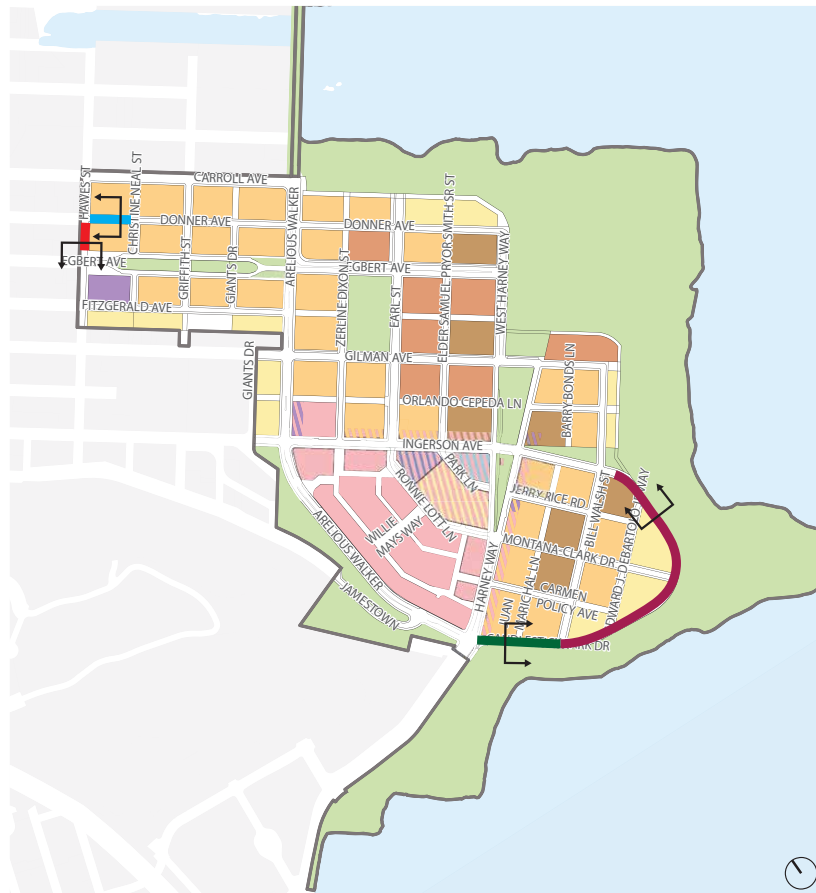


Figure 70: Candlestick Point



LAND USE	
 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE)	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

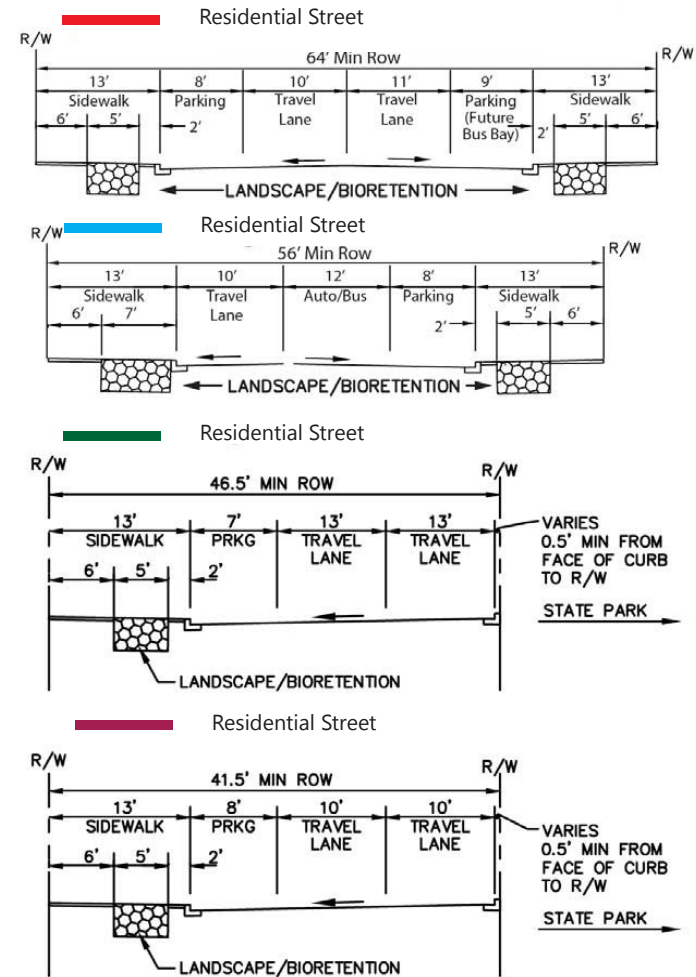
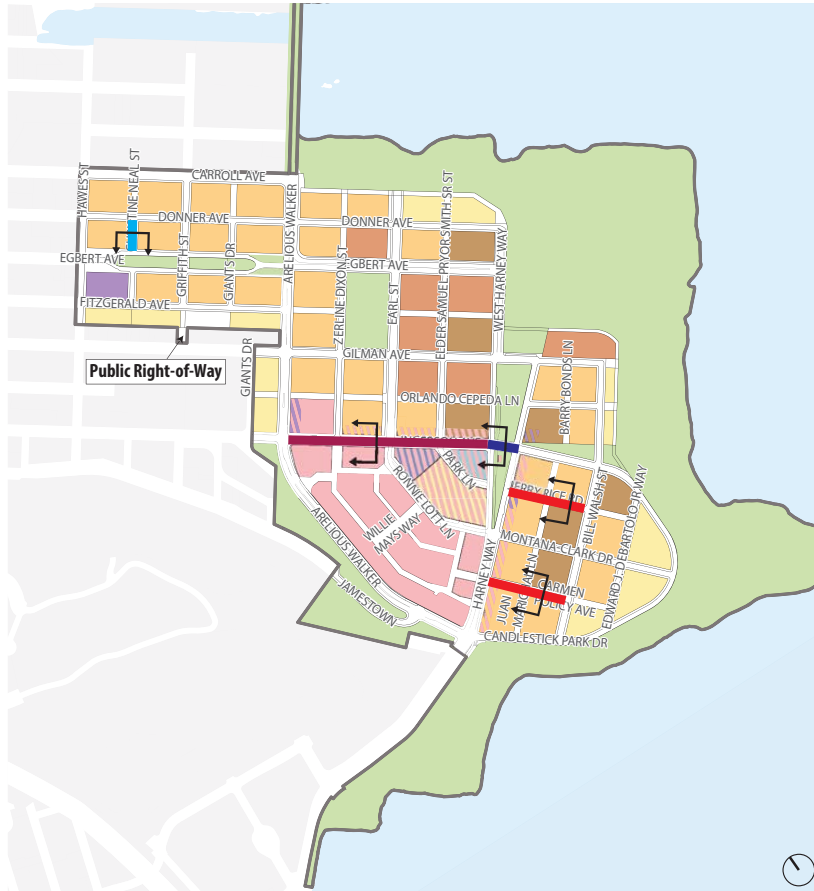


Figure 7P: Candlestick Point



LAND USE	
 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

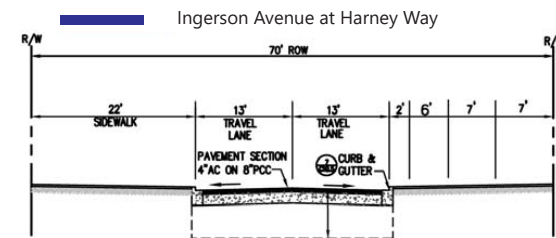
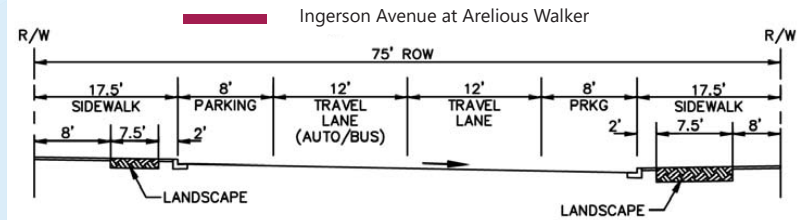
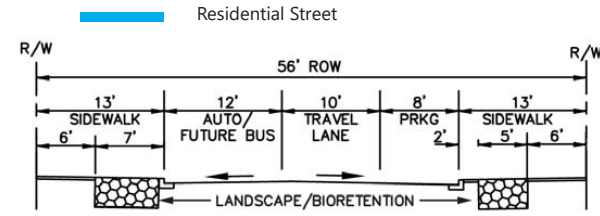
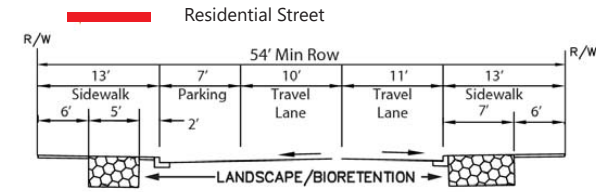


Figure 7Q: Candlestick Point



- | | | | |
|---|--|---|---|
|  | RESIDENTIAL DENSITY I
(15-75) UNITS PER ACRE |  | INFRASTRUCTURE / UTILITY (I / U) |
|  | RESIDENTIAL DENSITY II
(50-125) UNITS PER ACRE |  | PARKING (SP) |
|  | RESIDENTIAL DENSITY III
(210-175) UNITS PER ACRE |  | COMMUNITY USE (CU) |
|  | RESIDENTIAL DENSITY IV
(175-285) UNITS PER ACRE |  | PARKS AND OPEN SPACE |
|  | ARTIST (ART) |  | RETAIL* (RT) |
|  | COMMERCIAL (CM)
(INCLUDES R&D, OFFICE, HOTEL) |  | HOTEL (HT) |
| | |  | PERFORMANCE VENUE (PV) |

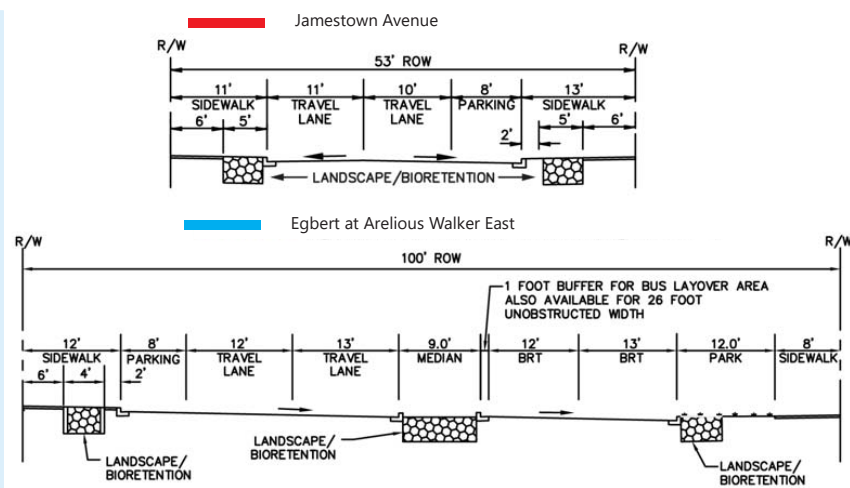


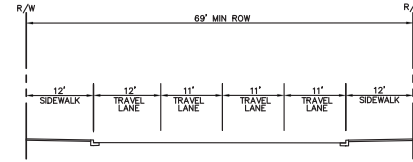
Figure 7R: Hunters Point Shipyards



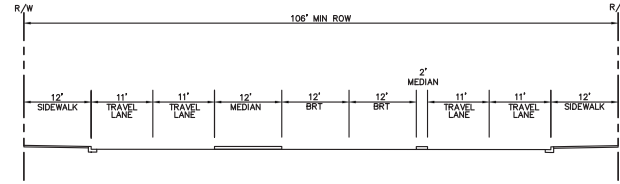
LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I/U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

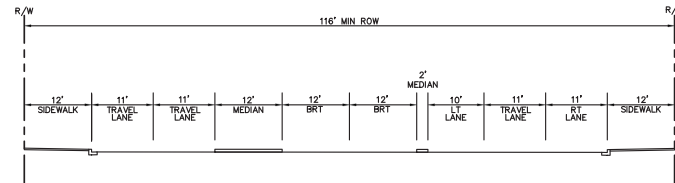
Crisp Road, west of Arelious Walker



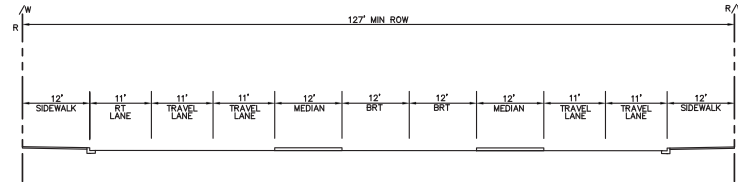
Crisp Road, east of Arelious Walker



Crisp Road, west of Donahue Street



Crisp Road, east of Donahue Street



Crisp Road, between I Street and H Street

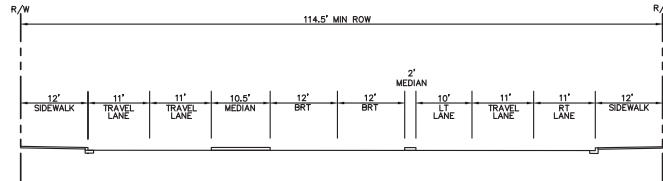


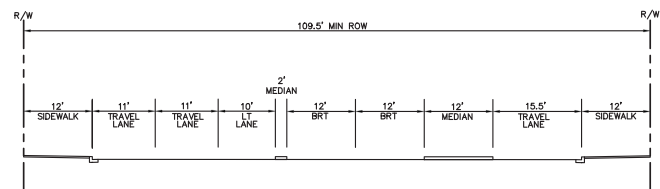
Figure 7S: Hunters Point Shipyard



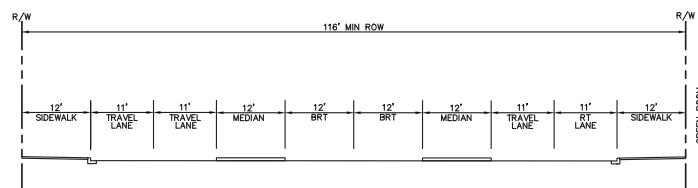
LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I/U)
 RESIDENTIAL DENSITY II (90-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

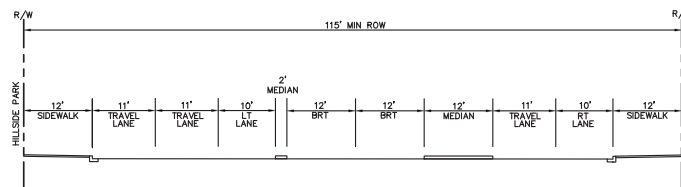
Crisp Road, east of H Street



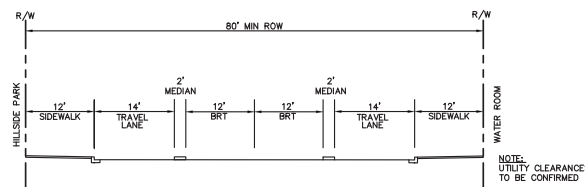
Crisp Road, west of Cochrane Street



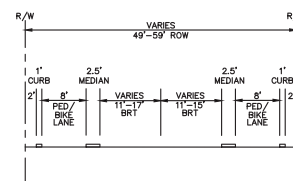
Crisp Road, east of Cochrane Street



Crisp Road, between Morrell Street and Fisher Avenue



Arelious Walker, south of Crisp Road ①



NOTE:
UTILITY CLEARANCES
TO BE CONFIRMED

Figure 7T: Hunters Point Shipyard

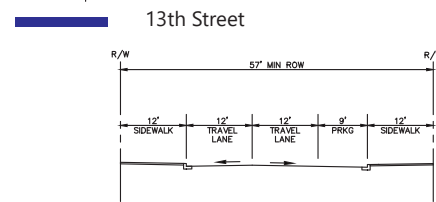
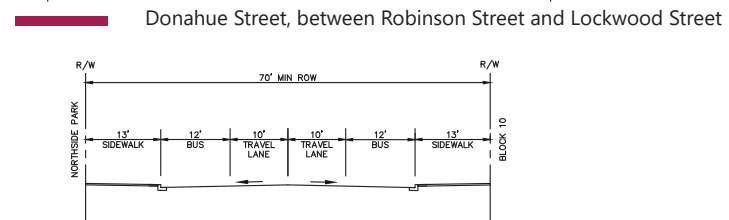
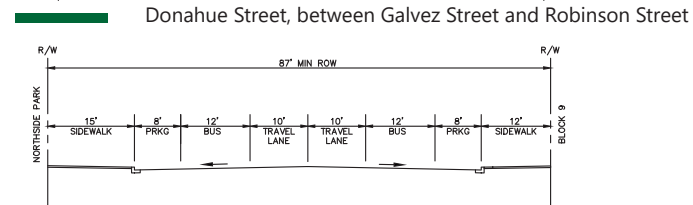
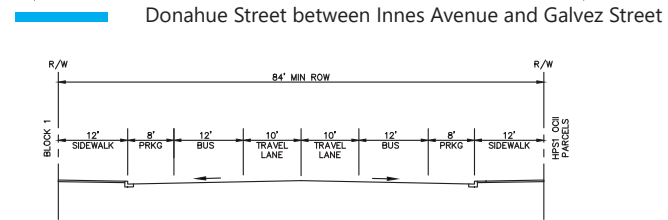
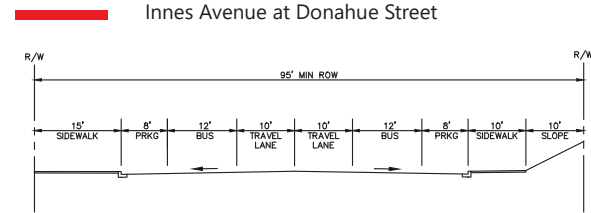
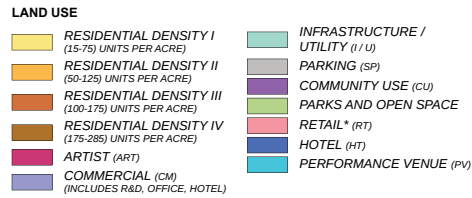
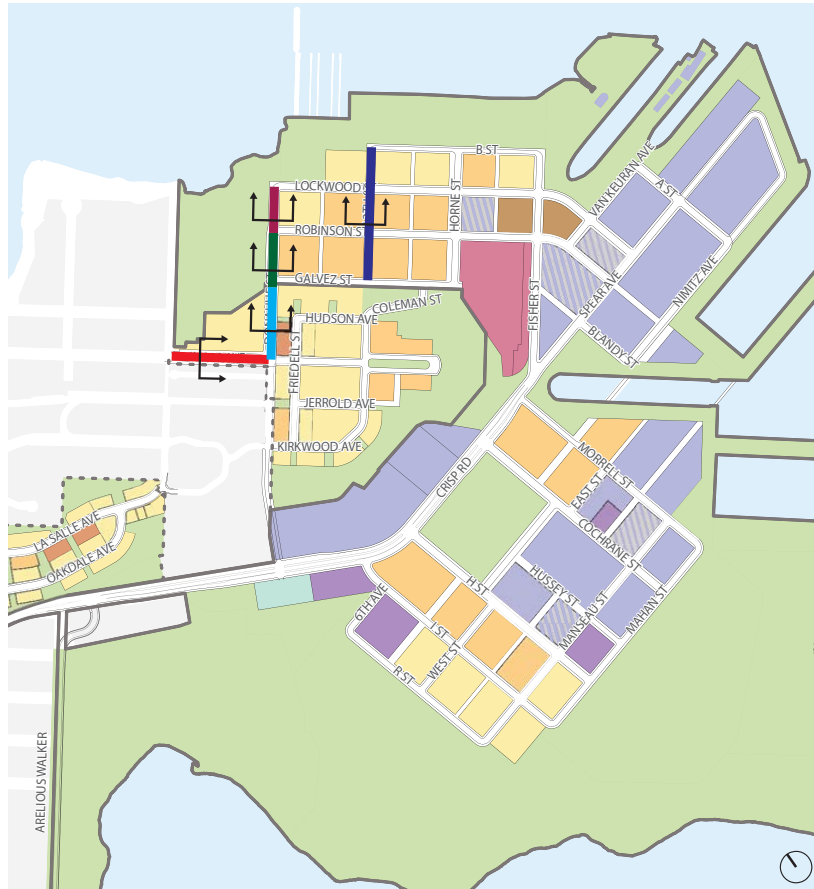
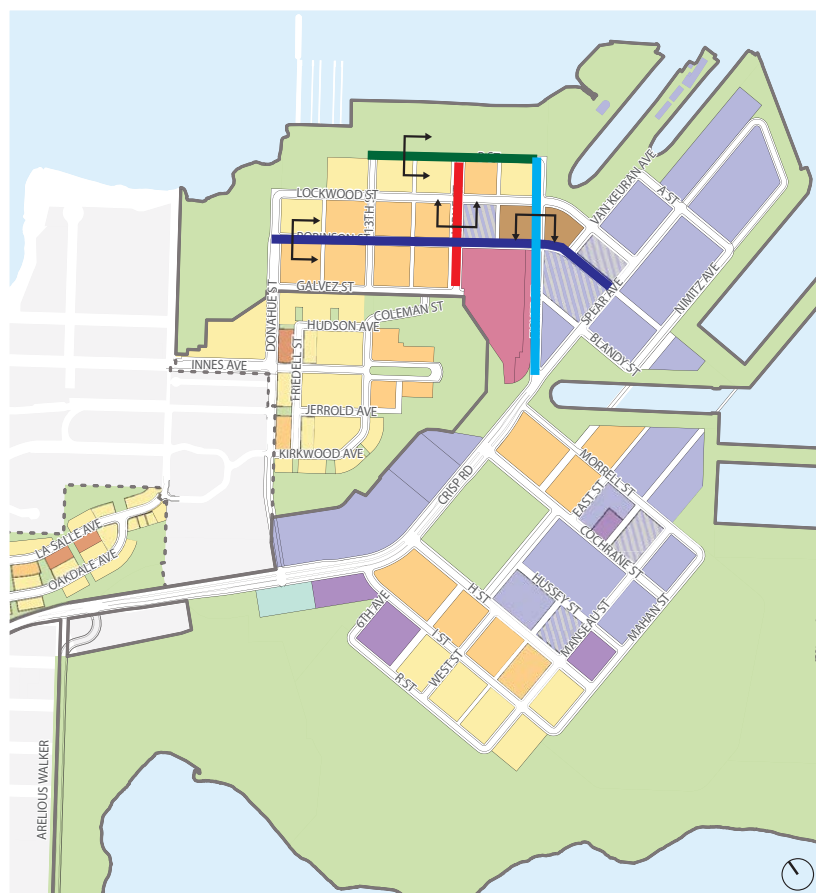
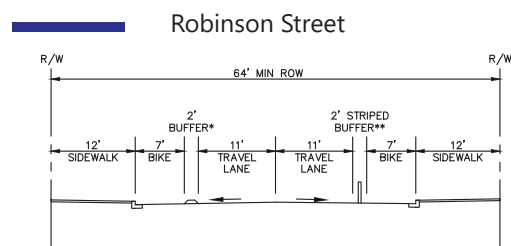
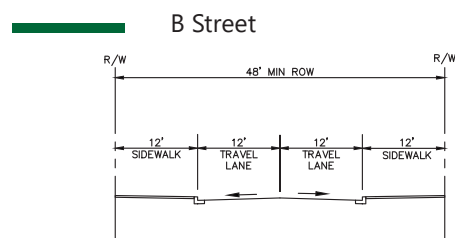
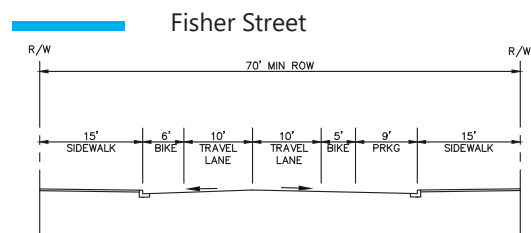
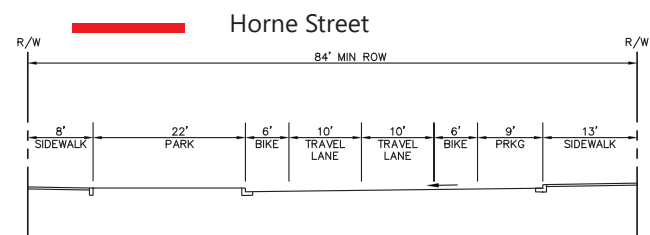


Figure 7U: Hunters Point Shipyard



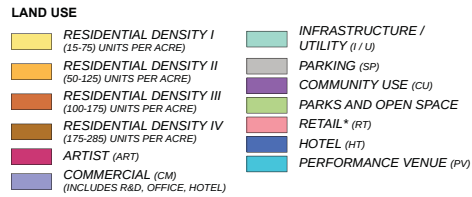
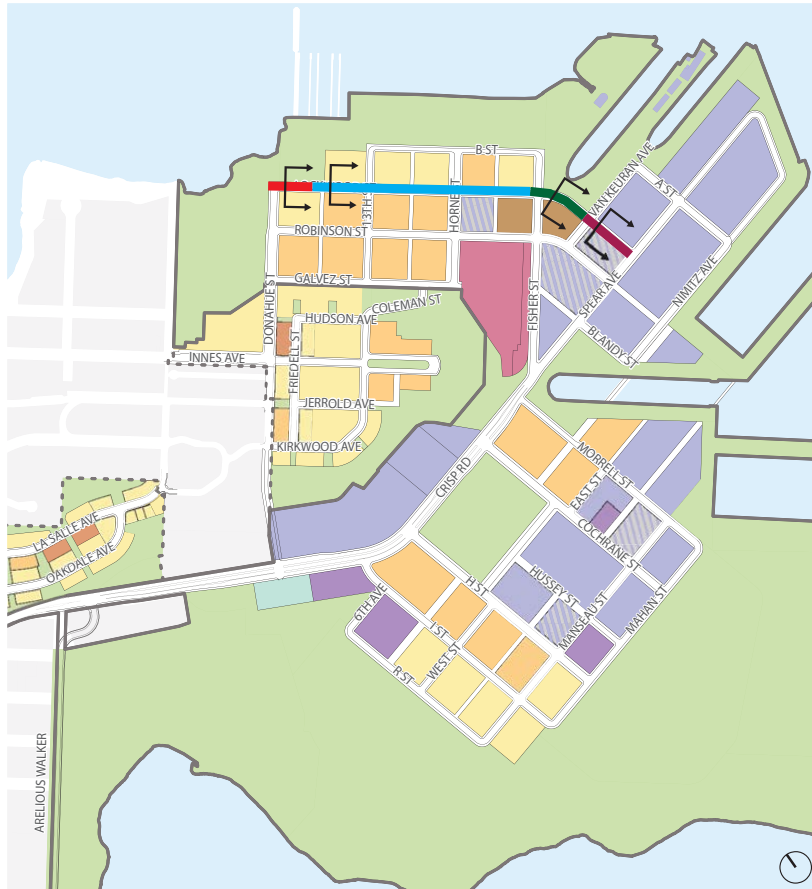
LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

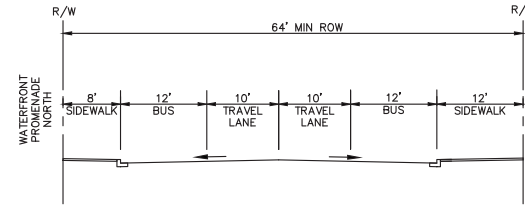


NOTE:
*6" RAISED MEDIAN, OR STRIPED BUFFER WHERE REQUIRED BY SFPUC FOR UTILITY CLEARANCE
** STRIPED BUFFER WITH SAFE HIT POSTS. CURB MAY BE IMPLEMENTED IF STRIPED BUFFER NOT REQUIRED BY SFPUC FOR UTILITY CLEARANCE

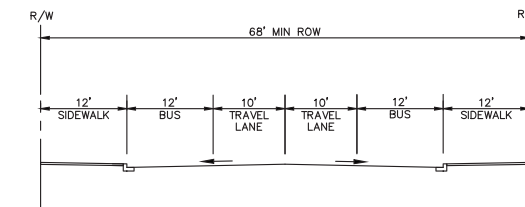
Figure 7V: Hunters Point Shipyard



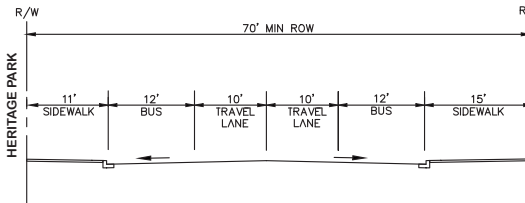
Lockwood Between Donahue and Midblock



Lockwood Between midblock and Fisher Ave



Lockwood Between Fisher Ave and Van Keuran



Lockwood Between Van Keuran and Spear

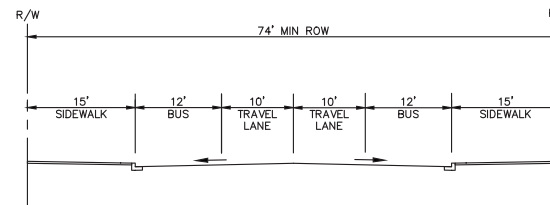
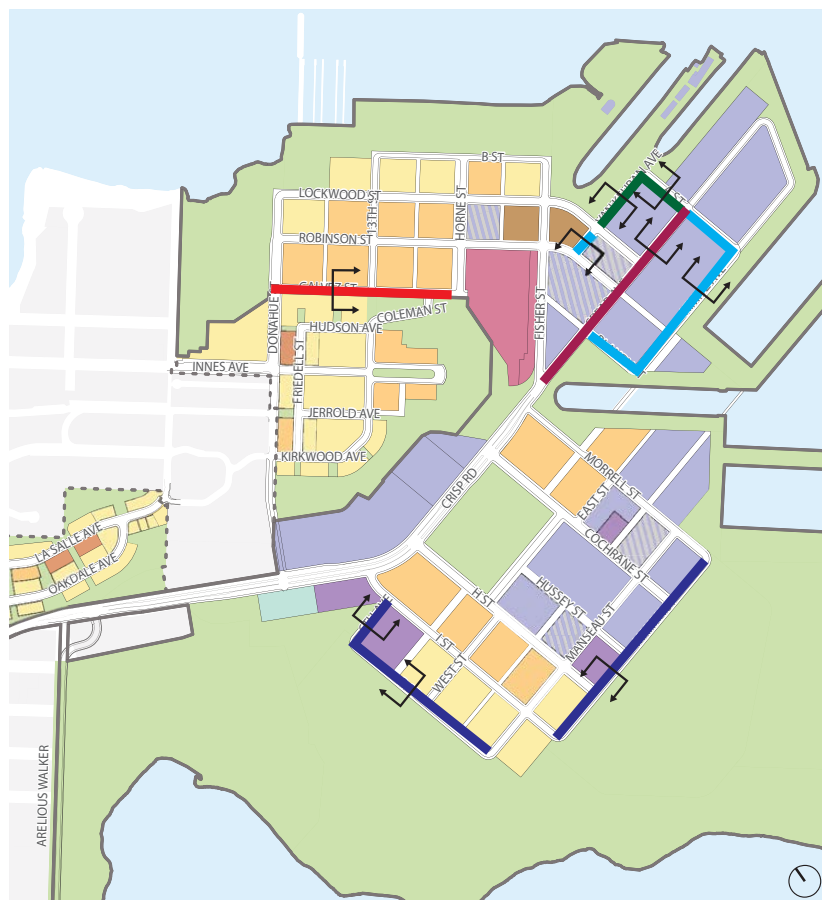


Figure 7W: Hunters Point Shipyard



LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

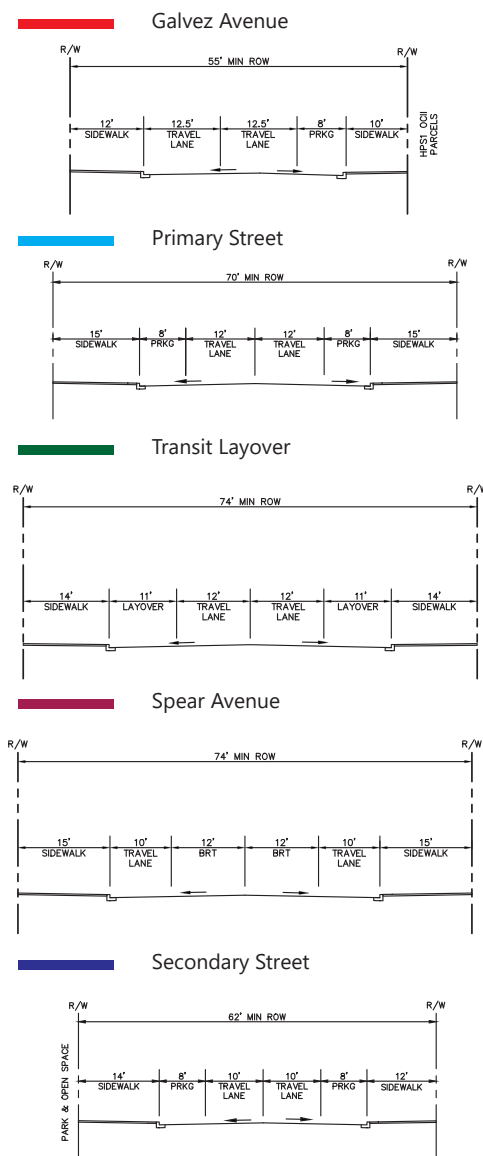
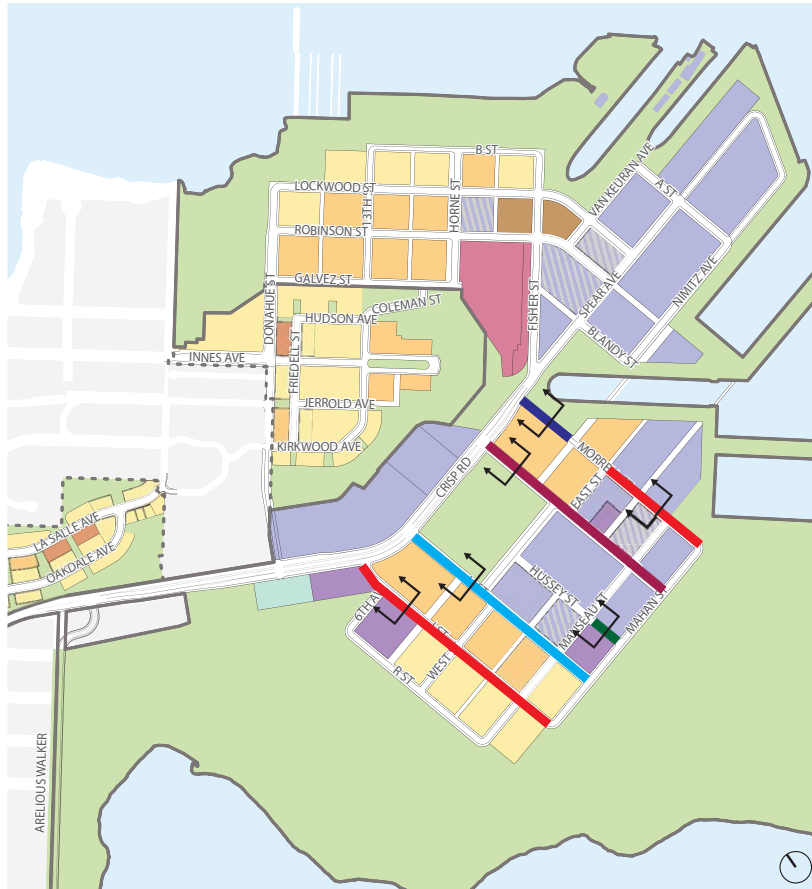


Figure 7X: Hunters Point Shipyard



LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I/U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

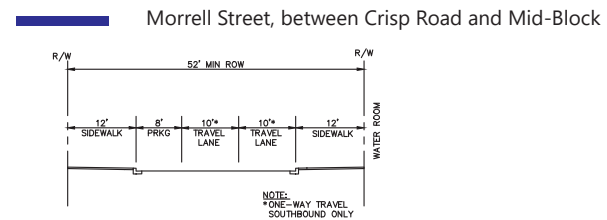
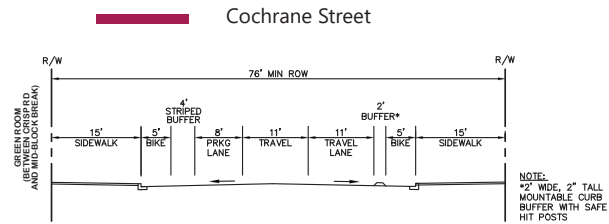
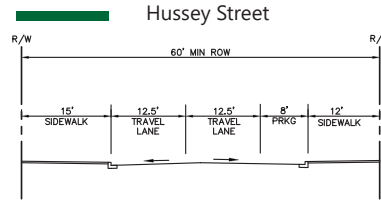
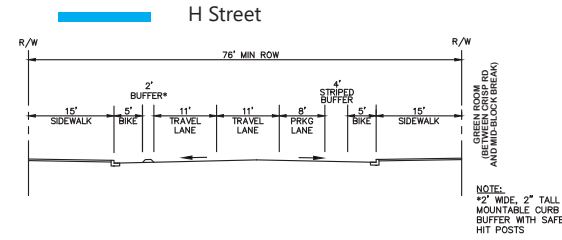
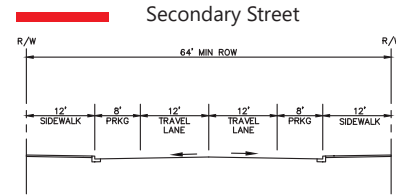
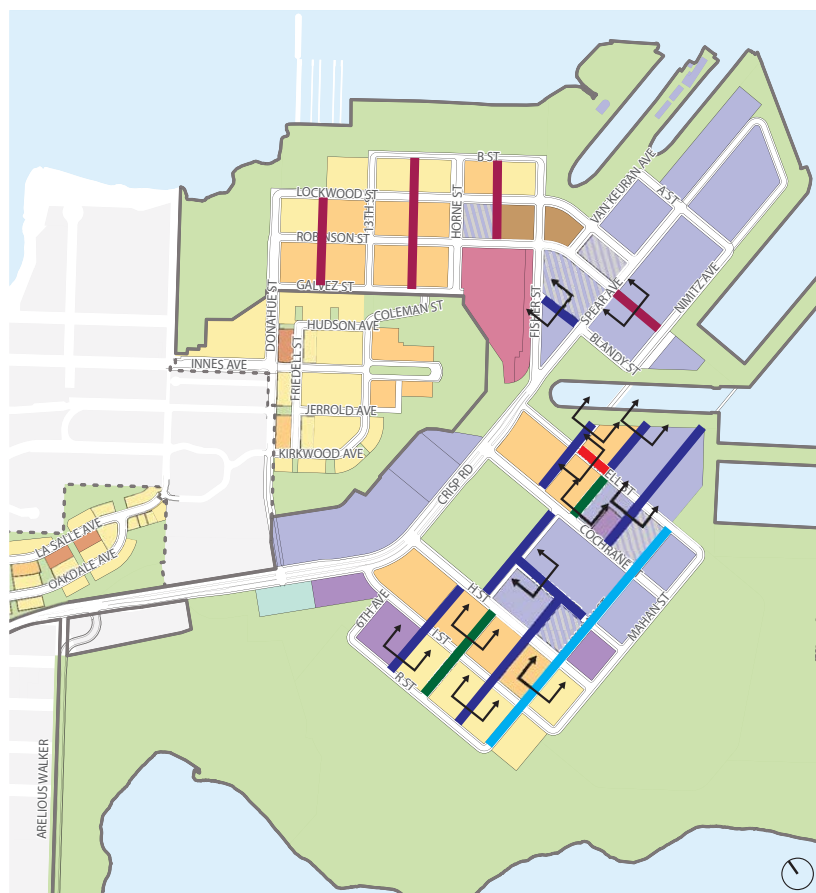


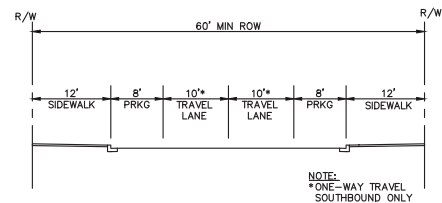
Figure 7Y: Hunters Point Shipyard



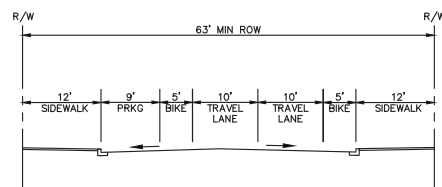
LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I / U)
 RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

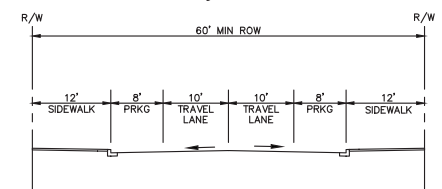
Morrell Street, between Mid-block and East Street



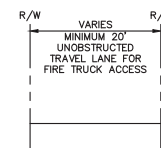
Manseau Street



Secondary Street



Private Mid-block Break (20' Minimum Emergency Vehicle Access)



Private Mid-block Break (26' Minimum Emergency Vehicle Access)

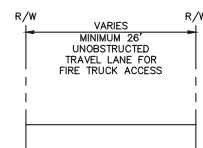
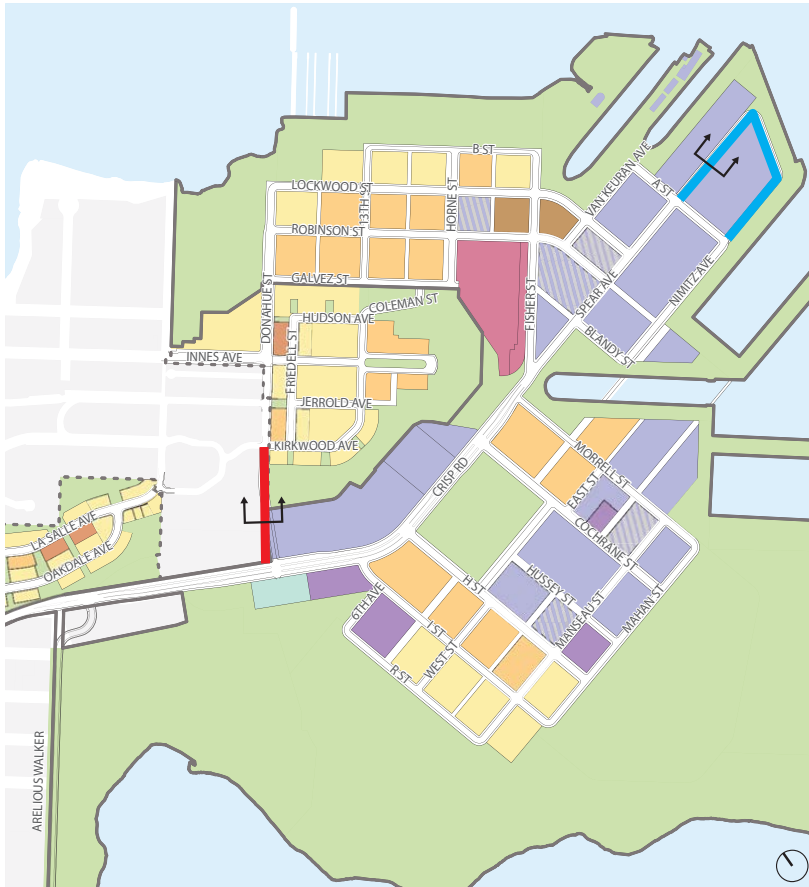


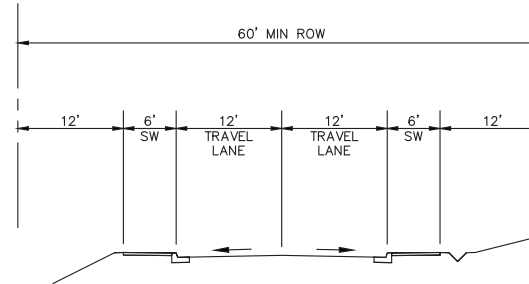
Figure 7Z: Hunters Point Shipyard



LAND USE

 RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE	 INFRASTRUCTURE / UTILITY (I/U)
 RESIDENTIAL DENSITY II (90-125) UNITS PER ACRE	 PARKING (SP)
 RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE	 COMMUNITY USE (CU)
 RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE	 PARKS AND OPEN SPACE
 ARTIST (ART)	 RETAIL* (RT)
 COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)	 HOTEL (HT)
	 PERFORMANCE VENUE (PV)

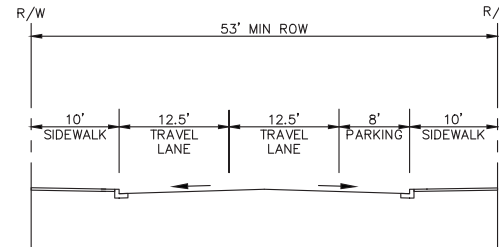
Donahue Street, north of Crisp



NOTE:
THE EXTENSION OF DONAHUE
STREET IS NOT VITAL TO SITE
CIRCULATION. THIS SECTION
MAY NOT BE CONSTRUCTED
DEPENDING ON FEASIBILITY.

Note: The Developer is pursuing the extension of Donahue Street to Crisp Road. However, the Developer is not obligated to complete the extension of Donahue Street as it relies on several external factors

Commercial Street





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, reconfiguration 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. **Figures 9 and 10** illustrate the proposed cross-sections.¹ 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 Arelious Walker Drive. The roadway would also have a 10-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/Arelious 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. **Figure 11** illustrates the extent of the improvements along Innes Avenue. 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 Arelious Walker Drive from Candlestick Point to Hunters Point Shipyard. **Figure 12** illustrates the plan view and cross-section view of the bridge. 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.

6. Donahue Street Extension

FivePoint is currently pursuing the extension of Donahue Street; however, the feasibility of the roadway extension is dependent on several external factors and is not an obligation of the project. If extended, Donahue Street, which currently connects Lockwood Street to La Salle Avenue, will be extended south to connect to Crisp Road. The roadway extension will provide a direct connection to and from the Shipyard North neighborhood and the Shipyard South neighborhood. The roadway extension would include up to two 12-foot travel lanes and sidewalks on either side.

¹ Proposed Harney Way cross-sections are draft proposals and may change as designs progress.

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); thus, the timing of these improvements are uncertain. The improvements are shown on **Figure 8** and described below.

7. 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.

8. 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. The City of Brisbane, in coordination with Caltrans, completed a Project Study Report (PSR) in 2012 which proposed a preferred alternative where the Geneva Avenue / Harney Way crossing is over U.S. 101. A separate environmental review and approvals by Caltrans, the City of Brisbane, SFCTA, 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.

9. 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.

Figure 8: Proposed Roadway Improvements

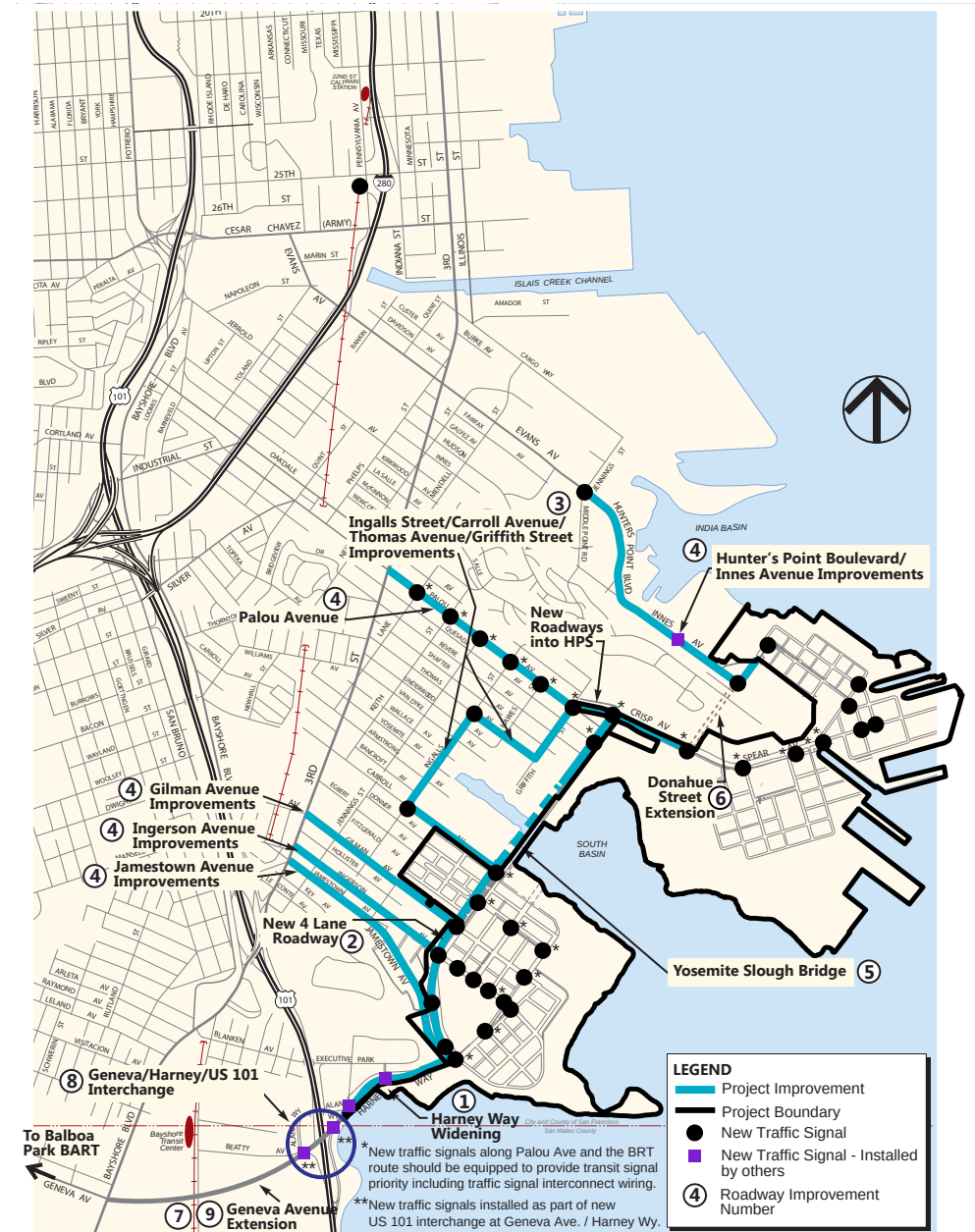


Figure 9: Proposed Harney Way Initial Configuration

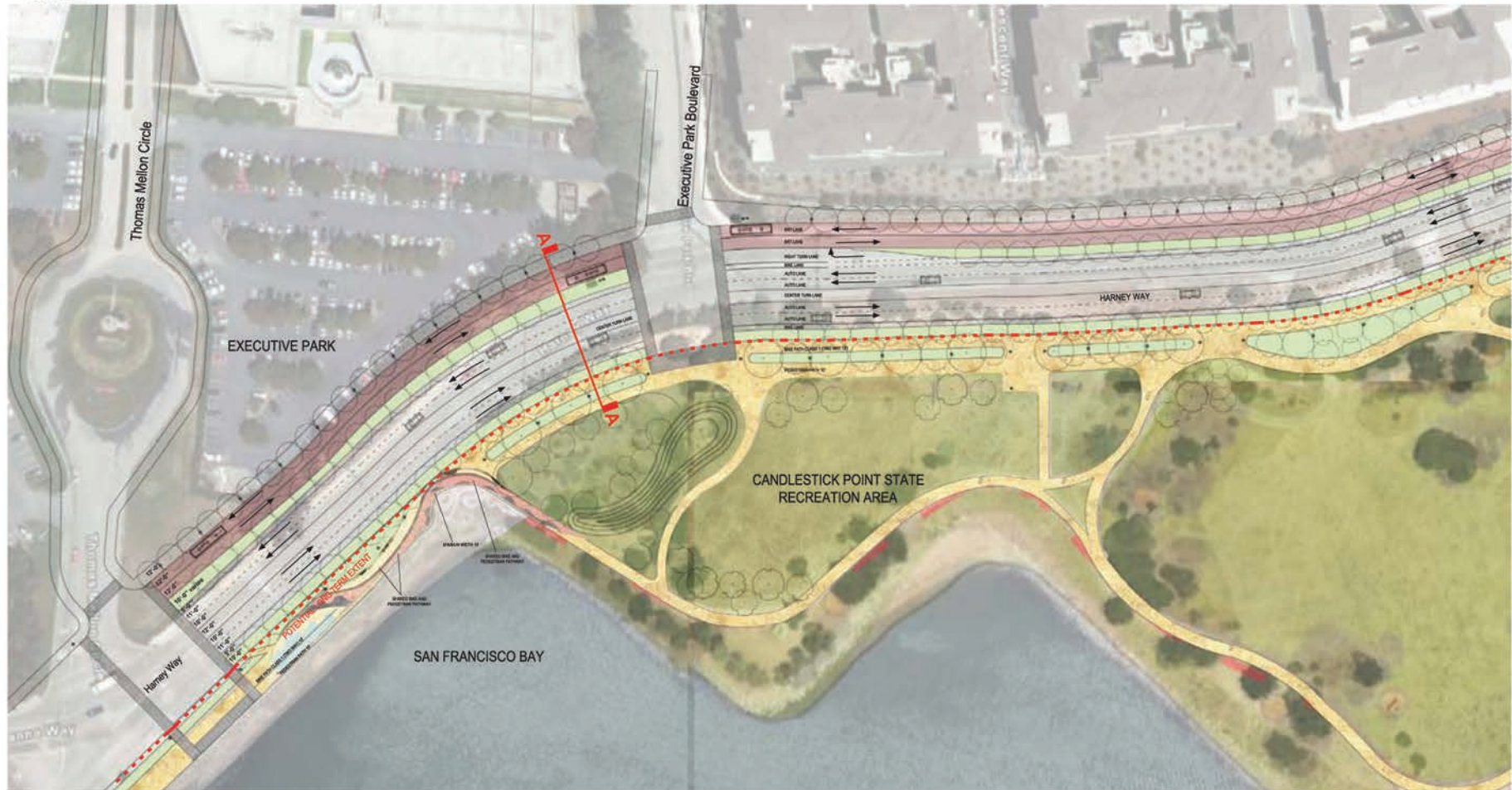
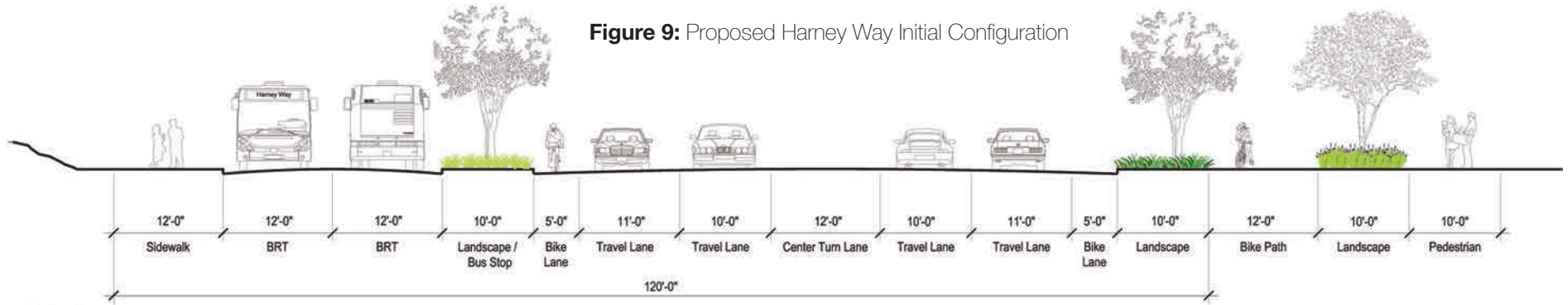
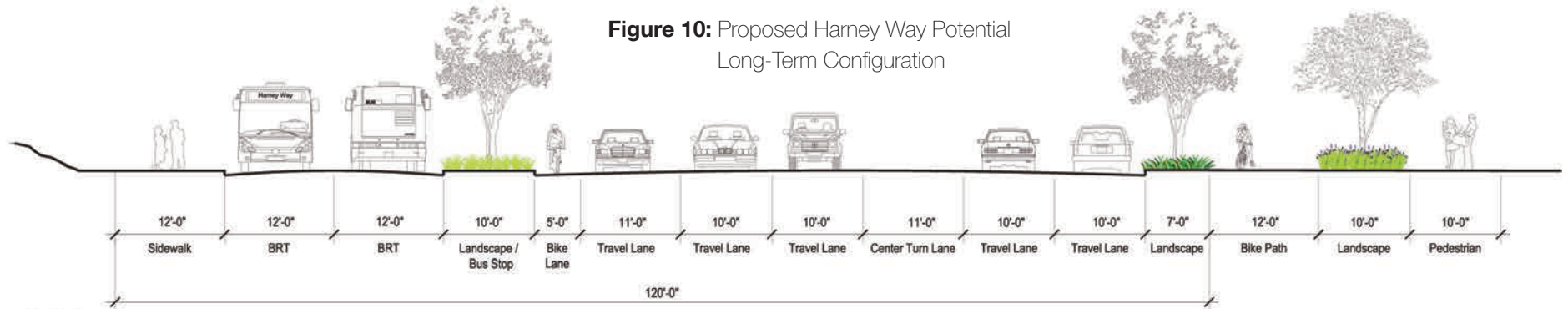


Figure 10: Proposed Harney Way Potential Long-Term Configuration



Section A



Figure 11: Innes Avenue Improvements

Proposed Scope of Improvements:

- The Innes corridor is planned to be reconstructed between Donahue and Jennings Street
- Traffic signals and left-turn pockets are planned to be installed to provide access to Build Inc. India Basin Development
- Street lights that need to be replaced are planned to be upgraded and a continuous sidewalk will be constructed on both sides of the street
- The work is planned to include streetscape improvements, which can include new street trees, benches, bicycle racks, and trash receptacles

The work does not include:

- Undergrounding of utilities
- Irrigation system for the street trees
- Stormwater planters

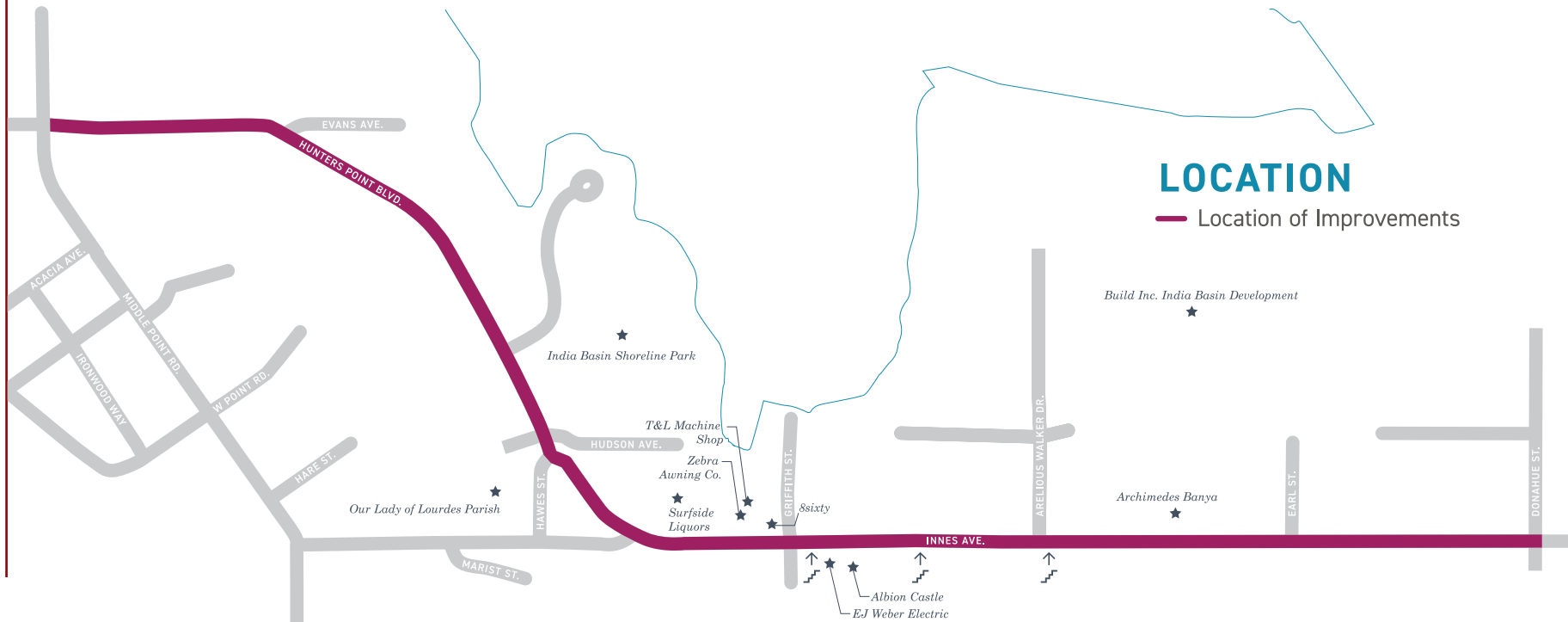
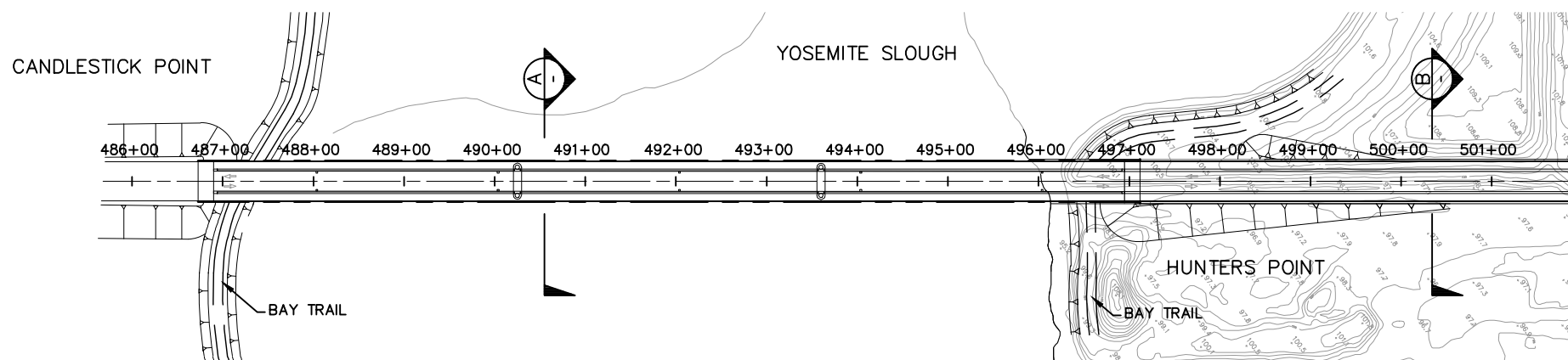
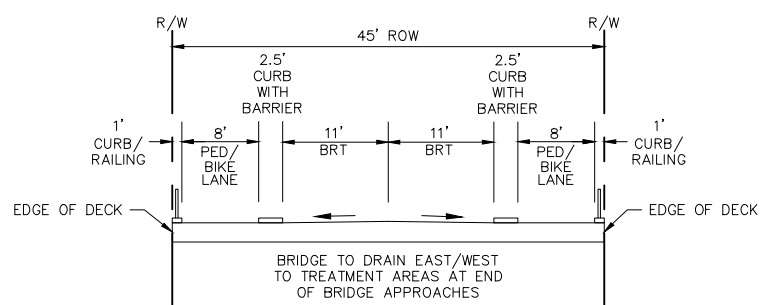


Figure 12: Yosemite Slough Bridge



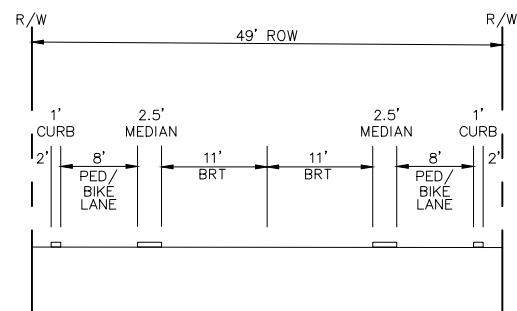
YOSEMITE SLOUGH BRIDGE PLAN

NTS



SECTION A

NTS



SECTION B

NTS



CHAPTER FIVE: 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 Guidelines⁴, 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 4**.

Table 4: SD-3 Calculated Mode Split – Weekday PM Peak Hour

Mode	SD-3 Mode Split ¹ (Inbound and Outbound Trips)
Auto	66%
Transit	16%
Walk	16%
Bike	2%
Total	100%

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.

⁴ 2002 Transportation Impact Analysis Guidelines for Environmental Review. Planning Department, City and County of San Francisco. October, 2002.

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 5** 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 5: Project Mode Split Goal - Weekday PM Peak Hour

Mode	SD-3 Mode Split	Project Travel Behavior Goal	Difference
Auto	66%	45%	-21%
Transit	16%	30%	+14%
Walk	16%	20%	+4%
Bike	2%	5%	+3%
Total	100%	100%	

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;
- 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.

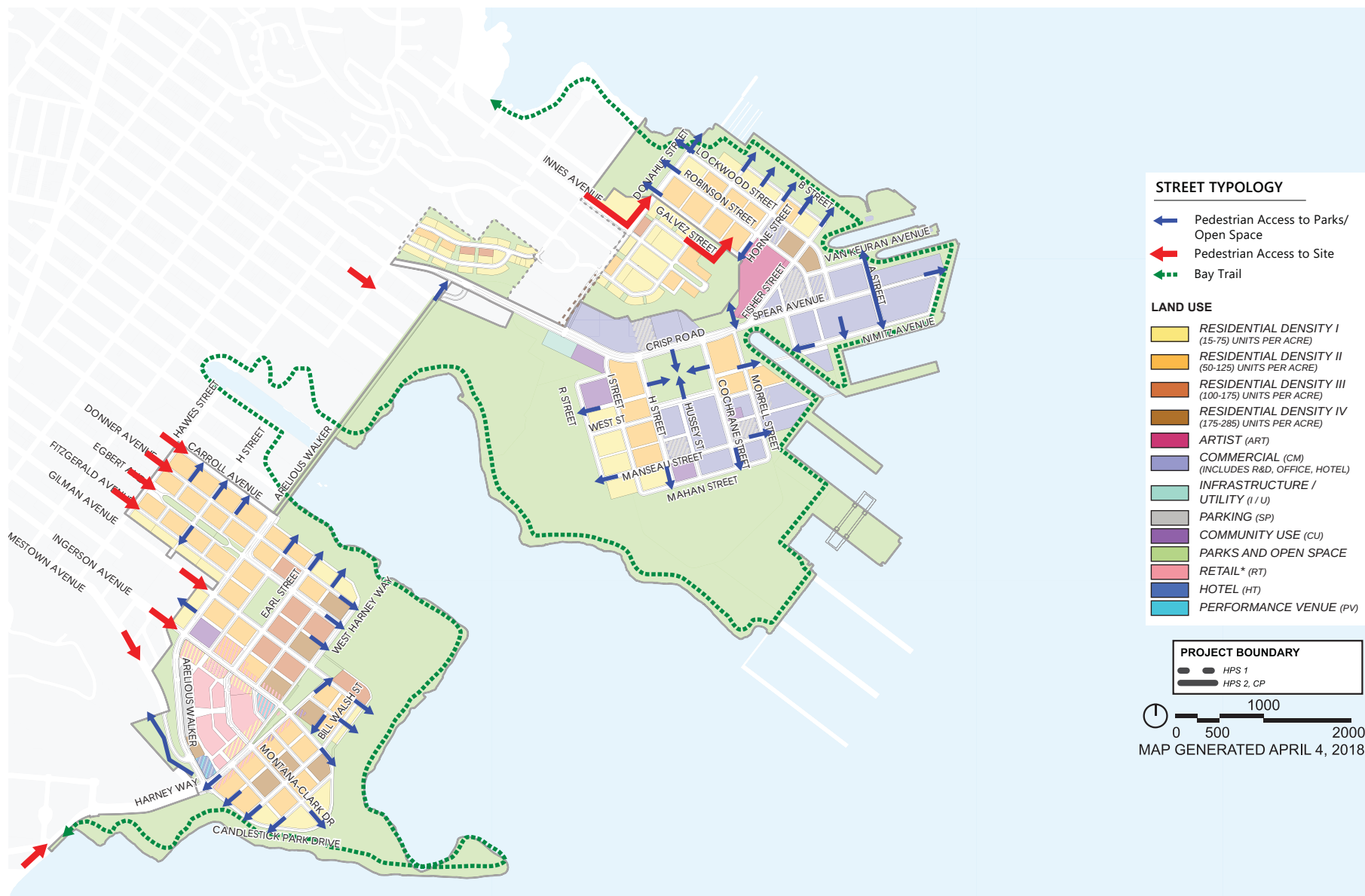
Maximize Pedestrian Travel

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 13**. 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;
- 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.

Figure 13: Pedestrian Circulation Plan



Maximize Bicycle Travel

The existing bicycle routes in the project vicinity, illustrated in **Figure 14**, 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 15**. To support bicycle travel, support facilities such as bicycle parking, in both residential and commercial developments (such as racks, indoor/long-term parking, lockers, and showers), as well as bike share stations will be included in both the Candlestick Point and Hunters Point Shipyard sites, as illustrated in **Figure 16**. Appendix A of the TDM Plan, included in this Plan's appendix documents assumptions for **Figure 16**. 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 (Class IV) will be provided through the project, connecting the Candlestick Point and Hunters Point Shipyard sites. The two-way cycle track will terminate at the south side of the Yosemite Slough Bridge where it will turn into a Class I shared facility. The Class I facility will bisect the Shipyard South neighborhood and connect to other bicycle facilities on-site. The Class I and Class IV facilities will provide 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 be designed for a posted speed of 25 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
- Discounted space will be provided to encourage a bicycle station offering rentals, repairs, and storage to locate at Candlestick Point/Hunters Point Shipyard.

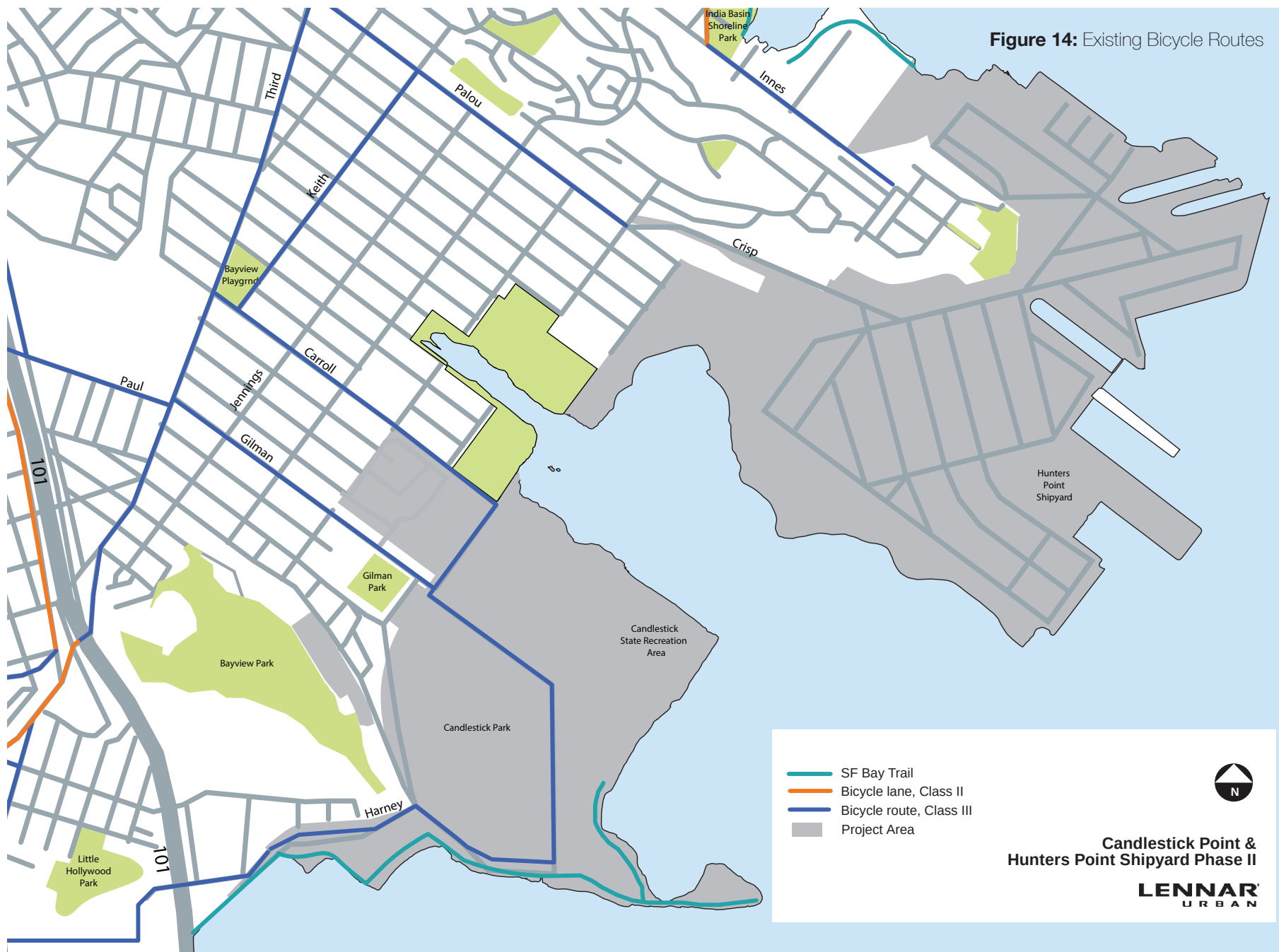


Figure 15: Proposed Bicycle Routes

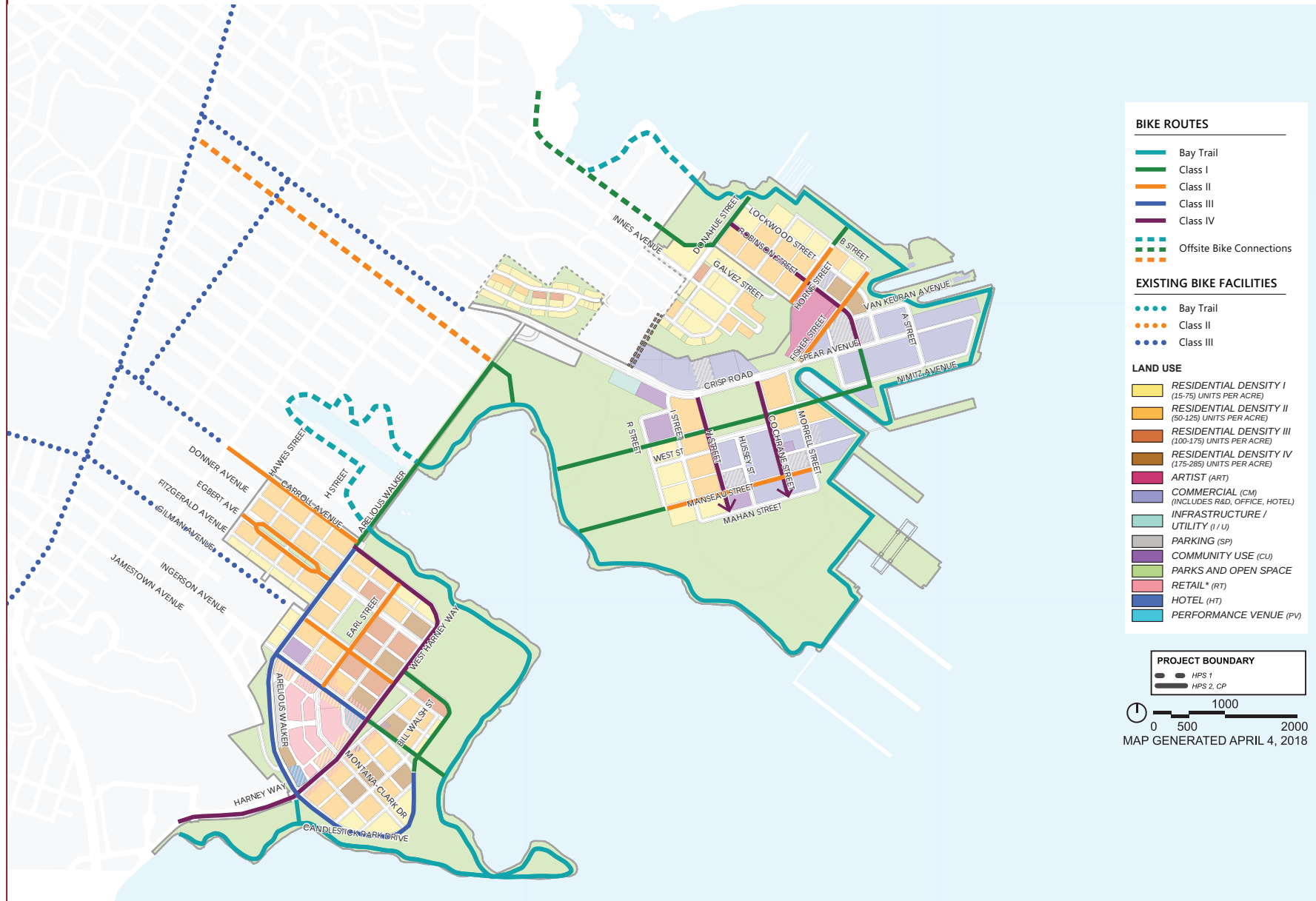
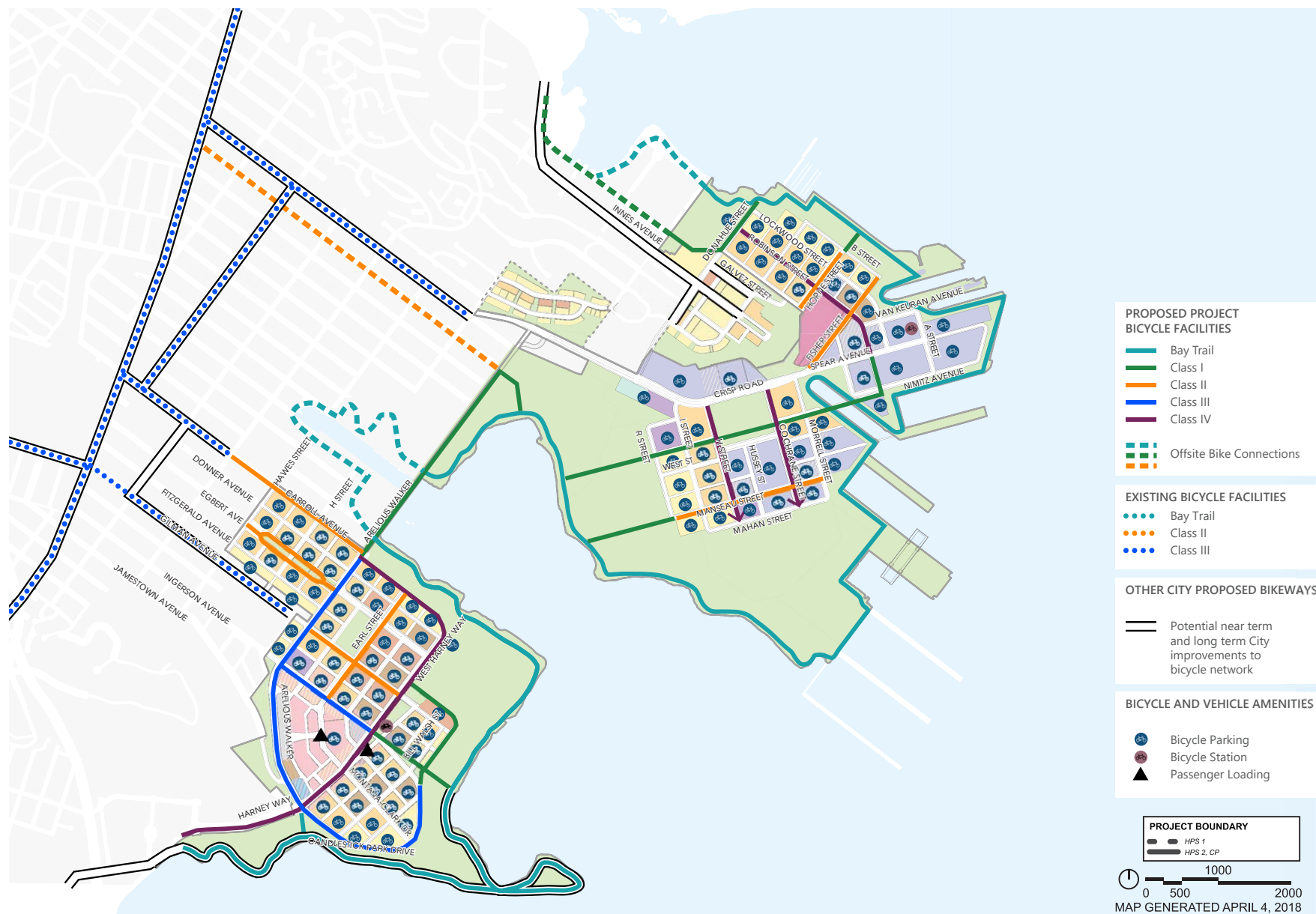


Figure 16: Bicycle Support Facilities





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 28R) 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 and eventually become 100 percent emission-free.

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 17**, are described in the list to follow. Appendix A of the TDM Plan, included in this Plan's appendix documents assumptions for **Figure 17**.

Figure 17: Proposed Transit Improvements¹



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 28R) service, new lines would be introduced to serve these corridors as well (see D and E below). The proposed expansion is summarized in **Table 6**.

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. 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.

¹ The transit service plan is continually reviewed and may be updated at the discretion of the SFMTA.

C. Hunters Point Shipyard Transit Center

The Hunters Point Shipyard Transit Center will serve the northern half of the project and would be located in the Shipyard R&D neighborhood along Spear Street, Lockwood Street, and Van Keuran Avenue. Along with bus bays, the facility will include shelters, ticketing kiosks, real-time transit information technology and operator restrooms. All 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 within a few blocks from the Shipyard Village Center retail street. Additionally, a ferry terminal and water taxi to accommodate water-based service to and from the project site is envisioned as potential transit expansion for the future.

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 28R) stops will be located throughout the Candlestick Point and Hunters Point Shipyard project site. At the BRT stops, platforms would be provided or curbside space could be specifically designated for BRT stops. The stops will include shelters, ticketing kiosks, real-time transit information and other amenities. **Figure 16** illustrates proposed stop locations within the project site.

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.

F. Water Taxi

The Project Sponsor is considering the potential for water taxi, as the site fronts the Bay and offers opportunities to include water-based transportation. The potential for a water taxi will be considered as the project continues to develop.

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.

G. Bayshore Transit Center

The Bayshore Transit Center is a multi-modal facility that will connect different modes of transportation and better serve the future transportation demand in the bi-county area. 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.



H. Oakdale Caltrain Station Improvements

Until 2005, the Bayview District was served by the Paul Avenue Station, which has since been closed. The San Francisco County Transportation Authority (SFCTA) is considering a new station serving this area at Oakdale Avenue. This project is not being actively pursued at this time; however, the improvements are still a possibility. 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.

I. 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 FORWARD

Muni has proposed changes to several of the lines that would serve Candlestick Point and Hunters Point Shipyard as part of Muni Forward, formerly known as the Transit Effectiveness Project (TEP). Service extensions and modifications beyond the Muni Forward proposals would be required to serve the project site. **Table 6** presents each existing line proposed to serve Candlestick Point and Hunters Point Shipyard, the line's equivalent under the Muni Forward proposals, and the modification to the existing or equivalent line that would be required to provide service to the project.

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;
- An Emergency Ride Home Program 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.

Table 6: Muni Service to the Project – Existing and Muni Forward Equivalents

Existing Muni Line	Equivalent under Muni Forward Proposals and Summary of Changes	Additional Proposed Service Enhancements
23 – Monterey	18 – 46th Ave: would be combined with Line 23, providing direct service to the Outer Sunset and Outer Richmond	Same as proposed Muni Forward service ¹
24 – Divisadero	24 – Divisadero: would be modified to serve the Mission and the Marina Districts	Extension along Palou Ave, Crisp Road, and Spear Ave to Hunters Point Shipyard Transit Center. Additionally, the 24 is not expected to have OCS wire extension, thus, the project will not include OCS through the site.
28R – 19th Ave/ Geneva Limited (BRT)	28R – 19th Ave Limited: would be modified to serve Balboa Park BART. Service would extend to 9 PM.	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
29 – Sunset	29 – Sunset: minor changes only	Extension along Gilman Ave to Harney Way
44 – O'Shaughnessy	44 – O'Shaughnessy: no changes	Extension along Innes Ave to Hunters Point Shipyard Transit Center
48 – Quintara to 24th St	48 – Quintara to 24th St: would cover portion of Line 19 on Evans and Innes	Extension to Hunters Point Shipyard Transit Center
54 – Felton	54 – Felton: minor changes only	Same as proposed Muni Forward service
T – Third (light rail)	T – Third: increase frequency and capacity and extend into Chinatown via the Central Subway	Same as proposed Muni Forward service
Candlestick Point Express (CPX)	Not proposed in Muni Forward	Provide new express bus service between Candlestick Point and Downtown San Francisco
Hunters Point Express (HPX)	Not proposed in Muni Forward	Provide new express bus service between Hunters Point Shipyard and Downtown San Francisco
Source: San Francisco Municipal Transportation Agency – March 2009		

¹ The 23 Monterey service may extend into HPS until SFMTA's fleet is modified to eliminate the need for OCS wires extended into the HPS site, at which point the 24 Divisadero would be extended and the 23 Monterey would return to its original (existing) routing.

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 seamlessly with the ongoing plans at nearby developments. The proposed TDM program will target residents, employees and visitors, and could include the strategies described in the following sections.

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.

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 Emergency 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.

TDM MONITORING

As stated, the project goal is to have no more than 45 percent of all person-trips in the weekday evening peak hour made by auto (exclusive of carpool, vanpools and shuttles) at buildout. Achieving this goal will require substantial investments in transit service from SFMTA as well as an aggressive TDM Plan implemented at the site. As part of the project's TDM Plan, the site's TC will conduct annual monitoring of travel behavior to assess the extent to which the project is achieving its auto mode split goal. Monitoring will be conducted separately at Candlestick Point and Hunters Point Shipyard and will begin when the first major phase of development at each of those sites, respectively, reaches 90 percent occupancy.

and the associated transit service has been in operation for a minimum of six months. Specifically, the associated transit service improvements expected to coincide with the issuance of certificates of occupancy of Major Phase 1 include:

- Hunters Point Express at 20 minute frequency
- 23-Monterey extension at 20 minute frequency
- 48-Quintara extension at 15 minute frequency
- 44-O'Shaughnessey extension at 10 minute frequency
- Candlestick Point Express at 10 minute frequency
- 29-Sunset extension at 5 minute frequency

The project may not meet its ultimate goal of fewer than 45 percent of all trips made by auto prior to full buildout of the project (during which time the full range of transit service to encourage transit trips and complimentary land uses to encourage walk trips may not be in place). If not, the Transportation Coordinator will meet and confer with SFMTA staff to determine whether adjustments should be made to the TDM Plan, or whether additional planned development and associated transit service improvements are likely to result in the project meeting its goal.

At project buildout, if monitoring demonstrates that the project is not meeting its goal, the Transportation Coordinator will meet and confer with SFMTA staff to consider different or additional TDM or Transit Measures to encourage travel patterns that more closely align with goal attainment.

SPECIAL EVENTS TDM ELEMENTS

The impact of events held at performance venues will be monitored to determine opportunities for applying TDM to encourage the use of non-auto modes. TDM measures part of the project's TDM plan would remain in place during special events. The TDM program includes elements that could be applied to managing travel to and from special events. Details of the program will be considered once specific tenants or events are determined.



Proposed TDM elements that could be applicable during special events include:

- Designated event bicycle parking and/or valet in a secure area for event patrons to drop off and pick up their bicycles ;
- Passenger loading adjacent to or near the special event space;
- Preferred parking spaces should be reserved for carpool vehicles;
- Variable parking prices;
- Parking management (valet);
- Extended shuttle service during special events;
- Promotion of transit and bike share services on the Candlestick Point / Hunters Point Shipyard and event website



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 ride-matching services, with allocated parking spaces and reduced parking charges;
- Emergency 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 ride-matching 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 Shipyard 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 7**.



Table 7: Car Share Parking Space Requirements

Number of Residential Units	Number of Required Car Share Parking Spaces
0-49	0
50-200	1
201 or more	2, plus 1 for every 200 dwelling units over 200
Number of Parking Spaces Provided for Non-Residential Uses or in a Non-Accessory Parking Facility	Number of Required Car Share Parking Spaces
0-24	0
25-49	1
50 or more	1, plus 1 for every 50 parking spaces over 50

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 units⁵. 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.

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.

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.

⁵ This arrangement would not apply to the 1,655 “Agency Affordable” units, which are limited by tax-credit financing requirements.

⁶ Klipp, Luke. “The Real Costs of San Francisco’s Off-Street Residential Parking Requirements: An analysis of parking’s impact on housing finance ability and affordability.” (2004).

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 8 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.



Table 8: Maximum Parking Requirements

Land Use	Rate
Residential	1.0 per unit
Regional Retail	2.7 per 1,000 sq. ft. (CP) 3.0 per 1,000 sq. ft. (HP)
Neighborhood Retail / Maker Space	1.0 per 1,000 sq. ft. (CP) ¹ 3.0 per 1,000 sq. ft. (HP)
Office / Research and Development	1.0 per 1,000 sq. ft. (CP) 1.3 per 1,000 sq. ft. (HP)
Hotel	0.25 per room
Film Arts Center	1/8/10 seats
Artists' Space	1.0 per 2,000 sq. ft.
Community Uses	1.0 per 2,000 sq. ft.
Institution / School	0.07 per 1,000 sq. ft.
Marina Slips	0.6 per slip
Arena/Performance Venue	1/15 seats

¹ Grocery stores include a maximum parking ratio of 2.7 spaces per 1,000 sq. ft.

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. Additionally, if monitoring demonstrates that the project is not meeting its mode split goal, parking reductions may be considered as a strategy to reduce auto use.

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 9** and **Table 10**.

Table 9: Bicycle Parking Spaces for Residential Uses

Residential Use	Minimum Number of Bicycle Parking Spaces Required
Dwelling units in all Districts	For projects up to 100 dwelling units: 1 Class 1 space for every 1 dwelling units.
	For Projects over 100 dwelling units: 100 Class 1 spaces, plus 1 Class 1 space for every 4 additional dwelling units over 100.
Group/Senior Housing	1 Class 1 space for every 10 units.

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 10: Bicycle Parking Spaces for Non-Residential Uses¹

Land Use	Minimum Number of Bicycle Parking Spaces Required
Office / Research & Development	1 Class 1 Space for every 5,000 square feet
Community Uses / Artists' Space	1 Class 1 Space for every 5,000 square feet
Retail ²	1 Class 1 Space for every 7,500 square feet
Hotel	1 Class 1 Space for every 30 rooms
School	4 Class 1 Spaces for every classroom
Childcare	1 Class 1 Space for every 20 children

¹ Class 2 bicycle parking will be identified in the Candlestick Point and Hunters Point Shipyard Phase II Streetscape Master Plan.

² Includes regional retail, neighborhood retail, maker space, film arts center, and performance venue.

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 though, ultimately, on-street passenger and freight loading will be implemented in accordance with SFMTA guidance and policies:

- 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;
- Loading spaces should not be designated where they would interfere with BRT or cycle track operations;
- 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)

Existing travel behavior shows an increase in ride-hailing or TNC services. It is expected that the use of TNC services will continue to rise in the future; thus, on-street loading designs should account for the potential increase in passenger loading demand. Additionally, TNC use will be monitored by the TC as part of the comprehensive monitoring program.

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 11 and 12 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 11**, 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 12**.



Table 11: Proposed Off-Street Freight Loading Space Limits
Medium- and High-Density Residential Blocks

Land Use	Size of Use	Number of Spaces Permitted (per block)
Non-Residential Uses	0 - 50,000 sq. ft.	1
	> 50,000 sq. ft.	1 space per 50,000 sq. ft.
Residential – low density	0 - 100 units	1
Residential – high density	> 100 units	1, plus 1 additional loading space for every 200 additional units
Total Number of Loading Spaces Allowed for Any Single Building (all uses)		4

Table 12: Proposed Off-Street Freight Loading Space Requirements
Outside of Medium- and High-Density Residential Blocks

Land Use	Size of Use	Number of Spaces Required (per block)
Retail, Wholesale, Manufacturing, Live/Work	0 - 10,000 sq. ft.	0
	10,000 - 60,000 sq. ft.	1
	60,000 - 100,000 sq. ft.	2
	> 100,000 sq. ft.	3, plus 1 for each additional 80,000 sq. ft.
Offices, Hotels, Residential, and all other uses	0 - 100,000 sq. ft.	0
	100,000 - 200,000 sq. ft.	1
	200,000 - 500,000 sq. ft.	2
	> 500,000 sq. ft.	3, plus 1 for each additional 400,000 sq. ft.

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 three major development phases each for Candlestick Point and Hunters Point Shipyard. **Table 13** presents the anticipated land development phasing.

These development assumptions anticipate construction of Candlestick Point will likely occur in initial Phases, with development at the Hunters Point Shipyard site occurring in later phases.

Tables 14 and 15 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 13: Land Development Phasing

Land Use	Phase 1	Phase 2	Phase 3	Totals
Hunters Point Shipyard				
Residential (dwelling units)	1,249	904	1,301	3,454
Neighborhood Retail / Maker Space (sf)	183,500	44,500	73,000	301,000
Regional Retail (sf)	0	100,000	0	100,000
Hotel (rooms)	0	175	0	175
Community Services (sf)	0	0	50,000	50,000
R&D (sf)	1,967,655	1,101,745	1,195,600	4,265,000
Artist's Studios (sf) ¹	255,000	0	0	255,000
Institution (sf) ²	65,000	0	345,000	410,000
Candlestick Point				
Residential (dwelling units)	2,439	1,942	2,837	7,218
Neighborhood Retail (sf)	125,000	0	0	125,000
Regional Retail (sf)	635,000	0	0	635,000
Hotel (rooms)	220	0	0	220
Community Services (sf)	47,000	3,000	0	50,000
Arena (seats)	10,000	0	0	10,000
Office (sf)	150,000	0	0	150,000
				Source: FivePoint – April 2018

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

² 410,000 sq. ft. equates to approximately 1,000 junior high/high school students and 1,000 high school/post-secondary students. Types of students and institutions may vary.

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, Gilman Avenue, 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 Phases 1 and 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 28R/BRT route would be implemented and extended in Phase 2.

Table 14: Roadway Improvement Phasing

Roadway Improvement	Phase		
	1	2	3
Hunters Point Shipyard			
Ingalls Avenue/Thomas Avenue/Griffith Street Improvement		◆	
Innes Avenue Streetscape	◆		
Palou Avenue Transit Preferred Street and Streetscape Improvements			◆
Yosemite Slough Bridge		◆	
Candlestick Point			
Harney Way Widening (Initial Configuration)	◆		
New Roadway through Candlestick Point	◆		
Carroll Avenue		◆	
Gilman Avenue Streetscape	◆		
Ingerson Avenue Repaving		◆	
Jamestown Avenue Streetscape		◆	
Geneva Avenue Extension ²		◆	
Harney Way/US 101 Interchange Reconstruction ²		◆	

¹ Ultimate configuration based on Mitigation Measure MM TR-16 from project EIR

² Included to indicate anticipated infrastructure development timeline.

Table 15: Transit Phasing

Table 15: Transit Phasing			
Route	Frequency (Minutes)	Major Phase/Sub-Phase	Approximate Year
Hunters Point Shipyard			
Hunters Point Express (HPX)	20 10 6	1 / HP-01 2 / HP-04 3 / HP-06	2021 ² 2025 2026
23 Monterey (Temporary) ¹	20	1 / HP-01	2021
24 Divisadero ¹	15 10	2 / HP-04 3 / HP-06	2025 2026
44 O'Shaughnessy	10 7.5 6.5	1 / HP-02 2 / HP-03 3 / HP-06	2022 2025 2026
48 Quintara	15 10	1 / HP-01 2 / HP-03	2021 2025
Candlestick Point ²			
Candlestick Point Express (CPX)	15 10	1 / CP-03 1 / CP-02	2021 2022
Extension of 29-Sunset	10 5	1 / CP-03 1 / CP-02	2021 2025
Privately-Funded Complimentary Shuttle ¹	7.5	1 / CP-02	2022
Routes Serving Both Sites			
Extension of 28R / BRT ³	8 5	2 / HP-04 3 / CP-07	2025 2028
Increase serve on T-Third Light Rail ⁴	6 5	No Change - Not triggered by project development	
Other Improvements			
Hunters Point Transit Center		3 / HP-05	2030
BRT Stops		2 / HP-04	2025
Connections to SamTrans		2 / HP-04	2025
Palou Avenue Transit Preferential Street		3 / HP-05 ⁶	2026 ⁶
Harney /Geneva BRT / Transit Preferential Street ⁵		Unknown - Currently Under Study	
Bayshore Transit Center		Unknown - Currently Under Study	
Oakdale Caltrain Station Improvements		Unknown - Currently Under Study	

- 1 The 23 Monterey service may extend into HPS until SFMTA's fleet is modified to eliminate the need for OCS wires extended into the HPS site, at which point the 24 Divisadero would be extended and the 23 Monterey would return to its original (existing) routing.
- 2 The Transit Operating Plan includes a complimentary publicly accessible shuttle that is privately-funded, which will provide service between the project site and the Balboa BART station, replicating service that will ultimately be offered by the 28R/BRT route.
- 3 Until construction of the Geneva Avenue extension, the BRT service may operate independently from the 28R – 19th Avenue/ Geneva Avenue limited between the Hunters Point Transit Center and the Bayshore Caltrain Station via Alana Way and Beatty Avenue.
- 4 Increased capacity on the T-Third shown here is accommodated within the overall implementation of the Central Subway service capacity and frequency enhancements and is not triggered by project development. 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.
- 5 Improvement currently under study – phasing shown is anticipated but subject to change.
- 6 Palou Avenue improvements will be triggered by sub-phase HP-05 or based on transit phasing to coincide with improved service frequencies

