Appendix D
Analysis of Transportation Effects

ESA

FEHR PEERS

April 4, 2018

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Subject: Analysis of Transportation Effects of Project Refinements to the Candlestick Point/Hunters Point Shipyard Phase II Project Since Certification of the Project's Final EIR (Addendum 5)

Dear Joy:

As you know, the *Candlestick Point/Hunters Point Shipyard Phase II Project Final EIR* (herein referred to simply as "EIR") was certified by the San Francisco Planning Commission and the San Francisco Redevelopment Commission in June 2010. The EIR analyzed the originally-proposed project (as described in Chapter II of the FEIR, hereinafter referred to as "FEIR Project"), several variants (as described in Chapter IV of the FEIR), and several alternatives (as described in Chapter VI of the FEIR). The City's subsequent actions approved a subset of the options analyzed in the EIR, including:

1. The Project with a stadium, with Candlestick Tower Variant 3D, Utilities Variant 4, and Shared Stadium Variant 5;
2. The Project without the stadium, with Non-Stadium R&D Variant 1, Candlestick Tower Variant 3D, and Utilities Variant 4;
3. The Project without the stadium, with Non-Stadium Housing Variant 2, Non-Stadium Housing/R&D Variant 2a, Candlestick Tower Variant 3D, and Utilities Variant 4; and
4. Sub-alternative 4A, which provides for the preservation of four historic structures in HPS2; Sub-alternative 4A could be implemented with either the stadium Variants or non-stadium Variants (see Board of Supervisors CEQA Findings pp. 2–4).

Since the certification of the EIR, a number of refinements have been proposed to the FEIR Project. Modifications to the FEIR Project 2010 Phasing Schedule and the schedules for implementation of the Transportation Plan and other public benefits were analyzed in Addendum 1, published on December 11, 2013, and approved by various City agencies and OCII in 2014. Addendum 4, published on February 22, 2016, analyzed modifications to the CP Design for Development and certain transportation system changes that required modification of several CP-HPS2 Project plan documents. These modifications were approved in 2016. (The same City agencies also approved

FEIR Addenda 2 and 3; however, FEIR Addendum 2 is no longer applicable to the Modified Project and Addendum 3 did not modify any portion of the project affecting the transportation network or affect any transportation impact analysis, and thus are not discussed further.)

The Modified Project, as proposed in this analysis, is most similar in land uses to Non-Stadium R&D Variant 1, listed above. This letter summarizes a review of the proposed refinements to determine whether and to what extent they would change conclusions regarding significant transportation-related impacts and associated mitigation measures as described in the EIR.

PROJECT MODIFICATIONS

Table 1 highlights the Addendum 5 transportation-related revisions as well as other previously analyzed and approved revisions from prior addenda, followed by a brief description of the changes. **Table 2** summarizes the Modified Project proposed land uses at Candlestick Point and at Hunters Point Shipyard (herein referred to as "CP" and "HPS," respectively). A detailed comparison of the modified land uses to the FEIR Project, FEIR Variant 1 (R&D), and FEIR Variant 2A (Housing/R&D) is provided in **Appendix A**. Compared to FEIR Variant 1, the Modified Project would reduce the number of housing units in CP by 632 housing units, relocating those units at HP. Additionally in HPS, the Modified Project would add a 175-room hotel, add 410,000 square feet of institutional/educational uses, reduce R&D/Office in HPS from 5,000,000 square feet to 4,265,000 square feet, and increase the retail/maker space in HPS from 125,000 square feet to 401,000 square feet (71,000 square feet of the retail in HPS would be retail that was previously approved and no longer planned to be built as part of HPS Phase 1). HPS would also include an additional 172 housing units that were previously approved but no longer planned to be built as part of HPS Phase 1. The Modified Project site plan is shown in **Figure 1**.

TABLE 1: PROJECT DESCRIPTION REVISIONS

Project Description Component	Change from FEIR Assumptions for Variant 1 (R&D)				
	Addendum 1[1]	**Addendum 2**	**Addendum 3**	**Addendum 4[2]**	**Addendum 5**
Land Use	No Change	Project change involved implementation of an Automated Waste Collection System to serve the entire project site, including very minor effects to the transportation system. That system is no longer proposed and the effects studied in Addendum 2 are no longer applicable to the Modified Project.	Project change does not impact transportation assumptions or conclusions	• Convert 15.5 ksf of office to 6 ksf of local serving retail • Convert 42 ksf of performance venue space to 1,200-seat (42 ksf) cinema • All other uses (and balance of office and performance venue space) to remain unchanged • Reduce the number of seats in the performance venue from 10,000 to 5,600 (including a Performance Arts Center and a Film Arts Center)	FEIR Variant 1 (R&D) land uses, plus the following changes: • Reduce R&D/Office from 5,000,000 square feet to 4,265,000 square feet at HP • Add a 175-room hotel at HP • Add 410,000 square feet of institutional/educational uses at HP • Increase the retail/maker space from 125,000 square feet to 401,000 square feet at HP • Relocation of 632 housing units from CP to HP • Addition of 172 additional residential dwelling units at HP previously approved but no longer planned to be built as part of HP Phase 1
Construction Phasing	Generally accelerated construction within Candlestick Point, including the regional retail center, and postponed construction within Hunters Point Shipyard. As a result of changes to development phasing, also included changes to phasing of internal transportation infrastructure, off-site roadway improvements, and transit service improvements.			No changes to project construction phasing compared to Addendum 1. EIR analyzed an initial and long-term configuration for Harney Way. Addendum 4 analyzed the effects of splitting construction of the initial configuration into two phases. Attachment A in the transportation assessment included with Addendum 4 illustrates the initial configuration.	Same land uses within CP as FEIR Variant 1 (with the exception of 632 residential units relocated from CP to HP as part of the Modified Project), but with similar construction phasing to Addendum 1 (i.e., overall acceleration of construction at CP). Within HP, as a result of additional changes to development phasing, more substantial changes to construction phasing, including internal transportation infrastructure, off-site roadway improvements, and transit service improvements

TABLE 1: PROJECT DESCRIPTION REVISIONS					
Roadway Geometry					
Roadway Cross Sections	A number of changes to roadway cross-sections based on need to align roadways and standardize lane widths per SFMTA direction.	Project change involved implementation of an Automated Waste Collection System to serve the entire project site, including very minor effects to the transportation system. That system is no longer proposed and the effects studied in Addendum 2 are no longer applicable to the Modified Project.	Project change does not impact transportation assumptions or conclusions	Additional changes to lane, sidewalk, and median widths to accommodate storm-water treatment and fire department requirements. Number of lanes and facility capacity generally remained unchanged. Attachment C of the transportation assessment included with Addendum 4 includes a cross-section comparison figure.	No changes in CP compared to Addendum 4. Changes in HPS South associated with re-orientation of street grid. Changes in R&D and HPS North associated with improvements to bicycle network to connect cycletrack through entire CP site, as well as to provide transit-only lanes on Lockwood Avenue. Generally, street design principles remain unchanged and facility capacity generally remains unchanged. Appendix D includes the revised cross-sections.
Gilman Avenue	No Change			Reconfigure the Gilman Avenue cross-section between Third Street and Arelious Walker. The cross-section would be revised to increase the sidewalk width and decrease the number of travel lanes from two lanes to one lane in each direction. Parking would remain on both sides of the street. Attachment D of the transportation assessment included with Addendum 4 illustrates the revised cross-section.	No change compared to Addendum 4
Roadway Alignment	Revised roadway alignment to accommodate changes to BRT alignment.			No changes to roadway alignment compared to Addendum 1.	Updated alignment of internal streets in HPS South associated with reorientation of street grid. Modified Project now also includes optional extension of Donahue Avenue from its current terminus south to connect to Crisp Avenue.
Yosemite Slough Bridge	Widen the bridge by four feet from the previously-approved non-stadium project alternative, to accommodate bicycle and pedestrian circulation on both sides of the bridge. Total width still within the maximum width evaluated in the EIR for the Stadium Alternative.			No additional changes to Yosemite Slough Bridge cross-section since Addendum 1.	No additional changes to Yosemite Slough Bridge cross-section since Addendum 1.

TABLE 1: PROJECT DESCRIPTION REVISIONS					
Transit		Project change involved implementation of an Automated Waste Collection System to serve the entire project site, including very minor effects to the transportation system. That system is no longer proposed and the effects studied in Addendum 2 are no longer applicable to the Modified Project.	Project change does not impact transportation assumptions or conclusions		
BRT Alignment	Convert proposed BRT lanes from a two-way, side-running alignment to a center-running alignment, where possible. At the Candlestick Point site, the BRT lanes would be re-oriented such that both BRT lanes are on the west side of the Wedge Park.			No additional changes to BRT alignment since Addendum 1.	No additional changes to BRT alignment since Addendum 1.
29 Sunset	Minor re-routing through Candlestick Point.			No additional changes to the 29-Sunset route since Addendum 1.	No additional changes to the 29-Sunset route since Addendum 1.
Hunters Point Shipyard Transit Center	Relocate the Hunters Point Transit Center one block north from the originally proposed location, resulting in re-routing all bus routes traversing the transit center.			No additional changes to the Hunters Point Shipyard Transit Center or transit routes since Addendum 1.	Relocate the Hunters Point Transit Center one block north from the revised location analyzed in Addendum 1, resulting in minor rerouting of all bus routes traversing the transit center in its vicinity. Figure 8 illustrates the proposed change.
Bicycle Network	Refine the bicycle network including the addition of a cycle track near the Candlestick Point Retail Center. The cycle track would replace the Class II bike lanes originally proposed on Arelious Walker and Harney Way.			Minor bicycle network refinement. Replace Class III sharrows with Class II bike lanes on Earl Street. Attachment H of the Transportation Assessment included with Addendum 4 shows the revisions to the bicycle network.	No changes to the bicycle network in CP compared to Addendum 4. Changes in HP to realign the cycletrack away from Crisp Avenue, through the open space to the south, and to connect to a midblock break within HPS South. Cycletrack would continue through HPS South and across Drydock 4 as a two-way cycletrack, and then travel up Spear and Robinson Street as a directional separated bicycle facility to connect to the cycletrack planned in the Northside Park, west of Donahue Street. Figure 12 presents the Modified Project bicycle network.
Pedestrian Network	Minor refinements to the pedestrian network.			Addition of sidewalk on the west-side of Arelious Walker, between Jamestown Avenue and Ingerson Avenue. Other minor changes to sidewalk widths to accommodate storm-water runoff, as noted above.	Changes in HP associated with realigned street grid; however, sidewalk widths and intersection density remain similar. Creation of two pedestrian bridges across Drydock 4. See Appendix D for revised cross-sections.

TABLE 1: PROJECT DESCRIPTION REVISIONS					
Parking	Minor refinement to the total parking supply. Generally the Project would supply parking within the range contemplated in the EIR (2,800 to 20,000 on- and/or off-street parking spaces).			Minor increases to the total off-street parking supply to account for loss of anticipated on-street parking. Accomplished through modifications to parking rates outlined in the D4D. Total parking supply is similar to what was initially contemplated in the EIR.	Minor changes to total supply associated with minor changes in land use and refinements to street and intersection designs. Decrease of approximately 725 spaces in Hunters Point and a decrease of approximately 250 in Candlestick Point compared to FEIR Variant 1 (R&D). No changes to maximum parking rates by land use, however. Generally, the Project would supply parking within the range contemplated in the EIR for Variant 1 (R&D) (3,000 to 23,000 on- and/or off-street parking spaces).
Loading	No Changes			No Changes	No Changes

Notes:

1. Detailed changes to the Project Description are described in Addendum 1, dated December 11, 2013.
2. Addendum 4 did not propose revisions that would affect the transportation system or analysis at the Hunters Point Shipyard site. Detailed changes to the Project Description are described in Addendum 4, dated February 22, 2016.

TABLE 2

MODIFIED PROJECT PROPOSED LAND USES

Land Use Program	FEIR Variant 1 (R&D)				Modified Project			
	CP		HPS		CP		HPS	
	Size	Units	Size	Units	Size	Units	Size	Units
Residential[1]	7,850	units	2,650	units	7,218	units	3,454	units
Neighborhood Retail/Maker Space[1,2]	125	ksf	125	ksf	125	ksf	301	ksf
Regional Retail	635	ksf	--	ksf	635	ksf	100	ksf
Office	150	ksf	--	ksf	150	ksf	--	ksf
Hotel	220	rooms	--	rooms	220	rooms	175	rooms
Community Services	50	ksf	50	ksf	50	ksf	50	ksf
Park	147	acres	238	acres	105.7	acres	337.7	acres
Arena	10,000	seats	--	seats	10,000	seats	--	seats
R&D	--	ksf	5,000	ksf	--	ksf	4,265	ksf
Artists' Studios	--	ksf	255	ksf	--	ksf	255	ksf
Marina	--	slips	300	slips	--	slips	300	slips
Institutional (Jr. HS/HS)	--	students	--	students	--	students	1,000[3]	students
Institutional (HS/Post-Secondary)	--	students	--	students	--	students	1,000[3]	students

1. The total amount of proposed land development for HPS Phase 2 shown in Table 2 includes 71 ksf of additional retail space and 172 additional dwelling units that will no longer be included as part of the HPS Phase 1 development, and therefore, would not represent "net new" approved development within the overall HPS Plan Area.
2. 75 ksf of the 301 ksf of Neighborhood Retail at HPS would be dedicated for maker space uses.
3. Includes 600 HS students and 400 college students. Half of the HS students would be on site at any given time. Only 1/3 of college students would be on site at any one time.

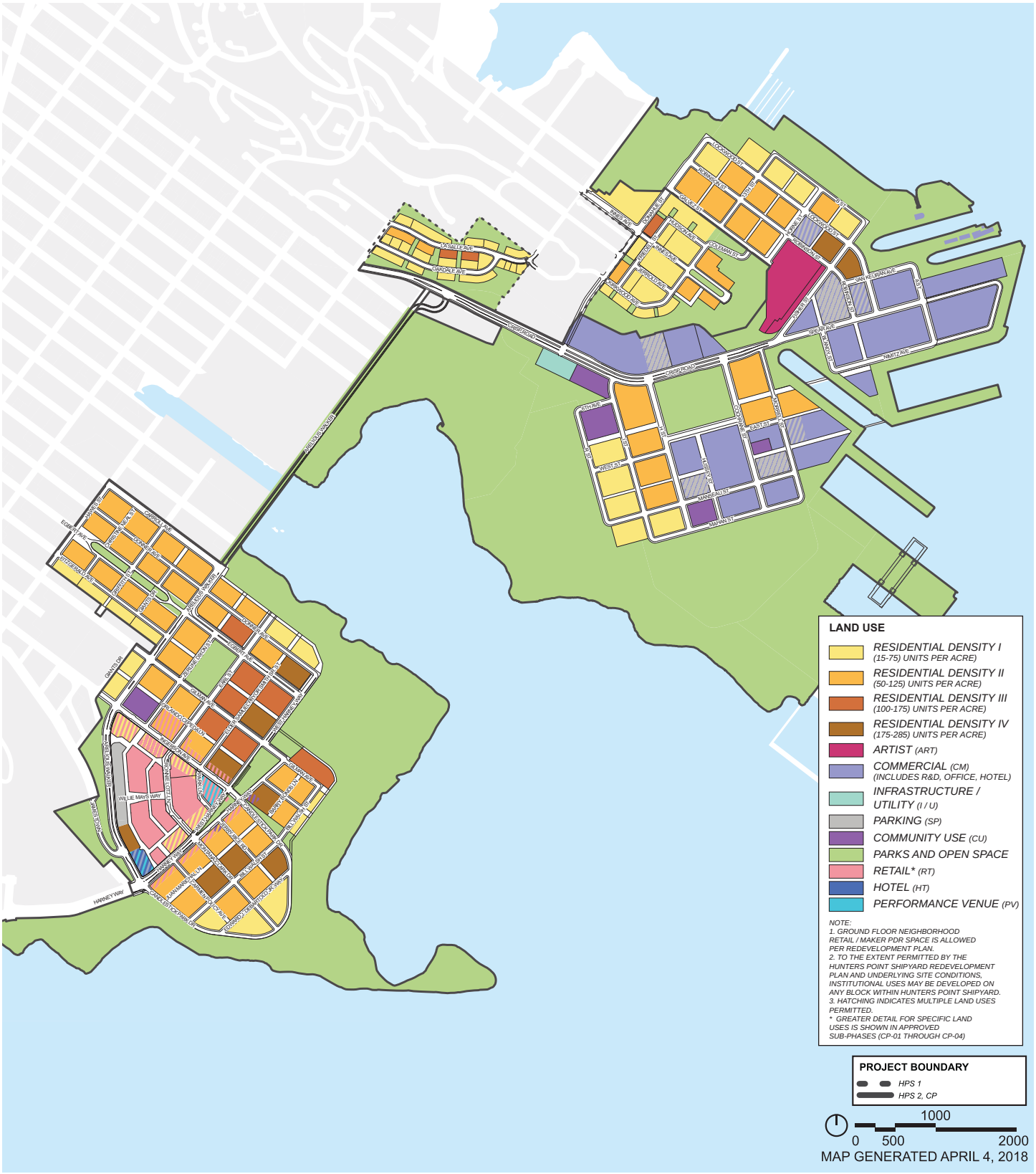

Figure 1

Modified Project Site Plan

TRAVEL DEMAND

Fehr & Peers conducted a detailed travel demand forecast of the Modified Project land uses using the same methods as described in the EIR. As noted earlier, the FEIR analyzed the FEIR Project as well as several variants and alternatives to the originally-proposed project. The land uses and travel demand characteristics of the Modified Project are similar to FEIR Variant 1 (R&D). Therefore, **Table 3**, below, compares the travel demand forecasts for the Modified Project with both the FIER Project and FEIR Variant 1 (R&D). Detailed calculation sheets are provided in **Appendix B**.

TABLE 3

TRAVEL DEMAND FORECAST COMPARISON (VEHICLE TRIPS)

		FEIR Project	FEIR Variant 1 (R&D)	Modified Project	Difference from FEIR Variant 1 (R&D)
AM Peak Hour	CP	2,310	2,310	2,264	-46
	HP	1,924	3,065	3,212	+147
	Total	**4,234**	**5,375**	**5,476**	**+101[1]**
PM Peak Hour	CP	4,913	4,913	4,882	-31
	HP	2,164	3,134	3,644	+510
	Total	**7,077**	**8,047**	**8,526**	**+479**

Notes:

1. Increases in trips associated with the Modified Project include approximately 100 AM peak hour and 200 PM peak hour vehicle trips for 172 dwelling units and 71 ksf of retail space. These new trips would not affect the total amount of traffic in the area at Project buildout because they correspond to the number of units and commercial square footage approved but not built, and no longer planned to be built, as part of the adjacent HPS Phase 1 project; however, they do represent an increase in the number of trips that are considered a part of the Modified Project. Thus, although the Modified Project's contribution in traffic is expected to increase by approximately 100 to 480 vehicle trips in the AM and PM peak hours,respectively, the total traffic volume in the area is expected to be nearly identical to the FEIR in the AM peak hour and increase by approximately 280 trips in the PM peak hour, since the other vehicle trips were previously accounted for as part of Phase 1.

As shown, the Modified Project would generate approximately 100 more vehicle trips overall in the AM peak hour (although it would generate approximately 150 more vehicle trips at Hunters Point Shipyard, which would be offset by a decrease of nearly 50 vehicle trips at Candlestick Point). In the PM peak hour, it would generate approximately 480 peak hour vehicle trips more than FEIR Variant 1, which includes an increase of approximately 500 trips at Hunters Point and a decrease of approximately 30 trips at Candlestick Point. Overall, the changes compared to Variant 1 represent an increase of 1.9 percent in vehicle trips during the AM peak hour and an increase of 6.0 percent during the PM peak hour associated with the Modified Project. In reviewing these numbers it is important to recall that nearly all of the AM peak hour increase and approximately 40 percent of the PM peak hour increase is due to land uses that were previously considered as part of Phase 1 and which are now considered part of the Modified Project. Thus, the overall increase in traffic in the area associated with the Modified Project is essentially nothing in the AM peak hour and 3.5 percent in the PM peak hour, even though the Modified Project's portion of the total traffic generated is higher.

Tables 4 and 5, below, summarize the change in transit travel demand associated with the Modified Project compared to Variant 1 (R&D). As shown, the Modified Project would generate slightly fewer transit trips than Variant 1 (R&D) from the EIR, although demand would increase slightly inbound to the HP and CP sites and decrease slightly outbound from the site in the AM peak hour compared to Variant 1 (R&D). The reverse phenomenon occurs in the PM peak hour.

TABLE 4
TRAVEL DEMAND FORECAST COMPARISON (TRANSIT TRIPS)

		FEIR Project	FEIR Variant 1 (R&D)	Modified Project	Difference from FEIR Variant 1 (R&D)
AM Peak Hour	Inbound	998	1,103	1,163	+52
	Outbound	813	1,215	1,155	-53
	Total	**1,811**	**2,318**	**2,318**	**-1**
PM Peak Hour	Inbound	1,475	1,506	1,602	-96
	Outbound	1,415	1,869	1,831	+37
	Total	**2,890**	**3,375**	**3,433**	**-59**

TABLE 5 FEIR VARIANT 1 (R&D) AND MODIFIED PROJECT TRANSIT TRIP GENERATION							
		FEIR Variant 1 (R&D)			Modified Project		
		CP	HP	Total	CP	HP	Total
AM Peak Hour	Inbound	299	916	1,103	300	863	1,163
	Outbound	667	435	1,215	642	513	1,155
	Total	**966**	**1,352**	**2,318**	**942**	**1,376**	**2,318**
PM Peak Hour	Inbound	1,054	452	1,506	1,029	573	1,602
	Outbound	835	1,033	1,869	833	998	1,831
	Total	**1,889**	**1,486**	**3,375**	**1,861**	**1,571**	**3,433**

Below is a discussion of the effects of the proposed changes on the impacts identified in the EIR.

IMPACT TR-1: ON-SITE AND OFF-SITE CONSTRUCTION IMPACTS

As described in the EIR, construction of the Project would result in transportation impacts in the Project vicinity due to construction vehicle traffic and roadway construction and would contribute to cumulative construction impacts in the Project vicinity. The EIR concluded implementation of mitigation measure MM TR-1, which would require the Applicant to develop and implement a construction traffic management plan to reduce the impact of construction activity on transportation facilities, would reduce the impacts caused by construction, but not to a less-than-significant level.

The overall amount of construction anticipated to occur as part of the Modified Project will be the same as or less than originally conceived and described for the FEIR Project, although the sequencing may be somewhat different. The FEIR Project analysis anticipated development phasing that would create more construction activities in the Hunters Point Shipyard in the early years of project buildout, with higher construction levels in Candlestick Point during later phases. Additionally, the FEIR Project also included construction of a new NFL stadium in the very early phases of development, which would have resulted in much more intense construction activities then will likely ever occur during any of the non-stadium options.

The revised phasing proposed for the Modified Project will reverse this, with more construction activities in Candlestick Point during the earlier years and more activity in the Hunters Point Shipyard site during later years. Further, because the Modified Project does not include a new NFL stadium, the overall construction activities will be more spread out over time and well below the peak levels anticipated for the FEIR Project.

Although the latest proposed phasing at Candlestick Point is slightly different from previous analyses of accelerated construction at Candlestick Point, such as the evaluation outlined in EIR Addendum 1, the overall construction activities and general proposal is similar to what was analyzed in EIR Addendum 1. Portions of the construction outlined in Addendum 1, including demolition of Candlestick Park, have already occurred. Postponement of construction in Hunters Point Shipyard is primarily a result of delays in transferring land from the US Navy to the City and County of San Francisco. An estimate of construction activities during the course of project buildout associated with the FEIR Project and the Modified Project, as well as a chart illustrating the difference in terms of construction truck trips over time between the two, is provided in **Appendix C**.

Overall, although the timing and location of construction activities may vary within the site compared to what was originally anticipated, the construction activities are expected to create similar or even less intense significant and unavoidable localized construction-related traffic impacts as were originally described in Impact TR-1 the EIR. Mitigation measure MM-TR-1, development of a Construction Traffic Management Program, would still apply, although impacts would continue to remain significant and unavoidable.

Therefore, construction of the Modified Project would not result in any new significant effects to transportation beyond those identified in the EIR nor would they result in a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

IMPACTS TR-2 THROUGH TR-16: TRAFFIC IMPACTS TO REGIONAL AND LOCAL ROADWAY SYSTEM, STUDY INTERSECTIONS, AND FREEWAY FACILITIES

As described in the EIR, the Project would generate substantial amounts of new vehicular traffic resulting in a number of significant impacts and mitigation measures. More specifically, the EIR identified Impact TR-2, a significant impact related to the Project's overall increase in traffic generation in relation to the current roadway system capacity. The EIR identified Mitigation Measure MM TR-2, the development and implementation of the Project's Transportation Demand

Management (TDM) plan as a means to lessen the severity of Project-generated traffic impact; however, Impact TR-2 would remain significant and unavoidable with mitigation.

The EIR identified Impacts TR-3 through TR-8, which described locations where the Project would create new project-related impacts or contribute to significant cumulative impacts at study intersections. Mitigation Measures MM TR-4 (restriping at the intersection of Tunnel/Blanken), MM TR-6 (participating in the bi-county study and paying a fair share contribution toward improvements near the Geneva Avenue/US 101 interchange), MM TR-7 (restriping at the Amador/Cargo Way intersection), and MM TR-8 (participating in the bi-county study and paying a fair share contribution toward improvements near the Bayshore/Geneva intersection) were recommended to reduce the severity of Project-related impacts. However, due to uncertainty regarding implementation of mitigation measures, Impacts TR-3 through TR-8 were determined to remain significant and unavoidable with mitigation. The EIR also identified Impact TR-9, which described the project's less than significant impact to a number of other study intersections.

At a slightly larger scale, the EIR identified Impact TR-10, which describes the effect of Project-related traffic spilling over into nearby residential neighborhood streets. The EIR determined this impact to be significant, and referenced other mitigation measures described elsewhere in the EIR (including Mitigation Measure MM TR-2, the development and implementation of a TDM Plan) as appropriate strategies to reduce the severity of Impact TR-10. However, the EIR determined that the impact would remain significant and unavoidable with mitigation.

The EIR also identified a number of significant Project-related impacts to freeway facilities, including Impacts TR-11 through TR-15. No feasible mitigation measures were identified for Impacts TR-11 through TR-13 and these impacts would be significant and unavoidable. Mitigation Measures MM TR-14 and MM TR-15, which called for participation in the bi-county study and payment of a fair share contribution toward improvements near the Geneva Avenue / US 101 interchange area, were identified to reduce the severity of Impacts TR-14 and TR-15; however, since the implementation of these measures was uncertain, Impacts TR-14 and TR-15 would also remain significant and unavoidable.

Finally, the EIR identified Impact TR-16, a significant impact associated with the Project's contribution to traffic on Harney Way, which will be a primary access route for all modes between the Project site and regional transportation facilities (US 101, Bayshore Caltrain, Balboa Park BART, the Bay Trail, etc.). Mitigation Measure MM TR-16 called for the project to construct the initial

phase of Harney Way at the outset of construction of the first major phase, which would reduce the Project's impact to less than significant.

However, as shown in Tables 3 and 4, the Modified Project would be most similar to FEIR Variant 1 (R&D) in terms of vehicle trips generated. The EIR also included a discussion of how the transportation impacts associated with Variant 1 (R&D) would be different from those of the FEIR Project summarized above. As noted in the EIR (pp. IV-18-IV-21), in addition to the same significant impacts as the FEIR Project, Project Variant 1 (R&D) would also have significant project-level or cumulative impacts on five intersections that would not occur with the FEIR Project. Specifically, FEIR Variant 1 (R&D) would have significant and unavoidable impacts at three additional intersections:

- Ingalls Street / Carrol Avenue
- Bayshore Boulevard / Oakdale Street
- Evans Avenue / Jennings Street

FEIR Variant 1 (R&D) would also have significant impacts at two additional intersections that could be reduced to less than significant levels with mitigation:

- Crisp Road / Palou Avenue / Griffith Street
- Innes Avenue / Earl Street

Mitigation at Crisp Road / Palou Avenue / Griffith Street identified in the EIR for Variant 1 (R&D) would involve re-striping the southbound approach to provide a dedicated left-turn lane and a shared through/right-turn lane, and prohibiting on-street parking on Griffith Street between Palou Avenue and Oakdale Avenue.

Mitigation at Innes Avenue / Earl Street identified in the EIR for Variant 1 (R&D) would involve constructing a new traffic signal at the intersection. Subsequent to the preparation of the EIR, the India Basin project has been proposed, and as of the writing of this analysis, that project has published a Draft EIR for public review and comment. The India Basin project includes construction of a traffic signal at this intersection.

There are two components to the discussion of the Modified Project's traffic impacts: one component addresses how project refinements would affect impacts under long-term buildout

conditions (similar to the conditions analyzed in the EIR) and the other component addresses how changes to project phasing would affect auto access to the site during the buildout period.

Buildout Conditions

The EIR's discussion of traffic impacts is based on project buildout. Refinements have been made to the internal roadway network, both to cross-section dimensions and roadway alignments. Refinements to roadway cross sections have been made to continue to encourage slow-speed auto traffic, but also to better accommodate transit, bicyclists, and on-street parking based on recent SFMTA design guidance for travel lane widths. Some of these changes have been discussed in prior addenda. Specifically, Addendum 1 (p. 10) described some general categories of modifications, such as establishing consistent design principles, establishing a more consistent BRT alignment, the design of the Yosemite Slough Bridge, and reorientation of some streets in Candlestick Point. These principles have not changed since Addendum 1, although some additional modifications to cross-sections have been proposed as a consequence of modification of some roadway alignments in HPS. Revised cross-sections associated with the Modified Project are presented in **Appendix D**.

However, other principles affecting the roadway designs described in Addendum 1, such as the revised bicycle network and the re-orientation of the street grid in Hunters Point South are no longer directly applicable, and additional modification is proposed as part of the Modified Project. Those elements are described generally below:

- **Revised bicycle network.** Project modifications described in Addendum 1 included a new cycletrack facility that closed a gap in the bicycle network near the project's retail center. The cycletrack would extend west of the project site, along Harney Way toward US 101[1] replacing the originally-proposed Class II bicycle lanes on both sides of the street. The cycletrack was also anticipated to travel along Crisp Road in Hunters Point Shipyard, before terminating near Spear Avenue. The modifications described in Addendum 1 related to the bicycle network revisions in Candlestick Point remain unchanged since Addendum 1.

[1] The EIR anticipated that Harney Way would be constructed in two phases. The first phase would construct two auto travel lanes in each direction (with two BRT lanes, on-street bicycle lanes, and a center turn lane). The changes proposed for the initial configuration of Harney Way do not affect auto capacity, but rather use land reserved for potential future expansion to extend the two-way Class I cycletrack from the project site west toward the Bay Trail. The Class I cycletrack would be removed if Harney Way were widened to its ultimate width because of the need for auto capacity. Under these circumstances, bicycle conditions along Harney Way would be identical to what was originally approved in the EIR.

Refer to Addendum 1, p. 26 for a comparison of the FEIR Project and the Addendum 1 refinements to the bicycle network. However, the Modified Project proposes to realign the cycletrack through HPS such that it traverses the open space to the south of Crisp Road, and then uses a neighborhood midblock break in Hunters Point South to travel parallel to Crisp Road. Refer to the bicycle impacts section of this letter for further discussion of the changes to the bicycle network.

- **Reorientation of Street Grid in Hunters Point South.** Streets in the Hunters Point South neighborhood associated with the Modified Project are similar to what was proposed in FEIR Variant 1 (R&D) (FEIR Figure IV-1, p. IV-7), but street alignments have been slightly modified to account for retention of some additional existing buildings. Overall, the size and density of the street grid in Hunters Point South is similar to what was originally approved in FEIR Variant 1 (R&D) and therefore, transportation capacity is expected to be similar.

- **Extension of Donahue Street south to Crisp Road.** Within Hunters Point, the originally-proposed Project provided one travel route to the north (via Donahue and Innes Avenue) and one travel route to the south (via Crisp Road and Palou Avenue). Travelers on the northern side of the Hunters Point Shipyard who wanted to travel south would have to travel through the entire Shipyard site to reach Crisp Avenue and Palou Avenue. Similarly, travelers in the southern part of Hunters Point who wish to travel north, would have to travel through the entire site to get to Innes Avenue. The extension of Donahue Street would provide a direct connection between Crisp Avenue and Innes Avenue, allowing for less circuitous travel and fewer vehicle trips through the center of the Shipyard site.

Although most roadway cross-section refinements consist of relatively minor modifications to the roadway network to accommodate refined bus circulation, bicycle networks, and pedestrian amenities as described above, one refinement is proposed – to Arelious Walker Drive – that does affect vehicular capacity at buildout. That refinement would reduce the ultimate width of the street from six lanes to four lanes, and would remove on-street parking and Class II bike lanes (to be replaced by the Class I cycletrack discussed elsewhere). This proposed change was evaluated and approved in Addendum 1, and found to continue to provide acceptable vehicular capacity for the refined land uses evaluated in Addendum 1. This change is also included in the Modified Project,

and the evaluation discussed in this section assesses the degree to which this change would continue to provide acceptable vehicular capacity for the Modified Project.

The EIR assessed cumulative (year 2030) weekday AM and PM peak hour intersection turning movement volumes for approximately 60 study intersections, assuming the development of the FIER Project (and numerous variants and alternatives), a number of adjacent planned projects, and some background traffic growth on area roadways. The operating characteristics of these study intersections were described in terms of Level of Service ("LOS")[2].

Because the Modified Project results in changes to the overall peak hour travel demand and includes some modifications that affect vehicular capacity, as noted above, this assessment includes a LOS analysis at a subset of intersections closest to the Modified Project site to assess the degree to which the Modified Project may affect impact determinations identified in the EIR. The subset of intersections evaluated is expected to include the intersections that experience the majority of project-related traffic volume changes, as they are closer to the project site where traffic is less dispersed. If changes to delay and LOS at these intersections are relatively small, it can reasonably be concluded that changes to other intersections further away from the project site would be even smaller.

Below, **Table 6** summarizes the intersection LOS for intersections nearest to the project site at full project buildout as described for Variant 1 (R&D) in the EIR and as forecasted with the Modified Project, including the proposed change to the ultimate configuration of Arelious Walker Drive (i.e., two through lanes in each direction instead of three). As shown, the Modified Project would have only minor effects to the intersection LOS analysis compared to Variant 1 (R&D) as outlined in the EIR. No intersections that operate at LOS D or better under Variant 1 (R&D) would deteriorate to LOS E or F, or deteriorate from LOS E under Variant 1 (R&D) to LOS F. Furthermore, the intersections forecasted to operate at LOS E or F under conditions with Variant 1 (R&D) would continue to operate at LOS E or F, respectively under the Modified Project. Volume to capacity ratios at each of the intersections forecasted to operate at LOS F with delays over 80 seconds per

[2] LOS is a qualitative description of an intersection's performance based on the average delay of per vehicles traveling through it. Intersection levels of service range from "A", which indicates free flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays. LOS A through D are considered excellent to satisfactory service levels.

TABLE 6

INTERSECTION OPERATIONS

Intersection[1]	FEIR Variant 1 (R&D)[2,3,4]				Modified Project[2,3]			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay / LOS	V/C	Delay / LOS	V/C	Delay / LOS	V/C	Delay / LOS	V/C
#4 – Evans / Third	**>80 / F**	**1.59**	**>80 / F**	**1.59**	**>80 / F**	**1.59**	**>80 / F**	**1.65**
#6 – Palou / Third	**>80 / F**	**2.22**	**>80 / F**	**5.97**	**>80 / F**	**2.47**	**>80 / F**	**6.65**
#9 – Gilman / Third[5]	**>80 / F**	**2.02**	**>80 / F**	**3.40**	**>80 / F**	**1.63**	**>80 / F**	**2.94**
#29 – Harney / Arelious Walker	25 / C	--	53 / D	--	22 / C	--	36 / D	--
#30 – Crisp / Palou	**>80 / F**	**1.12**	**>80 / F**	**1.18**	**>80 / F**	**1.12**	**>80 / F**	**1.21**
#34 – Arelious Walker / Gilman[5]	30 / C	--	38 / D	--	36 / D	--	52 / D	--
#46 – Innes Ave / Fitch	5 / A	--	6 / A	--	5 / A	--	6 / A	--
#47 – Innes Ave / Earl	1 (21) / A (C)[5]	--	3 (**63**) / A (**F**) [6]	--	1 (24) / A (C)	--	4 (**77**) / A (**F**)	--
#48 – Middle Point / Evans / Jennings	**61 / E**	**1.17**	43 / D	--	**64 / E**	**1.15**	30 / C	--
#54 – Ingalls / Palou	23 / C	--	33 / C	--	22 / C	--	37 / D	--
#55 – Keith / Palou	9 / A	--	8 / A	--	9 / A	--	8 / A	--

Notes:

1. Intersection numbers are based on EIR intersection numbering for reference and comparison purposes.
2. Delay in seconds per vehicle. For side-street stop controlled intersections, delay and LOS presented for the worst approach and indicated in parenthesis. For intersections operating at LOS F, delay calculations are not relevant, based on the HCM methodology, and therefore, delay is simply reported as greater than 80 seconds per vehicle. To allow for comparison in operating conditions at intersections operating at LOS F, the volume to capacity ratio (V/C) is also shown.
3. Intersections operating at LOS E or F shown in **bold**.
4. Refer to Tables 45 and 46, on pp. 167-172 of the Project's Transportation Impact Study, included as Appendix D to the FEIR, for LOS results for FEIR Variant 1 (R&D).
5. The analysis of conditions with the Modified Project at Gilman / Third and Gilman / Arelious Walker was performed using a more detailed and sophisticated software, the Synchro platform, than what was used in the FEIR in order to capture unique features of those intersections. Analysis of Modified Project conditions at Gilman / Third also reflects updated lane configurations established by SFMTA subsequent to publication of the EIR.
6. The EIR-reported calculation of LOS for the intersection of Innes Avenue / Earl Street in Table 46 on pp. 170-172 in the Transportation Impact Study included a typographical error. The error did not affect the conclusion of the EIR with respect to significant impacts. The correct LOS is included here.

vehicle would change only slightly at all intersections, indicating little change in operating conditions at these intersections, with the exception of Palou Avenue / Third Street in the PM peak hour. At Palou Avenue / Third Street, the v/c ratio would increase from 2.22 and 5.97 to 2.47 to 6.65 with the Modified Project in the AM and PM peak hours, respectively – an increase of approximately 10 percent. Overall, the Modified Project would increase volumes by approximately 14 vehicles in the AM peak hour and 87 vehicles in the PM peak hour, an increase of less than 0.3 percent in the AM peak hour and 1.5 percent in the PM peak hour. This increase in traffic volumes is well within the range of error of the project's travel demand forecasts[3] and is therefore not likely to create a perceptible difference for users.

Finally, as shown in Table 6 for Intersections #29 and #34, the proposed reduction in travel lanes from six to four lanes on Arelious Walker Drive that was first proposed in Addendum 1 would continue to provide for acceptable intersection operations under the Modified Project. Detailed intersection LOS calculations are included in **Appendix E**.

As noted above, significant impacts at the intersections of Crisp / Palou and Innes / Earl were able to be reduced to less than significant with mitigation measures identified specifically for Variant 1 (R&D) in the EIR. Implementation of the traffic signal at the intersection of Innes / Earl, as identified in the EIR, would continue to reduce impacts at this intersection to less than significant levels with the Modified Project.

However, the mitigation measure identified for Crisp / Palou would not be sufficient to reduce the impacts associated with the Modified Project to less than significant levels. As a result, a revised mitigation measure at this intersection would be required to achieve acceptable operations and reduce the impacts at this intersection to less than significant levels.

Therefore, the paragraph in the EIR describing the mitigation measure at this intersection (p. IV-19) should be revised, as follows:

[3] Refer to *Trip Generation*, 9th Edition, Institute of Transportation Engineers, which was the source of the data used in this study for forecasting trip generation, and is widely used in the industry. Generally, forecasts from this source are based average rates or fitted curve equations based on a set of observed data. However, the standard deviation of the data to the rates or equations is greater than two percent in virtually every land use category.

Striping the southbound approach to provide a dedicated ~~left~~right-turn lane and a shared through/~~right~~left-turn lane, ~~and~~ prohibiting on-street parking on Griffith Street between Palou Avenue and Oakdale Avenue, and constructing the westbound approach on Crisp Avenue to provide two dedicated left-turn lanes and one shared through/right-turn lane would result in an LOS D at the intersection. Implementation of this improvement would be the responsibility of SFMTA and DPW, the Project Applicant shall contribute its fair-share toward construction of the mitigation measure. Prior to payment of the contribution, the City shall create a mechanism to determine and receive fair share contributions from the Project Applicant. The SFMTA and DPW shall design and implement the measure as necessary.

Table 7, below, shows the operation of these two intersections with the mitigation measures as described above. With mitigation measures, these two intersections would operate acceptably and the impacts associated with the Modified Project would be less than significant, similar to the conclusions in the FEIR for Variant 1 (R&D).

TABLE 7

INTERSECTION OPERATIONS WITH MITIGATION

Intersection[1]	Modified Project[2,3]				Modified Project With Mitigation[2,3]			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay / LOS	V/C	Delay / LOS	V/C	Delay / LOS	V/C	Delay / LOS	V/C
#30 – Crisp / Palou	**>80 / F**	**1.12**	**>80 /F**	**1.21**	33 / C	0.86	36 / D	0.85
#47 – Innes Ave / Earl	1 (24) / A (C)[4]	--	4 (77) / A (F)[4]	--	18 / B	--	21 / C	--

Notes:

1. Intersection numbers are based on EIR intersection numbering for reference and comparison purposes.
2. Delay in seconds per vehicle. For side-street stop controlled intersections, delay and LOS presented for the worst approach and indicated in parenthesis. For intersections operating at LOS F, delay calculations are not relevant, based on the HCM methodology, and therefore, delay is simply reported as greater than 80 seconds per vehicle. To allow for comparison in operating conditions at intersections operating at LOS F, the volume to capacity ratio (V/C) is also shown.
3. Intersections operating at LOS E or F shown in **bold**.
4. The EIR-reported calculation of LOS for the intersection of Innes Avenue / Earl Street in Table 46 on pp. 170-172 in the Transportation Impact Study included a typographical error. The error did not affect the conclusion of the EIR with respect to significant impacts. The correct LOS is included here.

Therefore, because travel demand would be similar to that identified for Variant 1 (R&D) in the EIR, there would be no changes to auto capacity associated with project refinements that result in additional or more severe significant impacts, and intersection LOS would be similar to that identified in the EIR for Variant 1 (R&D) with some minor revisions to one of the mitigation measures identified in the EIR, the Modified Project would have similar impact conclusions for Impacts TR-2 through TR-16, as applied to Variant 1 (R&D) in the EIR. Mitigation measures MM TR-2, MM TR-4, MM TR-6, MM TR-7, MM TR-8, and MM TR-16 will continue to apply, including the additional locations identified for Variant 1 (R&D) in the EIR, revised as noted above.

Timing of Traffic Improvements

Although, for purposes of assessing transportation impacts, the Modified Project will be similar to FEIR Variant 1 (R&D) at buildout, the project development phasing has changed. The phasing of traffic improvements was set forth in a memorandum included as Appendix A4 to the FEIR Comments & Responses[4]. An analysis of the Modified Project phasing and infrastructure implementation timing was conducted to determine whether the Modified Project would provide auto circulation and access at a level adequate to meet the travel demand throughout the buildout period.

Candlestick Point

As noted earlier, development at Candlestick Point is anticipated to occur earlier than originally anticipated. As a result, and to respond to some of the changes in the order of development, revisions to the implementation phasing are proposed to better respond to land use phasing[5]. As shown in **Table 8**, most roadway improvements are scheduled to be implemented at the same triggers or sooner (relative to development levels) than proposed in the EIR, with the exception of Jamestown Avenue and Ingerson Avenue and the automobile route around Yosemite Slough. However, Jamestown Avenue and Ingerson Avenue improvements are largely streetscape improvements, designed to improve the overall urban design of the streets, and will not affect

[4] Fehr & Peers, *Roadway and Transit Phasing Plan*, March 17, 2010

[5] Although previous EIR Addenda also considered revisions to the project phasing compared to what was analyzed in the EIR, the comparison in this Addendum compares the Modified Project with the FEIR Project, and not to previously contemplated revisions.

TABLE 8
PROJECT STREET SEGMENT IMPROVEMENTS - CANDLESTICK POINT

Intersection	Improvement	Original Non-Stadium Option[d]		Modified Project	
		Traffic Volume Trigger?[c]	Trigger	Traffic Volume Trigger?[c]	Trigger[e]
Arelious Walker Drive, Shafter Avenue to Carroll Avenue	Construct Yosemite Slough Bridge[a]	No	Implementation of BRT	No	Implementation of BRT (HP-04)
Arelious Walker Drive, Carroll Avenue to Gilman Avenue	Interim Two-Lane Condition (See Addendum 2)	N/A		No	CP-01 (Adjacency)
	Ultimate Condition (See description above)	No	Implementation of BRT	Yes	CP-07 (Approximately 3,900 PM Peak Hour Vehicle Trips CP) or Implementation of BRT
Arelious Walker Drive, Gilman Avenue to Harney Way	Construct two travel lanes in each direction with center median/turn lane	No	Implementation of BRT	No	CP-02 (Adjacency)
Harney Way Widening, Arelious Walker Drive to Thomas Mellon Drive	Near Term (See Addendum 2)	Yes	3,537 PM Peak Hour Vehicle Trips or Implementation of BRT[c]	No	CP-02 (Adjacency)
	Long-Term (See Addendum 2)	TBD[b]	Per Mitigation Measure MM TR-16	TBD[b]	Per Mitigation Measure MM TR-16
Jamestown Avenue, Arelious Walker Drive to Third Street	Resurface and Restripe	No	Demolition of Candlestick Park	No	CP-07
Ingerson Avenue, Arelious Walker Drive to Third Street	Resurface and Restripe	No	Demolition of Candlestick Park	No	CP-07
Gilman Avenue, Arelious Walker Drive to Third Street	Reconstruct or Resurface and Restripe	No	TBD	No	CP-02
Carroll Avenue, Arelious Walker Drive to Ingalls Street	See Figures 2.1.2A – 2.1.2G	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP)[c]	Yes	CP-07 (Approximately 7,600 PM Peak Hour Vehicle Trips, CP & HP)[c]
Ingalls Street, Carroll Avenue to Thomas Avenue	See Figures 2.1.2A – 2.1.2G	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP)[c]	Yes	CP-07 (Approximately 7,600 PM Peak Hour Vehicle Trips, CP & HP)[c]

a. The cross-section for Yosemite Slough Bridge has been modified from what is shown in the EIR for the Non-Stadium alternative. However, at 45-feet in width, the structure would be smaller than the bridge approved in the Stadium scenario.
b. The isolated intersection analysis conducted for this study shows that the two intersections along Harney Way would operate acceptably with the near-term configuration even with full buildout of the project. However, because Harney Way is part of a complex series of roadway improvements and due to the inherent uncertainty in traffic forecasts, a study will be conducted prior to construction of each development phase to determine whether conditions are better or worse than projected. The results of that study will indicate whether additional development can be accommodated under the near-term configuration while maintaining acceptable LOS or whether widening is required.
c. Based on trip rates by land use used in the EIR for Variant 1 (R&D) and currently-proposed phasing. See Appendix E for LOS calculation showing that approximately 82% of project-related growth (corresponding to approximately 7,600 vehicle trips) can be accommodated at this intersection before significant LOS impacts would occur.
d. As summarized in the FEIR (Comments and Responses, Appendix A4, Roadway and Transit Phasing Plan), Fehr & Peers, March 17, 2010. Note that the "Original Non-Stadium Option" as presented in the FEIR and replicated here is applicable to all non-stadium options.
e. Where multiple triggers are provided, the trigger shall be whichever event occurs first. When a sub-phase is listed as the trigger, the improvement shall be fully constructed and operational prior to occupancy of the sub-phase.

vehicular capacity along the streets, so in terms of assessing traffic impacts, this modification is not material. Furthermore, the need for the auto route around Yosemite Slough is driven by the need for connection between HP and CP. Since development at HP is somewhat delayed compared to the forecasted schedule from the FIER, these improvements are not needed as quickly, and technical analysis has shown that they can be postponed until Subphase CP-07 (see discussion below).

Figures 2 – 4, attached, illustrate the auto access routes that would be available based on the Modified Project development and roadway infrastructure phasing. As shown, the major connections between the Candlestick Point development and the external transportation network are expected to be developed as part of the first Major Phase. These include Arelious Walker Drive, the four-lane internal spine roadway that connects the smaller internal streets to the external roadways connecting to the rest of the City via Carroll Avenue, Gilman Avenue, Ingerson Avenue, and Jamestown Avenue.

Within Major Phase 1 in Candlestick Point, the development will occur in five sub-phases, CP-01 through CP-05. CP-01 is already constructed or under construction, and includes 337 residential dwelling units on the Alice Griffith site, which will generate approximately 100 PM peak hour auto trips, based on the methodology described in the EIR. As part of this sub-phase, a portion of Arelious Walker has been constructed, between Gilman Avenue and Carroll Avenue. Ultimately, as noted earlier, Arelious Walker Drive would be constructed to provide two travel lanes in each direction, separated by a median. However, as part of CP-01, only the two lanes west of the median were constructed. During this initial period, this segment of Arelious Walker provides one travel lane in each direction. Then, during later phases of development, as noted below, the remaining half of Arelious Walker Drive would be constructed such that two auto lanes would be provided in each direction. The construction of this interim portion of Arelious Walker Drive is consistent with and supports the final configuration of Arelious Walker Drive. Refer to Addendum 1 (Appendix A, Sub-Appendix D) for figures showing the interim and final configuration of Arelious Walker Drive.

As proposed, providing only one travel lane in each direction along Arelious Walker Drive is adequate for this small number of units comprising CP-01, and essentially serves to connect the four development blocks together and provide connections to Carroll Avenue and Gilman Avenue, two primary east-west connections to the greater Bayview neighborhood.

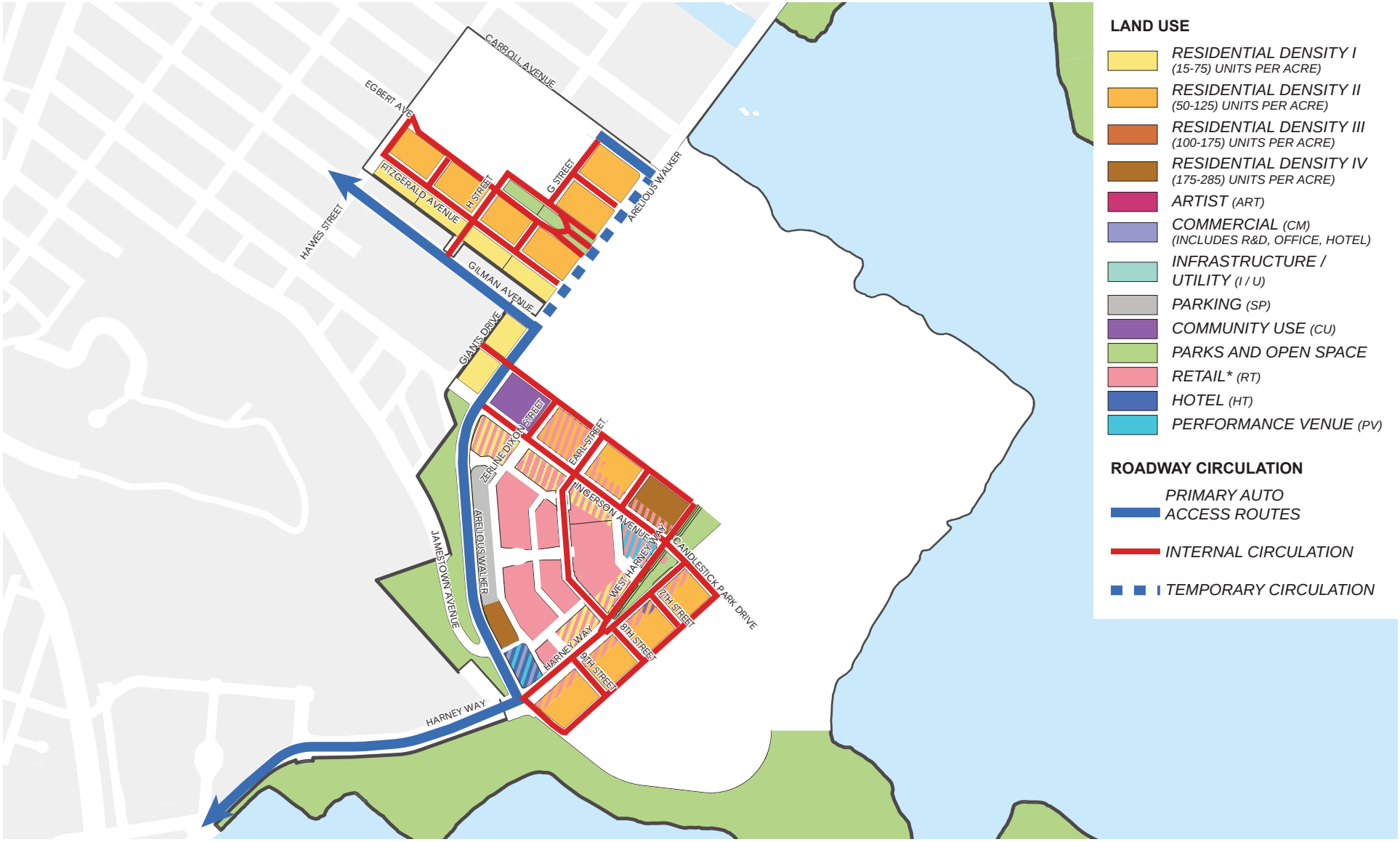

Figure 2

CP Major Phase 1

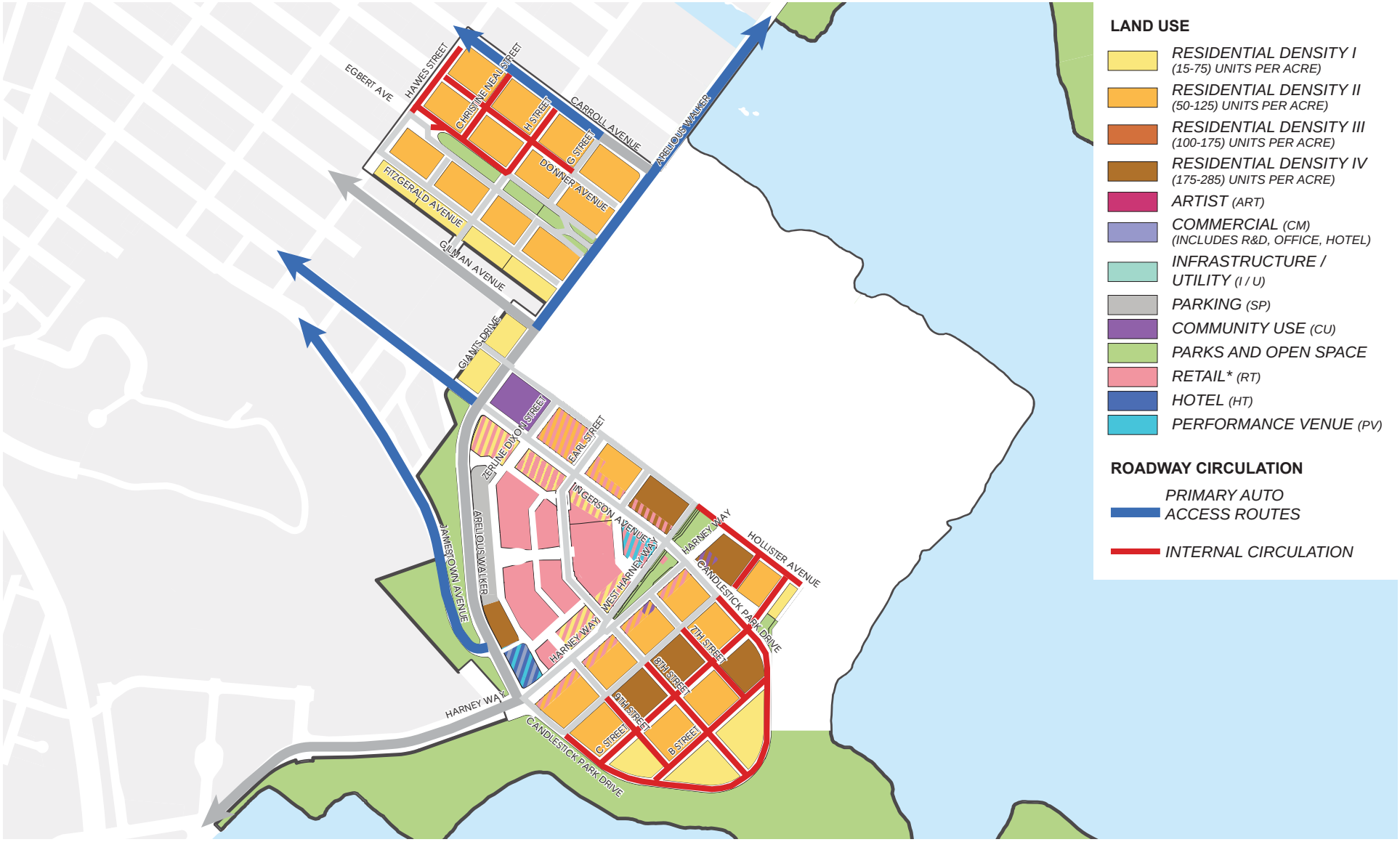

Figure 3

CP Major Phase 2

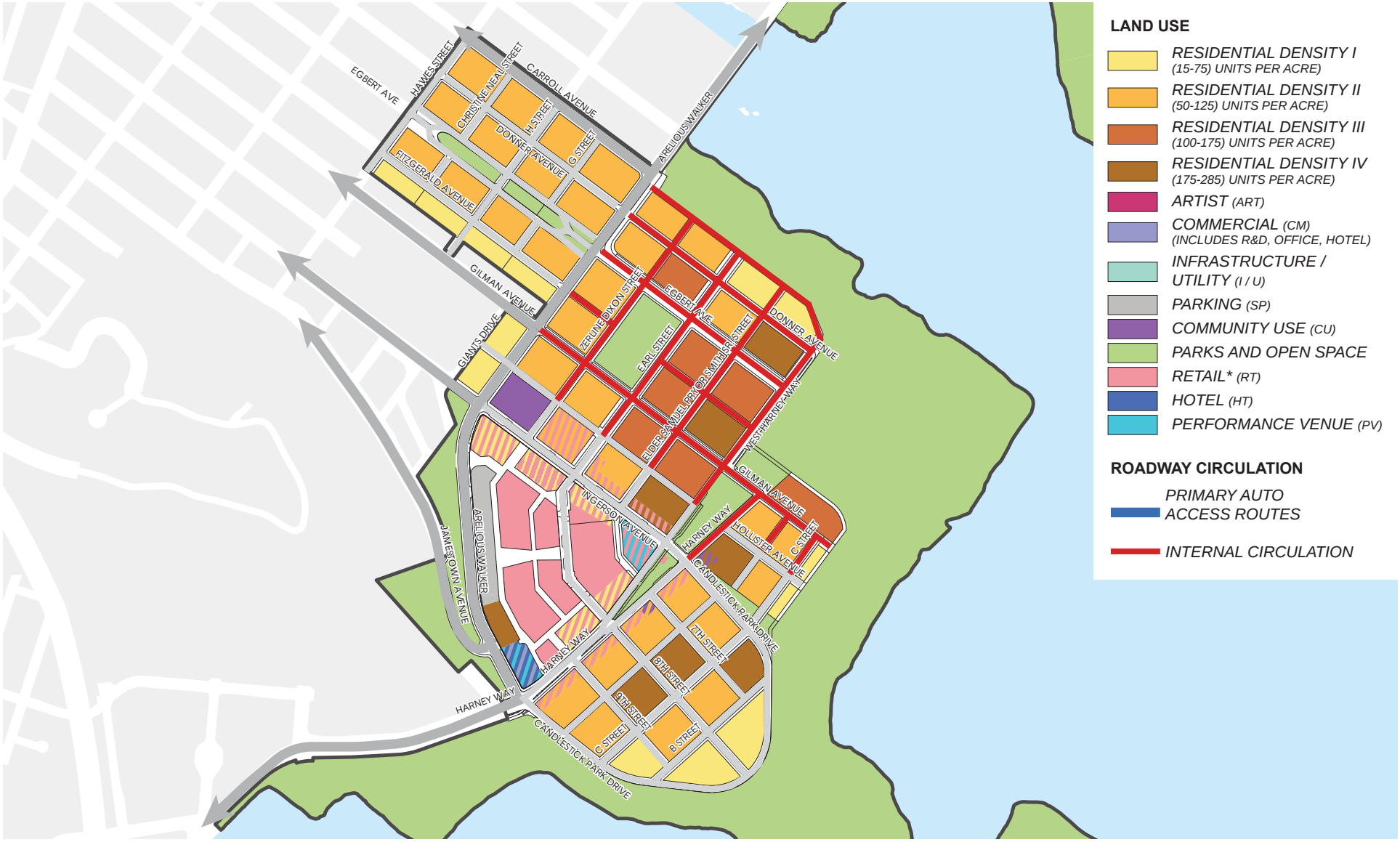

Figure 4

CP Major Phase 3

Sub-phase CP-02 would develop the 635 ksf regional retail center, a 220-room hotel, 419 residential units, 150 ksf of office, and the 10,000-seat arena. To support this large amount of new development, the key transportation infrastructure connecting Candlestick Point to external routes will be constructed, including Harney Way between the retail center and Thomas Mellon Drive and Arelious Walker Drive, between Harney Way and Gilman Avenue. This portion of Arelious Walker Drive would be constructed to its ultimate width of four lanes, and would connect to the interim two-lane portion to the north of Gilman. Harney Way will be constructed to its initial configuration with four lanes, as described in the EIR[6]. Additionally, Gilman Avenue, between Arelious Walker and Third Street would be reconfigured to provide one travel lane in each direction, center turn lanes, on-street parking, and would retain the existing sidewalks on both sides of the street. Intersections along Gilman Avenue would be signalized between Arelious Walker Drive and Third Street[7].

Note that Mitigation Measure MM TR-16 in the EIR requires Harney Way to be reconstructed prior to the issuance of a grading permit for the first Major Phase of development. As noted in EIR Addendum 1, since the first Sub-phase in Major Phase 1 in Candlestick Point, CP-01, does not connect to Harney Way and improvements to Harney Way would not affect auto capacity associated with CP-01, reconstruction of Harney Way is not necessary for the first subphase of development. Consequently, a modification was proposed to Mitigation Measure MM TR-16 as part of Addendum 1 (and subsequently approved by OCII, as noted earlier) to provide that Harney Way would be constructed such that it is complete prior to the issuance of occupancy permits for the second subphase of Major Phase 1, CP-02. These same revisions addressed in Addendum 1 would continue to apply to the modified Project.

Other than ensuring that other existing east-west streets connect to Arelious Walker Drive, none of the project-proposed improvements to Carroll Avenue, Ingerson Avenue, or Jamestown Avenue will be constructed as part of Sub-phase CP-02. Carroll Avenue is at the northernmost portion of the CP site, and therefore, not likely to be a desirable route to the Candlestick Point retail center, which

[6] EIR Addendum 4 discussed the potential for the initial phase of Harney Way to be constructed in two sequences corresponding to the need for information from SFMTA regarding the ultimate interim routing of the 28R BRT route. Addendum 4 concluded that since the sequenced construction would still result in the same auto capacity at all times and would still complete the exclusive right of way for the BRT in advance of service, there would be a less than significant impact of this sequencing. The same conclusions still apply to the Modified Project.

[7] This is different from the EIR proposal for Gilman Avenue. The proposed changes were evaluated in EIR Addendum 4, which showed the revised design would operate similar to the originally-proposed configuration, with less disruption to the neighborhood due to construction.

sits at the southern end of the CP site. Further, improvements proposed for Ingerson Avenue and Jamestown Avenue are generally streetscape improvements designed to improve the attractiveness of the streets and not to increase auto capacity; therefore, for purposes of discussing traffic impacts, the timing of improvements to these streets is not critical and most of the auto capacity connecting the CP site to the external roadway network will be constructed as part of Sub-phase CP-02 with the described improvements to Harney Way and interim improvements to Arelious Walker Drive.

At this point, prior to occupancy of Sub-phase CP-02, with the exception of the interim portion of Arelious Walker Drive between Gilman Avenue and Carroll Avenue, all of the major auto traffic infrastructure in Candlestick Point required to connect project-related traffic to the external roadway network will be constructed, as will most of the off-site capacity enhancements, including Harney Way and Gilman Avenue.

Subphase CP-03 involves construction of the blocks directly opposite the retail center across Ingerson Avenue. No additional transportation improvements are proposed as part of CP-03 because the major improvements needed to serve CP-03 will be constructed earlier, as part of CP-01 and CP-02.

With the opening of CP-04, the first four subphases would generate about 3,750 vehicle trips, which would exceed the trigger point identified in the FEIR of approximately 3,150 vehicle trips that would require improvements to the auto route around the Yosemite Slough, that includes Carroll Avenue, Ingalls Street, Thomas Avenue, and Griffith Avenue[8]. The analysis conducted for the FEIR was based on the original phasing, which as noted earlier, would develop in the Hunters Point Shipyard site faster than currently proposed. As a result, the automobile route around Yosemite Slough was identified as appropriate infrastructure to provide access to Candlestick Point and US 101 from the development at Hunters Point Shipyard. The trigger in the FEIR was identified as the appropriate time when the improvements would be necessary.

However, based on current proposed phasing, the previously-identified trigger point for the auto route around Yosemite Slough would be met with less development in the Hunters Point Shipyard and substantially more development in Candlestick Point than originally anticipated. As a result, there is likely to be less auto demand for travel between the Hunters Point site and US 101 or

[8] Fehr & Peers, *Roadway and Transit Phasing Plan*, p.5, Table 4, March 17, 2010

between the Candlestick Point and Hunters Point Shipyard sites, making the auto route around Yosemite Slough less critical at such an early stage.

The improvements around Yosemite Slough would be required when approximately 85 percent of the total forecasted increase in vehicle traffic at the intersection of Carroll Avenue and Ingalls Street would occur. Based on currently-proposed phasing, this would occur around CP-07, which is also when the northern portion of Alice Griffith development adjacent to Carroll Avenue is scheduled to be constructed. Thus, the trigger for improvements to Carroll Avenue and the automobile route around Yosemite Slough has been modified based on the revised phasing. Intersection LOS calculation sheets demonstrating that the intersection would operate acceptably under its current configuration up to approximately 85 percent of the total forecasted growth is provided in **Appendix E**.

The remaining auto capacity enhancements on Arelious Walker Drive, between Gilman Avenue and Carroll Avenue would also be required to be constructed prior to occupancy of Sub-phase CP-07. At the end of Sub-phase CP-06 in Candlestick Point, which represents the condition at which the most traffic would be using the interim portion of Arelious Walker Drive, the intersection of Arelious Walker Drive and Gilman Avenue would operate within acceptable level of service, as shown in **Table 9** below, and therefore, no significant impacts would occur as a result of providing this interim condition through Sub-phases CP-01 through CP-06. Detailed LOS calculations are provided in **Appendix E**.

TABLE 9
INTERIM INTERSECTION OPERATIONS – ARELIOUS WALKER DRIVE

Intersection	**Arelious Walker/Gilman (PM Peak Hour)**	
	Delay[1]	**LOS[1]**
Interim Condition at completion of CP-06	53	D

Notes:
1. Intersection level of service (LOS) based on weighted average control delay per vehicle, according to the *2000 Highway Capacity Manual*.

As a result, the roadways that facilitate travel between the project site and the external roadway network would generally provide their full capacity prior to any new trips being generated from Major Phase 2, with the exception of the portion of Arelious Walker between Gilman and Carroll. This segment would be widened to its full capacity near the beginning of Major Phase 2, at which point all major roadways in the CP portion of the project site would be at their full capacity. Otherwise, as shown in Figures 3 – 5, Major Phases 2 and 3, would only add internal circulation roadways adjacent to new development parcels to connect to the major roadways built as part of Major Phase 1. As a result, auto capacity in the Candlestick Point area will be greater than or similar to what was described in the EIR throughout the development buildout.

Hunters Point Shipyard

As noted earlier, development at Hunters Point Shipyard is anticipated to occur later than originally anticipated. As a result, and to respond to some of the changes in the order of development, revisions to the FEIR improvement phasing requirements are proposed to better respond to land use phasing. As shown in **Table 10**, similar to the proposed changes at Candlestick Point, all roadway improvements are scheduled to be implemented at the same triggers or sooner (relative to development levels) than proposed in the EIR.

Figures 5 – 7 show the development of land use and roadway infrastructure for Major Phases 1 – 3 for the Hunters Point Shipyard site, respectively. At buildout, the primary access routes to the Hunters Point Shipyard site include the four-lane Innes Avenue and the two-lane Palou Avenue. **Figure 5** illustrates that the primary northern access route to the Shipyard site, Donahue Street and Innes Avenue, would be constructed and connected to the HPS North area as part of Major Phase 1. The main southern access route to the Shipyard Site, Crisp Avenue, would also be constructed as part of Major Phase 1. Improvements to Crisp Avenue, Spear Avenue, and a portion of Robinson Street, and associated internal streets to connect between them, would be constructed as part of Subphase CP-01, prior to any new trips generated by development in the Hunters Point Shipyard site. The remainder of Robinson Street, and improvements to Donahue Street and Innes Avenue would be reconstructed as part of HP-02, when the first nearby developments as part of HP-02 are constructed. With the improvements constructed in HP-02, the roadway network will provide a complete, continuous route from Innes Avenue to Crisp and Palou avenues. This access route accounts for the total auto capacity of the HPS site to connect with the surrounding neighborhoods and will be adequate to serve the development proposed as part of Major Phase 1 in Hunters Point

Shipyard. Internal streets proposed as part of Major Phase 1 in Hunters Point Shipyard would connect between Donohue Street and Innes Avenue.

TABLE 10

PROJECT STREET SEGMENT IMPROVEMENTS – HUNTERS POINT SHIPYARD

Intersection	Improvement	Original Non-Stadium Option[c]		Modified Project	
		Traffic Volume Trigger?[b]	Trigger	Traffic Volume Trigger?[b]	Trigger[d]
Palou Avenue, Griffith Avenue to Third Street	Resurface and Restripe, Streetscape Amenities	Yes	TBD - Based on Transit Phasing	No	HP-05 or Based on Transit Phasing to coincide with improved service frequencies
Thomas Avenue, Ingalls Street to Griffith Street	Resurface and Restripe, Streetscape Amenities	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP)[a]	Yes	CP-07[e]
Griffith Street, Thomas Street to Palou Street	Resurface and Restripe, Streetscape Amenities	Yes	Reconstruction of Crisp Avenue	Yes	CP-07[e]
Innes Avenue, Donahue Street to Earl Street	Resurface and Restripe, Streetscape Amenities	Yes	1,000 PM Peak Hour Vehicle Trips	No	HP-02
Crisp Avenue, Palou Avenue to Fischer Street	Resurface, Restripe, Realign	No	Adjacency	No	HP-01
Innes Avenue/Hunters Point Boulevard/Evans Street, Earl Street to Jennings Street	Resurface and Restripe, Streetscape Amenities	Yes	1,000 PM Peak Hour Vehicle Trips	No	HP-02
Donahue Street, LaSalle Avenue/Kirkwood Avenue to Crisp Road	Extend Street	N/A		No	None. Optional Improvement.

a. Combined total from CP and HP
b. Based on trip rates by land use used in the EIR for Variant 1 (R&D).
c. As summarized in the FEIR (Comments and Responses, Appendix A4, Roadway and Transit Phasing Plan, Fehr & Peers, March 17, 2010
d. Where multiple triggers are provided, the trigger shall be whichever event occurs first. When a sub-phase is listed as the trigger, the improvement shall be fully constructed and operational prior to occupancy of the sub-phase.
e. Although these two segments are technically part of the HP improvements, they are part of an overall strategy to provide increased auto capacity between HP and CP and should be implemented simultaneously with other improvements on Carroll Avenue and Ingalls Street that are triggered by development in CP.

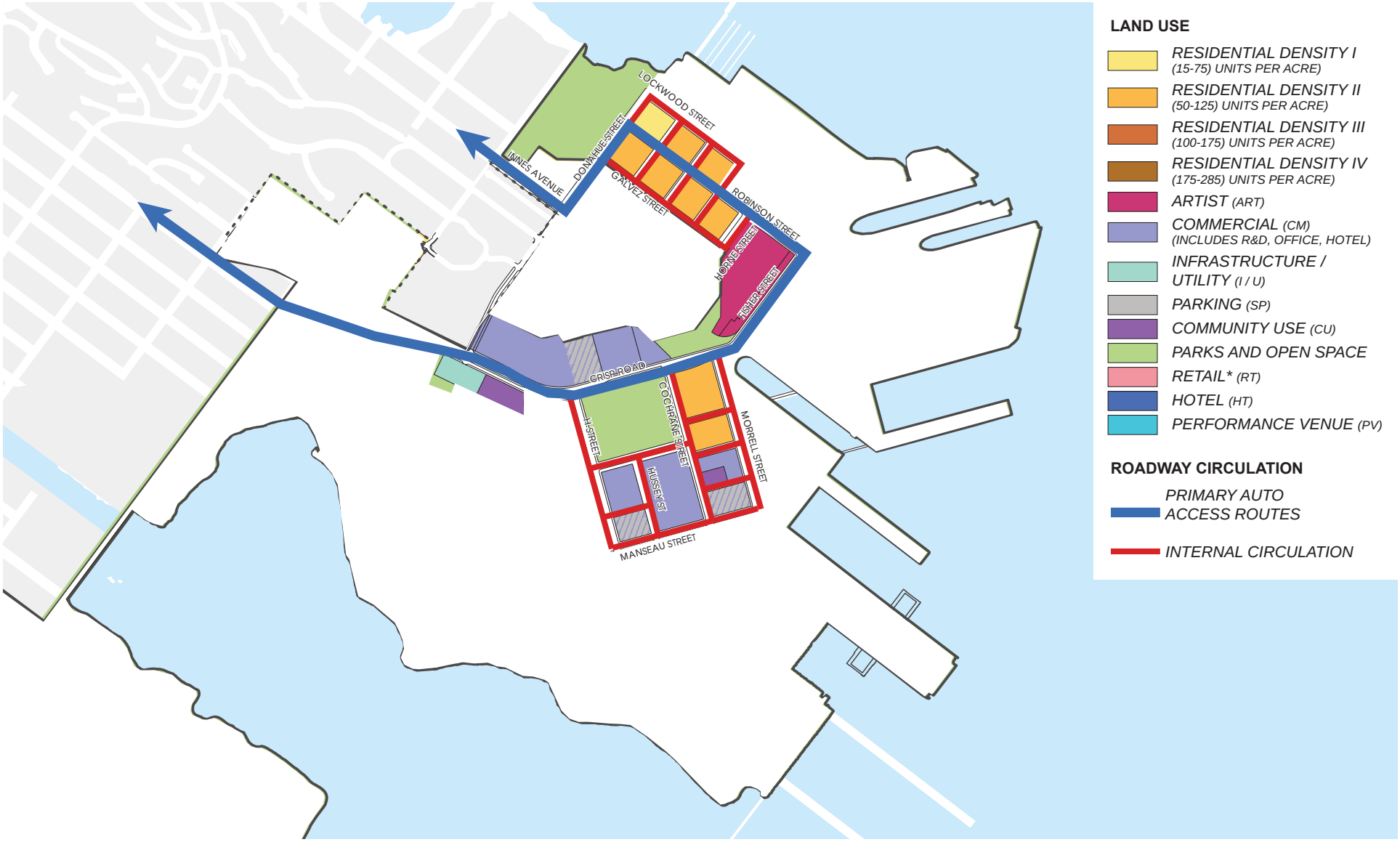

Figure 5

HP Major Phase 1

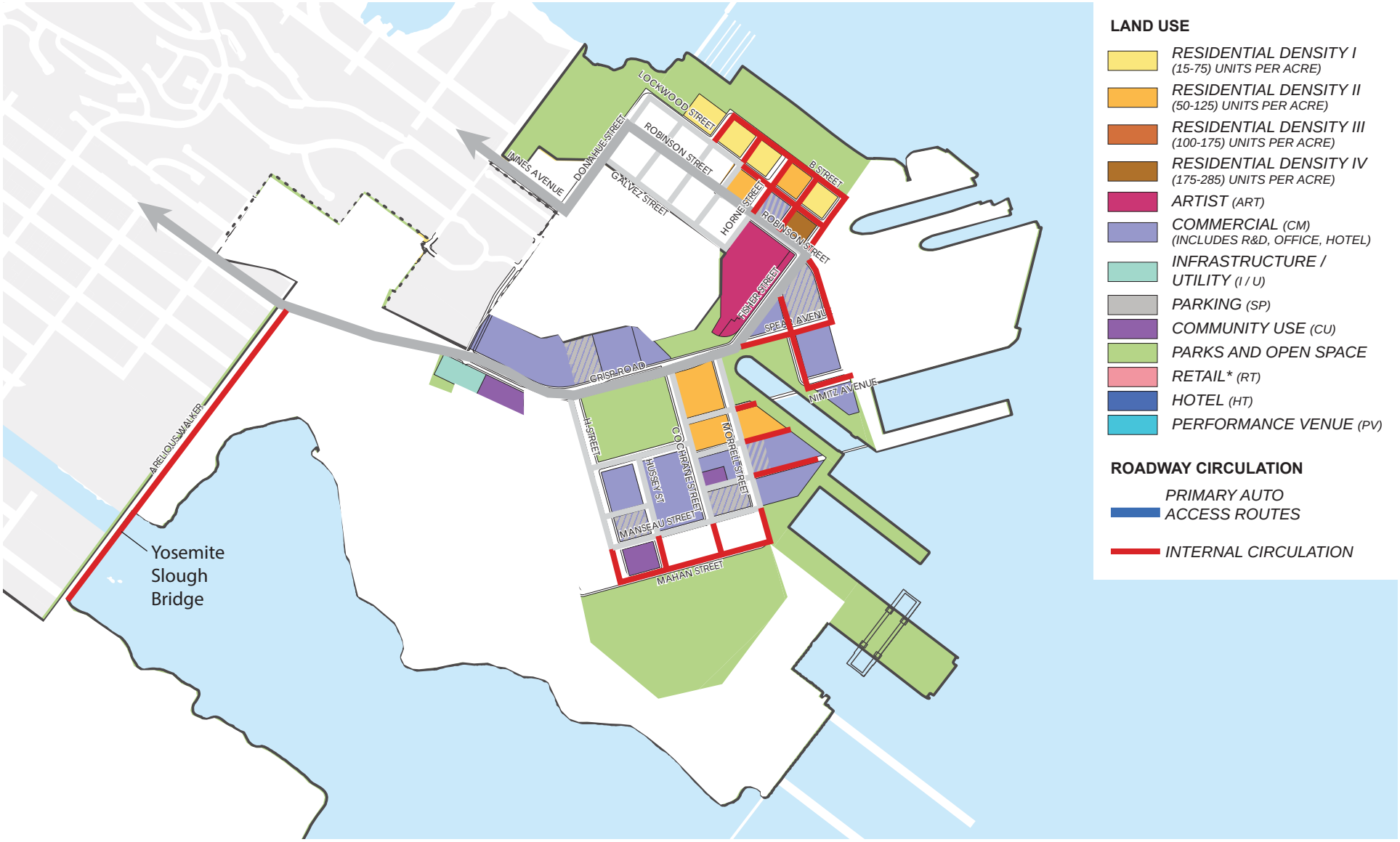

Figure 6

HP Major Phase 2

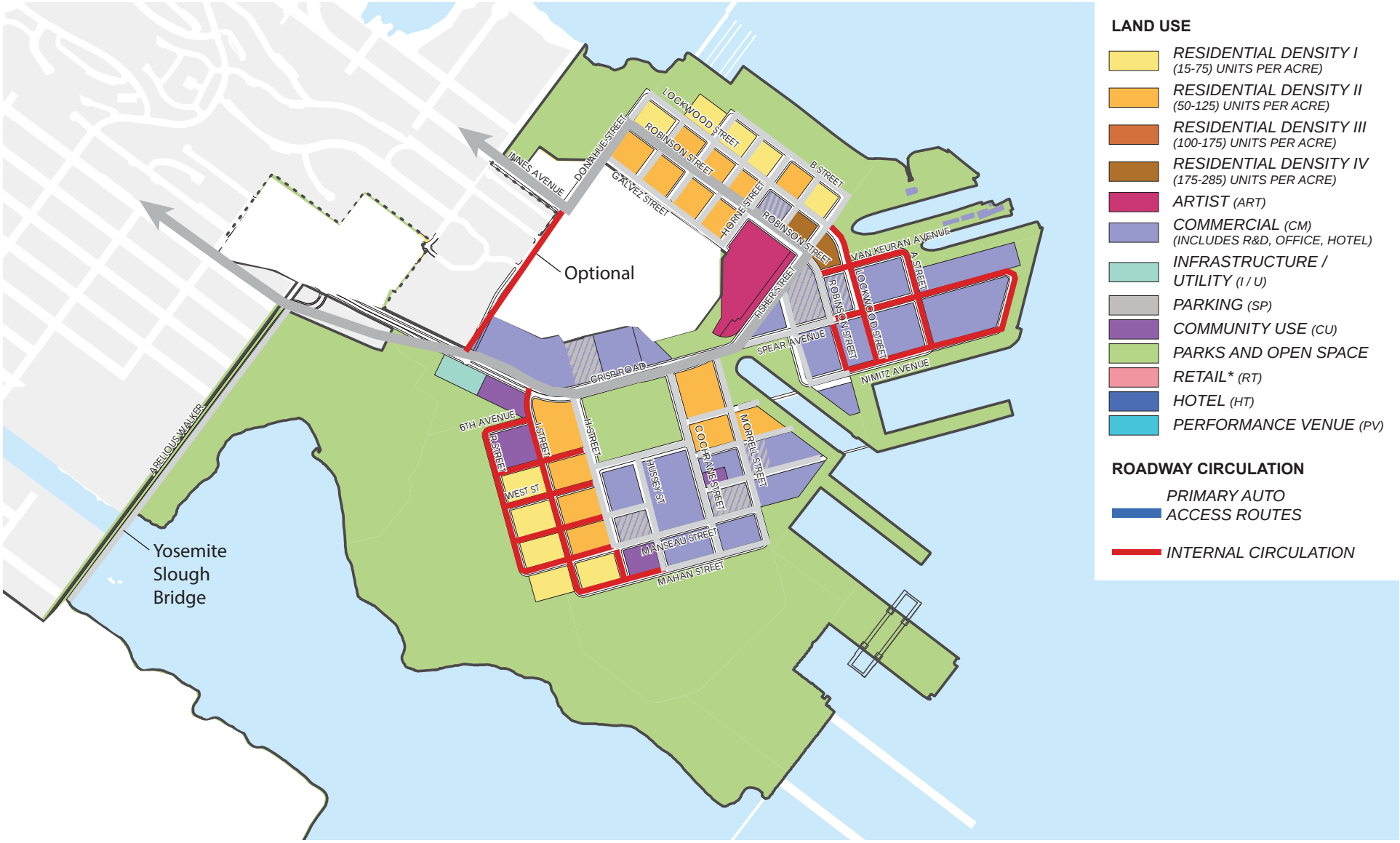

Figure 7

HP Major Phase 3

Figures 6 and 7 illustrate that, other than the optional extension of Donahue Street to Crisp Avenue, subsequent phases would simply build out the internal roadway network adjacent to individual development parcels, all of which will connect to the major access routes. Therefore, the major pieces of auto infrastructure connecting Hunters Point Shipyard with the external roadway network will be constructed as part of Major Phase 1 in Hunters Point Shipyard, and therefore, auto capacity should be greater than or similar to what was described in the EIR during all phases of development.

As noted earlier, the Modified Project includes an optional extension of Donahue Street to provide a better connection between the northern and southern portions of Hunters Point Shipyard. The technical analysis conducted as part of this letter report does not include this extension.

However, the decision to implement this extension would not affect impact conclusions. For example, under conditions without the extension, traffic from the southern portion of Hunters Point Shipyard destined for Innes Avenue and points north would drive through the site, "around the hill" (likely via Fischer Street, Robinson Street, and Donahue Street) to reach Innes Avenue. With the extension, this traffic could simply drive along Crisp Road to Donahue Street and drive directly "over the hill" to Innes Avenue. Traffic on external roadways would likely be similar, and traffic within the site would likely be less, as there would be less need for circuitous travel within the site. Thus, if anything, the extension of Donahue Street would likely reduce congestion within the site.

As a result of the analysis described above, no new or substantially increased significant traffic impacts are expected as a result of the Modified Project or the modified phasing compared to the traffic impacts described in the EIR associated with FEIR Variant 1 (R&D), and therefore, no new mitigation measures are required. Conditions with mitigation measures described in the FIER (and as modified above) would continue to operate similarly to conditions described in the FEIR.

IMPACTS TR-17 THROUGH TR-30: IMPACTS TO LOCAL AND REGIONAL TRANSIT OPERATIONS AND CAPACITY

The EIR described the Project's impacts to transit in Impacts TR-17 through TR-30. Impacts TR-17 through TR-20 identified that, with implementation of the Project's Transit Operating Plan (identified as Mitigation Measure MM TR-17), the Project would provide adequate transit capacity locally, at the standard Downtown screenlines, and regionally to meet its projected demand. With implementation of MM TR-17, Impacts TR-17 through TR-20 were determined to be less than significant.

The EIR also identified Impacts TR-21 through TR-27, which describe impacts to transit travel time associated with Project-generated traffic congestion on specific corridors affecting specific transit lines. Mitigation Measures MM TR-21 through MM TR-27 were identified and consist of three parts:

- Transit travel times should be monitored throughout the course of project buildout to determine whether Project-generated traffic is decreasing transit travel speeds.
- If speeds are decreasing, travel time reduction measures should be implemented on the affected corridors. These measures typically involve dedication of transit-only lanes.
- If reduction measures are either infeasible or not effective at improving travel speeds, new vehicles should be purchased to allow SFMTA to maintain planned service frequencies.

However, because implementation of these measures requires substantial additional outreach and design, the feasibility of these measures is uncertain, and Impacts TR-21 through TR-27 were determined to be significant and unavoidable.

The EIR also identifies Impact TR-28, a significant and unavoidable impact to SFMTA transit express routes using US 101 that may be slowed down by Project-generated freeway traffic for which no mitigation measures were identified. Impact TR-29 was identified as a less than significant impact to SFMTA transit express routes using I-280 because project-generated traffic on this route would not be as substantial. Impact TR-30 would be a significant and unavoidable impact to other regional transit routes (such as SamTrans express routes) using regional facilities to which the Project would contribute substantial amounts of traffic congestion.

The EIR concluded that Variant 1 (R&D) would have significant impacts to transit at the same locations as the FIER Project, but that Variant 1 (R&D) impacts would be more severe than the FEIR Project due to higher levels of traffic generated. No additional mitigation measures were required as part of Variant 1 (R&D), although the number of additional vehicles that may be required on the 48 Quintara was determined to be higher than that of the Proposed Project. Generally, the mitigation measures would be as effective at reducing the impacts to transit associated with Variant 1 (R&D) as they were forecasted to be at reducing the FEIR Project's impacts.

Similar to traffic impacts, the Modified Project's transit impacts at buildout as described in Impacts TR-17 through TR-30 will be similar to what was described in the EIR for Variant 1 (R&D), although two minor changes have been proposed. Specifically, the Modified Project proposes minor changes to the proposed routes for the 29 Sunset in Candlestick Point and to all routes in the Hunters Point Shipyard associated with a shift of the Hunters Point Shipyard Transit Center. As these routes were

part of the Project's Transit Operating Plan, which was required as part of mitigation measure MM-TR-17, the changes described below, are considered changes to the mitigation measure itself (although no changes to the text of the measure in the FIER are required). Changes described herein have been developed in consultation with SFMTA. Refer to the original Transit Operating Plan, which was included as Appendix A to the Project's Transportation Plan, approved in 2010 as part of the FEIR Project for details on the original transit plan. Refer to the revised Transit Operating Plan, included as Appendix A to the Modified Project's Transportation Plan, which has been prepared as part of the Modified Project, for a more detailed presentation of the Modified Project's transit service plan.

The modification to the 29 Sunset was evaluated as part of EIR Addendum 1 (pp. 19-24), which found that the revisions to the route would offer similar or better transit service levels to the route evaluated in the EIR. The 29 Sunset routing proposed as part of the Modified Project is identical to those evaluated in Addendum 1 and approved by OCII and SFMTA.

Figure 8 illustrates the proposed changes to routes serving the Hunters Point Shipyard. The changes involve moving the Hunters Point Transit Center two blocks to the north from the original EIR proposal. The 28R BRT route and the 23 Monterey/24 Divisadero would travel an additional two blocks along Spear Street to reach the center. Routes approaching the Transit Center from Innes Avenue would travel along Lockwood Street to reach the Transit Center instead of Robinson Street, as originally proposed in the FEIR. Land uses along Lockwood Street and Robinson Street are relatively similar, so no change to transit mode share is expected as a result of this change. In Hunters Point South, transit (the 28R BRT and the 23 Monterey/24 Divisadero) would travel along Crisp Avenue along the northern edge of Hunters Point South. This is similar to the original EIR proposed routing in Hunters Point South.

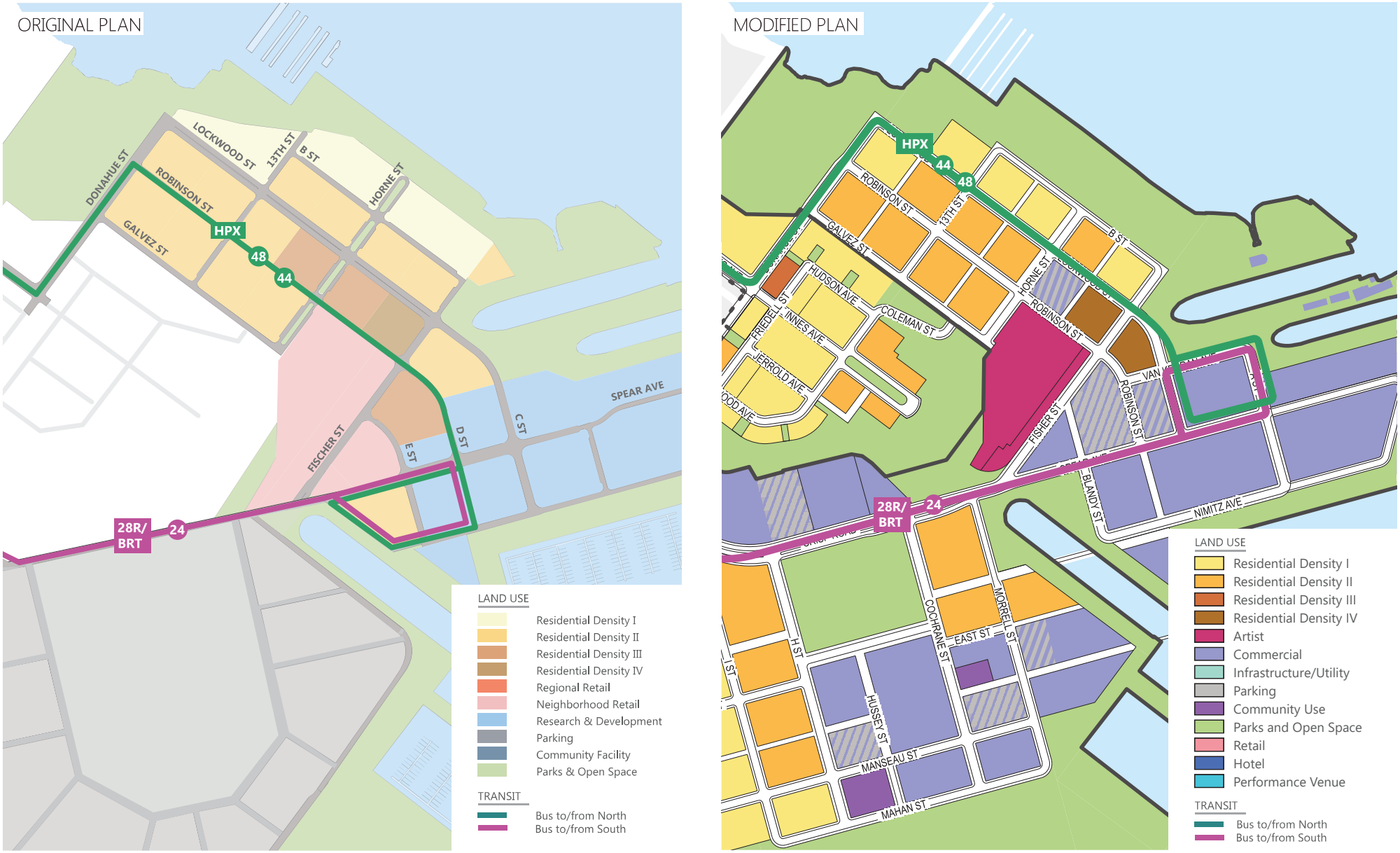

Figure 8

Proposed Change to Hunters Point Shipyard Transit

Transit Demand and Capacity

As shown in Tables 3 – 5 above, the changes contemplated as part of the Modified Project would slightly increase traffic demand and would not substantially change transit demand compared to FEIR Variant 1 (R&D) in the EIR. Furthermore, the proposed changes in routing are not likely to have an effect on mode share. Therefore, the proposed modifications will not likely result in additional or substantially more severe significant impacts beyond those identified in the EIR under buildout conditions as it relates to transit capacity impacts or delay associated with traffic congestion.

Transit Delay

Mitigation Measure MM TR-17, which calls for the project applicant to work with SFMTA to implement the proposed transit service increases would still apply. Mitigation Measures MM TR-21, MM TR-22, MM TR-23, MM TR-24, MM TR-25, MM TR-26, and MM TR-27, which call for the applicant and SFMTA to implement transit priority features or purchase new vehicles to maintain headways affected by Project-generated traffic congestion, would also still apply.

As noted in Table 3, the Modified Project would increase traffic volumes within the Hunters Point Shipyard site, possibly increasing delays to transit serving the Hunters Point Shipyard site. However, the Modified Project includes several features designed to ensure that transit within and around the Hunters Point Shipyard site is not adversely affected by increased traffic. Internal to the site, all transit would operate in transit-only lanes, as the Modified Project includes new transit only lanes along Lockwood Avenue that were not part of the FEIR Variant 1 (R&D), as well as the transit lanes along Crisp Avenue that have always been a part of the project.

External to the site, mitigation in the form of transit-only lanes was identified for the Palou Avenue routes in the FEIR, and monitoring is required to determine when/if the mitigation is needed. To the extent changes in Addendum 6 increase conflicts and delay to transit, the mitigation measure would simply be triggered sooner, as identified by the monitoring. Therefore, the delay to transit along Palou will not get worse than what the FEIR contemplated.

Similarly, the FEIR identified mitigation in the form of transit-only lanes along Evans Avenue. A similar monitoring program was established, such that if transit delays associated with the Modified Project are greater (or materialize more quickly in the buildout stages of the Modified Project) than

identified in the FEIR, the mitigation measure would simply be implemented sooner, meaning that excessive transit delays would still be avoided.

Furthermore, although not required as part of the FEIR Variant 1 (R&D) or the Modified Project, a nearby development project that would develop within India Basin, along Innes Avenue, west of the HP site, has been proposed. A Draft EIR has recently been published for public review and comment, although as of the preparation of this analysis, the Draft EIR has not been certified nor has the associated project been approved. However, that project's Draft EIR identified a significant impact to transit associated with movements into and out of the India Basin project's site. The Draft EIR has called for conversion of one lane in each direction on Innes Avenue to transit-only as mitigation for the significant impact associated with that project. That measure, if approved, would ensure a continuous transit-only lane between the Modified Project's transit center and Third Street, potentially resulting in increased traffic congestion and more efficient transit service.

While implementation of the India Basin project's mitigation measure for transit-only lanes along Innes Avenue would be an additional benefit to transit, the analysis herein does not assume that mitigation measure to be in place because it has not yet been approved. If those transit-only lanes are not implemented, transit conditions along the Innes Avenue corridor would be similar to those identified in the FEIR for Variant 1 (R&D) as the amount of traffic increase along Innes Avenue associated with the Modified Project would be relatively small (i.e., less than 100) since the Modified Project represents a net increase of only approximately 280 vehicle trips in the PM peak hour compared to FEIR Variant 1 (R&D), and only approximately half of those trips would occur along Innes Avenue, and only a fraction of the trips along Innes Avenue would occur in the peak direction.

Transit Phasing

Similar to the Project's roadway infrastructure, the Project's transit network was proposed to be implemented at various levels throughout the development as described in the Transit Operating Plan. As a result of proposed changes to the development phasing, the transit phasing has been modified in order to ensure that the appropriate transit service is provided throughout the development as currently envisioned. Mitigation Measure MM TR-17 notes that the transit operating plan may be modified from what was approved in the EIR "to address changes in the operating environment and service demands" based on SFMTA's planning methodology and public input if modifications result in:

- Similar or higher transit mode share to what was projected in the EIR
- Adequate capacity to serve projected transit ridership
- Similar or less severe traffic impacts to those identified in the EIR

Although the changes to the Transit Operating Plan are not specifically to address current or observable changes in the operating environment and service demands, the Project Sponsor and SFMTA believe that the proposed changes to development phasing would affect the future operating environment and service demands, and thus propose changes to the Transit Operating Plan to better meet future demands consistent with the Mitigation Measure MM TR-17 provisions.

The FEIR Project and Modified Project transit phasing are shown in **Table 11**. **Appendix F** includes detailed comparison of the approximate number of transit trips (and approximate level of development) that would be in place at the time each level of transit service would be implemented under the FEIR Project and the Modified Project. Generally, changes to the transit phasing delay the provision of transit service to the Hunters Point Shipyard site, due to the delay in development there. In response to the acceleration of planned development in Candlestick Point, transit service at Candlestick Point would be accelerated. Overall, the revised phasing has been developed in collaboration with SFMTA service planning staff to retain a relatively close approximation to the level of transit demand that would be generated for each level of transit service between the FEIR Project and Modified Project, combined with engineering judgment to account for the unique development phasing currently proposed.

Additional analysis demonstrating that the levels of transit service relative to development would result in similar effectiveness to the analysis in the FEIR is provided later in this section. **Figures 9 – 11** show the phasing of transit and bicycle infrastructure relative to the three Major Phases of development at HP. (Phasing of transit and bicycle infrastructure at CP is relatively similar to what was assessed in Addendum 1, and therefore, no additional detail is provided here).

CP-01, CP-03, and CP-04 are currently slated to be first sub-phases completed as part of Major Phase 1. They consist of residential and neighborhood-serving retail uses. The primary transit service likely to be used by residents in CP is express bus service to Downtown San Francisco. Thus, as part of these sub-phases (currently scheduled to be completed by approximately 2021), the Candlestick Point Express (CPX) bus route will be initiated. Because of the relatively high number of residential units comprising these sub-phases, the CPX will start out at 15-minute headways and then quickly increase to 10-minute headways.

TABLE 11

TRANSIT PHASING

Route	Frequency	FEIR/Approved Transit Operating Plan		Modified Project	
		Major Phase	Approx. Year	Major Phase/ Subphase	Approx. Year
Hunters Point Shipyard					
Hunters Point Express (HPX)	20	1	2017	1 / HP-01	2021[d]
	10	1[a]	2019[a]	2 / HP-04	2025
	6	N/A	N/A	3 / HP-06	2026
23 Monterey	20	1	2017	1 / HP-01	2021
23 Monterey or 24 Divisadero[b]	15	2	2023	2 / HP-04	2025
	10	2	2025	3 / HP-06	2026
48 Quintara	15	1	2015	1 / HP-01	2021
	10	1	2019	2 / HP-03	2025
44 O'Shaughnessy	10	N/A	N/A	1 / HP-02	2022
	7.5	1	2017	2 / HP-03	2025
	6.5	1	2019	3 / HP-06	2026
Candlestick Point					
Privately-Funded Shuttle[c]	7.5	N/A	N/A	1 / CP-02	2022
Candlestick Point Express (CPX)	20	2	2021	N/A	N/A
	15	2	2022	1 / CP-03	2021
	10	3	2027	1 / CP-02	2022
29 Sunset	10	2	2021	1 / CP-03	2021
	5	2	2022	1 / CP-02	2025
Routes Serving Both Sites					
28R/BRT (Includes Construction of Yosemite Slough Bridge)	8	2	2021	2 / HP-04	2025
	5	2	2022	3 / CP-07	2028
T Third	6	2	2020	No Change - Not triggered by project development	
	5	3	2025		

Notes:

a) Approved Transit Operating Plan called for service increases to 12-minute headways. This has been revised to 10-minute headways as part of the Modified Project.

b) 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. Note that the Approved Transit Operating Plan also called for three levels of service, corresponding to 15-, 10-, and 7.5-minute frequencies. The Modified Transit Operating Plan has been changed to reduce service levels somewhat on this route and increase service levels on express bus routes based on direction from SFMTA staff.

c) Temporary until initiation of BRT

d) 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.

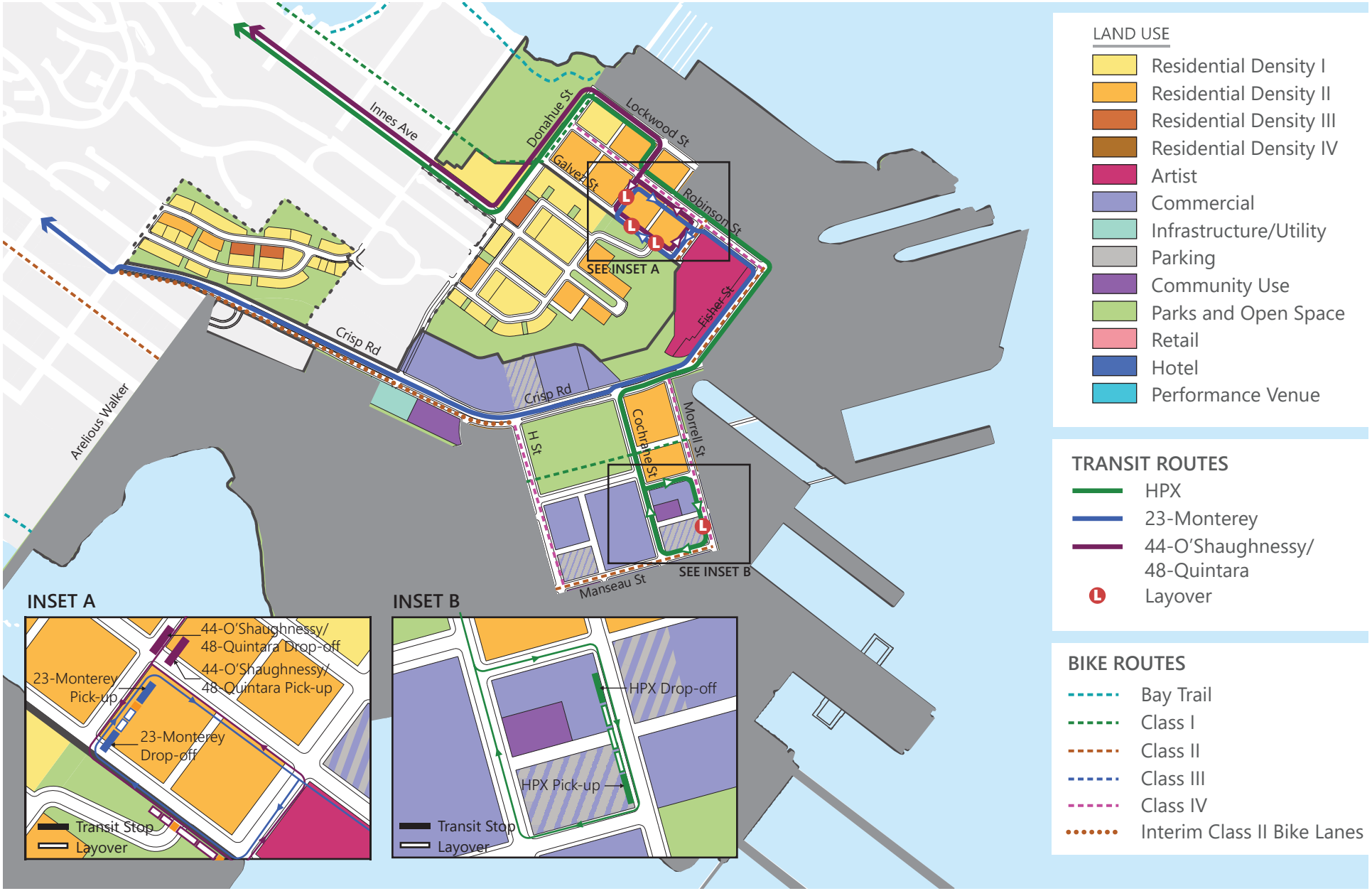

Figure 9

Hunters Point Shipyard - Major Phase I

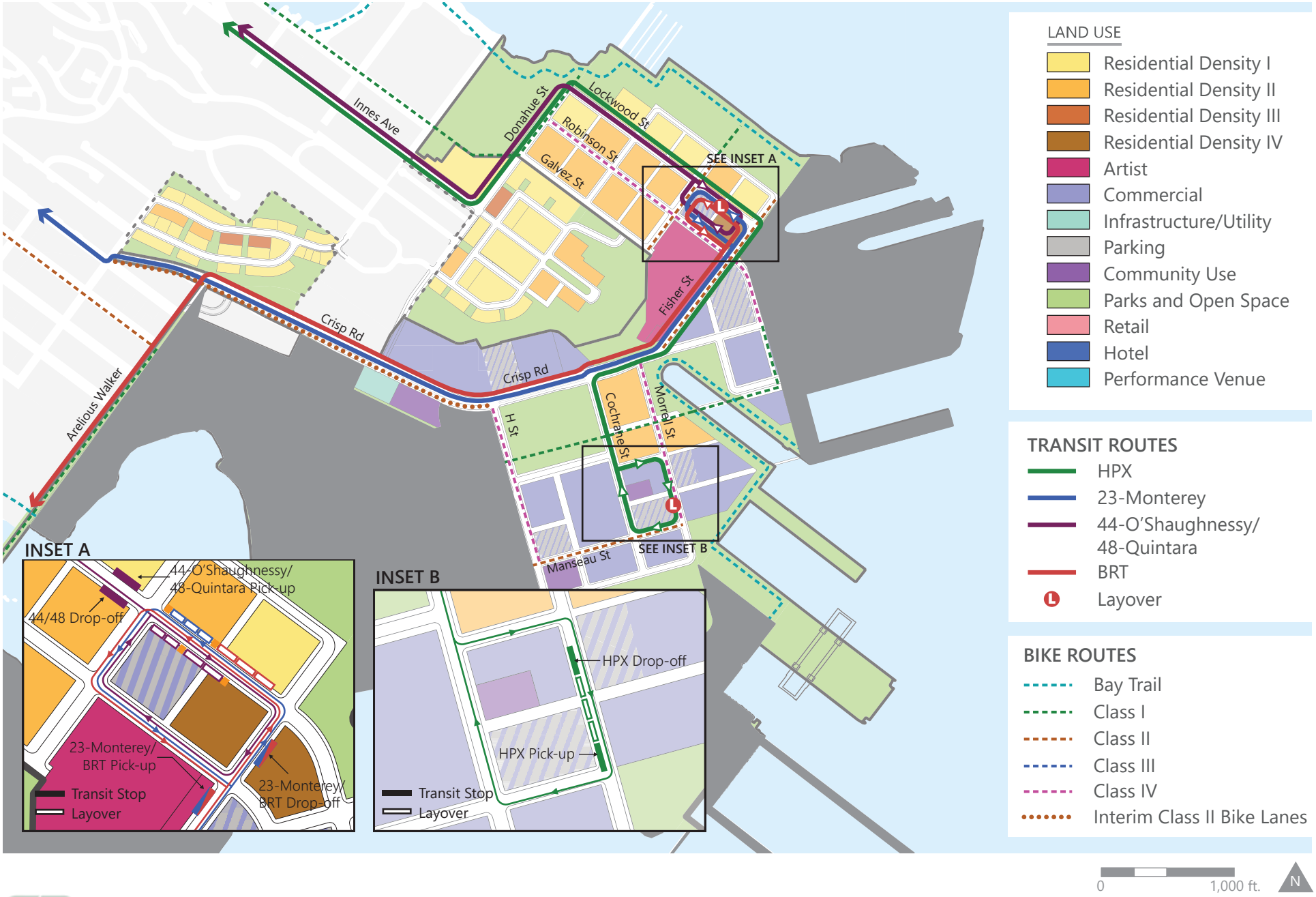

Figure 10

Hunters Point Shipyard - Major Phase II

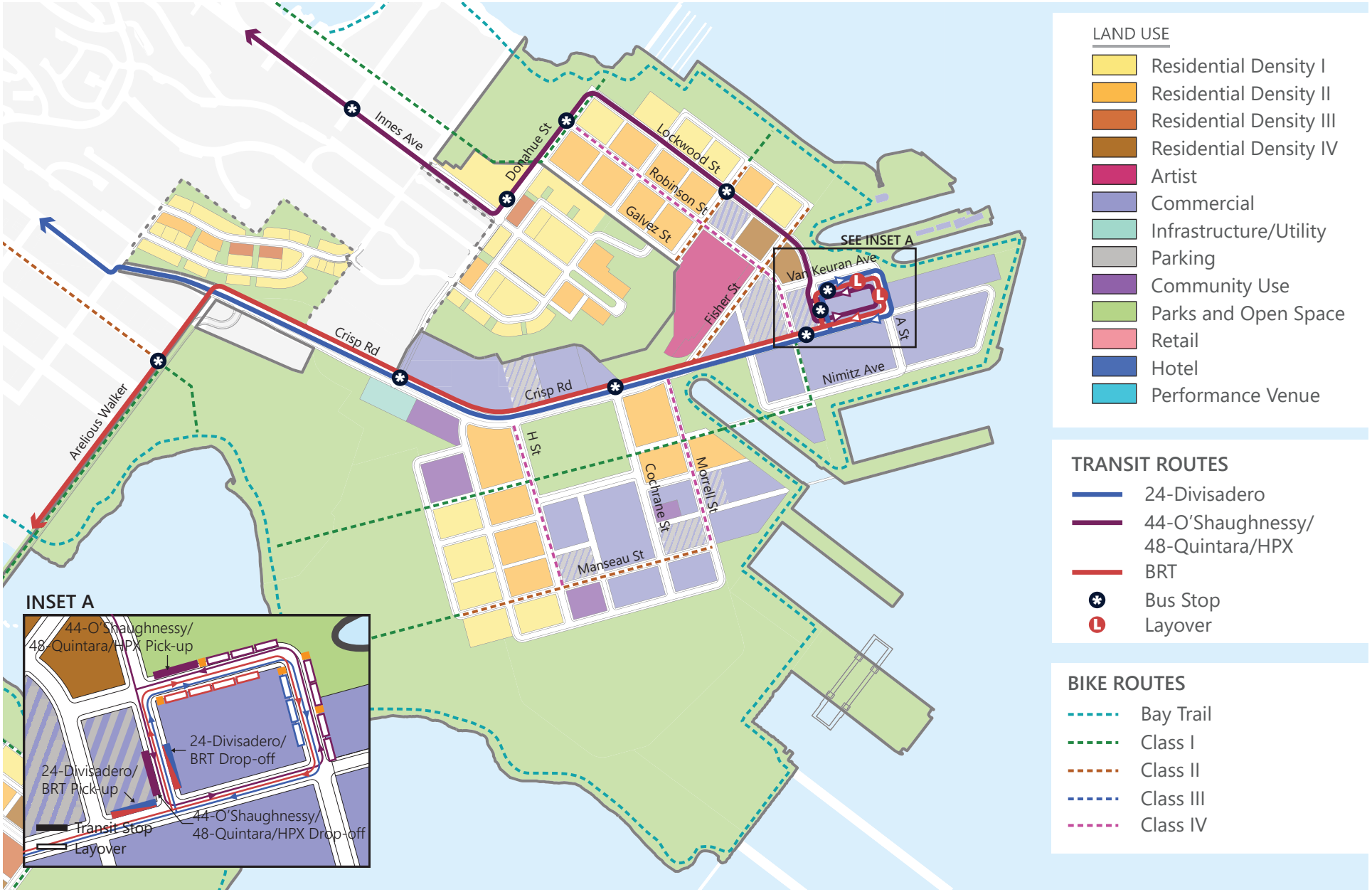

Figure 11

Hunters Point Shipyard - Major Phase III

To serve the retail center planned as part of CP-02, currently scheduled for completion around 2022, the 29 Sunset would be extended to the retail center. The FEIR also assumed the 28R BRT route would be operational prior to opening of the CP retail center. Because the opening of the retail center is currently proposed to be sooner relative to the rest of the development in the Project, SFMTA has indicated that operating the 28R BRT route is not possible in the near term, because of fleet requirements and infrastructure needs (both the Yosemite Slough Bridge and a workable routing west of US 101 prior to completion of the Geneva Interchange Project).

Addendum 1 modified the Transit Operating Plan to include a privately-funded shuttle, available complimentary for the general public, including existing neighbors, future residents, and shopping center patrons and employees, to provide service between the project site and the Balboa Park BART station, replicating service that will ultimately be offered by the 28R BRT route. This shuttle would be provided by the Project Sponsor or other on-site tenant. 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 the mutual agreement of the Environmental Review Officer. This shuttle service will remain in the Transit Operating Plan as part of the Modified Project.

Addendum 1 also modified the Transit Operating Plan to include a temporary extension of the 56 Rutland route into the CP site to provide additional connections to Caltrain and other regional transit. However, that modification called for the extension to be implemented temporarily, only until such time as the CPX was implemented. Since the Modified Project phasing includes implementation of the CPX early on, the 56 Rutland extension would no longer be necessary, and that would be removed from the Transit Operating Plan, consistent with the original FEIR Transit Operating Plan.

Figures 12 and 13 summarize the level of transit supply proposed to be implemented over time relative to the expected transit ridership demand, based on the development phasing schedule and the transit implementation triggers described above, for Candlestick Point and Hunters Point Shipyard, respectively. **Appendix F** provides a year-by-year summary of anticipated development, auto trip generation, and transit trip generation for the Candlestick Point and Hunters Point Shipyard sites, which, along with anticipated transit phasing described in Table 9, formed the basis for **Figures 12 and 13**.

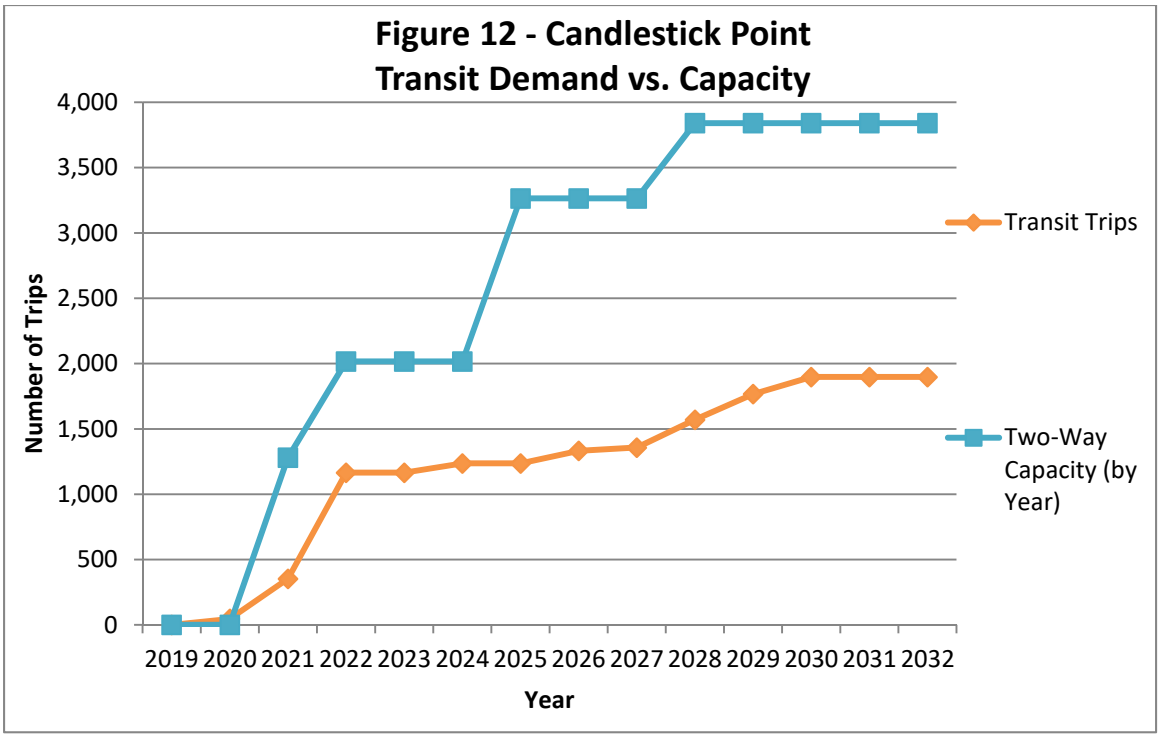
Figure 12 - Candlestick Point
Transit Demand vs. Capacity
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Number of Trips
2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032
Year
Transit Trips
Two-Way Capacity (by Year)

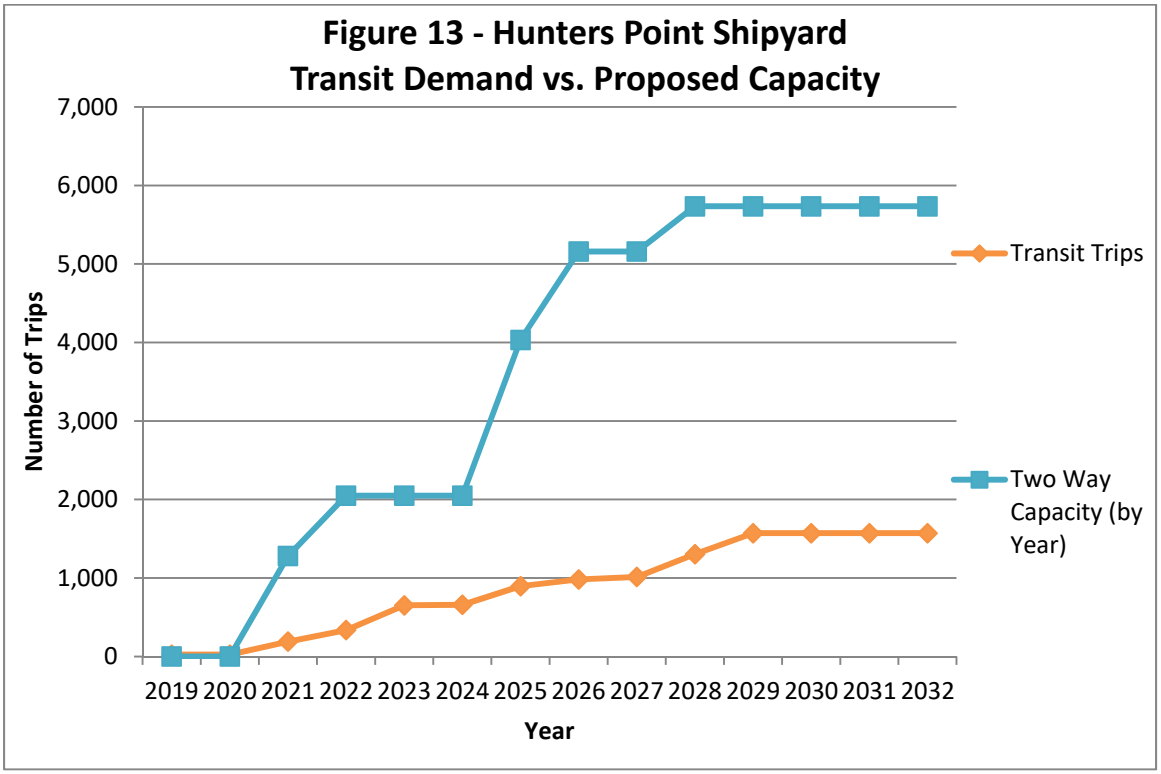
Figure 13 - Hunters Point Shipyard
Transit Demand vs. Proposed Capacity
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Number of Trips
2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032
Year
Transit Trips
Two Way Capacity (by Year)

The figures illustrate that with the proposed changes in development and transit phasing, the level of transit service proposed over time increases roughly in proportion to (and where possible, in advance of) increases in development and associated transit demand. **Figure 12** illustrates that with the Modified Project development schedule and transit phasing, the level of transit service relative to demand will always remain substantially higher than the demand at the Candlestick Point site. For example, the transit service capacity increases substantially in 2021 and 2022, coincident with substantial increases in demand over those same two years. Transit service increases again in 2025, in advance of increases in demand in years 2027 through 2030. The alignment of transit service increases with land use development throughout the development process and at buildout, means the transit will remain an attractive option for travelers in the area.

Figure 13 similarly illustrates that transit service relative to development at Hunters Point Shipyard will generally increase along with, and where possible, in advance of development.

Therefore, transit capacity will be adequate to serve the expected demand, and the mode split (i.e., the percentage of trips made by transit) should remain similar, meaning that there will not be additional significant transit impacts beyond those described in the EIR, nor will the Modified Project substantially increase the severity of significant impacts identified in the FIER, and no additional mitigation measures are required.

IMPACT TR-31 AND TR-32: BICYCLE CIRCULATION

The EIR identified Impacts TR-31 and TR-32 to bicycle circulation. Impact TR-31 generally describes the overall improvement to the areawide bicycle network that would result from the Project. Impact TR-32 describes a significant impact to Bicycle Routes #70 and #170 on Palou Avenue that would be adversely affected by the substantial increases to transit service along this street. Mitigation Measure MM TR-32 calls for relocating the bicycle routes to another nearby street with fewer conflicts, although the measure does not specify where the bicycle facilities should be relocated to.

As noted in the EIR, bicycle facilities are typically categorized as one of four "classes." A Class I facility is a dedicated, off-street space for bicycles to operate without interference from cars, except at intersections. Class I facilities can be one-way or two-way, and can also be shared with pedestrians in some cases. Class II facilities are on-street striped bicycle lanes, which allocate specific space on the street for bicycle use only. Class III facilities are bicycle routes, which do not allocate space dedicated for bicycles, but often include signage and "sharrow" pavement markings

alerting drivers to the likely presence of bicycles. Class IV facilities are exclusively for the use of bicycles and are separated from adjacent auto traffic lanes.

As shown in **Figures 14 and 15**, the Modified Project includes refinements to the proposed bicycle network. Many of these changes – particularly those in Candlestick Point – were addressed in and approved as part of Addendum 1 (pp. 25-27), and would not be changed further as part of the Modified Project being assessed herein. Therefore, they are not discussed further here.

The primary change to the bicycle network in the Modified Project compared to the changes approved as part of Addendum 1 is the re-alignment of the cycletrack in Hunters Point Shipyard South. One of the primary modifications approved as part of Addendum 1 was a new two-way cycletrack connecting the Hunters Point Shipyard and Candlestick Point neighborhoods. Within Hunters Point Shipyard, the cycletrack was to travel along the northern side of Crisp Avenue.

However, the Modified Project proposes an institutional/educational use and some R&D uses on the northern side of Crisp Avenue, which may require driveways or other curb cuts that may disrupt the cycletrack. Therefore, the Modified Project proposes to align the cycletrack through the open space and park area south of Crisp Avenue, and along one of the midblock breaks in HPS South. From there, it would extend across the new bridges across Drydock 4, where it would connect to the planned portion of the Bay Trail traversing the perimeter of HPS and with proposed facilities on Robinson Street. The facility on Robinson Street would be constructed as a Class IV separated facility providing an additional buffer between cyclists and adjacent traffic. These changes would ensure a more direct route between HPS and CP, and would ensure a complete connection within HPS, and to proposed cycletrack facilities west of HPS, within the proposed India Basin project. As a result, the modified Project would provide a more complete and connected network of routes and facilities, and would penetrate through the center of HPS South, instead of along its northern edge as had previously been contemplated.

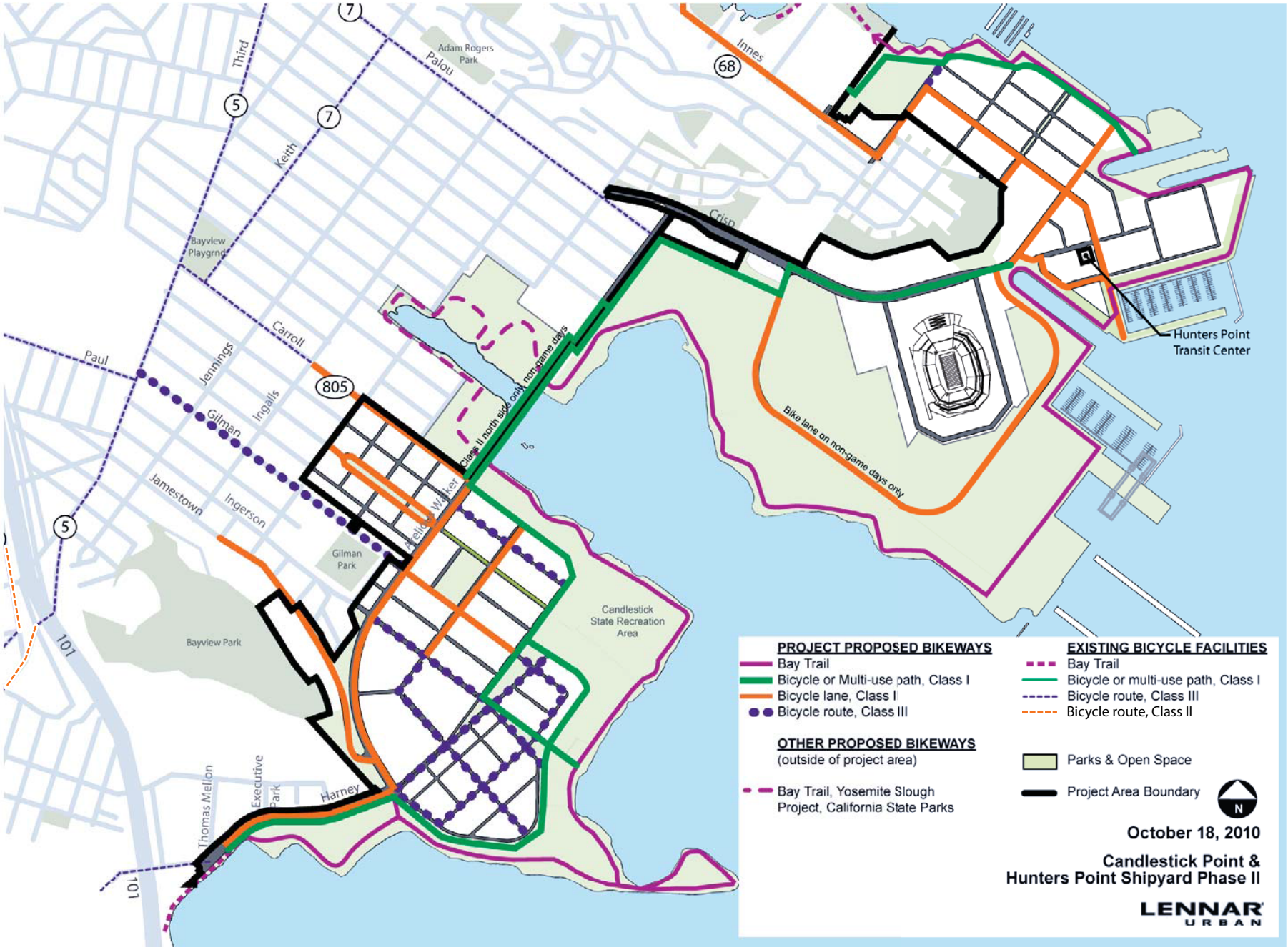

Figure 14

Originally Approved Bicycle Network

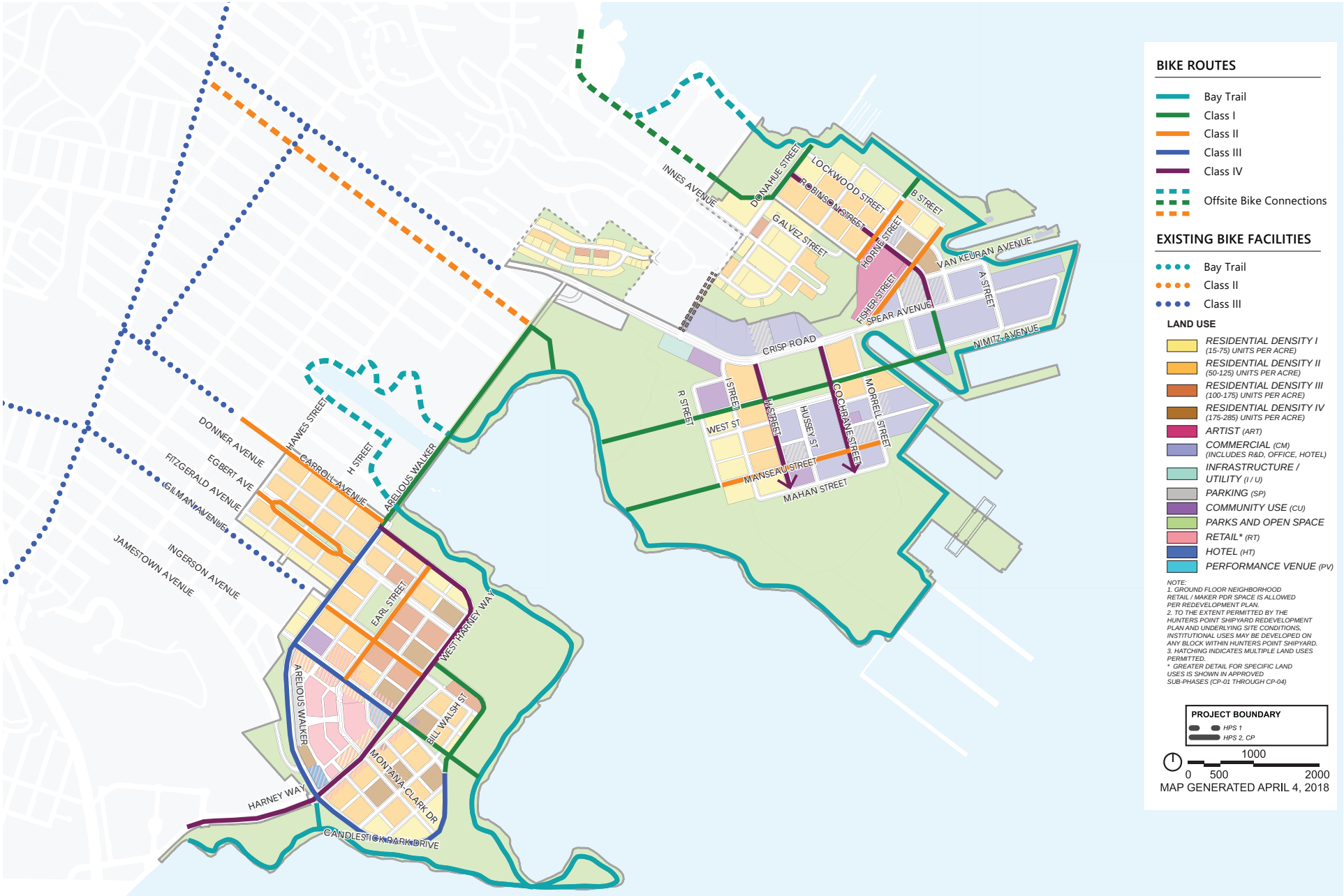

Figure 15

Modified Bicycle Network

Overall, the project refinements would continue to improve the overall bicycle network in the study area and facilities will be adequate to meet bicycle needs and Impacts TR-31 and TR-32 would remain unchanged. Mitigation Measure MM TR-32 would also still apply, and as part of the requirements of MM TR-32, SFMTA has already initiated conversations with the Project Sponsor regarding a study to consider relocating the existing bicycle route on Palou Avenue to Quesada Avenue, immediately to the south, and part of the City's Green Connections project. As noted in the EIR, this study must be complete prior to issuance of the grading permit for Major Phase 1 at Hunters Point Shipyard. No new significant impacts beyond those identified in the EIR would result from the Modified Project and the Modified Project would not make bicycle impacts substantially more severe than identified in the FIER, and therefore, no additional mitigation measures are required.

IMPACTS TR-33 AND TR-34: PEDESTRIAN CIRCULATION

The EIR identified Impacts TR-33 and TR-34 and determined that the Project would cause less than significant impacts on pedestrian circulation. The Modified Project generally maintains the project's goals of prioritizing the pedestrian realm through provision of generous sidewalks with streetscape amenities and safety measures, such as bulbouts at key locations. As noted earlier, sidewalks would generally remain between 12 and 15 feet, within the range of sidewalks considered in the original plan.

Overall, the Modified Project includes minor changes with respect to the pedestrian realm, such as slightly modified sidewalk widths and reoriented streets as shown in Appendix D and impacts are expected to be similar to Impacts TR-33 and TR-34, as described in the EIR and no new significant impacts or mitigation measures would be required.

IMPACTS TR-35 AND TR-36: PARKING

The EIR identified Impacts TR-35 and TR-36, which determined that although the Project would result in a shortfall of parking spaces compared to its projected demand and would remove some existing on-street parking spaces, the Project's impacts to parking conditions would be less than significant. The Modified Project may result in slightly fewer parking spaces on-street than the maximum envelope anticipated as part of FEIR Variant 1 (R&D). Specifically, the EIR identified that Variant 1 (R&D) would include approximately 3,000 on-street parking spaces (roughly evenly split between Candlestick Point and Hunters Point Shipyard) and between zero and approximately

20,000 off-street spaces. Therefore, the EIR concluded there would be a range of between approximately 3,000 spaces and 23,000 spaces in the entire development area.

The Modified Project would reduce on-street parking supply by up to several hundred spaces between Candlestick Point and Hunters Point Shipyard based on more detailed designs prepared as part of subphase applications and the desire to provide separated bicycle facilities along Robinson Street. (A precise count is unknown because the actual number of spaces that would have been provided cannot be determined until more detailed final designs are complete). Although the range of off-street parking spaces constructed was projected to be between zero and approximately 20,000 spaces in the FEIR, it is reasonable to expect that the Modified Project will build at least as many off-street spaces as would be removed through the minor design changes, such that with the loss of a few hundred on-street spaces, the Modified Project will still contain between 3,000 spaces and total 23,000 spaces.

Furthermore, **Table 12**, below, compares the maximum amount of parking allowed for FEIR Variant 1 (R&D) and the maximum amount that would be allowed for the Modified Project as described herein. As shown, there would be an overall increase in the maximum spaces allowed at Hunters Point Shipyard of 737 spaces and a corresponding decrease in the maximum amount of parking allowed at Candlestick Point of 242 spaces. The resulting maximum total of parking allowed within the Modified Project would be 495 more spaces than allowed under FEIR Variant 1 (R&D).

Therefore, since the Modified Project will still provide parking within the range identified in the EIR, or possibly very slightly above it, conclusions in the EIR related to parking, as described in Impacts TR-35 and TR-36, remain valid, no new significant impacts have been identified, and no new mitigation measures would be required.

TABLE 12 MAXIMUM ALLOWED PARKING SUPPLY						
	FEIR Variant 1 (R&D)			Modified Project		
	CP	HP	Total	CP	HP	Total
On-Street	1,360	1,678	3,038	1,360	1,487	2,847
Off-Street	10,196	9,678	19,874	9,954	10,606	20,560
Total	11,556	11,356	22,912	11,314	12,093	23,407
Source: Candlestick Point-Hunters Point Shipyard Phase II Development Plan EIR (2010) and FivePoint (2018)						

IMPACT TR-37: LOADING

The EIR identified Impact TR-37 and determined that the Project would provide adequate loading supply and therefore concluded that impacts related to loading would be less than significant, and that no mitigation measures would be required. As the modified Project does not change the overall loading requirements, implementation of the Modified Project would not result in any new significant impacts related to loading and no new mitigation measures would be required.

IMPACTS TR-38 THROUGH TR-50: STADIUM IMPACTS

The EIR included a number of impacts related to operation of the proposed new NFL stadium in the Hunters Point Shipyard site. However, the stadium is not part of the modified Project and these impacts and associated mitigation measures no longer apply.

IMPACT TR-51 THROUGH TR-55: ARENA IMPACTS

The EIR determined that the Project's proposed Arena use would create new impacts. Specifically, Impact TR-51 noted that the arena component of the Project would create significant and unavoidable traffic and site access impacts, and required development of an event Transportation

Management Plan (TMP) by the arena operator as Mitigation Measure MM TR-51. However, even with MM TR-51, the arena's impacts to site access and traffic would be significant and unavoidable. The EIR also identified as part of impact TR-52, that the arena's traffic generation would have significant impacts to transit operation and identified Mitigation Measure MM TR-23.1 (operational improvements to the 29 Sunset route) as a way to reduce the effects of the arena traffic on the 29 Sunset travel times. However, even with implementation of these two mitigation measures, the EIR concluded that the arena's impacts to traffic congestion and transit operations would remain significant and unavoidable.

The EIR also determined that the arena would have a less than significant impact to bicycle circulation (TR-53), pedestrian circulation (TR-54), and parking conditions (TR-55).

The Modified Project would not change the project with respect to the arena. Thus, the "event conditions" impacts associated with the arena would be essentially the same as identified in the FEIR. The Modified Project would not create any new significant impacts or substantially increase the severity of a significant impact associated with events at the arena compared to what was described in the EIR, and therefore no additional mitigation measures are required, although the previously-identified mitigation measures would continue to apply.

IMPACT TR-56: AIR TRAFFIC IMPACTS

The EIR determined that the Project would have a less than significant impact on air traffic. The modified Project would contain the same overall land uses and general development form and would not change the EIR's conclusion regarding air traffic. The modified Project would not create any new significant impacts with respect to air traffic and no additional mitigation measures are required.

IMPACT TR-57: HAZARDS DUE TO DESIGN FEATURES

The EIR determined that the Project's transportation infrastructure would be designed in accordance with City standards, and would be reviewed and approved by the City prior to construction. As a result the Project's impacts to hazards would be less than significant. The modified Project would also be designed accordance with City standards and would be reviewed and approved by the City. Therefore, no new significant impacts to design features have been identified and no mitigation measures are required.

IMPACT TR-58: EMERGENCY ACCESS

The EIR determined that the Project's transportation infrastructure would adequately facilitate emergency access and be designed to City standards, which include provisions that address emergency vehicles. The modified Project would also be designed accordance with City standards and would be reviewed and approved by the City. Therefore, no new significant impacts to emergency access have been identified and no mitigation measures are required.

CUMULATIVE IMPACTS

As noted in the EIR, the discussion of cumulative impacts was included with the discussion of project-related impacts in Impacts TR-1 through TR-58 and no additional cumulative impact discussion is necessary. Similar to what is described above and in the EIR, since the modified Project would generate similar levels of travel demand at buildout and would have a similar transportation infrastructure, the modified Project's contribution to cumulative impacts would be the same as what is described in the EIR.

VMT ANALYSIS (FOR INFORMATIONAL PURPOSES ONLY)

Subsequent to certification of the FEIR in 2010, and consistent with guidance from the State of California Office of Planning and Research (OPR)[9], the San Francisco Planning Commission adopted Planning Commission Resolution 19579 in March 2016 modifying the City's environmental review process by:

> *"removing automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, as a significant impact on the environmental [sic] pursuant to the California Environmental Quality Act, and replace it with vehicle miles traveled criteria which promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."*[10]

As a result of this change, project-related effects on congestion are no longer considered significant traffic-related impacts for projects where the San Francisco Planning Department is the Lead

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[9] California Office of Planning and Research, *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA,* January 20, 2016

[10] San Francisco Planning Department, *Executive Summary: Resolution Modifying Transportation Impact Analysis*, March 3, 2016.

Agency. Instead, the City of San Francisco replaced level of service as a metric with a new vehicle-miles traveled (VMT) metric and threshold.

However, since OCII is the Lead Agency for this project, and OCII has not adopted such a revised significance metric and threshold, effects on traffic congestion are still considered in the analysis, as described above. However, because the project is nearby other projects that have recently undergone environmental under the Planning Department's purview, this section presents a discussion of the Modified Project's effects on VMT for informational purposes only.

Background

Many factors affect travel behavior. These factors include density, diversity of land uses, the design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development at great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel, generate more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given these travel behavior factors, San Francisco has a lower VMT ratio than the nine-county San Francisco Bay Area region. In addition, some areas of the City have lower VMT ratios than other areas of the City. These areas of the City can be expressed geographically through transportation analysis zones. Transportation analysis zones are used in transportation planning models for transportation analysis and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.

The San Francisco County Transportation Authority (Transportation Authority) uses the San Francisco Chained Activity Model Process (SF-CHAMP) to estimate VMT by private automobiles and taxis for different land use types. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey 2010-2012, Census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP uses a synthetic population, which is a simulated set of individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day. The Transportation Authority uses tour-based analysis for office and residential uses, which examines the entire chain of trips over the course of a day, not just trips to and from the

project. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is necessary for retail projects because a tour is likely to consist of trips stopping in multiple locations, and the summarizing of tour VMT to each location would over-estimate VMT.[11,12]

Although not directly applicable to this analysis because the San Francisco Planning Department is not the lead agency, the Planning Department's threshold of significance for the new VMT metric states that:

- The project would have a significant adverse impact if it would cause major traffic hazards.
- The project would have a significant effect on the environment if it would cause substantial additional VMT.
- The project would have a significant effect on the environment if it would substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow lanes) or by adding new roadways to the network.

Specifically, Planning Commission Resolution 19579 and supporting materials provide direction for analyzing transportation conditions and identifying the transportation impacts of a proposed project in San Francisco based on the following:

> For residential projects, a project would generate substantial additional VMT if it exceeds the regional household VMT per capita minus 15 percent.[13] For office projects, a project would generate substantial additional VMT if it exceeds the regional VMT per employee minus 15 percent. As documented in the *Revised Proposal on Updates to the CEQA*

[11] To state another way: a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows us to apportion all retail-related VMT to retail sites without double-counting.

[12] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

[13] OPR's proposed transportation impact guidelines states a project would cause substantial additional VMT if it exceeds both the existing City household VMT per capita minus 15 percent and existing regional household VMT per capita minus 15 percent. In San Francisco, the City's average VMT per capita is lower (8.4) than the regional average (17.2). Therefore, the City average is irrelevant for the purposes of the analysis.

Guidelines on Evaluating Transportation Impacts in CEQA ("proposed transportation impact guidelines"), a 15 percent threshold below existing development is "both reasonably ambitious and generally achievable." [14] For retail projects, the Planning Department uses a VMT efficiency metric approach for retail projects: a project would generate substantial additional VMT if it exceeds the regional VMT per retail employee minus 15 percent. For mixed-use projects, each proposed land use is evaluated independently, per the criteria described above.

VMT Assessment

Table 13, below, presents the existing and future year VMT per capita rates for the Bay Area region and for the TAZs at CP and HP that include the Modified Project for both existing conditions and future year 2040 conditions. For residential development, the regional average daily VMT per capita is 17.2.[15] For office and retail development, regional average daily work-related VMT per employee is 19.1 and 14.9, respectively.

The Candlestick Point portion of the Modified Project includes residential, office, retail, hotel, and community services uses, plus an arena. The City considers VMT associated with hotel uses to be similar to residential. The arena has components that function similarly to retail and office. The community services are still somewhat undefined, but will likely also function similarly to retail. Therefore, the evaluation of the three primary land use categories for which data is available from the City adequately covers VMT patterns associated with all land uses at Candlestick Point.

As shown, at Candlestick Point, the VMT per capita for residential and retail uses are currently below the City's threshold of 15 percent below the regional average. VMT per capita for office uses at CP would currently exceed the threshold. However, by year 2040, all three land use types would generate VMT per capita substantially below the regional average and less than the City's threshold of significance. This is because the increased density associated with the Modified Project reduces the need for people to travel outside of the area for goods and services, and also because the substantial investment in transit service to the site reduces the need for people to travel to and from the site by automobile. So, buildout of the Modified Project itself would reduce the VMT at the site such that it would not exceed the thresholds.

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[14] This document is available online at: https://www.opr.ca.gov/s_sb743.php, page III:20.

[15] Includes the VMT generated by the households in the development.

Table 13. Daily Vehicle Miles Traveled per Capita[1]

Land Use	Bay Area			Candlestick Point						Hunters Point Shipyard			
				TAZ 882 (CP North)		TAZ 881 (CP South/Retail)		TAZ 891 (Alice Griffith)		TAZ 386 (HP North)		TAZ 387 (HP South/R&D)	
	Regional Average	Regional Average minus 15%	Year 2040 Regional Average minus 15%	Existing	Future Year 2040 (With Buildout of Proposed Project)	Existing	Future Year 2040 (With Buildout of Proposed Project)	Existing	Future Year 2040 (With Buildout of Proposed Project)	Existing	Future Year 2040 (With Buildout of Proposed Project)	Existing	Future Year 2040 (With Buildout of Proposed Project)
Households (Residential)	17.2	14.6	13.7	11.4	10.1	11.4	10.1	10.6	9.8	9.3	9.0	**17.5**	0.0[2]
Employment (Office)	19.1	16.2	14.5	**18.7**	13.8	**18.5**	13.5	**17.8**	13.7	**19.9**	12.4	**20.9**	13.6[2]
Visitors (Retail)	14.9	12.6	12.4	9.1	9.5	9.0	9.5	10.3	9.6	8.0	7.8	7.6	**15.4[2]**

Notes:

1. VMT rates exceeding the respective threshold are shown in **bold**.
2. The SF-CHAMP model land use assumptions for TAZ 387 assume primarily office and retail land uses, and do not include residential uses. Thus, the model reports a residential VMT per capita of 0.0 in TAZ 387 for year 2040, and similarly, reports an atypically high rate of VMT generation for retail uses (which derive a large portion of trips from residential uses). However, since the mix of uses actually proposed in that TAZ are more similar to those assumed in the model for TAZ 386, the VMT forecasts for TAZ 386 are likely representative of what would occur at TAZ 387 as well, all of which would be well below the City's threshold.

Source: www.sftransportationmap.org (accessed December 29, 2017)

At the Hunters Point Shipyard site, the Modified Project includes residential, retail, office/R&D, community services, a hotel, educational uses, a marina, and artists' studios. As with Candlestick Point, the community services uses will likely function similar to retail and the hotel will function similarly to residential. The artists' studios will function similarly to office in some respects and retail in other respects. The City considers educational uses to function similarly to office uses. Finally, the marina will function similarly to a recreational use, which the City considers to operate similar to retail. Thus, similar to Candlestick Point, all uses proposed at Hunters Point can be approximated using the three primary uses the City provides VMT data for.

As shown in Table 13, at Hunters Point Shipyard, the VMT per capita for retail uses is currently below the City's threshold of 15 percent below the regional average. VMT per capita for residential uses in HP North area also currently below the City's threshold. VMT per capita for office use in HP North and for both office and residential uses at HP South and the R&D area would currently exceed the threshold.

However, by year 2040, according to SF-CHAMP, all office and residential uses would be within the threshold, retail uses at HP North would be within the City's threshold, but retail uses at HP South and the R&D area would exceed the City's threshold. Land use assumptions in SF-CHAMP for TAZ 387 assume primarily office and retail land uses, and do not include residential uses. Thus, the model reports a residential VMT per capita of 0.0 in TAZ 387 for year 2040, and similarly, reports an atypically high rate of VMT generation for retail uses (which derive a large portion of trips from residential uses). However, the Modified Project would include office, retail, and residential in both TAZ 386 and 387. Since the mix of uses actually proposed in TAZ 387 is more similar to those assumed in the model for TAZ 386, the VMT forecasts for TAZ 386 are likely representative of what would occur at both TAZ 386 and 387, and therefore, the VMT per capita generated by the Modified Project in both Hunters Point Shipyard would be within the City's threshold.

CONCLUSION

In conclusion, the Modified Project would not change or alter any of the EIR's findings with respect to transportation impacts. All impacts would remain less than significant, less than significant with mitigation, or significant and unavoidable, as previously identified, and no new mitigation measures would be required. Additionally, the EIR's transportation cumulative impact conclusions would not be altered.

We hope you have found this useful.

Sincerely,

FEHR & PEERS

Chris Mitchell, PE
Principal

APPENDIX A

Comparison of Modified Project and FEIR Project/Variants

Land Uses

Table A-2: Comparison of 2018 Modified Project Variant to 2010 Project

	2010 FEIR PROJECT			2018 MODIFIED PROJECT VARIANT			2010-18 NET CHANGE		
	Candlestick	**Hunters Point Phase II**	**Total**	**Candlestick**	**Hunters Point Phase II**	**Total**	**Candlestick**	**Hunters Point Phase II**	**Total**
NON-RESIDENTIAL LAND USE									
Artist Studio	0 SF	255,000 SF	**255,000** SF	0 SF	255,000 SF	**255,000** SF	0 SF	0 SF	**0** SF
Community Use	50,000 SF	50,000 SF	**100,000** SF	50,000 SF	50,000 SF	**100,000** SF	0 SF	0 SF	**0** SF
Arena	75,000 SF	0 SF	**75,000** SF	75,000 SF	0 SF	**75,000** SF	0 SF	0 SF	**0** SF
	10,000 SEATS	0 SEATS	**10,000** SEATS	10,000 SEATS	0 SEATS	**10,000** SEATS	0 SEATS	0 SEATS	**0** SEATS
Hotel	150,000 SF	0 SF	**150,000** SF	150,000 SF	120,000 SF	**270,000** SF	0 SF	120,000 SF	**120,000** SF
	220 ROOMS	0 ROOMS	**220** ROOMS	220 ROOMS	175 ROOMS	**395** ROOMS	0 ROOMS	175 ROOMS	**175** ROOMS
Institution	0 SF	0 SF	**0** SF	0 SF	410,000 SF	**410,000** SF	0 SF	410,000 SF	**410,000** SF
Elementary School/Junior High School	0 SF	0 SF	**0** SF	0 SF	345,000 SF	**345,000** SF	0 SF	345,000 SF	**345,000** SF
	0 ± STUDENTS	0 ± STUDENTS	**0** ± STUDENTS	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS[b]	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS
High School/Post-Secondary	0 SF	0 SF	**0** SF	0 SF	65,000 SF	**65,000** SF	0 SF	65,000 SF	**65,000** SF
	0 ± STUDENTS	0 ± STUDENTS	**0** ± STUDENTS	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS[c]	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS
Stadium	0 SF	1,860,000 SF	**1,860,000** SF	0 SF	0 SF	**0** SF	0 SF	-1,860,000 SF	**-1,860,000** SF
	0 SEATS	69,000 SEATS	**69,000** SEATS	0 SEATS	0 SEATS	**0** SEATS	0 SEATS	-69,000 SEATS	**-69,000** SEATS
R&D/Office	150,000 SF	2,500,000 SF	**2,650,000** SF	150,000 SF	4,265,000 SF	**4,415,000** SF[d,e]	0 SF	1,765,000 SF	**1,765,000** SF
Regional Retail	635,000 SF	0 SF	**635,000** SF	635,000 SF	100,000 SF	**735,000** SF[f]	0 SF	100,000 SF	**100,000** SF
Neighborhood Retail	125,000 SF	125,000 SF	**250,000** SF	125,000 SF	226,000 SF	**351,000** SF	0 SF	101,000 SF	**101,000** SF
Maker Space	0 SF	0 SF	**0** SF	0 SF	75,000 SF	**75,000** SF	0 SF	75,000 SF	**75,000** SF
GSF Total	**1,185,000** SF	**4,790,000** SF	**5,975,000** SF	**1,185,000** SF	**5,501,000** SF	**6,686,000** SF	**0** SF	**711,000** SF	**711,000** SF
RESIDENTIAL	**7,850** UNITS	**2,650** UNITS	**10,500** UNITS	**7,218** UNITS	**3,454** UNITS	**10,672** UNITS[g]	**-632** UNITS	**804** UNITS	**172** UNITS
CAR PARKING									
Residential (Structured) Parking	7,850 SPACES	2,650 SPACES	**10,500** SPACES	7,218 SPACES	3,454 SPACES	**10,672** SPACES	-632 SPACES	804 SPACES	**172** SPACES
Commercial (Structured) Parking	2,346 SPACES	4,028 SPACES	**6,374** SPACES	2,736 SPACES	7,152 SPACES	**9,888** SPACES	390 SPACES	3,124 SPACES	**3,514** SPACES
Parking Total	**10,196** SPACES	**6,678** SPACES	**16,874** SPACES	**9,954** SPACES	**10,606** SPACES	**20,560** SPACES	**-242** SPACES	**3,928** SPACES	**3,686** SPACES
± On-street Parking	1,360 SPACES	683 SPACES	**2,043** SPACES	1,360 SPACES	1,487 SPACES	**2,847** SPACES[h]	0 SPACES	804 SPACES	**804** SPACES
Dedicated Stadium Parking	0 SPACES	12,665 SPACES	**12,665** SPACES	0 SPACES	0 SPACES	**0** SPACES	0 SPACES	-12,665 SPACES	**-12,665** SPACES
MARINA	**0** SLIPS	**300** SLIPS	**300** SLIPS	**0** SLIPS	**300** SLIPS	**300** SLIPS	**0** SLIPS	**0** SLIPS	**0** SLIPS
WATER TAXI	**NO**	**NO**	**NO**	**NO**	**YES**	**YES**	**NO**	**YES**	**YES**
New Parks	8.1 AC	140.0 AC	148.1 AC	9.0 AC	173.9 AC	182.9 AC	0.9 AC	33.9 AC	34.8 AC
New Sports Fields & Active Urban Recreation	0.0 AC	91.6 AC	91.6 AC	0.0 AC	58.1 AC	58.1 AC	0.0 AC	-33.5 AC	-33.5 AC
New State Recreation Area	5.7 AC	0.0 AC	5.7 AC	5.8 AC	0.0 AC	5.8 AC	0.1 AC	0.0 AC	0.1 AC
Existing State Recreation Area	91.0 AC	0.0 AC	91.0 AC	90.9 AC	0.0 AC	90.9 AC	-0.1 AC	0.0 AC	-0.1 AC
PARKS & OPEN SPACE	**104.8** AC	**231.6** AC	**336.4** AC	**105.7** AC	**232.0** AC	**337.7** AC	**0.9** AC	**0.4** AC	**1.3** AC
Other Parks[i]	**7.1** AC	**12.7** AC	**19.8** AC	**7.1** AC	**17.3** AC	**24.4** AC	**0.0** AC	**4.6** AC	**4.6** AC

SOURCE: 2010 Project Data: Table II-3 & Table II-6 of the FEIR.

[a] All infrastructure is excluded from the development program's square footage, with the exception of any associated office space, which is included in the R&D/Office category.

[b] Includes 400 high school students living on campus

[c] Includes 600 high school students and 400 college students. Half the high school students would be on site at any one time. One-third of the college students would be on site at any one time.

[d] The 2010 FEIR indicates that R&D uses are defined to include research and development, office, and light-industrial uses. Under the 2018 Modified Project Variant land use program, in CP, 150,000 sf of uses are designated as office uses, while in HPS2, 4,265,000 sf of uses are designated as R&D uses.

[e] Converts R&D/Office gsf to Retail at CP; converts R&D/Office gsf to Institution at HPS2.

[f] Includes 71,000 square feet of approved (but not constructed) commercial space from HPS1 to HPS2.

[g] Includes 172 approved (but not constructed) housing units from HPS1, increasing the overall unit count for CPHPS2 from 10,500 to 10,672.

[h] On-street parking is in addition to structured parking.

[i] Specific acreages for Other Parks were not provided in the 2010 FEIR. In addition, Other Parks are included for information purposes only; they are not included in the final calculation of parks and open space.

Table A-3: Comparison of 2018 Modified Project Variant to 2010 R&D Variant 1

	2010 R&D VARIANT 1			2018 MODIFIED PROJECT VARIANT			2010-18 NET CHANGE		
	Candlestick	**Hunters Point Phase II**	**Total**	**Candlestick**	**Hunters Point Phase II**	**Total**	**Candlestick**	**Hunters Point Phase II**	**Total**
NON-RESIDENTIAL LAND USE									
Artist Studio	0 SF	255,000 SF	**255,000** SF	0 SF	255,000 SF	**255,000** SF	0 SF	0 SF	**0** SF
Community Use	50,000 SF	50,000 SF	**100,000** SF	50,000 SF	50,000 SF	**100,000** SF	0 SF	0 SF	**0** SF
Arena	75,000 SF	0 SF	**75,000** SF	75,000 SF	0 SF	**75,000** SF	0 SF	0 SF	**0** SF
	10,000 SEATS	0 SEATS	**10,000** SEATS	10,000 SEATS	0 SEATS	**10,000** SEATS	0 SEATS	0 SEATS	**0** SEATS
Hotel	150,000 SF	0 SF	**150,000** SF	150,000 SF	120,000 SF	**270,000** SF	0 SF	120,000 SF	**120,000** SF
	220 ROOMS	0 ROOMS	**220** ROOMS	220 ROOMS	175 ROOMS	**395** ROOMS	0 ROOMS	175 ROOMS	**175** ROOMS
Institution	0 SF	0 SF	**0** SF	0 SF	410,000 SF	**410,000** SF	0 SF	410,000 SF	**410,000** SF
Elementary School/Junior High School	0 SF	0 SF	**0** SF	0 SF	345,000 SF	**345,000** SF	0 SF	345,000 SF	**345,000** SF
	0 ± STUDENTS	0 ± STUDENTS	**0** ± STUDENTS	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS[b]	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS
High School/Post-Secondary	0 SF	0 SF	**0** SF	0 SF	65,000 SF	**65,000** SF	0 SF	65,000 SF	**65,000** SF
	0 ± STUDENTS	0 ± STUDENTS	**0** ± STUDENTS	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS[c]	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS
Stadium	0 SF	0 SF	**0** SF	0 SF	0 SF	**0** SF	0 SF	0 SF	**0** SF
	0 SEATS	0 SEATS	**0** SEATS	0 SEATS	0 SEATS	**0** SEATS	0 SEATS	0 SEATS	**0** SEATS
R&D/Office	150,000 SF	5,000,000 SF	**5,150,000** SF	150,000 SF	4,265,000 SF	**4,415,000** SF[d,e]	0 SF	-735,000 SF	**-735,000** SF
Regional Retail	635,000 SF	0 SF	**635,000** SF	635,000 SF	100,000 SF	**735,000** SF[f]	0 SF	100,000 SF	**100,000** SF
Neighborhood Retail	125,000 SF	125,000 SF	**250,000** SF	125,000 SF	226,000 SF	**351,000** SF	0 SF	101,000 SF	**101,000** SF
Maker Space	0 SF	0 SF	**0** SF	0 SF	75,000 SF	**75,000** SF	0 SF	75,000 SF	**75,000** SF
GSF Total	**1,185,000** SF	**5,430,000** SF	**6,615,000** SF	**1,185,000** SF	**5,501,000** SF	**6,686,000** SF	**0** SF	**71,000** SF	**71,000** SF
RESIDENTIAL	**7,850** UNITS	**2,650** UNITS	**10,500** UNITS	**7,218** UNITS	**3,454** UNITS	**10,672** UNITS[g]	**-632** UNITS	**804** UNITS	**172** UNITS
CAR PARKING									
Residential (Structured) Parking	7,850 SPACES	2,650 SPACES	**10,500** SPACES	7,218 SPACES	3,454 SPACES	**10,672** SPACES	-632 SPACES	804 SPACES	**172** SPACES
Commercial (Structured) Parking	2,346 SPACES	7,028 SPACES	**9,374** SPACES	2,736 SPACES	7,152 SPACES	**9,888** SPACES	390 SPACES	124 SPACES	**514** SPACES
Parking Total	**10,196** SPACES	**9,678** SPACES	**19,874** SPACES	**9,954** SPACES	**10,606** SPACES	**20,560** SPACES	**-242** SPACES	**928** SPACES	**686** SPACES
± On-street Parking	1,360 SPACES	1,678 SPACES	**3,038** SPACES	1,360 SPACES	1,487 SPACES	**2,847** SPACES[h]	0 SPACES	-191 SPACES	**-191** SPACES
Dedicated Stadium Parking	0 SPACES	0 SPACES	**0** SPACES	0 SPACES	0 SPACES	**0** SPACES	0 SPACES	0 SPACES	**0** SPACES
MARINA	**0** SLIPS	**300** SLIPS	**300** SLIPS	**0** SLIPS	**300** SLIPS	**300** SLIPS	**0** SLIPS	**0** SLIPS	**0** SLIPS
WATER TAXI	**NO**	**NO**	**NO**	**NO**	**YES**	**YES**	**NO**	**YES**	**YES**
New Parks	8.1 AC	152.4 AC	160.5 AC	9.0 AC	173.9 AC	182.9 AC	0.9 AC	21.5 AC	22.4 AC
New Sports Fields & Active Urban Recreation	0.0 AC	69.8 AC	69.8 AC	0.0 AC	58.1 AC	58.1 AC	0.0 AC	-11.7 AC	-11.7 AC
New State Recreation Area	5.7 AC	0.0 AC	5.7 AC	5.8 AC	0.0 AC	5.8 AC	0.1 AC	0.0 AC	0.1 AC
Existing State Recreation Area	91.0 AC	0.0 AC	91.0 AC	90.9 AC	0.0 AC	90.9 AC	-0.1 AC	0.0 AC	-0.1 AC
PARKS & OPEN SPACE	**104.8** AC	**222.2** AC	**327.0** AC	**105.7** AC	**232.0** AC	**337.7** AC	**0.9** AC	**9.8** AC	**10.7** AC
Other Parks[i]	**7.1** AC	**12.7** AC	**19.8** AC	**7.1** AC	**17.3** AC	**24.4** AC	**0.0** AC	**4.6** AC	**4.6** AC

SOURCE: 2010 Project Data: Table IV-3 & Table II-5 of the FEIR.

[a] All infrastructure is excluded from the development program's square footage, with the exception of any associated office space, which is included in the R&D/Office category.

[b] Includes 400 high school students living on campus

[c] Includes 600 high school students and 400 college students. Half the high school students would be on site at any one time. One-third of the college students would be on site at any one time.

[d] The 2010 FEIR indicates that R&D uses are defined to include research and development, office, and light-industrial uses. Under the 2018 Modified Project Variant land use program, in CP, 150,000 sf of uses are designated as office uses, while in HPS2, 4,265,000 sf of uses are designated as R&D uses.

[e] Converts R&D/Office gsf to Retail at CP; converts R&D/Office gsf to Institution at HPS2.

[f] Includes 71,000 square feet of approved (but not constructed) commercial space from HPS1 to HPS2.

[g] Includes 172 approved (but not constructed) housing units from HPS1, increasing the overall unit count for CPHPS2 from 10,500 to 10,672.

[h] On-street parking is in addition to structured parking.

[i] Specific acreages for Other Parks were not provided in the 2010 FEIR. In addition, Other Parks are included for information purposes only; they are not included in the final calculation of parks and open space.

Table A-4: Comparison of 2018 Modified Project Variant to 2010 Housing/R&D Variant 2A

	2010 HOUSING/R&D VARIANT 2A			2018 MODIFIED PROJECT VARIANT			2010-18 NET CHANGE		
	Candlestick	**Hunters Point Phase II**	**Total**	**Candlestick**	**Hunters Point Phase II**	**Total**	**Candlestick**	**Hunters Point Phase II**	**Total**
NON-RESIDENTIAL LAND USE									
Artist Studio	0 SF	255,000 SF	**255,000** SF	0 SF	255,000 SF	**255,000** SF	0 SF	0 SF	**0** SF
Community Use	50,000 SF	50,000 SF	**100,000** SF	50,000 SF	50,000 SF	**100,000** SF	0 SF	0 SF	**0** SF
Arena	75,000 SF	0 SF	**75,000** SF	75,000 SF	0 SF	**75,000** SF	0 SF	0 SF	**0** SF
	10,000 SEATS	0 SEATS	**10,000** SEATS	10,000 SEATS	0 SEATS	**10,000** SEATS	0 SEATS	0 SEATS	**0** SEATS
Hotel	150,000 SF	0 SF	**150,000** SF	150,000 SF	120,000 SF	**270,000** SF	0 SF	120,000 SF	**120,000** SF
	220 ROOMS	0 ROOMS	**220** ROOMS	220 ROOMS	175 ROOMS	**395** ROOMS	0 ROOMS	175 ROOMS	**175** ROOMS
Institution	0 SF	0 SF	**0** SF	0 SF	410,000 SF	**410,000** SF	0 SF	410,000 SF	**410,000** SF
Elementary School/Junior High School	0 SF	0 SF	**0** SF	0 SF	345,000 SF	**345,000** SF	0 SF	345,000 SF	**345,000** SF
	0 ± STUDENTS	0 ± STUDENTS	**0** ± STUDENTS	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS[b]	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS
High School/Post-Secondary	0 SF	0 SF	**0** SF	0 SF	65,000 SF	**65,000** SF	0 SF	65,000 SF	**65,000** SF
	0 ± STUDENTS	0 ± STUDENTS	**0** ± STUDENTS	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS[c]	0 ± STUDENTS	1,000 ± STUDENTS	**1,000** ± STUDENTS
Stadium	0 SF	0 SF	**0** SF	0 SF	0 SF	**0** SF	0 SF	0 SF	**0** SF
	0 SEATS	0 SEATS	**0** SEATS	0 SEATS	0 SEATS	**0** SEATS	0 SEATS	0 SEATS	**0** SEATS
R&D/Office	150,000 SF	3,000,000 SF	**3,150,000** SF	150,000 SF	4,265,000 SF	**4,415,000** SF[d,e]	0 SF	1,265,000 SF	**1,265,000** SF
Regional Retail	635,000 SF	0 SF	**635,000** SF	635,000 SF	100,000 SF	**735,000** SF[f]	0 SF	100,000 SF	**100,000** SF
Neighborhood Retail	125,000 SF	125,000 SF	**250,000** SF	125,000 SF	226,000 SF	**351,000** SF[e]	0 SF	101,000 SF	**101,000** SF
Maker Space	0 SF	0 SF	**0** SF	0 SF	75,000 SF	**75,000** SF	0 SF	75,000 SF	**75,000** SF
GSF Total	**1,185,000**	**3,430,000** SF	**4,615,000** SF	**1,185,000** SF	**5,501,000** SF	**6,686,000** SF	**0** SF	**2,071,000** SF	**2,071,000** SF
RESIDENTIAL	**6,225** UNITS	**4,275** UNITS	**10,500** UNITS	**7,218** UNITS	**3,454** UNITS	**10,672** UNITS[g]	**993** UNITS	**-821** UNITS	**172** UNITS
CAR PARKING									
Residential (Structured) Parking	6,225 SPACES	4,275 SPACES	**10,500** SPACES	7,218 SPACES	3,454 SPACES	**10,672** SPACES	993 SPACES	-821 SPACES	**172** SPACES
Commercial (Structured) Parking	2,346 SPACES	4,428 SPACES	**6,774** SPACES	2,736 SPACES	7,152 SPACES	**9,888** SPACES	390 SPACES	2,724 SPACES	**3,114** SPACES
Parking Total	**8,571** SPACES	**8,703** SPACES	**17,274** SPACES	**9,954** SPACES	**10,606** SPACES	**20,560** SPACES	**1,383** SPACES	**1,903** SPACES	**3,286** SPACES
± On-street Parking	1,360 SPACES	1,428 SPACES	**2,788** SPACES	1,360 SPACES	1,487 SPACES	**2,847** SPACES[h]	0 SPACES	59 SPACES	**59** SPACES
Dedicated Stadium Parking	0 SPACES	0 SPACES	**0** SPACES	0 SPACES	0 SPACES	**0** SPACES	0 SPACES	0 SPACES	**0** SPACES
MARINA	**0** SLIPS	**300** SLIPS	**300** SLIPS	**0** SLIPS	**300** SLIPS	**300** SLIPS	**0** SLIPS	**0** SLIPS	**0** SLIPS
WATER TAXI	**NO**	**NO**	**NO**	**NO**	**YES**	**YES**	**NO**	**YES**	**YES**
New Parks	8.1 AC	150.9 AC	159.0 AC	9.0 AC	173.9 AC	182.9 AC	0.9 AC	23.0 AC	23.9 AC
New Sports Fields & Active Urban Recreation	0.0 AC	70.9 AC	70.9 AC	0.0 AC	58.1 AC	58.1 AC	0.0 AC	-12.8 AC	-12.8 AC
New State Recreation Area	5.7 AC	0.0 AC	5.7 AC	5.8 AC	0.0 AC	5.8 AC	0.1 AC	0.0 AC	0.1 AC
Existing State Recreation Area	91.0 AC	0.0 AC	91.0 AC	90.9 AC	0.0 AC	90.9 AC	-0.1 AC	0.0 AC	-0.1 AC
PARKS & OPEN SPACE	**104.8** AC	**221.8** AC	**326.6** AC	**105.7** AC	**232.0** AC	**337.7** AC	**0.9** AC	**10.2** AC	**11.1** AC
Other Parks[i]	**7.1** AC	**12.7** AC	**19.8** AC	**7.1** AC	**17.3** AC	**24.4** AC	**0.0** AC	**4.6** AC	**4.6** AC

SOURCE: 2010 Project Data: Table IV-19a & Table IV-21a of the FEIR.

[a] All infrastructure is excluded from the development program's square footage, with the exception of any associated office space, which is included in the R&D/Office category.

[b] Includes 400 high school students living on campus

[c] Includes 600 high school students and 400 college students. Half the high school students would be on site at any one time. One-third of the college students would be on site at any one time.

[d] The 2010 FEIR indicates that R&D uses are defined to include research and development, office, and light-industrial uses. Under the 2018 Modified Project Variant land use program, in CP, 150,000 sf of uses are designated as office uses, while in HPS2, 4,265,000 sf of uses are designated as R&D uses.

[e] Converts R&D/Office gsf to Retail at CP; converts R&D/Office gsf to Institution at HPS2.

[f] Includes 71,000 square feet of approved (but not constructed) commercial space from HPS1 to HPS2.

[g] Includes 172 approved (but not constructed) housing units from HPS1, increasing the overall unit count for CPHPS2 from 10,500 to 10,672.

[h] On-street parking is in addition to structured parking.

[i] Specific acreages for Other Parks were not provided in the 2010 FEIR. In addition, Other Parks are included for information purposes only; they are not included in the final calculation of parks and open space.

Table A-5: Comparison of 2018 Modified Project Variant to 2010 Project, R&D Variant 1, and Housing/R&D Variant 2A (Parks and Open Space)

	2010 PROJECT	2010 R&D VARIANT 1	2010 HOUSING/R&D VARIANT 2A	2018 MODIFIED PROJECT VARIANT
Hunters Point Shipyard Phase II (HPS2)				
NEW PARKS				
Grassland Ecology Park	82.1	82.7	83.4	106.8
Heritage Park	15.6	15.6	15.6	15.5
Hunters Point Mini Park	0.0	0.0	0.7	0
Hunters Point Neighborhood Park	0.0	0.0	0.9	0
Hunters Point Park Blocks	0.0	4.5	0.0	0
Hunters Point South Park	0.0	0.0	2.0	0
Hunters Point Wedge Park	0.0	2.8	3.1	0
Northside Park	12.8	12.8	12.8	12.8
R&D Plaza	0.0	2.1	0.0	0
Shipyard Hillside Open Space	0.0	0.0	0.0	2.4
Water Room/Dry Dock 4	0.0	0.0	0.0	7.3
Waterfront Promenade	29.5	31.9	32.4	29.1
Subtotal	**140.0**	**152.4**	**150.9**	**173.9**
NEW SPORTS FIELDS & ACTIVE URBAN RECREATION				
Maintenance Yard	0.0	0.0	0.0	5.5
Multi-Use Lawn/Fields	25.2	22.4	25.2	20.5
Sports Field Complex	59.7	40.7	39.0	28.7
Waterfront Recreation & Event Pier	6.7	6.7	6.7	3.4
Subtotal	**91.6**	**69.8**	**70.9**	**58.1**
HPS2 POSH Total	**231.6**	**222.2**	**221.8**	**232.0**
OTHER PARKS				
Green Room	0.0	0.0	0.0	8.1
Gunning Crane Pier Habitats	9.5	9.5	9.5	9.2
Shipyard Hillside Open Space	2.6	2.6	2.6	0.0
Horne Boulevard Park	0.6	0.6	0.6	0.0
Subtotal	**12.7**	**12.7**	**12.7**	**17.3**
HPS2 Total	**244.3**	**234.9**	**234.5**	**249.3**
Candlestick Point				
NEW PARKS				
Alice Griffith Neighborhood Park	1.4	1.4	1.4	1.4
Bayview Gardens/Wedge Park	2.5	2.5	2.5	3.7
Candlestick Point Neighborhood Park	3.1	3.1	3.1	3.1
Mini Wedge Park	1.1	1.1	1.1	0.8
Subtotal	**8.1**	**8.1**	**8.1**	**9.0**
STATE PARK LAND				
Bayview Gardens North	9.5	9.5	9.5	9.5
Grasslands South	10.3	10.3	10.3	10.3
The Heart of the Park (Includes new State Park)	15.4	15.4	15.4	15.4
Last Port (includes new State Park)	14.6	14.6	14.6	14.6
The Last Rubble	24.5	24.5	24.5	24.5
The Neck (includes new State Park)	4.9	4.9	4.9	4.9
The Point	6.1	6.1	6.1	6.1
Wind Meadow	11.4	11.4	11.4	11.4
Subtotal	**96.7**	**96.7**	**96.7**	**96.7**
CP POSH Total	**104.8**	**104.8**	**104.8**	**105.7**
OTHER PARKS				
Bayview Hillside Open Space	2.9	2.9	2.9	3.5
Earl Boulevard Park	0.4	0.4	0.4	0.0
Jamestown Walker Slope	3.9	3.9	3.9	3.6
Subtotal	**7.1**	**7.1**	**7.1**	**7.1**
CP Total	**111.9**	**111.9**	**111.9**	**112.8**
CP-HPS2 TOTAL	**356.2**	**346.8**	**346.4**	**362.1**
NEW PARKS	148.1	160.5	159.0	182.9
NEW SPORTS FIELDS & ACTIVE URBAN RECREATION	91.6	69.8	70.9	58.1
STATE PARK LAND	96.7	96.7	96.7	96.7
	336.4	327.0	326.6	337.7
OTHER PARKS	19.8	19.8	19.8	24.4

APPENDIX B

Detailed Trip Generation Calculations

Table A-1
Candlestick Point Trip Generation:

AM Peak Hour

Category		Total Use SF	Units	Land Use	ITE Land Use Code	AM ITE Trip Generation: Rate or Eqn	AM Vehicle Trips	AM Person Trips	%In	%Out	AM Vehicle Trips In	AM Person Trips In	AM Vehicle Trips Out	AM Person Trips Out	Internal Trip %	Internal Person Trip Reduction	Diverted Link Trip %	Diverted Link Trip Reduction	Pass-By Trip %	Pass-By Trip Reduction	External Person Trips (ITE less internalization, pass-by, and diverted): AM In	AM Out	AM Total	Transit %	External Transit Trips (Person Trips): AM In	AM Out	AM Total	Vehicle Trips Replaced by Transit: AM Total	External Vehicle Trips (Person/1.6): AM In	AM Out	AM Total	Bicycle Mode Share Adjustment
RETAIL		**760.0**	**ksf**	**Neighborhood Serving + Ancillary**																											
		635.0	ksf	Shopping Center	820	Eqn	808	1,293	61%	39%	493	789	315	504	36%	460					508	325	833	15%	75	48	123	77	271	173	444	
		125.0	ksf	Specialty Retail	814	Rate	148	237	61%	39%	65	104	83	133	36%	84					93	59	153	15%	14	9	22	14	50	32	81	
COMMERCIAL / ADAPTIVE REUSE																															
		150.0	**ksf**	**Buildings 1, 2, and 3**																											
		150.0	ksf	General Office	710	Eqn	261	418	88%	12%	229	366	32	51	36%	149					237	32	269	21%	49	7	55	35	118	16	134	
		25.0	ksf	Arena	710	Eqn	63	101	88%	12%	55	88	8	13	36%	36					57	8	65	21%	12	2	13	8	28	4	32	
RECREATION																															
		50.0	**ksf**																												
		0.0	ksf	Elementary School	520	Rate	0	0	54%	46%	0	0	0	0	36%	0					0	0	0	47%	0	0	0	0	0	0	0	
		0.0	ksf	Police/Fire Station	730	Rate	0	0	84%	16%	0	0	0	0	36%	0					0	0	0	47%	0	0	0	0	0	0	0	
		50.0	ksf	Recreational Comm Center	495	Rate	108	173	88%	12%	95	152	13	21	36%	61					98	13	111	21%	21	3	24	15	48	7	55	
		97	acres	County Park	412	Rate	2	3	80%	20%	1	2	1	2	36%	1					2	0	2	21%	0	0	0	0	1	0	1	
HOTELS																															
		220.0	**rooms**																												
		0.0	rooms	Resort Hotel	330	Rate	0	0	72%	28%	0	0	0	0	36%	0					0	0	0	20%	0	0	0	0	0	0	0	
		220.0	rooms	Hotel	310	Eqn	110	176	61%	39%	67	107	43	69	36%	63					69	44	113	20%	14	9	23	14	34	22	56	
RESIDENTIAL																															
		6962.0	**units**																												
		6962.0	units	Residential Townhouse	230	Rate	3,064	4,902	17%	83%	521	834	2,543	4,069	36%	1744					537	2,622	3,158	22%	116	565	681	425	263	1,285	1,549	
		0.0	units	Apartment	220	Rate	0	0	20%	80%	0	0	0	0	36%	0					0	0	0	50%	0	0	0	0	0	0	0	
		0.0	units	High-Rise Apartment	222	Rate	0	0	25%	75%	0	0	0	0	36%	0					0	0	0	50%	0	0	0	0	0	0	0	
		0.0	units	All Suites Hotel	311	Rate	0	0	55%	45%	0	0	0	0	36%	0					0	0	0	50%	0	0	0	0	0	0	0	
Total							**4,564**	**7,302**	**33%**	**67%**	**1,526**	**2,442**	**3,038**	**4,861**	**36%**	**2,598**					**1,601**	**3,104**	**4,705**		**300**	**642**	**942**	**589**	**813**	**1,539**	**2,352**	**2,264**

PM Peak Hour

Category		Total Use SF	Units	Land Use	ITE Land Use Code	PM ITE Trip Generation: Rate or Eqn	PM Vehicle Trips	PM Person Trips	%In	%Out	PM Vehicle Trips In	PM Person Trips In	PM Vehicle Trips Out	PM Person Trips Out	Internal Trip %	Internal Trip Reduction	Diverted Link Trip %	Diverted Link Trip Reduction	Pass-By Trip %	Pass-By Trip Reduction	External Trips (ITE less internalization, pass-by, and diverted): PM In	PM Out	PM Total	Transit %	External Transit Trips (Person Trips): PM In	PM Out	PM Total	Vehicle Trips Replaced by Transit: PM Total	External Vehicle Trips (Person/1.6): PM In	PM Out	PM Total	
RETAIL		**760.0**	**ksf**	**Neighborhood Serving + Ancillary**																											
		635.0	ksf	Shopping Center	820	Eqn	3,606	5,770	48%	52%	1,731	2,770	1,875	3,000	26%	1491					2,054	2,225	4,279	15%	309	335	644	402	1,090	1,181	2,272	
		125.0	ksf	Specialty Retail	814	Eqn	548	877	44%	56%	241	386	307	491	26%	227					286	364	650	15%	43	55	98	61	152	193	345	
COMMERCIAL / ADAPTIVE REUSE																															
		175.0	**ksf**	**Buildings 1, 2, and 3**																											
		150.0	ksf	General Office	710	Eqn	247	395	17%	83%	42	67	205	328	26%	102					50	243	293	23%	12	57	69	43	24	116	140	
		25.0	ksf	Arena	710	Eqn	108	173	17%	83%	19	30	89	142	26%	45					22	106	128	23%	5	25	30	19	10	51	61	
RECREATION																															
		147.0	**acres**																												
		0.0	ksf	Elementary School	520	Rate	0	0	43%	57%	0	0	0	0	26%	0					0	0	0	47%	0	0	0	0	0	0	0	
		0.0	ksf	Police/Fire Station	730	Rate	0	0	31%	69%	0	0	0	0	26%	0					0	0	0	47%	0	0	0	0	0	0	0	
		50.0	ksf	Recreational Comm Center	495	Rate	135	216	17%	83%	23	37	112	179	26%	56					27	133	160	23%	6	31	38	23	13	64	77	
		97	acres	County Park	412	rate	7	11	41%	59%	3	5	4	6	26%	3					3	5	8	25%	1	1	2	1	2	2	4	
HOTELS																															
		220.0	**rooms**																												
		0.0	rooms	Resort Hotel	330	Rate	0	0	43%	57%	0	0	0	0	26%	0					0	0	0	39%	0	0	0	0	0	0	0	
		220.0	rooms	Hotel	310	Eqn	131	210	53%	47%	69	110	62	99	26%	54					82	73	155	23%	19	17	35	22	40	35	75	
RESIDENTIAL																															
		6962.0	**units**																												
		6962.0	units	Residential Townhouse	230	Rate	3,621	5,794	67%	33%	2,426	3,882	1,195	1,912	26%	1497					2,879	1,418	4,297	22%	634	312	946	591	1,403	691	2,094	
		0.0	units	Apartment	220	Rate	0	0	65%	35%	0	0	0	0	26%	0					0	0	0	50%	0	0	0	0	0	0	0	
		0.0	units	High-Rise Apartment	222	Rate	0	0	61%	39%	0	0	0	0	26%	0					0	0	0	50%	0	0	0	0	0	0	0	
		0.0	units	All Suites Hotel	311	Rate	0	0	45%	55%	0	0	0	0	26%	0					0	0	0	50%	0	0	0	0	0	0	0	
Total							**8,403**	**13,445**	**54%**	**46%**	**4,554**	**7,286**	**3,849**	**6,158**	**26%**	**3,474**					**5,403**	**4,568**	**9,971**		**1,029**	**833**	**1,861**	**1,163**	**2,734**	**2,334**	**5,068**	**4,882**

Table A-2
Hunters Point Trip Generation:

AM Peak Hour

Category		Total Use SF	Units	Land Use	ITE Land Use Code	AM ITE Trip Generation: Rate or Eqn	AM Vehicle Trips	AM Person Trips	%In	%Out	AM Vehicle Trips In	AM Person Trips In	AM Vehicle Trips Out	AM Person Trips Out	Internal Trip %	Internal Person Trip Reduction	Diverted Link Trip %	Diverted Link Trip Reduction	Pass-By Trip %	Pass-By Trip Reduction	External Person Trips (ITE less internalization, pass-by, and diverted): AM In	AM Out	AM Total	Transit %	External Transit Trips (Person Trips): AM In	AM Out	AM Total	Vehicle Trips Replaced by Transit: AM Total	External Vehicle Trips (Person/1.6): AM In	AM Out	AM Total	Bicycle Mode Share Adjustment
RETAIL																															
		226.0	**ksf**	**Neighborhood Serving + Ancillary**																											
		226.0	ksf	Specialty Retail	814	Rate	258	413	61%	39%	114	182	144	230	34%	141					166	106	272	15%	24	16	40	25	88	57	145	
		100.0	ksf	Shopping Center	820	Eqn	267	427	61%	39%	163	261	104	166	34%	146					172	110	281	15%	25	16	41	26	91	58	150	
COMMERCIAL / ADAPTIVE REUSE																															
		4280.0	**ksf**	**Buildings 1, 2, and 3**																											
		15.0	ksf	Artist's	710	Eqn	42	67	88%	12%	37	59	5	8	34%	23					39	5	44	21%	8	1	9	6	19	3	22	
		4265.0	ksf	R&D	760	Eqn	3,356	5,370	83%	17%	2,785	4,456	571	914	34%	1834					2,935	601	3,536	21%	616	126	742	464	1,449	297	1,746	
		75.0	ksf	Maker's Space	BLEND	BLEND	81	130	75%	26%	60	96	21	34	34%	44					64	22	85	21%	13	5	18	11	31	11	42	
RECREATION																															
		0.0	students	Private School - Elementary	536	Rate	0	0	55%	45%	0	0	0	0	34%	0					0	0	0	20%	0	0	0	0	0	0	0	
		264.0	students	Private School - Middle	536	Rate	215	344	55%	45%	118	189	97	155	34%	117					125	102	227	20%	25	20	45	28	62	51	113	
		336.0	students	Private School - High	536	Rate	274	438	61%	39%	167	267	107	171	34%	150					176	113	289	20%	35	23	58	36	88	56	144	
		300.0	students	STEM Academy	530	Rate	130	208	68%	32%	88	141	42	67	34%	71					93	44	137	20%	19	9	27	17	47	22	68	
		135.0	students	SF State	550	Eqn	39	62	78%	22%	30	48	9	14	34%	21					32	9	41	20%	6	2	8	5	16	5	21	
		0.0	ksf	Police/Fire Station	730	Rate	0	0	84%	16%	0	0	0	0	34%	0					0	0	0	47%	0	0	0	0	0	0	0	
		50.0	ksf	Recreational Comm Center	495	Eqn	108	173	88%	12%	95	152	13	21	34%	59					100	14	114	21%	21	3	24	15	49	7	56	
		238	acres	County Park	412	Eqn	3	5	80%	20%	2	3	1	2	34%	2					3	1	3	21%	1	0	1	0	1	0	2	
HOTELS																															
		175.0	**rooms**																												
		0.0	rooms	Resort Hotel	330	Rate	0	0	72%	28%	0	0	0	0	34%	0					0	0	0	39%	0	0	0	0	0	0	0	
		175.0	rooms	Hotel	310	Eqn	82	131	61%	39%	50	80	32	51	34%	45					53	34	86	20%	11	7	17	11	26	17	43	
RESIDENTIAL																															
		3454.0	**units**																												
		3454.0	units	Residential Townhouse	230	Rate	1,521	2,434	17%	83%	259	414	1,262	2,019	34%	831					272	1,330	1,602	22%	59	287	345	216	134	652	786	
		0.0	units	Apartment	220	Rate	0	0	20%	80%	0	0	0	0	34%	0					0	0	0	50%	0	0	0	0	0	0	0	
		0.0	units	High-Rise Apartment	222	Rate	0	0	25%	75%	0	0	0	0	34%	0					0	0	0	50%	0	0	0	0	0	0	0	
		0.0	units	All Suites Hotel	311	Rate	0	0	55%	45%	0	0	0	0	34%	0					0	0	0	50%	0	0	0	0	0	0	0	
				Total			**6,376**	**10,202**	**62%**	**38%**	**3,968**	**6,349**	**2,408**	**3,853**	**34%**	**3,484**					**4,228**	**2,489**	**6,718**		**863**	**513**	**1,376**	**860**	**2,103**	**1,235**	**3,338**	**3,212**

PM Peak Hour

Category		Total Use SF	Units	Land Use	ITE Land Use Code	PM ITE Trip Generation: Rate or Eqn	PM Vehicle Trips	PM Person Trips	%In	%Out	PM Vehicle Trips In	PM Person Trips In	PM Vehicle Trips Out	PM Person Trips Out	Internal Trip %	Internal Trip Reduction	Diverted Link Trip %	Diverted Link Trip Reduction	Pass-By Trip %	Pass-By Trip Reduction	External Person Trips (ITE less internalization, pass-by, and diverted): PM In	PM Out	PM Total	Transit %	External Transit Trips (Person Trips): PM In	PM Out	PM Total	Vehicle Trips Replaced by Transit: PM Total	External Vehicle Trips (Person/1.6): PM In	PM Out	PM Total	Bicycle Mode Share Adjustment
RETAIL																															
		226.0	**ksf**	**Neighborhood Serving + Ancillary**																											
		226.0	ksf	Specialty Retail	814	Eqn	959	1,534	44%	56%	422	675	537	859	36%	549					433	552	985	15%	65	83	148	93	230	293	523	
		100.0	ksf	Shopping Center	820	Eqn	1,065	1,704	48%	52%	511	818	554	886	36%	610					525	569	1,094	15%	79	86	165	103	279	302	581	
COMMERCIAL / ADAPTIVE REUSE																															
		4280.0	**ksf**	**Buildings 1, 2, and 3**																											
		15.0	ksf	Artist's	710	Eqn	97	155	17%	83%	17	27	80	128	36%	56					17	83	100	23%	4	19	23	15	8	40	48	
		4265.0	ksf	R&D	760	Eqn	2,819	4,510	15%	85%	423	677	2,396	3,834	36%	1615					434	2,461	2,896	23%	101	573	674	421	208	1,180	1,388	
		75.0	ksf	Maker's Space	BLEND	BLEND	209	334	28%	72%	59	94	150	240	36%	120					60	155	215	23%	14	36	50	31	29	74	103	
RECREATION																															
		1323.0	**acres**																												
		0.0	students	Private School - Elementary	536	Rate	0	0	47%	53%	0	0	0	0	36%	0					0	0	0	20%	0	0	0	0	0	0	0	
		264.0	students	Private School - Middle	536	Rate	46	74	47%	53%	22	35	24	38	36%	26					22	25	47	20%	4	5	9	6	11	13	24	
		336.0	students	Private School - High	536	Rate	58	93	43%	57%	25	40	33	53	36%	33					26	34	60	20%	5	7	12	7	13	17	30	
		300.0	students	STEM Academy	530	Rate	40	64	47%	53%	19	30	21	34	36%	23					19	22	41	20%	4	4	8	5	10	11	21	
		135.0	students	SF State	550	Eqn	84	134	32%	68%	27	43	57	91	36%	48					28	59	86	20%	6	12	17	11	14	29	43	
		0.0	ksf	Police/Fire Station	730	Rate	0	0	31%	69%	0	0	0	0	36%	0					0	0	0	47%	0	0	0	0	0	0	0	
		50.0	ksf	Recreational Comm Center	495	Eqn	135	216	17%	83%	23	37	112	179	36%	77					24	115	139	23%	6	27	32	20	11	55	66	
		238	acres	County Park	412	Eqn	15	24	41%	59%	6	10	9	14	36%	9					6	9	15	25%	2	2	4	2	3	4	7	
HOTELS																															
		175.0	**rooms**																												
		0.0	rooms	Resort Hotel	330	Rate	0	0	43%	57%	0	0	0	0	36%	0					0	0	0	39%	0	0	0	0	0	0	0	
		175.0	rooms	Hotel	310	Eqn	104	166	53%	47%	55	88	49	78	36%	60					57	50	107	20%	11	10	21	13	28	25	53	
RESIDENTIAL																															
		3454.0	**units**																												
		3454.0	units	Residential Townhouse	230	Rate	1,797	2,875	67%	33%	1,204	1,926	593	949	36%	1029					1,237	609	1,846	22%	272	134	406	254	603	297	900	
		0.0	units	Apartment	220	Rate	0	0	65%	35%	0	0	0	0	36%	0					0	0	0	50%	0	0	0	0	0	0	0	
		0.0	units	High-Rise Apartment	222	Rate	0	0	61%	39%	0	0	0	0	36%	0					0	0	0	50%	0	0	0	0	0	0	0	
		0.0	units	All Suites Hotel	311	Rate	0	0	45%	55%	0	0	0	0	36%	0					0	0	0	50%	0	0	0	0	0	0	0	
				Total			**7,428**	**11,886**	**38%**	**62%**	**2,813**	**4,501**	**4,615**	**7,384**	**36%**	**4,255**					**2,889**	**4,743**	**7,631**		**573**	**998**	**1,572**	**982**	**1,447**	**2,340**	**3,787**	**3,644**

APPENDIX C

Construction Activities

Table 90
Construction Workers and Trucks by Phase
Hunters Point Shipyard and Candlestick Point

Project Area/Construction Phase	Construction Duration	Daily Construction Workers	Daily Construction Truck Trips
Hunters Point Shipyard			
Phase 1 – Site Preparation [1]			
Abatement & Demolition	2010 – 2015	10-50	8-48
Grading and Infrastructure	2012 - 2016	30-145	128-424
Phase 1 – Building Construction [1]			
Structure/Rough In	2012 - 2017	10-60	8-32
Interior and Exterior Finishes	2012 - 2017	8-10	8-16
Phase 2 – Site Preparation			
Abatement & Demolition	2014 – 2017	16-20	8-16
Grading and Infrastructure	2016 - 2019	26-85	224-256
Phase 2 – Building Construction			
Structure/Rough In	2016 - 2021	26-68	16-64
Interior and Exterior Finishes	2016 - 2021	30-60	16-64
Candlestick Point			
Phase 1 – Site Preparation			
Abatement & Demolition	2010 - 2015	10-20	8-24
Grading and Infrastructure	2012 – 2016	16-33	8-144
Phase 1 – Building Construction			
Structure/Rough In	2023 - 2017	14-18	8-16
Interior and Exterior Finishes	2023 - 2017	8-10	8-16
Phase 2 – Site Preparation			
Abatement & Demolition	2014 – 2017	10-40	8-48
Grading and Infrastructure	2016 - 2019	24-63	8-40
Phase 2 – Building Construction			
Structure/Rough In	2016 - 2021	14-18	8-16
Interior and Exterior Finishes	2016 - 2021	8-10	8-16
Phase 3 – Site Preparation			
Abatement & Demolition	2018 – 2021	16-20	16-24
Grading and Infrastructure	2020 - 2023	24-60	8-40
Phase 3 – Building Construction			
Structure/Rough In	2019 – 2025	14-40	8-32
Interior and Exterior Finishes	2019 – 2025	8-20	8-32
Phase 4 – Site Preparation			
Abatement & Demolition	2022 – 2024	16-20	16-24
Grading and Infrastructure	2024 - 2026	24-35	8-16
Phase 4 – Building Construction			
Structure/Rough In	2024 - 2028	10-20	8-16
Interior and Exterior Finishes	2024 – 2028	8-20	8-32
Yosemite Slough Bridge	2015 – 2016	62-78	24-32
HPS Off-site Improvements	2011 – 2016	24-30	8-16
CP Off-site Improvements	2011 – 2015	24-30	8-16

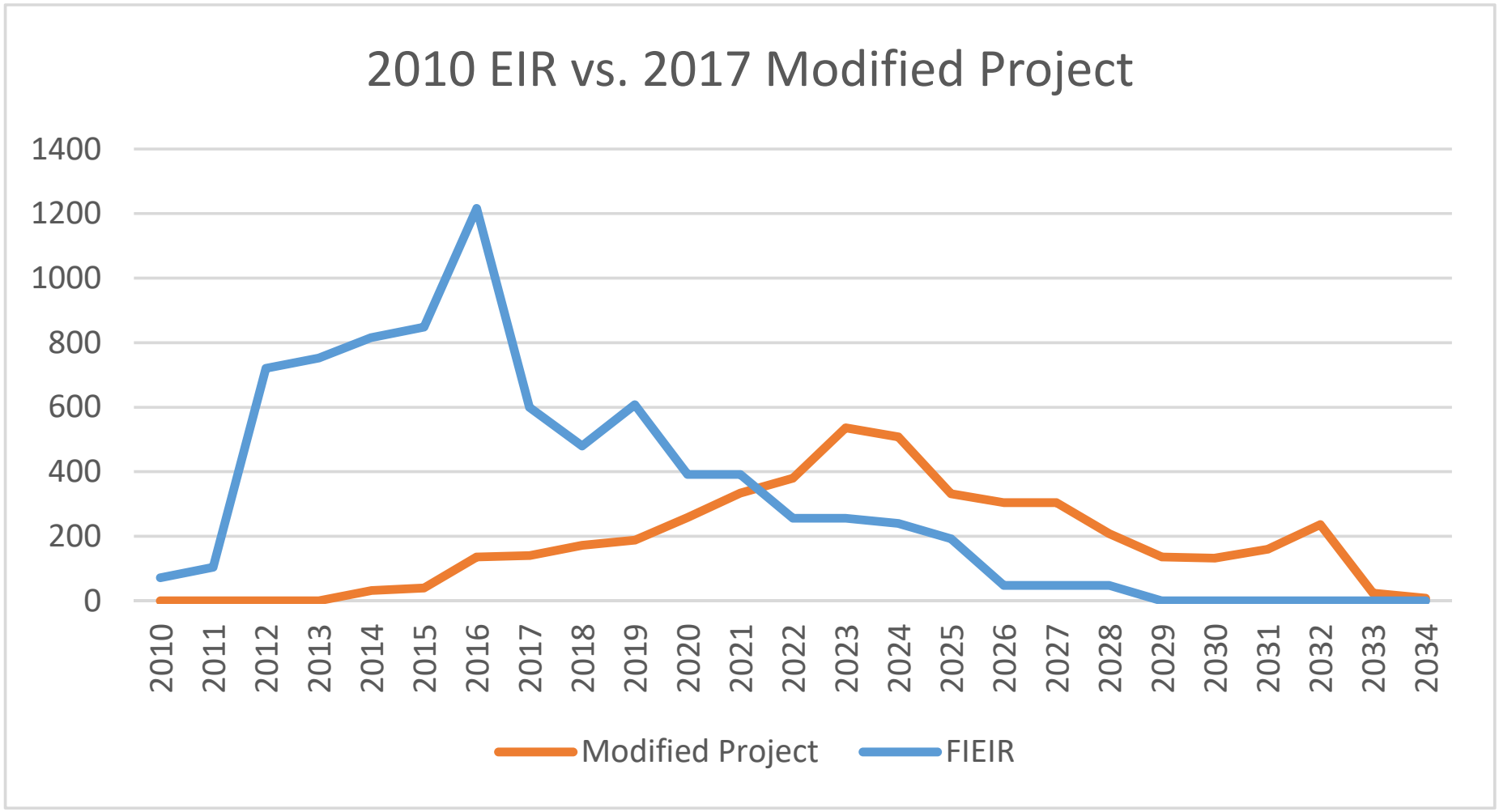
Note:
1. Includes stadium construction.
Source: MACTEC, 2009.

Table ## Project Construction Truck Trips

Year	Candlestick Point		Hunters Point Shipyard		Field Management		Combined	
	Max. Number of Daily Truck Trips	Avg. Number of Daily Truck Trips	Max. Number of Daily Truck Trips	Avg. Number of Daily Truck Trips	Max. Number of Daily Truck Trips	Avg. Number of Daily Truck Trips	Max. Number of Daily Truck Trips	Avg. Number of Daily Truck Trips
2014	24	12	0	0	8	4	32	16
2015	40	20	0	0	8	4	48	24
2016	136	88	0	0	8	4	144	92
2017	116	74	24	12	8	4	148	90
2018	150	91	24	12	8	4	182	107
2019	164	84	154	93	8	4	326	181
2020	106	53	233	133	8	4	347	190
2021	72	36	266	155	8	4	346	195
2022	84	42	296	166	8	4	388	212
2023	144	78	392	230	8	4	544	312
2024	216	110	292	160	8	4	516	274
2025	188	96	144	76	8	4	340	176
2026	192	96	112	60	8	4	312	160
2027	232	116	72	40	8	4	312	160
2028	196	98	12	8	8	4	216	110
2029	96	48	40	24	8	4	144	76
2030	36	18	96	56	8	4	140	78
2031	24	12	136	84	8	4	168	100
2032	48	24	188	148	4	2	240	174
2033	0	0	24	12	4	2	28	14
2034	0	0	8	4	4	2	12	6

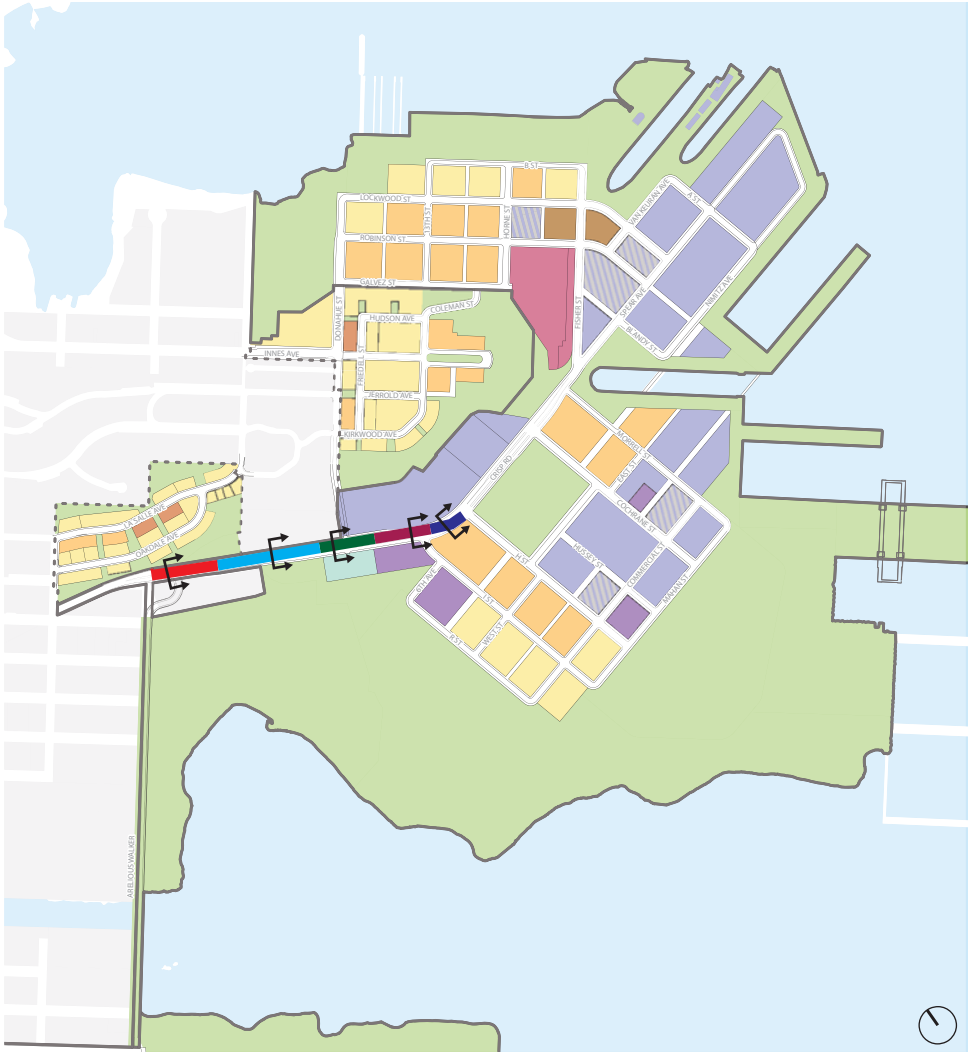
SOURCE: TRC, 2018

a.Truck trips includes on-site construction, off-site roadway improvements, and shoreline improvements.


2010 EIR vs. 2017 Modified Project
1400
1200
1000
800
600
400
200
0
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
Modified Project
FIEIR

APPENDIX D

Revised Roadway Cross-Sections

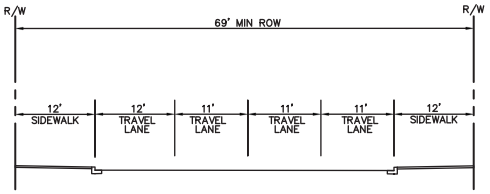


LAND USE

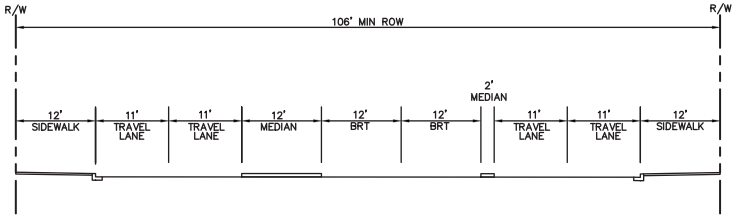
- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY*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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

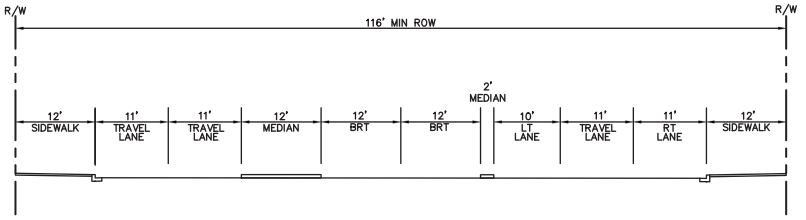
Crisp Road, west of Arelious Walker



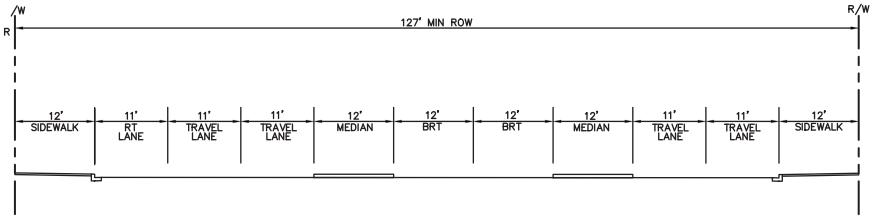
Crisp Road, east of Arelious Walker



Crisp Road, west of Donahue Street



Crisp Road, east of Donahue Street



Crisp Road, between I Street and H Street

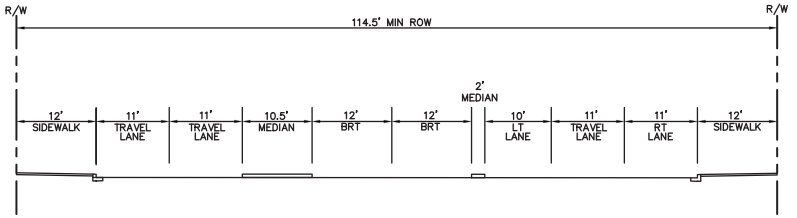
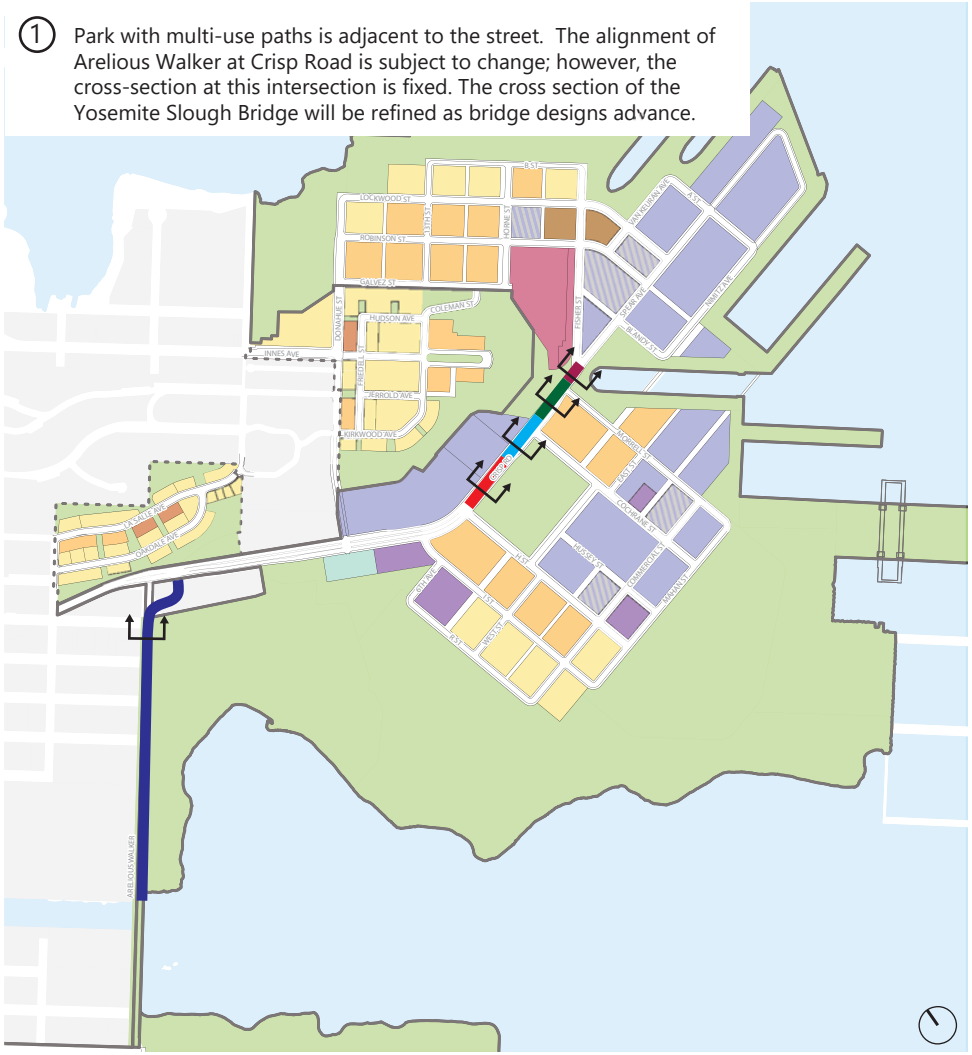


Figure 1

Hunters Point Shipyard Phase II Development: On-Site Street Network

① Park with multi-use paths is adjacent to the street. The alignment of Arelious Walker at Crisp Road is subject to change; however, the cross-section at this intersection is fixed. The cross section of the Yosemite Slough Bridge will be refined as bridge designs advance.



LAND USE

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

NOTE:
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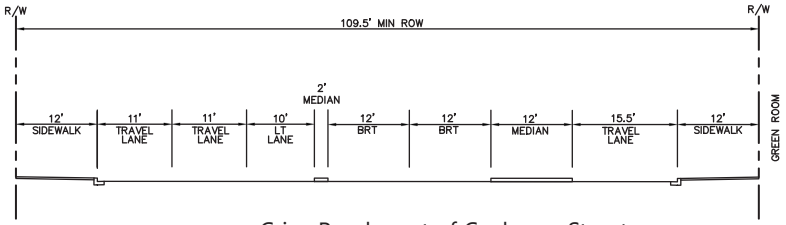
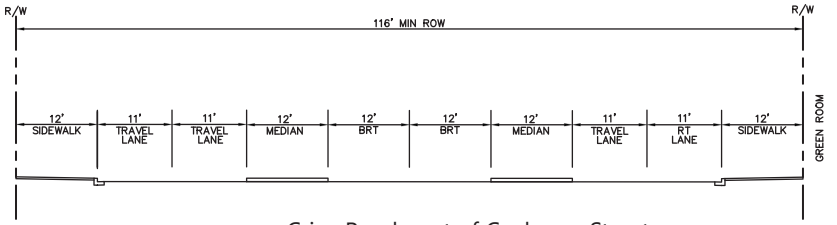
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

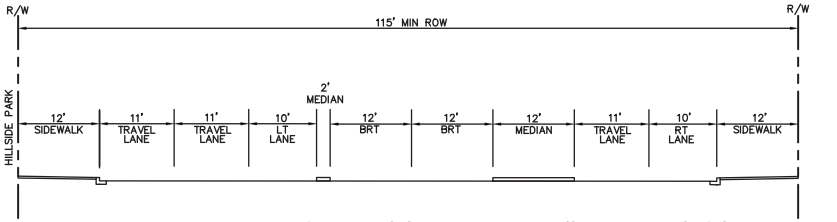
Crisp Road, east of H Street



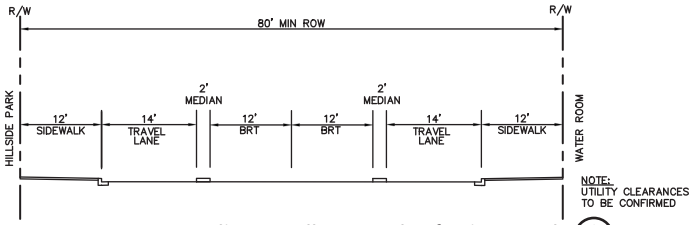
Crisp Road, west of Cochrane Street



Crisp Road, east of Cochrane Street



Crisp Road, between Morrell Street and Fisher Avenue



Arelious Walker, south of Crisp Road ①

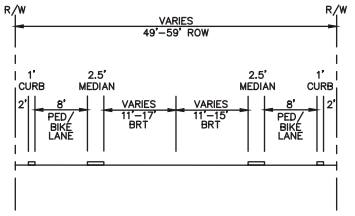
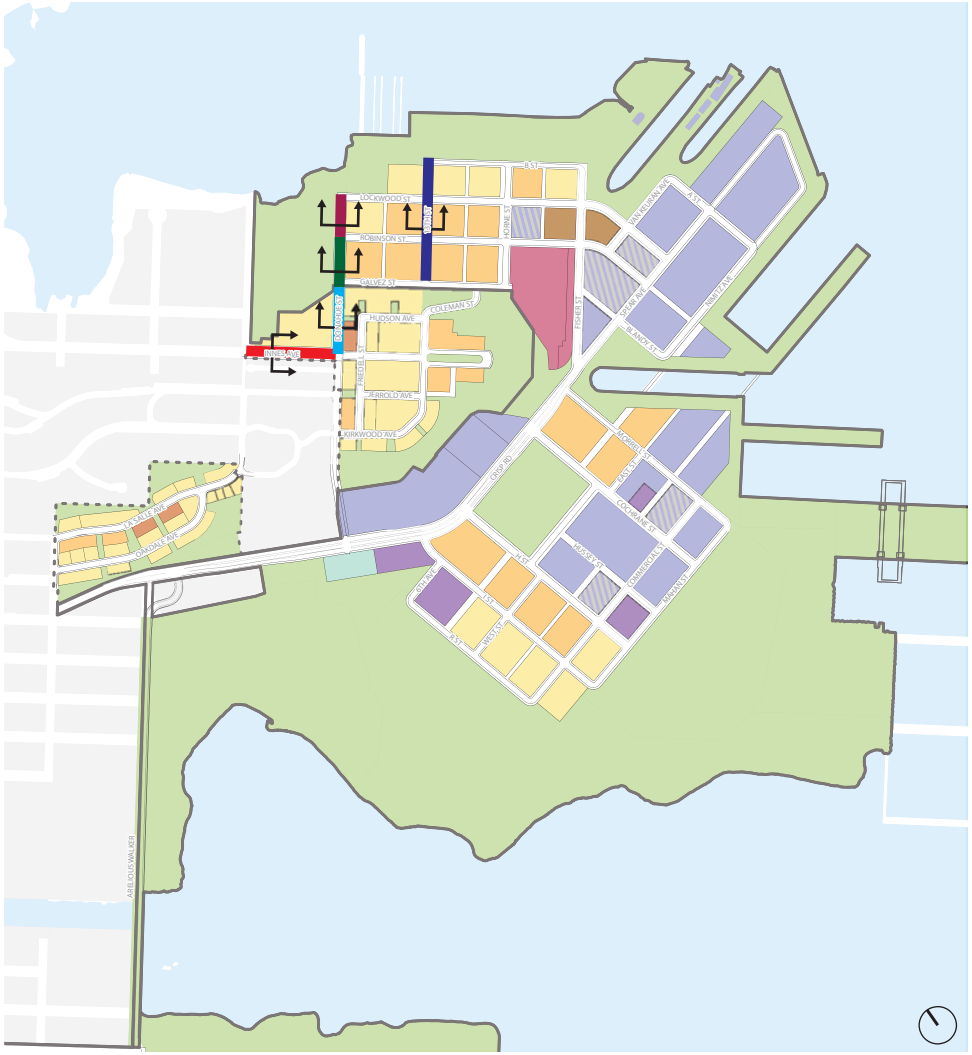


Figure 2

Hunters Point Shipyard Phase II Development: On-Site Street Network



LAND USE

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

NOTE:
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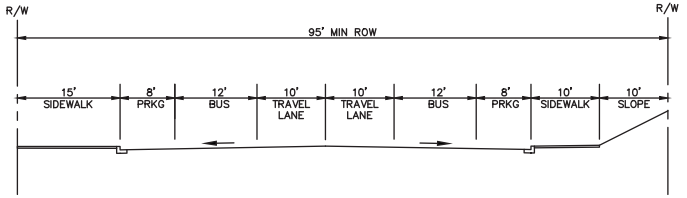
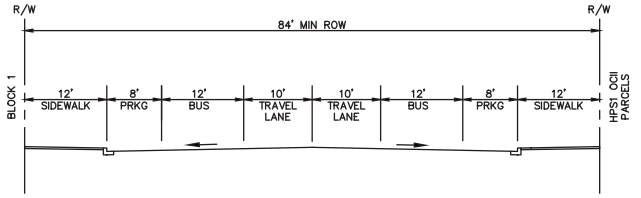
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

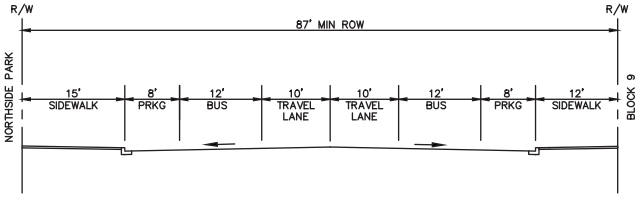
Innes Avenue at Donahue Street



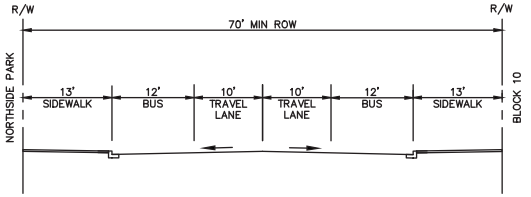
Donahue Street between Innes Avenue and Galvez Street



Donahue Street, between Galvez Street and Robinson Street



Donahue Street, between Robinson Street and Lockwood Street



13th Street

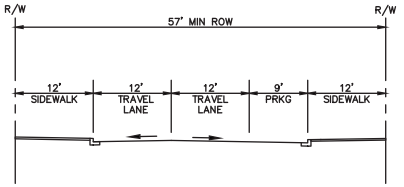
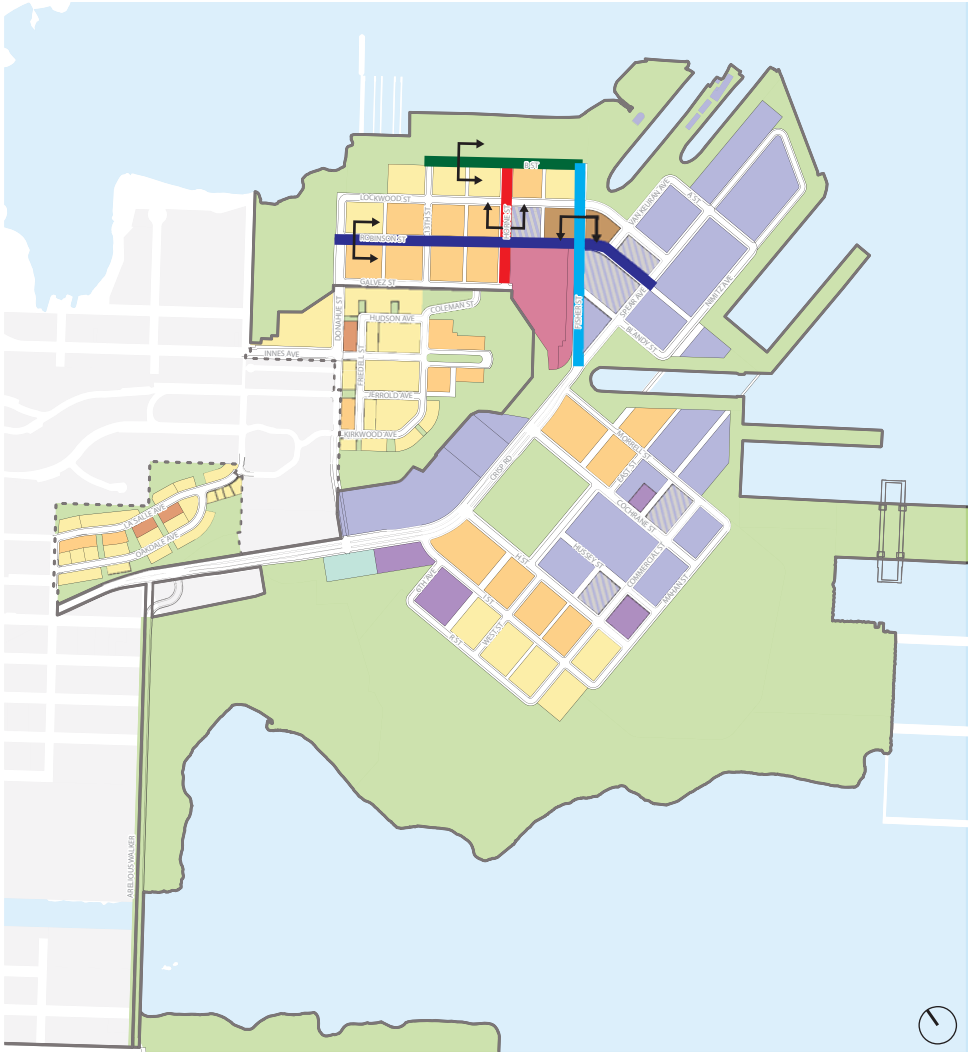


Figure 3

Hunters Point Shipyard Phase II Development: On-Site Street Network

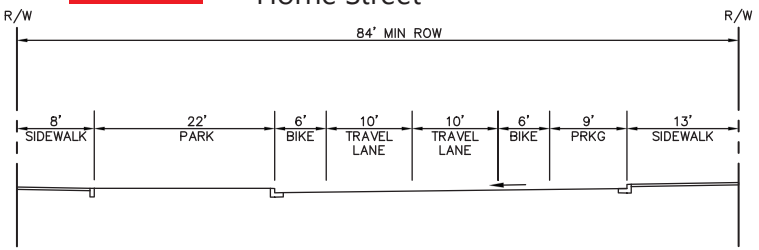


LAND USE

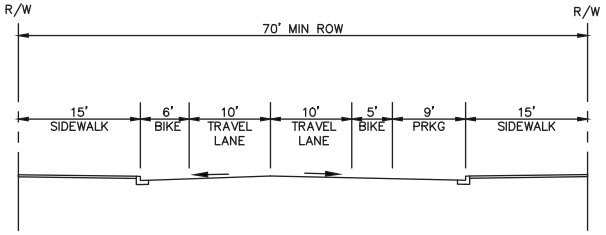
- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY*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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

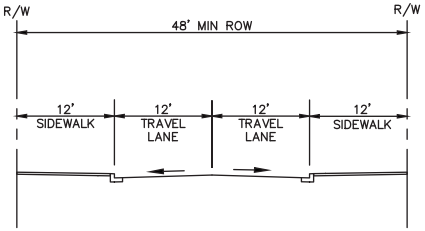
Horne Street



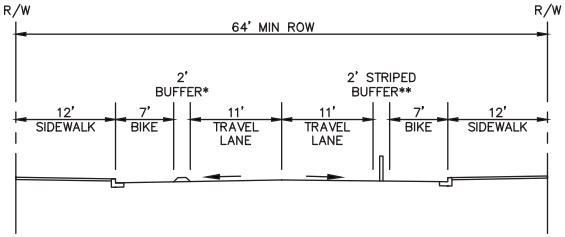
Fisher Street



B Street



Robinson Street



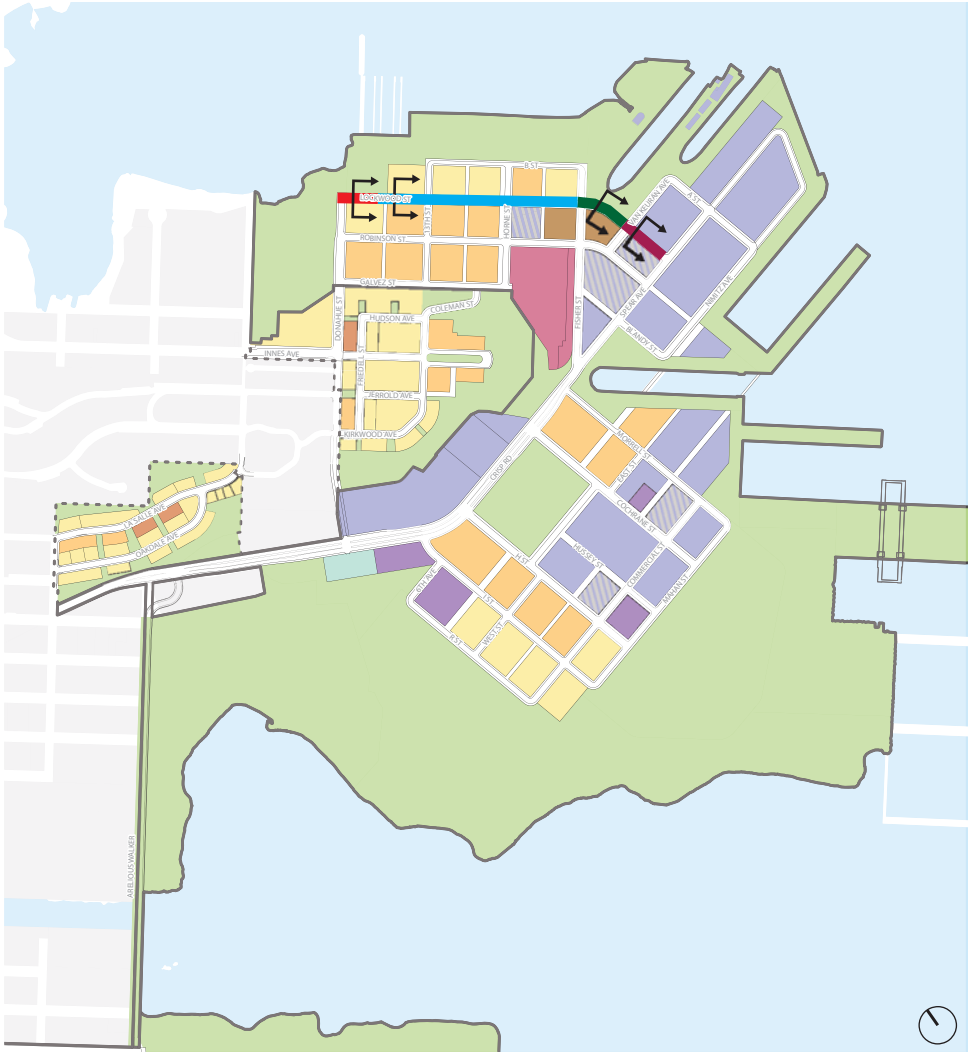
NOTE:

***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 4

Hunters Point Shipyard Phase II Development: On-Site Street Network

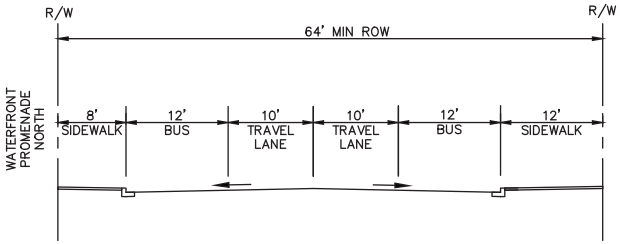


LAND USE

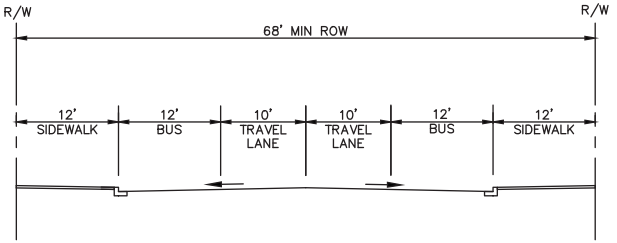
- RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)
- RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)
- RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)
- RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE)
- ARTIST (ART)
- COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)
- INFRASTRUCTURE / UTILITY (I / U)
-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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
* GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)

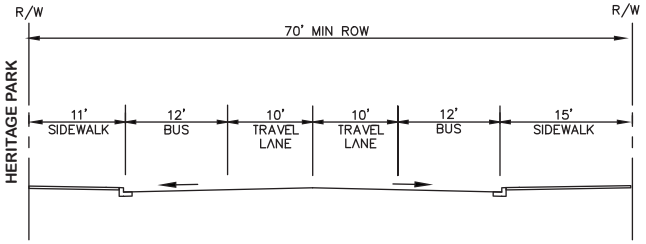
Lockwood Between Donahue and Midblock



Lockwood Between midblock and Fisher Ave



Lockwood Between Fisher Ave and Van Keuran



Lockwood Between Van Keuran and Spear

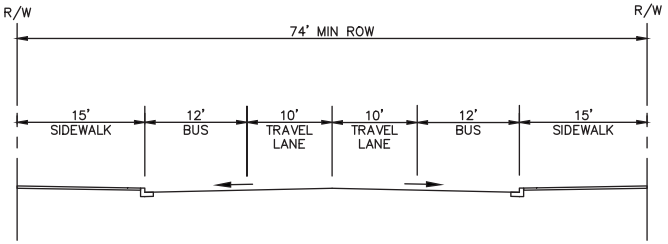
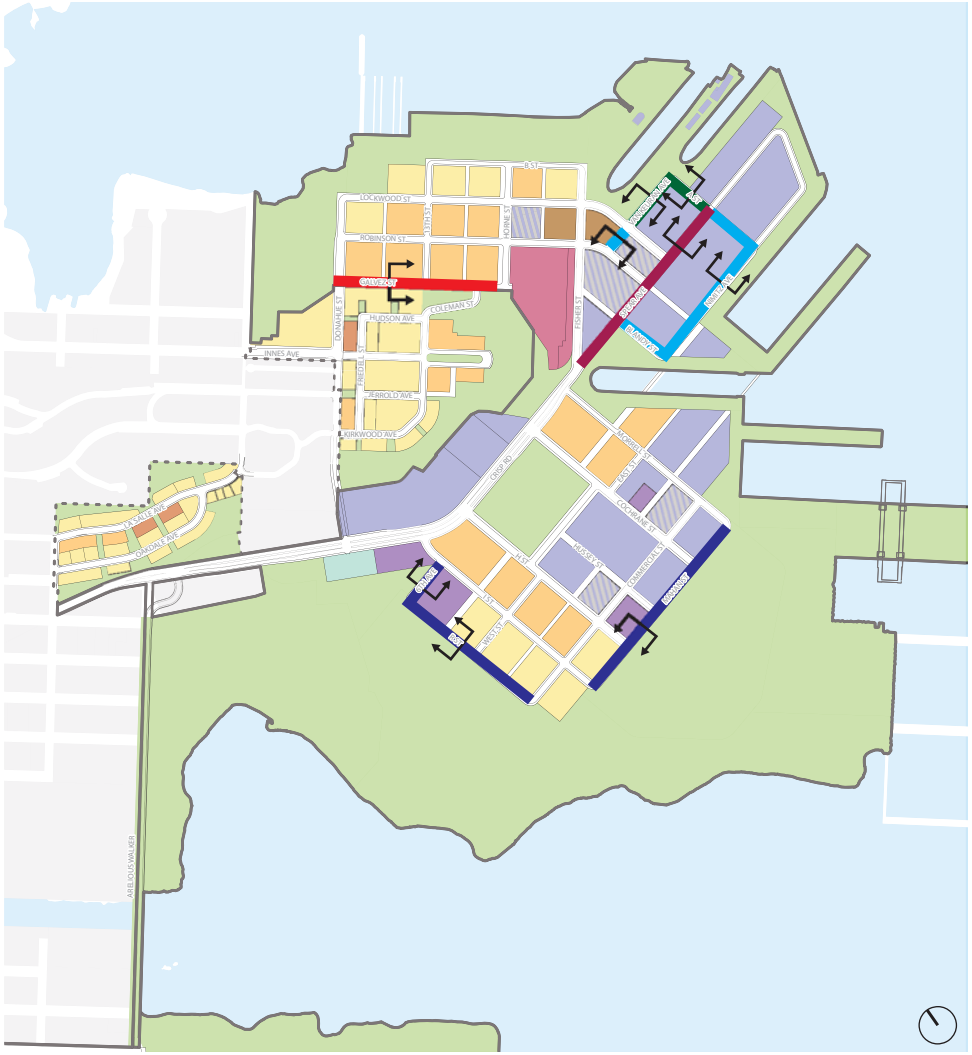


Figure 5

Hunters Point Shipyard Phase II Development: On-Site Street Network

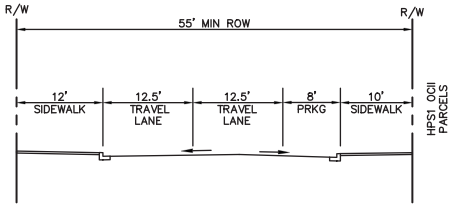


LAND USE

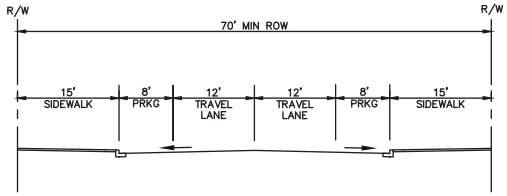
- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY*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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

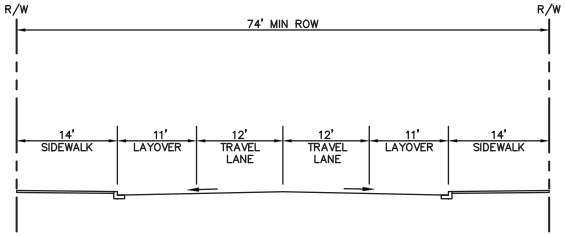
Galvez Avenue



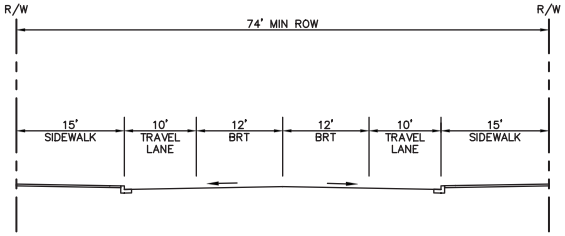
Commercial Roadway



Transit Layover



Spear Avenue



Residential/Commercial Roadway

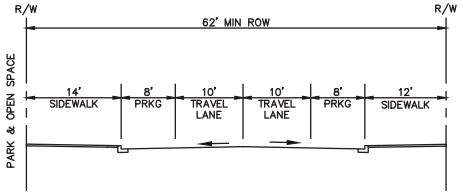
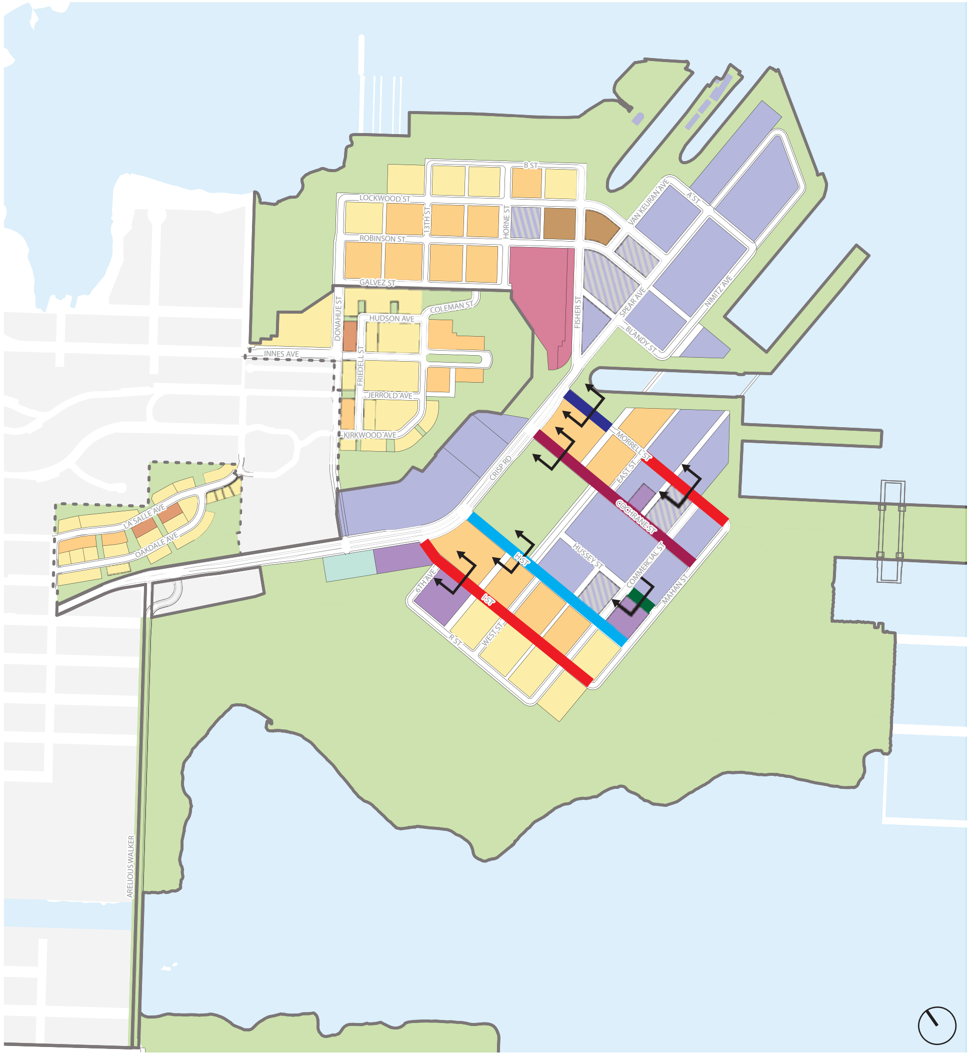


Figure 6

Hunters Point Shipyard Phase II Development: On-Site Street Network



LAND USE

- RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)
- RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)
- RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)
- RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE)
- ARTIST (ART)
- COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)
- INFRASTRUCTURE / UTILITY (I / U)
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- COMMUNITY USE (CU)
- PARKS AND OPEN SPACE
- RETAIL* (RT)
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3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

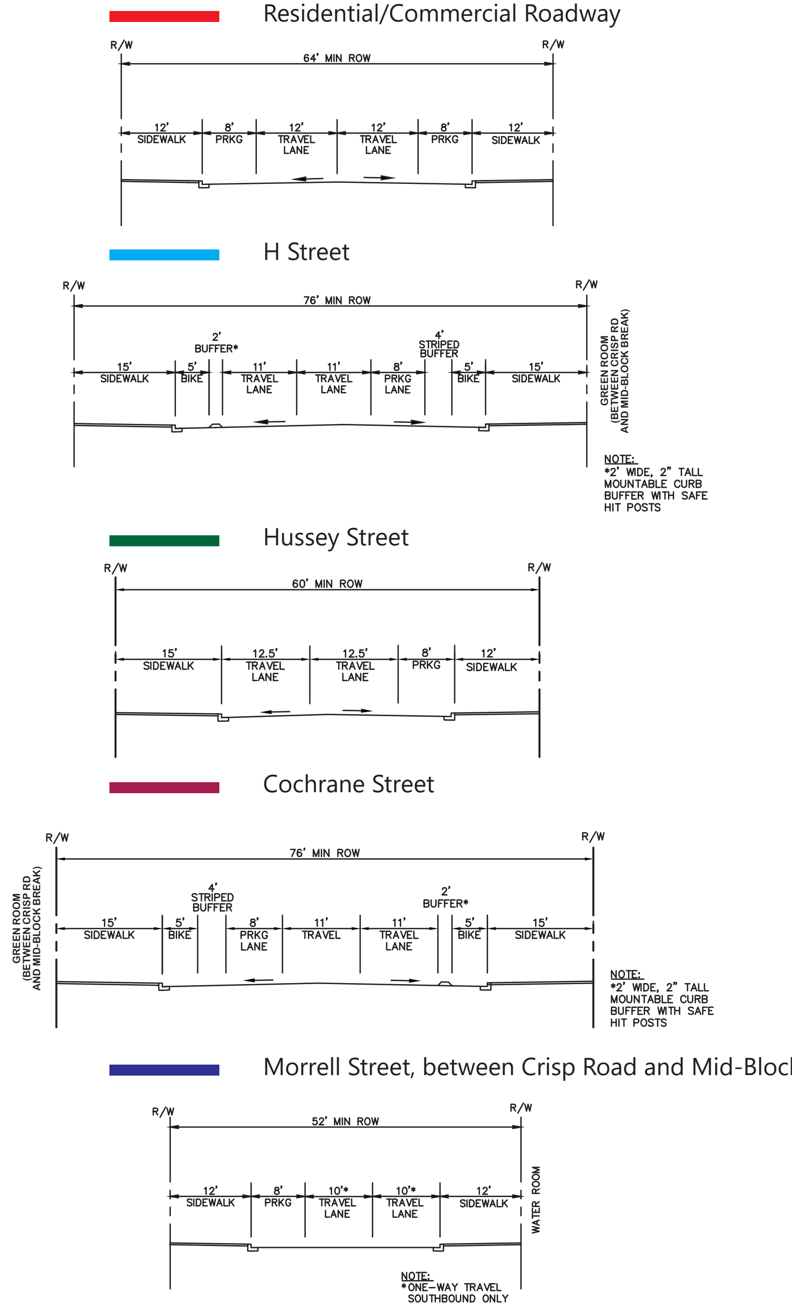
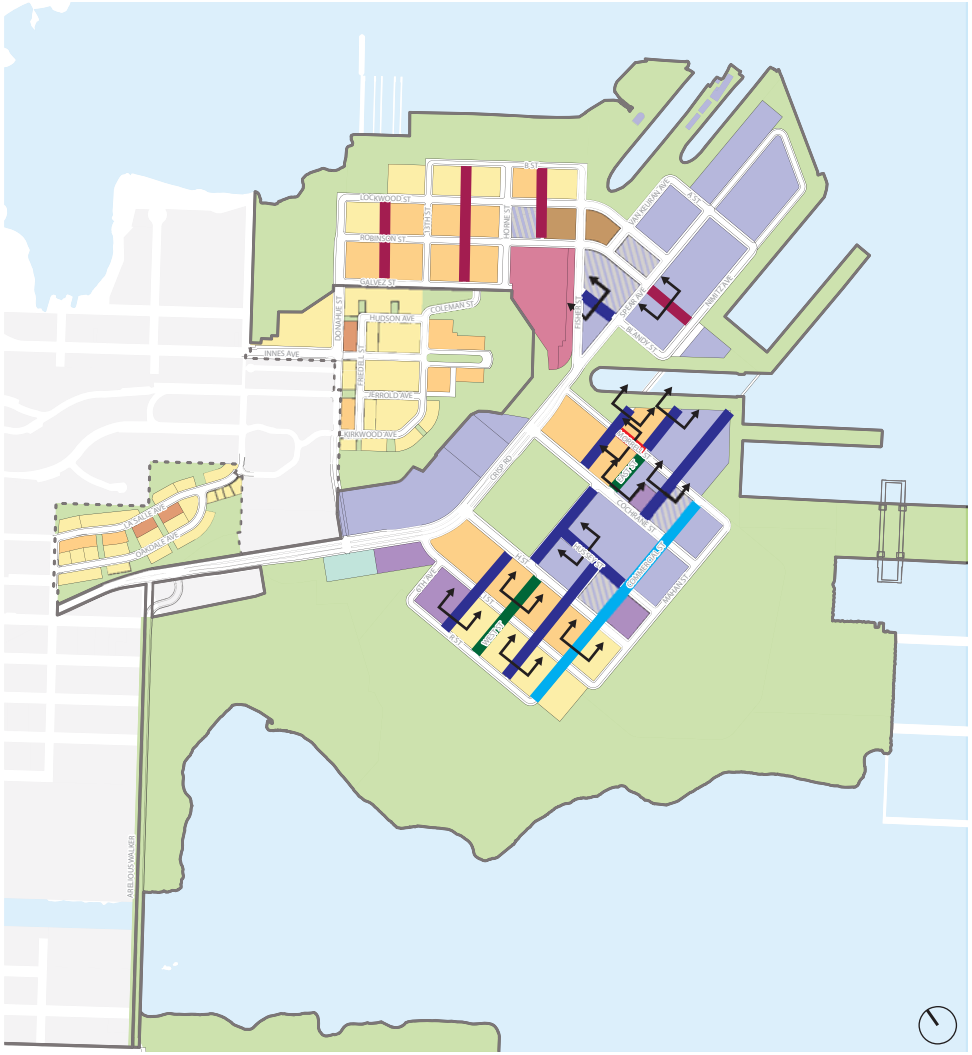


Figure 7

Hunters Point Shipyard Phase II Development: On-Site Street Network



LAND USE

- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY* (I / U)
- *PARKING* (SP)
- *COMMUNITY USE* (CU)
- *PARKS AND OPEN SPACE*
- *RETAIL** (RT)
- *HOTEL* (HT)
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NOTE:
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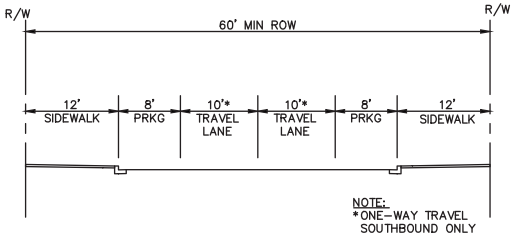
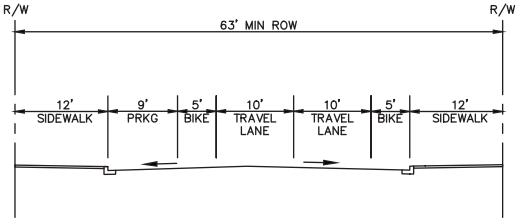
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

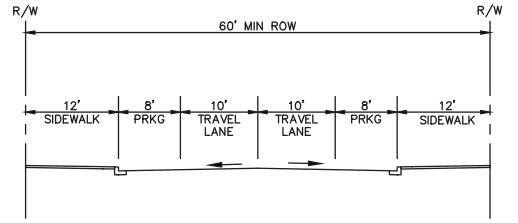
Morrell Street, between Mid-block and East Street



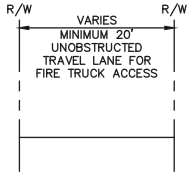
Manseau Street



Residential/Commercial Roadway



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



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

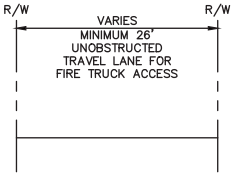
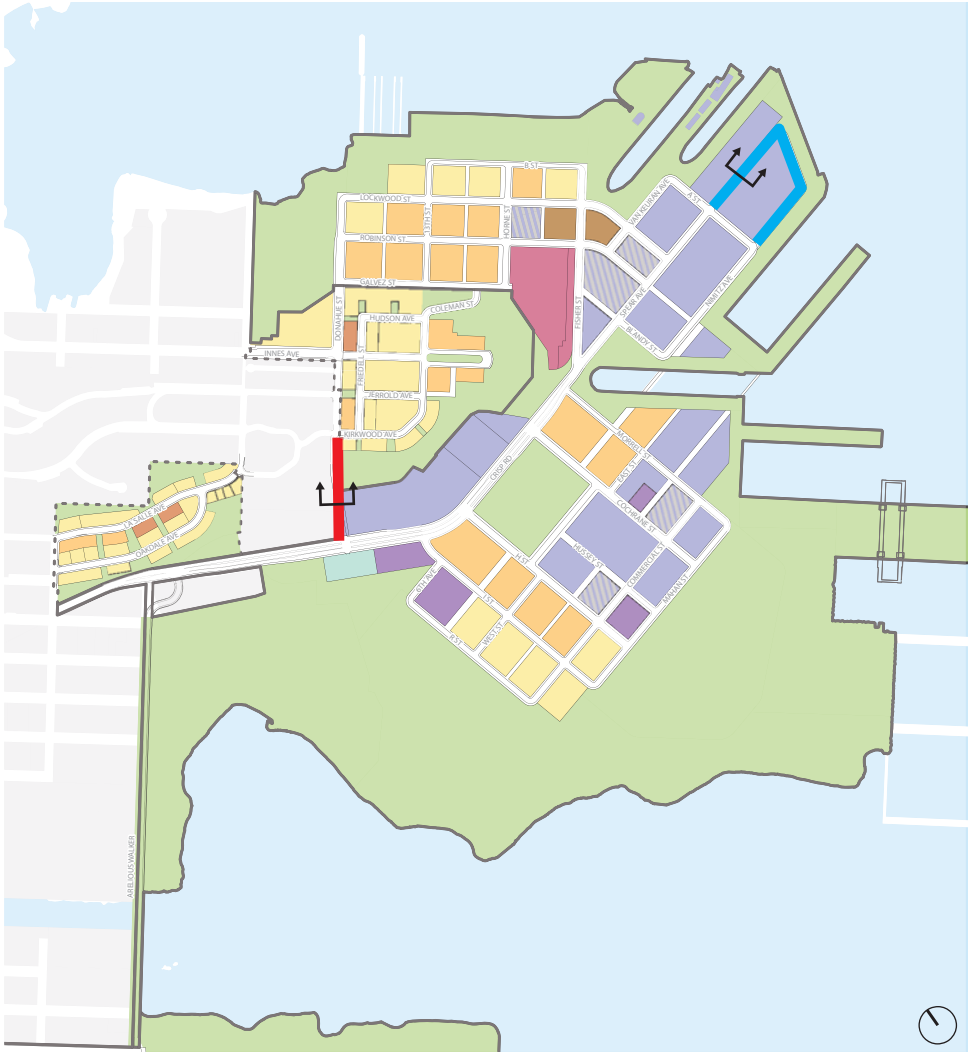


Figure 8

Hunters Point Shipyard Phase II Development: On-Site Street Network



LAND USE

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- RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)
- RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)
- RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE)
- ARTIST (ART)
- COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)
- INFRASTRUCTURE / UTILITY (I / U)
- PARKING (SP)
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- PARKS AND OPEN SPACE
- RETAIL* (RT)
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NOTE:
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3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
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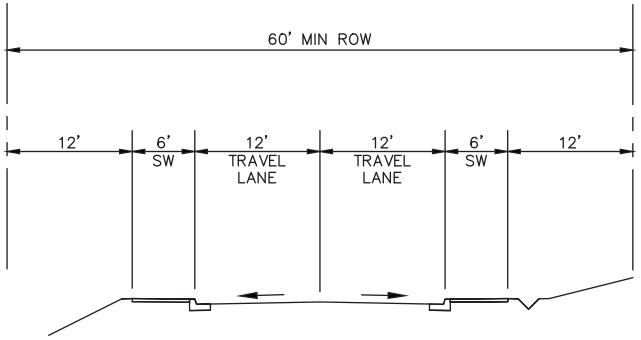
Residential/Commercial Roadway



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

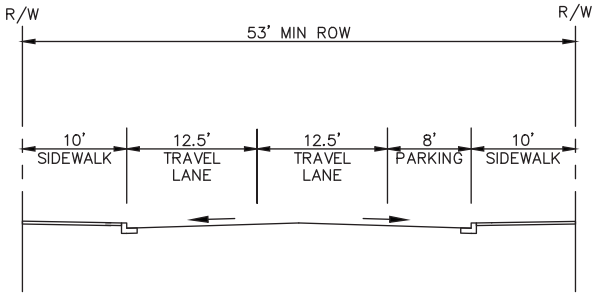
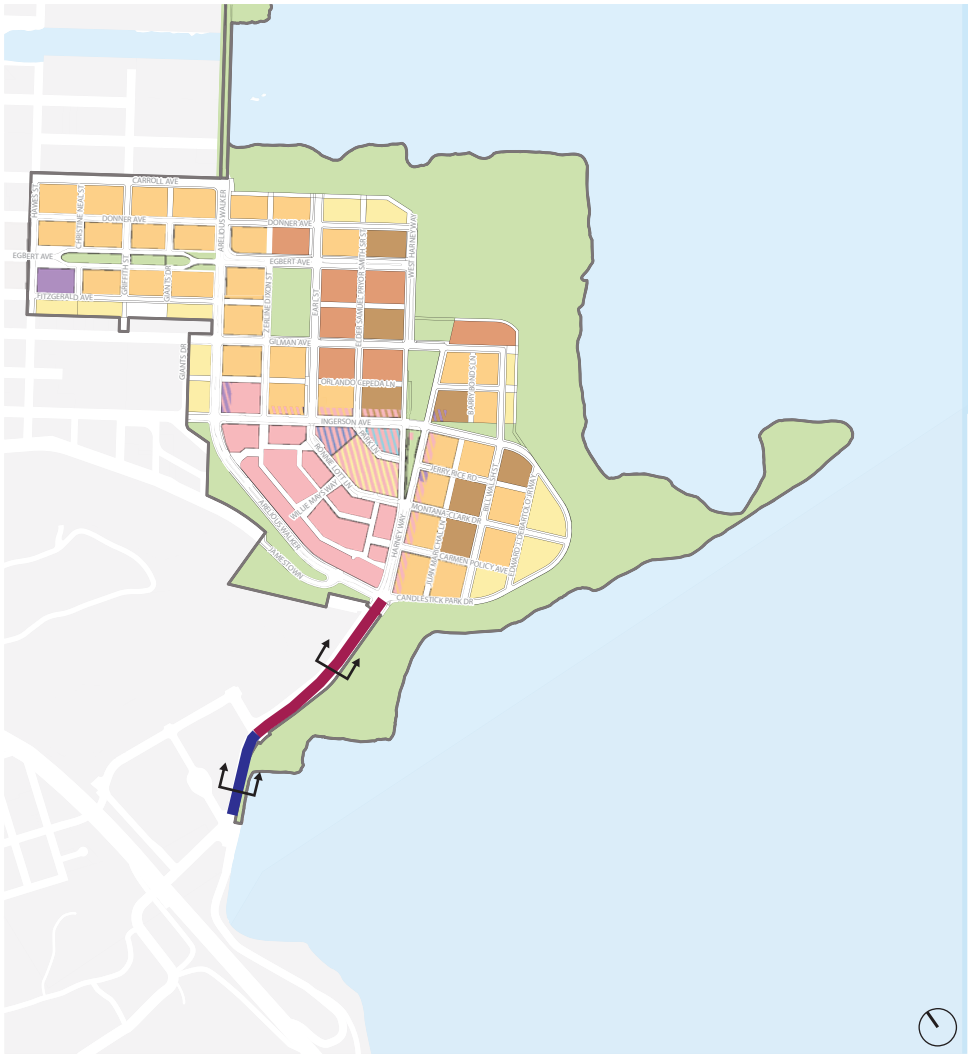


Figure 9

Hunters Point Shipyard Phase II Development: On-Site Street Network



LAND USE

- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY* (I / U)
- *PARKING* (SP)
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- *PARKS AND OPEN SPACE*
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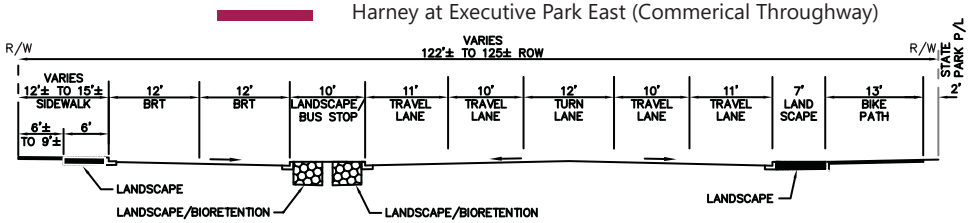
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

Harney at Executive Park East (Commerical Throughway)



Harney at Thomas Mellon (Commercial Throughway)

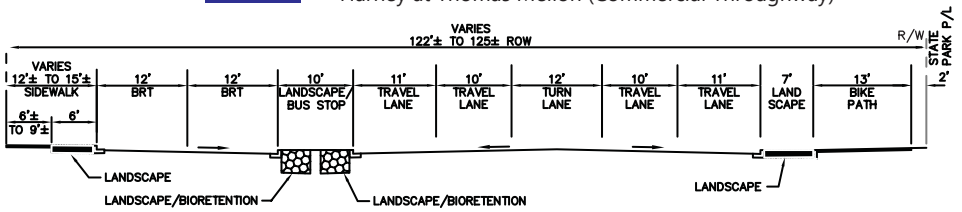
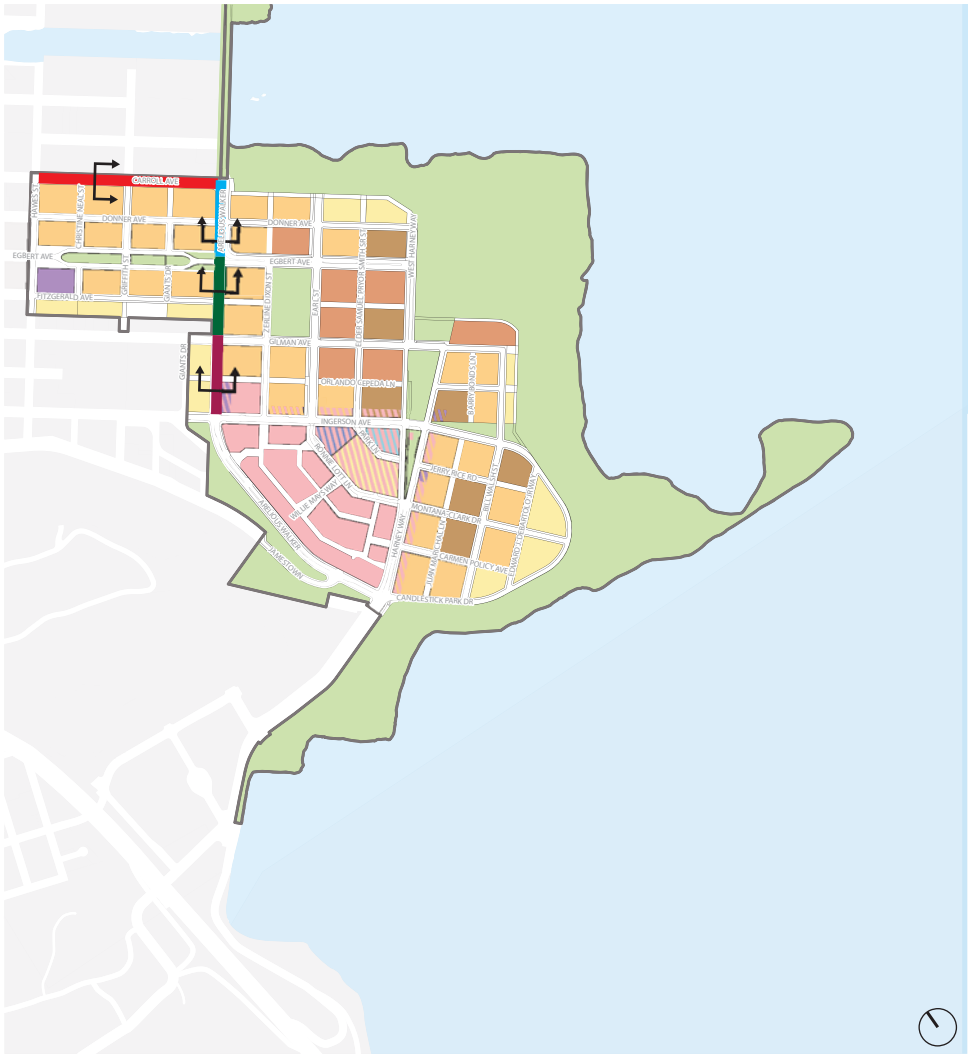


Figure 10

Candlestick Point Development: On-Site Street Network



LAND USE

- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
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- *INFRASTRUCTURE / UTILITY* (I / U)
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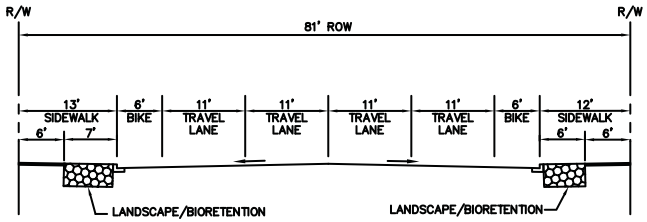
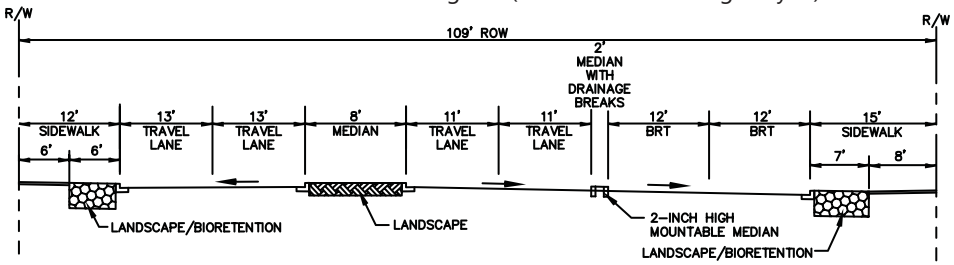
- *RETAIL** (RT)
- *HOTEL* (HT)
- *PERFORMANCE VENUE* (PV)

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

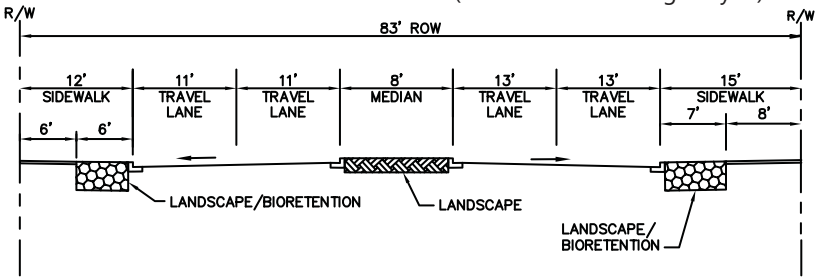
Carroll at Ingalls ("Industrial Mixed-Use Street" *)



Arelious Walker at Egbert ("Commercial Throughway" *)



Arelious Walker at Gilman ("Commercial Throughway" *)



Arelious Walker at Ingerson ("Commercial Throughway" *)

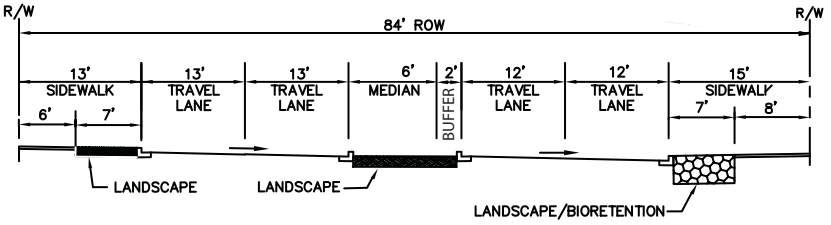
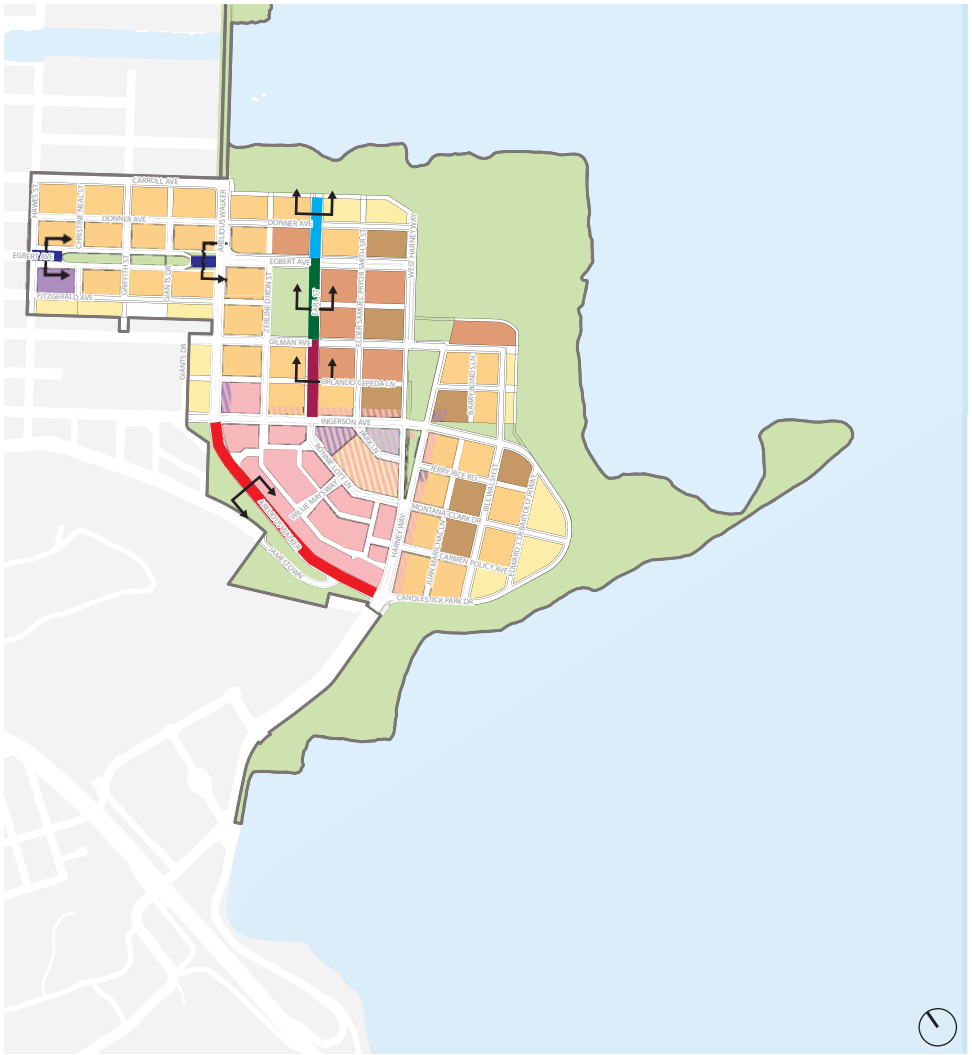


Figure 11

Candlestick Point Development: On-Site Street Network

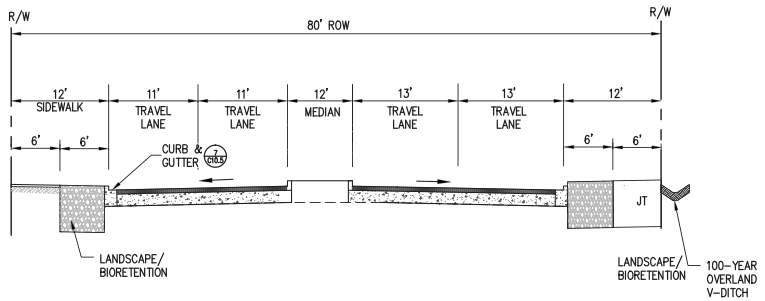


LAND USE

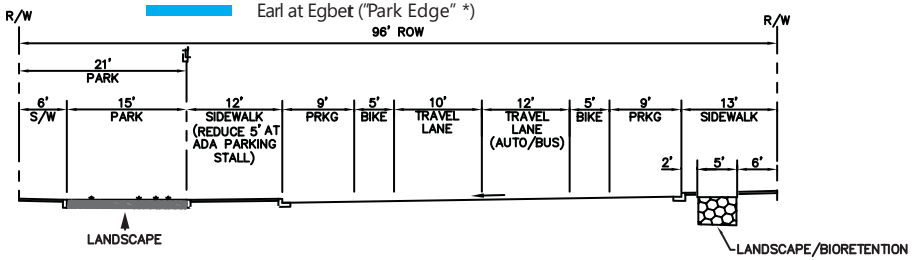
- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY*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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

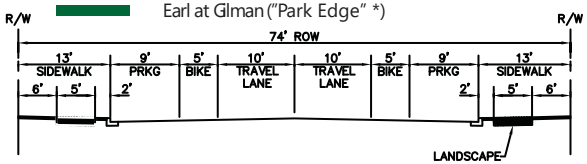
Arelious Walker at Harney ("Commercial Throughway" *)



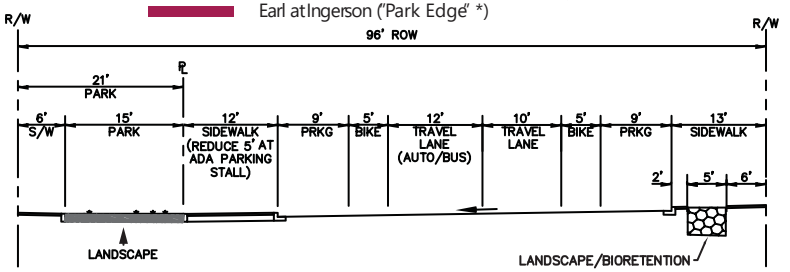
Earl at Egbert ("Park Edge" *)



Earl at Gilman ("Park Edge" *)



Earl at Ingerson ("Park Edge" *)



Egbert at Alice Griffith Park ("Parkway" *)①

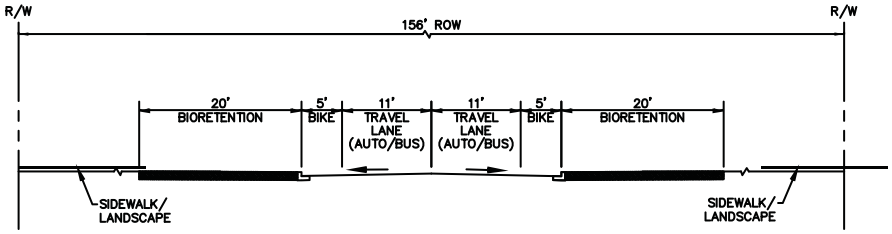
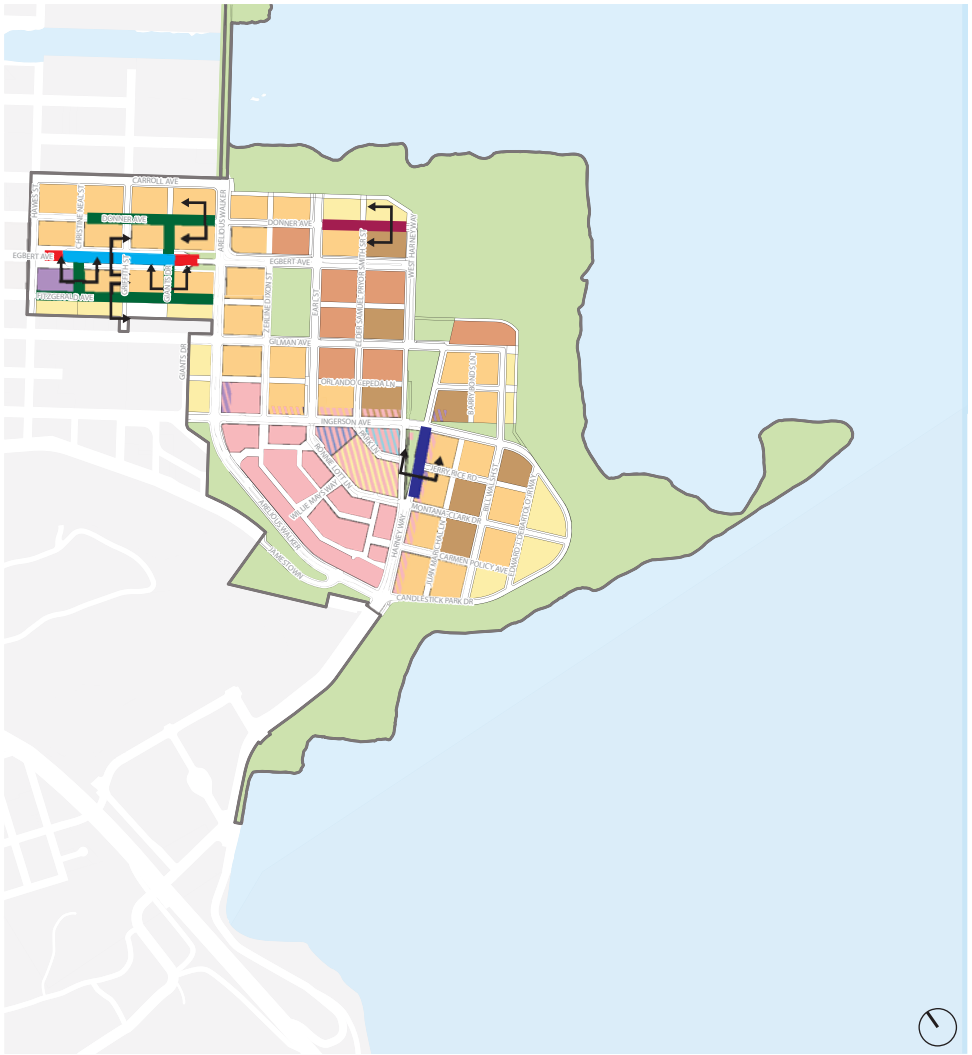


Figure 12

Candlestick Point Development: On-Site Street Network



LAND USE

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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
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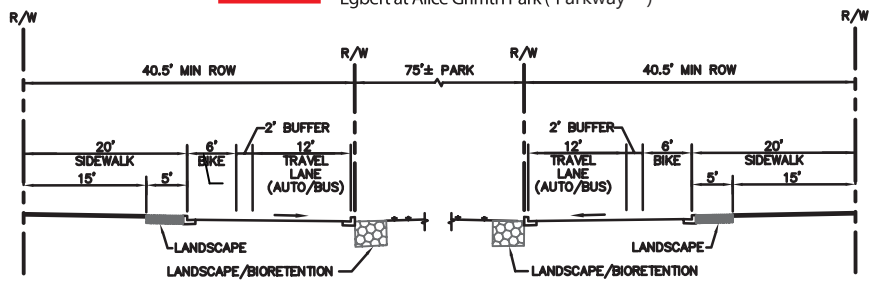
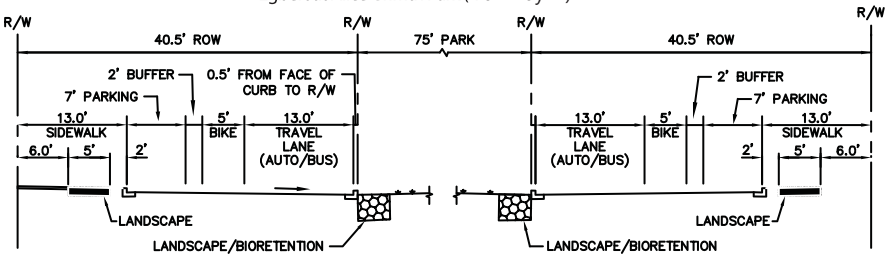
* GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)

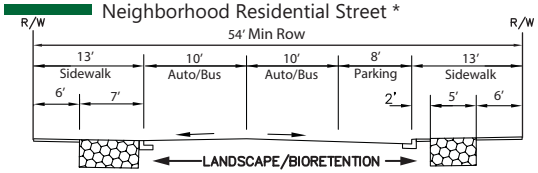
Egbert at Alice Griffith Park ("Parkway" *)①



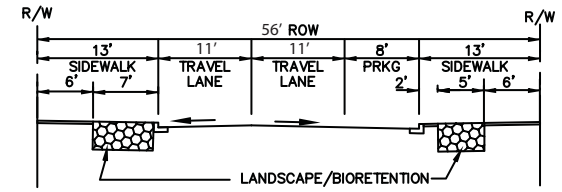
Egbert at Alice Griffith Park ("Parkway" *)①



Neighborhood Residential Street *



Neighborhood Residential Street *



Harney at Ingerson South ("Park Edge Street" *)

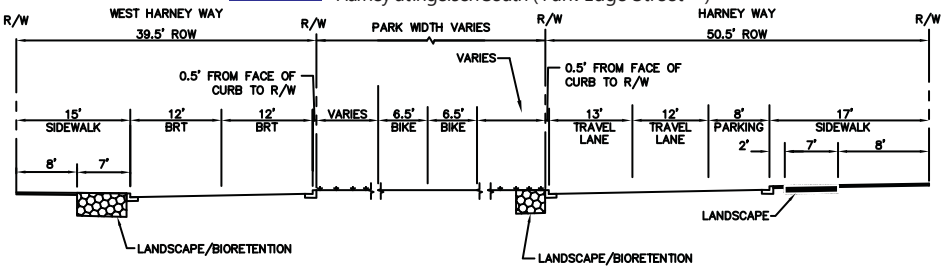
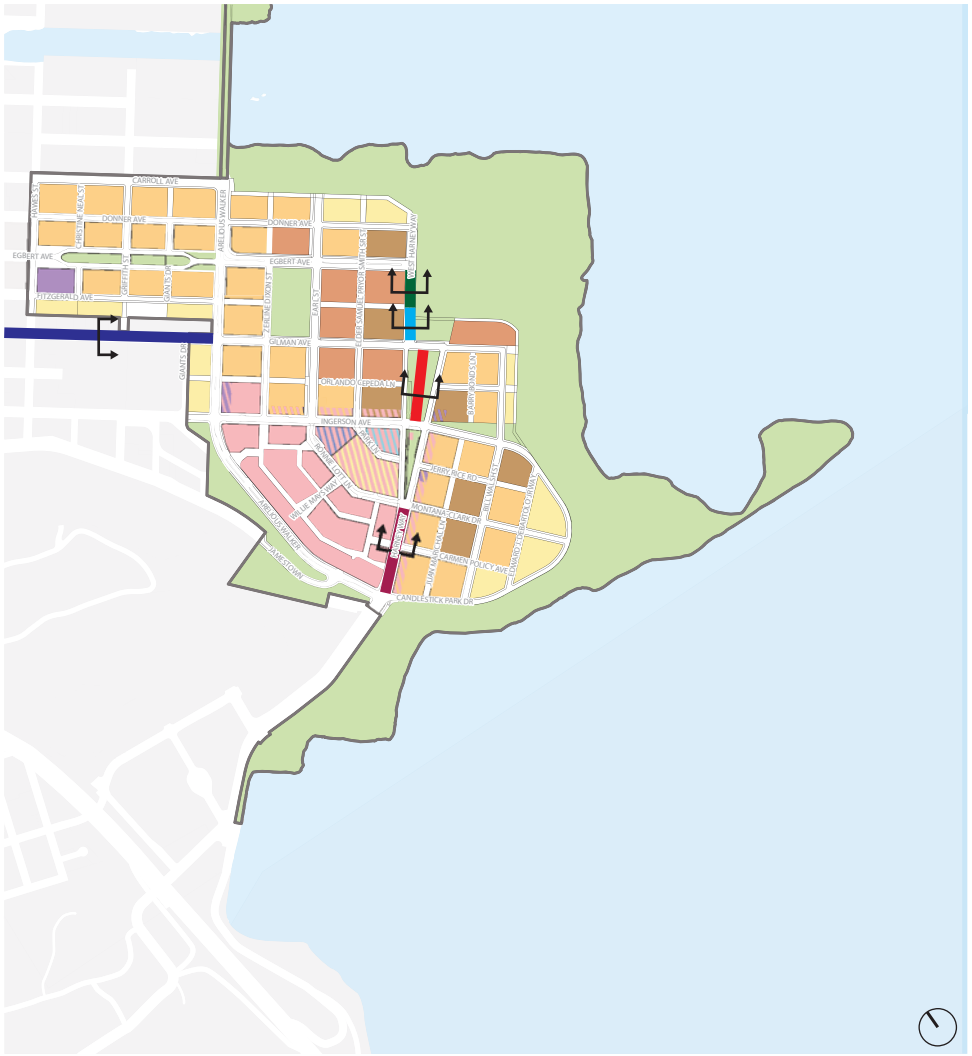


Figure 13

Candlestick Point Development: On-Site Street Network



LAND USE

- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY* (I / U)
- *PARKING* (SP)
- *COMMUNITY USE* (CU)
- *PARKS AND OPEN SPACE*
- *RETAIL** (RT)
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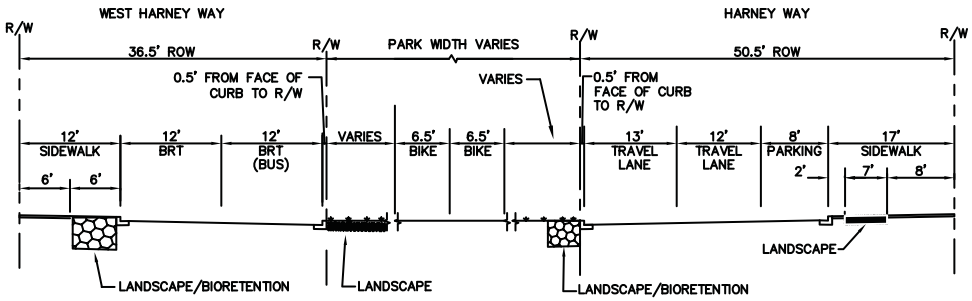
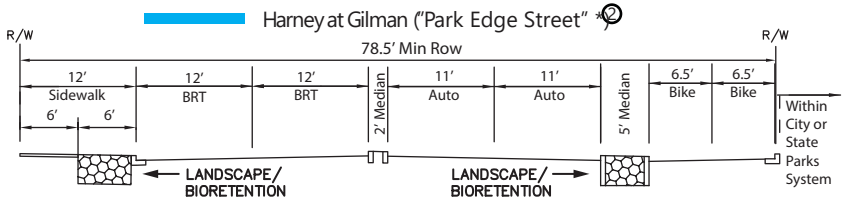
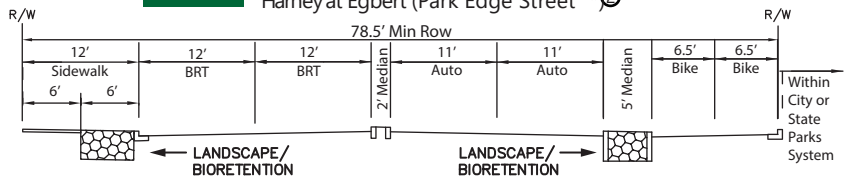
Harney at Ingerson North ("Park Edge Street" *)



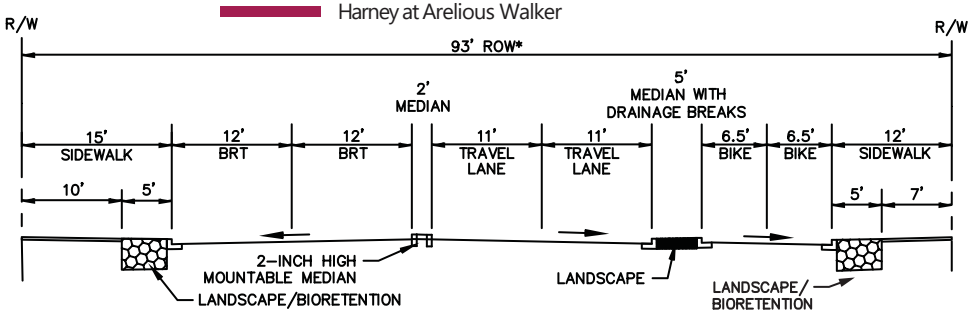
Harney at Gilman ("Park Edge Street" *)(2)



Harney at Egbert ("Park Edge Street" *)(2)



Harney at Arelious Walker



Gilman Avenue

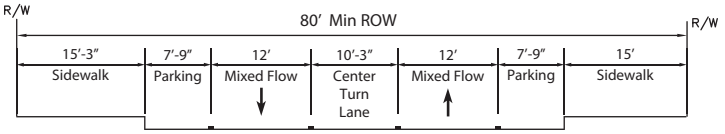
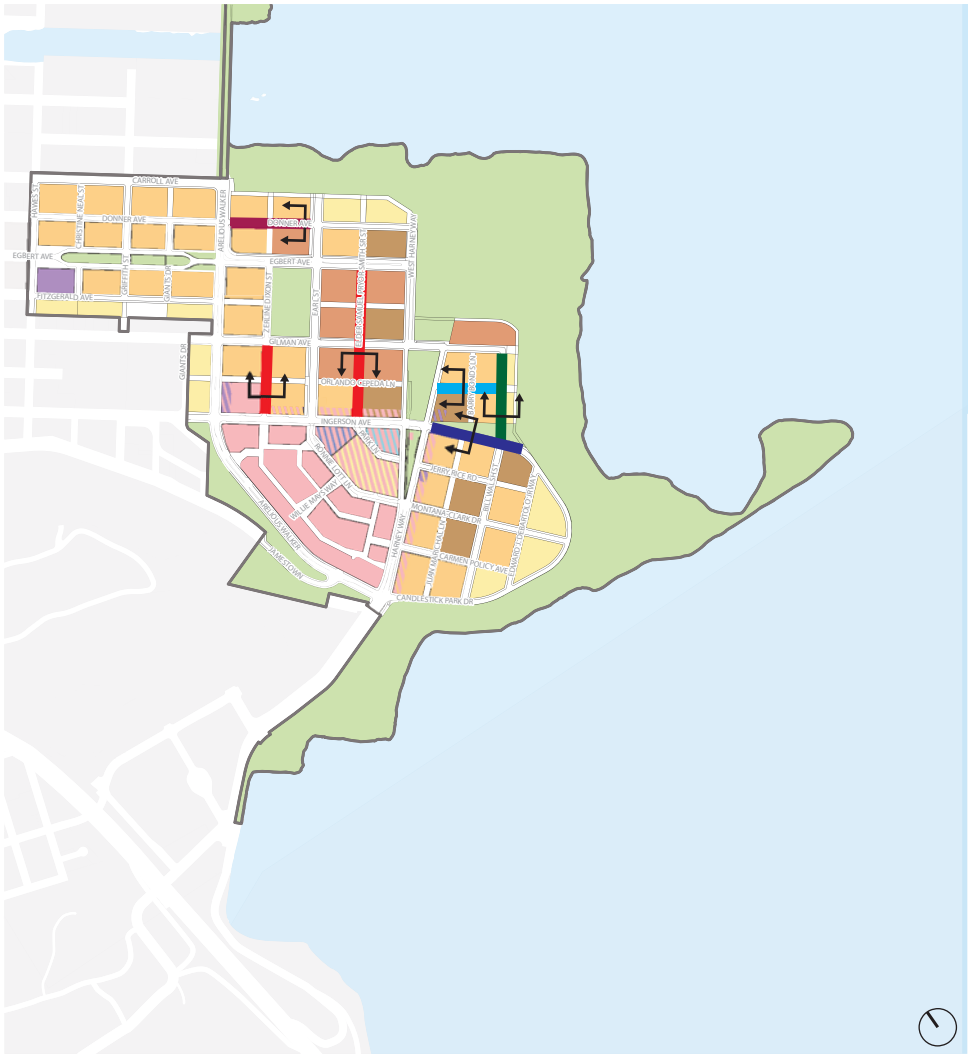


Figure 14

Candlestick Point Development: On-Site Street Network



LAND USE

- RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)
- RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)
- RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)
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- COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)
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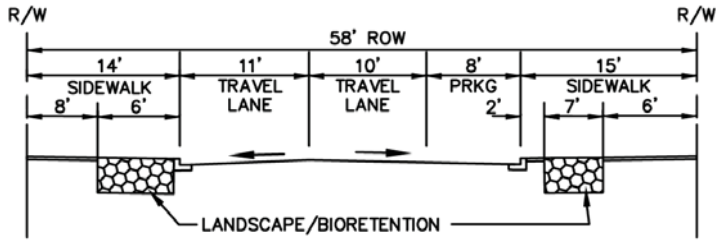
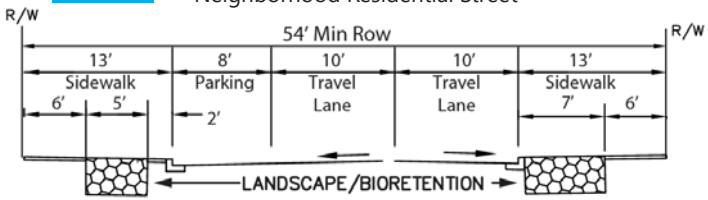
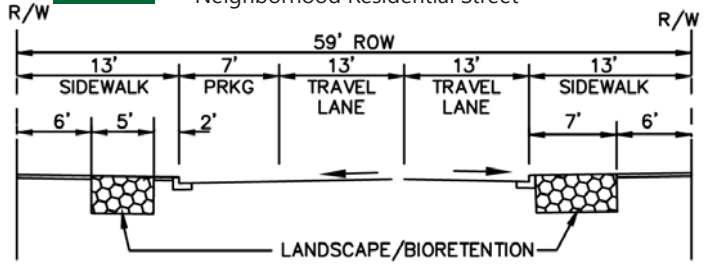
Neighborhood Residential Street



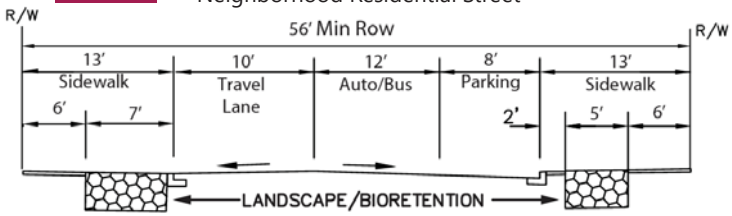
Neighborhood Residential Street



Neighborhood Residential Street



Neighborhood Residential Street



Neighborhood Residential Street

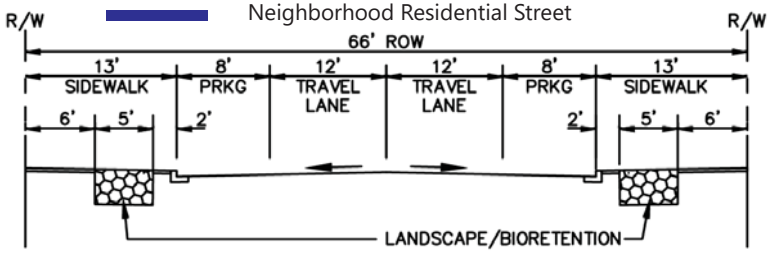
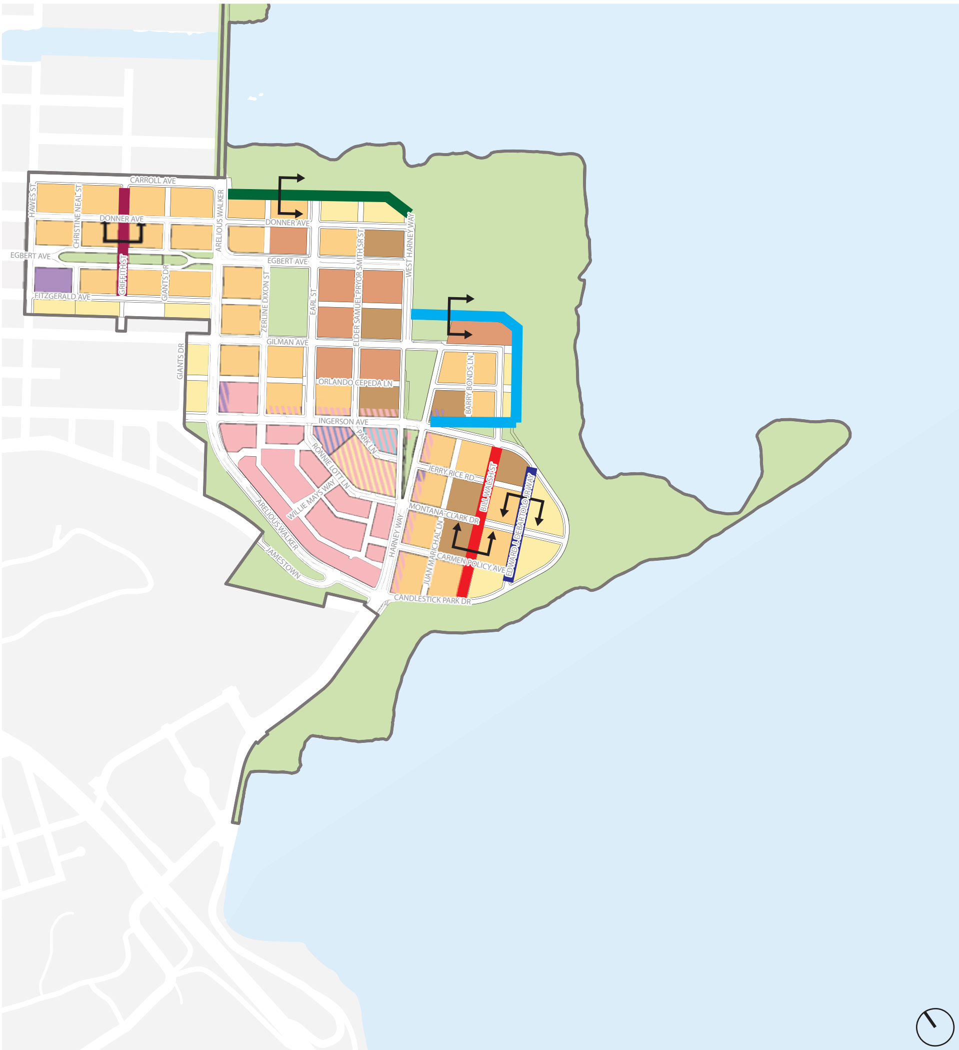


Figure 15

Candlestick Point Development: On-Site Street Network



LAND USE

- RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)
- RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)
- RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)
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- INFRASTRUCTURE / UTILITY (I / U)
- PARKING (SP)
- COMMUNITY USE (CU)
- PARKS AND OPEN SPACE
- RETAIL* (RT)
- HOTEL (HT)
- PERFORMANCE VENUE (PV)

NOTE:
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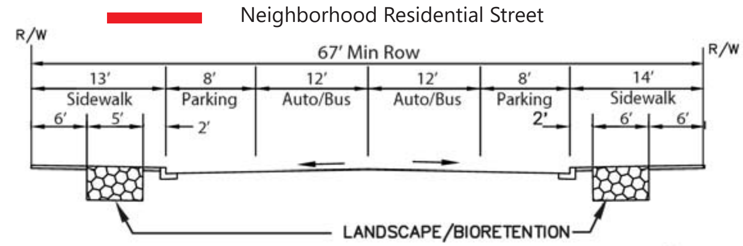
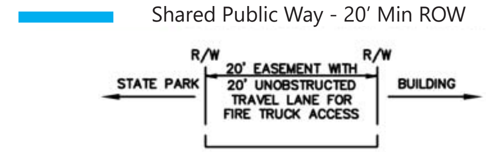
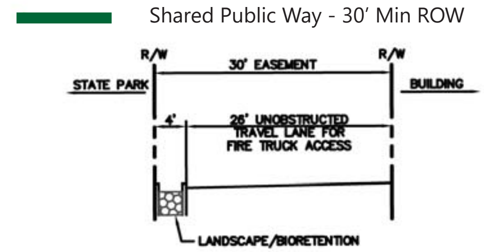
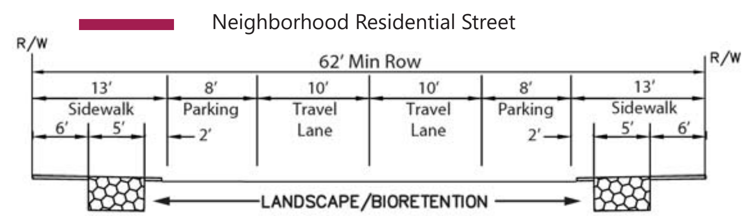








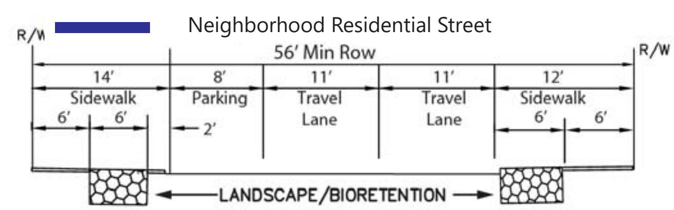
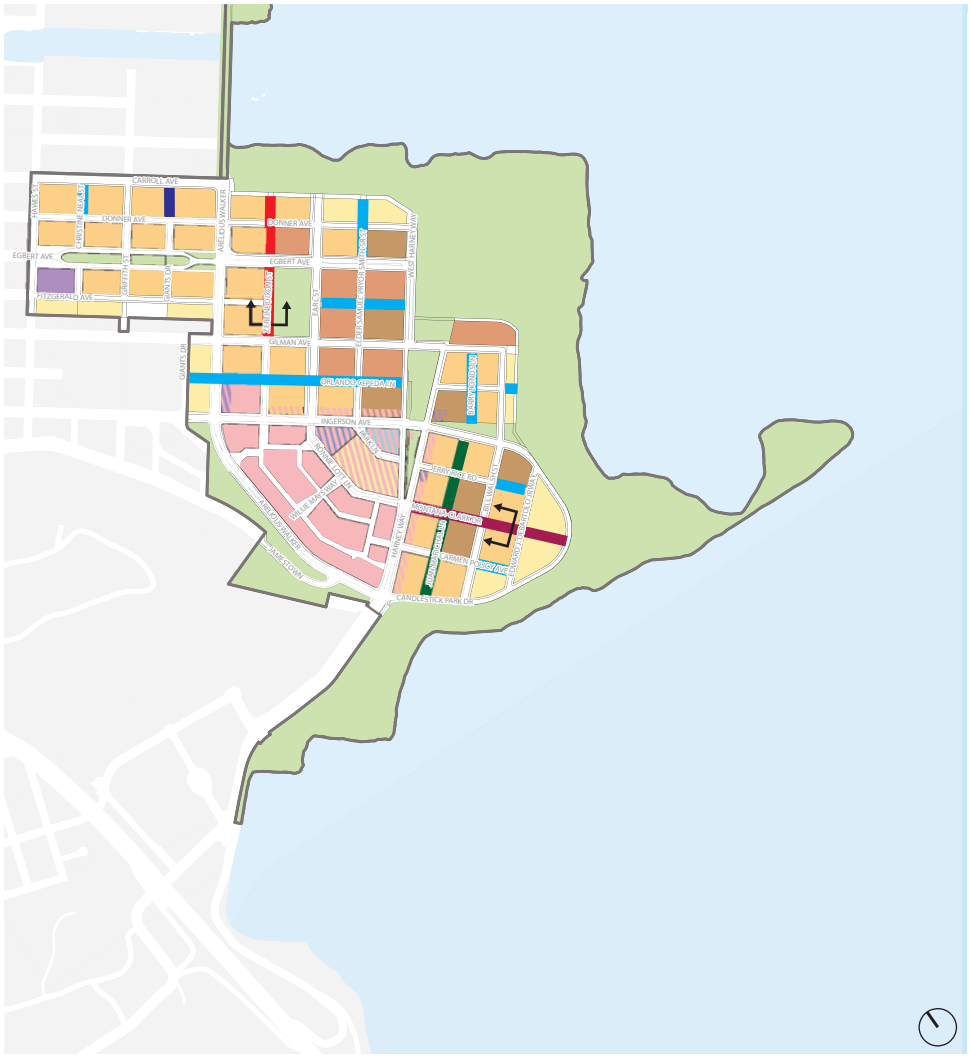


Figure 16

Candlestick Point Development: On-Site Street Network



LAND USE

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- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
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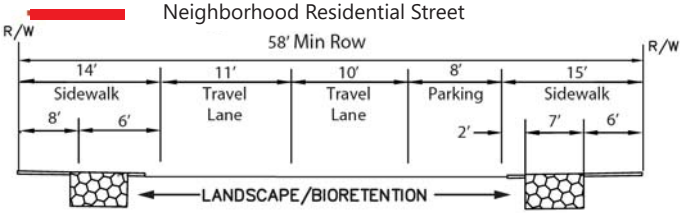
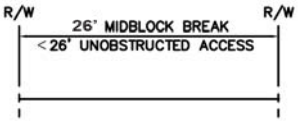
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

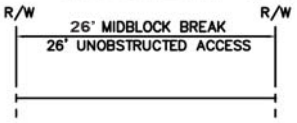
Neighborhood Residential Street



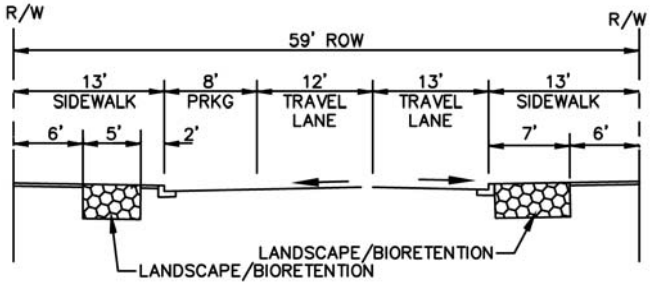
Mid-Block Break - 26' Min ROW



Mid-Block Break - 26' Min ROW



Neighborhood Residential Street



Mid-Block Break - 40' Min ROW

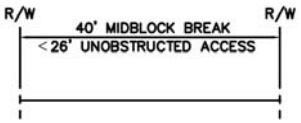
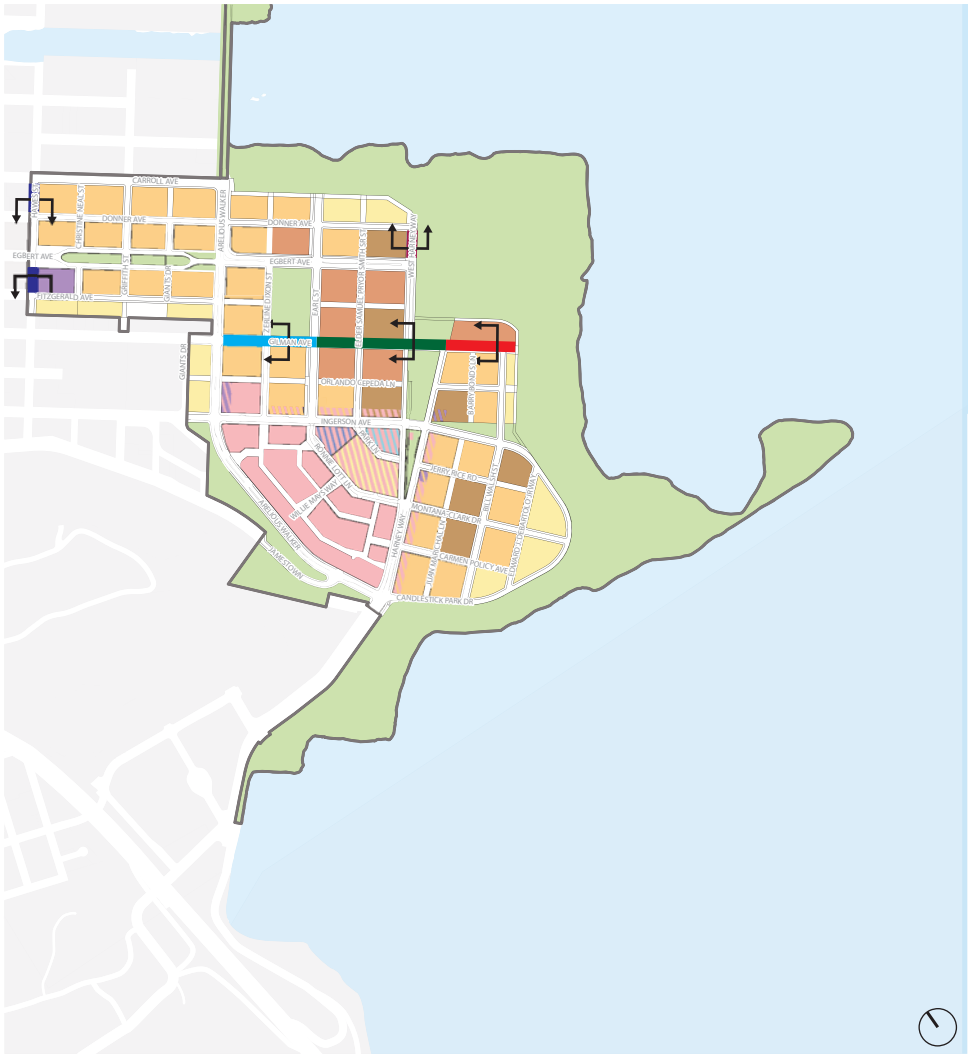


Figure 17

Candlestick Point Development: On-Site Street Network

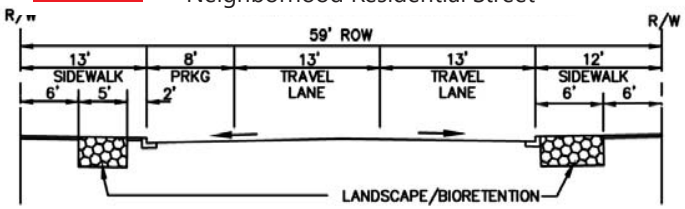


LAND USE

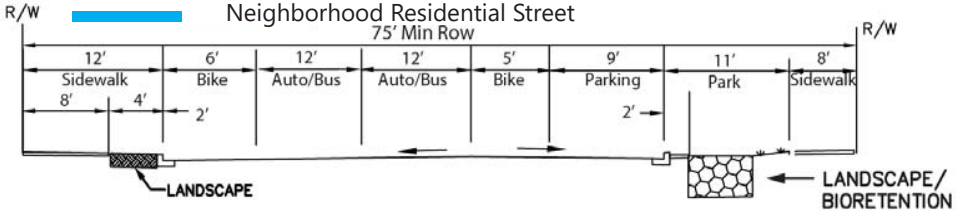
- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY*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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

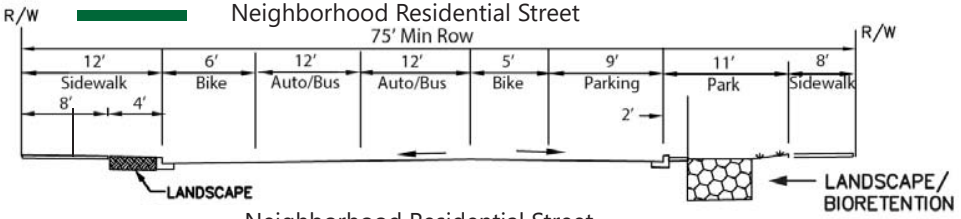
Neighborhood Residential Street



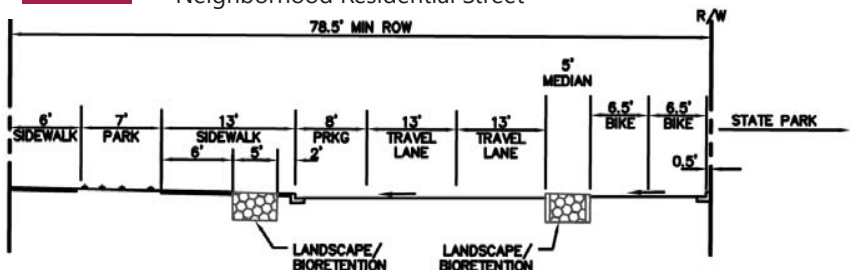
Neighborhood Residential Street



Neighborhood Residential Street



Neighborhood Residential Street



Neighborhood Residential Street

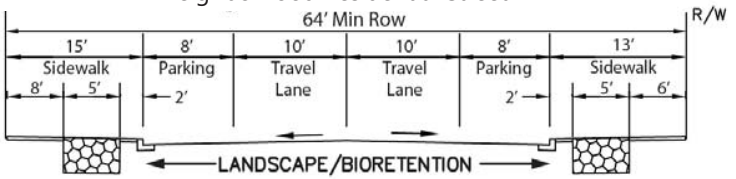
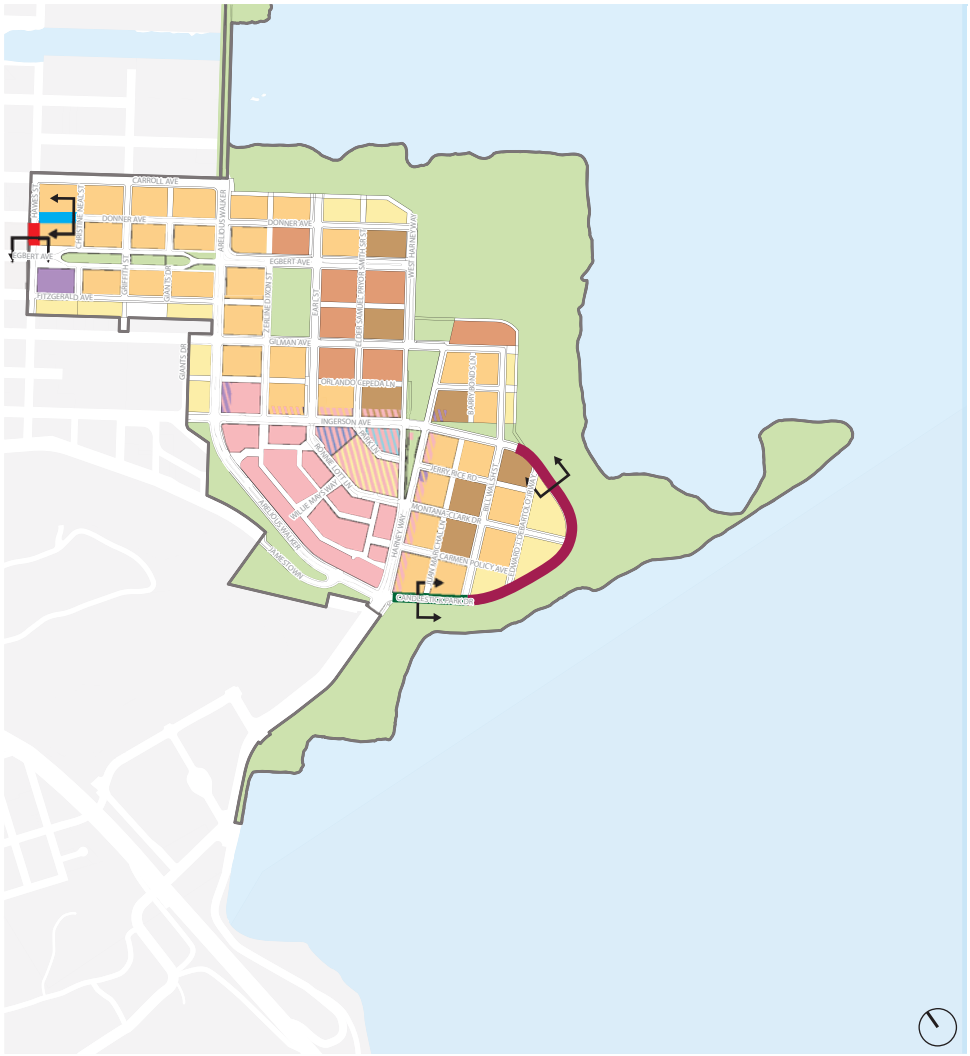


Figure 18

Candlestick Point Development: On-Site Street Network

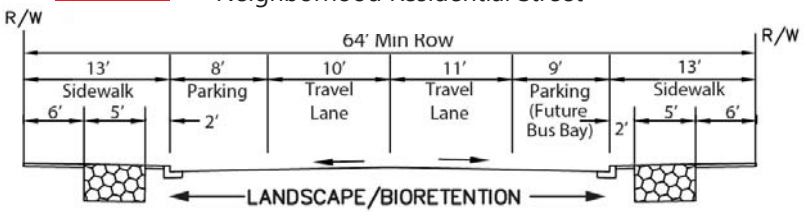


LAND USE

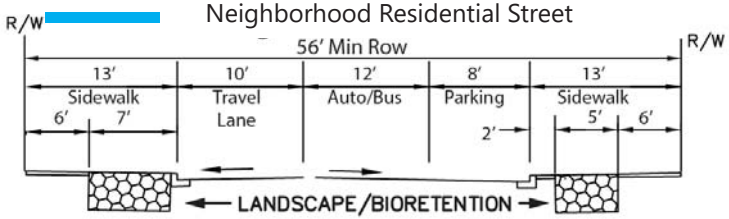
- RESIDENTIAL DENSITY I (15-75) UNITS PER ACRE)
- RESIDENTIAL DENSITY II (50-125) UNITS PER ACRE)
- RESIDENTIAL DENSITY III (100-175) UNITS PER ACRE)
- RESIDENTIAL DENSITY IV (175-285) UNITS PER ACRE)
- ARTIST (ART)
- COMMERCIAL (CM) (INCLUDES R&D, OFFICE, HOTEL)
- INFRASTRUCTURE / UTILITY (I / U)
-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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
* GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)

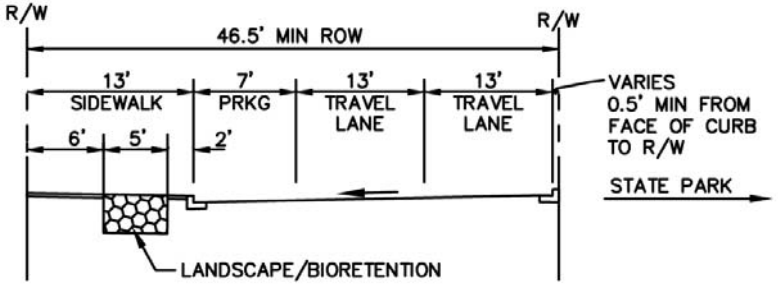
Neighborhood Residential Street



Neighborhood Residential Street



Neighborhood Residential Street



Neighborhood Residential Street

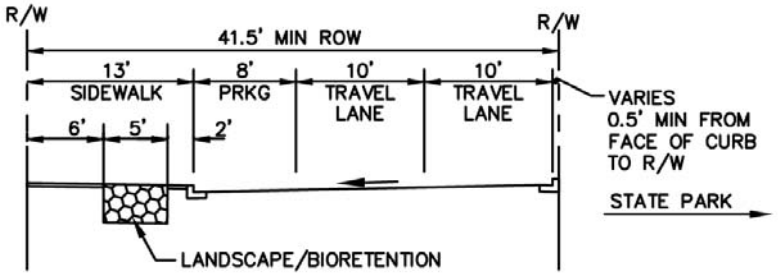
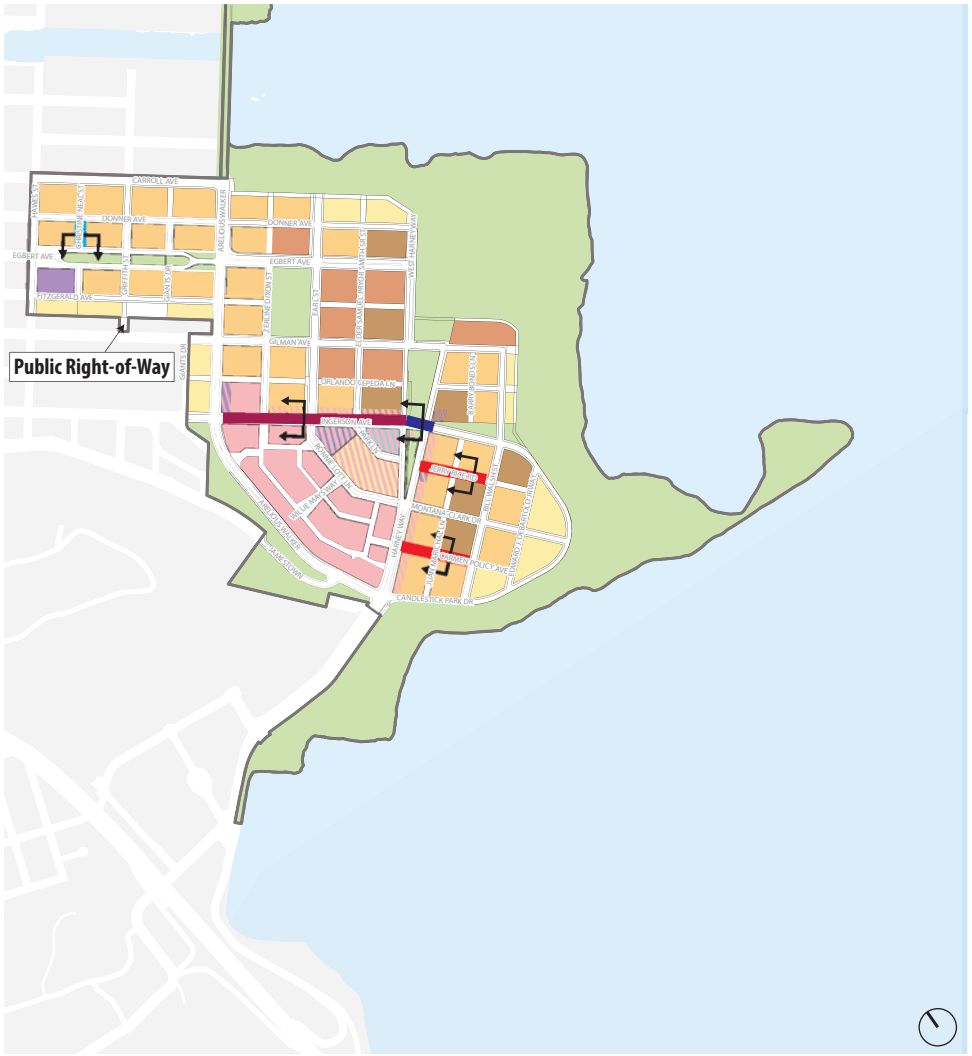


Figure 19

Candlestick Point Development: On-Site Street Network

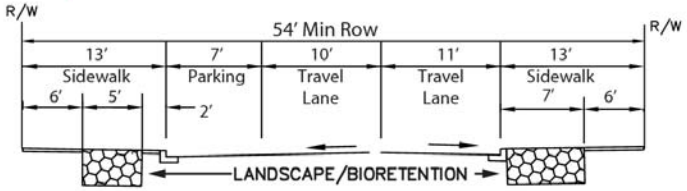


LAND USE

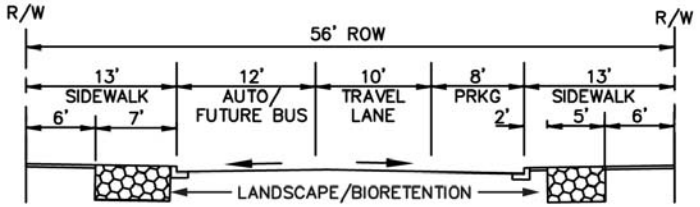
- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY*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

NOTE:
1. GROUND FLOOR NEIGHBORHOOD RETAIL / MAKER PDR SPACE IS ALLOWED PER REDEVELOPMENT PLAN.
2. TO THE EXTENT PERMITTED BY THE HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN AND UNDERLYING SITE CONDITIONS, INSTITUTIONAL USES MAY BE DEVELOPED ON ANY BLOCK WITHIN HUNTERS POINT SHIPYARD.
3. HATCHING INDICATES MULTIPLE LANE USES PERMITTED.
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

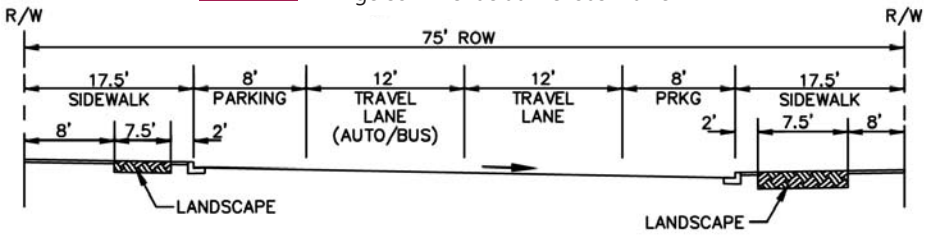
Neighborhood Residential Street



Neighborhood Residential Street



Ingerson Avenue at Arelious Walker



Ingerson Avenue at Harney Way

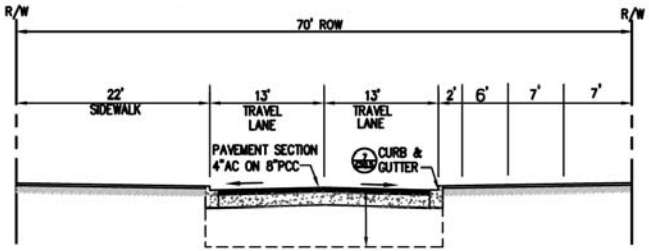
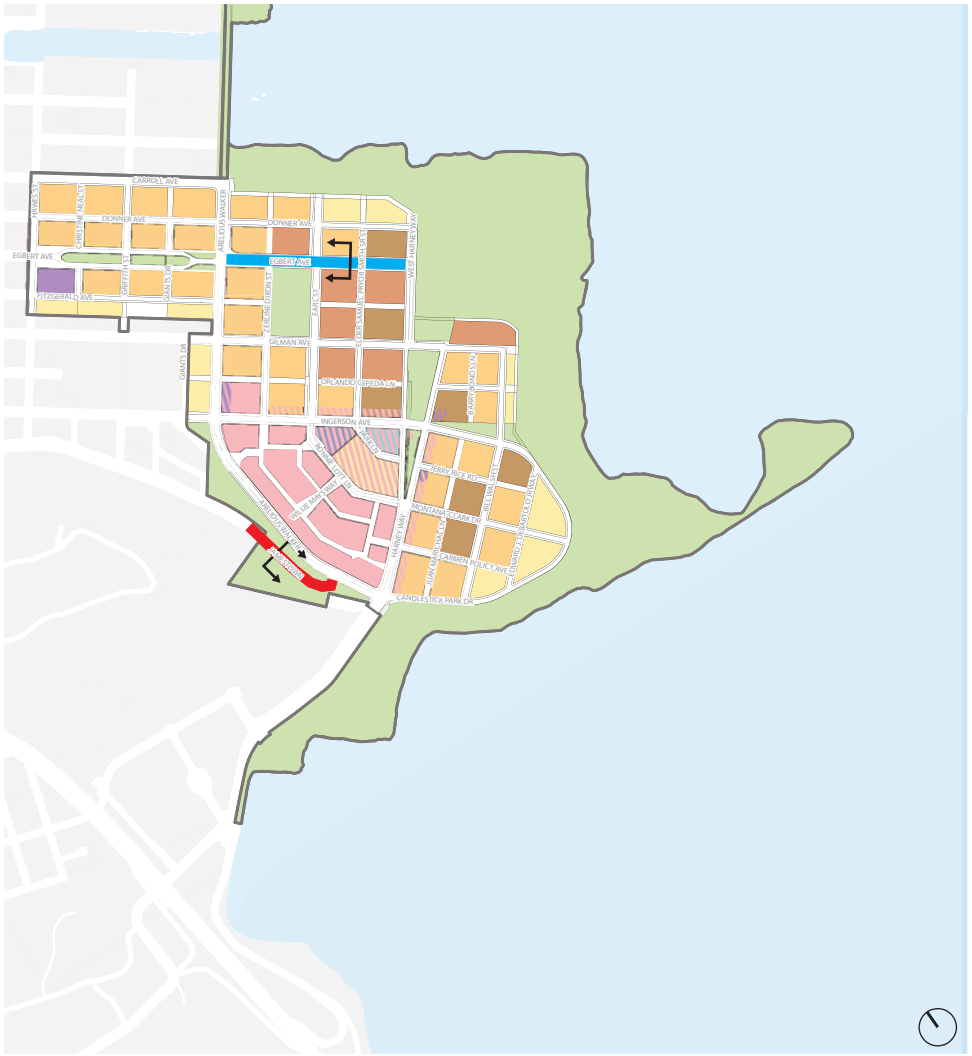


Figure 20

Candlestick Point Development: On-Site Street Network



LAND USE

- *RESIDENTIAL DENSITY I* (15-75) UNITS PER ACRE)
- *RESIDENTIAL DENSITY II* (50-125) UNITS PER ACRE)
- *RESIDENTIAL DENSITY III* (100-175) UNITS PER ACRE)
- *RESIDENTIAL DENSITY IV* (175-285) UNITS PER ACRE)
- *ARTIST* (ART)
- *COMMERCIAL* (CM) (INCLUDES R&D, OFFICE, HOTEL)
- *INFRASTRUCTURE / UTILITY* (I / U)
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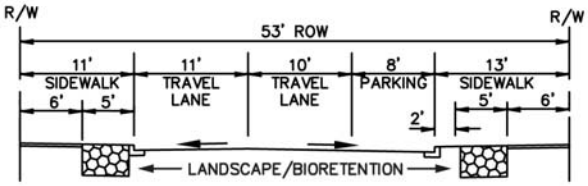
** GREATER DETAIL FOR SPECIFIC LAND USES IS SHOWN IN APPROVED SUB-PHASES (CP-01 THROUGH CP-04)*

Jamestown Avenue



Egbert at Arelious Walker East ("Park Edge Street")

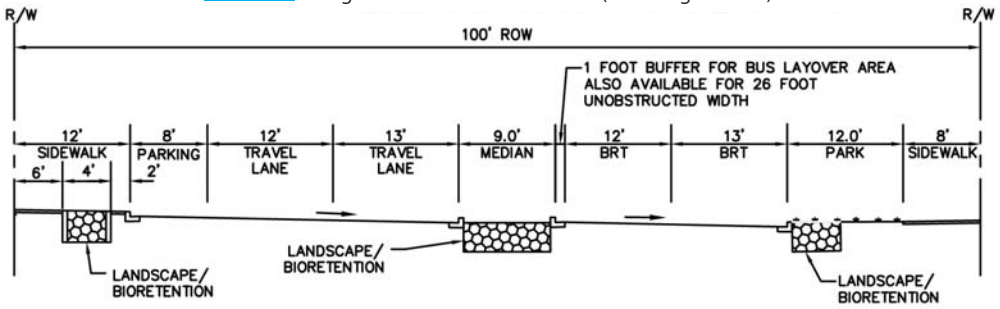


Figure 21

Candlestick Point Development: On-Site Street Network

APPENDIX E

LOS Calculations

```
MITIG8 - Proposed Project-VFri Mar 30, 2018 08:14:56                 Page 1-1
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1004 3rd St / Evans Ave
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         1.586
Loss Time (sec):      12               Average Delay (sec/veh):       274.1
Optimal Cycle:       102               Level Of Service:                  F
******************************************************************************
Street Name:              3rd St                          Evans Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:            Ovl              Ovl              Ovl              Ovl
Min. Green:    12   46    46    12   46    46     6   20    20    12   26    26
Y+R:          5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     270 1214   427   789 1215    30    30  642    80   262  479   429
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  270 1214   427   789 1215    30    30  642    80   262  479   429
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:   276 1239   436   805 1240    31    31  655    82   267  489   438
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  276 1239   436   805 1240    31    31  655    82   267  489   438
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  276 1239   436   805 1240    31    31  655    82   267  489   438
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.86 0.83  0.83  0.86 0.86  0.86  0.90 0.87  0.87  0.90 0.90  0.78
Lanes:       1.00 1.48  0.52  1.00 1.95  0.05  1.00 1.78  0.22  1.00 2.00  1.00
Final Sat.:  1641 2333   821  1641 3190    79  1718 2944   367  1718 3437  1476
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.53  0.53  0.49 0.39  0.39  0.02 0.22  0.22  0.16 0.14  0.30
Crit Moves:       ****        ****                   ****        ****
Green/Cycle: 0.12 0.45  0.57  0.12 0.45  0.51  0.06 0.20  0.31  0.12 0.25  0.37
Volume/Cap:  1.43 1.18  0.93  4.17 0.86  0.76  0.30 1.13  0.71  1.32 0.56  0.80
Uniform Del: 45.0 28.0  20.2  45.0 25.1  20.0  46.0 41.0  30.9  45.0 33.0  28.5
IncremntDel:219.6 87.5  10.5  1439  6.9   3.4   7.6 78.7   4.1 175.3  2.6  11.4
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:  264.6  116  30.7  1484 32.0  23.4  53.5  120  35.0 220.3 35.6  39.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 264.6  116  30.7  1484 32.0  23.4  53.5  120  35.0 220.3 35.6  39.9
LOS by Move:    F    F     C     F    C     C     D    F     C     F    D     D
HCM2kAvgQ:     18   42    24    99   18    16     1   17    10    19    8    14
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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```

```
MITIG8 - Proposed Project-VFri Mar 30, 2018 08:18:17                 Page 1-1
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1006 3rd St / Palou Ave
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         2.469
Loss Time (sec):      12               Average Delay (sec/veh):       402.7
Optimal Cycle:       102               Level Of Service:                  F
********************************************************************************
Street Name:              3rd St                          Palou Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted         Permitted         Permitted
Rights:           Include           Include           Include           Include
Min. Green:    15   69    69     0   49    49    21   21    21    21   21    21
Y+R:          5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
Lanes:        1  0  1  1  0    0  1  0  1  0    0  0  1! 0  0    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      40 1618   332   291 1287    73   149  234    40   189  185   116
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   40 1618   332   291 1287    73   149  234    40   189  185   116
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    41 1651   339   297 1313    74   152  239    41   193  189   118
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   41 1651   339   297 1313    74   152  239    41   193  189   118
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   41 1651   339   297 1313    74   152  239    41   193  189   118
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.77  0.77  0.42 0.42  0.42  0.21 0.21  0.21  0.53 0.53  0.63
Lanes:       1.00 1.66  0.34  0.35 1.56  0.09  0.35 0.56  0.09  0.51 0.49  1.00
Final Sat.:  1718 2427   498   282 1245    71   138  217    37   512  501  1190
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.68  0.68  1.05 1.05  1.05  1.10 1.10  1.10  0.38 0.38  0.10
Crit Moves:  ****                ****               ****
Green/Cycle: 0.15 0.63  0.63  0.48 0.48  0.48  0.25 0.25  0.25  0.25 0.25  0.25
Volume/Cap:  0.16 1.08  1.08  2.20 2.20  2.20  4.31 4.31  4.31  1.48 1.48  0.39
Uniform Del: 38.0 19.0  19.0  26.5 26.5  26.5  38.0 38.0  38.0  38.0 38.0  31.4
IncremntDel:  1.4 47.8  47.8 542.4  542 542.4  1514 1514  1514 234.9  235   3.7
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   39.4 66.8  66.8 568.9  569 568.9  1552 1552  1552 272.9  273  35.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  39.4 66.8  66.8 568.9  569 568.9  1552 1552  1552 272.9  273  35.2
LOS by Move:    D    E     E     F    F     F     F    F     F     F    F     D
HCM2kAvgQ:      1   41    41    86   86    86    55   55    55    28   28     3
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************

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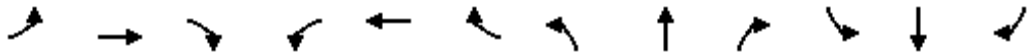
```

HCM Signalized Intersection Capacity Analysis
26: Third Street & Gilman Avenue

03/30/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	752	20	49	512	144	39	1503	60	100	898	183
Future Volume (vph)	140	752	20	49	512	144	39	1503	60	100	898	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1843		1770	1863	1583	1770	3519		1770	3449	
Flt Permitted		0.59		0.25	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1091		469	1863	1583	1770	3519		1770	3449	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	143	767	20	50	522	147	40	1534	61	102	916	187
RTOR Reduction (vph)	0	1	0	0	0	34	0	3	0	0	17	0
Lane Group Flow (vph)	0	929	0	50	522	113	40	1592	0	102	1086	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		2			6	3	7	4		3	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)		49.0		49.0	49.0	55.0	2.4	30.0		6.0	33.6	
Effective Green, g (s)		49.0		49.0	49.0	55.0	2.4	30.0		6.0	33.6	
Actuated g/C Ratio		0.49		0.49	0.49	0.55	0.02	0.30		0.06	0.34	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		534		229	912	949	42	1055		106	1158	
v/s Ratio Prot					0.28	0.01	0.02	c0.45		0.06	c0.31	
v/s Ratio Perm		c0.85		0.11		0.06						
v/c Ratio		1.74		0.22	0.57	0.12	0.95	1.51		0.96	0.94	
Uniform Delay, d1		25.5		14.6	18.1	10.8	48.7	35.0		46.9	32.2	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		340.6		0.5	0.9	0.1	119.7	234.1		74.9	15.2	
Delay (s)		366.1		15.0	18.9	10.9	168.5	269.1		121.8	47.4	
Level of Service		F		B	B	B	F	F		F	D	
Approach Delay (s)		366.1			17.0			266.6			53.7	
Approach LOS		F			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	190.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	141.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1029 Harney Way / Jamestown Ave
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.594
Loss Time (sec):      12               Average Delay (sec/veh):        21.9
Optimal Cycle:        48               Level Of Service:                  C
******************************************************************************
Street Name:            Harney Way                      Jamestown Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include           Ovl              Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        2  0  0  1  0    0  0  0  1  0    0  1  0  0  2    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     566  363     0     0  473    70    90    0   410     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  566  363     0     0  473    70    90    0   410     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:   578  370     0     0  483    71    92    0   418     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  578  370     0     0  483    71    92    0   418     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  578  370     0     0  483    71    92    0   418     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.98  1.00  1.00 0.96  0.96  0.93 1.00  0.73  1.00 1.00  1.00
Lanes:       2.00 1.00  0.00  0.00 0.87  0.13  1.00 0.00  2.00  0.00 1.00  0.00
Final Sat.:  3432 1862     0     0 1594   236  1773    0  2786     0 1900     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.20  0.00  0.00 0.30  0.30  0.05 0.00  0.15  0.00 0.00  0.00
Crit Moves:  ****                 ****        ****
Green/Cycle: 0.28 0.79  0.00  0.00 0.51  0.51  0.09 0.00  0.37  0.00 0.00  0.00
Volume/Cap:  0.59 0.25  0.00  0.00 0.59  0.59  0.59 0.00  0.41  0.00 0.00  0.00
Uniform Del: 30.9  2.7   0.0   0.0 17.3  17.3  43.9  0.0  23.3   0.0  0.0   0.0
IncremntDel:  1.0  0.1   0.0   0.0  1.0   1.0   6.1  0.0   0.3   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Delay/Veh:   31.9  2.8   0.0   0.0 18.3  18.3  50.0  0.0  23.6   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  31.9  2.8   0.0   0.0 18.3  18.3  50.0  0.0  23.6   0.0  0.0   0.0
LOS by Move:    C    A     A     A    B     B     D    A     C     A    A     A
HCM2kAvgQ:      9    3     0     0   12    12     4    0     6     0    0     0
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1030 Crisp Rd / Palou Ave
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         1.121
Loss Time (sec):      12               Average Delay (sec/veh):        87.2
Optimal Cycle:       100               Level Of Service:                  F
******************************************************************************
Street Name:             Crisp Rd                        Palou Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  1    0  0  1! 0  0    1  0  0  1  0    1  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      20   90   434    10  180   170    50  793    10   253  331    10
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   20   90   434    10  180   170    50  793    10   253  331    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    20   92   443    10  184   173    51  809    10   258  338    10
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   20   92   443    10  184   173    51  809    10   258  338    10
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   20   92   443    10  184   173    51  809    10   258  338    10
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.84 0.84  0.84  0.92 0.92  0.92  0.90 0.95  0.95  0.96 0.96  0.96
Lanes:       0.06 0.28  1.66  0.03 0.50  0.47  1.00 0.99  0.01  1.27 0.71  0.02
Final Sat.:    97  437  2643    48  871   822  1718 1783    22  2309 1287    39
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21 0.21  0.17  0.21 0.21  0.21  0.03 0.45  0.45  0.11 0.26  0.26
Crit Moves:  ****                ****             ****        ****
Green/Cycle: 0.19 0.19  0.19  0.19 0.19  0.19  0.05 0.40  0.40  0.10 0.45  0.45
Volume/Cap:  1.12 1.12  0.89  1.12 1.12  1.12  0.58 1.12  1.12  1.12 0.58  0.58
Uniform Del: 40.6 40.6  39.7  40.6 40.6  40.6  46.4 29.8  29.8  45.0 20.3  20.3
IncremntDel: 78.1 78.1  15.4  86.6 86.6  86.6   9.3 71.9  71.9  76.5  0.8   0.8
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:  118.7  119  55.1 127.2  127 127.2  55.7  102 101.6 121.6 21.1  21.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 118.7  119  55.1 127.2  127 127.2  55.7  102 101.6 121.6 21.1  21.1
LOS by Move:    F    F     E     F    F     F     E    F     F     F    C     C
HCM2kAvgQ:     18   18    11    20   20    20     2   36    36    12   11    11
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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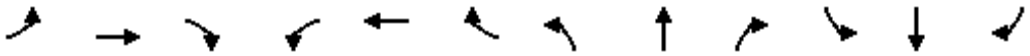
HCM Signalized Intersection Capacity Analysis
1: Arelious Walker & Gilman Avenue

03/30/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	160	322	10	89	149	261	392	10	122	341	345
Future Volume (vph)	251	160	322	10	89	149	261	392	10	122	341	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00	0.83	1.00	0.99		1.00	0.87	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1471	1770	1863	1322	1770	3502		1770	2834	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1471	1770	1863	1322	1770	3502		1770	2834	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	264	168	339	11	94	157	275	413	11	128	359	363
RTOR Reduction (vph)	0	0	148	0	0	134	0	2	0	0	194	0
Lane Group Flow (vph)	264	168	191	11	94	23	275	422	0	128	528	0
Confl. Peds. (#/hr)	100		100	100		100	100		100	100		100
Confl. Bikes (#/hr)			10			30			10			10
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	18.8	28.8	53.6	3.8	13.8	13.8	24.8	30.3		14.1	19.6	
Effective Green, g (s)	18.8	28.8	53.6	3.8	13.8	13.8	24.8	30.3		14.1	19.6	
Actuated g/C Ratio	0.20	0.30	0.56	0.04	0.15	0.15	0.26	0.32		0.15	0.21	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	350	564	829	70	270	192	462	1116		262	584	
v/s Ratio Prot	c0.15	0.09	0.06	0.01	c0.05		c0.16	0.12		0.07	c0.19	
v/s Ratio Perm			0.07			0.02						
v/c Ratio	0.75	0.30	0.23	0.16	0.35	0.12	0.60	0.38		0.49	0.90	
Uniform Delay, d1	35.9	25.4	10.4	44.1	36.6	35.3	30.7	25.1		37.1	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.9	0.3	0.1	1.1	0.8	0.3	5.6	0.2		1.4	17.3	
Delay (s)	44.8	25.7	10.5	45.1	37.3	35.6	36.3	25.3		38.6	54.1	
Level of Service	D	C	B	D	D	D	D	C		D	D	
Approach Delay (s)		25.6			36.6			29.6			51.7	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1046 Innes Ave/Fitch St
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.487
Loss Time (sec):       8               Average Delay (sec/veh):         5.0
Optimal Cycle:        31               Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    39    0    60    30 1144     0     0 1046    42
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    39    0    60    30 1144     0     0 1046    42
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:     0    0     0    40    0    61    31 1167     0     0 1067    43
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0    40    0    61    31 1167     0     0 1067    43
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0    40    0    61    31 1167     0     0 1067    43
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.88 1.00  0.88  0.81 0.81  1.00  1.00 0.90  0.90
Lanes:       0.00 0.00  0.00  0.39 0.00  0.61  0.05 1.95  0.00  0.00 1.92  0.08
Final Sat.:     0    0     0   661    0  1016    79 3007     0     0 3284   132
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.06 0.00  0.06  0.39 0.39  0.00  0.00 0.32  0.32
Crit Moves:                   ****                  ****
Green/Cycle: 0.00 0.00  0.00  0.12 0.00  0.12  0.80 0.80  0.00  0.00 0.80  0.80
Volume/Cap:  0.00 0.00  0.00  0.49 0.00  0.49  0.49 0.49  0.00  0.00 0.41  0.41
Uniform Del:  0.0  0.0   0.0  40.9  0.0  40.9   3.4  3.4   0.0   0.0  3.1   3.1
IncremntDel:  0.0  0.0   0.0   1.8  0.0   1.8   0.2  0.2   0.0   0.0  0.1   0.1
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
Delay/Veh:    0.0  0.0   0.0  42.7  0.0  42.7   3.5  3.5   0.0   0.0  3.2   3.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  42.7  0.0  42.7   3.5  3.5   0.0   0.0  3.2   3.2
LOS by Move:    A    A     A     D    A     D     A    A     A     A    A     A
HCM2kAvgQ:      0    0     0     4    0     4     7    7     0     0    6     6
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #1047 Innes Ave/Earl St
******************************************************************************
Average Delay (sec/veh):      1.3       Worst Case Level Of Service: C[ 24.2]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    20    0    80    40 1103     0     0  888    10
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    20    0    80    40 1103     0     0  888    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:     0    0     0    20    0    82    41 1126     0     0  906    10
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    20    0    82    41 1126     0     0  906    10
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.2 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.3 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1556 2118   458   916 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx   104   50   550   722 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx    99   47   550   722 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.21 0.00  0.15  0.06 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.3 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     B    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  288 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  1.5 xxxxx   0.2 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 24.2 xxxxx  10.3 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    C     *     B    *     *     *    *     *
ApproachDel:    xxxxxx             24.2           xxxxxx           xxxxxx
ApproachLOS:         *               C                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1048 Middle Point Rd / Evans Ave
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         1.153
Loss Time (sec):      10               Average Delay (sec/veh):        64.2
Optimal Cycle:       100               Level Of Service:                 E
*******************************************************************************
Street Name:         Middle Point Rd                     Evans Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  0    1  0  0  1  0    0  1  1  0  1    0  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     130  130    10   527  190    30    80 1497   160    20  964   309
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  130  130    10   527  190    30    80 1497   160    20  964   309
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:   133  133    10   538  194    31    82 1528   163    20  984   315
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  133  133    10   538  194    31    82 1528   163    20  984   315
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  133  133    10   538  194    31    82 1528   163    20  984   315
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.64 0.64  0.64  0.68 0.96  0.96  0.68 0.68  0.81  0.74 0.74  0.81
Lanes:       0.48 0.48  0.04  1.00 0.86  0.14  0.10 1.90  1.00  0.04 1.96  1.00
Final Sat.:   589  589    45  1290 1576   249   131 2460  1537    57 2754  1537
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.23 0.23  0.23  0.42 0.12  0.12  0.62 0.62  0.11  0.36 0.36  0.21
Crit Moves:                   ****                  ****
Green/Cycle: 0.36 0.36  0.36  0.36 0.36  0.36  0.54 0.54  0.54  0.54 0.54  0.54
Volume/Cap:  0.62 0.62  0.62  1.15 0.34  0.34  1.15 1.15  0.20  0.66 0.66  0.38
Uniform Del: 26.3 26.3  26.3  31.9 23.2  23.2  23.1 23.1  11.9  16.6 16.6  13.4
IncremntDel:  2.8  2.8   2.8  90.9  0.3   0.3  77.5 77.5   0.1   1.1  1.1   0.3
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   29.1 29.1  29.1 122.8 23.6  23.6 100.6  101  12.0  17.7 17.7  13.7
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  29.1 29.1  29.1 122.8 23.6  23.6 100.6  101  12.0  17.7 17.7  13.7
LOS by Move:    C    C     C     F    C     C     F    F     B     B    B     B
HCM2kAvgQ:      8    8     8    29    5     5    43   43     3    12   12     6
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1054 Ingalls St. / Palou Ave
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.773
Loss Time (sec):       8               Average Delay (sec/veh):        21.7
Optimal Cycle:        59               Level Of Service:                  C
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30  177    97    68  150    60    80  697    20    56  380    54
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   30  177    97    68  150    60    80  697    20    56  380    54
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    31  181    99    69  153    61    82  711    20    57  388    55
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   31  181    99    69  153    61    82  711    20    57  388    55
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   31  181    99    69  153    61    82  711    20    57  388    55
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.89 0.89  0.89  0.70 0.70  0.70  0.86 0.86  0.86  0.80 0.80  0.80
Lanes:       0.10 0.58  0.32  0.24 0.54  0.22  0.10 0.87  0.03  0.11 0.78  0.11
Final Sat.:   166  981   538   326  720   288   164 1427    41   174 1180   168
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.18  0.18  0.21 0.21  0.21  0.50 0.50  0.50  0.33 0.33  0.33
Crit Moves:                     ****             ****
Green/Cycle: 0.28 0.28  0.28  0.28 0.28  0.28  0.64 0.64  0.64  0.64 0.64  0.64
Volume/Cap:  0.67 0.67  0.67  0.77 0.77  0.77  0.77 0.77  0.77  0.51 0.51  0.51
Uniform Del: 32.2 32.2  32.2  33.4 33.4  33.4  12.6 12.6  12.6   9.4  9.4   9.4
IncremntDel:  3.7  3.7   3.7   9.8  9.8   9.8   3.6  3.6   3.6   0.4  0.4   0.4
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   35.9 35.9  35.9  43.1 43.1  43.1  16.2 16.2  16.2   9.8  9.8   9.8
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  35.9 35.9  35.9  43.1 43.1  43.1  16.2 16.2  16.2   9.8  9.8   9.8
LOS by Move:    D    D     D     D    D     D     B    B     B     A    A     A
HCM2kAvgQ:      9    9     9    10   10    10    18   18    18     8    8     8
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1055 Keith St. / Palou Ave
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.583
Loss Time (sec):       8               Average Delay (sec/veh):         8.9
Optimal Cycle:        37               Level Of Service:                  A
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30   50    10    20   60    20    29  767    20    10  490    20
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   30   50    10    20   60    20    29  767    20    10  490    20
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    31   51    10    20   61    20    30  783    20    10  500    20
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   31   51    10    20   61    20    30  783    20    10  500    20
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   31   51    10    20   61    20    30  783    20    10  500    20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.78 0.78  0.78  0.88 0.88  0.88  0.92 0.92  0.92  0.93 0.93  0.93
Lanes:       0.33 0.56  0.11  0.20 0.60  0.20  0.04 0.94  0.02  0.02 0.94  0.04
Final Sat.:   494  823   165   336 1007   336    62 1649    43    34 1670    68
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06  0.06  0.06 0.06  0.06  0.47 0.47  0.47  0.30 0.30  0.30
Crit Moves:       ****                          ****
Green/Cycle: 0.11 0.11  0.11  0.11 0.11  0.11  0.81 0.81  0.81  0.81 0.81  0.81
Volume/Cap:  0.58 0.58  0.58  0.57 0.57  0.57  0.58 0.58  0.58  0.37 0.37  0.37
Uniform Del: 42.6 42.6  42.6  42.5 42.5  42.5   3.3  3.3   3.3   2.5  2.5   2.5
IncremntDel:  5.5  5.5   5.5   4.4  4.4   4.4   0.6  0.6   0.6   0.2  0.2   0.2
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   48.1 48.1  48.1  47.0 47.0  47.0   3.9  3.9   3.9   2.6  2.6   2.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  48.1 48.1  48.1  47.0 47.0  47.0   3.9  3.9   3.9   2.6  2.6   2.6
LOS by Move:    D    D     D     D    D     D     A    A     A     A    A     A
HCM2kAvgQ:      4    4     4     4    4     4     8    8     8     4    4     4
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1004 3rd St / Evans Ave
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         1.647
Loss Time (sec):      12               Average Delay (sec/veh):       250.5
Optimal Cycle:       102               Level Of Service:                  F
*******************************************************************************
Street Name:              3rd St                          Evans Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:            Ovl              Ovl              Ovl              Ovl
Min. Green:    12   46    46    12   46    46     6   20    20    12   26    26
Y+R:          5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     260 1472   309   599 1541    20    40  459   250   480  621   841
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  260 1472   309   599 1541    20    40  459   250   480  621   841
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:   265 1502   315   611 1572    20    41  468   255   490  634   858
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  265 1502   315   611 1572    20    41  468   255   490  634   858
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  265 1502   315   611 1572    20    41  468   255   490  634   858
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.86 0.84  0.84  0.86 0.86  0.86  0.90 0.84  0.84  0.90 0.90  0.78
Lanes:       1.00 1.65  0.35  1.00 1.97  0.03  1.00 1.29  0.71  1.00 2.00  1.00
Final Sat.:  1641 2642   555  1641 3233    42  1718 2065  1125  1718 3437  1476
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.57  0.57  0.37 0.49  0.49  0.02 0.23  0.23  0.29 0.18  0.58
Crit Moves:       ****        ****                   ****        ****
Green/Cycle: 0.14 0.45  0.57  0.12 0.43  0.49  0.06 0.20  0.34  0.12 0.25  0.37
Volume/Cap:  1.14 1.26  1.00  3.17 1.14  1.00  0.40 1.16  0.67  2.42 0.72  1.56
Uniform Del: 43.8 28.0  22.0  45.0 29.2  26.2  46.3 41.0  28.9  45.0 34.7  32.0
IncremntDel:101.8  123  21.1 988.4 72.0  23.0  11.6 87.7   3.3 655.1  5.2 261.1
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:  145.6  151  43.1  1033  101  49.2  57.8  129  32.2 700.1 39.9 293.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 145.6  151  43.1  1033  101  49.2  57.8  129  32.2 700.1 39.9 293.1
LOS by Move:    F    F     D     F    F     D     E    F     C     F    D     F
HCM2kAvgQ:     12   52    31    70   37    27     1   18    10    51   11    65
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1006 3rd St / Palou Ave
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         6.647
Loss Time (sec):      12               Average Delay (sec/veh):      1307.9
Optimal Cycle:       102               Level Of Service:                  F
******************************************************************************
Street Name:              3rd St                          Palou Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted         Permitted         Permitted
Rights:           Include           Include           Include           Include
Min. Green:    15   69    69     0   49    49    21   21    21    21   21    21
Y+R:          5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0   5.0  5.0   5.0
Lanes:        1  0  1  1  0    0  1  0  1  0    0  0  1! 0  0    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     110 1593   278   135 2052   160    73  335   120   300  421   240
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  110 1593   278   135 2052   160    73  335   120   300  421   240
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:   112 1626   284   138 2094   163    74  342   122   306  430   245
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  112 1626   284   138 2094   163    74  342   122   306  430   245
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  112 1626   284   138 2094   163    74  342   122   306  430   245
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.77  0.77  0.39 0.39  0.39  0.07 0.07  0.07  0.33 0.33  0.63
Lanes:       1.00 1.70  0.30  0.11 1.75  0.14  0.14 0.63  0.23  0.42 0.58  1.00
Final Sat.:  1718 2498   436    86 1304   102    18   82    29   257  361  1190
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.65  0.65  1.61 1.61  1.61  4.19 4.19  4.19  1.19 1.19  0.21
Crit Moves:  ****                ****            ****
Green/Cycle: 0.15 0.63  0.63  0.48 0.48  0.48  0.25 0.25  0.25  0.25 0.25  0.25
Volume/Cap:  0.44 1.04  1.04  3.34 3.34  3.34 16.4516.45 16.45  4.67 4.67  0.81
Uniform Del: 39.7 19.0  19.0  26.5 26.5  26.5  38.0 38.0  38.0  38.0 38.0  35.6
IncremntDel:  5.6 31.2  31.2  1058 1058  1058  7012 7012  7012  1665 1665  20.2
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   45.3 50.2  50.2  1084 1084  1084  7050 7050  7050  1703 1703  55.8
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  45.3 50.2  50.2  1084 1084  1084  7050 7050  7050  1703 1703  55.8
LOS by Move:    D    D     D     F    F     F     F    F     F     F    F     E
HCM2kAvgQ:      3   35    35   146  146   146    80   80    80    93   93     8
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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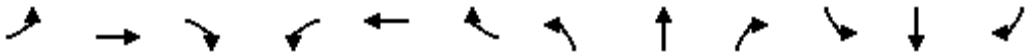
HCM Signalized Intersection Capacity Analysis
26: Third Street & Gilman Avenue

03/30/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	959	130	60	652	221	81	1312	60	266	1810	230
Future Volume (vph)	167	959	130	60	652	221	81	1312	60	266	1810	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.99		1.00	1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1825		1770	1863	1583	1770	3516		1770	3479	
Flt Permitted		0.38		0.17	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		703		324	1863	1583	1770	3516		1770	3479	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	170	979	133	61	665	226	83	1339	61	271	1847	235
RTOR Reduction (vph)	0	4	0	0	0	34	0	4	0	0	10	0
Lane Group Flow (vph)	0	1278	0	61	665	192	83	1397	0	271	2072	0
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		2			6	3	7	4		3	8	
Permitted Phases	2			6		6						
Actuated Green, G (s)		48.0		48.0	48.0	55.0	4.0	30.0		7.0	33.0	
Effective Green, g (s)		48.0		48.0	48.0	55.0	4.0	30.0		7.0	33.0	
Actuated g/C Ratio		0.48		0.48	0.48	0.55	0.04	0.30		0.07	0.33	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		337		155	894	949	70	1054		123	1148	
v/s Ratio Prot					0.36	0.01	0.05	c0.40		0.15	c0.60	
v/s Ratio Perm		c1.82		0.19		0.11						
v/c Ratio		3.79		0.39	0.74	0.20	1.19	1.32		2.20	1.80	
Uniform Delay, d1		26.0		16.7	21.0	11.4	48.0	35.0		46.5	33.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1263.5		1.6	3.4	0.1	166.1	152.9		567.1	365.7	
Delay (s)		1289.5		18.3	24.4	11.5	214.1	187.9		613.6	399.2	
Level of Service		F		B	C	B	F	F		F	F	
Approach Delay (s)		1289.5			21.0			189.4			423.9	
Approach LOS		F			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	486.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	180.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

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                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1029 Harney Way / Jamestown Ave
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.944
Loss Time (sec):      12               Average Delay (sec/veh):        36.1
Optimal Cycle:       100               Level Of Service:                  D
********************************************************************************
Street Name:            Harney Way                      Jamestown Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected       Split Phase      Split Phase
Rights:           Include          Include           Ovl              Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        2  0  0  1  0    0  0  0  1  0    0  1  0  0  2    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     492  956     0     0  972    60    90    0   712     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  492  956     0     0  972    60    90    0   712     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:   502  976     0     0  992    61    92    0   727     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  502  976     0     0  992    61    92    0   727     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  502  976     0     0  992    61    92    0   727     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.98  1.00  1.00 0.97  0.97  0.93 1.00  0.73  1.00 1.00  1.00
Lanes:       2.00 1.00  0.00  0.00 0.94  0.06  1.00 0.00  2.00  0.00 1.00  0.00
Final Sat.:  3432 1862     0     0 1740   107  1773    0  2786     0 1900     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.15 0.52  0.00  0.00 0.57  0.57  0.05 0.00  0.26  0.00 0.00  0.00
Crit Moves:  ****                 ****                    ****
Green/Cycle: 0.15 0.76  0.00  0.00 0.60  0.60  0.12 0.00  0.28  0.00 0.00  0.00
Volume/Cap:  0.94 0.69  0.00  0.00 0.94  0.94  0.43 0.00  0.94  0.00 0.00  0.00
Uniform Del: 41.8  6.1   0.0   0.0 18.3  18.3  40.7  0.0  35.4   0.0  0.0   0.0
IncremntDel: 25.8  1.5   0.0   0.0 15.4  15.4   1.4  0.0  20.1   0.0  0.0   0.0
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Delay/Veh:   67.6  7.6   0.0   0.0 33.7  33.7  42.1  0.0  55.5   0.0  0.0   0.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  67.6  7.6   0.0   0.0 33.7  33.7  42.1  0.0  55.5   0.0  0.0   0.0
LOS by Move:    E    A     A     A    C     C     D    A     E     A    A     A
HCM2kAvgQ:     12   16     0     0   35    35     3    0    17     0    0     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************

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                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1030 Crisp Rd / Palou Ave
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         1.207
Loss Time (sec):      12               Average Delay (sec/veh):        98.6
Optimal Cycle:       100               Level Of Service:                  F
********************************************************************************
Street Name:             Crisp Rd                        Palou Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  1    0  0  1! 0  0    1  0  0  1  0    1  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      20  160   326    10  170   110   150  466    10   600  732    20
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   20  160   326    10  170   110   150  466    10   600  732    20
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    20  163   333    10  173   112   153  476    10   612  747    20
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   20  163   333    10  173   112   153  476    10   612  747    20
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   20  163   333    10  173   112   153  476    10   612  747    20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.86 0.86  0.86  0.93 0.93  0.93  0.90 0.95  0.95  0.96 0.96  0.96
Lanes:       0.06 0.47  1.47  0.03 0.59  0.38  1.00 0.98  0.02  1.28 0.70  0.02
Final Sat.:    95  760  2405    61 1034   669  1718 1765    38  2336 1265    35
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21 0.21  0.14  0.17 0.17  0.17  0.09 0.27  0.27  0.26 0.59  0.59
Crit Moves:  ****                ****        ****                    ****
Green/Cycle: 0.18 0.18  0.18  0.14 0.14  0.14  0.07 0.29  0.29  0.28 0.49  0.49
Volume/Cap:  1.21 1.21  0.78  1.21 1.21  1.21  1.21 0.94  0.94  0.94 1.21  1.21
Uniform Del: 41.1 41.1  39.2  43.0 43.0  43.0  46.3 34.9  34.9  35.3 25.5  25.5
IncremntDel:113.4  113   5.8 125.1  125 125.1 146.0 26.2  26.2  12.6  102 101.6
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:  154.5  154  45.0 168.1  168 168.1 192.3 61.2  61.2  47.9  127 127.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 154.5  154  45.0 168.1  168 168.1 192.3 61.2  61.2  47.9  127 127.2
LOS by Move:    F    F     D     F    F     F     F    E     E     D    F     F
HCM2kAvgQ:     21   21     9    18   18    18     8   16    16    19   58    58
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************

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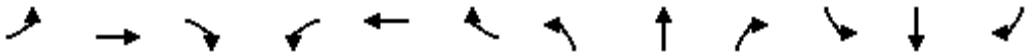
HCM Signalized Intersection Capacity Analysis
1: Arelious Walker & Gilman Avenue

03/30/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	437	421	10	230	183	332	514	10	220	718	201
Future Volume (vph)	225	437	421	10	230	183	332	514	10	220	718	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.90	1.00	1.00	0.81	1.00	0.99		1.00	0.93	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1430	1770	1863	1285	1770	3506		1770	3181	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1863	1430	1770	1863	1285	1770	3506		1770	3181	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	237	460	443	11	242	193	349	541	11	232	756	212
RTOR Reduction (vph)	0	0	158	0	0	160	0	2	0	0	22	0
Lane Group Flow (vph)	237	460	285	11	242	33	349	550	0	232	946	0
Confl. Peds. (#/hr)	100		100	100		100	100		100	100		100
Confl. Bikes (#/hr)			10			30			10			10
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	19.4	35.6	59.8	4.1	20.3	20.3	24.2	23.6		38.7	38.1	
Effective Green, g (s)	19.4	35.6	59.8	4.1	20.3	20.3	24.2	23.6		38.7	38.1	
Actuated g/C Ratio	0.16	0.30	0.50	0.03	0.17	0.17	0.20	0.20		0.32	0.32	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	286	552	766	60	315	217	356	689		570	1009	
v/s Ratio Prot	0.13	c0.25	0.07	0.01	c0.13		c0.20	0.16		0.13	c0.30	
v/s Ratio Perm			0.12			0.03						
v/c Ratio	0.83	0.83	0.37	0.18	0.77	0.15	0.98	0.80		0.41	0.94	
Uniform Delay, d1	48.7	39.4	18.5	56.3	47.6	42.5	47.7	45.9		31.7	39.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.6	10.4	0.3	1.5	10.7	0.3	43.0	6.4		0.5	15.4	
Delay (s)	66.3	49.8	18.8	57.8	58.3	42.8	90.7	52.4		32.2	55.2	
Level of Service	E	D	B	E	E	D	F	D		C	E	
Approach Delay (s)		41.2			51.6			67.2			50.7	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1046 Innes Ave/Fitch St
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.608
Loss Time (sec):       8               Average Delay (sec/veh):         5.6
Optimal Cycle:        39               Level Of Service:                  A
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    52    0    60    80 1086     0     0 1403    60
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    52    0    60    80 1086     0     0 1403    60
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:     0    0     0    53    0    61    82 1108     0     0 1432    61
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0    53    0    61    82 1108     0     0 1432    61
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0    53    0    61    82 1108     0     0 1432    61
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.89 1.00  0.89  0.64 0.64  1.00  1.00 0.90  0.90
Lanes:       0.00 0.00  0.00  0.46 0.00  0.54  0.14 1.86  0.00  0.00 1.92  0.08
Final Sat.:     0    0     0   784    0   904   166 2253     0     0 3276   140
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.07 0.00  0.07  0.49 0.49  0.00  0.00 0.44  0.44
Crit Moves:                   ****                 ****
Green/Cycle: 0.00 0.00  0.00  0.11 0.00  0.11  0.81 0.81  0.00  0.00 0.81  0.81
Volume/Cap:  0.00 0.00  0.00  0.61 0.00  0.61  0.61 0.61  0.00  0.00 0.54  0.54
Uniform Del:  0.0  0.0   0.0  42.4  0.0  42.4   3.6  3.6   0.0   0.0  3.3   3.3
IncremntDel:  0.0  0.0   0.0   5.7  0.0   5.7   0.6  0.6   0.0   0.0  0.2   0.2
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
Delay/Veh:    0.0  0.0   0.0  48.0  0.0  48.0   4.2  4.2   0.0   0.0  3.5   3.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  48.0  0.0  48.0   4.2  4.2   0.0   0.0  3.5   3.5
LOS by Move:    A    A     A     D    A     D     A    A     A     A    A     A
HCM2kAvgQ:      0    0     0     4    0     4     8    8     0     0    9     9
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #1047 Innes Ave/Earl St
******************************************************************************
Average Delay (sec/veh):      3.7       Worst Case Level Of Service: F[ 76.7]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    20    0    70   130  909     0     0 1253    20
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    20    0    70   130  909     0     0 1253    20
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:     0    0     0    20    0    71   133  928     0     0 1279    20
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    20    0    71   133  928     0     0 1279    20
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   6.8  6.5   6.9   4.2 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx   3.5  4.0   3.3   2.3 xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  2018 2482   649  1299 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx    51   29   412   513 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx    40   21   412   513 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  0.51 0.00  0.17  0.26 xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   1.0 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  14.4 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     B    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  134 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  3.8 xxxxx   1.0 xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 76.7 xxxxx  14.4 xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    F     *     B    *     *     *    *     *
ApproachDel:    xxxxxx             76.7           xxxxxx           xxxxxx
ApproachLOS:         *               F                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1048 Middle Point Rd / Evans Ave
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.959
Loss Time (sec):      10               Average Delay (sec/veh):        30.3
Optimal Cycle:       100               Level Of Service:                  C
*******************************************************************************
Street Name:         Middle Point Rd                     Evans Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  0    1  0  0  1  0    0  1  1  0  1    0  1  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     130  140    10   378  260    80    30  990   240    20 1662   581
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  130  140    10   378  260    80    30  990   240    20 1662   581
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:   133  143    10   386  265    82    31 1010   245    20 1696   593
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  133  143    10   386  265    82    31 1010   245    20 1696   593
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  133  143    10   386  265    82    31 1010   245    20 1696   593
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.46 0.46  0.46  0.69 0.95  0.95  0.66 0.66  0.81  0.84 0.84  0.81
Lanes:       0.46 0.50  0.04  1.00 0.76  0.24  0.06 1.94  1.00  0.02 1.98  1.00
Final Sat.:   405  436    31  1316 1374   423    74 2442  1537    38 3168  1537
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.33 0.33  0.33  0.29 0.19  0.19  0.41 0.41  0.16  0.54 0.54  0.39
Crit Moves:       ****                                          ****
Green/Cycle: 0.34 0.34  0.34  0.34 0.34  0.34  0.56 0.56  0.56  0.56 0.56  0.56
Volume/Cap:  0.96 0.96  0.96  0.86 0.57  0.57  0.74 0.74  0.29  0.96 0.96  0.69
Uniform Del: 32.2 32.2  32.2  30.7 26.9  26.9  16.6 16.6  11.6  21.0 21.0  15.9
IncremntDel: 40.9 40.9  40.9  15.1  1.2   1.2   2.1  2.1   0.2  12.9 12.9   2.4
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   73.1 73.1  73.1  45.7 28.1  28.1  18.8 18.8  11.8  33.8 33.8  18.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  73.1 73.1  73.1  45.7 28.1  28.1  18.8 18.8  11.8  33.8 33.8  18.3
LOS by Move:    E    E     E     D    C     C     B    B     B     C    C     B
HCM2kAvgQ:     13   13    13    14    9     9    14   14     4    32   32    14
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #1054 Ingalls St. / Palou Ave
*******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.962
Loss Time (sec):       8               Average Delay (sec/veh):        36.7
Optimal Cycle:       100               Level Of Service:                  D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      20  221    69    77  228   100    80  498    30   110  712    70
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   20  221    69    77  228   100    80  498    30   110  712    70
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    20  226    70    79  233   102    82  508    31   112  727    71
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   20  226    70    79  233   102    82  508    31   112  727    71
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   20  226    70    79  233   102    82  508    31   112  727    71
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.91 0.91  0.91  0.74 0.74  0.74  0.76 0.76  0.76  0.81 0.81  0.81
Lanes:       0.06 0.72  0.22  0.19 0.56  0.25  0.13 0.82  0.05  0.12 0.80  0.08
Final Sat.:   112 1236   386   269  796   349   190 1183    71   189 1225   120
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.18  0.18  0.29 0.29  0.29  0.43 0.43  0.43  0.59 0.59  0.59
Crit Moves:                     ****                                  ****
Green/Cycle: 0.30 0.30  0.30  0.30 0.30  0.30  0.62 0.62  0.62  0.62 0.62  0.62
Volume/Cap:  0.60 0.60  0.60  0.96 0.96  0.96  0.70 0.70  0.70  0.96 0.96  0.96
Uniform Del: 29.6 29.6  29.6  34.2 34.2  34.2  12.9 12.9  12.9  18.1 18.1  18.1
IncremntDel:  1.9  1.9   1.9  33.7 33.7  33.7   2.5  2.5   2.5  20.6 20.6  20.6
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   31.6 31.6  31.6  67.9 67.9  67.9  15.4 15.4  15.4  38.7 38.7  38.7
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  31.6 31.6  31.6  67.9 67.9  67.9  15.4 15.4  15.4  38.7 38.7  38.7
LOS by Move:    C    C     C     E    E     E     B    B     B     D    D     D
HCM2kAvgQ:      9    9     9    18   18    18    13   13    13    25   25    25
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************


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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1055 Keith St. / Palou Ave
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.588
Loss Time (sec):       8               Average Delay (sec/veh):         7.6
Optimal Cycle:        37               Level Of Service:                 A
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0    0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30   40    10    10   50    20    59  588    30    10  822    20
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   30   40    10    10   50    20    59  588    30    10  822    20
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    31   41    10    10   51    20    60  600    31    10  839    20
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   31   41    10    10   51    20    60  600    31    10  839    20
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   31   41    10    10   51    20    60  600    31    10  839    20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.78 0.78  0.78  0.92 0.92  0.92  0.83 0.83  0.83  0.94 0.94  0.94
Lanes:       0.37 0.51  0.12  0.12 0.63  0.25  0.09 0.87  0.04  0.01 0.97  0.02
Final Sat.:   553  738   184   217 1087   435   137 1368    70    21 1726    42
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06  0.06  0.05 0.05  0.05  0.44 0.44  0.44  0.49 0.49  0.49
Crit Moves:       ****                                           ****
Green/Cycle: 0.09 0.09  0.09  0.09 0.09  0.09  0.83 0.83  0.83  0.83 0.83  0.83
Volume/Cap:  0.59 0.59  0.59  0.50 0.50  0.50  0.53 0.53  0.53  0.59 0.59  0.59
Uniform Del: 43.4 43.4  43.4  43.1 43.1  43.1   2.7  2.7   2.7   2.9  2.9   2.9
IncremntDel:  6.5  6.5   6.5   2.4  2.4   2.4   0.4  0.4   0.4   0.6  0.6   0.6
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   49.9 49.9  49.9  45.4 45.4  45.4   3.1  3.1   3.1   3.6  3.6   3.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  49.9 49.9  49.9  45.4 45.4  45.4   3.1  3.1   3.1   3.6  3.6   3.6
LOS by Move:    D    D     D     D    D     D     A    A     A     A    A     A
HCM2kAvgQ:      3    3     3     3    3     3     6    6     6     8    8     8
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1030 Crisp Rd / Palou Ave
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.857
Loss Time (sec):      12               Average Delay (sec/veh):        33.1
Optimal Cycle:        93               Level Of Service:                  C
******************************************************************************
Street Name:             Crisp Rd                        Palou Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  1    0  1  0  0  1    1  0  0  1  0    2  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      20   90   437    10  180   170    50  796    10   260  340    10
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   20   90   437    10  180   170    50  796    10   260  340    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    20   92   446    10  184   173    51  812    10   265  347    10
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   20   92   446    10  184   173    51  812    10   265  347    10
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   20   92   446    10  184   173    51  812    10   265  347    10
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.82 0.82  0.79  0.97 0.97  0.83  0.90 0.95  0.95  0.90 0.98  0.98
Lanes:       0.06 0.27  1.67  0.05 0.95  1.00  1.00 0.99  0.01  2.00 0.97  0.03
Final Sat.:    92  416  2504    97 1741  1583  1718 1783    22  3432 1802    53
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.22  0.18  0.11 0.11  0.11  0.03 0.46  0.46  0.08 0.19  0.19
Crit Moves:       ****                             ****        ****
Green/Cycle: 0.26 0.26  0.26  0.26 0.26  0.26  0.08 0.53  0.53  0.09 0.54  0.54
Volume/Cap:  0.86 0.86  0.69  0.41 0.41  0.43  0.36 0.86  0.86  0.86 0.36  0.36
Uniform Del: 35.3 35.3  33.5  30.8 30.8  30.9  43.3 20.1  20.1  44.8 13.2  13.2
IncremntDel: 10.9 10.9   2.6   0.6  0.6   0.7   1.5  7.7   7.7  20.3  0.2   0.2
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   46.2 46.2  36.1  31.4 31.4  31.6  44.9 27.8  27.8  65.2 13.4  13.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  46.2 46.2  36.1  31.4 31.4  31.6  44.9 27.8  27.8  65.2 13.4  13.4
LOS by Move:    D    D     D     C    C     C     D    C     C     E    B     B
HCM2kAvgQ:     13   13     9     5    5     5     1   22    22     7    6     6
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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MITIG8 - Proposed Project-VWed Mar 28, 2018 10:45:09                 Page 1-1
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1047 Innes Ave/Earl St
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.745
Loss Time (sec):      10               Average Delay (sec/veh):        17.6
Optimal Cycle:        61               Level Of Service:                  B
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    20    0    80    40 1107     0     0  888    10
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    20    0    80    40 1107     0     0  888    10
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:     0    0     0    20    0    82    41 1130     0     0  906    10
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0    20    0    82    41 1130     0     0  906    10
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0    20    0    82    41 1130     0     0  906    10
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.87 1.00  0.87  0.90 0.90  1.00  1.00 0.90  0.90
Lanes:       0.00 0.00  0.00  0.20 0.00  0.80  0.07 1.93  0.00  0.00 1.98  0.02
Final Sat.:     0    0     0   329    0  1315   120 3310     0     0 3392    38
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.06 0.00  0.06  0.34 0.34  0.00  0.00 0.27  0.27
Crit Moves:                   ****             ****                   ****
Green/Cycle: 0.00 0.00  0.00  0.08 0.00  0.08  0.46 0.82  0.00  0.00 0.36  0.36
Volume/Cap:  0.00 0.00  0.00  0.74 0.00  0.74  0.74 0.42  0.00  0.00 0.74  0.74
Uniform Del:  0.0  0.0   0.0  44.8  0.0  44.8  22.3  2.6   0.0   0.0 28.1  28.1
IncremntDel:  0.0  0.0   0.0  19.7  0.0  19.7   2.0  0.1   0.0   0.0  2.5   2.5
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
Delay/Veh:    0.0  0.0   0.0  64.5  0.0  64.5  24.3  2.7   0.0   0.0 30.6  30.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  64.5  0.0  64.5  24.3  2.7   0.0   0.0 30.6  30.6
LOS by Move:    A    A     A     E    A     E     C    A     A     A    C     C
HCM2kAvgQ:      0    0     0     5    0     5    17    5     0     0   14    14
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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--------------------------------------------------------------------------------
                     Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1030 Crisp Rd / Palou Ave
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.852
Loss Time (sec):      12               Average Delay (sec/veh):        36.0
Optimal Cycle:        91               Level Of Service:                  D
********************************************************************************
Street Name:             Crisp Rd                        Palou Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  1    0  1  0  0  1    1  0  0  1  0    2  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      20  160   345    10  170   110   150  496    10   624  764    20
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   20  160   345    10  170   110   150  496    10   624  764    20
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    20  163   352    10  173   112   153  506    10   637  780    20
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   20  163   352    10  173   112   153  506    10   637  780    20
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   20  163   352    10  173   112   153  506    10   637  780    20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.84 0.84  0.81  0.96 0.96  0.83  0.90 0.95  0.95  0.90 0.98  0.98
Lanes:       0.06 0.44  1.50  0.06 0.94  1.00  1.00 0.98  0.02  2.00 0.97  0.03
Final Sat.:    89  712  2299   102 1729  1583  1718 1768    36  3432 1807    47
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.23 0.23  0.15  0.10 0.10  0.07  0.09 0.29  0.29  0.19 0.43  0.43
Crit Moves:       ****                          ****                   ****
Green/Cycle: 0.27 0.27  0.27  0.27 0.27  0.27  0.10 0.37  0.37  0.24 0.51  0.51
Volume/Cap:  0.85 0.85  0.57  0.37 0.37  0.26  0.85 0.77  0.77  0.77 0.85  0.85
Uniform Del: 34.6 34.6  31.5  29.7 29.7  28.7  44.0 27.8  27.8  35.4 21.4  21.4
IncremntDel: 10.8 10.8   0.8   0.5  0.5   0.3  30.3  5.6   5.6   4.6  7.6   7.6
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:   45.5 45.5  32.4  30.2 30.2  29.1  74.3 33.3  33.3  40.0 29.0  29.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  45.5 45.5  32.4  30.2 30.2  29.1  74.3 33.3  33.3  40.0 29.0  29.0
LOS by Move:    D    D     C     C    C     C     E    C     C     D    C     C
HCM2kAvgQ:     14   14     7     5    5     3     5   14    14    11   24    24
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************

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------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1047 Innes Ave/Earl St
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.860
Loss Time (sec):      10               Average Delay (sec/veh):        21.5
Optimal Cycle:        89               Level Of Service:                  C
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  0  0  0    0  0  1! 0  0    0  1  1  0  0    0  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    20    0    70   130  960     0     0 1301    20
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    20    0    70   130  960     0     0 1301    20
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:     0    0     0    20    0    71   133  980     0     0 1328    20
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0    20    0    71   133  980     0     0 1328    20
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0    20    0    71   133  980     0     0 1328    20
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  0.87 1.00  0.87  0.90 0.90  1.00  1.00 0.90  0.90
Lanes:       0.00 0.00  0.00  0.22 0.00  0.78  0.24 1.76  0.00  0.00 1.97  0.03
Final Sat.:     0    0     0   366    0  1282   407 3009     0     0 3378    52
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.06 0.00  0.06  0.33 0.33  0.00  0.00 0.39  0.39
Crit Moves:                   ****             ****                   ****
Green/Cycle: 0.00 0.00  0.00  0.06 0.00  0.06  0.38 0.84  0.00  0.00 0.46  0.46
Volume/Cap:  0.00 0.00  0.00  0.86 0.00  0.86  0.86 0.39  0.00  0.00 0.86  0.86
Uniform Del:  0.0  0.0   0.0  46.3  0.0  46.3  28.6  2.0   0.0   0.0 24.3  24.3
IncremntDel:  0.0  0.0   0.0  46.4  0.0  46.4   6.1  0.1   0.0   0.0  5.1   5.1
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   0.00 0.00  0.00  1.00 0.00  1.00  1.00 1.00  0.00  0.00 1.00  1.00
Delay/Veh:    0.0  0.0   0.0  92.7  0.0  92.7  34.7  2.1   0.0   0.0 29.4  29.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0  92.7  0.0  92.7  34.7  2.1   0.0   0.0 29.4  29.4
LOS by Move:    A    A     A     F    A     F     C    A     A     A    C     C
HCM2kAvgQ:      0    0     0     5    0     5    19    5     0     0   22    22
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

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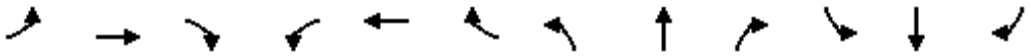
HCM Signalized Intersection Capacity Analysis
1: Arelious Walker & Gilman Avenue

03/30/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	306	295	10	161	128	232	360	10	154	503	141
Future Volume (vph)	158	306	295	10	161	128	232	360	10	154	503	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.84	1.00	1.00	0.69	1.00	1.00	0.68	1.00	0.93	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1327	1770	1863	1085	1770	1863	1074	1770	1675	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1327	1770	1863	1085	1770	1863	1074	1770	1675	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	166	322	311	11	169	135	244	379	11	162	529	148
RTOR Reduction (vph)	0	0	154	0	0	113	0	0	7	0	9	0
Lane Group Flow (vph)	166	322	157	11	169	23	244	379	4	162	668	0
Confl. Peds. (#/hr)	100		100	100		100	100		100	100		100
Confl. Bikes (#/hr)			10			30			10			10
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	14.2	31.4	52.7	2.8	20.0	20.0	21.3	39.3	39.3	28.5	46.5	
Effective Green, g (s)	14.2	31.4	52.7	2.8	20.0	20.0	21.3	39.3	39.3	28.5	46.5	
Actuated g/C Ratio	0.12	0.26	0.44	0.02	0.17	0.17	0.18	0.33	0.33	0.24	0.39	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	209	487	632	41	310	180	314	610	351	420	649	
v/s Ratio Prot	c0.09	c0.17	0.04	0.01	c0.09		c0.14	0.20		0.09	c0.40	
v/s Ratio Perm			0.07			0.02			0.00			
v/c Ratio	0.79	0.66	0.25	0.27	0.55	0.12	0.78	0.62	0.01	0.39	1.03	
Uniform Delay, d1	51.5	39.6	21.2	57.6	45.8	42.6	47.1	34.1	27.2	38.4	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.5	3.4	0.2	3.5	2.0	0.3	17.1	2.0	0.0	0.6	43.2	
Delay (s)	69.9	42.9	21.4	61.1	47.8	42.9	64.2	36.0	27.2	39.0	80.0	
Level of Service	E	D	C	E	D	D	E	D	C	D	E	
Approach Delay (s)		40.1			46.1			46.7			72.1	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

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------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
******************************************************************************
Intersection #1032 Ingalls St / Carroll Ave
******************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.978
Loss Time (sec):      12               Average Delay (sec/veh):        52.7
Optimal Cycle:       100               Level Of Service:                  D
******************************************************************************
Street Name:            Ingalls St                      Carrol Ave
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:         WideBypass       WideBypass         Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  1! 0  0    0  0  1! 0  0    0  1  0  1  0    0  1  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      17  160    17   646  156    10     9  325    18    42  306   394
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   17  160    17   646  156    10     9  325    18    42  306   394
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98  0.98 0.98  0.98
PHF Volume:    17  163    17   659  159    10     9  332    18    43  312   402
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   17  163    17   659  159    10     9  332    18    43  312   402
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   17  163    17   659  159    10     9  332    18    43  312   402
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.94 0.94  0.94  0.91 0.91  0.91  0.85 0.85  0.85  0.78 0.78  0.78
Lanes:       0.09 0.82  0.09  0.80 0.19  0.01  0.05 1.85  0.10  0.12 0.88  1.00
Final Sat.:   156 1468   156  1382  334    21    83 2988   165   178 1299  1478
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.11  0.11  0.48 0.48  0.48  0.11 0.11  0.11  0.24 0.24  0.27
Crit Moves:       ****        ****                                       ****
Green/Cycle: 0.11 0.11  0.11  0.49 0.49  0.49  0.28 0.28  0.28  0.28 0.28  0.28
Volume/Cap:  0.98 0.98  0.98  0.98 0.98  0.98  0.40 0.40  0.40  0.86 0.86  0.98
Uniform Del: 44.2 44.2  44.2  25.1 25.1  25.1  29.3 29.3  29.3  34.3 34.3  35.8
IncremntDel: 56.6 56.6  56.6  25.4 25.4  25.4   0.3  0.3   0.3   8.9  8.9  26.8
InitQueuDel:  0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Delay/Veh:  100.8  101 100.8  50.5 50.5  50.5  29.6 29.6  29.6  43.2 43.2  62.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 100.8  101 100.8  50.5 50.5  50.5  29.6 29.6  29.6  43.2 43.2  62.6
LOS by Move:    F    F     F     D    D     D     C    C     C     D    D     E
HCM2kAvgQ:     10   10    10    32   32    32     5    5     5    14   14    18
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************

  Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to FEHR & PEERS  WALNUT CRK
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APPENDIX F

Auto and Transit Trip Generation by Year and

Transit Phasing Comparison

Candlestick Point

DRAFT CONSTRUCTION SCHEDULE
3/23/2018

Major Phase	Sub Phase	Block	Use	Entitlement Statistics			Horizontal Duration			Vertical Duration				
				SQ FT	UNITS	PARKING	START		FINISH	START[1]		Finish A[2]		Finish B[3]
1 CP	**CP-1**	AG1, AG2, AG4, AG5	Apartment		337	337	**2014**	**-**	**2017**	**2015**	**-**			**2020**
			Alice Griffith		209									
			OCII		128									
	CP-2	CPC 1, 2, 3	Apartment	0	419	419				2020	-	2022	;	2023
			Inclusionary		43									
		FAC, CP-2 HOTEL	Hotel	150,000	0	55								
			Regional Retail	635,000	0	1,715								
			Office	150,000		150				2020	-	2022	;	2022
			Community Use	1,000	0	1								
			FAC	75,000	0	667								
				1,011,000	**419**	**3,006**	**2016**	**-**	**2019**	**2020**	**-**	**2022**	**;**	**2023**
		Bayview Hillside OS	Park				2019	-	2021					
		Jamestown Walker	Street				2019	-	2021					
		Harney Way 1	Park				2019	-	2021					
		Wedge Park 1	Park				2019	-	2021					
		Gilman Ave	Street				2019	-	2021					
		Last Port	Park				2019	-	2022					
		The Neck	Park				2019	-	2022					
							2019	**-**	**2022**					
	CP-3	CPN1A, CPN2A, CPN11A	Apartment	0	843	843				2020	-	2021	;	2024
			OCII		120									
			Inclusionary		73									
		CPN2A, CPN10A, CPN11A	Neighborhood Retail	62,500	0	63				2019	-	2021	;	2023
				62,500	**843**	**906**	**2016**	**-**	**2019**	**2019**	**-**	**2021**	**;**	**2024**
		Wedge Park 2A	Park				**2019**	**-**	**2022**					
	CP-4	CPS6A, CPS8A, CPS9A	Apartment	0	489	489				2019	-	2021	;	2023
			OCII		110									
			Inclusionary		38									
		CPS6A, CPS8A, CPS9A, CPS11A	Neighborhood Retail	62,500	0	63				2019	-	2021	;	2023
			Community Use	5,000	0	3								
				67,500	**489**	**554**	**2016**	**-**	**2019**	**2019**	**-**	**2021**	**;**	**2023**
	CP-5	AG6, AG13	Apartment	0	351	351	2018	-	2021	2024	-	2026	;	2027
			Alice Griffith		47									
			OCII		180									
			Inclusionary		13									
			Community Use	41,000	0	21								
				41,000	**351**	**372**	**2018**	**-**	**2021**	**2024**	**-**	**2026**	**;**	**2027**
		AG Neighborhood P1	Park				**2022**	**-**	**2023**					
2 CP	**CP-6**	8B, 9B, 10A, 10B, 11B	Apartment	**0**	**522**	**522**	**2020**	**-**	**2023**	**2022**	**-**	**2024**	**;**	**2028**
			Inclusionary		29									
			Workforce		237									
		Harney Way 2	Park				**2021**	**-**	**2023**					
	CP-7	AG17, AG19, AG20	Apartment	**0**	**408**	**408**	**2021**	**-**	**2024**	**2026**	**-**	**2028**	**;**	**2030**
			Inclusionary		41									
		Ingerson Ave	Street				2023	-	2024					
		Jamestown Ave	Street				2023	-	2024					
		AG Neighborhood 2	Park				2023	-	2024					
		Ing/Thom/Carl/Grifth	Street				2024	-	2025					
							2021	**-**	**2025**					
	CP-8	CPS6B, CPS 8B	Apartment	**0**	**567**	**567**	**2021**	**-**	**2024**	**2022**	**-**			**2028**
			OCII		165									
			Inclusionary		41									
		Mini Wedge Park 1	Park				**2024**		**2026**					
	CP-9	CPS12A, CPS12B, CPS71A	Apartment		**122**	**122**	**2022**	**-**	**2025**	**2024**	**-**	**2026**	**;**	**2030**
			Inclusionary		12									
		The Heart of Park	Park				2024	-	2026					
		The Point	Park				2024	-	2026					
							2024	**-**	**2026**					
	CP-10	CPS4A, CPS5	Apartment	0	323	323	2023	-	2026	2027	-	2029	;	2034
			Inclusionary		33									
			Community Use	3,000	0	2								
				3,000	**323**	**325**	**2023**	**-**	**2026**	**2027**	**-**	**2029**	**;**	**2034**
		Mini Wedge 2	Park				**2026**	**-**	**2027**					
3 CP	**CP-11**	CPN1B, CPN2B	Apartment	**0**	**240**	**240**	**2024**	**-**	**2027**	**2026**	**-**			**2029**
			OCII		130									
			Workforce		110									
		Earl Blvd Park 1 & 2	Street				**2016**	**-**	**2027**					
	CP-12	CPN10B, CPN11B	Apartment	**0**	**188**	**188**	**2024**	**-**	**2027**	**2025**	**-**	**2027**	**;**	**2027**
			Inclusionary		19									
		Wedge Park 2B	Park				**2028**	**-**	**2029**					
	CP-13	CPS1, CPS2A, CPS2B, CPS3	Apartment	**0**	**589**	**589**	**2025**	**-**	**2028**	**2026**	**-**	**2028**	**;**	**2029**
			OCII		90									
			Inclusionary		51									
		The Last Rubble	Park				2027	-	2029					
		Wind Meadow	Park				2027	-	2029					
							2027	**-**	**2029**					
	CP-14	CPN 3A, 3B	Apartment	**0**	**234**	**234**	**2026**	**-**	**2029**	**2027**	**-**	**2029**	**;**	**2029**
			Inclusionary		24									
		CP Neighborhood Park	Park				**2028**	**-**	**2029**					
	CP-15	CPN8A, CPN8B, CPN9A, CPN9B	Apartment		**629**	**629**	**2026**	**-**	**2029**	**2027**	**-**	**2029**	**;**	**2035**
			Inclusionary		64									
		Wedge Park 3	Park				2030	-	2031					
		Bayview Gardens	Park				2030	-	2031					
							2030	**-**	**2031**					
	CP-16	CPN4B, CPN 5A	Apartment	**0**	**477**	**477**	**2027**	**-**	**2030**	2028	-	2030	;	2030
			OCII		110									
			Inclusionary		15									
			Workforce		220									
		Earl Blvd Park 3	Park				2030	-	2031					
		Grasslands S1	Park				2032	-	2033					
							2030	**-**	**2033**					
	CP-17	CNP8A, CPN6B, CPN7B	Podium/Townhome	**0**	**480**	**480**	**2027**	**-**	**2030**	**2028**	**-**	**2030**	**;**	**2033**
			Inclusionary		37									
			Workforce		120									
		Grasslands S2	Park				**2032**	**-**	**2033**					
UNALLOCATED			Performance Venue	**0**	0	0								
			TOTAL	**1,185,000**	**7,218**	**9,954**								
		USE SUBTOTAL	Artist Studio	0	0									
			Community Use	50,000	0									
			FAC/Performance Venue	75,000	0									
			Hotel	150,000	0									
			Marina	0	0									
			Neighbourhood Retail/Maker Space	125,000	0									
			Office	150,000	0									
			Regional Retail	635,000	0									
			School/Institution	0	0									
			Residential	0	7,218									
				1,185,000	**7,218**									

[1] Earliest Start Date

[2] Earliest Closing Start Date

[3] Last Closing Start Date

[4] Entitled 150,000 SF, however Business Plan projects 130,000 SF for Hotel

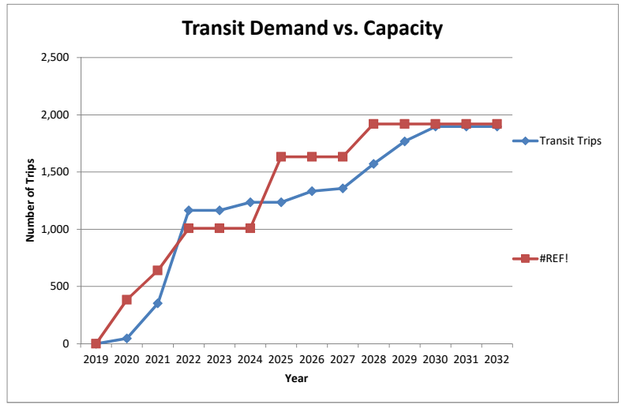
[5] 46,000 SF of PAC allocated to CP-3. Performance Venue entitlement (29,000 SF) is currently unallocated.

[6] Entitled 131,000 SF, however Business Plan projects 129,188 SF for Neighborhood Retail with balance to be relocated elsewhere within CP

[7] Entitled for 2,630 parking spaces

ASSUMPTIONS
Horizontal duration includes abatement, demolition, grading and horizontal infrastructure
Vertical duration includes foundation, piles, structure, rough in, interior and exterior finishes, through full occupancy
Shoreline construction will be done concurrently with adjacent park improvements

Candlestick Point Transit Trips by Year



Average Trip Generation Rate Calculation					
Land Uses	Size	Transit Trips	Auto Trips	Transit Rate	Vehicle Rate
Residential (DU)	6962	946	2,094	0.14	0.30
Arena (office)	25	30	61	1.20	2.45
FAC (seats)	0	0	0	0.00	0.00
Retail (ksf)	760	742	2,617	0.98	3.44
Hotel (rooms)	220	35	75	0.16	0.34
Office (ksf)	150	69	140	0.46	0.94
Community Facilities (ksf)	50	38	77	0.75	1.53
Parks (acres)	97	2	4	0.02	0.04

Land Use (By Year)

Year / Land Use	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	Check	
Residential (DU)		337	1,332	419		522		473	188	1,564	1,426	957			7218	256	includes AC
PAC Office (ksf)				25											25	0	
FAC (seats)				0											0	0	
Retail (ksf)			125	635											760	0	
Hotel (rooms)				220											220	0	
Community Facilities (ksf)			5	1				41			3				50	0	
Office (ksf)				150											150	0	
Parks (acres)								97							97	0	

Source: Draft Construction Schedule provided by FivePoint. "Vertical Duration, Finish A" was used as the year of implementation. (See "CP Phasing" tab)

Land Use (Cumulative)

Year / Land Use	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential (DU)	0	337	1669	2088	2088	2610	2610	3083	3271	4835	6261	7218	7218	7218
PAC Office (ksf)	0	0	0	25	25	25	25	25	25	25	25	25	25	25
PAC (seats)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail (ksf)	0	0	125	760	760	760	760	760	760	760	760	760	760	760
Hotel (rooms)	0	0	0	220	220	220	220	220	220	220	220	220	220	220
Community Facilities (ksf)	0	0	5	6	6	6	6	47	47	47	50	50	50	50
Office (ksf)	0	0	0	150	150	150	150	150	150	150	150	150	150	150
Parks (acres)	0	0	0	0	0	0	0	97	97	97	97	97	97	97

Transit Trips (Cumulative)

Year / Land Use	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential (DU)	0	46	227	284	284	355	355	419	444	657	851	981	981	981
PAC Office (ksf)	0	0	0	30	30	30	30	30	30	30	30	30	30	30
PAC (seats)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail (ksf)	0	0	122	742	742	742	742	742	742	742	742	742	742	742
Hotel (rooms)	0	0	0	35	35	35	35	35	35	35	35	35	35	35
Community Facilities (ksf)	0	0	4	5	5	5	5	35	35	35	38	38	38	38
Office (ksf)	0	0	0	69	69	69	69	69	69	69	69	69	69	69
Parks (acres)	0	0	0	0	0	0	0	2	2	2	2	2	2	2
Total	**0**	**46**	**353**	**1,165**	**1,165**	**1,236**	**1,236**	**1,332**	**1,357**	**1,570**	**1,767**	**1,897**	**1,897**	**1,897**

Vehicle Trips (Cumulative)

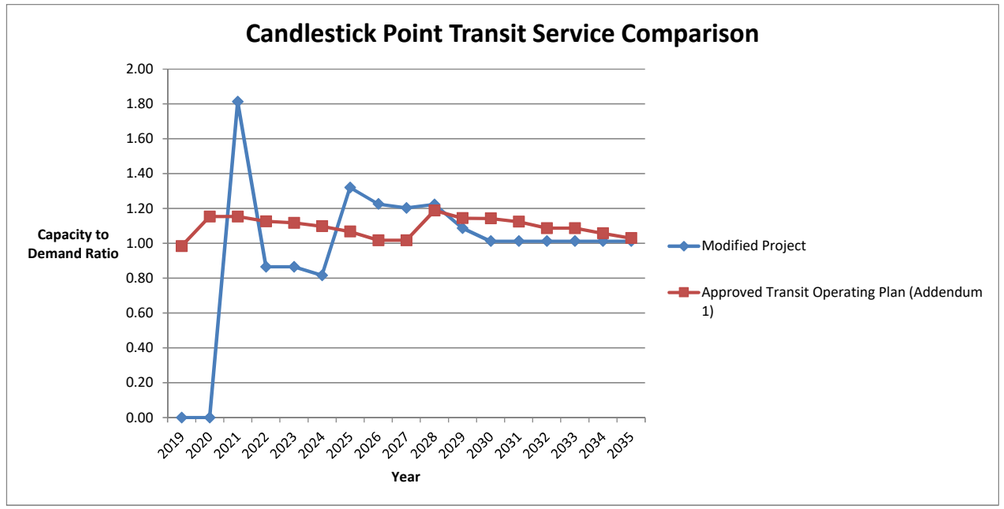
Year / Land Use	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential (DU)	0	101	502	628	628	785	785	927	984	1,454	1,883	2,171	2,171	2,171
PAC Office (ksf)	0	0	0	61	61	61	61	61	61	61	61	61	61	61
PAC (seats)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail (ksf)	0	0	430	2,617	2,617	2,617	2,617	2,617	2,617	2,617	2,617	2,617	2,617	2,617
Hotel (rooms)	0	0	0	75	75	75	75	75	75	75	75	75	75	75
Community Facilities (ksf)	0	0	8	9	9	9	9	72	72	72	77	77	77	77
Office (ksf)	0	0	0	140	140	140	140	140	140	140	140	140	140	140
Parks (acres)	0	0	0	0	0	0	0	4	4	4	4	4	4	4
Total	**0**	**101**	**940**	**3,530**	**3,530**	**3,687**	**3,687**	**3,896**	**3,953**	**4,423**	**4,857**	**5,145**	**5,145**	**5,145**
	0%	2%	18%	69%	69%	72%	72%	76%	77%	86%	94%	100%	100%	100%

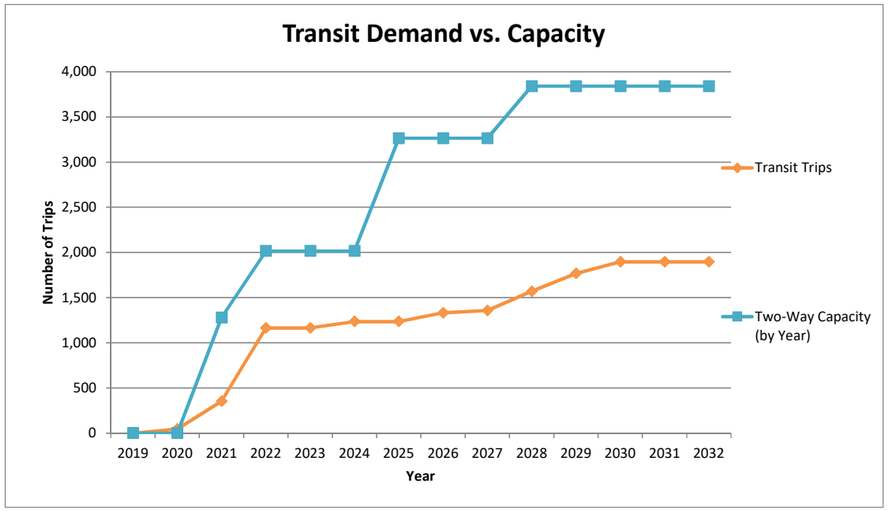
Transit Capacity (One-way)

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	0	384	640	1008	1008	1008	1632	1632	1632	1920	1920	1920	1920	1920

** Although no changes are proposed for the 29 Sunset in 2020, the development slated to occur in 2020 is in Alice Griffith and is adequately served by the existing service on the 29 Sunset, and therefore, caapcity is provided to that develoment.*

Candlestick Point
Transit Phasing Plan (2018)





Proposed Transit Phasing (2018)

		Frequency (min)	One-Way Capacity Serving Project Site (pax/hr)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Candlestick Point	**Begin Candlestick Point Express (CPX)**	15	256			256														
		10	384				384	384	384	384	384	384	384	384	384	384	384	384	384	384
	Extend 29-Sunset	10	384			384	384	384	384											
		5	768							768	768	768	768	768	768	768	768	768	768	768
	New Shuttle (30 pax @ 7.5 min freq)	7.5	240				240	240	240											
	Begin/Extend 28L/BRT	8	480							480	480	480								
		5	768										768	768	768	768	768	768	768	768
			Available One-Way Capacity (by Year)	0	0	640	1008	1008	1008	1632	1632	1632	1920	1920	1920	1920	1920	1920	1920	1920
			Estimated Transit Demand (by Year)	0	46	353	1,165	1,165	1,236	1,236	1,332	1,357	1,570	1,767	1,897	1,897	1,897	1,897	1,897	1,897
			Capacity-to-Demand Ratio	#DIV/0!	0.00	1.81	0.87	0.87	0.82	1.32	1.23	1.20	1.22	1.09	1.01	1.01	1.01	1.01	1.01	1.01
			Two-Way Capacity (by Year)	0	0	1280	2016	2016	2016	3264	3264	3264	3840	3840	3840	3840	3840	3840	3840	3840

Old Transit Phasing (December 2013)

		Frequency (min)	One-Way Capacity Serving Project Site (pax/hr)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Candlestick Point	**Begin Candlestick Point Express (CPX)**	15	256		256	256	256	256	256	256	256	256	256	256						
		10	384												384	384	384	384	384	384
	Extend 29-Sunset	10	384																	
		5	768	768	768	768	768	768	768	768	768	768	768	768	768	768	768	768	768	768
	Extend 56-Rutland	20	135	135	135	135	135													
	Extra Bus		45	45	45	45	45													
	New Shuttle (30 pax @ 7.5 min freq)	7.5	240	240	240	240	240													
	Begin/Extend 28L/BRT	8	480					480	480	480	480	480								
		5	768										768	768	768	768	768	768	768	768
			Available One-Way Capacity (by Year)	1188	1444	1444	1444	1504	1504	1504	1504	1504	1792	1792	1920	1920	1920	1920	1920	1920
			Estimated Transit Demand (by Year)	1,207	1,252	1,252	1,282	1,346	1,370	1,409	1,478	1,478	1,508	1,566	1,680	1,708	1,766	1,766	1,816	1,865
			Capacity-to-Demand Ratio	0.98	1.15	1.15	1.13	1.12	1.10	1.07	1.02	1.02	1.19	1.14	1.14	1.12	1.09	1.09	1.06	1.03

Hunters Point

DRAFT CONSTRUCTION SCHEDULE

3/23/2018

Major Phase	Sub Phase	Block	Use	Entitlement Statistics			Horizontal Duration			Vertical Duration				
				SQ FT	UNITS	PARKING	Start		Finish	Start[1]		Finish A[2]		Finish B[3]
1 HP	**HP-1**	37, 38	Apartment	0	450	450				2020	-	2022	;	2023
			Inclusionary		45									
		1, 2, 3, 36, 40, 44	R&D	1,967,655	0	2,558				2021	-	2023	;	2026
		4, 5, 36, 37, 38, 40, 43, 44	Artist Studio	255,000	0	128				2017	-	2019	;	2019
			Neighborhood Retail/Maker Space	183,000	0	549				2020		2021		2025
		3	School	65,000	0	9				2022	-	2024	;	2024
			Community Facility: Fire Station	0	0	0				2024	-	2026		2026
		1	Parking Garage							2020	-	2022	;	2024
		35, 43	Recycled Water Treatment Plan	0	0	0				2019	-	2024	;	2024
				2,470,655	**450**	**3,693**	**2019**	**-**	**2024**	**2017**	**-**	**2019**	**;**	**2026**
		Shipyard Hillside OS	Park				2022	-	2023					
		Green Room	Park				2022	-	2023					
							2022	**-**	**2023**					
	HP-2	6, 7, 9, 8, 10, 11, 12	Apartment	0	799	799				2020	-	2022	;	2024
			OCII		130									
			Inclusionary		67									
		Northside Park	Neighborhood Retail/Maker Space	500	0	2				2024	-	2025	;	2025
				500	**799**	**801**	**2019**	**-**	**2023**	**2020**	**-**	**2022**	**;**	**2025**
		Northside Park	Park				2023	-	2024					
		Innes Ave	Street				2023	-	2024					
		Horne Blvd 1	Street				2023	-	2024					
							2023	**-**	**2024**					
2 HP	**HP-3**	13, 15, 16, 17, 18, 19, 20	Apartment	0	754	754				2023	-	2025	;	2026
			OCII		90									
			Inclusionary		58									
			Workforce		100									
			Parking Garage	0	0	0				2023	-	2025	;	2026
				0	**754**	**754**	**2021**	**-**	**2024**	**2023**	**-**	**2025**	**;**	**2026**
		Waterfront Prom N	Park				2024	-	2025					
		YS Bridge	Bridge				2020	-	2025					
							2024	**-**	**2025**					
	HP-4	31	Apartment	0	150	150				2024	-	2025	;	2025
			Inclusionary		15									
		21, 32, 33	R&D	1,101,745	0	1,432				2026	-	2028	;	2030
		30	Hotel	120,000	0	44				2027	-	2029	;	2029
		21, 31, Water Room	Neighborhood Retail/Maker Space	44,500	0	134				2023	-	2025	;	2029
			Regional Retail	100,000		300				2023	-	2025		2028
		32	Parking Garage							2027	-	2029	;	2029
		Marina South	Slips	0	0	90								
				1,366,245	**150**	**2,150**	**2021**	**-**	**2025**	**2023**	**-**	**2025**	**;**	**2030**
		Palou Ave					2028	-	2030					
		Park: Community SFC					2029	-	2032					
		Wr Room/DD4/Bridge	Park				2026	-	2027					
		Waterfront Prom SP	Park				2026	-	2027					
		Waterfront R&E Park	Park				2026	-	2027					
		Regun Crane Pier	Park				2026	-	2027					
							2025	**-**	**2032**					
3 HP	**HP-5**	23	Apartment	0	317	317				2026	-	2029	;	2029
			Inclusionary		32									
		25, 26, 27, 28, 29	R&D	1,195,600	0	1,554				2028	-	2029	;	2031
		22, 24, 27, 28, 29, Heritage Park	Neighborhood Retail/Maker Space	51,500	0	155				2024	-	2026	;	2030
		22, 27, 28, 29	Regional Retail	0	0	0								
		22, 24	Parking Garage							2024	-	2026	;	2026
		Marina North	Slips	0	0	90								
				1,247,100	**317**	**2,116**	**2023**	**-**	**2027**	**2024**	**-**	**2026**	**;**	**2031**
		Heritage Park	Park				2030	-	2031					
		Waterfront Prom NP	Park				2031	-	2034					
							2030	**-**	**2034**					
	HP-6	45, 46, 47, 48, 49, 50, 51, 52, 53	Apartment		984	984				2026	-	2028	;	2030
			OCII		135									
			Inclusionary		76									
			Workforce		105									
		45, 46	Neighborhood Retail/Maker Space	21,500	0	65				2025	-	2029	;	2029
		54	Community Use	50,000	0	25				2025	-	2027		2027
		55	Institution	345,000	0	20				2025	-	2026		2026
				416,500	**984**	**1,094**	**2023**	**-**	**2028**	**2025**	**-**	**2026**	**;**	**2030**
		Maintenance Yard	Park				2031	-	2033					
		Grassland EP	Park				2031	-	2032					
		Multiuse OS	Park				2030	-	2031					
							2030	**-**	**2033**					
			TOTAL	**5,501,000**	**3,454**	**10,607**								
		USE SUBTOTAL	Artist Studio	255,000	0	128								
			Community Use	50,000		25								
			FAC/Performance Venue	0	0	0								
			Hotel	120,000	0	44								
			Marina	0	0	180								
			Neighborhood Retail/Maker Space	301,000	0	903								
			R&D	4,265,000	0	5,545								
			Regional Retail	100,000	0	300								
			School/Institution	410,000	0	29								
			Residential	0	3,454	3,454								
			OCII		355									
			Inclusionary		293									
			Workforce		205									
				5,501,000	**3,454**	**10,607**								

[1] Earliest Start Date

[2] Earliest Closing Start Date

[3] Last Closing Start Date

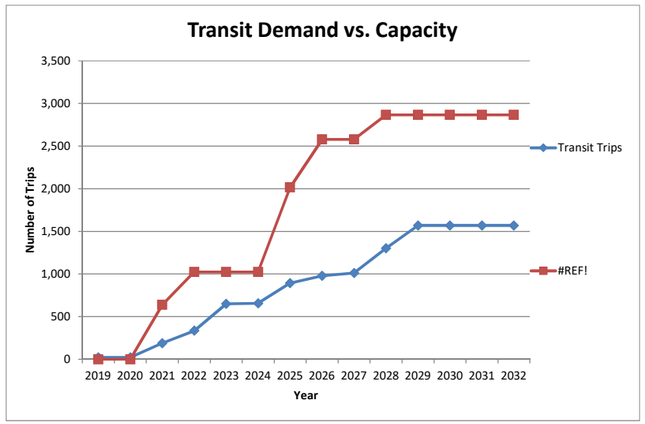
ASSUMPTIONS

Horizontal duration includes abatement, demolition, grading and horizontal infrastructure

Vertical duration includes foundation, piles, structure, rough in, interior and exterior finishes, through full occupancy

Shoreline construction will be done concurrently with adjacent park improvements

Hunters Point Transit Trips by Year



Average Trip Generation Rate Calculation					
Land Uses	Size	Transit Trips	Auto Trips	Transit Rate	Auto Rate
Residential (DU)	3454	406	900	0.12	0.26
Community Facilities (ksf)	50	32	66	0.65	1.33
Hotel (rooms)	175	21	53	0.12	0.31
Retail/Maker Space (ksf)	401	363	1207	0.90	3.01
R&D (ksf)	4265	674	1388	0.16	0.33
School (students)	1035	47	117	0.05	0.11
Parks (acres)	238	4	7	0.02	0.03
Artist Studio (ksf)	15	23	48	1.56	3.18

Land Use (By Year)

Year / Land Use	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	Check
Residential (DU)				1249			904			984	317				3454	0
Community Facilities (ksf)									50						50	0
Hotel (rooms)											175				175	0
Retail (ksf)			183				145	52			22				401	0
R&D (ksf)					1968					1102	1196				4265	0
School						164		871							1035	0
Parks (acres)					238										238	0
Artist Studio (ksf)	15														15	0

Source: Draft Construction Schedule provided by FivePoint. "Vertical Duration, Finish A" was used as the year of implementation. (See "HP Phasing" tab)

Land Use (Cumulative)

Year / Land Use	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential (DU)	0	0	0	1249	1249	1249	2153	2153	2153	3137	3454	3454	3454	3454
Community Facilities (ksf)	0	0	0	0	0	0	0	0	50	50	50	50	50	50
Hotel (rooms)	0	0	0	0	0	0	0	0	0	0	175	175	175	175
Retail (ksf)	0	0	183	183	183	183	328	379.5	379.5	379.5	401	401	401	401
R&D (ksf)	0	0	0	0	1968	1968	1968	1968	1968	3070	4266	4266	4266	4266
School	0	0	0	0	0	164.0854	164.0854	1035	1035	1035	1035	1035	1035	1035
Parks (acres)	0	0	0	0	238	238	238	238	238	238	238	238	238	238
Artist Studio (ksf)	15	15	15	15	15	15	15	15	15	15	15	15	15	15

Transit Trips (Cumulative)

Year / Land Use	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential (DU)	0	0	0	147	147	147	253	253	253	369	406	406	406	406
Community Facilities (ksf)	0	0	0	0	0	0	0	0	32	32	32	32	32	32
Hotel (rooms)	0	0	0	0	0	0	0	0	0	0	21	21	21	21
Retail (ksf)	0	0	166	166	166	166	297	343	343	343	363	363	363	363
R&D (ksf)	0	0	0	0	311	311	311	311	311	485	674	674	674	674
School	0	0	0	0	0	7	7	47	47	47	47	47	47	47
Parks (acres)	0	0	0	0	4	4	4	4	4	4	4	4	4	4
Artist Studio (ksf)	23	23	23	23	23	23	23	23	23	23	23	23	23	23
Total	**23**	**23**	**189**	**336**	**651**	**658**	**895**	**981**	**1,013**	**1,303**	**1,570**	**1,570**	**1,570**	**1,570**

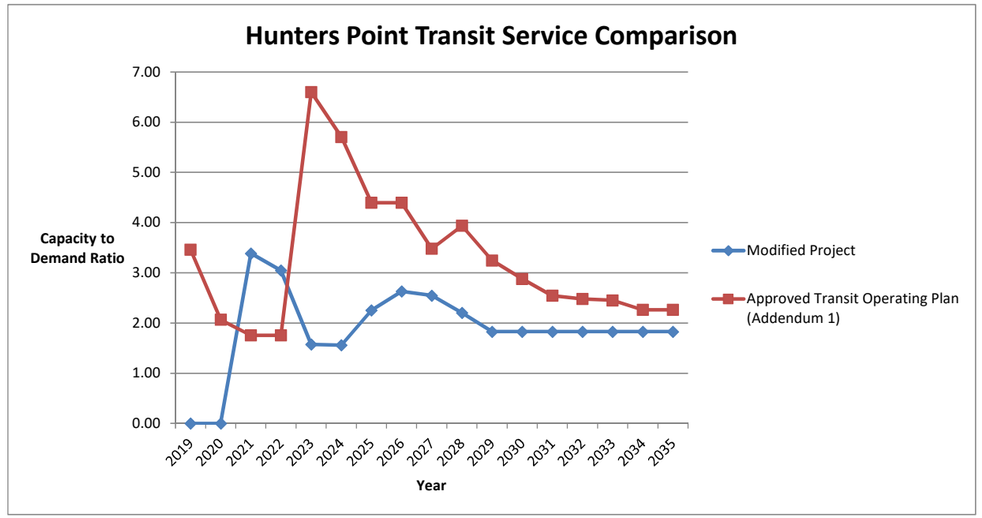
Auto Trips (Cumulative)

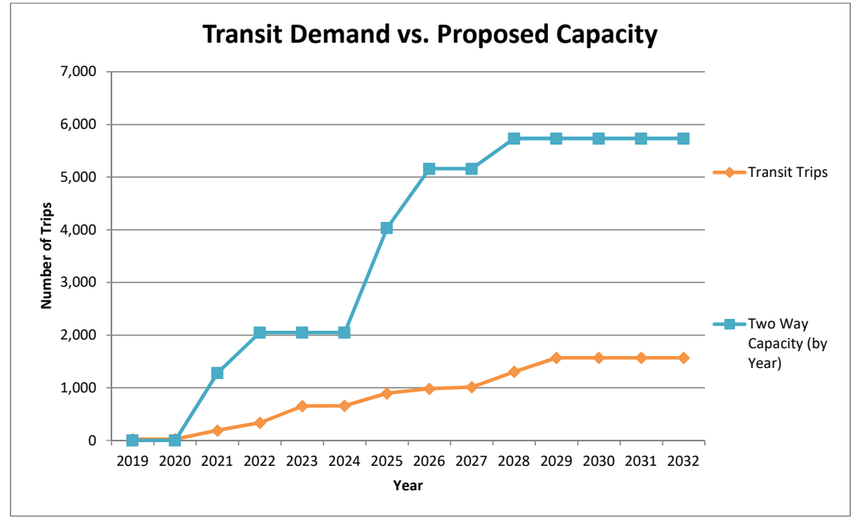
Year / Land Use	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential (DU)	0	0	0	325	325	325	561	561	561	817	900	900	900	900
Community Facilities (ksf)	0	0	0	0	0	0	0	0	66	66	66	66	66	66
Hotel (rooms)	0	0	0	0	0	0	0	0	0	0	53	53	53	53
Retail (ksf)	0	0	551	551	551	551	987	1,142	1,142	1,142	1,207	1,207	1,207	1,207
R&D (ksf)	0	0	0	0	641	641	641	641	641	999	1,389	1,389	1,389	1,389
School	0	0	0	0	0	19	19	117	117	117	117	117	117	117
Parks (acres)	0	0	0	0	7	7	7	7	7	7	7	7	7	7
Artist Studio (ksf)	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total	**48**	**48**	**599**	**924**	**1,572**	**1,591**	**2,263**	**2,516**	**2,582**	**3,196**	**3,787**	**3,787**	**3,787**	**3,787**

Transit Capacity (One-way)

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	0	0	640	1024	1024	1024	2016	2579	2579	2867	2867	2867	2867	2867

Hunters Point
Transit Phasing Plan (2018)





Proposed Transit Phasing (2018)

		Frequency (min)	One-Way Capacity Serving Project Site (pax/hr)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Hunters Point	**Begin Hunters Point Express (HPX)**	20	192			192	192	192	192											
		10	384							384										
		6	740								740	740	740	740	740	740	740	740	740	740
	Extend 23-Monterey	20	192			192	192	192	192											
	Extend 23-Monterey	15	256							256										
	Extend 24-Divisadero/23-Montery	10	384								384	384	384	384	384	384	384	384	384	384
		7.5	512																	
	Extend 48-Quintara (Replace 19)	15	256			256	256	256	256											
		10	384							384	384	384	384	384	384	384	384	384	384	384
		10	384				384	384	384											
	Extend 44-O'Shaughnessy	7.5	512							512										
		6.5	591								591	591	591	591	591	591	591	591	591	591
Candlestick Point	**Begin/Extend 28L/BRT**	8	480							480	480	480								
		5	768										768	768	768	768	768	768	768	768
			Available One-Way Capacity (by Year)	0	0	640	1024	1024	1024	2016	2579	2579	2867	2867	2867	2867	2867	2867	2867	2867
			Estimated Transit Demand (by Year)	23	23	189	336	651	658	895	981	1,013	1,303	1,570	1,570	1,570	1,570	1,570	1,570	1,570
			Capacity-to-Demand Ratio	0.00	0.00	3.39	3.05	1.57	1.56	2.25	2.63	2.55	2.20	1.83	1.83	1.83	1.83	1.83	1.83	1.83
			Two Way Capacity (by Year)	0	0	1280	2048	2048	2048	4032	5158	5158	5734	5734	5734	5734	5734	5734	5734	5734

Old Transit Phasing (December 2013)

		Frequency (min)	One-Way Capacity Serving Project Site (pax/hr)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Hunters Point	**Begin Hunters Point Express (HPX)**	20	192					192												
		12	320						320	320	320	320	320	320	320	320	320	320	320	320
	Extend 23-Monterey	15	256					256	256	256	256	256	256							
	Extend 24-Divisadero	10	384											384						
		7.5	512												512	512	512	512	512	512
	Extend 48-Quintara	15	256	256	256	256	256	256												
		10	384						384	384	384	384	384	384	384	384	384	384	384	384
	Extend 44-O'Shaughnessy	7.5	512					512												
		6.5	591						591	591	591	591	591	591	591	591	591	591	591	591
Candlestick Point	**Begin/Extend 28L/BRT**	8	480					480	480	480	480	480								
		5	768										768	768	768	768	768	768	768	768
			Available One-Way Capacity (by Year)	256	256	256	256	1696	2031	2031	2031	2031	2319	2447	2575	2575	2575	2575	2575	2575
			Estimated Transit Demand (by Year)	74	124	146	146	257	356	462	462	584	589	754	895	1013	1039	1051	1139	1139
			Capacity-to-Demand Ratio	3.46	2.06	1.75	1.75	6.60	5.71	4.40	4.40	3.48	3.94	3.25	2.88	2.54	2.48	2.45	2.26	2.26