



December 11, 2013

Mr. Chris Kern
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

Subject: DRAFT 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

Dear Chris:

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. Since that time, the Housing/R&D Variant (Variant 2A) has been advanced as the project. Since the certification of the EIR, a number of refinements have been proposed to Variant 2A. 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.

TRAVEL DEMAND

At buildout, the project will contain the same land uses, the same levels of transit service, and a comparable roadway grid as was assumed in the EIR for Variant 2A. The primary factors that influence the project's travel demand have not changed; therefore, the project's travel demand forecasts as described in the EIR remain valid for conducting this assessment.

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 originally conceived and described in the EIR. However, the original 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. The revised phasing proposed for the project will likely 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. The acceleration of construction in Candlestick Point is associated with demolition of Candlestick Park and construction of the Candlestick Point retail center and several blocks of housing surrounding the site. 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 modified Project compared to the original project is provided in **Appendix A**. Note that the comparison shown in the Appendix is for the 2010 Stadium Alternative and the 2013 Modified Project.

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 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 or 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 FIER 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.

Overall, at buildout, the modified Project will contain the same land uses, the same levels of transit service, and a comparable roadway grid as was assumed in the EIR for Variant 2A. The primary factors that influence the Project's travel demand have not changed; therefore, the modified Project's travel demand forecasts for buildout conditions will be identical to those described in the EIR.

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. Minor 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 to better accommodate transit, bicyclists, and on-street parking based on recent SFMTA design guidance for travel lane widths. Specifically, changes fall into one of several categories. The categories of modifications, and their potential for creating new impacts, are discussed below:

- **Establish consistent design principles.** The revisions reflect recent direction from SFMTA regarding cross-section dimensions for various street components, such as width of parking lanes, width of travel lanes, and width of bicycle lanes. While there have been some refinements to specific lane dimensions, all auto and transit travel lanes will continue to be within a range of 10-12 feet, consistent with the range of widths analyzed in the original EIR. Parking lanes will be 8-feet wide, increasing to 9-feet when adjacent to Class II bicycle lanes, which is also within the range of between 7-9 feet for on-street parking included in the original EIR. Class II bicycle lanes will be 6-feet wide, except when



- adjacent to (9-foot wide) on street parking, in which case they will be 5-feet wide. Bicycle lanes between 5-6 feet wide are consistent with the range of bicycle lanes included in the original EIR. Sidewalks have been made more consistent such that they are nearly always either 12- or 15-feet wide, which is consistent with the range of sidewalk widths described in the original EIR.
- **Establish a more consistent BRT alignment.** The modifications also reflect direction from SFMTA regarding converting the BRT from a two-way, side-running alignment to a center-running alignment, where possible, to be consistent with other priority transit corridors in San Francisco. Generally, this affects the Hunters Point Shipyard site more than the Candlestick Point site. However, within Candlestick Point, adjacent to the wedge park, the BRT and auto lanes have been re-oriented so that both auto lanes are on the east side of the wedge park and both BRT lanes are on the west side of the wedge park, essentially offering similar benefits as center-running BRT, since the BRT lanes would essentially be operating in an exclusive roadway. Overall, SFMTA has determined that center-running BRT tends to be quicker and more reliable because left-turns at intersections, which conflict with the center-running BRT, can more easily be controlled by special signal phasing than right turns, which conflict with the side-running proposal. As a result, the changes should, if anything, result in a faster and more reliable BRT route.
 - **Reorientation of some streets in Candlestick Point.** The original transportation network analyzed in the EIR had one east-west residential street in Candlestick Point parallel to and between Ingerson Avenue and Gilman Avenue and one street parallel to and between Egbert Street and Gilman Avenue. The original plan had north-south mid-block breaks (also referred to as alleys) on either side of Earl Street (parallel to Earl Street). However, with the proposed changes to the BRT-only roadway on the west side of the wedge park, the east-west streets would dead-end at the wedge park, potentially forcing autos to turn into the BRT lanes. To respond, the functionality of these streets was switched, essentially converting these two east-west residential streets into mid-block breaks and the two north-south mid-block breaks described above into residential streets. Overall, this swap will result in approximately the same level of auto capacity in the area and is anticipated to result in only minor, localized changes to auto circulation.
 - **Revised bicycle network.** The project modifications include a new cycletrack facility that closes 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 101¹ replacing the originally-proposed Class II bicycle lanes on both sides of the street. Refer to the bicycle impacts section of this letter for further discussion. Illustrations of the revised configuration of the first phase of Harney Way are provided in **Appendix B**. In other locations Class II bicycle lanes have been proposed to be converted to Class III routes. Refer to the discussion of bicycle impacts for further discussion of the changes to the bicycle network.

- **Yosemite Slough Bridge.** The bridge width is currently proposed to be four feet wider than the previously-approved non-stadium alternative, but substantially narrower than the approved stadium alternative, and therefore, within the range of bridge widths considered in the EIR. The additional four feet will accommodate bicycle and pedestrian circulation on both sides of the bridge and will accommodate maintenance vehicles on both sides of the bridge. Overall, the additional width will provide more space for bicycles and pedestrians, and better allow for maintenance to occur with minimal disruption to BRT service.
- **Reorientation of Street Grid in Hunters Point South.** Streets in the Hunters Point South neighborhood have been re-oriented to allow for the BRT route to penetrate the center of the neighborhood at the intersection of Crisp Avenue / Fischer Street. This should, if anything, further promote the use of transit from the Hunters Point South neighborhood. Overall, the size and density of the street grid in Hunters Point South is similar to what was originally approved in the EIR for Variant 2A - Housing, and therefore, transportation capacity is expected to be similar.

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 Arellous Walker Drive – that does affect vehicular capacity at buildout.

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.



Currently, Arelious Walker Drive is a short roadway between Gilman Avenue and Carroll Avenue that provides access to parking areas for Candlestick Park stadium. As previously proposed in the CP/HPS Phase II redevelopment plan and analyzed in the EIR, Arelious Walker Drive would be extended south to Harney Way and north to Carroll Avenue after the demolition of Candlestick Park. It would serve as one of the primary auto arterial streets both into and through the Candlestick Point site. As approved, Arelious Walker Drive would have two travel lanes, a bicycle lane and on-street parking on the east side (northbound) of the street and three travel lanes, a bicycle lane and on-street parking on the west side (southbound) of the street. The sidewalk on the east side was proposed to be 22 feet to allow for the addition of a third northbound lane in the future, should traffic conditions warrant. The intersections of Arelious Walker Drive/Gilman Avenue and Arelious Walker Drive/Harney Way would both be signalized as part of the project.

One of the proposed modifications to the Project is to narrow the ultimate cross section of Arelious Walker Drive to include only two travel lanes and no on-street parking and no Class II bicycle lane in each direction (i.e., a travel lane was removed from the southbound side of the street and more conventional sidewalks have been proposed on each side of the street, and on-street parking and bicycle lanes have been eliminated). The bicycle lanes have been replaced by a two-way cycle track running through the heart of the project along Harney Way (see bicycle impacts section for more discussion). Two-way Bus Rapid Transit (BRT) lanes would be provided between Egbert Street and Carroll Avenue.

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 CP/HPS Phase II, 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. The intersections of Arelious Walker Drive/Gilman Avenue and Arelious Walker Drive/Harney Way were included in the analysis.

Below, **Table 1** summarizes the intersection LOS for both intersections at full project buildout with the original Arelious Walker Drive configuration and with the proposed change to the ultimate configuration (i.e., two through lanes in each direction instead of three). As shown, with the

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.



proposed change to the ultimate configuration, both study intersections would operate within the City's LOS D threshold at full project buildout conditions. Detailed intersection LOS calculations are included in **Appendix C**.

TABLE 1: INTERSECTION OPERATIONS – ARELIIOUS WALKER DRIVE

Intersection	Arelious Walker/Gilman				Arelious Walker/Harney Way			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay ²	LOS ²	Delay ²	LOS ²	Delay ²	LOS ²	Delay ²	LOS ²
Original Arelious Walker Drive Configuration at Buildout	30	C	36	C	22	C	41	D
Revised Arelious Walker Drive Configuration at Buildout	33	C	50	D	22	C	41	D

Notes:

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

Source: Fehr & Peers, 2009 and 2013.

Therefore, because travel demand would be consistent with what was described in the EIR, and there would be no changes to auto capacity associated with project refinements, other than the change described above, which would not result in additional significant impacts, the EIR's conclusions for Impacts TR-2 through TR-16, remain unchanged from what was described 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.

Timing of Traffic Improvements

Although, for purposes of assessing transportation impacts, the modified Project will be essentially the same as evaluated in the EIR at buildout, the project development phasing has changed. The phasing of traffic improvements was set forth in the *Infrastructure Plan – Candlestick Point Development and Hunters Point Shipyard Phase 2 Development*, August 3, 2010 (Infrastructure Plan). An analysis of the revised 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 from the Infrastructure Plan are proposed to better respond to land use phasing. As shown in **Table 2**, all 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. 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 vehicular capacity along the streets, so in terms of assessing traffic impacts, this modification is not material.

Figures 1 – 4, attached, illustrate the auto access routes that would be available based on the modified 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.

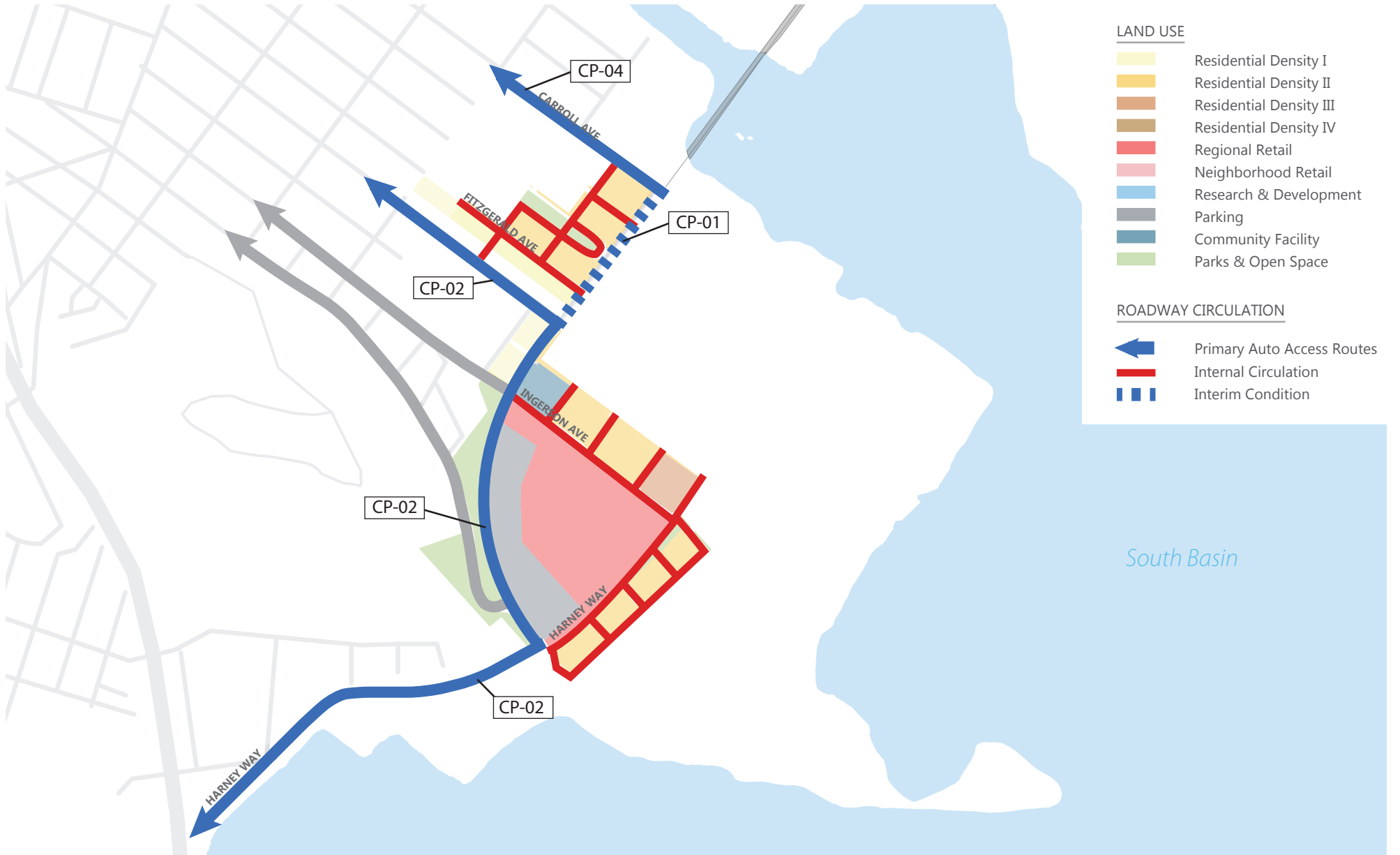
Within Major Phase 1 in Candlestick Point, the development will occur in five sub-phases, CP-01 through CP-05. CP-01 includes construction of 325 residential dwelling units on the Alice Griffith site, which will generate approximately 100 PM peak hour auto trips, based on the methodology described in the EIR. As part of this sub-phase, a portion of Arelious Walker will be 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 would be constructed. During this initial period, this segment of Arelious Walker would provide 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 would be consistent with and would support the final configuration of Arelious Walker Drive. The interim configuration of Arelious Walker Drive is shown in **Appendix D**.

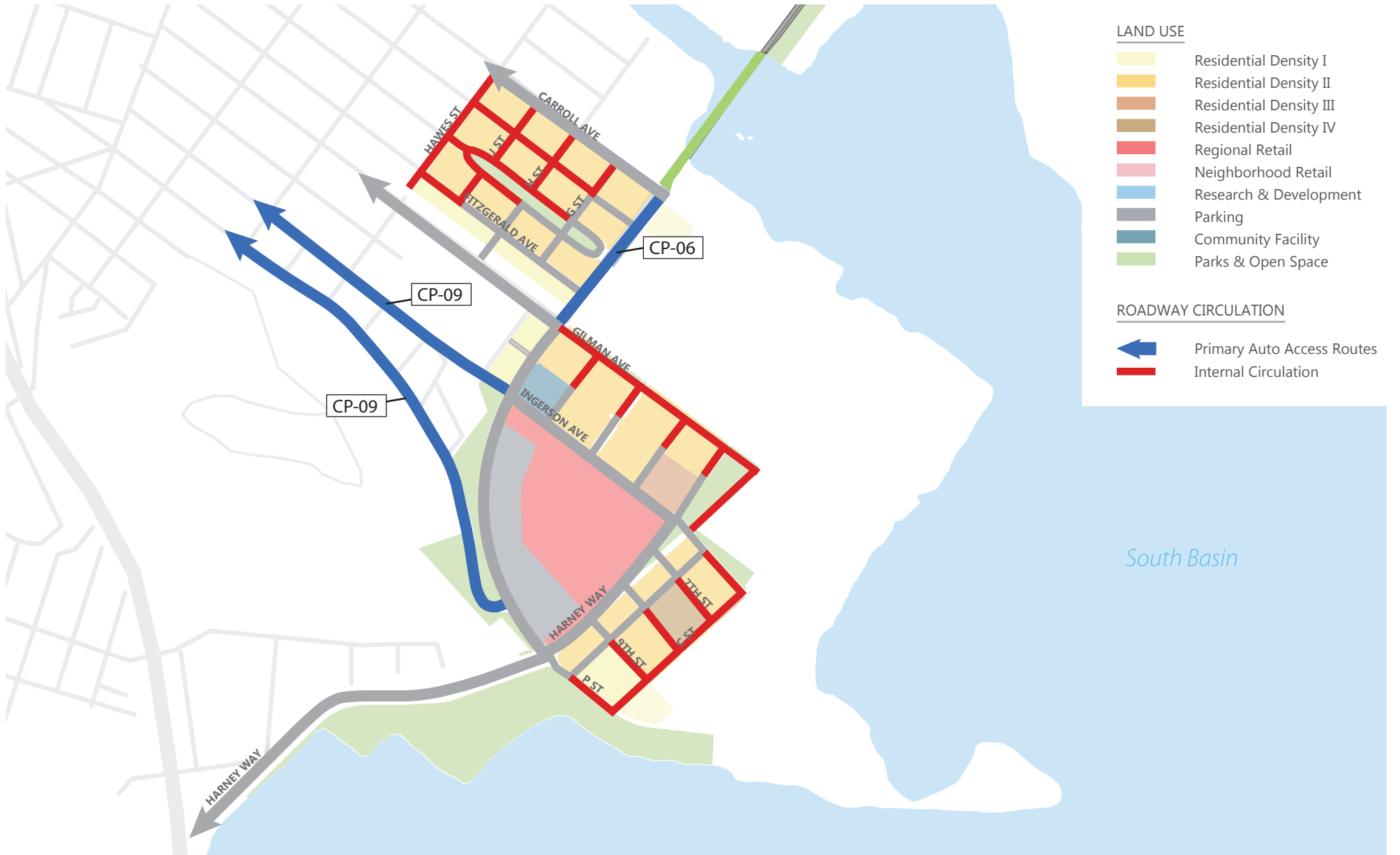


TABLE 2 - PROJECT STREET SEGMENT IMPROVEMENTS - CANDLESTICK POINT

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
Arelious Walker Drive, Carroll Avenue to Gilman Avenue	Interim Two-Lane Condition (See Appendix D)	N/A		No	CP-01 (Adjacency)
	Ultimate Condition (See description above)	No	Implementation of BRT	Yes	CP-06 (Approximately 3,500 PM Peak Hour Vehicle Trips) 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 Appendix B)	Yes	3,537 PM Peak Hour Vehicle Trips or Implementation of BRT ^c	No	CP-02 (Adjacency)
	Long-Term (See Appendix B)	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-09
Ingerson Avenue, Arelious Walker Drive to Third Street	Resurface and Restripe	No	Demolition of Candlestick Park	No	CP-09
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-04 (Approximately 3,200 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	HP-06 (Reconstruction of Crisp Avenue) ^f

- 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.
- 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.
- Based on trip rates by land use used in the EIR for Variant 2A – Housing Variant.
- As summarized in the project's Infrastructure Plan.
- 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.
- Although improvements to Ingalls Street were proposed as part of the Candlestick Point development, they, along with improvements to Thomas Avenue and Griffith Street will not be necessary until development levels at Hunters Point Shipyard necessitate the provision of a southern access roadway via Crisp Avenue. Until this time, there will not be a complete route to connect Candlestick Point and the Hunters Point Shipyard and these roadway improvements offer no meaningful benefit.





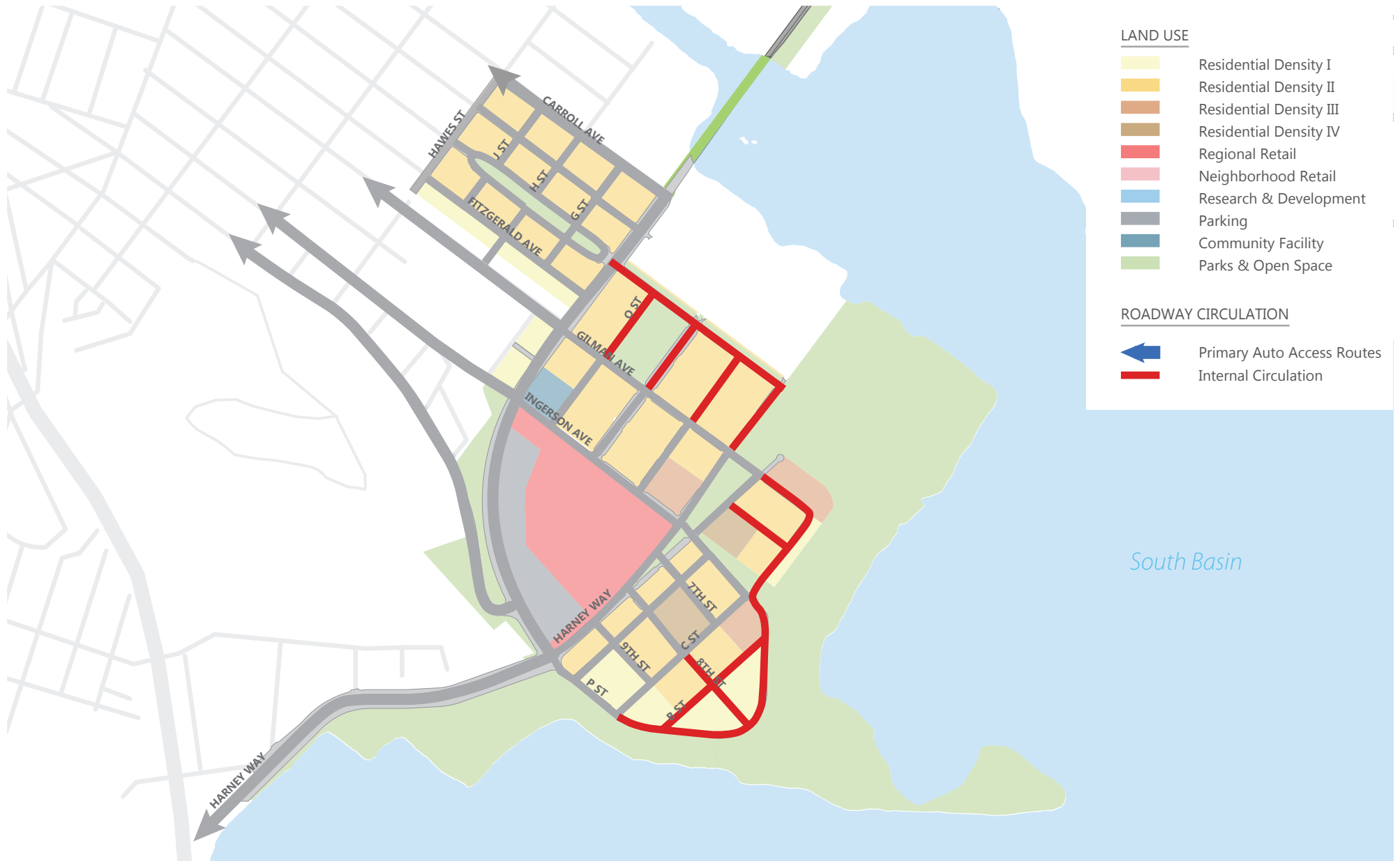
LAND USE

- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

ROADWAY CIRCULATION

- Primary Auto Access Routes
- Internal Circulation









As proposed, providing only one travel lane in each direction along Arelious Walker Drive should be adequate for this small number of units expected as part of CP-01, and will essentially serve 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.

Sub-phase CP-02 would develop the 635 ksf regional retail center, 150 ksf of office space, a 220-room hotel, 280 additional residential units, and possibly a 75 ksf arena/performance venue. 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. Additionally, Gilman Avenue, between Arelious Walker and Third Street would be reconfigured to provide two travel lanes, on-street parking, and 12-foot sidewalks on both sides of the street.

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. 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 is proposed to Mitigation Measure MM TR-16 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. Mitigation Measure MM TR-16 is proposed to be modified as follows:

MM TR-16 Widen Harney Way as shown in Figure 5 in the Transportation Study. Prior to issuance of the ~~grading~~occupancy permit for ~~Development Phase 1 of the Project, Candlestick Point Sub-Phase CP-02,~~ the Project Applicant shall widen Harney Way as shown in Figure 5 in the Transportation Study, with the modification to include a two-way cycletrack, on the southern portion of the project right of way. Prior to the issuance of grading permits for Candlestick Point Major Phases 2, 3 and 4, the Project Applicant shall fund a study to evaluate traffic conditions on Harney Way and determine whether additional traffic associated with the next phase of development would result in the need to modify Harney Way to its ultimate configuration, as shown in Figure 6 in the



Transportation Study, unless this ultimate configuration has already been built. This study shall be conducted in collaboration with the SFMTA, which would be responsible for making final determinations regarding the ultimate configuration. The ultimate configuration would be linked to intersection performance, and it would be required when study results indicate intersection LOS at one or more of the three signalized intersection on Harney Way at mid-LOS D (i.e., at an average delay per vehicle of more than 45 seconds per vehicle). If the study and SFMTA conclude that reconfiguration would be necessary to accommodate traffic demands associated with the next phase of development, the Project Applicant shall be responsible to fund and complete construction of the improvements prior to occupancy of the next phase.

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 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.

Prior to opening of CP-04, the first three subphases would generate about 3,200 vehicle trips, which is approximately the trigger point identified in the project's Infrastructure Plan that would require improvements to the auto route around the Yosemite Slough, that includes Carroll



Avenue, Ingalls Street, Thomas Avenue, and Griffith Avenue. The analysis conducted for the Infrastructure Plan 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 Infrastructure Plan 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 very little development in the Hunters Point Shipyard and substantially more development in Candlestick Point than originally anticipated. As a result, there is likely to be little auto demand for travel between the Hunters Point site and US 101 or between the Candlestick Point and Hunters Point Shipyard sites, making the auto route around Yosemite Slough less critical at such an early stage. Regardless, improvements to Carroll Avenue between Arelious Walker Drive and Ingalls Street are still proposed to be completed as part of CP-04, generally consistent with the Infrastructure Plan triggers, because development at Candlestick Point will still increase demand for east-west travel to the greater Bayview neighborhood. However, improvements to Ingalls Street, Thomas Street, and Griffith Avenue which primarily serve to connect the Hunters Point Shipyard development with the Bayview neighborhood, Candlestick Point, and US 101, will be constructed at a later point, when development levels in the Hunters Point Shipyard development warrant (refer to next section, which discusses timing of improvements for Hunters Point Shipyard for more detail).

Finally, although improvements associated with Carroll Avenue are currently proposed to be constructed prior to occupancy of Subphase CP-04 based on the original Infrastructure Plan analysis, if subsequent technical analysis can demonstrate that because of the location and types of development proposed, improvements to Carroll Avenue are not required until later in the development phasing, at the mutual agreement of the Environmental Review Officer and the Project Sponsor, and with the appropriate addenda to the EIR, the timing may be further modified.

The remaining auto capacity enhancements on Arelious Walker Drive, between Gilman Avenue and Carroll Avenue would be constructed prior to occupancy of the first sub-phase in Major Phase 2 (CP-06). At the end of Major Phase 1 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 3** below, and therefore, no significant impacts would occur as a result of providing this interim condition through Major Phase 1. Detailed LOS calculations are provided in **Appendix C**.

**TABLE 3: INTERIM INTERSECTION OPERATIONS –
ARELIOUS WALKER DRIVE**

Intersection	Arelious Walker/Gilman	
	Delay ²	LOS ²
Interim Condition at completion of Major Phase 1	44	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. As shown in **Figures 2 – 4**, subsequent Major Phases 2 through 4, respectively, 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 Infrastructure Plan improvement phasing requirements are proposed to better respond to land use phasing. As shown in **Table 4**, 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.



TABLE 4 - 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-06 or Based on Transit Phasing
Thomas Avenue, Ingalls Street to Griffith Street	Resurface and Restripe, Streetscape Amenities	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP) ^a	Yes	HP-06 (Reconstruction of Crisp Avenue)
Griffith Street, Thomas Street to Palou Street	Resurface and Restripe, Streetscape Amenities	Yes	Reconstruction of Crisp Avenue	Yes	HP-06 (Reconstruction of Crisp Avenue)
Innes Avenue, Donahue Street to Earl Street	Resurface and Restripe, Streetscape Amenities	Yes	1,000 PM Peak Hour Vehicle Trips	No	HP-01
Crisp Avenue, Palou Avenue to Fischer Street (Diagonal Route)	Resurface, Restripe, Realign	No	Adjacency	No	HP-06 (Adjacency) or Based on Transit Phasing
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-01

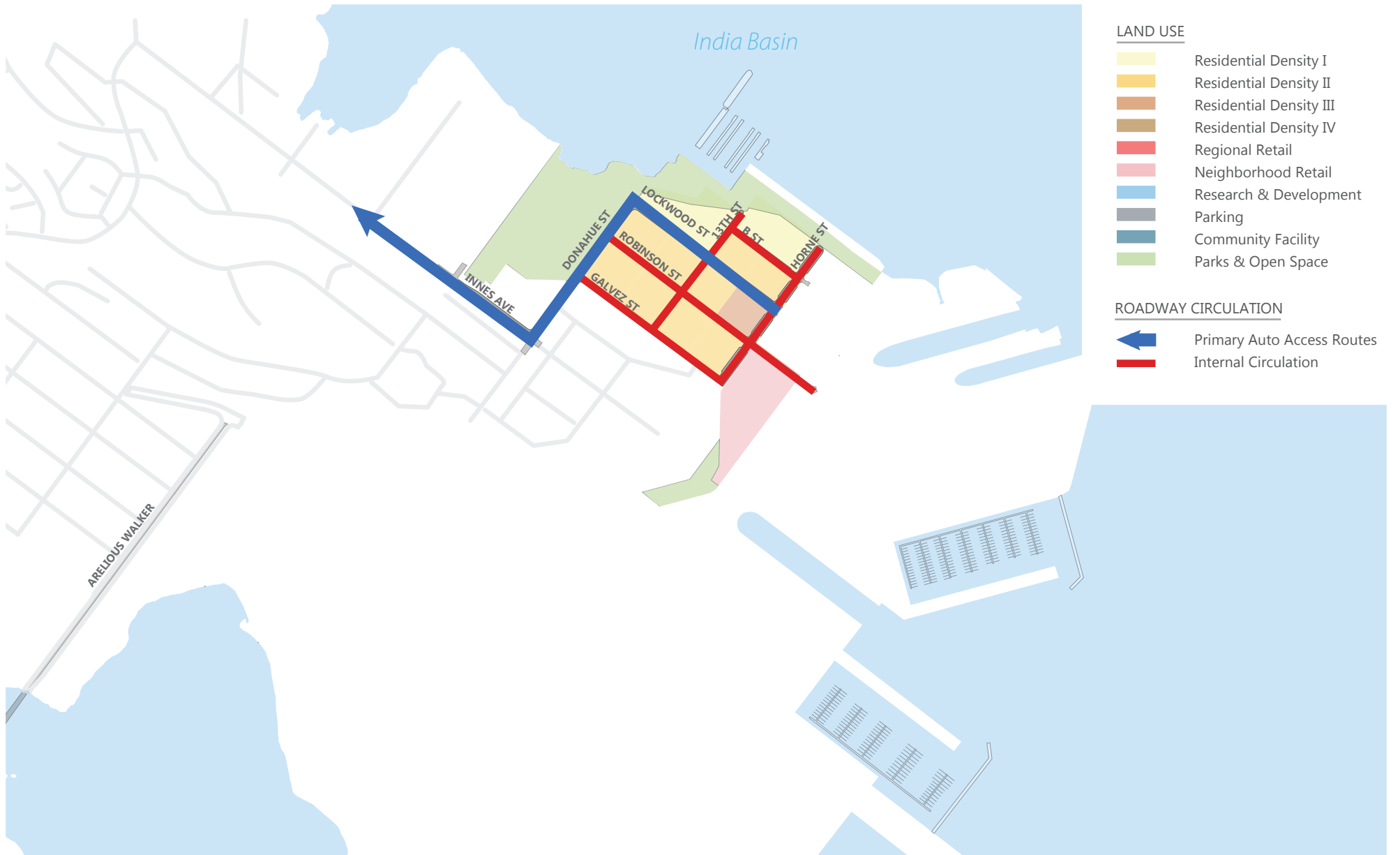
a. Combined total from CP and HP

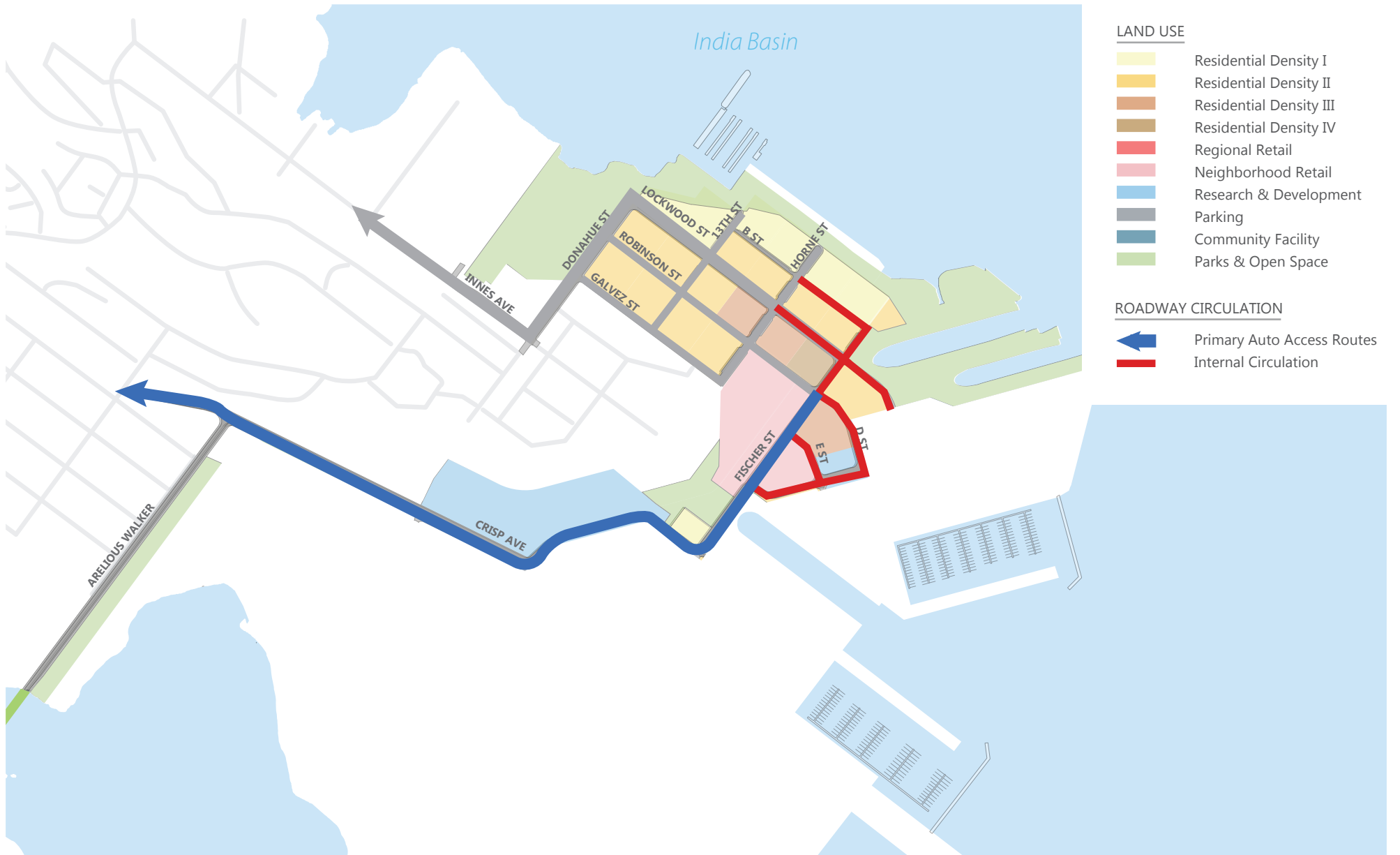
b. Based on trip rates by land use used in the EIR for Variant 2A – Housing Variant.

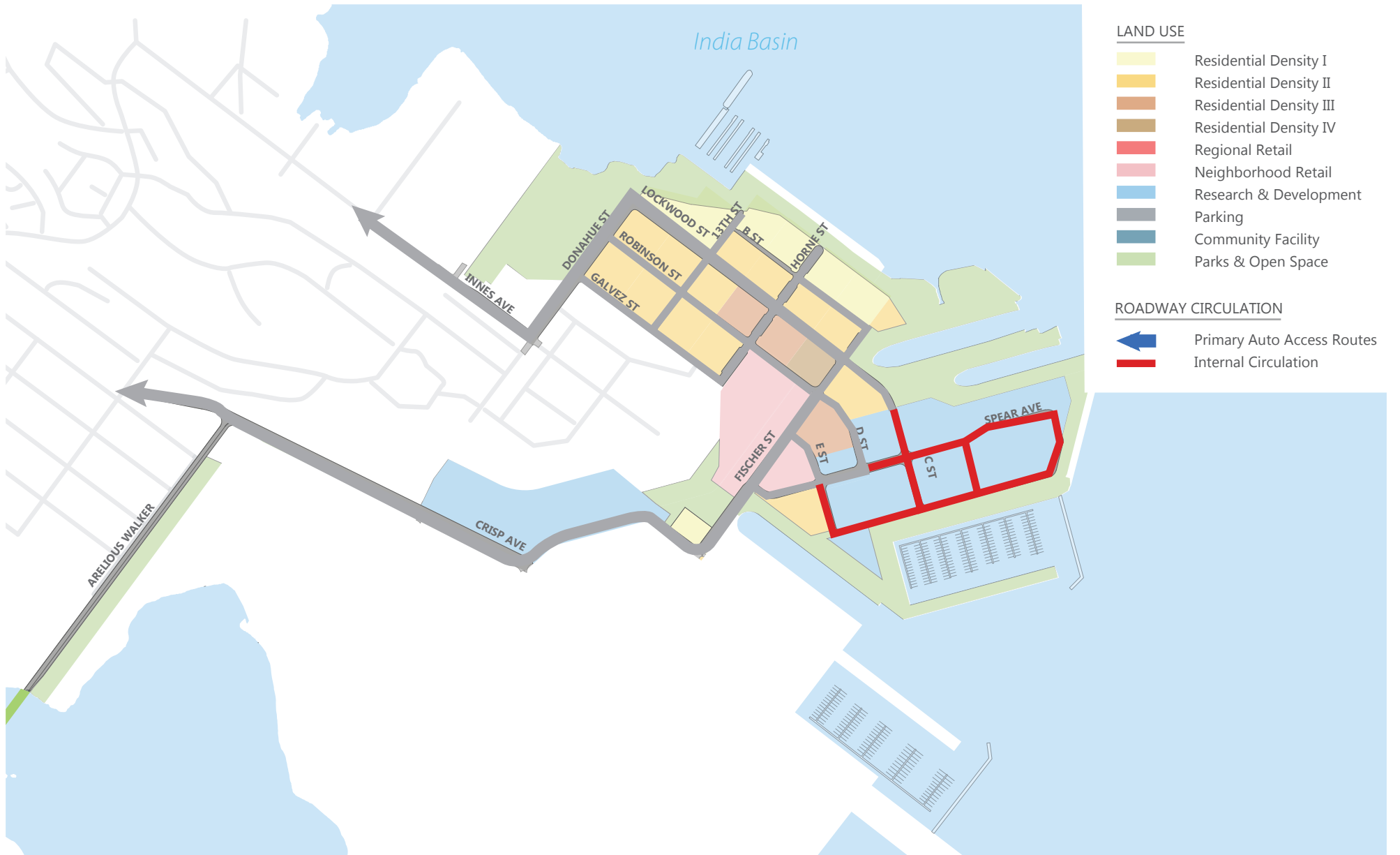
c. As summarized in the project's Infrastructure Plan.

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.

Figures 5 – 8 show the development of land use and roadway infrastructure for Major Phases 1 – 4 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, Donohue Street and Innes Avenue, would be constructed and connected to the HPS North area as part of Major Phase 1. These improvements would be constructed as part of Subphase CP-01, prior to any new trips generated by development in the Hunters Point Shipyard site. This access route accounts for approximately 2/3 of the total auto capacity of the HPS site and will be adequate to serve the development proposed as part of Major Phase 1 in Hunters Point Shipyard, due to its relatively large portion of the total planned auto capacity and its proximity to 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 to Donohue Street and Innes Avenue.







LAND USE

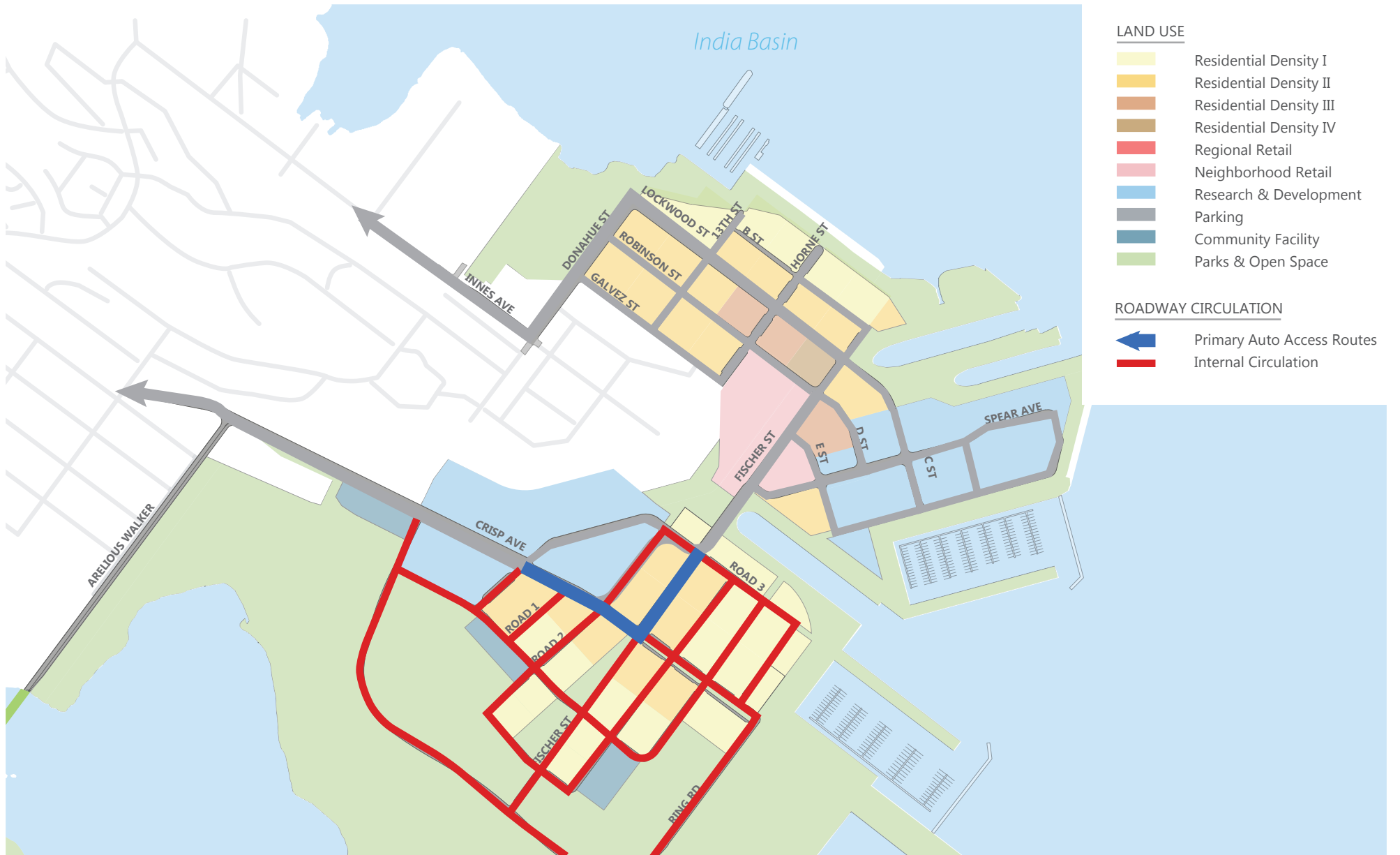
- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

ROADWAY CIRCULATION

- Primary Auto Access Routes
- Internal Circulation



Not to Scale



LAND USE

- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

ROADWAY CIRCULATION

- Primary Auto Access Routes
- Internal Circulation



Not to Scale



Figure 6 illustrates that the second major auto access route, Crisp Road and Palou Avenue, would be constructed as part of Major Phase 2 in Hunters Point Shipyard. These improvements would be constructed as part of Subphase CP-06, the first development site to be constructed within the southern half of the Hunters Point Shipyard site. This means that 100 percent of the planned auto ingress/egress capacity for the HPS site would be constructed and fully operational before any trips associated with Major Phase 3 in Hunters Point Shipyard are generated, when only approximately 40 percent of the total auto trips associated with the full site buildout would be generated. **Figures 7 and 8** illustrate that 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, similar to Candlestick Point, the major pieces of auto infrastructure will be constructed as part of Major Phases 1 and 2 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 a result, no new 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, and the modified Project is not expected to substantially increase the severity of significant impacts compared to what was described in the FIER, and therefore, no new mitigation measures are required.

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:



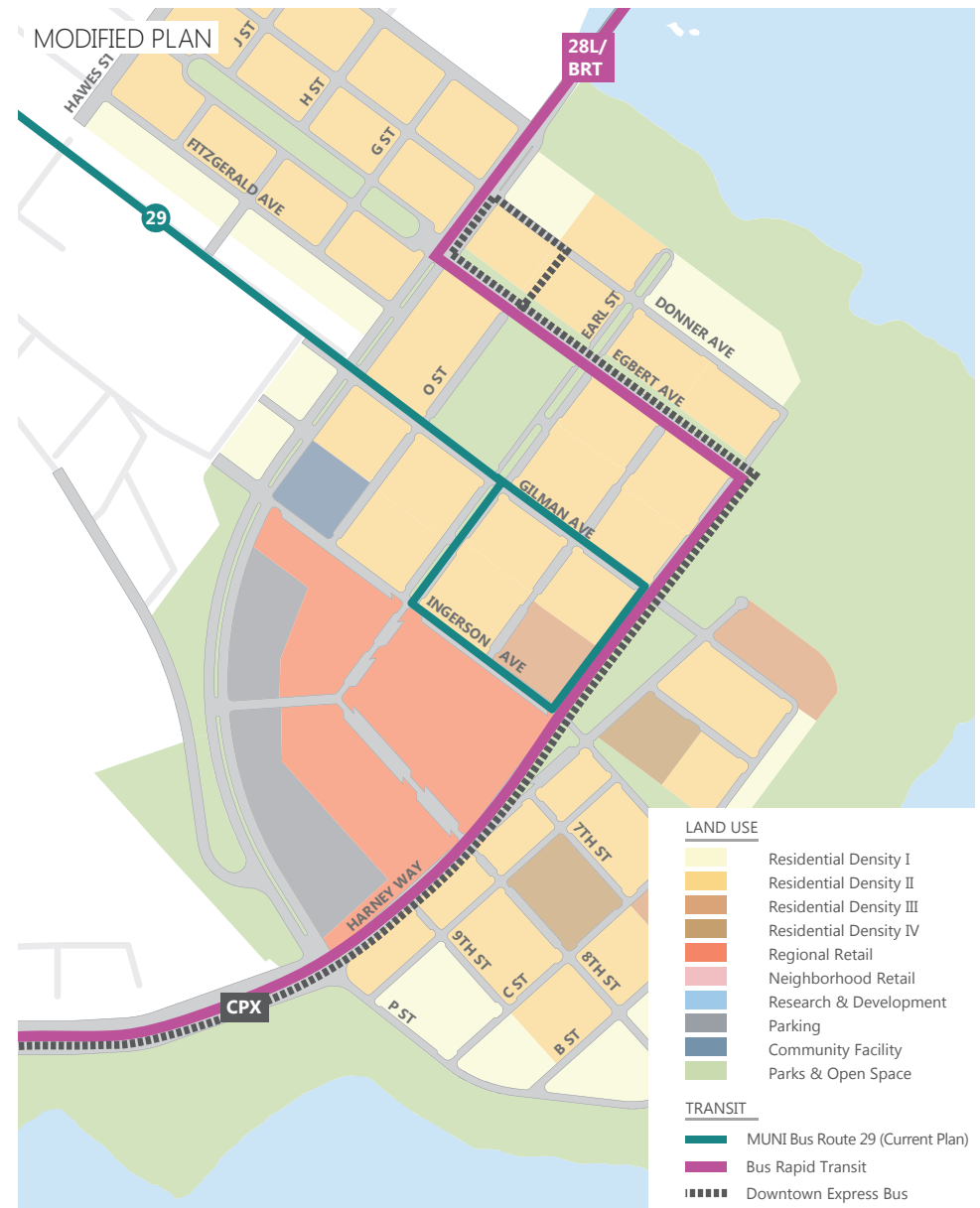
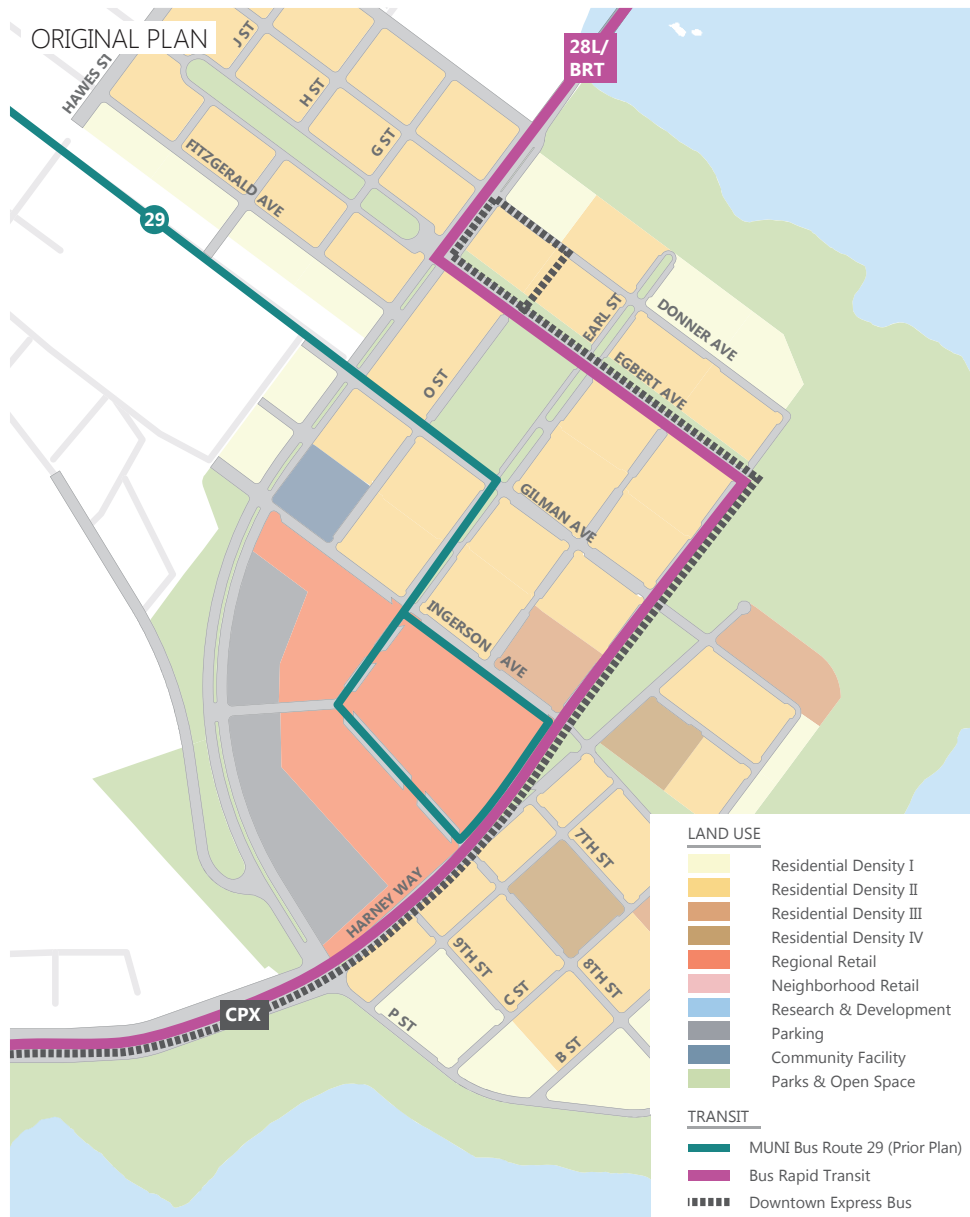
- Transit travel times should be monitored throughout the course of project buildout to determine whether Project-generated traffic is decreasing transit travel speeds.
- If speeds are decreasing, travel time reduction measures should be implemented on the affected corridors. These measures typically 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.

Similar to traffic impacts, the modified Project's transit impacts at buildout as described in Impacts TR-17 through TR-30 will be identical to what was described in the EIR, 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 one-block shift of the Hunters Point Shipyard Transit Center.

Figure 9 illustrates the proposed change to the 29 Sunset routing within Candlestick Point. The original project called for the 29 Sunset to circulate within the Candlestick Point retail center. The revised proposal calls for the 29 Sunset to continue to serve the front of the retail center along Ingerson Avenue, but instead of circulating within the retail center, the route would circulate around the development blocks to the north, so that the 29 Sunset provides more direct service to the high-density residential buildings proposed near the intersection of Gilman Avenue and Harney Way. This minor routing change will, if anything, increase the project's transit mode share by bringing transit service closer to more residential units while continuing to provide direct "front-door" service to the retail center.



Not to Scale



Figure 10 illustrates the proposed changes to routes serving the Hunters Point Shipyard. The changes involve moving the Hunters Point Transit Center one block to the north. The 28L BRT route and the 24 Divisadero would travel an additional block 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. 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 28L BRT and the 24 Divisadero) would travel along Crisp Avenue into the approximate center of Hunters Point South, instead of around the northern perimeter. By providing service into the center of the Hunters Point South, if anything, transit will be more accessible to surrounding development, and transit mode share would, if anything, increase slightly.

Because transit mode share is likely to be only slightly affected by the proposed modifications in CP and HP, the proposed modifications will not likely result in additional significant impacts beyond those identified in the EIR under buildout conditions.

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.

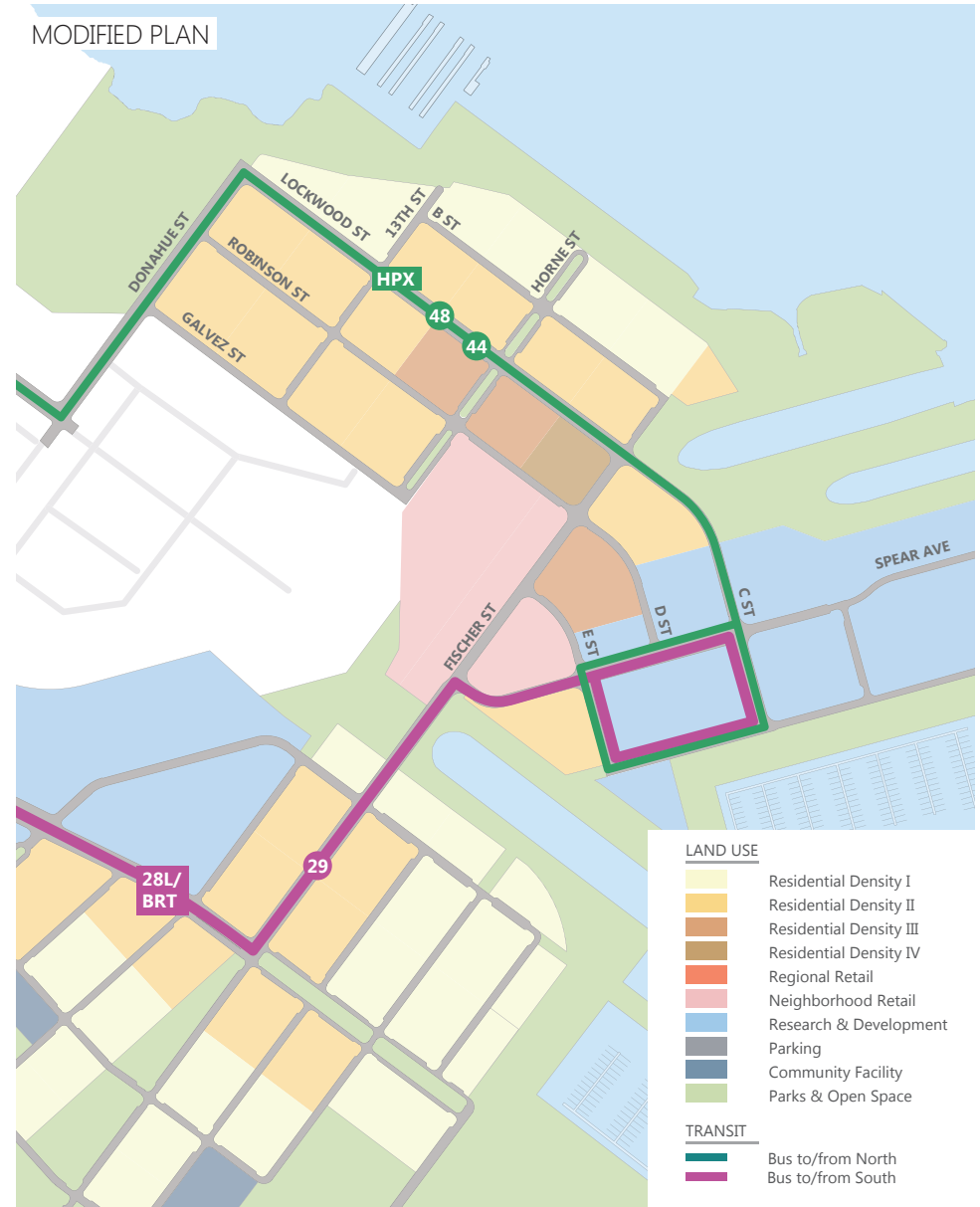
Similar to the Project's roadway infrastructure, the Project's transit network was proposed to be implemented at various levels throughout the development as described in the Transit Operating Plan. As a result of proposed changes to the development phasing, the transit phasing has been modified in order 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 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

ORIGINAL PLAN



MODIFIED PLAN





The original and revised transit phasing are shown in **Table 5. Appendix E** 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 original plan and the modified plan. 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 original and modified project, combined with engineering judgment to account for the unique development phasing currently proposed.

To serve the retail center, the 29 Sunset would be extended to the retail center and its frequency would be increased from 10 minutes to its ultimate frequency of 5 minutes. However, because of the substantial amount of development proposed in early phases of the modified project compared to the original project, and the different types of land uses to be constructed initially (i.e., a heavier focus on retail in the early phases than originally anticipated), SFMTA has indicated that operating the other routes ultimately planned to serve Candlestick Point, including the CPX Candlestick Point Express and the 28L BRT route, is not possible in the near term. The CPX Candlestick Point Express is not likely to be particularly effective for non-residential uses, which account for the majority of travel-demand generating uses in the early phases of development in Candlestick Point. Similarly, the 28L BRT would not be desirable in early years because the infrastructure connecting it to Geneva Avenue to the west would not be in place.

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



TABLE 5: TRANSIT PHASING

Route	Frequency	Original Transit Operating Plan		Proposed Revisions	
		Major Phase ^a	Approx. Year	Major Phase ^a / Subphase	Approx. Year
Hunters Point Shipyard					
Hunters Point Express (HPX)	20	1	2017	2 / HP-04	2023
	12	1	2019	2 / HP-05	2024
23 Monterey	15	1	2017	2 / HP-04	2023
24 Divisadero	10	2	2023	3 / HP-09	2029
	7.5	2	2025	3 / HP-12	2030
48 Quintara	15	1	2015	1 / HP-01	2019
	10	1	2019	2 / HP-05	2024
44 O'Shaughnessy	7.5	1	2017	2 / HP-04	2023
	6.5	1	2019	2 / HP-05	2024
Candlestick Point					
56 Rutland ^b	15	N/A	N/A	1 / CP-02	2017
Private Shopping Center Shuttle ^b	7.5	N/A	N/A	1 / CP-02	2017
Candlestick Point Express (CPX)	20	2	2021	N/A	N/A
	15	2	2022	2 / CP-06	2020
	10	3	2027	3 / CP-14	2030
29 Sunset	10	2	2021	N/A	N/A
	5	2	2022	1 / CP-02	2017
Routes Serving Both Sites					
28L/BRT (Includes Construction of Yosemite Slough Bridge)	8	2	2021	2 / CP-07 and HP-04 ^c	2023
	5	2	2022	3 / CP-12 and HP-07 ^d	2028
T Third	6	2	2020	No Change - Not triggered by project development	
	5	3	2025		

Notes:

- The original Transit Operating Plan contemplated only three Major Phases of development. The revised phasing breaks the development into four Major Phases each for Candlestick Point and Hunters Point Shipyard.
- Temporary until initiation of CPX and/or BRT
- Respective sub-phases in CP and HP that reach 20% buildout of Major Phase 2
- Respective sub-phases in CP and HP that initiate Major Phase 3

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



Figures 11 and 12 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. The figures compare this information for the original project (the red line) and the modified project (the blue line). It is important to note that the graphs compare the one-way transit capacity in terms of seats per hour with the two-way transit demand. Thus, since the transit capacity to demand ratio is greater than 1.0 at all times, even if all transit trips were traveling in a single direction (all inbound or all outbound), there would be enough transit capacity serving the project site at all times to accommodate the demand. Note also that the information provided for the original project is based on the Stadium Alternative, because year-by-year development phasing was not developed for other Alternatives and Variants. As a result, at buildout, the modified transit service appears to provide slightly less transit service than the original project, when actually, the difference is simply the difference between the Stadium Alternative and Non-Stadium Variant 2a – Housing. **Appendix E** 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 5**, formed the basis for **Figures 11 and 12**.

The figures illustrate that with the proposed changes in development and transit phasing, the level of transit service proposed throughout the development process relative to the types of development anticipated will remain at a similarly robust level as was originally contemplated throughout development and at Project buildout. **Figure 11** illustrates that with the revised development schedule and revised transit phasing, the level of transit service relative to demand will remain similar to or greater than the original project at buildout, which means the transit will remain an attractive option for travelers in the area.

Figure 12 illustrates that once substantial development begins to occur in Hunters Point, the level of transit service relative to demand will actually exceed what was anticipated in the original project, based on the original development and transit implementation phasing until approximately year 2030. After that, the modified project appears to provide less transit service relative to demand than the original project is because the “original” project shown is the stadium alternative and the modified alternative is the Non-Stadium Alternative Variant 2A – Housing, which provides the same level of transit service with slightly higher demand than the Stadium Alternative. As a result, transit service will remain an equally attractive option in Hunters Point under the modified project development and transit phasing as was under the original phasing.

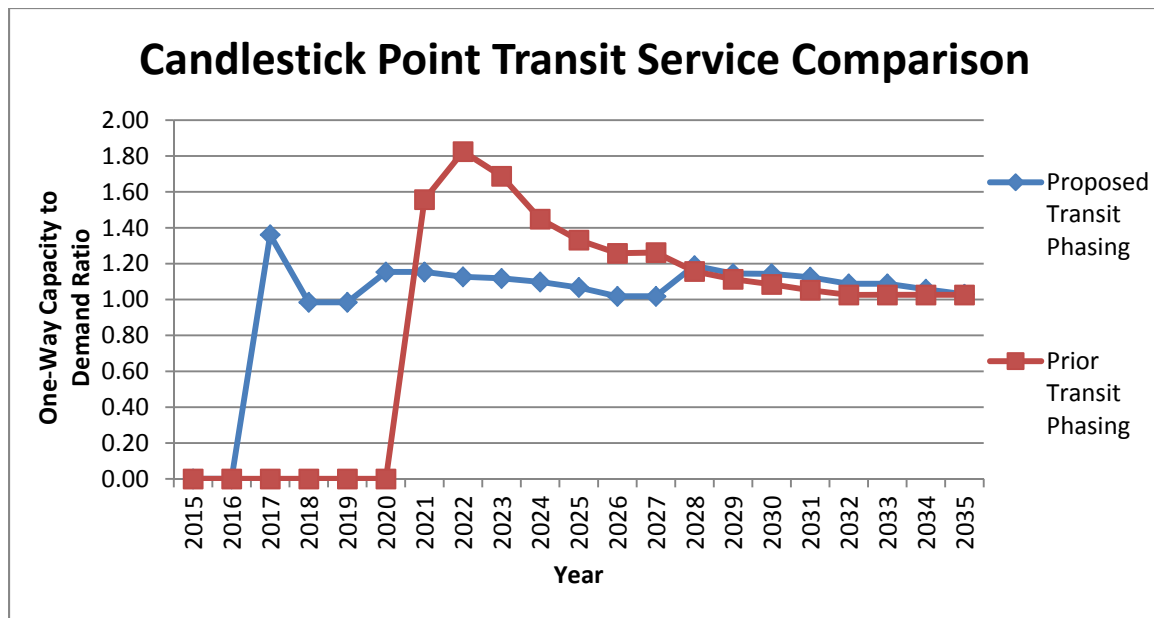


Figure 11 – Comparison of Transit Service Relative to Demand during Project Buildout at Candlestick Point

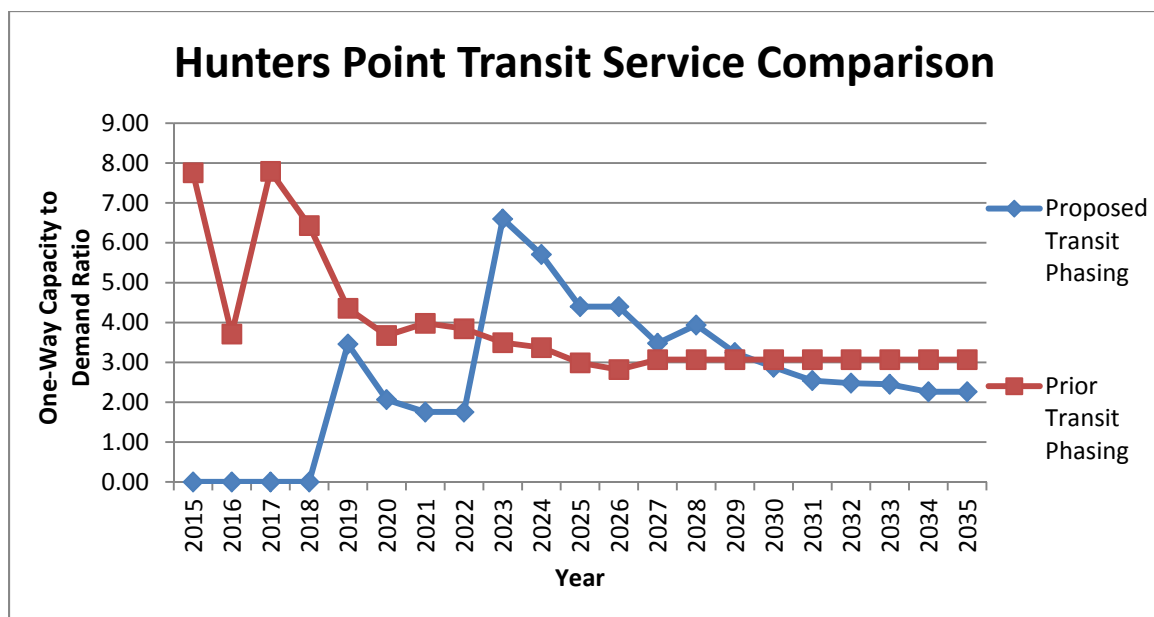


Figure 12 – Comparison of Transit Service Relative to Demand during Project Buildout at Hunters Point Shipyard



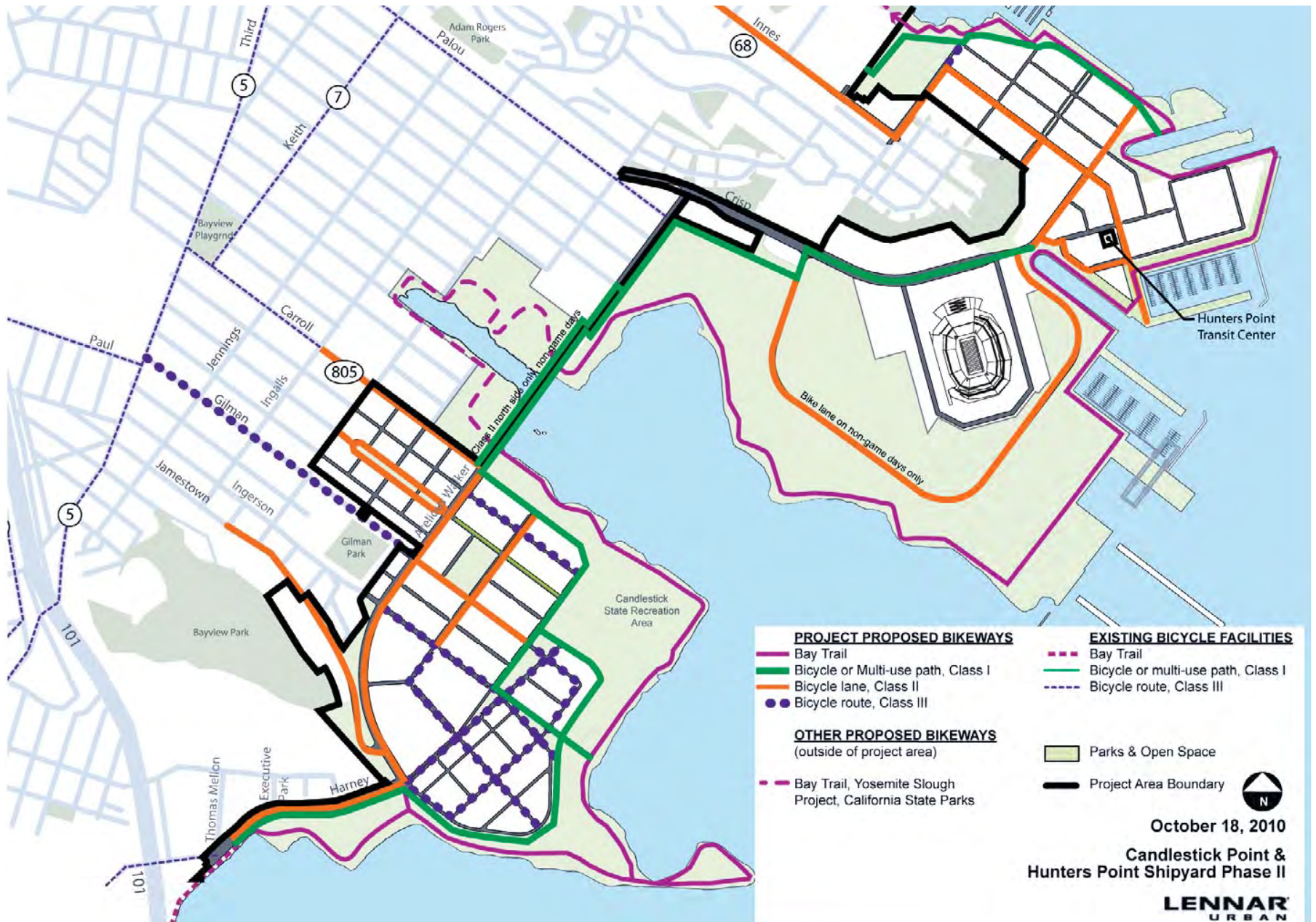
Therefore, transit capacity will be adequate to serve the expected demand, and the mode split (i.e., the percentage of trips made by transit) should remain similar, meaning that there will not be additional significant transit impacts beyond those described in the EIR, nor will the modified Project substantially 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 three "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.

As shown in **Figures 13 and 14**, the modified Project includes refinements to the proposed bicycle network. The changes include replacing the Class II facilities on Arellous Walker Drive with a new, separated, two-way Class I bicycle facility that travels through the heart of the project, and more directly connects the CP and HP project sites. The original bicycle network included Class II facilities on Arellous Walker Drive that connected from the Yosemite Slough Bridge to Harney Way, essentially the only route connecting one end of the Candlestick Point site to the other. The original project also included Class II facilities on Harney Way adjacent to the retail center and the wedge park north of Ingerson Avenue. But, between Ingerson Avenue and Arellous Walker Drive, only Class III facilities were provided, which meant that no dedicated facilities would be provided through the retail core of the project.





LAND USE

- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

BIKE

- | Proposed Route | Existing Route |
|---|--|
| Cycletrack | Bike Class III |
| Bike Class I | Bay Trail |
| Bike Class II | |
| Bike Class III | |
| Bay Trail | |





The proposed refinements to the bicycle network would replace the Class II facilities on Arelious Walker with a new Class I two-way cycletrack that travels through the wedge park and the retail center of the Candlestick Point site. The cycletrack will be fully separated from auto traffic, will travel along a route with fewer intersection conflicts, and will provide a flatter topographic route. As a result, it will likely be more desirable to commuters and recreational cyclists, alike. The cycletrack would continue north through the Hunters Point Shipyard site to the Hunters Point transit center and south along Harney Way toward US 101, where ultimately it could be connected to the Bay Trail and/or other regional facilities. When fully-constructed, the new cycletrack facility will provide a dedicated, two-way, Class I facility connecting the Hunters Point Shipyard and Candlestick Point sites to each other and to regional bicycle and transit facilities. Arelious Walker Drive would retain a Class III designation.

In addition, Class II bicycle lanes would be removed from Earl Street to narrow the street and to maximize the space available for public parks on the west side of the street. The narrower street would shorten crossing distances for pedestrians and as a result, improve pedestrian safety and further encourage walking as a primary mode of transportation (reducing demand for transit and auto travel). Earl Street would retain a Class III designation. Given the low speeds anticipated for this street enabled by the narrowing of the street, provision of corner and mid-block bulbouts, and enhanced "sharrow" pavement markings, bicycles will be more comfortably able to share the travel lane with autos.

The revised bicycle network also corrects an error on the proposed bicycle network figure from the Transportation Study and the EIR. Both documents depicted a proposed Class II bicycle facility on Gilman Avenue, between Arelious Walker and Third Street, although the project actually proposed a Class III facility. The project's Transportation Plan bicycle network figure (which is shown in Figure 13) correctly depicted this corridor as a Class III route, and the Final EIR noted that the Draft EIR had incorrectly represented this corridor on the figure. Thus, this is not a project change, but rather a correction of a graphical error.

Class III bicycle route designations have been removed from several streets within the CP South neighborhood, and from Donner Avenue in the CP North neighborhood. Regardless of the bicycle designation, these streets are designed to minimum widths allowed by various City departments in order to encourage traffic to drive slowly. Further, the density of the street grid and dispersion of auto parking throughout the area means that traffic volumes will be dispersed through the network and therefore, relatively low on any individual street. In these cases, the



designation of Class III routes was deemed unnecessary because all of the streets in this part of the project would function well for bicyclists to share travel lanes with traffic. Thus, while a comparison of the graphics may suggest substantial changes to the bicycle network, particularly in the CP South neighborhood due to the removal of a number of Class III routes, the only physical difference on these streets associated with a removal of the Class III designation is that "sharrow" pavement markings and bicycle route signage would not be provided; the change in designation would not affect the physical amount of space allocated for bicycles, nor would it substantially affect the interactions between bicycles and autos.

Changes to the bicycle network in Hunters Point Shipyard include extension of a one-block Class II facility on Horne Street from its originally proposed northern terminus at Robinson to the end of Horne Street, where it will intersect with the Bay Trail. Additionally, Class II bicycle lanes have been added throughout the refined HP South neighborhood.

Finally, the proposed Class II bicycle lanes on Innes Avenue would have resulted in removal of on-street parking along Innes Avenue in the India Basin neighborhood. In response to neighbor concerns regarding the loss of on-street parking, the refined project no longer includes these Class II bicycle lanes, but instead retains the existing Class III bicycle route. However, this does not constitute a new significant impact as Class III bicycle routes are standard treatments provided throughout San Francisco as part of the City's bicycle network. As part of a separate project, the City is investigating opportunities to provide a parallel Class I facility on Hudson Street; however, this is not required as mitigation for project impacts and is being pursued separately.

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. One sidewalk, the west side of Arelious Walker, between Ingerson Avenue and Harney Way, on the opposite side of the street from the retail center, would be reduced to 7 feet; however, this change is expected to be adequate because there are no land uses on the west side of this street, and the design meets minimum ADA requirements. This dimension is analogous to the original project's proposed sidewalk width of 8 feet on the south side of Innes Avenue, near Donohue Street, which is also adjacent to a large hill with no fronting land uses.

Overall, the modified Project includes minor changes with respect to the pedestrian realm 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 in the EIR for Variant 2A - Housing. Specifically, the EIR identified that Variant 2A - Housing would include approximately 2,800 on-street parking spaces (roughly evenly split between Candlestick Point and Hunters Point Shipyard) and between zero and approximately 17,300 off-street spaces. Therefore, the EIR concluded there would be a range of between approximately 2,800 spaces and 20,000 spaces in the entire development area.

The modified Project would reduce on-street parking supply by approximately 450 spaces at Candlestick Point and by approximately 150 spaces at Hunters Point Shipyard. Although the range of off-street parking spaces constructed was projected to be between zero and 17,300 spaces, it is reasonable to expect that the project will build at least 600 off-street spaces, such that



with the loss of 600 on-street spaces, the modified Project will still contain between 2,800 spaces and 20,000 spaces. Therefore, since the modified Project will still provide parking within the range identified in the EIR, 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.

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 continue to include a potential arena/entertainment use near the Candlestick Point retail center. Nothing in the modified Project would substantially change the degree to which the arena use would generate travel demand or access the site, and therefore, the modified Project would not create any new significant impacts or substantially increase the severity of a significant impact compared to what was described in the EIR, and therefore no additional mitigation measures are required.

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 the same 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.

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

SF08-0407



APPENDIX A

Construction Activities by Phase

<div> <div>Table of Construction Comparison 2010 vs. 2013 (Draft TRC 12/04/2013)</div> <div>Construction Workers and Trucks by Phase</div> <div>Hunters Point Shipyard and Candlestick Point</div> </div>								
Project Area / Construction Phase	2010 Construction Duration	2010 Construction Years	2010 Daily Construction Workers	2010 Daily Construction Truck Trips	2013 Construction Duration	2013 Construction Years	2013 Daily Construction Workers	2013 Daily Construction Truck Trips
Hunters Point Shipyard								
Phase 1 - Site Preparation								
Abatement & Demo	2011 - 2015	1 - 5	10 - 63	8 - 48	2014 - 2020	1 - 7	0 - 66	0 - 104
Grading and Infrastructure	2013 - 2017	3 - 7	25 - 130	8 - 288	2014 - 2020	1 - 7	0 - 113	0 - 176
Phase 1 - Building Construction								
Structure/Rough in	2011 - 2016	1 - 6	18 - 100	8 - 32	2014 - 2021	1 - 8	0 - 58	0 - 48
Interior and Exterior Finishes	2011 - 2016	1 - 6	10-70	8 - 32	2014 - 2021	1 - 8	0 - 56	0 - 40
Phase 2 - Site Preparation								
Abatement & Demo	2016 - 2019	6 - 9	13 - 65	8 - 56	2018 - 2024	5 - 11	13 - 76	4 - 80
Grading and Infrastructure	2018 - 2021	8 - 11	38-100	96 - 224	2018 - 2024	5 - 11	25 - 111	8 - 208
Phase 2 - Building Construction								
Structure/Rough in	2016 - 2019	6 - 9	60 - 80	16 - 32	2022 - 2025	9 - 12	10 - 80	8 - 32
Interior and Exterior Finishes	2016 - 2019	6 - 9	25 - 83	16 - 40	2022 - 2025	9 - 12	10 - 55	4 - 24
Phase 3 - Site Preparation								
Abatement & Demo	2020 - 2023	10 - 13	13 - 35	8 -32	2024 - 2030	11 - 17	13 - 48	4 - 48
Grading and Infrastructure	2022 - 2025	12 - 15	35 - 60	24 - 40	2025 - 2030	12 - 17	25 - 95	4 - 80
Phase 3 - Building Construction								
Structure/Rough in	2021 - 2024	11 - 14	16 - 20	8 - 16	2026 - 2030	13 - 17	20 - 40	8 - 32
Interior and Exterior Finishes	2021 - 2025	11 - 15	25 - 35	8 - 16	2027 - 2031	14 - 18	10 - 35	4 - 24
Phase 4 - Site Preparation								
Abatement & Demo	2024 - 2028	14 - 18	13 - 28	8 - 32	2026 - 2033	17 - 20	13 - 185	4 - 200
Grading and Infrastructure	2026 - 2031	16 - 21	18 - 60	8 - 128	2027 - 2033	18 - 20	25 - 146	2 - 232
Phase 4 - Building Construction								
Structure/Rough in	None				2028 - 2034	15 - 21	18 - 76	8 - 64
Interior and Exterior Finishes	2026 - 2031	16 - 21	10-50	8 - 40	2028 - 2034	15 - 21	10 - 80	2 - 64
Candlestick Point								
Phase 1 - Site Preparation								
Abatement & Demo	2013 - 2015	3 - 5	10 - 13	8 - 16	2014 - 2017	1 - 4	13 - 57	4 - 72
Grading and Infrastructure	2013 - 2017	3 - 7	30 - 55	12 - 96	2014 - 2018	1 - 5	25 - 145	4 - 64
Phase 1 - Building Construction								
Structure/Rough in	2013 - 2016	3 - 6	14 - 18	8 - 16	2015 - 2018	2 - 5	18 - 100	8 - 64
Interior and Exterior Finishes	2013 - 2016	3 - 6	8 - 10	4 - 8	2015 - 2019	2 - 6	10 - 63	2 - 36
Phase 2 - Site Preparation								
Abatement & Demo	2016 - 2019	6 - 9	13 - 38	8 - 32	2018 - 2025	5 - 12	13 - 26	4 - 32
Grading and Infrastructure	2018 - 2021	8 - 11	30 - 93	8 - 32	2018 - 2025	5 - 12	25 - 85	4 - 20
Phase 2 - Building Construction								
Structure/Rough in	2016 - 2021	6 - 11	16 - 32	16 - 32	2019 - 2025	6 - 12	18 - 40	8 - 32
Interior and Exterior Finishes	2016 - 2021	6 - 11	10 - 33	8 - 20	2019 - 2026	6 - 13	10 - 46	2 - 20
Phase 3 - Site Preparation								
Abatement & Demo	2020 - 2023	10 - 13	10 - 38	4 - 50	2025 - 2031	12 - 18	13 - 31	4 - 24
Grading and Infrastructure	2022 - 2025	12 - 15	26 - 60	12 - 128	2025 - 2031	12 - 18	25 - 135	4 - 48
Phase 3 - Building Construction								
Structure/Rough in	2021 - 2025	11 - 15	40 - 100	16 - 48	2027 - 2031	14 - 18	18 - 80	8 - 32
Interior and Exterior Finishes	2021 - 2025	11 - 15	20 - 75	16 - 32	2027 - 2032	14 - 19	10 - 66	2 - 28
Phase 4 - Site Preparation								
Abatement & Demo	2024 - 2028	14 - 18	13 - 43	8 - 32	2031 - 2034	18 - 21	13 - 26	4 - 16
Grading and Infrastructure	2026 - 2030	16 - 20	30 - 135	16 - 52	2031 - 2034	18 - 21	25 - 50	4 - 16
Phase 4 - Building Construction								
Structure/Rough in	2024 - 2030	14 - 20	40 - 80	16 - 32	2033 - 2034	20 - 21	18 - 40	8 - 16
Interior and Exterior Finishes	2024 - 2031	14 - 21	30 - 90	16 - 48	2033 - 2035	20 - 22	10 - 56	4 - 32
Yosemite Slough Bridge	2015 - 2016	5 - 6	62 - 78	18- 24	2018 - 2020	5 - 7	62 - 78	16- 24
HPS Off-Site Improvements	2015 - 2017	5 - 7	24 - 30	8 - 12	2018 - 2025	5 - 12	30 - 60	8 - 24
CP Off-Site Improvements	2013 - 2018	3 - 8	24 - 30	8 - 12	2015 - 2023	2 - 10	30 - 56	8 - 24

Notes:

- 2010 data was derived from Table 90, Appendix A3 of the EIR, March 23, 2010
- 2013 Major Phase boundaries differ from 2010 boundaries; in addition, the 2010 project included the Stadium option.
- Values presented in Blue have been added to the 2010 column for completeness as they were not present in the original table in the Final EIR.
- The "Construction Years" column was added for reference purposes, please assume that the "2010" Year 1 is 2011 and the "2013" Year 1 is 2014.
- All worker and truck quantities are approximate, and subject to change pending final design.
- This table does not include trips associated with field management.
- Hunter Point Shipyard Phase 2 "Abatement and Demolition" and "Infrastructure and Grading" have been adjusted to a 2018 start date to accommodate the construction of the Yosemite Slough Bridge, and connecting roadways within HP-05 and HP-06 per the 2013 phasing.
- The main changes associated with Candlestick point relate to the Candlestick Stadium sub phase occurring earlier in the project then what was assumed in the 2010 schedule. This resulted in higher values in the early part of the project but lower in the later part.
- The main changes associated with Hunter Point Shipyard (HPS) relate to the Non Stadium variant, and having that sub phase divided down into several smaller development blocks. This resulted in higher average values across HPS due to construction being spread more evenly across the project years rather than a large amount of work all happening on the front end of the project as in the 2010 project schedule.

Table of Shoreline Improvement Daily Construction Workers Comparison 2010 vs. 2013 (Draft TRC 11/18/2013)						
Construction Workers by Phase and Yearly Barge Trips						
Hunters Point Shipyard and Candlestick Point						
Project Area / Construction Year	2010 Construction Duration (Months)	2010 Daily Construction Workers	2010 Yearly Barge Trips	2013 Construction Duration (Months)	2013 Daily Construction Workers	2013 Yearly Barge Trips
Hunters Point Shipyard						
2015 Shoreline	9	6 - 7	0			
2016 Shoreline	9	18 - 21	6			
2017 Shoreline	9	45 - 50	80			
2018 Shoreline	6	35 - 40	55			
2020 Shoreline				9	18 - 21	6
2021 Shoreline				9	18 - 21	6
2022 Shoreline	5	14 - 16	15	5	11 - 12	20
2023 Shoreline	5	14 - 16	15	9	21 - 24	40
2024 Shoreline				5	21 - 24	30
2025 Shoreline	10	14 - 16	10			
2026 Shoreline	9	42 - 48	40			
2027 Shoreline				3	7 - 8	8
2028 Shoreline				3	7 - 8	8
2029 Shoreline				9	21 - 24	40
2030 Shoreline				7	15 - 17	18
2031 Shoreline				11	22 - 25	28
2032 Shoreline				9	18 - 21	22
2033 Shoreline				2	5 - 7	2
2034 Shoreline				2	5 - 7	2
Candlestick Point						
2018 Shoreline	2	5 - 7	2			
2022 Shoreline	2	5 - 7	2			
2024 Shoreline	2	5 - 7	2	4	5 - 7	2
2026 Shoreline	4	5 - 7	3			
2027 Shoreline	4	5 - 7	3			
2028 Shoreline	6	5 - 7	4	2	5 - 7	2
2029 Shoreline				2	5 - 7	2
2030 Shoreline				4	5 - 7	2
2031 Shoreline				2	5 - 7	2
2033 Shoreline				2	5 - 7	2
2034 Shoreline				2	5 - 7	2

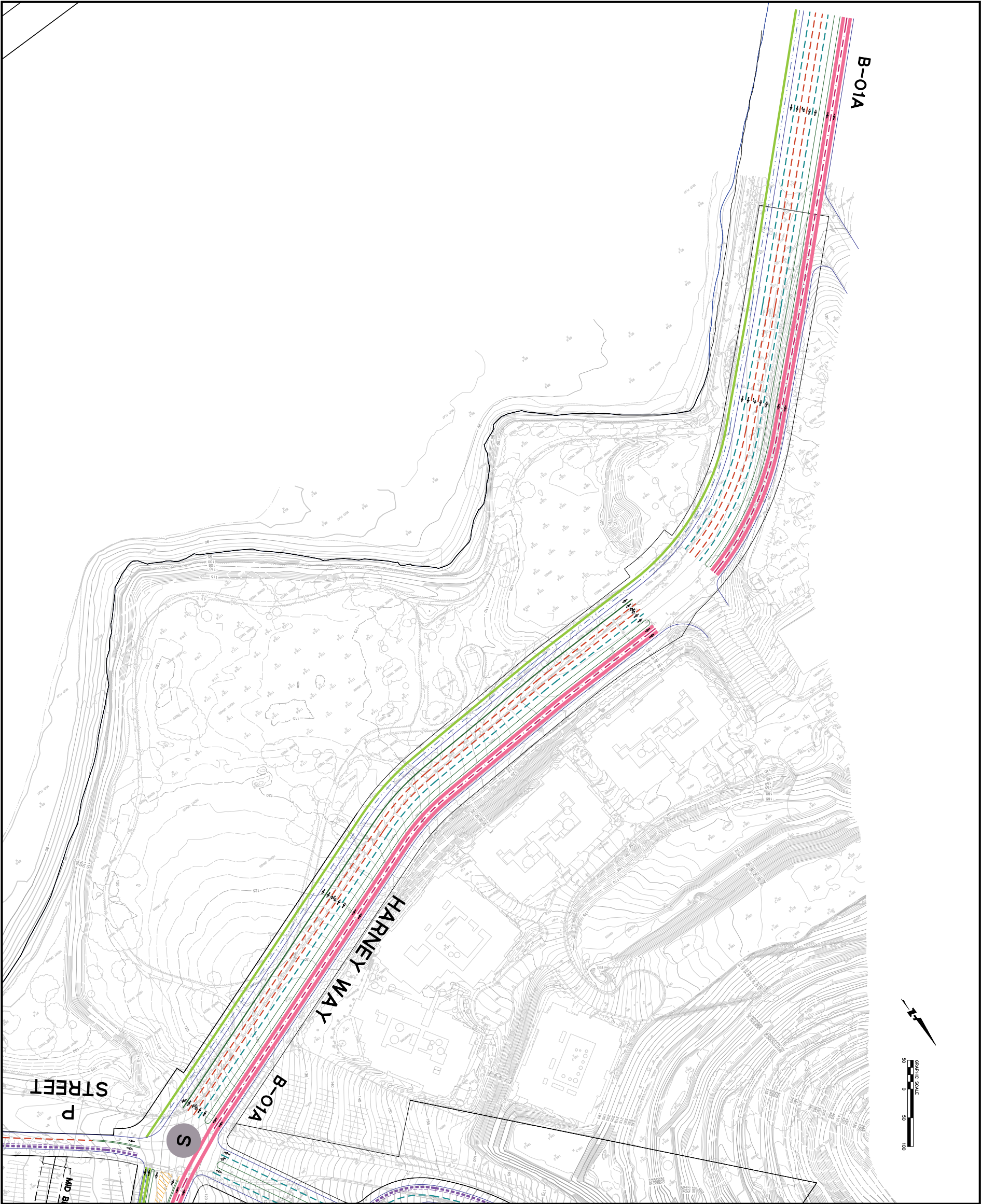
Notes:

1. 2010 data was derived from Table 91, Appendix A3 of the EIR, March 23, 2010
2. 2013 Major Phase boundaries differ from 2010 boundaries; in addition, the 2010 project included the Stadium option.
3. Spaces shaded in grey show that no shoreline work is anticipated for the construction year.
4. All worker and barge quantities are approximate, and subject to change pending final design.
5. Does not include work associated with field management.



APPENDIX B

Harney Way Initial and Long-Term Configuration



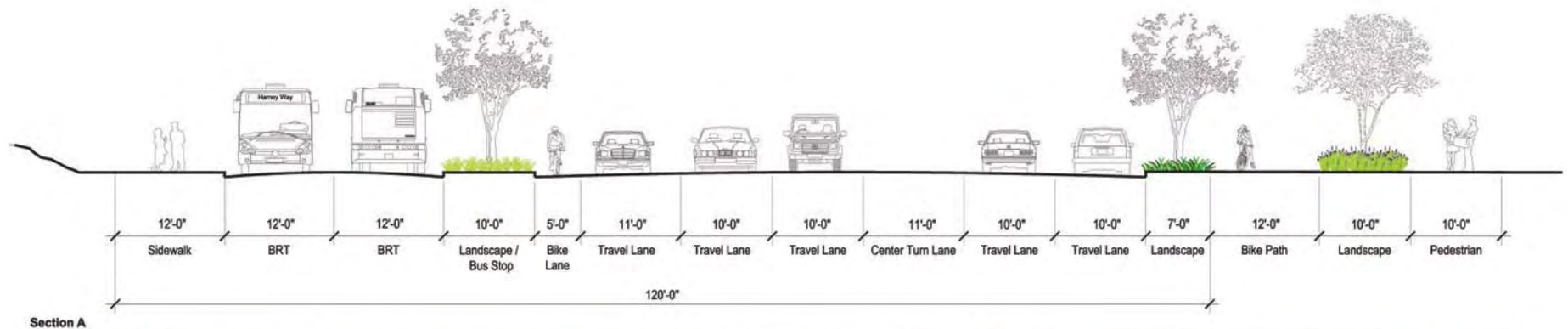
6 OF 10	Drawing Number: 6	Date 7/26/13	No.	Revisions
		Scale SEE DWG		
		Design JRK / HH		
		Drawn JRK		
		Approved TA		
		Job No 20110162		

CANDLESTICK POINT AND HUNTERS POINT SHIPYARD PHASE 2
HARNEY WAY
SAN FRANCISCO CALIFORNIA

**BKF**
ENGINEERS/SURVEYORS/PLANNERS

255 SHORELINE DRIVE, STE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)

Figure 10: Proposed Harney Way Potential Long-Term Configuration





APPENDIX C

Intersection LOS Calculations

ORIGINAL ARELIOUS WALKER DRIVE CONFIGURATION

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-----
Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.531
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      30.2
Optimal Cycle:        43          Level Of Service:          C
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 2    0    1    1    0          1    0    1    1    0          1    1    0    0    2          0    0    1!    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              320    360    10          70    360    310          340    60    330          10    40    40
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:           320    360    10          70    360    310          340    60    330          10    40    40
Added Vol:             0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:          0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           320    360    10          70    360    310          340    60    330          10    40    40
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:               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 Volume:            320    360    10          70    360    310          340    60    330          10    40    40
Reduct Vol:            0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           320    360    10          70    360    310          340    60    330          10    40    40
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
Final Vol.:            320    360    10          70    360    310          340    60    330          10    40    40
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900    1900    1900          1900    1900    1900          1900    1900    1900          1900    1900    1900
Adjustment:            0.90    0.93    0.93          0.93    0.87    0.87          0.94    0.94    0.73          0.92    0.92    0.92
Lanes:                 2.00    1.95    0.05          1.00    1.07    0.93          1.70    0.30    2.00          0.11    0.45    0.44
Final Sat.:            3432    3428    95          1769    1770    1524          3036    536    2786          193    773    773
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.09    0.11    0.11          0.04    0.20    0.20          0.11    0.11    0.12          0.05    0.05    0.05
Crit Moves:           ****          ****          ****          ****
Green/Cycle:           0.18    0.41    0.41          0.15    0.38    0.38          0.22    0.22    0.22          0.10    0.10    0.10
Volume/Cap:            0.53    0.26    0.26          0.26    0.53    0.53          0.50    0.50    0.53          0.53    0.53    0.53
Uniform Del:           37.5    19.7    19.7          37.3    23.9    23.9          34.0    34.0    34.2          42.9    42.9    42.9
IncremntDel:           0.9    0.1    0.1          0.5    0.4    0.4          0.5    0.5    0.9          3.2    3.2    3.2
InitQueueDel:          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:             38.4    19.8    19.8          37.9    24.3    24.3          34.5    34.5    35.1          46.1    46.1    46.1
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:            38.4    19.8    19.8          37.9    24.3    24.3          34.5    34.5    35.1          46.1    46.1    46.1
LOS by Move:           D    B    B          D    C    C          C    C    D          D    D    D
HCM2kAvgQ:              5    4    4          2    9    9          6    6    6          3    3    3
*****

```


Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #1034 Arelious Walker Dr / Gilman Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.772

Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 35.6

Optimal Cycle: 71 Level Of Service: D

Street Name: Arelious Walker Dr Gilman 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 Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 2 0 1 1 0 1 0 1 1 0 1 1 0 0 2 0 0 1! 0 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 570 580 10 110 680 160 390 130 550 10 30 80

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: 570 580 10 110 680 160 390 130 550 10 30 80

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 570 580 10 110 680 160 390 130 550 10 30 80

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: 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 Volume: 570 580 10 110 680 160 390 130 550 10 30 80

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 570 580 10 110 680 160 390 130 550 10 30 80

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

Final Vol.: 570 580 10 110 680 160 390 130 550 10 30 80

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.90 0.93 0.93 0.93 0.90 0.90 0.94 0.94 0.73 0.89 0.89 0.89

Lanes: 2.00 1.97 0.03 1.00 1.62 0.38 1.50 0.50 2.00 0.08 0.25 0.67

Final Sat.: 3432 3467 60 1769 2784 655 2692 897 2786 141 422 1125

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.17 0.17 0.17 0.06 0.24 0.24 0.14 0.14 0.20 0.07 0.07 0.07

Crit Moves: **** **** **** ****

Green/Cycle: 0.22 0.39 0.39 0.14 0.32 0.32 0.26 0.26 0.26 0.09 0.09 0.09

Volume/Cap: 0.77 0.43 0.43 0.43 0.77 0.77 0.57 0.57 0.77 0.77 0.77 0.77

Uniform Del: 36.9 22.5 22.5 39.1 30.9 30.9 32.4 32.4 34.5 44.4 44.4 44.4

IncrementDel: 5.0 0.2 0.2 1.2 3.5 3.5 0.8 0.8 5.2 20.8 20.8 20.8

InitQueueDel: 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: 41.9 22.7 22.7 40.2 34.4 34.4 33.2 33.2 39.7 65.2 65.2 65.2

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: 41.9 22.7 22.7 40.2 34.4 34.4 33.2 33.2 39.7 65.2 65.2 65.2

LOS by Move: D C C D C C C C D E E E

HCM2kAvgQ: 10 7 7 4 14 14 8 8 11 6 6 6

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-----
Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1029 Harney Way / Jamestown Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.565
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      22.3
Optimal Cycle:        45          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
Lanes:                 2    0    1    0          0    0    1    0    1          0    0    1!    0    1          0    0    0    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              230    300    0          0    480    60          100    0    360          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:           230    300    0          0    480    60          100    0    360          0    0    0
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           230    300    0          0    480    60          100    0    360          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:               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 Volume:            230    300    0          0    480    60          100    0    360          0    0    0
Reduct Vol:             0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           230    300    0          0    480    60          100    0    360          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
Final Vol.:            230    300    0          0    480    60          100    0    360          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    0.98    0.83          0.86    1.00    0.86          1.00    1.00    1.00
Lanes:                 2.00    1.00    0.00          0.00    1.00    1.00          0.36    0.00    1.64          0.00    0.00    0.00
Final Sat.:            3432    1862    0          0    1862    1583          581    0    2671          0    0    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.07    0.16    0.00          0.00    0.26    0.04          0.17    0.00    0.13          0.00    0.00    0.00
Crit Moves:           ****              ****              ****
Green/Cycle:           0.12    0.58    0.00          0.00    0.46    0.46          0.30    0.00    0.42          0.00    0.00    0.00
Volume/Cap:            0.56    0.28    0.00          0.00    0.56    0.08          0.56    0.00    0.32          0.00    0.00    0.00
Uniform Del:           41.6    10.8    0.0          0.0    19.9    15.4          29.2    0.0    19.2          0.0    0.0    0.0
IncremntDel:           1.8    0.1    0.0          0.0    0.9    0.0          0.9    0.0    0.1          0.0    0.0    0.0
InitQueueDel:          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:             43.5    10.9    0.0          0.0    20.8    15.4          30.1    0.0    19.3          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:            43.5    10.9    0.0          0.0    20.8    15.4          30.1    0.0    19.3          0.0    0.0    0.0
LOS by Move:           D    B    A          A    C    B          C    A    B          A    A    A
HCM2kAvgQ:              4    5    0          0    11    1          8    0    5          0    0    0
*****

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                        Level Of Service Computation Report
                2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1029 Harney Way / Jamestown Ave
*****
Cycle (sec):           100                Critical Vol./Cap.(X):           1.003
Loss Time (sec):       12 (Y+R=4.0 sec)    Average Delay (sec/veh):       41.1
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
Lanes:                2    0    0    1    0          0    0    1    0    1          0    0    1!    0    1          0    0    0    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:             450  950    0                0 1000    60                80    0    530                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:           450  950    0                0 1000    60                80    0    530                0    0    0
Added Vol:             0    0    0                0    0    0                0    0    0                0    0    0
PasserByVol:          0    0    0                0    0    0                0    0    0                0    0    0
Initial Fut:           450  950    0                0 1000    60                80    0    530                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:              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 Volume:           450  950    0                0 1000    60                80    0    530                0    0    0
Reduct Vol:           0    0    0                0    0    0                0    0    0                0    0    0
Reduced Vol:          450  950    0                0 1000    60                80    0    530                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
Final Vol.:           450  950    0                0 1000    60                80    0    530                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 0.98  0.83          0.85 1.00  0.85          1.00 1.00  1.00
Lanes:                2.00 1.00  0.00          0.00 1.00  1.00          0.23 0.00  1.77          0.00 0.00  0.00
Final Sat.:           3432 1862    0                0 1862  1583          373    0  2844                0    0    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.13 0.51  0.00          0.00 0.54  0.04          0.21 0.00  0.19          0.00 0.00  0.00
Crit Moves:          ****                      ****                      ****
Green/Cycle:          0.13 0.67  0.00          0.00 0.54  0.54          0.21 0.00  0.34          0.00 0.00  0.00
Volume/Cap:           1.00 0.77  0.00          0.00 1.00  0.07          1.00 0.00  0.54          0.00 0.00  0.00
Uniform Del:          43.5 11.4   0.0           0.0 23.2  11.2          39.3 0.0   26.4           0.0 0.0   0.0
IncremntDel:          43.2  2.9   0.0           0.0 29.2   0.0          37.2 0.0   0.5           0.0 0.0   0.0
InitQueueDel:         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:            86.7 14.3   0.0           0.0 52.5  11.3          76.5 0.0   26.9           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:           86.7 14.3   0.0           0.0 52.5  11.3          76.5 0.0   26.9           0.0 0.0   0.0
LOS by Move:          F    B    A            A    D    B            E    A    C            A    A    A
HCM2kAvgQ:            12    21    0            0    39    1            16    0    8            0    0    0
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REVISED ARELIOUS WALKER DRIVE CONFIGURATION

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.630
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      32.5
Optimal Cycle:        51          Level Of Service:          C
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 1  0  1  1  0          1  0  1  1  0          1  1  0  0  2          0  0  1! 0  0
-----|-----|-----|-----|
Volume Module:
Base Vol:              320  360    10          70  360    310          340  60  330          10  40  40
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:           320  360    10          70  360    310          340  60  330          10  40  40
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           320  360    10          70  360    310          340  60  330          10  40  40
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:               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 Volume:            320  360    10          70  360    310          340  60  330          10  40  40
Reduct Vol:             0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           320  360    10          70  360    310          340  60  330          10  40  40
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
Final Vol.:            320  360    10          70  360    310          340  60  330          10  40  40
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900 1900  1900          1900 1900  1900          1900 1900  1900          1900 1900  1900
Adjustment:            0.93 0.93  0.93          0.93 0.87  0.87          0.94 0.94  0.73          0.92 0.92  0.92
Lanes:                 1.00 1.95  0.05          1.00 1.07  0.93          1.70 0.30  2.00          0.11 0.45  0.44
Final Sat.:            1769 3428    95          1769 1770  1524          3036 536  2786          193 773  773
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.18 0.11  0.11          0.04 0.20  0.20          0.11 0.11  0.12          0.05 0.05  0.05
Crit Moves:           ****          ****          ****          ****
Green/Cycle:           0.29 0.44  0.44          0.17 0.32  0.32          0.19 0.19  0.19          0.08 0.08  0.08
Volume/Cap:            0.63 0.24  0.24          0.24 0.63  0.63          0.60 0.60  0.63          0.63 0.63  0.63
Uniform Del:           31.0 17.3  17.3          36.1 28.8  28.8          37.1 37.1  37.4          44.4 44.4  44.4
IncremntDel:           2.5  0.1  0.1          0.4  1.2  1.2          1.5  1.5  2.5          8.7  8.7  8.7
InitQueueDel:           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:             33.6 17.4  17.4          36.5 30.0  30.0          38.6 38.6  39.9          53.2 53.2  53.2
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:           33.6 17.4  17.4          36.5 30.0  30.0          38.6 38.6  39.9          53.2 53.2  53.2
LOS by Move:           C    B    B          D    C    C          D    D    D          D    D    D
HCM2kAvgQ:              9    4    4          2   10   10          6    6    6          4    4    4
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.949
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      49.6
Optimal Cycle:        100          Level Of Service:          D
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 1  0  1  1  0          1  0  1  1  0          1  1  0  0  2          0  0  1! 0  0
-----|-----|-----|-----|
Volume Module:
Base Vol:              570  580    10          110  680    160          390  130    550          10  30    80
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:           570  580    10          110  680    160          390  130    550          10  30    80
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           570  580    10          110  680    160          390  130    550          10  30    80
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:               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 Volume:            570  580    10          110  680    160          390  130    550          10  30    80
Reduct Vol:              0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           570  580    10          110  680    160          390  130    550          10  30    80
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
Final Vol.:            570  580    10          110  680    160          390  130    550          10  30    80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900 1900    1900          1900 1900    1900          1900 1900    1900          1900 1900    1900
Adjustment:            0.93 0.93    0.93          0.93 0.90    0.90          0.94 0.94    0.73          0.89 0.89    0.89
Lanes:                 1.00 1.97    0.03          1.00 1.62    0.38          1.50 0.50    2.00          0.08 0.25    0.67
Final Sat.:           1769 3467    60          1769 2784    655          2692 897    2786          141 422    1125
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.32 0.17    0.17          0.06 0.24    0.24          0.14 0.14    0.20          0.07 0.07    0.07
Crit Moves:           ****          ****          ****          ****
Green/Cycle:           0.34 0.44    0.44          0.16 0.26    0.26          0.21 0.21    0.21          0.07 0.07    0.07
Volume/Cap:            0.95 0.38    0.38          0.38 0.95    0.95          0.70 0.70    0.95          0.95 0.95    0.95
Uniform Del:           32.2 19.2    19.2          37.5 36.5    36.5          36.7 36.7    39.1          46.1 46.1    46.1
IncremntDel:           24.7 0.2    0.2          0.9 19.0    19.0          2.9 2.9    25.3          64.1 64.1    64.1
InitQueueDel:          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:             56.8 19.3    19.3          38.3 55.5    55.5          39.6 39.6    64.3          110.2 110 110.2
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:           56.8 19.3    19.3          38.3 55.5    55.5          39.6 39.6    64.3          110.2 110 110.2
LOS by Move:           E    B    B          D    E    E          D    D    E          F    F    F
HCM2kAvgQ:             22    6    6          3    18    18          9    9    14          7    7    7
*****

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                        Level Of Service Computation Report
                2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1029 Harney Way / Jamestown Ave
*****
Cycle (sec):          100                Critical Vol./Cap.(X):          0.565
Loss Time (sec):      12 (Y+R=4.0 sec)    Average Delay (sec/veh):      22.3
Optimal Cycle:        45                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
Lanes:                 2    0    0    1    0      0    0    1    0    1      0    0    1!    0    1      0    0    0    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              230    300    0            0    480    60            100    0    360            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:           230    300    0            0    480    60            100    0    360            0    0    0
Added Vol:              0    0    0            0    0    0            0    0    0            0    0    0
PasserByVol:           0    0    0            0    0    0            0    0    0            0    0    0
Initial Fut:           230    300    0            0    480    60            100    0    360            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:               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 Volume:            230    300    0            0    480    60            100    0    360            0    0    0
Reduct Vol:             0    0    0            0    0    0            0    0    0            0    0    0
Reduced Vol:           230    300    0            0    480    60            100    0    360            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
Final Vol.:            230    300    0            0    480    60            100    0    360            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    0.98    0.83        0.86    1.00    0.86        1.00    1.00    1.00
Lanes:                 2.00    1.00    0.00        0.00    1.00    1.00        0.36    0.00    1.64        0.00    0.00    0.00
Final Sat.:            3432    1862    0            0    1862    1583        581    0    2671            0    0    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.07    0.16    0.00        0.00    0.26    0.04        0.17    0.00    0.13        0.00    0.00    0.00
Crit Moves:           ****                      ****                      ****
Green/Cycle:           0.12    0.58    0.00        0.00    0.46    0.46        0.30    0.00    0.42        0.00    0.00    0.00
Volume/Cap:            0.56    0.28    0.00        0.00    0.56    0.08        0.56    0.00    0.32        0.00    0.00    0.00
Uniform Del:           41.6    10.8    0.0          0.0    19.9    15.4        29.2    0.0    19.2         0.0    0.0    0.0
IncremntDel:           1.8    0.1    0.0          0.0    0.9    0.0         0.9    0.0    0.1         0.0    0.0    0.0
InitQueueDel:          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:             43.5    10.9    0.0          0.0    20.8    15.4        30.1    0.0    19.3         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:            43.5    10.9    0.0          0.0    20.8    15.4        30.1    0.0    19.3         0.0    0.0    0.0
LOS by Move:           D    B    A            A    C    B            C    A    B            A    A    A
HCM2kAvgQ:              4    5    0            0    11    1            8    0    5            0    0    0
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1029 Harney Way / Jamestown Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          1.003
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      41.1
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
Lanes:                2    0    0    1    0        0    0    1    0    1        0    0    1!    0    1        0    0    0    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:             450    950          0          0    1000          60          80    0    530          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:           450    950          0          0    1000          60          80    0    530          0    0    0
Added Vol:             0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           450    950          0          0    1000          60          80    0    530          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:              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 Volume:           450    950          0          0    1000          60          80    0    530          0    0    0
Reduct Vol:           0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:          450    950          0          0    1000          60          80    0    530          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
Final Vol.:           450    950          0          0    1000          60          80    0    530          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    0.98    0.83    0.85    1.00    0.85    1.00    1.00    1.00
Lanes:                2.00    1.00    0.00    0.00    1.00    1.00    0.23    0.00    1.77    0.00    0.00    0.00
Final Sat.:           3432    1862          0          0    1862    1583    373    0    2844          0    0    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.13    0.51    0.00    0.00    0.54    0.04    0.21    0.00    0.19    0.00    0.00    0.00
Crit Moves:          ****              ****              ****
Green/Cycle:          0.13    0.67    0.00    0.00    0.54    0.54    0.21    0.00    0.34    0.00    0.00    0.00
Volume/Cap:           1.00    0.77    0.00    0.00    1.00    0.07    1.00    0.00    0.54    0.00    0.00    0.00
Uniform Del:          43.5    11.4    0.0    0.0    23.2    11.2    39.3    0.0    26.4    0.0    0.0    0.0
IncremntDel:          43.2    2.9    0.0    0.0    29.2    0.0    37.2    0.0    0.5    0.0    0.0    0.0
InitQueueDel:         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:            86.7    14.3    0.0    0.0    52.5    11.3    76.5    0.0    26.9    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:           86.7    14.3    0.0    0.0    52.5    11.3    76.5    0.0    26.9    0.0    0.0    0.0
LOS by Move:          F    B    A    A    D    B    E    A    C    A    A    A
HCM2kAvgQ:            12    21    0    0    39    1    16    0    8    0    0    0
*****

```


Interim Arelious Walker Configuration - End of Major Phase 1

MITIG8 - PP Variant 2A PM Sun Nov 24, 2013 19:51:14

Page 1-1

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-----
Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.821
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      43.5
Optimal Cycle:        82          Level Of Service:          D
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 2    0    1    1    0          0    0    1!    0    0          1    1    0    0    2          0    0    1!    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              419    426          8          79    506    118          284    94    404          7    22    58
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:           419    426          8          79    506    118          284    94    404          7    22    58
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           419    426          8          79    506    118          284    94    404          7    22    58
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:            428    435          8          81    516    120          290    96    412          7    22    59
Reduct Vol:              0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           428    435          8          81    516    120          290    96    412          7    22    59
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
Final Vol.:            428    435          8          81    516    120          290    96    412          7    22    59
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900    1900    1900          1900    1900    1900          1900    1900    1900          1900    1900    1900
Adjustment:            0.90    0.93    0.93          0.95    0.95    0.95          0.94    0.94    0.73          0.89    0.89    0.89
Lanes:                 2.00    1.96    0.04          0.11    0.72    0.17          1.50    0.50    2.00          0.08    0.25    0.67
Final Sat.:            3432    3462          65          203    1302    304          2697    893    2786          136    427    1125
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.12    0.13    0.13          0.40    0.40    0.40          0.11    0.11    0.15          0.05    0.05    0.05
Crit Moves:                ****          ****          ****          ****
Green/Cycle:           0.15    0.15    0.15          0.48    0.48    0.48          0.18    0.18    0.18          0.06    0.06    0.06
Volume/Cap:            0.82    0.82    0.82          0.82    0.82    0.82          0.60    0.60    0.82          0.82    0.82    0.82
Uniform Del:           41.1    41.0    41.0          22.2    22.1    22.1          37.7    37.7    39.4          46.2    46.2    46.2
IncremntDel:           10.0    9.8    9.8          6.3    6.2    6.2          1.5    1.5    10.4          37.4    37.4    37.4
InitQueueDel:           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:              51.0    50.8    50.8          28.4    28.3    28.3          39.2    39.2    49.9          83.6    83.6    83.6
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:            51.0    50.8    50.8          28.4    28.3    28.3          39.2    39.2    49.9          83.6    83.6    83.6
LOS by Move:           D    D    D          C    C    C          D    D    D          F    F    F
HCM2kAvgQ:              9    9    9          21    21    21          6    6    9          5    5    5
*****

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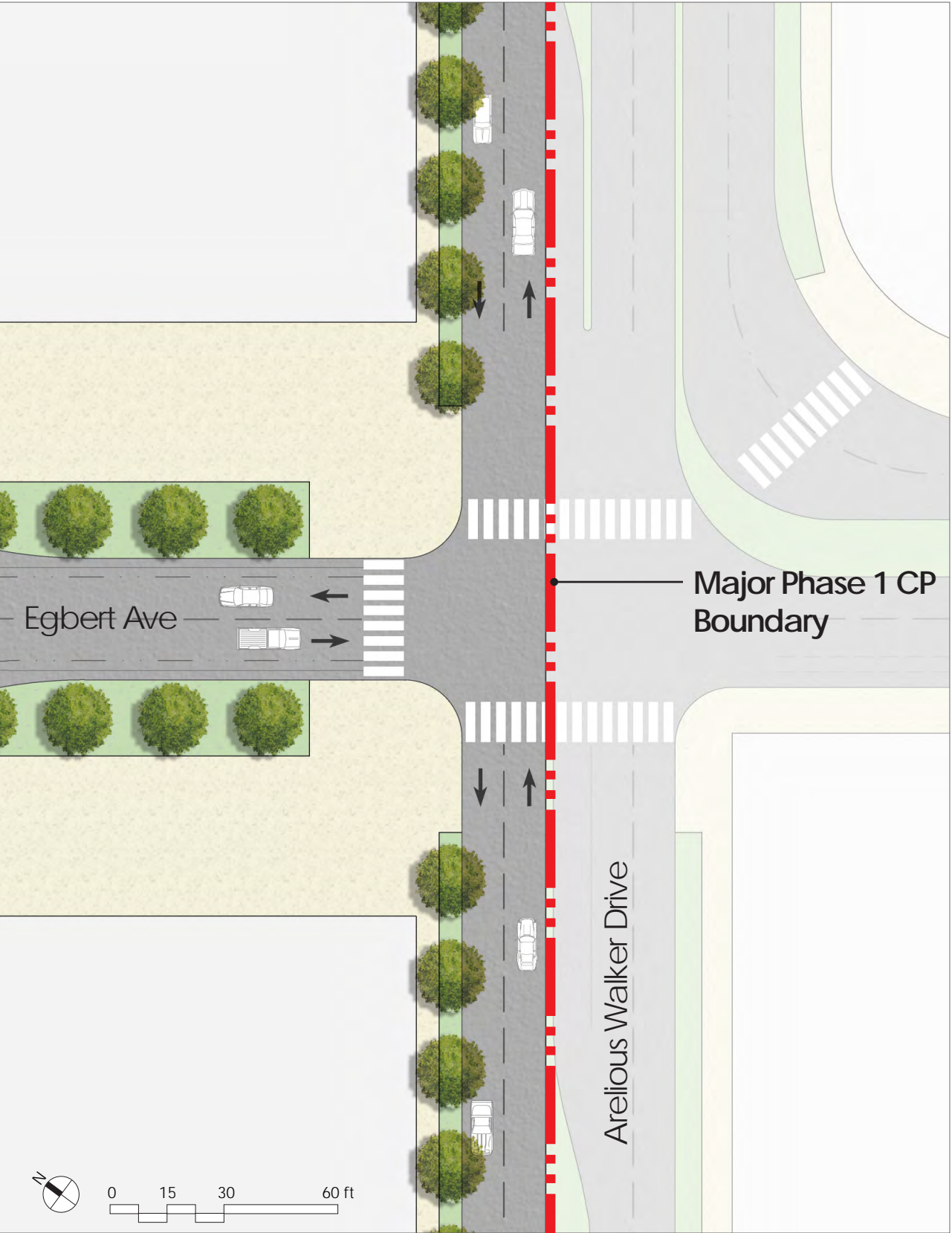
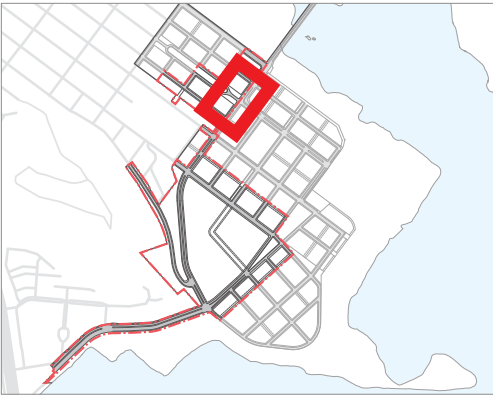


APPENDIX D

Initial Configuration for Arelious Walker Drive

ARELIIOUS WALKER

INTERIM CONDITION



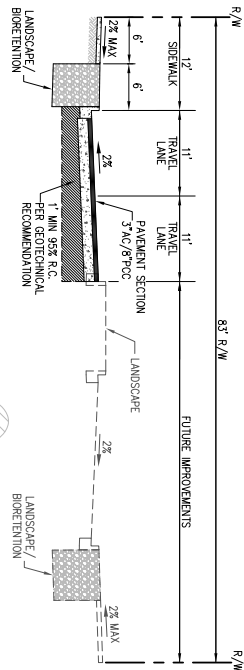
FULL BUILDOUT



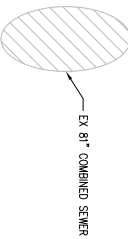
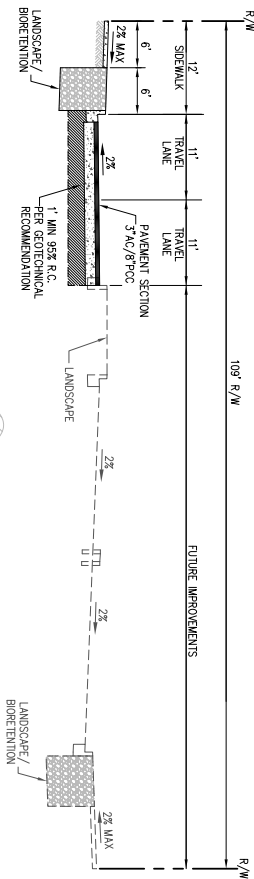


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1-800-227-2800
AT LEAST TWO DAYS
BEFORE THE DIS

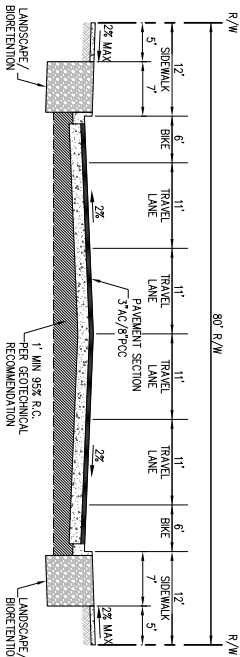
UNDERGROUND SERVICE LEFT OF NORTHERN CALIFORNIA



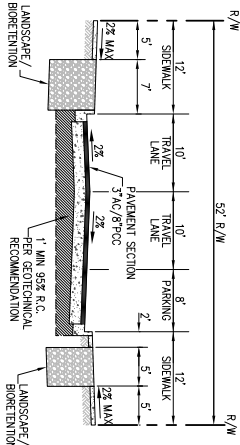
ARROYO WALKER DRIVE
TYPICAL SECTION
(STA 40+00 TO STA 45+60)
NOT TO SCALE



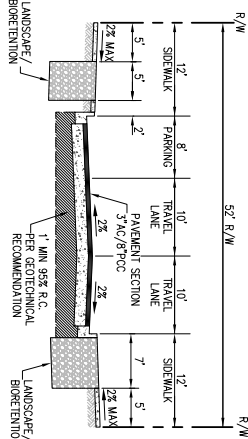
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TYPICAL SECTION
(STA 45+60 TO STA 51+20)
NOT TO SCALE



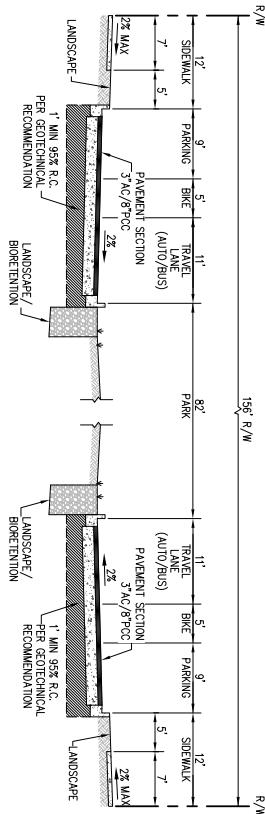
CARROLL AVENUE
TYPICAL SECTION
NOT TO SCALE



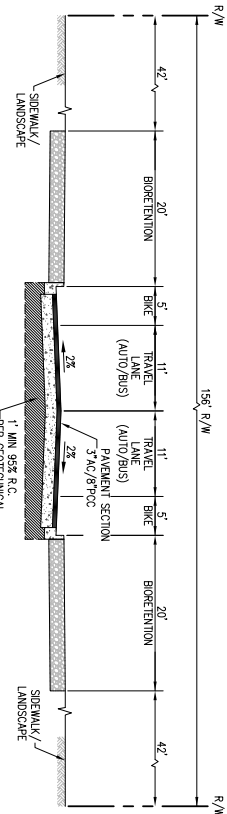
DONNER AVENUE
TYPICAL SECTION
NOT TO SCALE



FITZGERALD AVENUE & G STREET
TYPICAL SECTION
NOT TO SCALE



EGBERT AVENUE
TYPICAL SECTION
(STA 19+60 TO STA 20+60)
NOT TO SCALE



EGBERT AVENUE
TYPICAL SECTION
(STA 22+10 TO STA 23+00)
NOT TO SCALE

65% SUBMITTAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

CANDLESTICK POINT

SUB-PHASE CP-01

IMPROVEMENT PLANS

TYPICAL STREET CROSS SECTIONS

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DATE:
09/18/2013
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1
PROJ. ENGR:
1
PROJ. MGR:
1

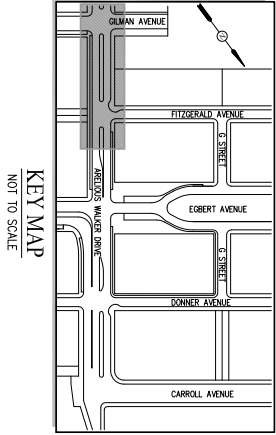
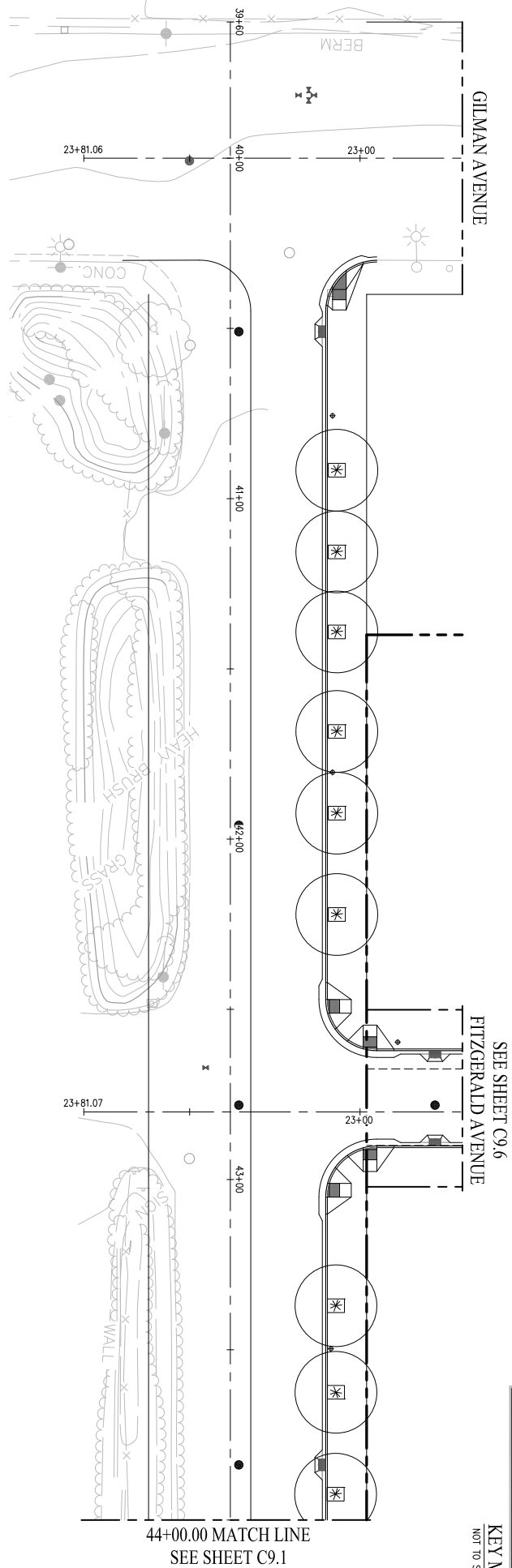
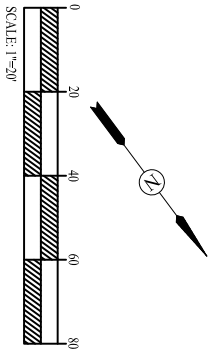
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C1.4
JOB NUMBER
1804-030
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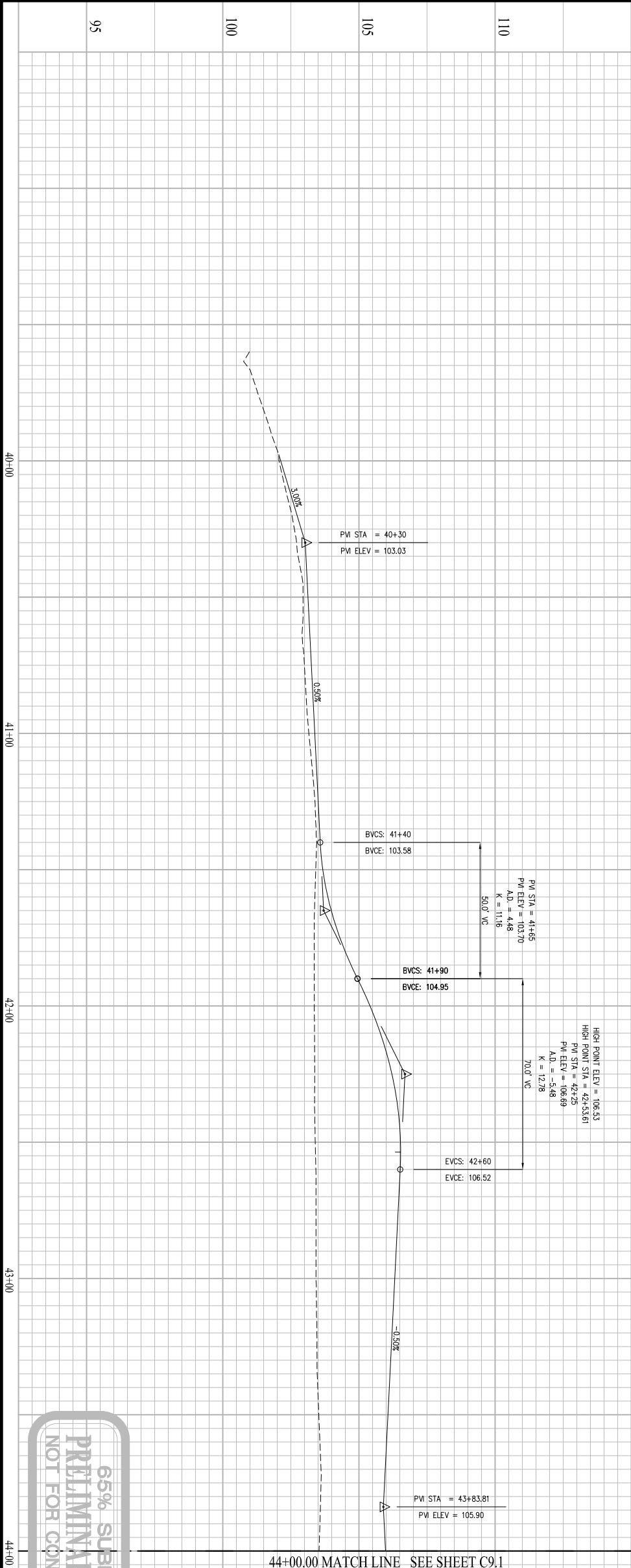


DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS
BEFORE 100 DMS

UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA



ARELIIOUS WALKER DRIVE
SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



65% SUBMITTAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

CANDLESTICK POINT

IMPROVEMENT PLANS

ARELIIOUS WALKER DRIVE SURFACE IMPROVEMENTS

CITY AND COUNTY OF SAN FRANCISCO

SUB-PHASE CP-01



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PROJ. MGR:
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NO.	BY	DATE	REVISIONS	CITY APPROVAL

JOB NUMBER
1804-030

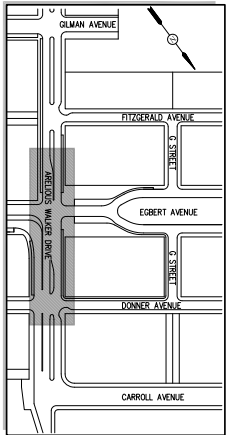
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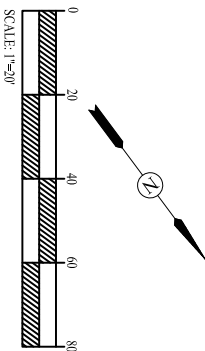
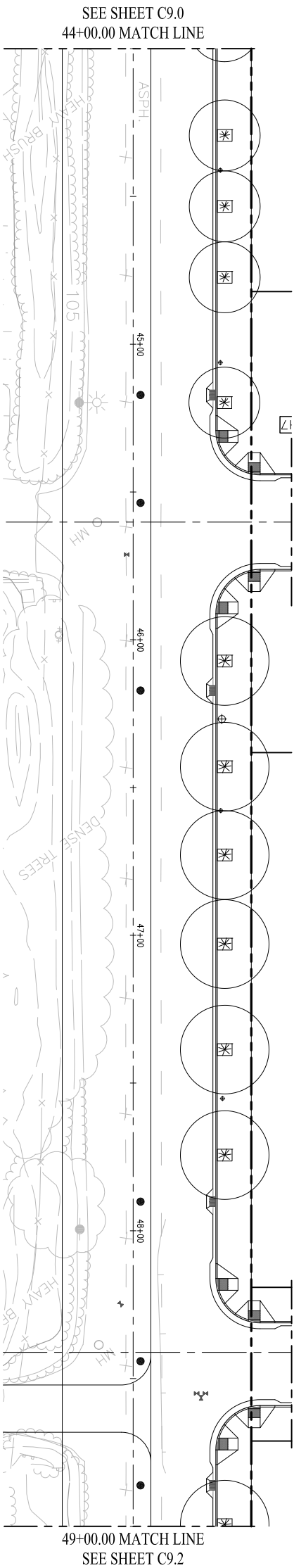


DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS
BEFORE 100 DMS
UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA



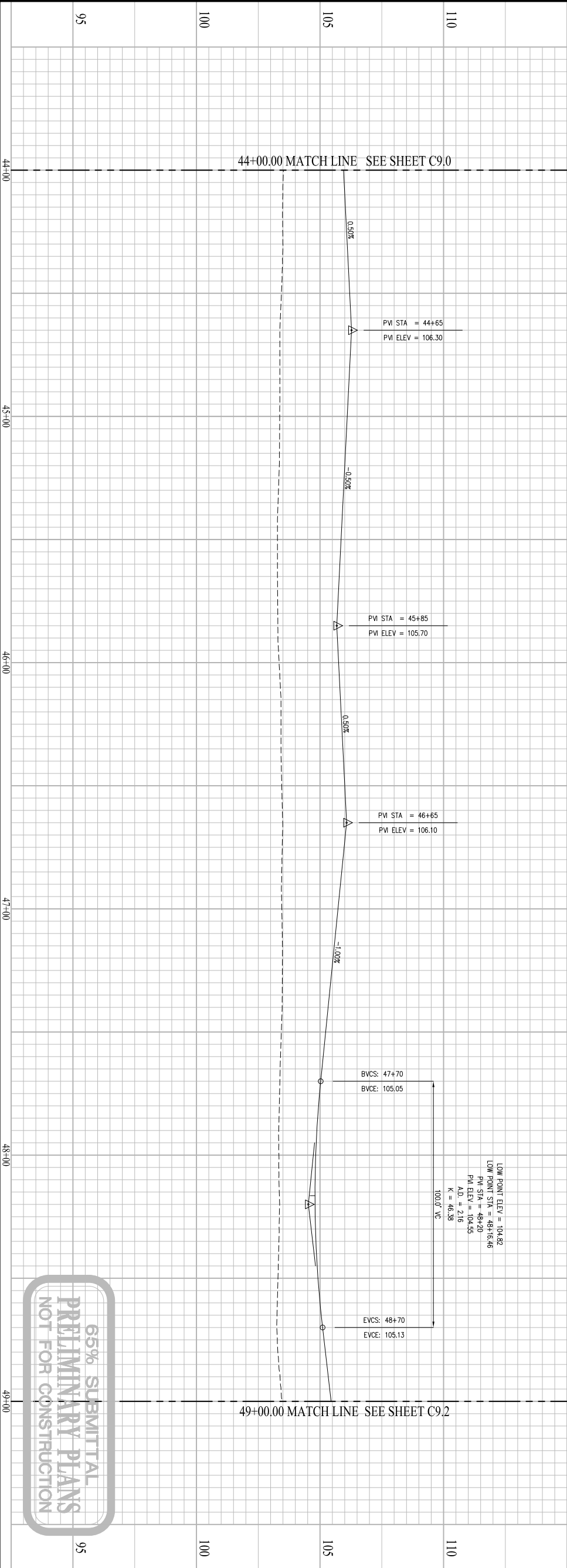
SEE SHEET C9.5
EGBERT AVENUE

SEE SHEET C9.4
DONNER AVENUE



ARELIOS WALKER DRIVE

SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



65% SUBMITTAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

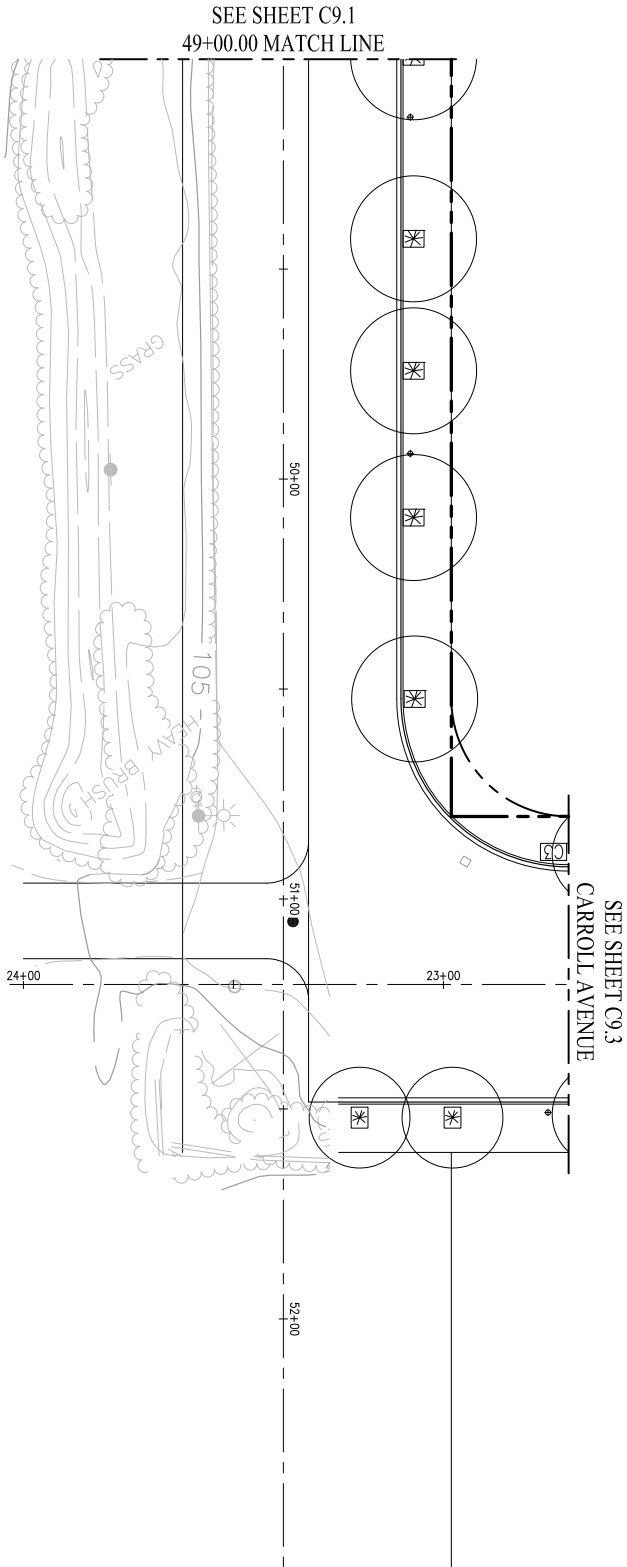
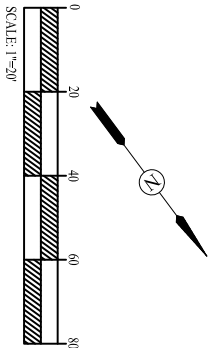
CANDLESTICK POINT IMPROVEMENT PLANS ARELIOS WALKER DRIVE SURFACE IMPROVEMENTS CITY AND COUNTY OF SAN FRANCISCO	SUB-PHASE CP-01	 Carlson, Barbee & Gibson, Inc. CIVIL ENGINEERS • SURVEYORS • PLANNERS 2633 Camino Ramon • San Ramon, CA 94583 Tel 925-866-0322 www.cbang.com			DATE: 09/18/2013	NO.	BY	DATE	REVISIONS	CITY APPROVAL
					DRAWN BY: —					
JOB NUMBER 1804-030										

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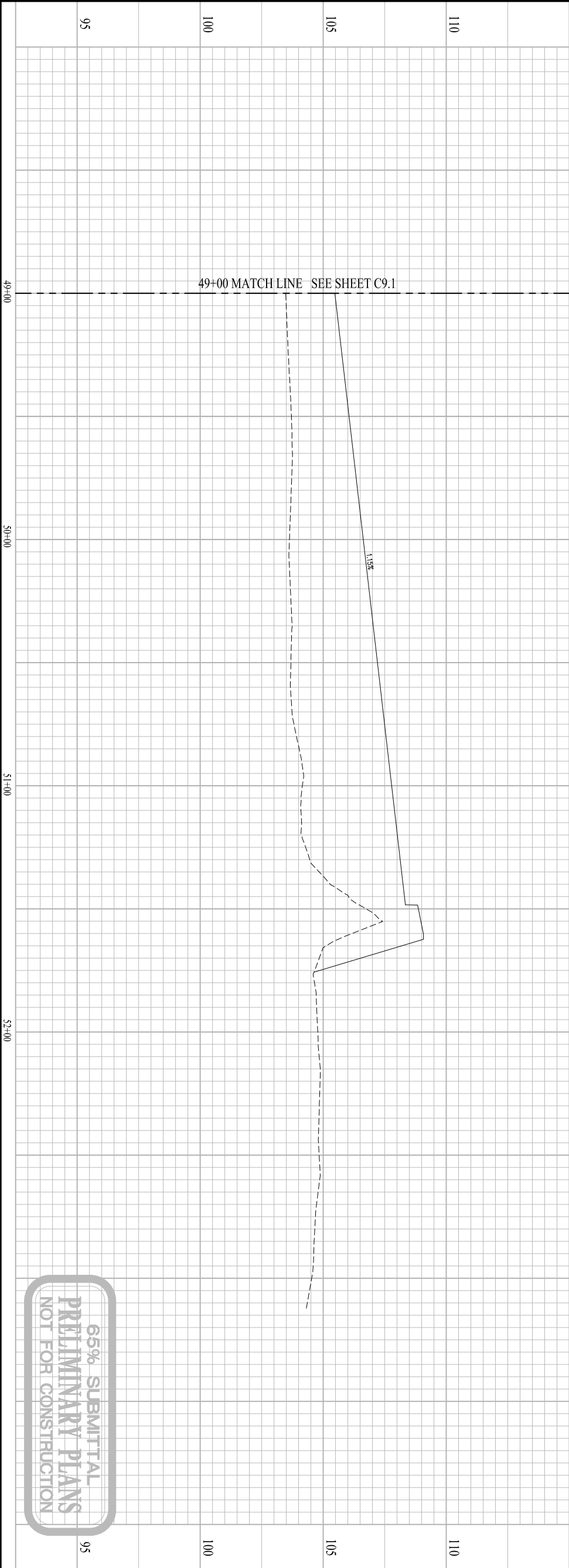
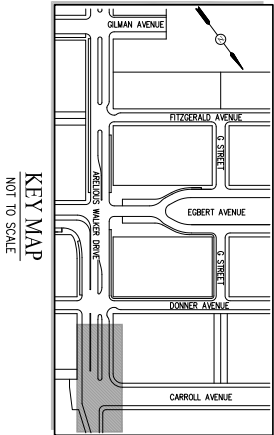


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AT LEAST TWO DAYS
BEFORE 100 DMS

UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA



ARELIIOUS WALKER DRIVE
SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



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SHEET NUMBER
C9.2

JOB NUMBER
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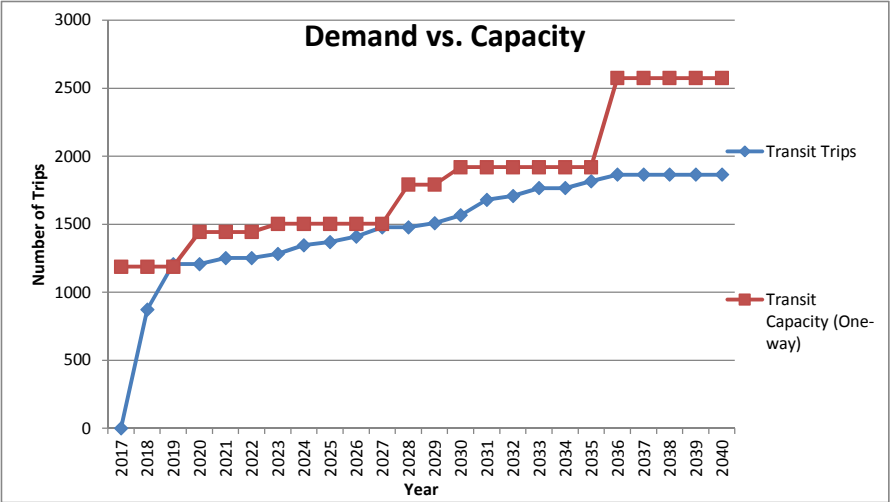
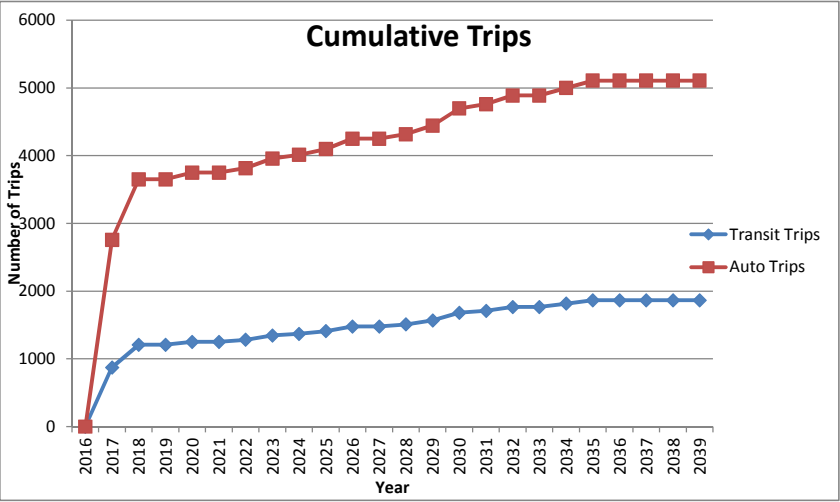


APPENDIX E

Auto and Transit Trip Generation by Year and Transit Phasing Comparison

CP

Trip Rates	Transit	Auto
Residential	0.14	0.31
Office	0.59	1.2
Retail	1.02	3.59
Hotel	0.17	0.36
Community Facilities	0.78	1.6
Parks	0.04	0.04



Land Use (By Year)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential (# of units)	0	605	924	0	322	0	215	452	172	280	495	0	215	410	815	205	410	0	360	345	0	0	0	0	0
Office (ksf)	0	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail (ksf)	0	635	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hotel (# of rooms)	0	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Community Facilities (ksf)	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Land Use (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential (# of units)	0	605	1529	1529	1851	1851	2066	2518	2690	2970	3465	3465	3680	4090	4905	5110	5520	5520	5880	6225	6225	6225	6225	6225	6225
Office (ksf)	0	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175
Retail (ksf)	0	635	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760
Hotel (# of rooms)	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
Community Facilities (ksf)	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

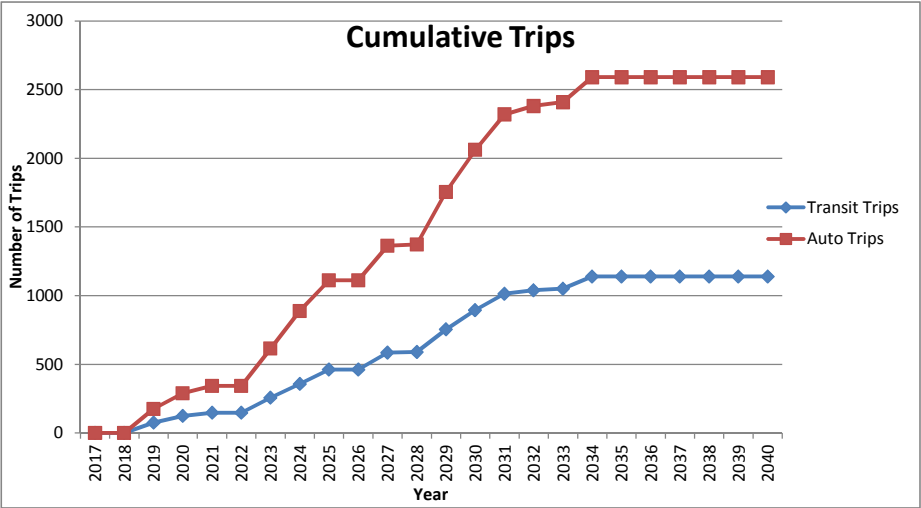
Transit Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	85	214	214	259	259	289	353	377	416	485	485	515	573	687	715	773	773	823	872	872	872	872	872	872
Office	0	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103
Retail	0	648	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775
Hotel	0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
Community Facilities	0	0	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Total	0	873	1207	1207	1252	1252	1282	1346	1370	1409	1478	1478	1508	1566	1680	1708	1766	1766	1816	1865	1865	1865	1865	1865	1865

Auto Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	188	474	474	574	574	640	781	834	921	1074	1074	1141	1268	1521	1584	1711	1711	1823	1930	1930	1930	1930	1930	1930
Office	0	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
Retail	0	2280	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728
Hotel	0	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Community Facilities	0	0	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Total	0	2757	3651	3651	3751	3751	3817	3958	4011	4098	4251	4251	4318	4445	4698	4761	4888	4888	5000	5107	5107	5107	5107	5107	5107

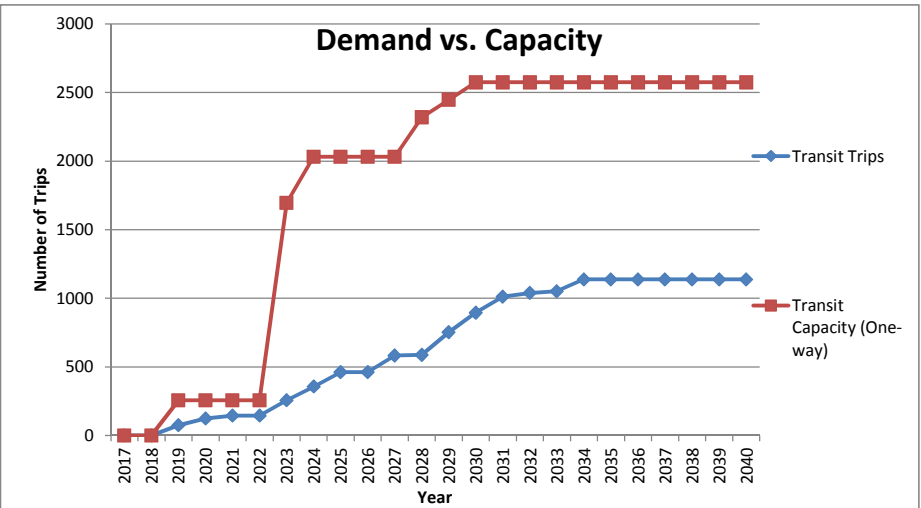
Total Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	273	688	688	833	833	929	1134	1211	1337	1559	1559	1656	1841	2208	2299	2484	2484	2646	2802	2802	2802	2802	2802	2802
Office	0	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313
Retail	0	2928	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503
Hotel	0	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116
Community Facilities	0	0	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238
Total	0	3630	4858	4858	5003	5003	5099	5304	5381	5507	5729	5729	5826	6011	6378	6469	6654	6654	6816	6972	6972	6972	6972	6972	6972

Transit Capacity (One-way)	Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
		1188	1188	1188	1444	1444	1444	1504	1504	1504	1504	1504	1792	1792	1920	1920	1920	1920	1920	1920	2575	2575	2575	2575	2575

HP



Trip Rates	Transit	Auto
Residential	0.12	0.28
Retail	0.72	2.54
R&D	0.18	0.37
Park	0.02	0.03
Community Facilities	0.68	1.4



Land Use (By Year)	Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Land Use																									
Residential (# of units)		0	0	620	415	185	0	810	380	40	0	0	0	485	385	510	220	100	0						
Retail (ksf)		0	0	0	0	0	0	18	53	5	0	0	0	24	5	0	0	0	0						
R&D (ksf)		0	0	0	0	0	0	0	90	537	0	680.122	24.118	500	505	313.76	0	0	350						
Parks (acres)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Community Facilities (ksf)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37						

Land Use (Cumulative)	Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Land Use																									
Residential (# of units)		0	0	620	1035	1220	1220	2030	2410	2450	2450	2450	2450	2935	3320	3830	4050	4150	4150	4150	4150	4150	4150	4150	4150
Retail (ksf)		0	0	0	0	0	0	18	71	76	76	76	76	100	105	105	105	105	105	105	105	105	105	105	105
R&D (ksf)		0	0	0	0	0	0	0	90	627	627	1307.122	1331.24	1831.24	2336.24	2650	2650	2650	3000	3000	3000	3000	3000	3000	3000
Parks (acres)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Community Facilities (ksf)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	37	37	37	37	37	37

Transit Trips (Cumulative)	Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	Land Use																								
	Residential	0	0	74	124	146	146	244	289	294	294	294	294	352	398	460	486	498	498	498	498	498	498	498	498
	Retail	0	0	0	0	0	0	13	51	55	55	55	55	72	76	76	76	76	76	76	76	76	76	76	76
	R&D	0	0	0	0	0	0	0	16	113	113	235	240	330	421	477	477	477	540	540	540	540	540	540	540
	Parks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Community Facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25	25	25	25	25	25
	Total	0	0	74	124	146	146	257	356	462	462	584	589	754	895	1013	1039	1051	1139	1139	1139	1139	1139	1139	1139

Auto Trips (Cumulative)	Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	Land Use																								
	Residential	0	0	174	290	342	342	568	675	686	686	686	686	822	930	1072	1134	1162	1162	1162	1162	1162	1162	1162	1162
	Retail	0	0	0	0	0	0	46	180	193	193	193	193	254	267	267	267	267	267	267	267	267	267	267	267
	R&D	0	0	0	0	0	0	0	33	232	232	484	493	678	864	981	981	981	1110	1110	1110	1110	1110	1110	1110
	Parks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Community Facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	52	52	52	52	52	52
	Total	0	0	174	290	342	342	614	888	1111	1111	1363	1372	1754	2061	2320	2382	2410	2591	2591	2591	2591	2591	2591	2591

Total Trips (Cumulative)	Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	Land Use																								
	Residential	0	0	248	414	488	488	812	964	980	980	980	980	1174	1328	1532	1620	1660	1660	1660	1660	1660	1660	1660	1660
	Retail	0	0	0	0	0	0	59	231	248	248	248	248	326	343	343	343	343	343	343	343	343	343	343	343
	R&D	0	0	0	0	0	0	0	49	345	345	719	733	1008	1285	1458	1458	1458	1650	1650	1650	1650	1650	1650	1650
	Parks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Community Facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	77	77	77	77	77	77
	Total	0	0	248	414	488	488	871	1244	1573	1573	1947	1961	2508	2956	3333	3421	3461	3730	3730	3730	3730	3730	3730	3730

[illegible]

HPX	20 Minutes [1]		12 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	469	1220	1173	2410
Retail (ksf)	5	0	12.5	71
R&D (ksf)	150	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	115	146	288	304
Approximate Year	2017	2023	2019	2024

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 50% into Major Phase 1, now proposed as 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

CPX	20 Minutes [1]		15 Minutes [2]		10 Minutes [3]	
	Old	New	Old	New	Old	New
Development:						
Residential (DU)	1630	N/A	3588	1529	5545	4905
Retail (ksf)	0	N/A	353	760	365	760
R&D (ksf)	0	N/A	0	0	70	0
Artists (ksf)	0	N/A	0	0	0	0
Community Facilities (ksf)	0	N/A	0	100	0	100
Office (ksf)	0	N/A	75	150	150	150
Hotel (Rooms)	0	N/A	110	220	220	220
Transit Trip Gen Trigger	164	N/A	838	1193	1514	1608
Approximate Year	2021	N/A	2022	2020	2027	2030

[1] Originally contemplated as initiation of Major Phase 2, but because of substantial development in first years, the CPX will begin at 15-minute frequencies.

[2] Originally contemplated as 50% into Major Phase 2, now proposed as prior to first occupancy of Major Phase 2

[3] Originally contemplated as initiation of Major Phase 3, now proposed as 50% into Major Phase 3

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

23 Monterey/24 Divisadero

	23 Monterey: 15 Minutes [1]		24 Divisadero: 10 Minutes [2]		24 Divisadero: 7.5 Minutes [3]	
	Old	New	Old	New	Old	New
Development:						
Residential (DU)	469	1220	2406	2935	2498	3320
Retail (ksf)	5	0	45	100	88	105
R&D (ksf)	150	0	975	1831	1313	2336
Artists (ksf)	0	0	48	0	120	0
Community Facilities (ksf)	0	0	0	0	0	0
Office (ksf)	0	0	0	0	0	0
Hotel (Rooms)	0	0	0	0	0	0
Transit Trip Gen Trigger	115	146	643	636	744	810
Approximate Year	2017	2023	2023	2029	2025	2030

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 20% into Major Phase 2, now proposed 50% into Major Phase 3

[3] Originally contemplated as 50% into Major Phase 2, now proposed as prior to first occupancy of Major Phase 4

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

48 Quintara

	15 Minutes [1]		10 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	1	1	1173	2410
Retail (ksf)	0	0	13	71
R&D (ksf)	0	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	1	1	288	304
Approximate Year	2015	2019	2019	2024

[1] Originally contemplated as initiation of Major Phase 1. No change proposed.

[2] Originally contemplated as 50% into Major Phase 1, now proposed 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

44 O'Shaughnessy

	7.5 Minutes [1]		6.5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	469	1220	1173	2410
Retail (ksf)	5	0	13	71
R&D (ksf)	150	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	115	146	288	304
Approximate Year	2017	2023	2019	2024

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 50% into Major Phase 1, now proposed 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

29 Sunset

	10 Minutes [1]		5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	2413	N/A	3588	605
Retail (ksf)	141	N/A	350	635
R&D (ksf)	0	N/A	0	0
Artists (ksf)	0	N/A	0	0
Community Facilities (ksf)	0	N/A	0	0
Office (ksf)	30	N/A	75	150
Hotel (Rooms)	44	N/A	110	220
Transit Trip Gen Trigger	433	N/A	838	835
Approximate Year	2021	N/A	2022	2017

[1] Originally contemplated as 20% into Major Phase 2, but because of substantial development in the first years, the 29 Sunset will begin at 5-minute frequencies.

[2] Originally contemplated as 50% into Major Phase 2, now proposed 70% into Major Phase 1

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

28L - BRT

	8 Minutes [1]		5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	4819	4548	6100	5915
Retail (ksf)	166	778	415	836
R&D (ksf)	975	0	1298	627
Artists (ksf)	48	0	120	0
Community Facilities (ksf)	0	100	0	100
Office (ksf)	30	150	75	150
Hotel (Rooms)	44	220	110	220
Transit Trip Gen Trigger	1075	1456	1582	1926
Approximate Year	2021	2023	2022	2028

[1] Originally contemplated as 20% into Major Phase 2 (CP + HP), now proposed to remain 20% of Major Phase 2 CP + 20% of Major Phase 2 HP. Interim routes servicing CP include temporary extension of the 56 Rutland and supplemental shuttles

[2] Originally contemplated as 50% into Major Phase 2 (CP + HP), now proposed prior to occupancy of Major Phase 3 CP and Major Phase 3 HP

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

November 22, 2013

MEMORANDUM

To: Chris Kern, and
Jessica Range,
Planning Department, City and County of San Francisco

From: Michael Keinath

Subject: Screening Air Quality Analysis and Health Risk Assessment for the Refinements to the
Candlestick Point-Hunter Point Shipyard Phase II Development Plan

Planning Department Case File No: 2007.0946E

Introduction:

In 2009, ENVIRON International Corporation (ENVIRON) performed four ambient air quality (AAQ) human health risk assessments (HHRA) as part of the Environmental Impact Report (EIR) for the proposed Candlestick Point – Hunters Point Shipyard Phase II Development Plan (herein referred to as “Project”; also known as San Francisco Planning Department Case Number 2007.0946E). The EIR for the Project was certified in July 2010 and since that time the Project proponent, Lennar Urban, and the City of San Francisco, having been working to implement the Project plan. However, during that time, the professional football team, the San Francisco 49ers, has chosen to move to a stadium in Santa Clara, California, obviating the need for rebuilding a stadium on the Project site. Additionally, since the new stadium in Santa Clara will be ready for the fall 2014 football season, the existing stadium at the Project site will be vacant after January 2014. While the overall development program of the Project has not changed (i.e., total square footage by each land use), the phasing of the Project and the uses for particular parcels has changed from what was originally evaluated in 2009. A map showing this revised phasing is presented as Attachment A. To reflect this new phasing, TRC prepared a Construction Workers and Equipment Phasing Plan for the Project dated 11/18/13 (included as Attachment B).

ENVIRON has conducted a screening-level construction HHRA of the revised phasing plan (designated herein as the “2013 Phasing Plan”) to determine if the modified project would result in any new significant impacts not identified in the EIR or substantially increase the severity of an impact. Section III.H.4 of the EIR identified the construction thresholds of significance for toxic air contaminants as:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 1×10^{-5} (10 in one million)
- Ground level concentrations of non-carcinogenic air contaminants/pollutants resulting in a HI greater than 1 for the MEI

As discussed in Impact AQ-2 of the EIR, all impacts were determined to be less than Significant with Mitigation, namely Mitigation Measures AQ 2.1 and 2.2, listed below:

- MM AQ 2.1 Implement Emission Control Device Installation on Construction. To reduce DPM [diesel particulate matter] emissions during Project construction, the Project Applicant shall require construction equipment used for the Project to utilize emission control technology such that 50% of the fleet will meet US EPA Tier 2 standards outfitted with California ARB [Air Resources Board] Level 3 VDECS (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) during the first two years of construction activities, increasing to 75% of the fleet in the third year and 100% of the fleet starting in the fourth year and for the duration of the Project.
- MM AQ 2.2 Implement Accelerated Emission Control Device Installation on Construction Equipment Used for Alice Griffith Parcels. In addition to mitigation measure MM AQ 2.1, in order to minimize the potential impacts to residents living in Alice Griffith from the construction activities in that area, the Project Applicant will require that all construction equipment used in the Alice Griffith parcels (CP01 through CP06) would utilize equipment which meets the US EPA Tier 2 standards outfitted with California ARB Level 3 VDECS (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) throughout the entire duration of construction activities on those parcels.

Below we describe the methods used in this screening level HHRA to determine whether the proposed modifications to the Project Phasing Schedule would result in any new significant impact on air quality beyond those identified in the FEIR or substantially increase the severity of a significant impact.

Approach:

Other than modifications detailed below, for this updated HHRA, ENVIRON followed the methods outlined in Section III.H Air Quality of the EIR. As discussed there, the methods used to analyze the human health effects from emissions of DPM associated with Project construction equipment were developed consistent with Bay Area Air Quality Management District (BAAQMD), California Environmental Protection Agency (Cal/EPA), and United State Environmental Protection Agency (USEPA) risk assessment guidance. The analysis incorporates conservative (i.e., health protective) methodologies for the following: (1) the estimation of emissions, (2) the calculation of airborne concentrations of DPM during construction activities at receptor locations, and (3) the estimation of excess lifetime cancer risks and non-cancer health effects or hazard indices (HIs).

Revised Construction Phasing

As discussed earlier, TRC prepared an updated construction phasing schedule (dated 11/18/13) which included phase duration, construction equipment list and usage, number of construction workers, and number of construction truck trips for:

- Hunter's Point Shipyard
- Candlestick Point
- Development of Shoreline of Hunter's Point Shipyard and Candlestick Point
- Field management for the construction

Emissions Calculation

Emissions from off-road construction equipment associated with Project development as identified by TRC were calculated using CalEEMod[®] default equipment horsepower, load factor, and emission

factors.¹ CalEEMod[®] defaults were developed based on ARB's 2011 In-Use Off-road Equipment Inventory Model.² The original analysis assumed construction would begin in 2010. Therefore, implementation of MM AQ-2.1 has been adjusted to reflect the current construction schedule assuming that the Project would require construction equipment used for the Project to utilize emission control technology such that 50% of the fleet will meet US EPA Tier 2 standards outfitted with California ARB Level 3 VDECS (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) during the first two years of construction activities (2014 and 2015), increasing to 75% of the fleet in the third year (2016), and 100% of the fleet starting in the fourth year (2017) and for the remaining duration of the Project. Similarly, MM AQ-2.2 was evaluated such that 100% of the construction equipment fleet at the Alice Griffith parcels will meet the Tier 2 standards and be outfitted with California ARB Level 3 VDECS for the entire duration of the Project.

Emissions from on-road mobile sources, particularly the running, idling, and starting emissions from worker commute trips and haul truck trips making deliveries and removing materials, were calculated using CalEEMod[®] default emission factors. CalEEMod[®] defaults were developed based on ARB's EMFAC2011 model.³ The worker vehicles were assumed to be 50% light duty vehicles (LDA) and 50% light duty trucks (i.e., 25% LDT1 and 25% LDT2). The haul trucks were assumed to be 100% medium heavy-duty trucks (MHDT). These are the same assumptions used in the 2009 analysis. The distance that the workers and haul trucks would travel along the hauling roads was assumed to be the same as the 2009 analysis. Since the distance that the workers and hauling trips originating from the Field Management phase was unknown, ENVIRON assumed an average travel distance based on the length of the other haul roads. Idling and starting emissions from on-road activity were allotted to the construction parcels. Running emissions from on-road activity were attributed to the hauling roads.

Air Dispersion Modeling

The air dispersion models (using the USEPA AERMOD) were run for the construction emissions as calculated in 2009 and the revised emissions as a method of comparing the impact of the revised phasing plan to the previously modeled receptor locations (as before, ground level receptors were assumed). The modeled receptor grid is presented in Attachment C. A 30 meter by 30 meter grid of volume sources (Attachment D) was developed for the revised construction emissions, with emissions within each parcel evenly distributed throughout the volume sources. The models used the same meteorological and terrain data as were used in the 2009 analysis. Mobile source starting and idling emissions associated with each parcel development were modeled along with the construction off-road equipment emissions through the volume sources. On-road mobile running emissions which occur off-site were not modeled considering the running emissions are likely to be lower due to cleaner engines as a result of the construction beginning in 2014, 4 years later than that assumed in the 2009 analysis.

Health Risk Assessment

The HHRA was conducted in the same way described in the EIR, including the assumption that all PM10 from diesel fueled construction equipment was assumed to be DPM. For this screening level update, the cancer risk was calculated using the total construction DPM emissions and a weighted average exposure factor assuming 9 years of exposure as a child and 13 years as an adult). The chronic HI was conservatively estimated based on the total DPM rather than the maximum year DPM emissions.

¹ <http://www.caleemod.com/>

² http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles

³ http://www.arb.ca.gov/msei/categories.htm#onroad_motor_vehicles

Results:

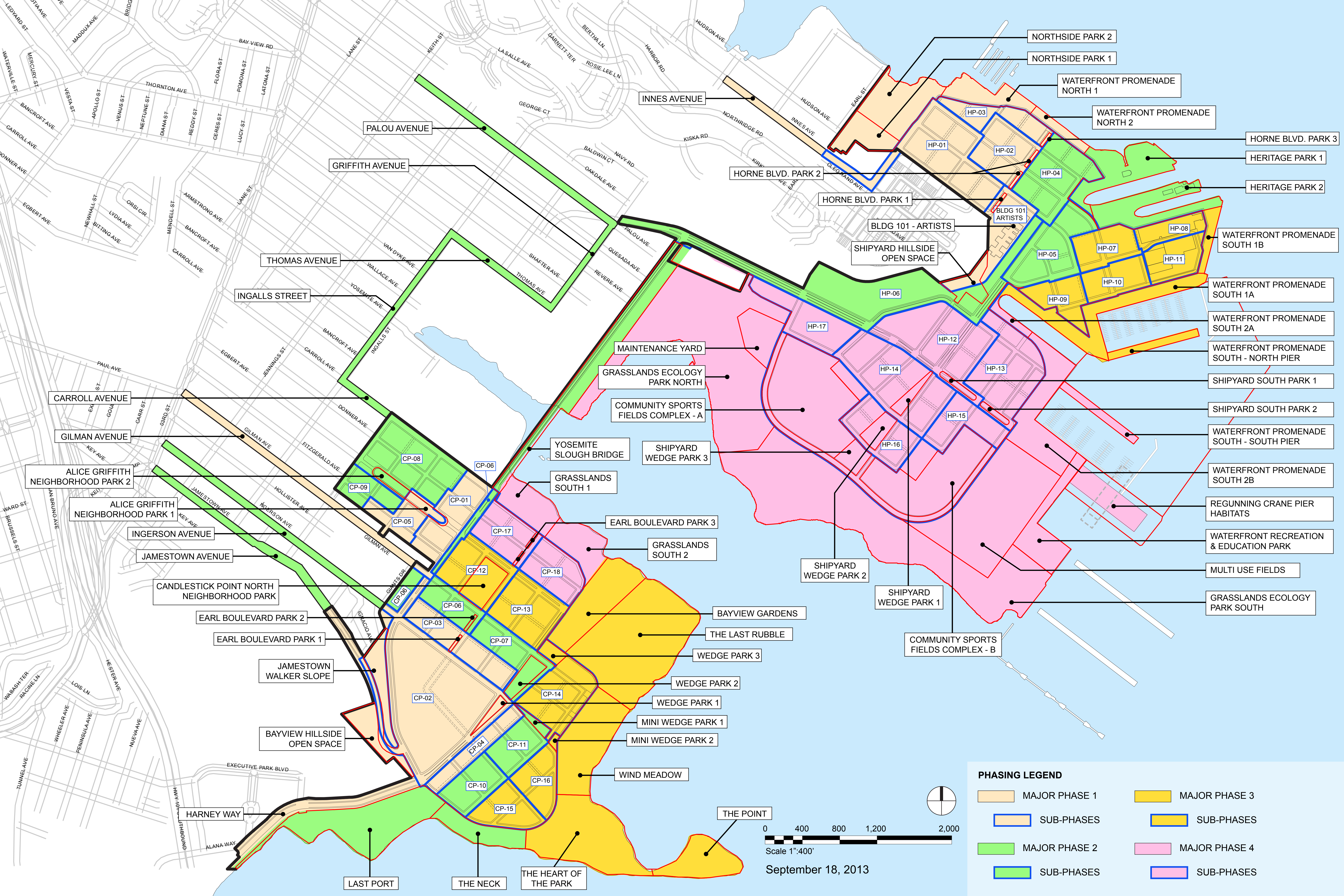
The modified Project with the new phasing schedule, beginning 4 years later than that assumed in the EIR and with the application of mitigation measures MM AQ-2.1 and 2.2. provided in the EIR, results in an excess cancer risk at the maximally exposed sensitive receptor location of less than 3 in a million and would not exceed the threshold of >10.0 in 1 million. The non-cancer impacts would be less than the Chronic Hazard Index (HI) threshold of >1 at the maximally exposed individual location. With mitigation, the results for the modified Project are below the significance thresholds for determining whether construction activities would expose sensitive receptors to substantial levels of DPM.

Implementation of the modified construction schedule would not result in any new significant effects related to emissions of DPM beyond those identified in the EIR or a substantial increase in the severity of a significant impact because:

1. The construction will begin 4 years later than what was assumed in the EIR. The cleaner equipment would reduce the unmitigated portion of the construction emissions during the first three years of construction.
2. Updated analysis pertaining to the application of the mitigation measures reflecting a construction start year of 2014.
3. The DPM emissions were updated using CalEEMod[®] default equipment data which are based on the newer version of OFFROAD (2011). The previous model (OFFROAD2007) overestimated the equipment load factor by 33%.

Therefore, no new mitigation measures would be required.

Attachment A
Revised Construction Phasing



Attachment B
Revised Construction Workers and Equipment Phasing Plan

DRAFT: CPHPSII Project: Construction Workers and Equipment for Hunters Point Shipyard Construction Phase (Revision Date: 11/18/2013)						Major Phase Indicator Subphase Color Coding									
Prepared by TRC for EIR Analysis						1 HP									
						2HP									
						3 HP									
						4 HP									
						Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2014	1	Site Preparation	Abatement	Bldg 101 Artist	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		10	8	8	4	5		
				Artist Replmt Space	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		10	8	8	4	5		
			Demolition	Bldg 101 Artist	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
				Artist Replmt Space	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
			Grading & Infrastructure	Bldg 101 Artist	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				Artist Replmt Space	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
			Building Construction	Foundation Piles/Structure/Rough-In	Bldg 101 Artist	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		10	8	8	4	5	
				Interior and Exterior Finishes	Bldg 101 Artist	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5	
2015	2	Building Construction	Foundation Piles/Structure/Rough-In	Artist Replmt Space	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		10	8	8	4	5		
			Interior and Exterior Finishes	Artist Replmt Space	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
2016	3	Site Preparation	Abatement	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	5	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
			Demolition	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	8	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13		
			Grading & Infrastructure	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	None								0		
		Building Construction	Foundation Piles/Structure/Rough-In	Artist Replmt Space	None								0		
			Interior and Exterior Finishes	Artist Replmt Space	None								0		
2017	4	Site Preparation	Abatement	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	None								0		
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		25	20	24	16	13		
			Demolition	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	None								0		
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	7	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			38	30	80	64	19		
			Grading & Infrastructure	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19		
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
			Building Construction	Foundation Piles/Structure/Rough-In	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10	
				Interior and Exterior Finishes	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5	
Roadway	Improvements	YS Bridge		9	(1)Excavators, (2)Loaders, (2) Off Road Dump Truck, (1) Dozer, (4) barges, (4) Cranes, (1) Drill Rig, (1)Water Truck	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck, (1) Pile Driver	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (2) Pump Trucks	78	62	24	16	39			
		Innes Ave		10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	15			
2018	5	Abatement	HP-02 (HPS North - 5a, 6a, 5b, 6b)	None									0		
				HP-03 (HPS North - 3a, 3b, 7a, 7b)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				HP-06 (Roadway-YSB Connection)	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
				Demolition	Horne Blvd P1	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9	
			HP-02 (HPS North - 5a, 6a, 5b, 6b)		None								0		
			HP-03 (HPS North - 3a, 3b, 7a, 7b)		6	(2) Man Lifts, (2)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	16	8	13		
			HP-06 (Roadway-YSB Connection)		2	(2) Man Lifts, (1)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			20	16	8	4	10		
			Grading & Infrastructure	Horne Blvd P1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
		HP-02 (HPS North - 5a, 6a, 5b, 6b)		7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19			
		HP-03 (HPS North - 3a, 3b, 7a, 7b)		None								0			
		HP-06 (Roadway-YSB Connection)		2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18			
		Building Construction	Foundation Piles/Structure/Rough-In	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10		
			Interior and Exterior Finishes	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
		Roadway	Improvements	YS Bridge	9	(1)Excavators, (2)Loaders, (2) Off Road Dump Truck, (1) Dozer, (4) barges, (4) Cranes, (1) Drill Rig, (1)Water Truck	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck, (1) Pile Driver	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (2) Pump Trucks	78	62	24	16	39		
					Innes Ave	10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	15	
		2019	6	Abatement	Northside P1	None									0
						Northside P2	None								0
						Horne Blvd P2	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		10	8	8	4	5
						HP-03 (HPS North - 3a, 3b, 7a, 7b)	None								0
					Demolition	Northside P1	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			13	10	8	4	7
Northside P2	1					(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			13	10	8	4	7		
Horne Blvd P2	1					(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
HP-03 (HPS North - 3a, 3b, 7a, 7b)	None												0		
Grading & Infrastructure	Northside P1			2	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	32	24	13			
	Northside P2			4	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	32	24	13			
	Horne Blvd P2			1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
	HP-03 (HPS North - 3a, 3b, 7a, 7b)			9	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19			
Building Construction	Foundation Piles/Structure/Rough-In			HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10		
				Horne Blvd P1	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
	Interior and Exterior Finishes			HP-02 (HPS North - 5a, 6a, 5b, 6b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10		
				HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
Roadway	Improvements			YS Bridge	9	(1)Excavators, (2)Loaders, (2) Off Road Dump Truck, (1) Dozer, (4) barges, (4) Cranes, (1) Drill Rig, (1)Water Truck	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck, (1) Pile Driver	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (2) Pump Trucks	78	62	24	16	39		
					Innes Ave	6	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	15	
2020	7	Abatement	Waterfront Prom N1	None									0		
				Waterfront Prom N2	None								0		
				Horne Blvd P3	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		10	8	8	4	5		
				HP-05 (Roadway-YSB Connection)	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
			Demolition	HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	5	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				Waterfront Prom N1	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
				Waterfront Prom N2	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
				Horne Blvd P3	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
		Grading & Infrastructure	HP-05 (Roadway-YSB Connection)	1	(2) Man Lifts, (2)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13			
			HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	9	(2) Man Lifts, (2)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13			
			Waterfront Prom N1	5		(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
			Waterfront Prom N2	5		(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
		Foundation Piles/Structure/Rough-In	Horne Blvd P3	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
			HP-05 (Roadway-YSB Connection)	4		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19			
			HP-06 (Roadway-YSB Connection)	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18			
			HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19			
		Foundation Piles/Structure/Rough-In	HP-02 (HPS North - 5a, 6a, 5b, 6b)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10			
				Northside P1	None								0		
				Northside P2	None								0		
				Horne Blvd P2	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		

DRAFT: CPHPSII Project: Construction Workers and Equipment for Hunters Point Shipyard Construction Phase (Revision Date: 11/18/2013)						Major Phase Indicator Subphase Color Coding									
Prepared by TRC for EIR Analysis						1 HP									
						2HP									
						3 HP									
						4 HP									
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
		Building Construction		HP-03 (HPS North - 3a, 3b, 7a, 7b)	8	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10		
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
			Interior and Exterior Finishes	Northside P1	3		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7		
				Northside P2	7		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7		
				Horne Blvd P2	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				HP-03 (HPS North - 3a, 3b, 7a, 7b)	3	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
		Roadway	Improvements	YS Bridge	6	(1)Excavators, (2)Loaders, (2) Off Road Dump Truck, (1) Dozer, (4) barges, (4) Cranes, (1) Drill Rig, (1)Water Truck	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck, (1) Pile Driver	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (2) Pump Trucks	78	62	24	16	39		
2021	8	Site Preparation	Abatement	HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	None								0		
				HP-05 (R&D - 1, 2a, 3a, 2b)	2	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
			Demolition	HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	None								0		
				HP-05 (R&D - 1, 2a, 3a, 2b)	5	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13		
			Grading & Infrastructure	HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19		
				HP-05 (R&D - 1, 2a, 3a, 2b)	3		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19		
		Building Construction	Foundation Piles/Structure/Rough-in	HP-03 (HPS North - 3a, 3b, 7a, 7b)	None								0		
				Waterfront Prom N1	None								0		
				Waterfront Prom N2	None								0		
				Horne Blvd P3	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
			Interior and Exterior Finishes	HP-03 (HPS North - 3a, 3b, 7a, 7b)	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				Waterfront Prom N1	10		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				Waterfront Prom N2	10		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				Horne Blvd P3	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
		2022	9	Site Preparation	Abatement	Heritage Park 1	None								0
						HP-05 (R&D - 1, 2a, 3a, 2b)	None								0
						HP-06 (HPS South - 1)	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7
Demolition	Heritage Park 1				1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
	HP-05 (R&D - 1, 2a, 3a, 2b)				None								0		
	HP-06 (HPS South - 1)				2	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	8	4	10		
Grading & Infrastructure	Heritage Park 1				5	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	32	24	13		
	HP-05 (R&D - 1, 2a, 3a, 2b)				5		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19		
	HP-06 (HPS South - 1)				5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18		
Building Construction	Foundation Piles/Structure/Rough-in			HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
	Interior and Exterior Finishes			HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10		
2023	10	Site Preparation	Abatement	Heritage Park 2	None								0		
				HP-06 (HPS South - 1)	None								0		
				HP-06 (HPS South - 1)	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
			Grading & Infrastructure	Heritage Park 2	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	32	24	13		
				HP-06 (HPS South - 1)	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18		
				HP-06 (HPS South - 1)	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18		
		Building Construction	Foundation Piles/Structure/Rough-In	HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
				Heritage Park 1	None								0		
				HP-05	6	(1) Cement Truck, (1) Pump Truck, (1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Pile Driver	40	32	16	8	20		
			Interior and Exterior Finishes	HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10		
				Heritage Park 1	12		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
2024	11	Site Preparation	Abatement	Shipyards Hillside OS	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift			13	10	8	4	7		
				HP-07 (R&D - 3b, 4)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
			Demolition	Shipyards Hillside OS	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	8	4	10		
				HP-07 (R&D - 3b, 4)	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
			Grading & Infrastructure	Shipyards Hillside OS	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18		
				HP-07 (R&D - 3b, 4)	None								0		
		Building Construction	Foundation Piles/Structure/Rough-In	HP-05 (R&D - 1, 2a, 3a, 2b)	6		(1) Cement Truck, (1) Pump Truck, (1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Pile Driver	40	32	16	8	20		
				Heritage Park 2	None								0		
				HP-06 (HPS South - 1)	7	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	8	4	10		
			Interior and Exterior Finishes	HP-05 (R&D - 1, 2a, 3a, 2b)	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10		
				Heritage Park 2	12		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
2025	12	Site Preparation	Abatement	Ing/Tho/Cri/Grif	10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	30	24	12	8	15		
				Ing/Tho/Cri/Grif	10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	30	24	12	8	15		
			Demolition	HP-08 (R&D - 5)	None								0		
				HP-09 (R&D - 9, 8a)	5	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	8	4	10		
			Grading & Infrastructure	HP-07 (R&D - 3b, 4)	8	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	32	24	18		
				HP-08 (R&D - 5)	None								0		
				HP-06 (HPS South - 1)	None								0		
		Building Construction	Foundation Piles/Structure/Rough-In	Shipyards Hillside OS	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	10	8	8	4	5		
				HP-06 (HPS South - 1)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				Shipyards Hillside OS	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
			Roadway	Improvements	Ing/Tho/Cri/Grif	10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	15	
					Ing/Tho/Cri/Grif	10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	15	
2026	13	Site Preparation	Abatement	HP-08 (R&D - 5)	None								0		
				HP-09 (R&D - 9, 8a)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork Lift	(1) Water Truck		13	10	8	4	7		
			Demolition	HP-12	6	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
				HP-08 (R&D - 5)	None								0		
			HP-09 (R&D - 9, 8a)	5	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	8	4	10			
				HP-12	9	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13		
		Grading & Infrastructure	HP-08 (R&D - 5)	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	40	32	18			
			HP-09 (R&D - 9, 8a)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18			
			HP-12	None								0			
			Building Construction	Foundation Piles/Structure/Rough-In	HP-07 (R&D - 3b, 4)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10	
					HP-07 (R&D - 3b, 4)	None								0	
		Abatement		Waterfront Prom S 1b	None								0		
				HP-09 (R&D - 9, 8a)	None								0		
			HP-10 (R&D - 8b, 7)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7			
				HP-12 (HPS South - 14, 15a, 15b, 16a, 16b)	None								0		
			HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	5	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7			

DRAFT: CPHPSII Project: Construction Workers and Equipment for Hunters Point Shipyard Construction Phase (Revision Date: 11/18/2013)						Major Phase Indicator Subphase Color Coding									
Prepared by TRC for EIR Analysis						1 HP									
						2HP									
						3 HP									
						4 HP									
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2027	14	Site Preparation	Demolition	Waterfront Prom S 1b	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
				HP-09 (R&D - 9, 8a)	None							0			
				HP-10 (R&D - 8b, 7)	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane	20	16	24	16	10			
				HP-12 (HPS South - 14, 15a, 15b, 16a, 16b)	None										
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	9	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane		25	20	24	16	13			
			Grading & Infrastructure	Waterfront Prom S 1b	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
				HP-09 (R&D - 9, 8a)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18			
				HP-10 (R&D - 8b, 7)	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	40	32	18			
				HP-12 (HPS South - 14, 15a, 15b, 16a, 16b)	11	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19			
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19			
		Building Construction	Foundation Piles/Structure/Rough-in	HP-07 (R&D - 3b, 4)	None								0		
				HP-08 (R&D - 5)	7	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10			
			Interior and Exterior Finishes	HP-07 (R&D - 3b, 4)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
				HP-08 (R&D - 5)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
2028	15	Site Preparation	Abatement	HP-10 (R&D - 8b, 7)	None								0		
				HP-11 (R&D - 6)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	13	10	16	8	7			
				Shipyards South P1	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	10	8	8	4	5			
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	None							0			
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	6	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	13	10	8	4	7			
			Demolition	HP-10 (R&D - 8b, 7)	None								0		
				HP-11 (R&D - 6)	5	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane	20	16	24	16	10			
				Shipyards South P1	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	None							0			
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	9	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane		25	20	24	16	13			
			Grading & Infrastructure	HP-10 (R&D - 8b, 7)	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	40	32	18		
				HP-11 (R&D - 6)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	40	32	18		
				Shipyards South P1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	9	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
		Building Construction	Foundation Piles/Structure/Rough-in	HP-08 (R&D - 5)	None								0		
				Waterfront Prom S 1b	None								0		
				HP-09 (R&D - 9, 8a)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10			
				HP-12	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10			
			Interior and Exterior Finishes	HP-08 (R&D - 5)	None								0		
				Waterfront Prom S 1b	10		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				HP-09 (R&D - 9, 8a)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
				HP-12	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
		2029	16	Site Preparation	Abatement	HP-11 (R&D - 6)	None								0
						Waterfront Prom S 2a	None								0
						Waterfront Prom S 2b	None								0
						Waterfront Prom SP	None								0
						Shipyards South P 2	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	10	8	8	4	5	
					Demolition	HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	None								0
						HP-15 (HPS South - 12a, 12b, 13)	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	13	10	8	4	7	
						HP-11 (R&D - 6)	None								0
Waterfront Prom S 2a	1					(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	8	4	8			
Waterfront Prom S 2b	2					(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	8	4	8			
Grading & Infrastructure	Waterfront Prom SP				1	(1) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	16	8	8			
	Shipyards South P 2				1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
	HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)				None								0		
	HP-15 (HPS South - 12a, 12b, 13)				4	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane		25	20	24	16	13			
	HP-11 (R&D - 6)				None								0		
Building Construction	Foundation Piles/Structure/Rough-in			Waterfront Prom S 2a	2		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				Waterfront Prom S 2b	6		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				Waterfront Prom SP	3		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	28	22	16	8	14		
				Shipyards South P 2	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	9	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19			
				HP-15 (HPS South - 12a, 12b, 13)	None								0		
				HP-09 (R&D - 9, 8a)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10			
	Interior and Exterior Finishes			HP-10 (R&D - 8b, 7)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10			
				HP-12	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10			
				Shipyards South P1	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10			
				HP-09 (R&D - 9, 8a)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
				HP-10 (R&D - 8b, 7)									0		
				HP-12	10	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Shipyards South P1	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
		Abatement	Waterfront Prom S 1a	None								0			
			Waterfront Prom NP	None								0			
			Shipyards South BP	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	10	8	8	4	5				
			Shipyards WP 1	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	10	8	8	4	5				
			HP-15 (HPS South - 12a, 12b, 13)	None								0			
		Demolition	HP-16 (HPS South - 7a, 7b, 9a, 9b)	2	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	13	10	8	4	7				
			Waterfront Prom S 1a	2	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	8	4	8				
			Waterfront Prom NP	1	(1) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	16	8	8				
			Shipyards South BP	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9			
			Shipyards WP 1	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9			
		Site Preparation	HP-15 (HPS South - 12a, 12b, 13)	None								0			
			HP-16 (HPS South - 7a, 7b, 9a, 9b)	3	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane		25	20	24	16	13				
			Waterfront Prom S 1a	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13				

DRAFT: CPHPSII Project: Construction Workers and Equipment for Hunters Point Shipyard Construction Phase (Revision Date: 11/18/2013)						Major Phase Indicator Subphase Color Coding									
						1 HP									
						2HP									
						3 HP									
						4 HP									
Prepared by TRC for EIR Analysis															
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2030	17		Grading & Infrastructure	Waterfront Prom NP	3		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	28	22	16	8	14		
				Shipyards South BP	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				Shipyards WP 1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	4	2	13		
				HP-15 (HPS South - 12a, 12b, 13)	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	None									0	
			Foundation Piles/Structure/Rough-In	HP-10 (R&D - 8b, 7)	None										0
				HP-11 (R&D - 6)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10		
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				Waterfront Prom S 2a	None									0	
				Waterfront Prom S 2b	None									0	
				Waterfront Prom SP	None									0	
				Shipyards South BP	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				Shipyards South P2	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
				HP-10 (R&D - 8b, 7)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				HP-11 (R&D - 6)	None								0		
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	9	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Waterfront Prom S 2a	5		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				Waterfront Prom S 2b	12		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				Waterfront Prom SP	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				Shipyards South BP	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Shipyards South P2	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4			
2031	18		Abatement	Grassland EP South	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				Community SFC B	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				Multituse Field	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				Waterfront R&E Park	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				Regunning Crane Pier	None								0		
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	None								0		
			Demolition	HP-17 (HPS South 3)	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
				Grassland EP South	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	20	16	24	16	10		
				Community SFC B	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
				Multituse Field	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
				Waterfront R&E Park	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
				Regunning Crane Pier	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
			Grading & Infrastructure	HP-16 (HPS South - 7a, 7b, 9a, 9b)	None								0		
				HP-17 (HPS South 3)	5	(2) Man Lifts, (2)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13		
				Grassland EP South	7	(1)Excavators, (2)Loaders, (1)Bobcat, (2) Off Road Dump Truck, (1)Water Truck		(1) Barge	20	16	120	104	10		
				Community SFC B	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				Multituse Field	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				Waterfront R&E Park	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				Regunning Crane Pier	3	(1)Excavators, (2)Loaders, (1)Bobcat, (2) Off Road Dump Truck, (1)Water Truck		(1) Barge	13	10	8	4	7		
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
				HP-17 (HPS South 3)	None								0		
				HP-11 (R&D - 6)	None								0		
			Foundation Piles/Structure/Rough-In	Waterfront Prom S 1a	None									0	
				Waterfront Prom NP	None									0	
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				Shipyards South BP										0	
				Shipyards WP 1	None									0	
				HP-15 (HPS South - 12a, 12b, 13)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				HP-11 (R&D - 6)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				Waterfront Prom S 1a	12		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				Waterfront Prom NP	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	8	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Shipyards South BP										0	
				Shipyards WP 1	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7		
				HP-15 (HPS South - 12a, 12b, 13)	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
2032	19		Abatement	Shipyards WP 2 & 3	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				Community SFC A	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				HP-17 (HPS South 3)	None									0	
			Demolition	Shipyards WP 2 & 3	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
				Community SFC A	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
				HP-17 (HPS South 3)	None									0	
			Grading & Infrastructure	Shipyards WP 2 & 3	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	4	2	13		
				Community SFC A	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				HP-17 (HPS South 3)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
			Foundation Piles/Structure/Rough-In	HP-15 (HPS South - 12a, 12b, 13)	None									0	
				Grassland EP South	None									0	
				Community SFC B	None									0	
				Multituse Field	None									0	
				Waterfront R&E Park	None									0	
				Regunning Crane Pier	None									0	
			Interior and Exterior Finishes	HP-16 (HPS South - 7a, 7b, 9a, 9b)	10	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				HP-15 (HPS South - 12a, 12b, 13)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Grassland EP South	12		(1) Excavator, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	18	14	16	8	9		
				Community SFC B	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7		
				Multituse Field	6		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7		
				Waterfront R&E Park	6		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7		
				Regunning Crane Pier	10		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
	Site Preparation	Abatement	Maintenance Yard	None								0			
		Demolition	Grassland EP North	None								0			
			Maintenance Yard	None								0			
		Grading & Infrastructure	Grassland EP North	3	(1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	24	16	7				
			Maintenance Yard	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13				

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Major Phase Indicator
Subphase Color Coding
1 HP
2HP
3 HP
4 HP

Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips		
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment
2033	20	Building Construction	Foundation Piles/Structure/Rough-In	Grassland EP North	7	(1)Excavators, (2)Loaders, (1)Bobcat, (2) Off Road Dump Truck, (1)Water Truck		(1) Barge	20	16	120	104	10
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	None								0
				Shipyards WP 2 & 3	None								0
				Community SFC A	None								0
			Interior and Exterior Finishes	HP-17 (HPS South 3)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5
				Shipyards WP 2 & 3	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7
				Community SFC A	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7
				HP-17 (HPS South 3)	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5
			Foundation Piles/Structure/Rough-In	HP-17 (HPS South 3)	None								0
				Maintenance Yard	None								0
				Grassland EP North	None								0
				HP-17 (HPS South 3)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5
2034	21	Building Construction	Interior and Exterior Finishes	Maintenance Yard	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7
				Grassland EP North	12		(1) Excavator, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	18	14	16	8	9

Draft: CPHPSII Project: Construction Workers and Equipment for Candlestick Point Construction Phase (Revision Date: 11/18/2013) Prepared by TRC for EIR Analysis					Major Phase Indicator Subphase Color Coding										
					1 CP										
					2 CP										
					3 CP										
					4 CP										
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2014	1	Site Preparation	Demolition	CP-01 (Alice Griffith - 1, 2, 4)	2		(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7		
				CP-02 (CP Center)	None								0		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
			Grading & Infrastructure	CP-01 (Alice Griffith - 1, 2, 4)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-02 (CP Center)	None								0		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
2015	2	Site Preparation	Abatement	CP-01 (Alice Griffith - 1, 2, 4)	None								0		
				CP-02 (CP Center)	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	24	16	7		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
				Wedge Park 1	None								0		
			Demolition	CP-01	None								0		
				CP-02 (CP Center)	10	(4) Man Lifts, (2)Excavators,(2) Off Road Dump Truck, (2)Loaders, (2)Dozer, (2)Water Trucks, (2) Crane			40	32	48	40	20		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
				Wedge Park 1	None								0		
			Grading & Infrastructure	CP-01 (Alice Griffith - 1, 2, 4)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-02 (CP Center)	5	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
				Wedge Park 1	None								0		
		Building Construction	Foundation Piles/Structure/Rough-In	CP-01 (Alice Griffith - 1, 2, 4)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
				CP-02 (CP Center)	None								0		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
			Interior and Exterior Finishes	CP-01 (Alice Griffith - 1, 2, 4)	None								0		
				CP-02 (CP Center)	None								0		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
Roadways	Improvements	Harney Way	None									0			
2016	3	Site Preparation	Abatement	Bayview Hillside OS	None								0		
				Jamestown Walker	None								0		
				CP-02 (CP Center)	None								0		
				CP-05 (Alice Griffith - 14, 8, 9)	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
			Demolition	Bayview Hillside OS	None								0		
				Jamestown Walker	None								0		
				CP-02 (CP Center)	None								0		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	12	6	7			
			CP-04 (CP South - 11a, 9a, 8a, 6a)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9				
			CP-05 (Alice Griffith - 14, 8, 9)	2	(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	16	8	7				
			CP-02 (CP Center)	5	(2)Excavators, (1)Loaders,(1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15				
			Bayview Hillside OS	None								0			
			Wedge Park 1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13			
			CP-03 (CP North - 1a, 2a, 10a, 11a)	5	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	6	15				
			CP-04 (CP South - 11a, 9a, 8a, 6a)	6	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15				
			CP-05 (Alice Griffith - 14, 8, 9)	3	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15				
			Foundation Piles/Structure/Rough-In	CP-01 (Alice Griffith - 1, 2, 4)	None								0		
				CP-02 (CP Center)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
		Wedge Park 1		None								0			
		CP-03 (CP North - 1a, 2a, 10a, 11a)		None								0			
		CP-04 (CP South - 11a, 9a, 8a, 6a)		None								0			
		Interior and Exterior Finishes		CP-01 (Alice Griffith - 1, 2, 4)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
			CP-02 (CP Center)	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10				
			Wedge Park 1	None								0			
			CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0			
			CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0			
			Roadways	Improvements	Harney Way	10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	12		
		2017	4	Site Preparation	Abatement	CP-05 (Alice Griffith - 14, 8, 9)	None								0
						Bayview Hillside OS	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9	
					Demolition	Jamestown Walker	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9	
						CP-05 (Alice Griffith - 14, 8, 9)	None								0
					Grading & Infrastructure	Bayview Hillside OS	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15	
						Jamestown Walker	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15	
Foundation Piles/Structure/Rough-In	CP-05 (Alice Griffith - 14, 8, 9)			None								0			
	CP-01 (Alice Griffith - 1, 2, 4)			None								0			
	CP-02 (CP Center)			5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20			
	Bayview Hillside OS			None								0			
	Jamestown Walker			None								0			
	CP-03 (CP North - 1a, 2a, 10a, 11a)			7	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20			
	CP-04 (CP South - 11a, 9a, 8a, 6a)			6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10			
	CP-05 (Alice Griffith - 14, 8, 9)			None								0			
	Interior and Exterior Finishes			CP-01 (Alice Griffith - 1, 2, 4)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
				CP-02 (CP Center)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
Bayview Hillside OS				None								0			
Wedge Park 1				2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
Building Construction	Foundation Piles/Structure/Rough-In			CP-03 (CP North - 1a, 2a, 10a, 11a)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
				CP-04 (CP South - 11a, 9a, 8a, 6a)	12	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
	Interior and Exterior Finishes			CP-05 (Alice Griffith - 14, 8, 9)	None								0		
	2018	5	Site Preparation	Abatement	AG Neighborhood P1	None								0	
					CP-06 (CP North - 1b, 2b, 6, 7)	None								0	
Demolition				AG Neighborhood P1	None								0		
				CP-06 (CP North - 1b, 2b, 6, 7)	1	(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
Grading & Infrastructure				AG Neighborhood P1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	33	26	16	8	17		
				CP-06 (CP North - 1b, 2b, 6, 7)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (2) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers							
Building Construction			Foundation Piles/Structure/Rough-In	Bayview Hillside OS	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
				Jamestown Walker	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
			Interior and Exterior Finishes	CP-04 (CP South - 11a, 9a, 8a, 6a)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10		
				CP-05 (Alice Griffith - 14, 8, 9)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	18	14	16	8	9		

Draft: CPHPSII Project: Construction Workers and Equipment for Candlestick Point Construction Phase (Revision Date: 11/18/2013) Prepared by TRC for EIR Analysis					Major Phase Indicator Subphase Color Coding										
					1 CP										
					2 CP										
					3 CP										
					4 CP										
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
			Interior and Exterior Finishes	Jamestown Walker	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				CP-05 (Alice Griffith - 14, 8, 9)	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
		Roadways	Improvements	Gilman Ave	3	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	12			
2019	6	Site Preparation	Abatement	CP-06 (CP North - 1b, 2b, 6, 7)	None								0		
				Earl Blvd Park 1 & 2	None							0			
				CP-07 (CP North- 10b, 11b)	None							0			
			Demolition	CP-06 (CP North - 1b, 2b, 6, 7)	None							0			
				Earl Blvd Park 1 & 2								0			
				CP-07 (CP North- 10b, 11b)	1		(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9		
			Grading & Infrastructure	CP-06 (CP North - 1b, 2b, 6, 7)	None							0			
				Earl Blvd Park 1 & 2	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
				CP-07 (CP North- 10b, 11b)	6	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				AG Neighborhood P1	None							0			
		Building Construction	Foundation Piles/Structure/Rough-In	CP-06 (CP North - 1b, 2b, 6, 7)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	40	32	16	8	20			
				AG Neighborhood P1	3		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7		
			Interior and Exterior Finishes	CP-06 (CP North - 1b, 2b, 6, 7)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	16	8	10		
				CP-07 (CP North- 10b, 11b)	None								0		
2020	7	Site Preparation	Abatement	CP-07 (CP North- 10b, 11b)	None								0		
				CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
				CP-07 (CP North- 10b, 11b)	None								0		
			Demolition	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	4	(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			13	10	16	8	7		
				CP-07 (CP North- 10b, 11b)	None								0		
				Grading & Infrastructure	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	5	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	8	4	15		
			Building Construction	Foundation Piles/Structure/Rough-In	CP-06 (CP North - 1b, 2b, 6, 7)	None							0		
					Earl Blvd Park 1 & 2	None								0	
		CP-06 (CP North - 1b, 2b, 6, 7)			None								0		
		Interior and Exterior Finishes		Earl Blvd Park 1 & 2	1		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7		
				CP-06 (CP North - 1b, 2b, 6, 7)											
				CP-06 (CP North - 1b, 2b, 6, 7)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork lift									
		2021	8	Site Preparation	Abatement	Wedge Park 2	None								0
						CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	None								0
CP-09 (Alice Griffith - 15, 16, 13)	1					(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
Demolition	Wedge Park 2				None								0		
	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)				None								0		
	CP-09 (Alice Griffith - 15, 16, 13)				3		(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	16	8	7		
Grading & Infrastructure	Wedge Park 2				1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)				5	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	8	4	15			
	CP-09 (Alice Griffith - 15, 16, 13)				4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	8	4	15			
	CP-09 (Alice Griffith - 15, 16, 13)														
Building Construction	Foundation Piles/Structure/Rough-In			CP-07 (CP North- 10b, 11b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
				CP-07 (CP North- 10b, 11b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	32	16	8	10		
	Interior and Exterior Finishes			CP-07 (CP North- 10b, 11b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift									
				CP-07 (CP North- 10b, 11b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift									
2022	9	Site Preparation	Abatement	AG Neighborhood P2	None								0		
				CP-09 (Alice Griffith - 15, 16, 13)	None								0		
				CP-10 (CP South - 11b, 9b)	None								0		
			Demolition	AG Neighborhood P2	None								0		
				CP-09 (Alice Griffith - 15, 16, 13)	None								0		
				CP-10 (CP South - 11b, 9b)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
			Grading & Infrastructure	AG Neighborhood P2	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
				CP-09 (Alice Griffith - 15, 16, 13)	None								0		
				CP-10 (CP South - 11b, 9b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-10 (CP South - 11b, 9b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
		Building Construction	Foundation Piles/Structure/Rough-In	CP-07 (CP North- 10b, 11b)	None								0		
				Wedge Park 2	None								0		
				CP-08	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	18	14	16	8	9			
			Interior and Exterior Finishes	CP-07 (CP North- 10b, 11b)	None								0		
Wedge Park 2	2			(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7					
CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	10	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift				10	8	8	4	5					
CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)															
2023	10	Site Preparation	Abatement	CP-10 (CP South - 11b, 9b)	None								0		
				CP-11 (CP South - 8b, 6b)	None								0		
				CP-10 (CP South - 11b, 9b)	None								0		
			Demolition	CP-11 (CP South - 8b, 6b)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
				CP-10 (CP South - 11b, 9b)	None								0		
				Grading & Infrastructure	CP-11 (CP South - 8b, 6b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15		
		Building Construction	Foundation Piles/Structure/Rough-In	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	18	14	16	8	9			
				AG Neighborhood 2	None								0		
				CP-09 (Alice Griffith - 15, 16, 13)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	18	14	16	8	9			
			Interior and Exterior Finishes	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	10	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				AG Neighborhood 2	3		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7		
				CP-09 (Alice Griffith - 15, 16, 13)	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
		Roadways	Improvements	Ingerson Ave	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	28	22	12	8	14			
				Jamestown Ave	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	28	22	12	8	14			
2024	11	Site Preparation	Abatement	Last Port	None								0		
				The Neck	None								0		
				CP-11 (CP South - 8b, 6b)	None								0		
			Demolition	Last Port	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7			
				The Neck	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	13	10	8	4	7		
				CP-11 (CP South - 8b, 6b)	None								0		
			Grading & Infrastructure	Last Port	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				The Neck	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				CP-11 (CP South - 8b, 6b)	None								0		
				CP-09 (Alice Griffith - 15, 16, 13)	None								0		
		Building Construction	Foundation Piles/Structure/Rough-In	CP-10 (CP South - 11b, 9b)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
				CP-09 (Alice Griffith - 15, 16, 13)	None								0		
				Interior and Exterior Finishes	CP-10 (CP South - 11b, 9b)	3	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10	
			2025	12	Site Preparation	Abatement	Mini Wedge Park 1	None							
CP-12 (CP North - 3a, 3b)	None												0		
Mini Wedge Park 1	None												0		
Demolition	CP-12 (CP North - 3a, 3b)	1				(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	16	8	7			
	Mini Wedge Park 1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13				
	CP-12 (CP North - 3a, 3b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (2) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers		33	26	16	8	17					
Building Construction	Foundation Piles/Structure/Rough-In	CP-10 (CP South - 11b, 9b)	None								0				
		Last Port	None								0				
		The Neck	None								0				
		CP-11 (CP South - 8b, 6b)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20				
	Interior and Exterior Finishes	CP-10 (CP South - 11b, 9b)	None								0				
		Last Port	5		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7				
		The Neck	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7					
		CP-11 (CP South - 8b, 6b)	3	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10				
2026		Abatement	CP-12 (CP North - 3a, 3b)	None								0			
			CP-13 (CP North - 8a, 8b, 9a, 9b)	None								0			

Draft: CPHPSII Project: Construction Workers and Equipment for Candlestick Point Construction Phase (Revision Date: 11/18/2013) Prepared by TRC for EIR Analysis					Major Phase Indicator Subphase Color Coding										
					1 CP										
					2 CP										
					3 CP										
					4 CP										
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2026	13	Site Preparation	Demolition	CP-12 (CP North - 3a, 3b)	None								0		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	1		(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	18	14	16	8	9			
			Grading & Infrastructure	CP-12 (CP North - 3a, 3b)	None								0		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	8	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15		
		Building Construction	Foundation Piles/Structure/Rough-In	CP-11 (CP South - 8b, 6b)	None								0		
				Mini Wedge Park 1	None								0		
				CP-11 (CP South - 8b, 6b)	None								0		
		Interior and Exterior Finishes	Mini Wedge Park 1	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
2027	14	Site Preparation	Abatement	Bldv North Park	None								0		
				CP Neighborhood	None								0		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	None								0		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	None								0		
			Demolition	Bldv North Park	None								0		
				CP Neighborhood	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	4	2	7				
				CP-13 (CP North - 8a, 8b, 9a, 9b)	None							0			
				CP-14 (CP South - 4a, 2a, 4b, 2b)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	18	14	16	8	9				
			Grading & Infrastructure	Bldv North Park	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
				CP Neighborhood	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	None								0		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
		Building Construction	Foundation Piles/Structure/Rough-In	CP-12 (CP North - 3a, 3b)	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	40	32	16	8	20			
			Interior and Exterior Finishes	CP-12 (CP North - 3a, 3b)	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	16	8	10			
		2028	15	Site Preparation	Abatement	Bldv Park South	None								0
						Wedge Park 3	None								0
						Bayview Gardens	None								0
CP-14 (CP South - 4a, 2a, 4b, 2b)	None												0		
Demolition	CP-15 (CP South - 10b, 10a, 12b)				None								0		
	Bldv Park South				None								0		
	Wedge Park 3				None								0		
	Bayview Gardens				1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7				
Grading & Infrastructure	CP-14 (CP South - 4a, 2a, 4b, 2b)				None								0		
	CP-15 (CP South - 10b, 10a, 12b)				1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	18	14	16	8	9				
	Bldv Park South				1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
	Wedge Park 3				1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
Grading & Infrastructure	Bayview Gardens			3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
	CP-14 (CP South - 4a, 2a, 4b, 2b)			4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15				
	CP-15 (CP South - 10b, 10a, 12b)			4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15				
	Building Construction			Foundation Piles/Structure/Rough-In	CP-12 (CP North - 3a, 3b)	None							0		
					Bldv Park North	None								0	
CP Neighborhood					None								0		
CP-13 (CP North - 8a, 8b, 9a, 9b)					4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
Interior and Exterior Finishes				CP-12 (CP North - 3a, 3b)	None								0		
				Bldv Park North	1	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
				CP Neighborhood	5	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
				CP-13 (CP North - 8a, 8b, 9a, 9b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
2029	16	Site Preparation	Abatement	The Last Rubble	None								0		
				CP-15 (CP South - 10b, 10a, 12b)	None								0		
				CP-16 (CP South - 7a, 7b, 12a)	None								0		
			Demolition	The Last Rubble	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7				
				CP-15 (CP South - 10b, 10a, 12b)	None								0		
				CP-16 (CP South - 7a, 7b, 12a)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	18	14	16	8	9				
			Grading & Infrastructure	The Last Rubble	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				CP-15 (CP South - 10b, 10a, 12b)	None								0		
				CP-16 (CP South - 7a, 7b, 12a)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-13 (CP North - 8a, 8b, 9a, 9b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
		Building Construction	Foundation Piles/Structure/Rough-In	Bldv Park South	None								0		
				Wedge Park 3	None								0		
				Bayview Gardens	None								0		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
			Interior and Exterior Finishes	CP-13 (CP North - 8a, 8b, 9a, 9b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
				Bldv Park South									0		
				Wedge Park 3	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
				Bayview Gardens	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7			
				CP-14 (CP South - 4a, 2a, 4b, 2b)	5	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
2030	17	Site Preparation	Abatement	The Heart of Park	None								0		
				The Point	None								0		
				CP-16 (CP South - 7a, 7b, 12a)	None								0		
			Demolition	The Heart of Park	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7				
				The Point	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7				
				CP-16 (CP South - 7a, 7b, 12a)	None								0		
			Grading & Infrastructure	The Heart of Park	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				The Point	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				CP-16 (CP South - 7a, 7b, 12a)	None								0		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
		Building Construction	Foundation Piles/Structure/Rough-In	The Last Rubble	None								0		
				CP-15 (CP South - 10b, 10a, 12b)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	5	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
				Bldv Park South									0		
			Interior and Exterior Finishes	Wedge Park 3	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
				Bayview Gardens	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7			
				CP-14 (CP South - 4a, 2a, 4b, 2b)	5	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
				CP-15 (CP South - 10b, 10a, 12b)	3	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
2031	18	Site Preparation	Abatement	Wind Meadow	None								0		
				Mini Wedge 2	None								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		
			Demolition	Wind Meadow	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7				
				Mini Wedge 2	None								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	1	(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	18	14	16	8	9				
			Grading & Infrastructure	Wind Meadow	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				Mini Wedge 2	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	7	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (2) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	33	26	16	8	17			
		Building Construction	Foundation Piles/Structure/Rough-In	CP-15 (CP South - 10b, 10a, 12b)	None								0		
				The Heart of Park	None								0		
				The Point	None								0		
				CP-16 (CP South - 7a, 7b, 12a)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
			Interior and Exterior Finishes	CP-15 (CP South - 10b, 10a, 12b)	None								0		
				The Heart of Park	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7			
				The Point	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7			
				CP-16 (CP South - 7a, 7b, 12a)	3	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
Site Preparation	Abatement	CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0				
		CP-18 (CP North - 7a, 6a, 7b, 6b)	None								0				
		CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0				
	Demolition	CP-18 (CP North - 7a, 6a, 7b, 6b)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	18	14	16	8	9						
		CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0				

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Prepared by TRC for EIR Analysis

Major Phase Indicator
Subphase Color Coding
1 CP
2 CP
3 CP
4 CP

Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips		
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment
2032	19		Grading & Infrastructure	CP-18 (CP North - 7a, 6a, 7b, 6b)	7	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15
				CP-16 (CP South - 7a, 7b, 12a)	None								0
			Foundation Piles/Structure/Rough-In	Wind Meadow	None								0
				Mini Wedge 2	None								0
				CP-16 (CP South - 7a, 7b, 12a)	None								0
			Interior and Exterior Finishes	Wind Meadow	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7
				Mini Wedge 2	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7
2033	20		Site Preparation	Abatement	Earl Blvd Park 3	None							0
				Abatement	Grassland S1	None							0
				Abatement	CP-18 (CP North - 7a, 6a, 7b, 6b)	None							0
				Demolition	Earl Blvd Park 3	1		(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7
					Grassland S1	1		(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7
					CP-18 (CP North - 7a, 6a, 7b, 6b)	None							0
			Grading & Infrastructure	Earl Blvd Park 3	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13
				Grassland S1	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13
				CP-18 (CP North - 7a, 6a, 7b, 6b)	None								0
			Building Construction	Foundation Piles/Structure/Rough-In	CP-17 (CP North - 4a, 5a, 4b, 5b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	20	16	16	8	10
				Interior and Exterior Finishes	CP-17 (CP North - 4a, 5a, 4b, 5b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Pile Driver	10	8	8	4	5
2034	21		Site Preparation	Abatement	Grassland S2	None							0
				Demolition	Grassland S2	1		(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7
				Grading & Infrastructure	Grassland S2	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	25	20	8	4	13
			Building Construction	Foundation Piles/Structure/Rough-In	CP-17 (CP North - 4a, 5a, 4b, 5b)	None							0
					Earl Blvd Park 3	None							0
					Grassland S1	None							0
					CP-18	7	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	40	32	16	8	20
					CP-17 (CP North - 4a, 5a, 4b, 5b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Pile Driver	10	8	8	4	5
				Interior and Exterior Finishes	Earl Blvd Park 3	1		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	13	10	8	4	7
					Grassland S1	10		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	13	10	8	4	7
					CP-18 (CP North - 7a, 6a, 7b, 6b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	20	16	8	4	10
2035	22		Building Construction	Foundation Piles/Structure/Rough-In	CP-18 (CP North - 7a, 6a, 7b, 6b)	None							0
				Foundation Piles/Structure/Rough-In	Grassland S2	None							0
			Interior and Exterior Finishes	CP-18 (CP North - 7a, 6a, 7b, 6b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10
				Grassland S2	10		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7

Construction Phase	Yearly Average Duration (months)	Daily Construction Workers		Daily Construction Truck Trips ¹	Daily Construction Truck Trips ¹	Yearly Barge Trips		Construction Equipment ^{2,3}	Construction Equipment ²	Construction Equipment ²
		Max. Number of workers	Avg. Number of workers	Max. Number of truck trips	Avg. Number of truck trips			Full Time	1/2 Time	1/4 Time
Hunters Point Shipyard										
2020 Shoreline Demolition and Improvements (Waterfront Prom N1+ N2)	9	21	18	0	0	6	6	(1) Floating Platforms, (1) Bobcat		
2021 Shoreline Demolition and Improvements (Waterfront Prom N1 + N2)	9	21	18	0	0	6	6	(2) Floating Platforms, (1) Bobcat	(1) Cranes, (1)Barge, (1) Bobcat	
2022 Shoreline Demolition and Improvements (Heritage Parks 1)	5	12	11	0	0	20	4	(4) Floating Platforms, (4) Cranes, (2) Excavator, (2) Bobcat	(2)Barge	
2023 Shoreline Demolition and Improvements (Heritage Parks 1 +2)	9	24	21	0	0	40	7	(4) Floating Platforms, (4) Cranes, (2) Excavator, (2) Bobcat	(2)Barge	
2024 Shoreline Demolition and Improvements (Heritage Park 2)	5	24	21	0	0	30	7	(2) Floating Platforms, (2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2027 Shoreline Demolition and Improvements (Waterfront Prom S 1b)	3	8	7	0	0	8	4	(2) Floating Platforms, (2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2028 Shoreline Demolition and Improvements (Waterfront Prom S 1b)	3	8	7	0	0	8	4	(2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2029 Shoreline Demolition and Improvements (Waterfront Prom S 2b, Waterfront Prom South 2a)	9	24	21	0	0	40	7	(2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2030 Shoreline Demolition and Improvements (Waterfront Prom S 2b, Waterfront Prom S 2a, Waterfront Prom S 1a, Waterfront Prom NP)	7	17	15	0	0	18	7	(4) Floating Platforms, (4) Cranes, (2) Excavator, (2) Bobcat	(2)Barge	
2031 Shoreline Demolition and Improvements (Grassland EP South, Waterfront R&E Park, Waterfront Prom S 1a, Waterfront Prom NP, Regunning Crane Pier)	11	25	22	0	0	28	11	(2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2032 Shoreline Demolition and Improvements (Grassland EP South, Waterfront R&E Park, Regunning Crane Pier)	9	21	18	0	0	22	9	(2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2033 Shoreline Demolition and Improvements (Grassland EP North)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2034 Shoreline Demolition and Improvements (Grassland EP North)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
Candlestick Point										
2024 Shoreline Improvements (Last Port + The Neck)	4	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2028 Shoreline Improvements (Bayview Gardens)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2029 Shoreline Improvements (The Last Rubble)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2030 Shoreline Improvements (The Point + The Heart of the Park)	4	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2031 Shoreline Improvements (Wind Meadow)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2033 Shoreline Improvements (Grasslands S1)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2034 Shoreline Improvements (Grasslands S2)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge

SOURCE: MACTEC

- Note:**
1. Number of truck trips making deliveries, and number of truck trips required for materials removal, see assumptions for trip details.
 2. The construction equipment in this table identifies what will be required in addition to the equipment already onsite performing infrastructure work.
 3. It should be assumed that all Floating Platforms referenced in the "Construction Equipment" columns will be propane or electric powered.
- (2) = Number of pieces of specified equipment.

Assumptions

Each truck will be able to carry 15 cy of material
Each barge will be able to carry 2500 tons of material
Hunters Point Shipyard import fill will be brought on site by barge (100%)
Candlestick Point import fill will be brought on site by barge (50%), and sourced on site (50%).
Quantities do not account for work performed by Navy.

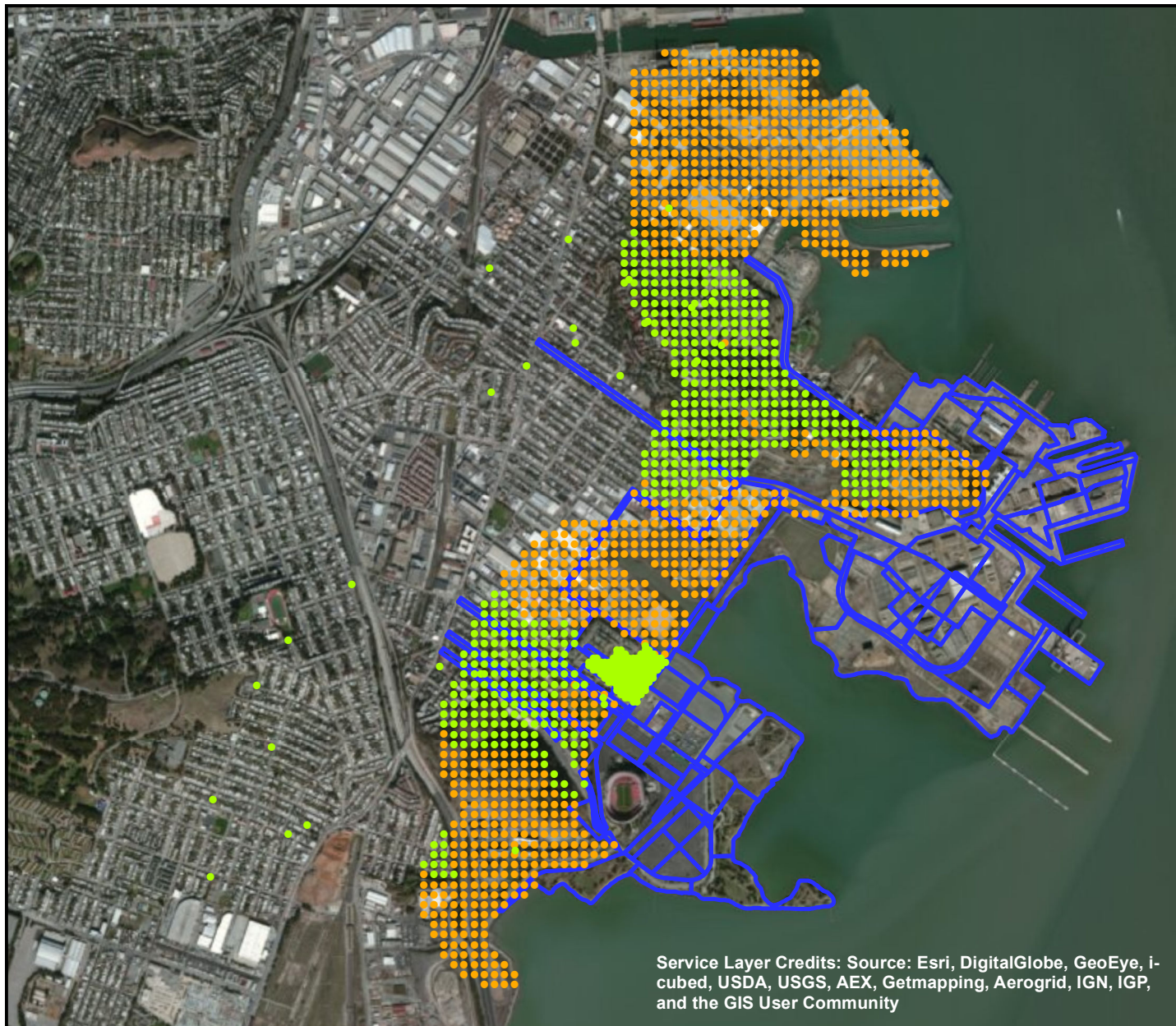
Construction Phase	Yearly Average Duration (months)	Daily Construction Workers		Daily Construction Truck Trips ¹			Construction Equipment ³ Full Time	Construction Equipment ³ 1/2 Time	Construction Equipment ³ 1/4 Time
		Max. Number of workers	Avg. Number of workers	Max. Number of truck trips	Avg. Number of truck trips	Number of on site equipment			
Field Management 2014	12	20	16	4	2	8		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2015	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2016	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2017	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2018	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2019	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2020	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2021	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2022	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2023	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2024	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2025	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2026	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2027	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2028	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2029	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2030	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2031	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2032	12	25	20	4	2	6		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2033	12	25	20	4	2	6		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2034	12	15	12	4	2	6		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2035	12	15	12	4	2	6		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	

Note:

1. Number of truck trips making deliveries, and number of truck trips required for materials removal, see assumptions for trip details.
 2. Back up equipment is kept onsite to minimize downtime if a piece of equipment breaks down and needs replacement. Typically this equipment will not be used on a day to day basis.
 3. It should be assumed that all Man Lifts referenced in the "Construction Equipment" columns will be propane or electric powered.
 4. Hunters Point and Candlestick Point will each utilize a new dedicated crushing plant located near the Bay. The crushing plants will be comprised of 1 loader, 1 hammer, 1 screener, 1 crusher and an adjacent batch plant. Each crushing plant will operate ½ time.
- (2) = Number of pieces of specified equipment.

Assumptions

Max. number of round trips to 8 total trips
Each truck will be able to carry 20 tons of material
Personal vehicle trips to and from the construction site were not included in the truck trip calculations and are estimated to be 1 trip for every 2 workers as incentives will be offered for use of mass transit and car/van pooling.
Import fill will be brought onto the site through two primary modes; Trucks (60%) and Barge (40%).
Quantities do not account for concurrent remediation work occurring at Hunters Point Shipyard.



Legend

- Resident/Sensitive (Adult & Child)
- Worker
- Property Boundary

0 500 1,000
Meter

0 2,500 5,000
Feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Proposed Receptor Location Refinements to the Candlestick Point - Hunters Point Shipyards Phase II Development Plan San Francisco, California



Attachment
C



Legend

◆ Modeled Volume Source

Sources are modeled at 30 meter spacing within the grid.

0 500 1,000
Meter

0 1,000 2,000
Feet



**Modeled Source Location
Refinements to the Candlestick Point - Hunters Point
Shipyard Phase II Development Plan
San Francisco, California**



Attachment
D



SAN FRANCISCO PLANNING DEPARTMENT

ATTACHMENT 2
ADDENDUM NO. 1

Addendum to Environmental Impact Report

Addendum Date: December 11, 2013
Case No.: 2007.0946E
Project Title: Candlestick Point-Hunters Point Shipyard Phase II
EIR: 2007.0946E, certified June 3, 2010
Project Sponsor: CP Development Co., LP
Lead Agency: San Francisco Planning Department/Office of Community Investment and Infrastructure
Staff Contact: Chris Kern – (415) 575-9037
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REMARKS

Background

On June 3, 2010, the San Francisco Planning Commission and the Redevelopment Agency Commission certified the Final Environmental Impact Report (FEIR) for the Candlestick Point – Hunters Point Shipyard Phase II Project (Project), San Francisco Planning Department file number 2007.0946E and San Francisco Redevelopment Agency file number ER06.05.07. On July 14, 2010, the San Francisco Board of Supervisors affirmed the Planning Commission's certification of the Final EIR (Motion No. M10-110) and adopted findings of fact, evaluation of mitigation measures and alternatives, and a statement of overriding considerations (File No. 100572) and adopted a Mitigation Monitoring and Reporting Program (MMRP) in fulfillment of the requirements of the California Environmental Quality Act (CEQA). The Project is the integrated redevelopment of 702 acres in the Candlestick Point area and the Hunters Point Shipyard Phase II area with a major mixed-use project including open space, housing, commercial (office, regional retail, and neighborhood retail) uses, research and development, artist space, a marina, new infrastructure, community uses, entertainment venues, and a new football stadium.

Between June 3, 2010 through August 3, 2010, the Planning Commission, Redevelopment Agency, Board of Supervisors, and other City Boards and Commissions adopted various resolutions, motions and ordinances relating the Project approval and implementation, including but not limited to: (1) General Plan amendments; (2) Planning Code amendments; (3) Zoning Map amendments; (4) Bayview Hunters Point Redevelopment Plan amendments; (5) Hunters Point Shipyard Redevelopment Plan amendments; (6) Interagency Cooperation Agreements; (7) Design for Development documents; (8) Health Code, Public Works Code, Building Code, and Subdivision Code amendments; (9) Disposition and Development Agreement, which included (among other documents) as attachments a Project Phasing Schedule, a Transportation Plan, and an Infrastructure Plan; (10) Real Property Transfer

Agreement; (11) Public Trust Exchange Agreement; (12) Park Reconfiguration Agreement; and (13) Tax Increment Allocation Pledge Agreement.

Subsequent to the certification of the FEIR and the approvals listed above and as part of the first major phase and sub-phase applications, the project sponsor has proposed changes to the Project Phasing Schedule and corresponding changes to the schedules for implementation of related transportation system improvements in the Transportation Plan, including the Transit Operating Plan, and Infrastructure Plan and other public benefits.

Project Summary

The Project covers approximately 702 acres along the southeastern waterfront of San Francisco consisting of 281 acres at Candlestick Point (Candlestick) and 421 acres at Hunters Point Shipyard (HPS Phase II). The FEIR evaluated and the City approved the Project as described in Chapter II and several variants. At the time of Project approval, it was not known whether the 49ers football team would move to Santa Clara or require a new stadium to be built as part of the Project. Consequently, the Board of Supervisors approved several development options including the Project with the stadium and two non-stadium variants. Specifically, the Board approved: (1) the Project with a stadium as described in Chapter II of the FEIR with the Candlestick Tower Variant 3D, Utility Variant 4, and Shared Stadium Variant 5; (2) the Project without the stadium plus the R&D Variant 1, the Candlestick Tower Variant 3D, and the Utility Variant 4; (3) the Project without the stadium plus the Housing/R&D Variant 2a, the Candlestick Tower Variant 3D, and the Utility Variant 4; and (4) Sub-alternative 4A, which provides for the preservation of four historic structures located in the Hunters Point Shipyard and which could be implemented with either the stadium Project or non-stadium Variants.¹

Following the Project approval in 2010, the 49ers decided to move to, and are constructing a stadium in, the City of Santa Clara. Consequently, the project sponsor has decided to proceed with the Project without the stadium plus the Housing/R&D Variant 2a, and the Candlestick Tower Variant 3D. For purposes of this Addendum, the Project is defined as the non-stadium Project with the Housing/R&D Variant 2a, including the Candlestick Tower Variant 3D.

No decision has been made with respect to implementing the Utility Variant 4; therefore, this variant is not included in the current Major Phase 1 and sub-phase applications and will not be discussed in this Addendum. Implementation of the Housing/R&D Variant 2a at this time includes Sub-alternative 4A, but as Major Phase 1 does not include development affecting the four historic structures under Sub-alternative 4A, this sub-alternative will not be discussed in this Addendum.

This Addendum evaluates proposed changes to the Project Phasing Schedule; related adjustments to the timing of construction of parks, open space and other public benefit

¹ Board of Supervisors CEQA Findings pp.2-4, July 14, 2010. This document is on file and available for review as part of Case File No. 2007.0946E

improvements; related changes to the implementation of transportation system improvements, including the provision of some interim transit service that would serve the Project until permanent transit service is warranted when the project is further built-out; reconfiguration of Arelious Walker Drive to provide a more walkable roadway; improvements in the bicycle network; and other minor modifications to roadway configurations as described below. No changes to the kinds, locations, densities or intensities of development at build out of the Project are proposed under this Addendum. In addition, this Addendum addresses minor revisions proposed to Mitigation Measures TR-16 Widen Harney Way and UT-2 Auxiliary Water Supply System as described below. The proposed changes to the Project described in this Addendum are subject to approval by the City and County of San Francisco's Commission on Community Investment and Infrastructure through its actions on the Major Phase 1 Plan Submission and the Streetscape Plan pursuant to Disposition and Development Agreement with CP Development Co., LP for the Candlestick Point and Phase 2 Hunters Point Shipyard Project Area.

PROPOSED PROJECT MODIFICATIONS

Project Phasing Schedule

The project sponsor is proposing changes to the Project Phasing Schedule because: (1) the HPS Parcel B site will not be available for development until later than previously anticipated due to delays in the transfer of this site from the Navy to the developer; and (2) the Candlestick Park stadium site will be available for development sooner than previously anticipated due to the 49ers football team's move to a new stadium in Santa Clara in 2014.

In response to these changes, the project sponsor proposes the following changes to the Project Phasing Schedule:

- Demolition of Candlestick Park stadium and construction of the Candlestick Point Regional Retail Center in Major Phase 1 instead of Major Phase 3 as shown in the 2010 Project Phasing Schedule.
- Development of all of the research and development blocks on Parcel C in HPS Phase II in Major Phase 3 instead of splitting this development between Major Phase 2 and 3 as shown in the 2010 Project Phasing Schedule.
- Development of all improvements in the HPS Phase II South area in Major Phase 4 instead of splitting this development among Major Phases 2, 3, and 4 as shown in the 2010 Project Phasing Schedule.

Under the modified Phasing Schedule, construction activities at Candlestick Point would occur from 2014 through 2035 rather than 2012 through 2031 as described in the FEIR (see **Table 2** below). Off-site roadway, utility, and shoreline improvements would be constructed beginning in 2014 rather than 2013 (see **Table 4** below). The number of construction workers on the site on any given day would vary from a low of 28 during the final stages of vertical development to a maximum of 297 workers during the peak years of development rather than the range of 70 to 328 as anticipated in the FEIR (see **Appendix A**, p. 42 – Construction Activities by Phase). The

number of truck trips on any given day would vary from a low of 8 truck trips to a maximum of 148 during site preparation at Alice Griffith (8 to 96 in the FEIR). The number of on-site equipment would be about 148 pieces during the height of construction activity (68 in the FEIR).

Under the modified Phasing Schedule, construction activities in HPS Phase II would occur from 2014 through 2034 rather than 2011 through 2031 as described in the FEIR (see **Table 3** below). Off-site roadway, utility, and shoreline improvements would be constructed beginning in 2014 rather than 2013 (see **Table 5** below). The number of construction workers on the site on any given day would vary from a low of 25 workers during the final stage of vertical development to a maximum of 483 workers during the peak years of development rather than 15 to 455 as described in the FEIR (see **Appendix A**, p. 42 – Construction Activities by Phase). The number of truck trips on any given day would vary from a low of 4 trucks trips to a maximum of 508 truck trips, primarily during the peak year of grading and infrastructure development (4 to 288 in the FEIR). The number of on-site equipment would be about 262 pieces during the height of construction activity (65 in the FEIR).

Tables 1-5 and **Figures 1 and 2** compare the 2010 Project Phasing Schedule with the proposed 2013 Project Phasing Schedule.

In addition to the changes to the Project Phasing Schedule described above, the project proponent proposes corresponding changes to the schedule for implementation of the project-related public benefit improvements. As with the proposed changes to the Project Phasing Schedule, all of the public benefits identified in the FEIR for the non-stadium Project with the Housing/R&D Variant 2a would be constructed, but the timing of implementation of these improvements would change to reflect the changes in the phasing of the overall development. **Tables 4 and 5** and **Figures 1 and 2** below show the proposed changes in the timing of implementation of the project-related public benefits under the revised Project Phasing Schedule.

Auxiliary Water Supply System

Mitigation Measure UT-2 Auxiliary Water Supply System (MM UT-2) requires construction of new Auxiliary Water Supply System (AWSS) loops within Candlestick Point and HPS Phase II to connect with the City's AWSS fire-fighting water system. However, instead of the AWSS loops specified in MM UT-2, the project sponsor is proposing an alternative design for the project AWSS system. The proposed changes to the AWSS design would include a different piping layout than previously contemplated and the addition of two Portable Water Supply Systems (PWSS) instead of loop systems. The PWSS is a portable fire hydrant system that provides the SFFD with the ability to extend the AWSS as needed. The PWSS also provides the SFFD with the flexibility to use these portable systems throughout the City. The proposed AWSS in the Candlestick Point development would include the purchase of two PWSS setups for the SFPD. The SFFD has determined that the addition of the two PWSS would allow the

The map displays the Lennar Improvement Area, which is divided into four color-coded phases of completion:

- Phase 1:** Phase Completion by 2017 (Dark Brown)
- Phase 2:** Phase Completion by 2021 (Green)
- Phase 3:** Phase Completion by 2025 (Yellow)
- Phase 4:** Phase Completion by 2031 (Purple)

Other features include:

- Yosemite Slough Restoration Site (Outside of Lennar Improvement Area):** Indicated by a hatched pattern.
- Existing Parks:** Indicated by a light green color.
- Project Boundary:** A thick black line.
- NAP (Not-a-Part):** A thick black line with a white center.

The map also shows surrounding basins: *India Basin* to the north, *South Basin* to the south, and *Candlestick Cove* to the southwest. A legend in the top left corner defines the symbols and colors used. A north arrow and the text "NOT TO SCALE" are located in the bottom right corner.

^a Note: The phase completion years shown in Figure IV-10a Housing/R&D Variant (Variant 2A) Building and Park Construction Schedule [New] on page C&R 752 of the FEIR are incorrect due to a typographical error. The phase completion years in Figure 1 above are corrected to match the FEIR project description for Variant 2A.

5

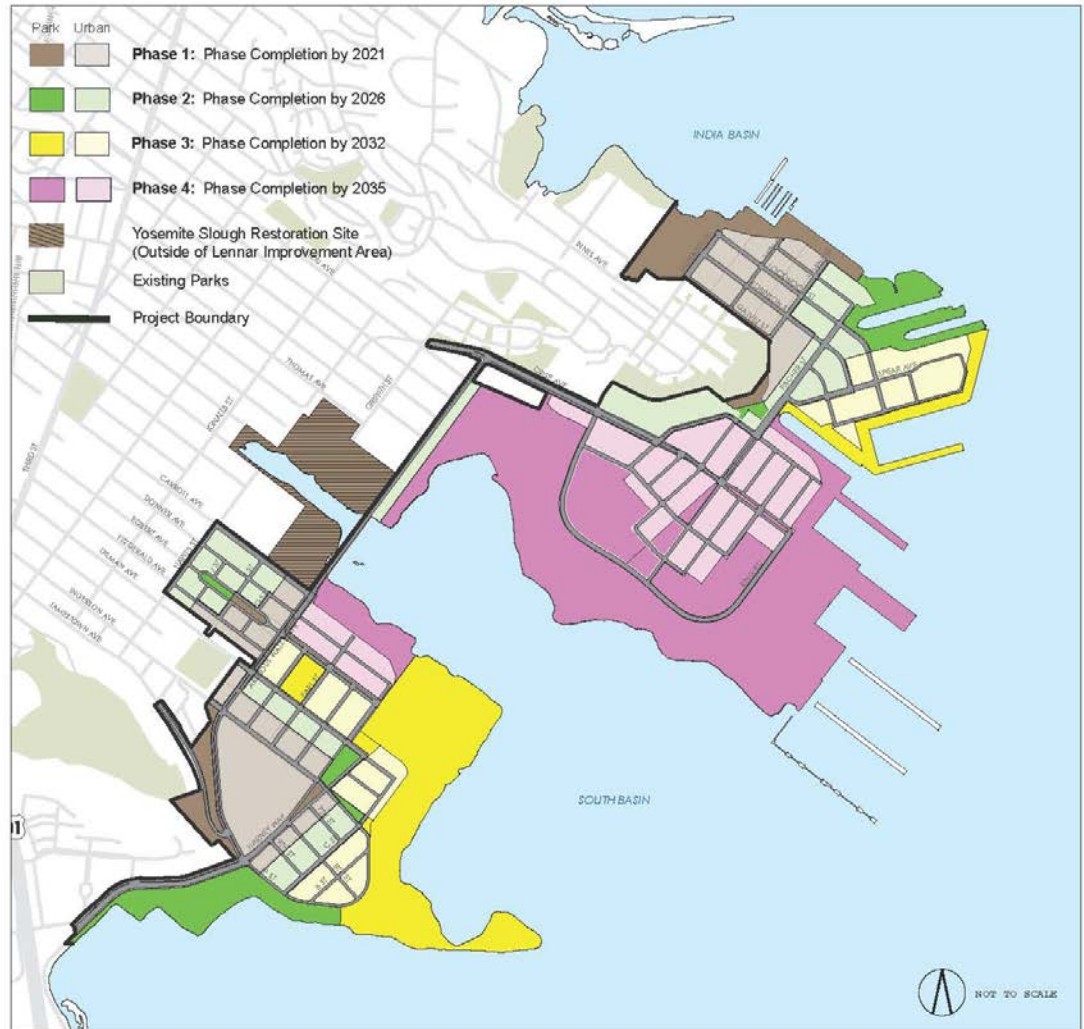


FIGURE 2 – NON-STADIUM VARIANT 2A 2013 PHASING SCHEDULE

TABLE 1 – SUMMARY OF PROPOSED PROJECT PHASING SCHEDULE MODIFICATIONS										
	Major Phase 1		Major Phase 2		Major Phase 3		Major Phase 4		Totals	
	2010 Phasing 2011-2017	2013 Phasing 2014-2021	2010 Phasing 2016-2021	2013 Phasing 2018-2026	2010 Phasing 2020-2025	2013 Phasing 2024-2032	2010 Phasing 2024-2031	2013 Phasing 2026-2035	2010 Phasing 2011-2035	2013 Phasing 2014-2035
Housing (units)	3,158	2,874	1,248	3,166	3,149	2,165	2,945	2,295	10,500	10,500
Office (sf)	0	150,000	0	0	150,000	0	0	0	150,000	150,000
Research & Development (sf)	593,000	0	1,355,122	627,000	1,051,878	1,823,000	0	550,000	3,000,000	3,000,000
Arena (seats)	0	10,000	0	0	10,000	0	0	0	10,000	10,000
Arena (sf)	0	75,000	0	0	75,000	0	0	0	75,000	75,000
Hotel (rooms)	0	220	0	0	220	0	0	0	220	220
Hotel (sf)	0	150,000	0	0	150,000	0	0	0	150,000	150,000
Neighborhood Retail (sf)	73,000	145,000	52,000	76,000	70,000	9,000	55,000	20,000	250,000	250,000
Regional Retail (sf)	0	635,000	0	0	635,000	0	0	0	635,000	635,000
Artist's Studio / Art Centre (sf)	255,000	255,000	0	0	0	0	0	0	255,000	255,000
Community Facilities (sf)	10,253	50,000	0	0	89,747	0	0	50,000	100,000	100,000

TABLE 2 – PROPOSED PROJECT PHASING SCHEDULE MODIFICATIONS CANDLESTICK POINT										
	Major Phase 1		Major Phase 2		Major Phase 3		Major Phase 4		Totals	
	2010 Phasing 2013-2017	2013 Phasing 2014-2019	2010 Phasing 2016-2021	2013 Phasing 2018-2026	2010 Phasing 2020-2025	2013 Phasing 2025-2032	2010 Phasing 2024-2031	2013 Phasing 2031-2035	2010 Phasing 2013-2035	2013 Phasing 2014-2035
Housing (units)	998	1,529	128	1,936	2,154	2,055	2,945	705	6,225	6,225
Office (sf)	0	150,000	0	0	150,000	0	0	0	150,000	150,000
Research & Development (sf)	0	0	0	0	0	0	0	0	0	0
Arena (seats)	0	10,000	0	0	10,000	0	0	0	10,000	10,000
Arena (sf)	0	75,000	0	0	75,000	0	0	0	75,000	75,000
Hotel (rooms)	0	220	0	0	220	0	0	0	220	220
Hotel (sf)	0	150,000	0	0	150,000	0	0	0	150,000	150,000
Neighborhood Retail (sf)	0	125,000	0	0	70,000	0	55,000	0	125,000	125,000
Regional Retail (sf)	0	635,000	0	0	635,000	0	0	0	635,000	635,000
Artist's Studio / Art Centre (sf)	0	0	0	0	0	0	0	0	0	0
Community Facilities (sf)	0	50,000	0	0	50000	0	0	0	50,000	50,000

TABLE 3 – PROPOSED PROJECT PHASING SCHEDULE MODIFICATIONS HUNTERS POINT SHIPYARD PHASE II										
	Major Phase 1		Major Phase 2		Major Phase 3		Major Phase 4		Totals	
	2010 Phasing 2011-2017	2013 Phasing 2014-2021	2010 Phasing 2016-2021	2013 Phasing 2018-2025	2010 Phasing 2020-2025	2013 Phasing 2024-2031	2010 Phasing 2024-2031	2013 Phasing 2026-2034	2010 Phasing 2011-2031	2013 Phasing 2014-2034
Housing (units)	2,160	1,345	1,120	1,230	995	110	0	1,590	4,275	4,275
Office (sf)	0	0	0	0	0	0	0	0	0	0
Research & Development (sf)	593,000	0	1,355,122	627,000	1,051,878	1,823,000	0	550,000	3,000,000	3,000,000
Arena (seats)	0	0	0	0	0	0	0	0	0	0
Arena (sf)	0	0	0	0	0	0	0	0	0	0
Hotel (rooms)	0	0	0	0	0	0	0	0	0	0
Hotel (sf)	0	0	0	0	0	0	0	0	0	0
Neighborhood Retail (sf)	73,000	20,000	52,000	76,000	0	9,000	0	20,000	125,000	125,000
Regional Retail (sf)	0	0	0	0	0	0	0	0	0	0
Artist's Studio / Art Centre (sf)	255,000	255,000	0	0	0	0	0	0	255,000	255,000
Community Facilities (sf)	10,253	0	0	0	39,747	0	0	50,000	50,000	50,000

TABLE 4 - CANDLESTICK POINT PUBLIC BENEFITS							
Major Phase 1 CP		Major Phase 2 CP		Major Phase 3 CP		Major Phase 4 CP	
2010 Phasing	2013 Phasing	2010 Phasing	2013 Phasing	2010 Phasing	2013 Phasing	2010 Phasing	2013 Phasing
Alice Griffith Neighborhood Park 1	Bayview Hillside Open Space		Earl Boulevard Park 1 and 2	Candlestick Point Neighborhood Park	Boulevard Park North	Earl Boulevard Park 3	Earl Boulevard Park 3
Alice Griffith Neighborhood Park 2	Jamestown Walker Slope		Wedge Park 2	Boulevard Park North	CP Neighborhood Park	Boulevard Park South	Grasslands North
Gilman Ave	Harney Way		Alice Griffith Neighborhood Park 2	Grasslands North	Boulevard Park South	Grasslands South	Grasslands South
Ingerson Ave	Wedge Park 1		Ingerson Ave	Yosemite Slough Bridge (incl approach)	Wedge Park 3	Grassland Ecology Park North	
Jamestown Ave	Gilman Ave		Jamestown Ave	Last Port	Bayview Gardens	Grassland Ecology Park South	
	Alice Griffith Neighborhood Park 1		Last Port	Earl Boulevard Park 1	The Last Rubble	The Neck	
			The Neck	Wedge Park	The Heart of the Park	Mini-Wedge Park	
			Mini-Wedge Park 1	Earl Boulevard Park 2	The Point	The Last Rubble	
				Bayview Gardens	Wind Meadow	Wind Meadow	
				Bayview Hillside Open Space	Mini-Wedge 2	The Heart of the Park	
				Jamestown Walker Slope		The Point	
				Harney Way			

TABLE 5 - HUNTERS POINT SHIPYARD PUBLIC BENEFITS							
Major Phase 1 HPS		Major Phase 2 HPS		Major Phase 3 HPS		Major Phase 4 HPS	
2010 Phasing	2013 Phasing	2010 Phasing	2013 Phasing	2010 Phasing	2013 Phasing	2010 Phasing	2013 Phasing
Building 101 Infrastructure	Building 101 Infrastructure	Heritage Park 1	Yosemite Slough Bridge	Waterfront Promenade South 1a	Waterfront Promenade South 1b	Waterfront Promenade North Pier	Shipyards South Park 1
Artist Replacement Space	Artist Replacement Space	Heritage Park 2	Heritage Park 1	Waterfront Promenade South 1b	Waterfront Promenade South 1a	Waterfront Promenade South Pier	Waterfront Promenade South 2a
Northside Park 1	Innes Avenue	Waterfront Promenade South 2a	Heritage Park 2	Shipyards South Park	Waterfront Promenade North Pier		Waterfront Promenade South 2b
Northside Park 2	Horne Blvd Park 2	Waterfront Promenade South 2b	Shipyards Hillside Open Space	Shipyards Wedge Park			Waterfront Promenade South Pier
Waterfront Promenade North 1	Northside Park 1	Ingalls/Thomas/Carroll/Griffith	Palou Ave	Shipyards Neighborhood Park			Shipyards South Park 2
Horne Boulevard Park 1	Northside Park 2		Ingalls/Thomas/Carroll/Griffith	Community Sports Fields Complex / Maintenance Yard			Shipyards South Boulevard Park
Waterfront Promenade North 2	Horne Blvd Park 2			Shipyards Mini Park			Shipyards Wedge Park 1
Horne Boulevard Park 2	Waterfront Promenade North 1			Multi-Use Fields			Grassland Ecology Park South
Innes Avenue	Waterfront Promenade North 2			Waterfront Recreation and Education Park			Community Sports Fields Complex B
Palou Ave	Horne Boulevard Park 1			Regunners Crane Pier			Multi-Use Fields
Shipyards Hillside Open Space				Shipyards South Boulevard Park			Waterfront Recreation and Education Park
							Regunners Crane Pier
							Shipyards Wedge Park 2 & 3
							Community Sports Fields Complex A
							Maintenance Yard
							Grassland Ecology Park North

As such, MM UT-2 is proposed to be revised as follows.

MM UT-2 Auxiliary Water Supply System. Prior to issuance of occupancy permits, as part of the Infrastructure Plan to be approved, the Project Applicant shall construct an Auxiliary Water Supply System (AWSS) ~~loop~~ within Candlestick Point to connect to the City's planned extension of the offsite system off-site on Gilman Street from Ingalls Street to Candlestick Point. The Project Applicant shall construct an additional AWSS ~~loop~~ on HPS Phase II to connect to the existing system at Earl Street and Innes Avenue and at Palou and Griffith Avenues, with ~~looped~~ service along Spear Avenue/Crisp Road.

TRANSPORTATION SYSTEM

General Refinements

The project proponent proposes refinements to roadway cross-section dimensions and alignments from those shown in the previously approved Transportation Plan. Refinements to roadway cross sections are proposed to continue to encourage slow-speed auto traffic, but to better accommodate transit, bicyclists, and on-street parking based on recent San Francisco Municipal Transportation Agency (SFMTA) design guidance for travel lane widths. Specifically, proposed changes fall into one of several categories. The categories of modifications, and their potential for creating new impacts, are discussed below:

- **Establish consistent design principles.** The proposed revisions reflect recent direction from SFMTA regarding cross-section dimensions for various street components, such as width of parking lanes, width of travel lanes, and width of bicycle lanes. While some refinements are proposed to specific lane dimensions, all auto and transit travel lanes would continue to be within a range of 10-12 feet, consistent with the range of widths analyzed in the FEIR. Parking lanes would be 8 feet wide, increasing to 9 feet when adjacent to Class II bicycle lanes, which is also within the range of between 7-9 feet for on-street parking described in the FEIR. Class II bicycle lanes would be 6 feet wide, except when adjacent to (9-foot wide) on-street parking, in which case they would be 5 feet wide. Bicycle lanes between 5-6 feet wide are consistent with the range of bicycle lanes described in the FEIR. Sidewalk widths would range primarily from 12-15 feet, throughout the Project, consistent with the range of sidewalk widths described in the FEIR.
- **Establish a more consistent BRT alignment.** The proposed modifications also reflect direction from SFMTA regarding converting the proposed Bus Rapid Transit (BRT) lanes from a two-way, side-running alignment to a center-running alignment, where possible, to be consistent with other priority transit corridors in San Francisco. Generally, this would affect the Hunters Point Shipyard site more than the Candlestick Point site. However, within Candlestick Point, adjacent to the wedge park, the BRT and auto lanes would be re-oriented so that both auto lanes are on the east side of the wedge park and both BRT lanes are on the west side of the wedge park, essentially offering similar benefits as center-running BRT, since the BRT lanes would essentially be

operating in an exclusive roadway. Overall, SFMTA has determined that center-running BRT tends to be quicker and more reliable because left-turns at intersections, which conflict with the center-running BRT, can more easily be controlled by special signal phasing than right turns, which conflict with the side-running proposal. As a result, the changes should, if anything, result in a faster and more reliable BRT route.

- **Reorientation of some streets in Candlestick Point.** The original transportation network analyzed in the FEIR had one east-west residential street in Candlestick Point parallel to and between Ingerson Avenue and Gilman Avenue and one street parallel to and between Egbert Street and Gilman Avenue. The original plan had north-south mid-block breaks (also referred to as alleys) on either side of Earl Street (parallel to Earl Street). However, with the proposed changes to the BRT-only roadway on the west side of the wedge park, the east-west streets would dead-end at the wedge park, potentially forcing autos to turn into the BRT lanes. To respond, the functionality of these streets would be switched, essentially converting these two east-west residential streets into mid-block breaks and the two north-south mid-block breaks described above into residential streets. Overall, this swap would result in approximately the same level of auto capacity in the area and is anticipated to result in only minor, localized changes to auto circulation.
- **Revised bicycle network.** The project modifications include a new cycle track facility that closes a gap in the bicycle network near the project's retail center. The cycle track would extend west of the project site, along Harney Way toward US 101³ replacing the originally-proposed Class II bicycle lanes on both sides of the street. Illustrations of the revised configuration of the first phase of Harney Way are provided in **Appendix A – Transportation Impact Analysis**. In other locations Class II bicycle lanes are proposed to be converted to Class III routes. See the bicycle impacts section below for further discussion of the proposed changes to the bicycle network.
- **Yosemite Slough Bridge.** The bridge width is proposed to be four feet wider than the previously-approved non-stadium alternative, but substantially narrower than the approved stadium alternative, and therefore, within the range of bridge widths considered in the FEIR. The additional four feet would accommodate bicycle and pedestrian circulation on both sides of the bridge and would accommodate maintenance vehicles on both sides of the bridge. Overall, the additional width would provide more space for bicycles and pedestrians, and better allow for maintenance to occur with minimal disruption to BRT service.

³ 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 would not affect auto capacity, but rather use land reserved for potential future expansion to extend the two-way Class I cycle track from the project site west toward the Bay Trail.

- **Reorientation of Street Grid in Hunters Point South.** Streets in the Hunters Point South neighborhood would be re-oriented to allow for the BRT route to penetrate the center of the neighborhood at the intersection of Crisp Avenue / Fischer Street. This modification is anticipated to further promote the use of transit from the Hunters Point South neighborhood. Overall, the size and density of the street grid in Hunters Point South is similar to what was described in the FEIR for Variant 2A, and therefore, transportation capacity is expected to be similar.

Arelious Walker Drive

Although most of the proposed roadway cross-section refinements consist of relatively minor modifications to the roadway network to improve bus circulation, bicycle networks, and pedestrian amenities as described above, one refinement is proposed – to Arelious Walker Drive – that does affect vehicular capacity at build out.

Currently, Arelious Walker Drive is a short roadway between Gilman Avenue and Carroll Avenue that provides access to parking areas for Candlestick Park stadium. As previously proposed in the CP/HPS Phase II redevelopment plan and analyzed in the FEIR, Arelious Walker Drive would be extended south to Harney Way and north to Carroll Avenue after the demolition of Candlestick Park. It would serve as one of the primary auto arterial streets both into and through the Candlestick Point site. As described in the FEIR, Arelious Walker Drive would have two travel lanes, a bicycle lane and on-street parking on the east side (northbound) of the street and three travel lanes, a bicycle lane and on-street parking on the west side (southbound) of the street. The sidewalk on the east side was previously proposed to be 22 feet wide to allow for the addition of a third northbound lane in the future, should traffic conditions warrant. The intersections of Arelious Walker Drive/Gilman Avenue and Arelious Walker Drive/Harney Way would both be signalized as part of the project.

One of the proposed modifications to the Project is to narrow the ultimate cross section of Arelious Walker Drive to include only two travel lanes in each direction separated by a median and to eliminate the previously proposed on-street parking and Class II bicycle lanes. The bicycle lanes would be replaced by a two-way cycle track running through the heart of the project along Harney Way (see bicycle impacts section for more discussion). Two-way BRT lanes would be provided between Egbert Street and Carroll Avenue.

Timing of Traffic Improvements

Candlestick Point

As noted above, 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 from the Infrastructure Plan are proposed to better respond to land use phasing. **Table 6** presents the implementation timing for the original project and the proposed modified timing, based on development sub-phases.

TABLE 6 - 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
Arelious Walker Drive, Carroll Avenue to Gilman Avenue	Interim Two-Lane Condition (See Appendix A)	N/A		No	CP-01 (Adjacency)
	Ultimate Condition (See description above)	No	Implementation of BRT	Yes	CP-06 (Approximately 3,500 PM Peak Hour Vehicle Trips) 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 Appendix A)	Yes	3,537 PM Peak Hour Vehicle Trips or Implementation of BRT ^c	No	CP-02 (Adjacency)
	Long-Term (See Appendix A)	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-09
Ingerson Avenue, Arelious Walker Drive to Third Street	Resurface and Restripe	No	Demolition of Candlestick Park	No	CP-09
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 Appendix A Figures 2.1.2A – 2.1.2G	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP) ^c	Yes	CP-04 (Approximately 3,200 PM Peak Hour Vehicle Trips, CP & HP) ^c
Ingalls Street, Carroll Avenue to Thomas Avenue	See Appendix A Figures 2.1.2A – 2.1.2G	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP) ^c	Yes	HP-06 (Reconstruction of Crisp Avenue) ^f

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- a. The cross-section for Yosemite Slough Bridge has been modified from what is shown in the FEIR for the Non-Stadium alternative. However, at 49-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 build out 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 FEIR for Variant 2A – Housing Variant.
 - d. As summarized in the project's Infrastructure Plan.
 - 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.
 - f. Although improvements to Ingalls Street were proposed as part of the Candlestick Point development, they, along with improvements to Thomas Avenue and Griffith Street will not be necessary until development levels at Hunters Point Shipyard necessitate the provision of a southern access roadway via Crisp Avenue. Until this time, there will not be a complete route to connect Candlestick Point and the Hunters Point Shipyard and these roadway improvements offer no meaningful benefit.

Within Major Phase 1 at Candlestick Point, the development would occur in five sub-phases, CP-01 through CP-05. CP-01 includes construction of 325 residential dwelling units at the Alice Griffith site, which would generate approximately 100 PM peak hour auto trips, based on the methodology described in the FEIR. As part of this sub-phase, a portion of Arelious Walker would be constructed, between Gilman Avenue and Carroll Avenue. Ultimately, as noted above, 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 would be constructed. During this initial period, this segment of Arelious Walker would provide 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 would be consistent with and would support the final configuration of Arelious Walker Drive. The interim configuration of Arelious Walker Drive is shown in **Appendix A**.

Sub-Phase CP-02 would develop the 635,000-square-foot regional retail center, 150,000 square feet of office space, 220-room hotel, 280 additional residential units, and possibly a 75,000-square-foot arena/performance venue. To support this large amount of new development, the key transportation infrastructure connecting Candlestick Point to external routes would 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 would be constructed to its initial configuration with four lanes, as described in the FEIR. Additionally, Gilman Avenue, between Arelious Walker and Third Street would be reconfigured to provide two travel lanes, on-street parking, and 12-foot sidewalks on both sides of the street.

Note that Mitigation Measure MM TR-16 in the FEIR requires Harney Way to be reconstructed prior to the issuance of a grading permit for the first Major Phase of development. Since the first sub-phase in Major Phase 1 in Candlestick Point, CP-01 would 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 sub-phase of development. Consequently, the project sponsor proposes to revise Mitigation Measure MM TR-16 to provide that Harney Way would be widened prior to the issuance of occupancy permits for the second sub-phase of Major Phase 1, CP-02. Accordingly, Mitigation Measure MM TR-16 is proposed to be modified as follows:

MM TR-16 Widen Harney Way as shown in Figure 5 in the Transportation Study. Prior to issuance of the ~~grading-occupancy~~ permit for ~~Development Phase 1 of the Project, Candlestick Point Sub-Phase CP-02,~~ the Project Applicant shall widen Harney Way as shown in Figure 5 in the Transportation Study, with the modification to include a two-way cycle track, on the southern portion of the project right of way. Prior to the issuance of grading permits for Candlestick Point Major Phases 2, 3 and 4, the Project Applicant shall fund a study to evaluate traffic conditions on Harney Way and determine whether additional traffic associated with the next phase of development would result in the need to modify Harney Way to its ultimate configuration, as shown in Figure 6 in the Transportation Study, unless this ultimate configuration has already been built. This study shall be conducted in collaboration with the SFMTA, which would be responsible for making final determinations regarding the ultimate configuration. The ultimate configuration would be linked to intersection performance, and it would be required when study results indicate intersection LOS at one or more of the three signalized intersection on Harney Way at mid-LOS D (i.e., at an average delay per vehicle of more than 45 seconds per vehicle). If the study and SFMTA conclude that reconfiguration would be necessary to accommodate traffic demands associated with the next phase of development, the Project Applicant shall be responsible to fund and complete construction of the improvements prior to occupancy of the next phase.

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 would be constructed as part of Sub-Phase CP-02. Carroll Avenue is at the northernmost portion of the Candlestick Point site, and therefore, not likely to be a desirable route to the Candlestick Point retail center, which sits at the southern end of the 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 Candlestick Point site to the external roadway network would 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 would be constructed, as would most of the off-site capacity enhancements, including Harney Way and Gilman Avenue.

Sub-Phase 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.

Prior to opening of CP-04, the first three sub-phases would generate about 3,200 vehicle trips, which is approximately the trigger point identified in the project's Infrastructure Plan that would require improvements to the auto route around the Yosemite Slough, that includes Carroll Avenue, Ingalls Street, Thomas Avenue, and Griffith Avenue. The analysis conducted for the Infrastructure Plan was based on the original phasing, which as noted earlier, would develop in the Hunters Point Shipyard site faster than proposed under the 2010 Project Phasing Schedule. 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 Infrastructure Plan was identified as the appropriate time when the improvements would be necessary.

However, based on the proposed changes to the Project Phasing Schedule, the previously-identified trigger point for the auto route around Yosemite Slough would be met with very little development in the Hunters Point Shipyard and substantially more development in Candlestick Point than previously anticipated. As a result, there is likely to be little auto demand for travel between the Hunters Point site and US 101 or between the Candlestick Point and Hunters Point Shipyard sites, making the auto route around Yosemite Slough less critical at such an early stage. Regardless, improvements to Carroll Avenue between Arelious Walker Drive and Ingalls Street are still proposed to be completed as part of CP-04, generally consistent with the Infrastructure Plan triggers, because development at Candlestick Point would still increase demand for east-west travel to the greater Bayview neighborhood. However, improvements to Ingalls Street, Thomas Street, and Griffith Avenue which primarily serve to connect the Hunters Point Shipyard development with the Bayview neighborhood, Candlestick Point, and US 101, would be constructed at a later point, when development levels in the Hunters Point Shipyard development warrant (refer to next section, which discusses timing of improvements for Hunters Point Shipyard for more detail).

Finally, although improvements associated with Carroll Avenue would be constructed prior to occupancy of Sub-Phase CP-04 under the previously-approved Project Infrastructure Plan, if subsequent technical analysis demonstrates that improvements to Carroll Avenue are not required until later in the development phasing because of the location and types of development proposed, at the mutual agreement of the Planning Department and the Project Sponsor, the timing of these improvements may be further modified.

The remaining auto capacity enhancements on Arelious Walker Drive, between Gilman Avenue and Carroll Avenue would be constructed prior to occupancy of the first sub-phase in Major Phase 2 (CP-06). At the end of Major Phase 1 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 7** below.

**TABLE 7 – INTERIM INTERSECTION OPERATIONS FOR
ARELIOUS WALKER DRIVE**

Intersection	Arelious Walker/Gilman	
	Delay ²	LOS ²
Interim Condition at completion of Major Phase 1	44	D

- a. 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 at Candlestick Point. Subsequent Major Phases 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 would be greater than or similar to what was described in the FEIR throughout Project build out.

Hunters Point Shipyard

Under the proposed changes to the Project Phasing Schedule, development at Hunters Point Shipyard would occur later than previously anticipated. As a result, revisions to the Infrastructure Plan improvement phasing requirements are proposed to align with the changes proposed to the phasing of development. As shown in **Table 8**, similar to the proposed changes at Candlestick Point, all roadway improvements would be implemented at the same triggers or sooner (relative to development levels) as described in the FEIR.

At build out, the primary access routes to the Hunters Point Shipyard site would include the four-lane Innes Avenue and the two-lane Palou Avenue. As shown in **Table 8** above, the primary northern access route to the Shipyard site, Donohue Street and Innes Avenue, would be constructed and connected to the Hunters Point Shipyard North area as part of Major Phase 1. These improvements would be constructed as part of Sub-Phase CP-01, prior to any new trips generated by development in the Hunters Point Shipyard site. This access route accounts for approximately two-thirds of the total auto capacity of the Hunters Point Shipyard site and would be adequate to serve the development proposed as part of Major Phase 1 in Hunters Point Shipyard, due to its relatively large portion of the total planned auto capacity and its proximity to 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 to Donohue Street and Innes Avenue.

TABLE 8 – STREET SEGMENT IMPROVEMENTS FOR 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-06 or Based on Transit Phasing
Thomas Avenue, Ingalls Street to Griffith Street	Resurface and Restripe, Streetscape Amenities	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP) ^a	Yes	HP-06 (Reconstruction of Crisp Avenue)
Griffith Street, Thomas Street to Palou Street	Resurface and Restripe, Streetscape Amenities	Yes	Reconstruction of Crisp Avenue	Yes	HP-06 (Reconstruction of Crisp Avenue)
Innes Avenue, Donahue Street to Earl Street	Resurface and Restripe, Streetscape Amenities	Yes	1,000 PM Peak Hour Vehicle Trips	No	HP-01
Crisp Avenue, Palou Avenue to Fischer Street (Diagonal Route)	Resurface, Restripe, Realign	No	Adjacency	No	HP-06 (Adjacency) or Based on Transit Phasing
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-01

a. Combined total from CP and HP

b. Based on trip rates by land use used in the FEIR for Variant 2A – Housing Variant.

c. As summarized in the project's Infrastructure Plan.

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.

Table 8 also illustrates that the second major auto access route, Crisp Road and Palou Avenue, would be constructed as part of Sub-Phase HP-06, in Major Phase 2 in Hunters Point Shipyard. This sub-phase would be the first development site to be constructed within the southern half of the Hunters Point Shipyard site. Thus, all of the planned auto ingress/egress capacity for the Hunters Point Shipyard site would be constructed and fully operational before any trips associated with Major Phase 3 in Hunters Point Shipyard would be generated and when only approximately 40 percent of the total auto trips associated with the full site build out would be generated. Subsequent phases would build out the internal roadway network adjacent to individual development parcels, all of which would connect to the major access routes. Therefore, similar to Candlestick Point, the major pieces of auto infrastructure would be constructed as part of Major Phases 1 and 2 in Hunters Point Shipyard, and auto capacity would be greater than or similar to what was described in the FEIR during all phases of development.

Transit

At build out, the modified project's transit network would be nearly identical to what was described in the FEIR, although two minor changes are proposed. Specifically, the modified project proposes minor changes to the routes for the 29 Sunset in Candlestick Point and to all routes in the Hunters Point Shipyard associated with a one-block shift of the planned Hunters Point Shipyard Transit Center.

Figure 3 below illustrates the proposed change to the 29 Sunset routing within Candlestick Point. The Project as described in the FEIR called for the 29 Sunset to circulate within the Candlestick Point retail center. Under the proposed project modifications, the 29 Sunset would continue to serve the front of the retail center along Ingerson Avenue, but instead of circulating within the retail center, the route would circulate around the development blocks to the north, so that the 29 Sunset would provide more direct service to the high-density residential buildings proposed near the intersection of Gilman Avenue and Harney Way. This minor routing change is anticipated to increase the Project's transit mode share by bringing transit service closer to more residential units while continuing to provide direct "front-door" service to the retail center.

Figure 4 below illustrates the proposed changes to routes serving the Hunters Point Shipyard. The changes involve moving the Hunters Point Transit Center one block to the north. The 28L BRT route and the 24 Divisadero would travel an additional block 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. 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 28L BRT and the 24 Divisadero) would travel along Crisp Avenue into the approximate center of Hunters Point South, instead of around the northern perimeter. By providing service into the center of the Hunters Point South, transit would be more accessible to surrounding development, and transit mode share is expected to increase slightly.

Similar to the Project's roadway infrastructure, the Project's transit network would be implemented at various levels throughout the development in accordance with the Transit Operating Plan. The Project Sponsor proposes to revise the Transit Operating Plan to match the changes to the Project Phasing Schedule to ensure that the appropriate transit service is provided throughout the development. Mitigation Measure MM TR-17 specifies that the Transit Operating Plan may be modified from what was described in the FEIR if modifications result in:

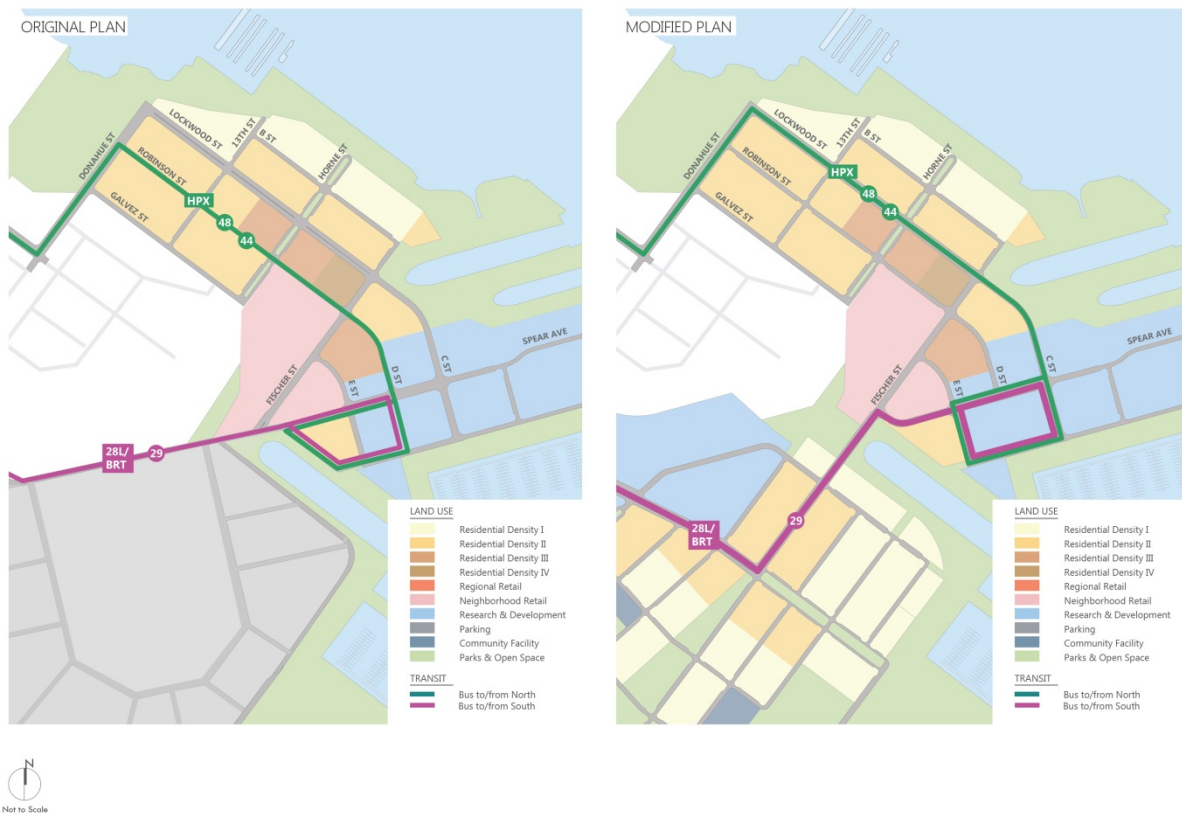
- Similar or higher transit mode share to what was projected in the FEIR
- Adequate capacity to serve projected transit ridership
- Similar or less severe traffic impacts to those identified in the FEIR



CANDLESTICK POINT TRANSIT DETAIL

Figure 3

The original and revised transit phasing are shown in **Table 9** below. **Appendix A** includes a 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 original plan and the modified plan. Generally, changes to the transit phasing would delay the provision of transit service to the Hunters Point Shipyard site in response to the corresponding delay in development of this site. In response to the acceleration of planned development in Candlestick Point, transit service at Candlestick Point would be accelerated. The proposed revisions to the Transit Operating Plan have been developed in collaboration with SFMTA service planning staff to ensure that transit service during each phase of the development would remain comparable to that provided under the previously-approved plan.



HUNTERS POINT TRANSIT DETAIL

Figure 4

To serve the retail center, the 29 Sunset would be extended to the retail center and its frequency would be increased from 10 minutes to its ultimate frequency of 5 minutes. However, because of the substantial amount of development proposed in early phases of the modified project compared to the original project, and the different types of land uses to be constructed initially (i.e., a heavier focus on retail in the early phases than originally anticipated), SFMTA has indicated that operating the other routes ultimately planned to serve Candlestick Point, including the CPX Candlestick Point Express and the 28L BRT route, is not possible in the near term. The CPX Candlestick Point Express is not likely to be particularly effective for non-residential uses, which account for the majority of travel-demand generating uses in the early phases of development in Candlestick Point. Similarly, the 28L BRT would not be desirable in early years because the infrastructure connecting it to Geneva Avenue to the west would not be in place.

Instead of the 28L BRT and the CPX, SFMTA has indicated that it would instead extend the 56 Rutland route as an interim measure until the 28L BRT and/or the CPX are implemented. In addition, the 56 Rutland would increase its frequency from every 20 minutes as proposed under the Transit Effectiveness Project (TEP) to every 15 minutes. While the 56 Rutland is a relatively minor route in relation to the overall system, it provides service to regional transit facilities,

including the T Third Street light rail, the Bayshore Caltrain station, and the 9 San Bruno bus lines, which serve Downtown San Francisco, and is therefore an appropriate substitution for part of the CPX and 28L BRT service. Once the CPX and/or the 28L BRT are implemented, the 56 Rutland may be returned to its TEP-proposed route and frequency.

TABLE 9 – TRANSIT PHASING

Route	Frequency	Original Transit Operating Plan		Proposed Revisions	
		Major Phase ^a	Approx. Year	Major Phase ^a / Sub-Phase	Approx. Year
Hunters Point Shipyard					
Hunters Point Express (HPX)	20	1	2017	2 / HP-04	2023
	12	1	2019	2 / HP-05	2024
23 Monterey	15	1	2017	2 / HP-04	2023
24 Divisadero	10	2	2023	3 / HP-09	2029
	7.5	2	2025	3 / HP-12	2030
48 Quintara	15	1	2015	1 / HP-01	2019
	10	1	2019	2 / HP-05	2024
44 O'Shaughnessy	7.5	1	2017	2 / HP-04	2023
	6.5	1	2019	2 / HP-05	2024
Candlestick Point					
56 Rutland ^b	15	N/A	N/A	1 / CP-02	2017
Private Shopping Center Shuttle ^b	7.5	N/A	N/A	1 / CP-02	2017
Candlestick Point Express (CPX)	20	2	2021	N/A	N/A
	15	2	2022	2 / CP-06	2020
	10	3	2027	3 / CP-14	2030
29 Sunset	10	2	2021	N/A	N/A
	5	2	2022	1 / CP-02	2017
Routes Serving Both Sites					
28L/BRT (Includes Construction of Yosemite Slough Bridge)	8	2	2021	2 / CP-07 and HP-04 ^c	2023
	5	2	2022	3 / CP-12 and HP-07 ^d	2028
T Third	6	2	2020	No Change - Not triggered by project development	
	5	3	2025		

- The original Transit Operating Plan contemplated only three Major Phases of development. The revised phasing breaks the development into four Major Phases each for Candlestick Point and Hunters Point Shipyard.
- Temporary until initiation of CPX and/or BRT
- Respective sub-phases in CP and HP that reach 20% build out of Major Phase 2
- Respective sub-phases in CP and HP that initiate Major Phase 3

In addition, the Project Sponsor would include a complimentary shuttle, available for shopping center patrons and employees, to provide service between the project site and the Balboa Park BART station, replicating service that would ultimately be offered by the 28L BRT route. Service would be offered at a 7.5-minute frequency with approximately 30-passenger vehicles. This would be an interim service until the 28L BRT route, the CPX, or other comparable transit service is implemented. Although the shuttle service would initially be oriented to the Balboa Park BART Station, the site's Transit Demand Management (TDM) coordinator would 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 Planning Department.

Figures 5 and 6 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. The figures compare this information for the original project (the red line) and the modified project (the blue line). It is important to note that the graphs compare the one-way transit capacity in terms of seats per hour with the two-way transit demand, thus is a basic measure of the overall level of transit service relative to demand. Note also that the information provided for the original project is based on the Stadium Alternative, because year-by-year development phasing was not developed for other Alternatives and Variants. As a result, at build out, the modified transit service appears to provide slightly less transit service than the original project, when actually, the difference is simply the difference between the Stadium Alternative and Non-Stadium Variant 2a – Housing. **Appendix A** 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 5**, formed the basis for **Figures 5 and 6**.

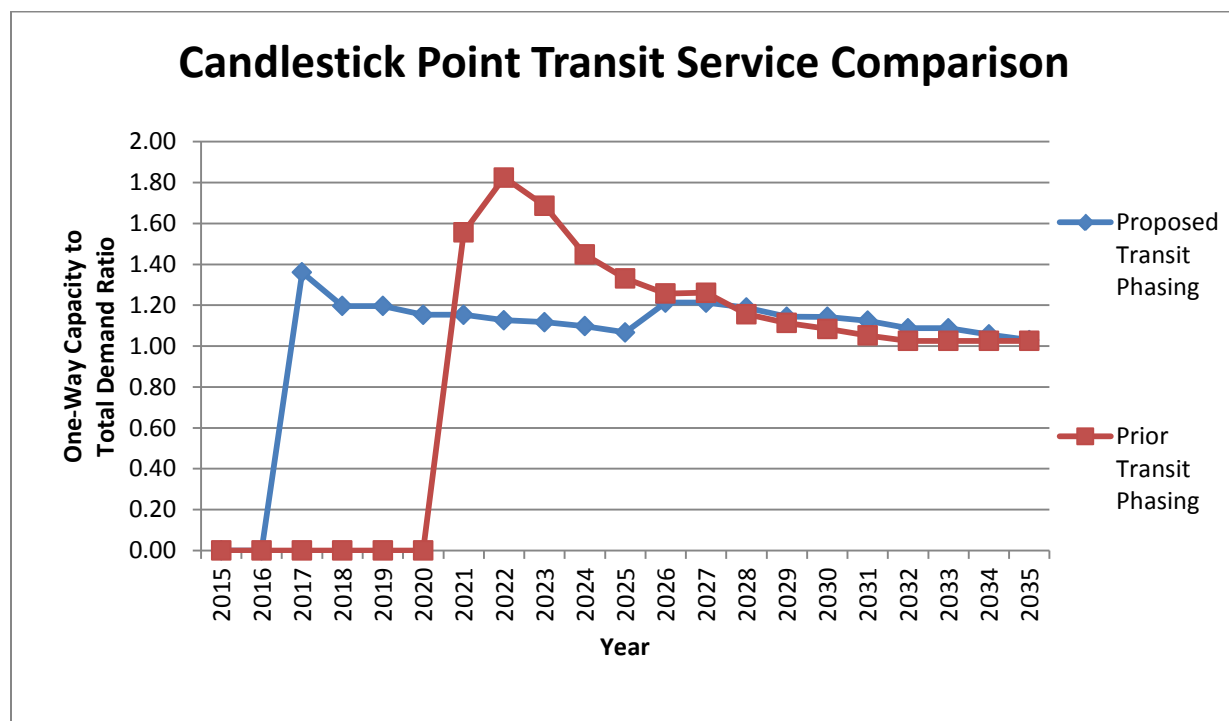


FIGURE 5 – COMPARISON OF TRANSIT SERVICE RELATIVE TO DEMAND DURING PROJECT BUILD OUT AT CANDLESTICK POINT

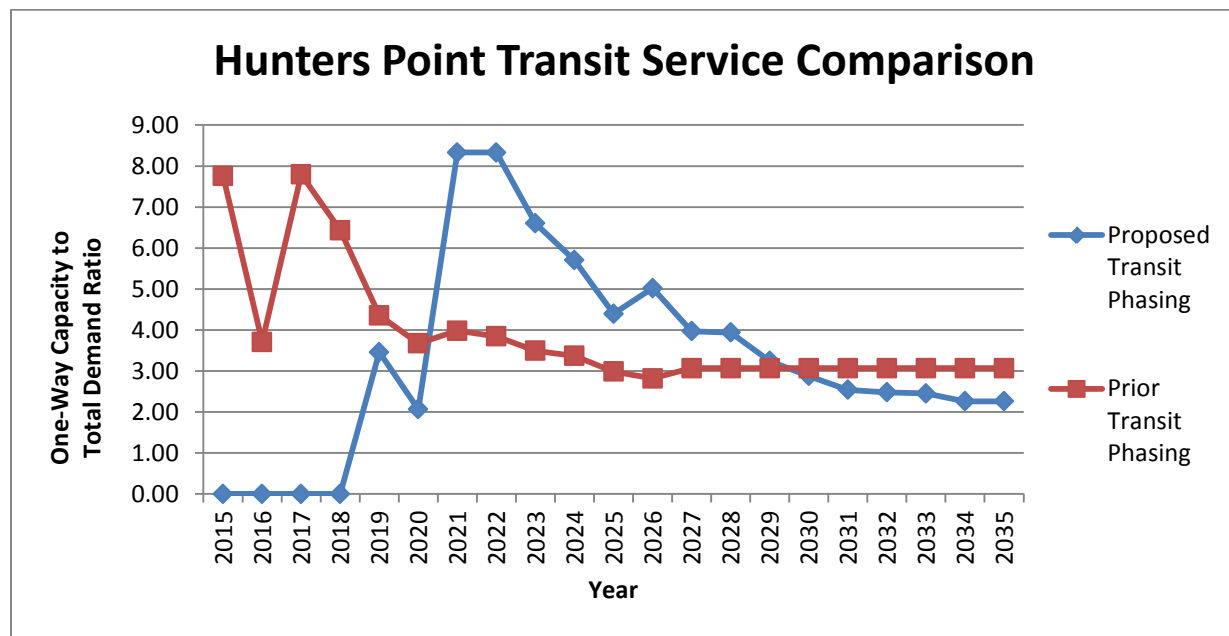


FIGURE 6 – COMPARISON OF TRANSIT SERVICE RELATIVE TO DEMAND DURING PROJECT BUILD OUT AT HUNTERS POINT SHIPYARD

The above figures illustrate that with the proposed changes in development and transit phasing, the level of transit service proposed throughout the development process relative to the types of development anticipated would remain at a similar level as previously contemplated throughout development and at Project build out.

Figure 5 illustrates that with the revised development schedule and revised transit phasing, the level of transit service relative to demand would remain similar to or greater than the identified in the FEIR at build out. Thus, transit would remain an attractive option for travelers in the area.

Figure 6 illustrates that once substantial development begins to occur in Hunters Point, the level of transit service relative to demand would exceed what was anticipated in the FEIR, based on the original development and transit implementation phasing until approximately year 2030. After that, the modified project appears to provide less transit service relative to demand than the original project is because the “original” project shown is the stadium alternative and the modified alternative is the Non-Stadium Alternative Variant 2A, which provides the same level of transit service with slightly higher demand than the Stadium Alternative. As a result, transit service would remain an equally attractive option in Hunters Point under the modified project development and transit phasing as was evaluated in the FEIR.

Therefore, transit capacity would be adequate to serve the expected demand, and the mode split (i.e., the percentage of trips made by transit) would remain similar.

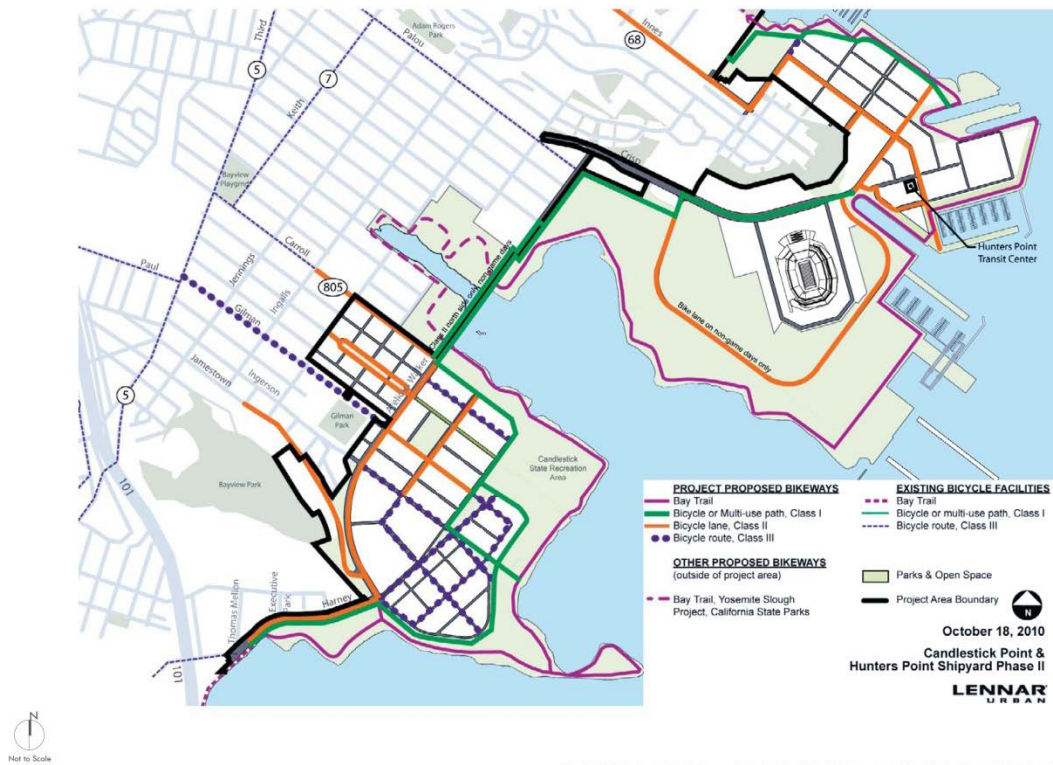
Bicycles

As shown in **Figures 7 and 8**, the modified Project includes refinements to the proposed bicycle network. The changes include replacing the Class II facilities on Arelious Walker Drive with a new, separated, two-way Class I bicycle facility that travels through the heart of the project, and more directly connects the CP and HP project sites. The original bicycle network included Class II facilities on Arelious Walker Drive that connected from the Yosemite Slough Bridge to Harney Way, essentially the only route connecting one end of the Candlestick Point site to the other. The original project also included Class II facilities on Harney Way adjacent to the retail center and the wedge park north of Ingerson Avenue. But, between Ingerson Avenue and Arelious Walker Drive, only Class III facilities were provided, which meant that no dedicated facilities would be provided through the retail core of the project.

The proposed refinements to the bicycle network would replace the Class II facilities on Arelious Walker with a new Class I two-way cycle track that travels through the wedge park and the retail center of the Candlestick Point site. The cycle track would be fully separated from auto traffic, travel along a route with fewer intersection conflicts, and would provide a flatter topographic route. As a result, the proposed cycle track is expected to be more desirable to both commuters and recreational cyclists. The cycle track would continue north through the Hunters Point Shipyard site to the Hunters Point transit center and south along Harney Way toward US 101, where ultimately it could be connected to the Bay Trail and/or other regional facilities. When fully-constructed, the new cycle track facility would provide a dedicated, two-way, Class I facility connecting the Hunters Point Shipyard and Candlestick Point sites to each other and to regional bicycle and transit facilities. Arelious Walker Drive would retain a Class III designation.

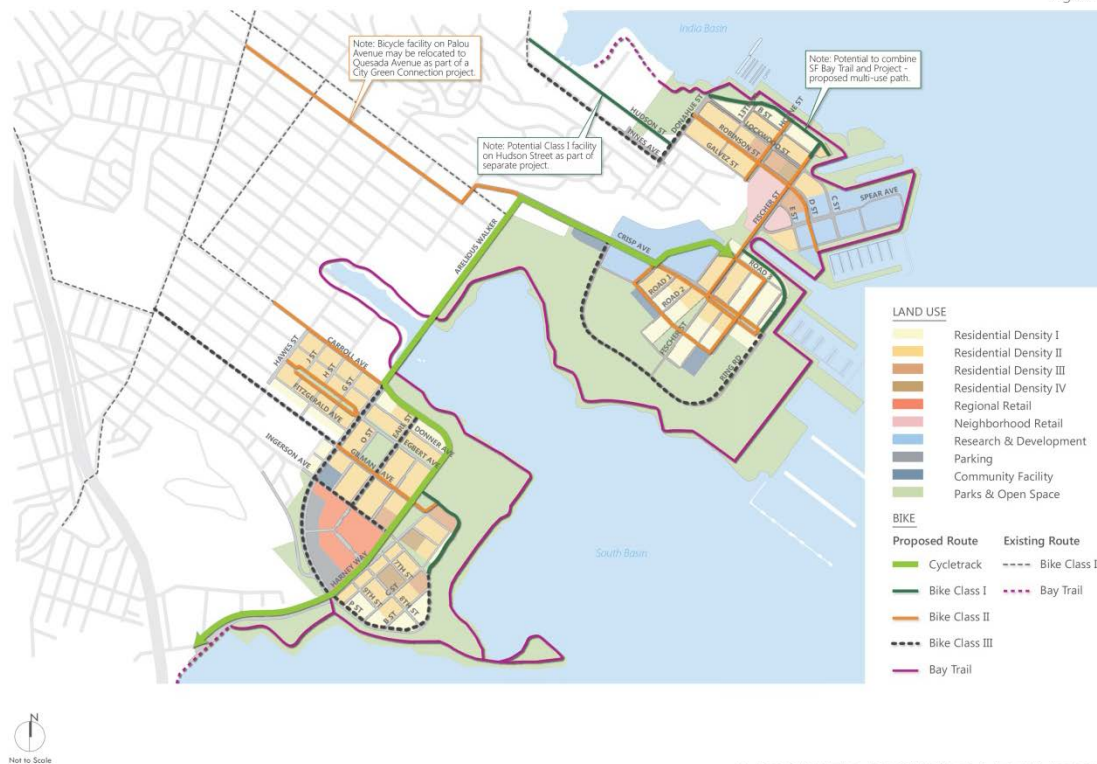
In addition, Class II bicycle lanes would be removed from Earl Street to narrow the street and to maximize the space available for public parks on the west side of the street. The narrower street would shorten crossing distances for pedestrians and as a result, improve pedestrian safety and further encourage walking as a primary mode of transportation (reducing demand for transit and auto travel). Earl Street would retain a Class III designation. Given the low speeds anticipated for this street enabled by the narrowing of the street, provision of corner and mid-block bulbouts, and enhanced “sharrow” pavement markings, bicycles would be more comfortably able to share the travel lane with autos.⁴

⁴ The revised bicycle network also corrects an error on the proposed bicycle network figure from the Transportation Study and the EIR. Both documents depicted a proposed Class II bicycle facility on Gilman Avenue, between Arelious Walker and Third Street, although the project actually proposed a Class III facility. The project’s Transportation Plan bicycle network figure (which is shown in Figure 7) correctly depicted this corridor as a Class III route, and the FEIR noted that the Draft EIR had incorrectly represented this corridor on the figure. Thus, this is not a project change, but rather a correction of a graphical error.



ORIGINALLY - APPROVED BICYCLE NETWORK

Figure 7



MODIFIED BICYCLE NETWORK

Figure 8

Class III bicycle route designations are proposed to be removed from several streets within the Candlestick Point South neighborhood and from Donner Avenue in the Candlestick Point North neighborhood. Regardless of the bicycle designation, these streets are designed to minimum widths allowed by various City departments in order to encourage traffic to drive slowly. Further, the density of the street grid and dispersion of auto parking throughout the area means that traffic volumes would be dispersed through the network and therefore, relatively low on any individual street. In these cases, the designation of Class III routes was deemed unnecessary because all of the streets in this part of the project would function well for bicyclists to share travel lanes with traffic. Thus, while a comparison of the graphics may suggest substantial changes to the bicycle network, particularly in the CP South neighborhood due to the removal of a number of Class III routes, the only physical difference on these streets associated with a removal of the Class III designation is that “sharrow” pavement markings and bicycle route signage would not be provided; the change in designation would not affect the physical amount of space allocated for bicycles, nor would it substantially affect the interactions between bicycles and autos.

Proposed changes to the bicycle network in Hunters Point Shipyard include extension of a one-block Class II facility on Horne Street from its originally proposed northern terminus at Robinson to the end of Horne Street, where it will intersect with the Bay Trail. Additionally, Class II bicycle lanes have been added throughout the refined Hunters Point Shipyard South neighborhood.

Finally, on-street parking along Innes Avenue in the India Basin neighborhood would be retained, and the proposed Class II bicycle lanes on Innes Avenue would be eliminated. Instead the existing Class III bicycle route and parking would be retained. As part of a separate project, the City is investigating opportunities to provide a parallel Class I facility on Hudson Street; however, this is not required as mitigation for project impacts and is being pursued separately.

Pedestrians

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 wide, within the range of sidewalks considered in the FEIR. One sidewalk, the west side of Arelious Walker, between Ingerson Avenue and Harney Way, on the opposite side of the street from the retail center, would be reduced to 7 feet; however, this change is expected to be adequate because there are no land uses on the west side of this street, and the design meets minimum ADA requirements. This dimension is analogous to the original project’s proposed sidewalk width of 8 feet on the south side of Innes Avenue, near Donohue Street, which is also adjacent to a large hill with no fronting land uses.

Parking

The modified Project may result in slightly fewer parking spaces on-street than the maximum envelope anticipated in the FEIR. However, the resultant parking supply would continue to be

within the range contemplated in the FEIR, specifically between 2,043 spaces (assuming all of these would be on-street and zero off-street would be provided) and approximately 19,000 on- and off-street spaces).

Loading

No changes are proposed to the Project with respect to loading. Buildings, and their loading access, would still be built to the requirements described in the FEIR.

Emergency Access

No changes are proposed that would affect emergency access. As described in the traffic impacts section, roadways would be built with the major spines and connections to the adjacent neighborhood in early phases, with connection roadways adjacent to development parcels constructed as new development parcels are built.

ANALYSIS OF ENVIRONMENTAL EFFECTS

Section 31.19(c)(1) of the San Francisco Administrative Code states that a modified project must be reevaluated and that, "If, on the basis of such reevaluation, the Environmental Review Officer determines, based on the requirements of CEQA, that no additional environmental review is necessary, this determination and the reasons therefore shall be noted in writing in the case record, and no further evaluation shall be required by this Chapter."

California Environmental Quality Act (CEQA) Guidelines Section 15164 provides for the use of an addendum to document the basis for a lead agency's decision not to require a subsequent EIR for a project that is already adequately covered in a previously certified EIR. The lead agency's decision to use an addendum must be supported by substantial evidence that the conditions that would trigger the preparation of a Subsequent EIR, as provided in CEQA Guidelines Section 15162, are not present.

This Addendum describes the potential environmental effects of the modified project compared to the impacts identified in the FEIR, and explains how the proposed modifications would not result in any new significant environmental impacts or a substantial increase in the severity of previously identified environmental impacts and would not require the adoption of any new or considerably different mitigation measures or alternatives.

Land Use and Plans

The FEIR determined that the Project would not result in any significant land use and plans impacts with respect to: (1) construction impacts; (2) LU-1, the physical division of an established community; (3) LU-2, conflict with plans, policies, or regulations; (4) LU-3, existing land use character; or (4) cumulative impacts.

Given that the proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any land use changes, would not change the density or intensity of the Project uses, and would not change

the Project location, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to land use and plans impacts. All impacts would remain less than significant and no mitigation measures would be required.

Population, Housing and Employment

The FEIR determined that the Project would result in the following less than significant impacts: (1) PH-1, less than significant impacts as the Project would not induce substantial direct population growth during construction; (2) PH-2, less than significant impacts as the Project would not result in indirect population growth during operation, (3) PH-2a, less than significant impacts regarding indirect population growth during operation of Candlestick Point; (4) PH-2b, less than significant impacts regarding indirect population growth during operation of HPS Phase II; (5) PH-3, no impacts regarding the displacement of existing housing units or residents, necessitating the construction of new units elsewhere; (6) PH-3a, no impacts regarding displacement of existing housing units and residents at Candlestick Point, necessitating the construction of new units elsewhere; (7) PH-3b, no impacts regarding displacement of existing housing units and residents at HPS Phase II, necessitating the construction of new units elsewhere; (8) less than significant cumulative population, housing and employment impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, the density or intensity of development, or population and employment projections. As with the project considered in the FEIR, construction of the modified Project would result in temporary construction job growth. While the timing of construction activities would be different under the proposed changes to the Project Phasing Schedule, the average and maximum numbers of workers on site would not change relative to the numbers of construction workers evaluated in the FEIR. As discussed in the FEIR, it is anticipated that construction employees not already living in the Bayview Hunters Point neighborhood would commute from elsewhere in the Bay Area rather than relocate to the Bayview Hunters Point neighborhood for a temporary construction assignment, and construction hiring policies for the Project would continue to maximize local hiring. Thus, development of the Project under the 2013 Phasing Schedule would not generate a substantial, unplanned population increase, and impacts associated with temporary construction employment on population and housing would continue to be less than significant.

Therefore, there are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on population, housing or employment. Therefore, given that the Project modifications would not result in any changes in population, housing and employment demand, increase in construction activities, or physical changes in the Project location or build out that would implicate the significance criteria for population, employment and housing, the Project modifications would not change or alter any of the FEIR's findings with respect to

population, housing and employment impacts. All impacts would remain less than significant or no impact and no new mitigation measures would be required. Additionally, the FEIR population, housing and employment cumulative impact conclusions would not be altered.

Transportation and Circulation

The FEIR determined that the Project would result in the following less than significant impacts:

Impact TR-9, Effects on LOS and traffic volume at these intersections: Bayshore Boulevard and the intersections of Hester/US-101 Southbound off-ramp, Tunnel Avenue, Arleta Street, Leland Avenue, Silver Avenue, and Old County Road; San Bruno/Silliman Street/US-101 Southbound off-ramp; Sierra Point/Lagoon Way.

Impact TR-19, Effects on transit demand at Downtown Screenlines.

Impact TR-20, Effects on transit demand at Regional Screenlines.

Impact TR-29, Effects on transit demand on the 14X-Mission Express transit route when on I-280.

Impact TR-31, Safety effects on conditions for bicyclists and effects on bicycle accessibility or the ability to accommodate bicycle demand associated with Project uses.

Impact TR-33, Effects on pedestrian facilities.

Impact TR-34, Safety effects for pedestrians and effects on public sidewalk crowding or pedestrian accessibility.

Impact TR-35, Effects on parking needs and ability to accommodate parking with alternative solutions.

Impact TR-36, Effects to on-street parking

Impact TR-37, Effects on loading spaces.

Impact TR-40, Effects on bicycle access on game days.

Impact TR-41, Safety effects for pedestrians and effects on public sidewalk crowding or pedestrian accessibility on game days.

Impact TR-42, Effects on pedestrian access to State Park facilities on game days.

Impact TR-43, Effects on parking needs on game days.

Impact TR-44, Effects on loading capacity on game days.

Impact TR-45, Effects on emergency access on game days.

Impact TR-48, Effects on bicycle circulation during secondary events.

Impact TR-49, Effects on pedestrian accessibility during secondary events.

Impact TR-50, Effects on parking supply for secondary events.

Impact TR-53, Effects on bicycle circulation during arena events.

Impact TR-54, Safety effects for pedestrians and effects on public sidewalk crowding or pedestrian accessibility during arena events.

Impact TR-55, Effects on arena parking needs.

Impact TR-56, Effects on air traffic.

Impact TR-57, Impacts from design features.

Impact TR-58, Effects on emergency access to the Project area.

The FEIR determined that the Project would result in the following less than significant impacts with implementation of mitigation measures:

Impact TR-16: Traffic Impacts on Harney Way.

Impact TR-17: Transit Capacity Impacts.

Impact TR-18: Transit Impacts at Study Area Cordons.

Traffic Impact on Intersections under R&D and Housing/R&D Variants. The R&D and Housing/R&D Variants would worsen traffic conditions at the intersection of Crisp and Palou. The R&D Variant would cause acceptable traffic conditions to become unacceptable at the intersection of Innes and Earl.

The FEIR determined that the Project would result in the following significant impacts that cannot be avoided or reduced to a less than significant level:

Impact TR-1: Effect of Project Construction on Vehicle Traffic and Roadway Construction on Transportation System.

Impact TR-2: Effect of Project on Traffic Volumes

Impact TR-3: Effect of Project Traffic at Certain Area Intersections.

Impact TR-4: Effect of Project Traffic at Tunnel/Blanken.

Impact TR-5: Project Contribution to Traffic at Degraded Intersections.

Impact TR-6: Project Traffic at Freeway Ramps.

Impact TR-7: Project Traffic at Amador/Cargo/Illinois.

Impact TR-8: Project Traffic at Bayshore/Geneva.

Impact TR-10: Project Traffic Effects.

Impact TR-11: Project Traffic at Freeway Segments.

Impact TR-12: Project Traffic Impact at Freeway Ramps.

Impact TR-13: Project Traffic Contribution to Cumulative Impacts at Freeway Ramps.

Impact TR-14: Project Traffic Impact to Diverge Queue Storage at Harney/US 101 Northbound Off-ramp.

Impact TR-15: Project Traffic Contribution to Diverge Queue Storage Impacts.

Impact TR-21: Project Traffic Impacts to 9-San Bruno Transit Line.

Impact TR-22: Project Traffic Impacts to 23-Monterey, 24-Divisadero, 44-O'Shaughnessy Transit Lines.

Impact TR-23: Project Traffic Impacts to 29-Sunset Transit Line.

Impact TR-24: Project Traffic Impacts to 48-Quintara-24th Street Transit Line.

Impact TR-25: Project Traffic Impacts to 54-Felton Transit Line.

Impact TR-26: Project Traffic Impacts to T-Third Transit Line.

Impact TR-27: Project Traffic Impacts to 28L-19th Avenue/Geneva Limited Transit Line.

Impact TR-28: Project Traffic Impacts to 9X, 9AX, 9BX-Bayshore Expresses and 14X-Mission Express Transit Lines

Impact TR-30: Project Traffic Impacts to SamTrans Bus Lines.

Impact TR-32: Project Traffic Impacts to Bicycle Routes.

Impact TR-38: Stadium 49ers Game Site Access and Traffic Impacts.

Impact TR-39: Stadium 49er Game Transit Impacts.

Impact TR-46: Stadium Secondary Event Site Access and Traffic Impacts.

Impact TR-47: Stadium Secondary Event Transit Impacts.

Impact TR-51: Project Site Access and Traffic Impacts from Arena Uses.

Impact TR-52: Transit Impacts from Arena Uses.

As noted above, the proposed Class II bicycle lanes on Innes Avenue would have resulted in removal of on-street parking along Innes Avenue in the India Basin neighborhood. Under the proposed project modifications, the existing Class III bicycle route and parking would be retained. This change would not result in a new significant impact as Class III bicycle routes are standard treatments provided throughout San Francisco as part of the City's bicycle network.

Overall, the project refinements would continue to improve the overall bicycle network in the study area and facilities would 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.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to transportation travel demand characteristics or substantial changes to construction effects or transportation capacity, either during project construction or at project build out. Construction activities would occur in a slightly different sequence than previously anticipated, but overall activity levels would remain the same as identified in the FEIR (Impact TR-1). The modified Project phasing would provide adequate internal auto capacity throughout the development of the project, and the Project would result in the same auto trip generation and similar roadway capacity as identified in the FEIR at build out (Impacts TR-2 through TR-16). The modified Project transit phasing would continue to offer similar levels of transit service relative to development throughout the project construction period, and would offer the same transit service at project build out as was analyzed in the FEIR (Impacts TR-17 through TR-30). The modified Project's bicycle network would provide a similarly-robust bicycle network compared to what was identified in the FEIR, and would continue to improve and promote bicycling throughout the area (Impacts TR-31 and TR-32). The modified Project would provide similar pedestrian amenities compared to what was analyzed in the FEIR (Impacts TR-33 and TR-34). The project's maximum parking supply would be approximately 600 fewer parking spaces than the maximum identified in the FEIR, but would continue to provide a supply within the range identified in the FEIR (Impacts TR-35 and TR-36). The modified Project would not affect loading (Impact TR-37). Because the modified Project would not include a new football stadium,

Impacts TR-38 through TR-50 would not occur. The modified Project would not affect conditions for the new arena (Impacts TR-51 through TR-55), air traffic (Impact TR-56), hazards due to design features (Impact TR-57), or emergency access (Impact TR-58).

Based on the foregoing and as further presented in **Appendix A**, there are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effects of the development under the revised Phasing Schedule on the capacity, safety, or quality of the transportation network. Therefore, given that the proposed Project modifications would not result in any increase in construction activities or physical changes in the Project build-out that would implicate the transportation significance criteria, the Project modifications would not change or alter any of the FEIR's findings with respect to transportation impacts. All impacts would remain less than significant, less than significant with mitigation, significant and unavoidable, or significant and unavoidable with mitigation, and no new mitigation measures would be required. Additionally, the FEIR transportation cumulative impact conclusions would not be altered.

Aesthetics

The FEIR determined that the Project would not result in any significant impacts with respect to: (1) AE-1, construction impacts on a scenic vista or scenic resource; (2) AE-2, construction impacts on visual character or quality with implementation of mitigation; (3) AE-3, construction impacts on light or glare that could obstruct day or night views; (4) AE-4, Project impacts on scenic vistas; (5) AE-5, Project impacts on scenic resources; (6) AE-6, Project impacts on visual character; (7) AE-7, Project impacts on light and glare with implementation of mitigation; or (8) cumulative impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes in the location, height or bulk of development identified in the FEIR or create any new sources of light and glare other than those considered in the FEIR. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effects of the development under the revised Phasing Schedule on the visual character and quality of the surrounding area or on scenic vistas. Therefore, given that the proposed Project modifications would not result in any increase in construction activities or physical changes in the Project build-out that would implicate the aesthetic significance criteria, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to aesthetic impacts. All impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required.

Shadows

The FEIR determined that the Project would result in the following less than significant impacts: (1) SH-1a, less than significant impacts as implementation of the Project at Candlestick Point would not result in new structures with the potential to cast shadows on existing or proposed parks and open space in a manner that would have an adverse effect on the use of the open

space; (2) SH-1b, less than significant impacts as implementation of the Project at HPS Phase II would not result in new structures with the potential to cast shadows on existing or proposed parks and open space in a manner that would have an adverse effect on the use of the open space; (3) SH-1, less than significant impacts as implementation of the Project would not result in new structures with the potential to cast shadows on existing or proposed parks and open space in a manner that would have an adverse effect on the use of the open space; (4) less than significant cumulative shadow impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, including parks and towers, the extent of construction or operational activities, the nature of the Project land uses, or the density or intensity of development. Development would continue to occur on the same areas of the site analyzed for development in the FEIR. The Project includes the tower configuration in Tower Variant 3D with no changes and the shadow effects of that variant was thoroughly analyzed in the FEIR and remains valid. Consequently, there would be no changes to the Project's effects related to shadows. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on shadow. Therefore, given that the Project modifications would not result in any increase in construction activities or physical changes in the Project location or build out that would implicate the shadow significance criteria, the Project modifications would not change or alter any of the FEIR's findings with respect to shadow impacts. All impacts would remain less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR shadow cumulative impact conclusions would not be altered.

Wind

The FEIR determined that the Project would result in the following less than significant impacts: (1) W-1a, less than significant impacts, with implementation of mitigation measure W-1a, as implementation of the Project at Candlestick Point, with mitigation, would not include tall structures that would result in ground-level-equivalent wind speed exceeding 26 mph for a single hour of the year in pedestrian corridors and public spaces; (2) W-1b, less than significant impacts, with implementation of mitigation measures, as implementation of the Project at HPS Phase II would not include tall structures that would result in ground-level-equivalent wind speed exceeding 26 mph for a single hour of the year in pedestrian corridors and public spaces; (3) W-1, less than significant impacts, with implementation of mitigation measures, as implementation of the Project would not include tall structures that would result in ground-level-equivalent wind speed exceeding 26 mph for a single hour of the year in pedestrian corridors and public spaces; (4) less than significant cumulative wind impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the

Project, the extent of construction or operational activities, the nature of the Project land uses, or the density or intensity of development. Development would continue to occur on the same areas of the site analyzed for development in the FEIR and design guidelines and mitigation measure W-1a to address wind impacts, adopted as part of the Project approvals, would be unchanged by the Project modifications. Consequently, there would be no changes to the Project's effects related to wind. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on wind. Therefore, given that the Project modifications would not result in any increase in construction activities or physical changes in the Project location or build out that would implicate the wind significance criteria, the Project modifications would not change or alter any of the FEIR's findings with respect to wind impacts. All impacts would remain less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR wind cumulative impact conclusions would not be altered.

Air Quality

The FEIR determined that the Project would result in the following less than significant with implementation of mitigation measures, and significant and unavoidable impacts: (1) AQ-1, less than significant impacts, with implementation of mitigation measures, from construction emission of criteria pollutants; (2) AQ-2, less than significant impacts, with implementation of mitigation measures, from construction emissions of diesel particulate matter; (3) AQ-3, less than significant impacts, with implementation of mitigation measures, from construction emissions of toxic air contaminants; (4) AQ-4, significant and unavoidable impacts from mass emissions of criteria pollutants during project operations; (5) AQ-5, less than significant impact from carbon monoxide emissions due to motor vehicle trips during project operation; (6) AQ-6, less than significant impacts with implementation of mitigation measures from emissions of toxic air contaminants due to operation of research and development uses; (7) AQ-7, less than significant impact from vehicle emissions of PM_{2.5} during project operation; (8) AQ-8, less than significant impacts from odors during project operations; (9) AQ-9 less than significant related to conformity with regional air quality plan objectives; and (10) less than significant cumulative impacts, except for the project's contribution to significant cumulative impacts from emissions of toxic air contaminants and PM_{2.5}.

The Project Phasing Schedule, corresponding changes to the timing of construction of public benefits, and implementation of transportation system improvements could have an effect on construction-related air quality impacts. **Appendix B – Screening Air Quality Analysis and Health Risk Assessment for the Refinements to the Candlestick Point-Hunter Point Shipyard Phase II Development Plan** analyzes the air quality effect of changes to the Project Phasing Schedule and corresponding changes to the timing of construction of public benefits and demonstrates that these Project modifications would not result in any new construction-related air quality impacts. As the proposed Project Modifications would not result in any change in the location of the Project, the overall extent of construction or operational activities, the nature of the Project land uses, the density or intensity of the development or Project population and

employment projections, the Project modifications would not affect any other air quality-related impact analyses. Further, there are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effects of the development under the modified Project on air quality. Therefore, given the analysis in **Appendix B** concerning changes in construction timing shows no new impacts would occur, and the fact that the Project would not result in any overall increase in construction activities or changes in the Project location or build out that would implicate the significance criteria for air quality, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to air quality impacts. All Project impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR air quality cumulative impact conclusions would not be altered.

Noise and Vibration

For purposes of the impact statements summarized below related to noise during Project construction, the FEIR assumes that construction would be carried out in conformance with the requirements of Sections 2907 and 2908 of the Municipal Code. The FEIR determined that the Project would result in the following impacts: (1) NO-1a, less than significant impacts, with implementation of mitigation measures, as a result of construction at Candlestick Point on increased noise levels for both off-site and on-site sensitive receptors; however, the Project's construction noise impacts would occur primarily in noise-sensitive areas adjacent or near to active construction sites (which would vary in location and duration over the entire period the proposed Project would be under construction) and would not occur during recognized sleep hours; (2) NO-1b, less than significant impacts, with implementation of mitigation measures, as a result of construction at HPS Phase II on increased noise levels for both off-site and on-site sensitive receptors; however, the Project's construction noise impacts would be temporary and would also not occur during recognized sleep hours; (3) NO-1, less than significant impacts, with implementation of mitigation measures, as a result of construction activities associated with the Project on increased noise levels for both off-site and on-site sensitive receptors; however, the Project's construction noise impacts would occur primarily in noise-sensitive areas adjacent or near to active construction sites (which would vary in location and duration over the entire period the proposed Project would be under construction) and would also not occur during recognized sleep hours; (4) NO-2a, significant and unavoidable impacts, with implementation of mitigation measures, as a result of construction at Candlestick Point by creating excessive groundborne vibration levels in existing residential neighborhoods adjacent to the Project site and at proposed on-site residential uses should the latter be occupied before Project construction activity on adjacent parcels. Although the Project's construction vibration impacts would be temporary, would not occur during recognized sleep hours, and would be consistent with the requirements for construction activities that exist in Sections 2907 and 2908 of the Municipal Code, vibration levels would still be significant; (5) NO-2b, significant and unavoidable impacts, with implementation of mitigation measures, from rock removal activities in the Alice Griffith and Jamestown districts resulting in vibration levels that exceed the FTA threshold of 80 VdB or could cause damage to structures from vibration caused by the

fracturing of bedrock for excavation; (6) NO-2c, significant and unavoidable impacts, with implementation of mitigation measures, from construction at HPS Phase II that would create excessive groundborne vibration levels in existing residential neighborhoods adjacent to the Project site and at proposed on-site residential uses should the latter be occupied before Project construction activity on adjacent parcels is complete. Although the Project's construction vibration impacts would be temporary, would not occur during recognized sleep hours, and would be consistent with the requirements for construction activities that exist in Sections 2907 and 2908 of the Municipal Code, vibration levels would be significant; (7) NO-2, significant and unavoidable impacts, with implementation of mitigation measures, from construction activities associated with the Project that would create excessive groundborne vibration levels in existing residential neighborhoods adjacent to the Project site and at proposed on-site residential uses should the latter be occupied before Project construction activity on adjacent parcels is complete. Although the Project's construction vibration impacts would be temporary, would not occur during recognized sleep hours, and would be consistent with the requirements for construction activities that exist in Sections 2907 and 2908 of the Municipal Code, vibration levels would still be significant; (8) NO-3, significant and unavoidable impacts, with implementation of mitigation measures, from construction activities associated with the Project that would result in a substantial temporary or periodic increase in ambient noise levels; (9) NO-4, less than significant impacts with implementation of the Project, including the use of mechanical equipment or the delivery of goods, on exposure to noise-sensitive land uses on or off site to noise levels that exceed the standards established by the City; (10) NO-5, less than significant impacts from the Project regarding the generation or exposure of persons on or off site to excessive groundborne vibration; (11) NO-6, significant and unavoidable impacts with operation of the Project as it would generate increased local traffic volumes that could cause a substantial permanent increase in ambient noise levels in existing residential areas along the major Project site access routes; (12) NO-7, significant and unavoidable impacts, with implementation of mitigation measures, on noise during football games and concerts at the proposed stadium resulting in temporary increases in ambient noise levels that could adversely affect surrounding residents for the duration of a game or concert; (13) NO-8, less than significant impacts from Project exposure of residents and visitors to excessive noise levels from flights from San Francisco International Airport such that the noise would be disruptive or cause annoyance; (14) less than significant cumulative noise and vibration impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, or the density or intensity of development. Development would continue to occur on the same areas of the site analyzed for development in the FEIR. Under the 2013 Project Phasing Schedule, the level of construction activity at Candlestick Point during Major Phase 1 would be comparable to the level of construction activity for Major Phase 3 under the 2010 Phasing Schedule described in the FEIR. Likewise, under the proposed 2013 Phasing Schedule, the level

of construction activity at Candlestick Point during Major Phase 3 would be similar to that previously anticipated to occur during Major Phase 1 under the 2010 Phasing Schedule. Consequently, while the timing of when construction noise impacts would occur at different locations would differ somewhat from what was described in the FEIR, there would be no changes to the Project's overall effects related to noise and vibration. The FEIR assumed that sensitive residential receptors both inside and outside of the Project area would be exposed to construction-related noise and vibration impacts and operational traffic noise impacts. The Project approvals included adoption of all identified feasible mitigation measures to reduce these noise- and vibration-related impacts. The Project schedule revisions would result in similar sensitive residential receptor exposure to construction and operational noise and vibration impacts and do not alter these assumptions or conclusions. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on noise and vibration. Therefore, given that the Project modifications would not result in any increase in construction activities or physical changes in the Project location or build out that would implicate the noise and vibration significance criteria, the Project modifications would not change or alter any of the FEIR's findings with respect to noise and vibration impacts. All impacts would remain less than significant, less than significant with mitigation, or significant and unavoidable with mitigation, and no new mitigation measures would be required. Additionally, the FEIR noise and vibration cumulative impact conclusions would not be altered.

Cultural and Paleontological Resources

The FEIR determined that the Project would result in the following less than significant and significant impacts: (1) CP-1a, less than significant impacts on the significance of an historical resource during construction at Candlestick Point; (2) CP-1b, significant and unavoidable impacts, with implementation of mitigation measures, due to a substantial adverse change in the significance of an historical resource at HPS Phase II; (3) CP-1, significant and unavoidable impacts, with implementation of mitigation measures, due to a substantial adverse change in the significance of a historical resource at the combined Candlestick Point and HPS Phase II (Project); (4) CP-2a, less than significant impacts, with implementation of mitigation measures, on the significance of archaeological resources, including prehistoric Native American, Chinese fishing camp, and maritime-related archaeological remains Construction at Candlestick Point with implementation of the Project; (5) CP-2b, less than significant impacts, with implementation of mitigation measures, on the significance of archaeological resources, including prehistoric Native American resources, Chinese fishing camps, and maritime related resources with construction at HPS Phase II; (6) CP-2, less than significant impacts, with implementation of mitigation measures, on the significance of archaeological resources, including prehistoric Native American resources, Chinese fishing camps, and maritime related resources with construction at Candlestick Point and HPS Phase II combined (7) CP-3a, less than significant impacts, with implementation of mitigation measures, on the significance of a paleontological resources during construction at Candlestick Point; (8) CP-3b, less than significant impacts, with implementation of mitigation measures, on the significance of a

paleontological resources during construction at HPS Phase II; (9) CP-3c, less than significant impacts, with implementation of mitigation measures, on the significance of a paleontological resource during construction of the Yosemite Slough bridge, shoreline improvements, and the marina improvements activities, including in-water activities; (10) CP-3d, less than significant impacts, with implementation of mitigation measures, on the significance of a paleontological resource during pile driving associated with construction of the Yosemite Slough bridge, shoreline improvements, and the marina improvements (11) CP-3, less than significant impacts, with implementation of mitigation measures, on the significance of a paleontological resource during construction activities associated with the Candlestick Point and HPS Phase II Project; (4) less than significant cumulative archaeological and paleontological impacts and significant and unavoidable cumulative historical resource impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, the density or intensity of development, or population and employment projections.

Consequently, there would be no changes to the Project's effects related to cultural and paleontological resources. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on cultural and paleontological resources. Therefore, given that the Project modifications would not result in any changes in cultural and paleontological resources impact conclusions, increase in construction activities, or physical changes in the Project location or build out that would implicate the significance criteria for cultural and paleontological resources, the Project modifications would not change or alter any of the FEIR's findings with respect to cultural and paleontological resources impacts. All impacts would remain less than significant or significant and unavoidable with mitigation and no new mitigation measures would be required. Additionally, the FEIR cultural and paleontological resources cumulative impact conclusions would not be altered.

Hazards and Hazardous Materials

The FEIR determined that the Project would result in the following less than significant and significant impacts: (1) HZ-1, less than significant impacts, with implementation of mitigation measures, from exposure to known contaminants during construction activities; (2) HZ-2, less than significant impacts, with implementation of mitigation measures, from exposure to previously unidentified contaminants during construction; (3) HZ-3, less than significant impacts, with implementation of mitigation measures, from off-site transport and disposal of contaminated soil and groundwater during construction; (4) HZ-4, less than significant impacts from installation of underground utilities; (5) HZ-5, less than significant impacts, with implementation of mitigation measures, from installation of foundation support piles; (6) HZ-6, less than significant impacts, with implementation of mitigation measures, from soil handling, stockpiling, and transport within the project site boundaries during construction; (7) HZ-7, less than significant impacts, with implementation of mitigation measures, from contaminated

surface runoff from construction sites; (8) HZ-8, less than significant impacts, with implementation of mitigation measures, from exposure to hazardous material releases that have not been fully remediated (9) HZ-9, less than significant impacts, with implementation of mitigation measures, from exposure to hazardous materials in conjunction with limited remediation activities during construction of the Yosemite Slough Bridge; (10) HZ-10, less than significant impacts, with implementation of mitigation measures, from exposure to hazardous materials during construction of shoreline improvements; (11) HZ-11, less than significant impacts, with implementation of mitigation measures, from exposure to hazardous materials while constructing infrastructure on Navy-owned property; (12) HZ-12, less than significant impacts, with implementation of mitigation measures, from remediation activities conducted in conjunction with development activities at HPS Phase II early transfer parcels; (13) HZ-13, less than significant impacts from exposures to hazardous materials contamination during construction of off-site roadway improvements; (14) HZ-14, less than significant impacts, with implementation of mitigation measures, from exposure of ecological receptors to hazardous materials from construction activities; (15) HZ-15, less than significant impacts, with implementation of mitigation measures, from exposure to naturally occurring asbestos from construction activities; (16) HZ-16, less than significant impacts from exposure to hazardous materials in buildings and structures; (17) HZ-17, less than significant impacts, with implementation of mitigation measures, from exposure of workers to hazardous materials during construction; (18) HZ-18, less than significant impacts, with implementation of mitigation measures, from construction activities with potential to generate hazardous air emissions within one-quarter mile of a school; (19) HZ-19, less than significant impacts, with implementation of mitigation measures, from release of contaminants from historic uses or fill; (20) HZ-20, less than significant impacts from routine use, storage, transport, or disposal of hazardous materials during Project construction; (21) HZ-21, less than significant impacts, with implementation of mitigation measures, from routine maintenance of properties; (22) HZ-22, less than significant impacts from routine use, storage, transport, or disposal of hazardous materials during Project operation; (23) HZ-23, less than significant impacts from exposure to hazardous materials caused by upset or accident conditions; (24) HZ-24, less than significant impacts, with implementation of mitigation measures, from hazardous air emissions associated with R&D uses within one-quarter mile of a school; (25) HZ-25, no impacts from safety hazards from conflicts with airport land use plans; (26) HZ-26, no impact from safety hazards from proximity to private air strips; (27) HZ-27, less than significant impact from fire hazards or conflicts with emergency response and evacuation plans; and (28) less than significant cumulative impacts from hazards and hazardous materials.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, the density or intensity of development. Consequently, there would be no changes to the Project's effects related to hazards and hazardous materials. There are no changed

circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effects of the development under the modified project related to impacts associated with hazards or hazardous materials. Therefore, given that the Project would not result in any increase in construction activities or changes in the Project location or build out that would implicate the significance criteria for hazards and hazardous materials, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to hazards and hazardous materials impacts. All Project impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR hazards or hazardous materials cumulative impact conclusions would not be altered.

Geology and Soils

The FEIR determined that the Project would result in the following less than significant impacts: (1) GE-1, 1a, 1b, less than significant impacts, with implementation of mitigation measures from construction on soil erosion; (2) GE-2, 2a, 2b, less than significant impacts, with implementation of mitigation measures, from construction on settlement from dewatering activities; (3) GE-3, less than significant impacts, with implementation of mitigation measures, from construction on destabilization of bedrock from rock removal activities; (4) GE-4, 4a, 4b, less than significant impacts, with implementation of mitigation measures, from project operations on exposing people and structures to seismically induced ground shaking; (5) GE-5, 5a, 5b, less than significant impacts, with implementation of mitigation measures, from project operations on exposing people and structures to seismically induced ground failure; (6) GE-6, 6a, 6b, less than significant impacts, with implementation of mitigation measures, from project operations on exposing people and structures to seismically induced landslides; (7) GE-7, 7a, 7b, less than significant impacts, with implementation of mitigation measures, from project operations on exposing people and structures to shoreline instability; (8) GE-8, 8a, 8b, less than significant impacts, with implementation of mitigation measures, from project operations on exposing people and structures to landslides; (9) GE-9, 9a, 9b, less than significant impacts, with implementation of mitigation measures, from project operations on exposing people and structures to damage from settlement; (10) GE-10, 10a, 10b, less than significant impacts, with implementation of mitigation measures, from project operations on exposing people and structures to expansive soils; (11) GE-11, 11a, 11b, less than significant impacts, with implementation of mitigation measures, from project operations on exposing people and structures to corrosive soils; (12) GE-12, no impact from surface fault rupture; (13) GE-13, no impact from the use of soils incapable of supporting septic tanks or alternative wastewater systems; (14) GE-14, no impact from the destruction of unique geologic features; (15) less than significant impacts, with implementation of mitigation measures, to cumulative geology and soils impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, or

the density or intensity of development. Development would continue to occur on the same areas of the site analyzed for development in the FEIR. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on geology and soils. Therefore, given that the proposed Project modifications would not result in any increase in construction activities or physical changes in the Project location or build out that would implicate the significance criteria for geology and soils, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to geology and soils impacts. All impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR geology and soils cumulative impact conclusions would not be altered.

Hydrology and Water Quality

The FEIR determined that the Project would result in the following less than significant impacts: (1) HY-1, 1a, 1b, 1c, less than significant impacts, with implementation of mitigation measures, from construction regarding compliance with water quality standards and waste discharge requirements; (2) HY-2, less than significant impacts from construction on groundwater supplies and groundwater recharge; (3) HY-3, less than significant impacts from construction on erosion and siltation; (4) HY-4, less than significant impacts, with implementation of mitigation measures, from construction on flooding; (5) HY-5, less than significant impacts, with implementation of mitigation measures, from construction on storm sewer system capacity; (6) HY-6, 6a, 6b, 6c, less than significant impacts, with implementation of mitigation measures, at Candlestick and HPS Phase II, and less than significant impacts of the Yosemite Slough Bridge, from project operations regarding compliance with water quality standards and waste discharge requirements; (7) HY-7, less than significant impacts, with implementation of mitigation measures, from project operations on water quality; (8) HY-8, no impact from project operations on groundwater supplies and groundwater recharge; (9) HY-9, less than significant impacts, with implementation of mitigation, from project operations on erosion or siltation effects; (10) HY-10, less than significant impacts, with implementation of mitigation, from project operations on flooding from surface runoff; (11) HY-11, less than significant impacts, with implementation of mitigation, from project operations on storm sewer system capacity; (12) HY-12, 12a, 12b, less than significant impacts, with implementation of mitigation, related to placing housing in a flood hazard area; (13) HY-13, 13a, 13b, 13c, less than significant impacts at Candlestick and the Yosemite Slough Bridge and less than significant impacts, with implementation of mitigation, at HPS Phase II related to placing structures within a flood hazard zone; (14) HY-14, less than significant impacts, with implementation of mitigation, regarding other flood risks; (15) HY-15, less than significant impacts related to seiche, tsunami, and mudflows; (16) less than significant cumulative hydrology and water quality impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, or

the density or intensity of development. Development would continue to occur on the same areas of the site analyzed for development in the FEIR. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on hydrology and water quality. Therefore, given that the proposed Project modifications would not result in any increase in construction activities or physical changes in the Project location or build out that would implicate the significance criteria for hydrology and water quality, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to hydrology and water quality impacts. All impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR hydrology and water quality cumulative impact conclusions would not be altered.

Biological Resources

The FEIR determined that the Project would result in the following less than significant impacts: (1) BI-1, no construction impact on regional conservation plans; (2) BI-2, less than significant impacts from construction on common species and habitat; (3) BI-3a and 3b, no construction impact on sensitive plants; (4) BI-4a, 4b, 4c, less than significant impacts, with implementation of mitigation measures, from construction on waters of the United States and navigable waters; (5) BI-5a, 5b, no construction impacts at Candlestick and less than significant impacts, with implementation of mitigation measures, at HPS Phase II from construction on eelgrass beds; (6) BI-6a, 6b, less than significant impacts, with implementation of mitigation measures, from construction on sensitive bird species; (7) BI-7a, 7b, less than significant impacts at Candlestick and less than significant impacts, with implementation of mitigation measures, at HPS Phase II from construction on foraging habitat for raptors; (8) BI-8a, 8b, less than significant impacts from construction on the western red bat; (9) BI-9a, 9b, no impact at Candlestick and less than significant impacts, with implementation of mitigation measures, at HPS Phase II from construction on marine mammals and fish; (10) BI-10a, 10b, 10c, less than significant impacts from construction on mollusks; (11) BI-11a, 11b, 11c, less than significant impacts, with implementation of mitigation measures, from construction on special-status fish species; (12) BI-12a, 12b, 12c, less than significant impacts, with implementation of mitigation measures, from construction on essential fish habitat; (13) BI-13a, 13b, less than significant impacts at Candlestick and less than significant impact, with implementation of mitigation measures, at HPS Phase II from construction on wildlife movement; (14) BI-14a, 14b, less than significant impacts, with implementation of mitigation measures, from construction on local plans and policies; (15) BI-15a, 15b, no impact at Candlestick and less than significant impacts, with implementation of mitigation measures, at HPS Phase II from construction on contaminated soils or sediments; (16) BI-16a, 16b, less than significant impacts from project operations on sensitive birds and animals; (17) BI-17a, 17b, no impact from project operations on nesting American peregrine falcons; (18) BI-18a, 18b, no impact at Candlestick and less than significant impacts, with implementation of mitigation measures, at HPS Phase II, from project operations on sensitive aquatic species, mollusks, and designated essential fish habitat; (19) BI-19a, 19b, no impact at Candlestick and less than significant impacts, with implementation of mitigation

measures, at HPS Phase II, from project operations on contaminated sediments; (20) BI-20a, 20b, less than significant impacts, with implementation of mitigation measures, from project operations on the movement of bird species; (21) BI-21a, 21b, less than significant, with implementation of mitigation measures, from project operations on local plans and policies; (22) BI-22, less than significant impacts, with implementation of mitigation measures, from project operations on special-status and/or legally protected species; (23) BI-23, less than significant impacts, with implementation of mitigation measures, from project operations on sensitive habitats; (24) BI-24, less than significant impacts, with implementation of mitigation measures, from project operations on wetlands and jurisdictional waters; (25) BI-25, less than significant impacts, with implementation of mitigation measures, from project operations on fish or wildlife movement; (26) BI-26, less than significant impacts, with implementation of mitigation measures, from project operations on local plans and policies; (27) less than significant impacts, with implementation of mitigation measures, to cumulative biological resource impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, or the density or intensity of development. Development would continue to occur on the same areas of the site analyzed for development in the FEIR. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on the biological resources. Therefore, given that the proposed Project modifications would not result in any increase in construction activities or physical changes in the Project location or build out that would implicate the biological resource significance criteria, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to biological resource impacts. All impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR biological resource cumulative impact conclusions would not be altered.

Public Services

The FEIR determined that the Project would result in the following less than significant and significant impacts: (1) PS-1, less than significant impacts, with implementation of mitigation measures, from construction on police protection; (2) PS-2, less than significant impacts, with implementation of mitigation measures, from project operations on police protection; (3) PS-3, less than significant impacts, with implementation of mitigation measures, from construction on fire protection and emergency medical services; (4) PS-4, less than significant impacts from project operations on fire protection and emergency medical services; (5) PS-5, no impact from construction on schools; (6) PS-6, less than significant impacts from project operations on schools; (7) PS-7, no impact from construction on library services; (8) PS-8, less than significant impacts from project operations on library services; (9) less than significant cumulative impacts, except for the project's contribution to significant cumulative impacts on police services.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, the density or intensity of development, or Project population and employment projections. Consequently, there would be no increase in the demand for public services. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effects of the development under the modified Project on the public services. Therefore, given that the Project would not result in any increase in construction activities or changes in the Project location or build out that would implicate the significance criteria for public services, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to public service impacts. All Project impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR public service cumulative impact conclusions would not be altered.

Recreation

The FEIR determined that the Project would result in the following less than significant impacts: (1) RE-1, less than significant impacts as Construction of the parks, recreational uses, and open space proposed by the Project would not result in substantial adverse physical environmental impacts beyond those analyzed and disclosed in the EIR; (2) RE-2, less than significant impacts, with implementation of mitigation measures, as implementation of the Project would not increase the use of existing parks and recreational facilities that would cause the substantial physical deterioration of the facilities to occur or to be accelerated, nor would it result in the need for, new or physically altered park or recreational facilities; (3) RE-3, less than significant impacts, as implementation of the Project would decrease the size of Candlestick Point State Recreation Area (CPSRA) but would not, overall, adversely affect the recreational opportunities offered by that park, nor would it substantially adversely affect windsurfing opportunities at the Project site; (4) less than significant cumulative recreation impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, or the density or intensity of development. Development would continue to occur on the same areas of the site analyzed for development in the FEIR. Under the proposed 2013 Project Phasing Schedule, the timing of construction of park and recreation improvements would be altered to match the changes in the timing of development. However, as shown in **Figures 1 and 2** and **Tables 3 and 4**, under the proposed 2013 Project Phasing Schedule, the project would continue to provide a wide variety of new park and open space facilities in phase with build out of the development to meet the project demand for recreational facilities. **Table 10** below compares the ratio of expected park acreage to population with the proposed Project modifications to the 2010 Phasing.

TABLE 10 – COMPARISON OF RESIDENTIAL UNITS AND PARK ACREAGE								
	Residential Units		Population		Total Parkland (ac)		Parkland-to-Population Ratio (acres per 1,000 Residents)	
	2010 Phasing^a	2013 Phasing	2010 Phasing	2013 Phasing	2010 Phasing	2013 Phasing	2010 Phasing	2013 Phasing
Existing	256	256	1,113	1,113	120.2	120.2	108	108
Phase 1	3,158	2,874	7,358	6,696	136.0	138.4	18.5	20.7
Phase 2	4,406	6,040	10,266	14,073	162.5	159.4	15.8	11.3
Phase 3	7,555	8,205	17,603	19,118	246.7	168.2	14.0	8.8
Phase 4	10,500	10,500	24,465	24,465	326.6	327.7	13.3	13.4

^a. The numbers of residential units proposed under each major phase of the Project shown in Table IV-26a on page C&R-2268 of the FEIR vary slightly from the numbers of units proposed in the FEIR project description for Variant 2A. As such, the numbers for residential units and corresponding population and parkland-to-population ratios shown for the 2010 Phasing Schedule above are revised to match the FEIR project description. These minor corrections do not result in any changes to the conclusions reached in the FEIR concerning the effects of the Project on recreation because the ratio of parkland to population would remain above 5.5 acres per 1,000 residents for all phases of the project.

As shown in the table above, under the proposed 2013 Phasing Schedule, the Project would continue to exceed the standard of 5.5 acres of parkland per 1,000 residents that was used as a benchmark in the FEIR recreation analysis. Therefore, the Project modifications will comply within Mitigation Measure RE-2, which calls for adequate parkland to be constructed along with residential units. Consequently, there would be no changes to the Project's effects related to recreation. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on recreation. Therefore, given that the Project modifications would not result in any increase in construction activities or major physical changes in the Project location or build out that would implicate the recreation significance criteria, the Project modifications would not change or alter any of the FEIR's findings with respect to recreation impacts. All impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR recreation cumulative impact conclusions would not be altered.

Utilities

The FEIR determined that the Project would result in the following less than significant impacts:

(1) UT-1, less than significant impacts regarding the need for new or expanded water entitlements and resources; (2) UT-2, less than significant impacts, with implementation of mitigation measures, regarding the need for construction of new or expanded water treatment or conveyance facilities; (3) UT-3, 3a, 3b, less than significant impacts, with implementation of mitigation measures, regarding the need for expansion of off-site wastewater conveyance facilities; (4) UT-4, less than significant impacts regarding the potential to exceed wastewater treatment requirements of the Regional Water Quality Control Board; (5) UT-5, 5a, 5b, less than

significant impacts, with implementation of mitigation measures, regarding construction-related solid waste generation; (6) UT-6, 6a, 6b, less than significant impacts regarding disposal of construction-related hazardous waste; (7) UT-7, 7a, 7b, less than significant impacts, with implementation of mitigation measures, regarding operational solid waste generation; (8) UT-8, 8a, 8b, less than significant impacts regarding disposal of operational generated hazardous waste; (9) UT-9, less than significant impacts, with implementation of mitigation measures, regarding compliance with solid waste regulations; (10) UT-10, less than significant impacts regarding dry utility infrastructure and service capacity; (11) less than significant cumulative utility impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, the density or intensity of development, or population and employment projections. Consequently, there would be no increase in the demand for utility services. The SFFD has determined that the proposed changes to the design of the AWSS described above would provide an equivalent level of protection as the AWSS loops specified in MM UT-2. Thus, the proposed modifications to the design of the AWSS would fulfill the requirements of MM UT-2 for provision of an AWSS with connections to off-site systems.

There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on utilities. Therefore, given that the proposed Project modifications would not result in any increase in demand for utilities, increase in construction activities, or physical changes in the Project location or build out that would implicate the significance criteria for utilities, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to utility impacts. All impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR utility cumulative impact conclusions would not be altered.

Energy

The FEIR determined that the Project would result in the following less than significant and significant impacts: (1) ME-1, less than significant impact from energy use during construction; (2) ME-2, less than significant impacts, with implementation of mitigation measures, from the use of large amount of electricity in a wasteful manner for the operation of buildings constructed under the Project; (3) ME-3, less than significant impacts, with implementation of mitigation measures, from the use of large amount of natural gas in a wasteful manner for the operation of buildings constructed under the Project; (4) ME-4 less than significant impacts, with implementation of mitigation measures, from the use of large amount of energy in a wasteful manner for vehicle trips associated with the Project; and (5) less than significant cumulative impacts related to energy use during project construction and operation.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, the density or intensity of development, or Project population and employment projections. Consequently, there would be no increase in energy use. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effects of the development under the modified Project related to energy use. Therefore, given that the Project would not result in any increase in construction activities or changes in the Project location or build out that would implicate the significance criteria for energy use, the proposed Project modifications would not change or alter any of the FEIR's findings with respect to energy impacts. All Project impacts would remain less than significant or less than significant with mitigation and no new mitigation measures would be required. Additionally, the FEIR energy cumulative impact conclusions would not be altered.

Greenhouse Gas Emissions

The FEIR determined that the Project would result in the following less than significant impact: (1) GC-1, less than significant impact, as the Project would not result in a substantial contribution to global climate change by increasing GHG emissions in a manner that conflicts with the state goal of reducing GHG emissions in California to 1990 levels by 2020 (e.g., a substantial contribution to global climate change) or conflict with the San Francisco's Climate Action Plan by impeding implementation of the local GHG reduction goals established by the San Francisco 2008 Greenhouse Gas Reduction Ordinance; (2) less than significant cumulative greenhouse gas emissions impacts.

The proposed changes to the Project Phasing Schedule, corresponding changes to the timing of construction of public benefits and implementation of transportation system improvements, and minor transportation system changes, would not result in any changes to the location of the Project, the extent of construction or operational activities, the nature of the Project land uses, or the density or intensity of development. Development would continue to occur on the same areas of the site analyzed for development in the FEIR. Consequently, there would be no changes to the Project's effects related to greenhouse gas emissions. There are no changed circumstances or new information that would result in any different conclusions than those reached in the FEIR concerning the effect of the development under the modified Project on greenhouse gas emissions. Therefore, given that the Project modifications would not result in any increase in construction activities or physical changes in the Project location or build out that would implicate the greenhouse gas emissions significance criteria, the Project modifications would not change or alter any of the FEIR's findings with respect to greenhouse gas emissions impacts. The impact would remain less than significant, and no new mitigation measures would be required. Additionally, the FEIR greenhouse gas emissions cumulative impact conclusions would not be altered.

Mitigation Measures

The proposed project modifications would affect implementation of Mitigation Measures TR-16, TR-17, and UT-2. For reference, these proposed changes are summarized below. See the Transportation and Utilities sections above for further discussion of these proposed changes.

Mitigation Measure MM TR-16 Widen Harney Way as shown in Figure 5 of the Transportation Study

The text of MM TR-16 is proposed to be revised as follows:

MM TR-16 Widen Harney Way as shown in Figure 5 in the Transportation Study. Prior to issuance of the ~~grading-occupancy~~ permit for ~~Development Phase 1 of the Project, Candlestick Point Sub-Phase CP-02,~~ the Project Applicant shall widen Harney Way as shown in Figure 5 in the Transportation Study, with the modification to include a two-way cycle track, on the southern portion of the project right of way. Prior to the issuance of grading permits for Candlestick Point Major Phases 2, 3 and 4, the Project Applicant shall fund a study to evaluate traffic conditions on Harney Way and determine whether additional traffic associated with the next phase of development would result in the need to modify Harney Way to its ultimate configuration, as shown in Figure 6 in the Transportation Study, unless this ultimate configuration has already been built. This study shall be conducted in collaboration with the SFMTA, which would be responsible for making final determinations regarding the ultimate configuration. The ultimate configuration would be linked to intersection performance, and it would be required when study results indicate intersection LOS at one or more of the three signalized intersection on Harney Way at mid-LOS D (i.e., at an average delay per vehicle of more than 45 seconds per vehicle). If the study and SFMTA conclude that reconfiguration would be necessary to accommodate traffic demands associated with the next phase of development, the Project Applicant shall be responsible to fund and complete construction of the improvements prior to occupancy of the next phase.

Mitigation Measure MM TR-17 Implement the Project's Transit Operating Plan.

The text of MM TR-17 is not proposed to be revised. As provided under MM TR-17, SFMTA has agreed to modifications to the previously-approved Transit Operating Plan as detailed above and further described in **Appendix A** to adjust the phasing of transit improvements in response to the proposed changes to the Project Phasing Schedule.

Mitigation Measure MM UT-2 Auxiliary Water Supply System.

The text of MM UT-2 is proposed to be revised as follows:

MM UT-2 Auxiliary Water Supply System. Prior to issuance of occupancy permits, as part of the Infrastructure Plan to be approved, the Project Applicant shall construct an Auxiliary Water Supply System (AWSS) ~~loop~~ within Candlestick Point to connect to the City's planned extension of the offsite system off-site on Gilman Street from Ingalls Street to Candlestick Point. The Project Applicant shall construct an additional AWSS

loop on HPS Phase II to connect to the existing system at Earl Street and Innes Avenue and at Palou and Griffith Avenues, with looped service along Spear Avenue/Crisp Road.

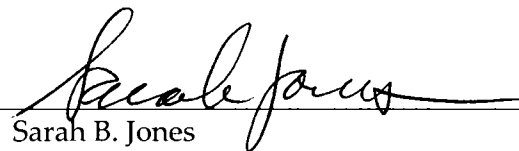
CONCLUSION

Based on the foregoing, it is concluded that the analyses conducted and the conclusions reached in the Final EIR certified on June 3, 2010 remain valid. The proposed revisions to the project will not cause new significant impacts not identified in the EIR, and no new mitigation measures will be necessary to reduce significant impacts. Other than as described in this Addendum, no project changes have occurred, and no changes have occurred with respect to circumstances surrounding the proposed project that will cause significant environmental impacts to which the project will contribute considerably, and no new information has become available that shows that the project will cause significant environmental impacts. Therefore, no supplemental environmental review is required beyond this addendum.

Date of Determination:

I do hereby certify that the above determination
has been made pursuant to State and Local
requirements.

December 11, 2013


Sarah B. Jones

Environmental Review Officer

cc:

Bulletin Board / Master Decision File
Distribution List



December 11, 2013

Mr. Chris Kern
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

Subject: DRAFT 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

Dear Chris:

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. Since that time, the Housing/R&D Variant (Variant 2A) has been advanced as the project. Since the certification of the EIR, a number of refinements have been proposed to Variant 2A. 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.

TRAVEL DEMAND

At buildout, the project will contain the same land uses, the same levels of transit service, and a comparable roadway grid as was assumed in the EIR for Variant 2A. The primary factors that influence the project's travel demand have not changed; therefore, the project's travel demand forecasts as described in the EIR remain valid for conducting this assessment.

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 originally conceived and described in the EIR. However, the original 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. The revised phasing proposed for the project will likely 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. The acceleration of construction in Candlestick Point is associated with demolition of Candlestick Park and construction of the Candlestick Point retail center and several blocks of housing surrounding the site. 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 modified Project compared to the original project is provided in **Appendix A**. Note that the comparison shown in the Appendix is for the 2010 Stadium Alternative and the 2013 Modified Project.

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 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 or 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 FIER 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.

Overall, at buildout, the modified Project will contain the same land uses, the same levels of transit service, and a comparable roadway grid as was assumed in the EIR for Variant 2A. The primary factors that influence the Project's travel demand have not changed; therefore, the modified Project's travel demand forecasts for buildout conditions will be identical to those described in the EIR.

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. Minor 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 to better accommodate transit, bicyclists, and on-street parking based on recent SFMTA design guidance for travel lane widths. Specifically, changes fall into one of several categories. The categories of modifications, and their potential for creating new impacts, are discussed below:

- **Establish consistent design principles.** The revisions reflect recent direction from SFMTA regarding cross-section dimensions for various street components, such as width of parking lanes, width of travel lanes, and width of bicycle lanes. While there have been some refinements to specific lane dimensions, all auto and transit travel lanes will continue to be within a range of 10-12 feet, consistent with the range of widths analyzed in the original EIR. Parking lanes will be 8-feet wide, increasing to 9-feet when adjacent to Class II bicycle lanes, which is also within the range of between 7-9 feet for on-street parking included in the original EIR. Class II bicycle lanes will be 6-feet wide, except when



- adjacent to (9-foot wide) on street parking, in which case they will be 5-feet wide. Bicycle lanes between 5-6 feet wide are consistent with the range of bicycle lanes included in the original EIR. Sidewalks have been made more consistent such that they are nearly always either 12- or 15-feet wide, which is consistent with the range of sidewalk widths described in the original EIR.
- **Establish a more consistent BRT alignment.** The modifications also reflect direction from SFMTA regarding converting the BRT from a two-way, side-running alignment to a center-running alignment, where possible, to be consistent with other priority transit corridors in San Francisco. Generally, this affects the Hunters Point Shipyard site more than the Candlestick Point site. However, within Candlestick Point, adjacent to the wedge park, the BRT and auto lanes have been re-oriented so that both auto lanes are on the east side of the wedge park and both BRT lanes are on the west side of the wedge park, essentially offering similar benefits as center-running BRT, since the BRT lanes would essentially be operating in an exclusive roadway. Overall, SFMTA has determined that center-running BRT tends to be quicker and more reliable because left-turns at intersections, which conflict with the center-running BRT, can more easily be controlled by special signal phasing than right turns, which conflict with the side-running proposal. As a result, the changes should, if anything, result in a faster and more reliable BRT route.
 - **Reorientation of some streets in Candlestick Point.** The original transportation network analyzed in the EIR had one east-west residential street in Candlestick Point parallel to and between Ingerson Avenue and Gilman Avenue and one street parallel to and between Egbert Street and Gilman Avenue. The original plan had north-south mid-block breaks (also referred to as alleys) on either side of Earl Street (parallel to Earl Street). However, with the proposed changes to the BRT-only roadway on the west side of the wedge park, the east-west streets would dead-end at the wedge park, potentially forcing autos to turn into the BRT lanes. To respond, the functionality of these streets was switched, essentially converting these two east-west residential streets into mid-block breaks and the two north-south mid-block breaks described above into residential streets. Overall, this swap will result in approximately the same level of auto capacity in the area and is anticipated to result in only minor, localized changes to auto circulation.
 - **Revised bicycle network.** The project modifications include a new cycletrack facility that closes 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 101¹ replacing the originally-proposed Class II bicycle lanes on both sides of the street. Refer to the bicycle impacts section of this letter for further discussion. Illustrations of the revised configuration of the first phase of Harney Way are provided in **Appendix B**. In other locations Class II bicycle lanes have been proposed to be converted to Class III routes. Refer to the discussion of bicycle impacts for further discussion of the changes to the bicycle network.

- **Yosemite Slough Bridge.** The bridge width is currently proposed to be four feet wider than the previously-approved non-stadium alternative, but substantially narrower than the approved stadium alternative, and therefore, within the range of bridge widths considered in the EIR. The additional four feet will accommodate bicycle and pedestrian circulation on both sides of the bridge and will accommodate maintenance vehicles on both sides of the bridge. Overall, the additional width will provide more space for bicycles and pedestrians, and better allow for maintenance to occur with minimal disruption to BRT service.
- **Reorientation of Street Grid in Hunters Point South.** Streets in the Hunters Point South neighborhood have been re-oriented to allow for the BRT route to penetrate the center of the neighborhood at the intersection of Crisp Avenue / Fischer Street. This should, if anything, further promote the use of transit from the Hunters Point South neighborhood. Overall, the size and density of the street grid in Hunters Point South is similar to what was originally approved in the EIR for Variant 2A - Housing, and therefore, transportation capacity is expected to be similar.

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 Arellous Walker Drive – that does affect vehicular capacity at buildout.

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.



Currently, Arelious Walker Drive is a short roadway between Gilman Avenue and Carroll Avenue that provides access to parking areas for Candlestick Park stadium. As previously proposed in the CP/HPS Phase II redevelopment plan and analyzed in the EIR, Arelious Walker Drive would be extended south to Harney Way and north to Carroll Avenue after the demolition of Candlestick Park. It would serve as one of the primary auto arterial streets both into and through the Candlestick Point site. As approved, Arelious Walker Drive would have two travel lanes, a bicycle lane and on-street parking on the east side (northbound) of the street and three travel lanes, a bicycle lane and on-street parking on the west side (southbound) of the street. The sidewalk on the east side was proposed to be 22 feet to allow for the addition of a third northbound lane in the future, should traffic conditions warrant. The intersections of Arelious Walker Drive/Gilman Avenue and Arelious Walker Drive/Harney Way would both be signalized as part of the project.

One of the proposed modifications to the Project is to narrow the ultimate cross section of Arelious Walker Drive to include only two travel lanes and no on-street parking and no Class II bicycle lane in each direction (i.e., a travel lane was removed from the southbound side of the street and more conventional sidewalks have been proposed on each side of the street, and on-street parking and bicycle lanes have been eliminated). The bicycle lanes have been replaced by a two-way cycle track running through the heart of the project along Harney Way (see bicycle impacts section for more discussion). Two-way Bus Rapid Transit (BRT) lanes would be provided between Egbert Street and Carroll Avenue.

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 CP/HPS Phase II, 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. The intersections of Arelious Walker Drive/Gilman Avenue and Arelious Walker Drive/Harney Way were included in the analysis.

Below, **Table 1** summarizes the intersection LOS for both intersections at full project buildout with the original Arelious Walker Drive configuration and with the proposed change to the ultimate configuration (i.e., two through lanes in each direction instead of three). As shown, with the

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.



proposed change to the ultimate configuration, both study intersections would operate within the City's LOS D threshold at full project buildout conditions. Detailed intersection LOS calculations are included in **Appendix C**.

TABLE 1: INTERSECTION OPERATIONS – ARELIIOUS WALKER DRIVE

Intersection	Arelious Walker/Gilman				Arelious Walker/Harney Way			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay ²	LOS ²	Delay ²	LOS ²	Delay ²	LOS ²	Delay ²	LOS ²
Original Arelious Walker Drive Configuration at Buildout	30	C	36	C	22	C	41	D
Revised Arelious Walker Drive Configuration at Buildout	33	C	50	D	22	C	41	D

Notes:

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

Source: Fehr & Peers, 2009 and 2013.

Therefore, because travel demand would be consistent with what was described in the EIR, and there would be no changes to auto capacity associated with project refinements, other than the change described above, which would not result in additional significant impacts, the EIR's conclusions for Impacts TR-2 through TR-16, remain unchanged from what was described 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.

Timing of Traffic Improvements

Although, for purposes of assessing transportation impacts, the modified Project will be essentially the same as evaluated in the EIR at buildout, the project development phasing has changed. The phasing of traffic improvements was set forth in the *Infrastructure Plan – Candlestick Point Development and Hunters Point Shipyard Phase 2 Development*, August 3, 2010 (Infrastructure Plan). An analysis of the revised 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 from the Infrastructure Plan are proposed to better respond to land use phasing. As shown in **Table 2**, all 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. 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 vehicular capacity along the streets, so in terms of assessing traffic impacts, this modification is not material.

Figures 1 – 4, attached, illustrate the auto access routes that would be available based on the modified 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.

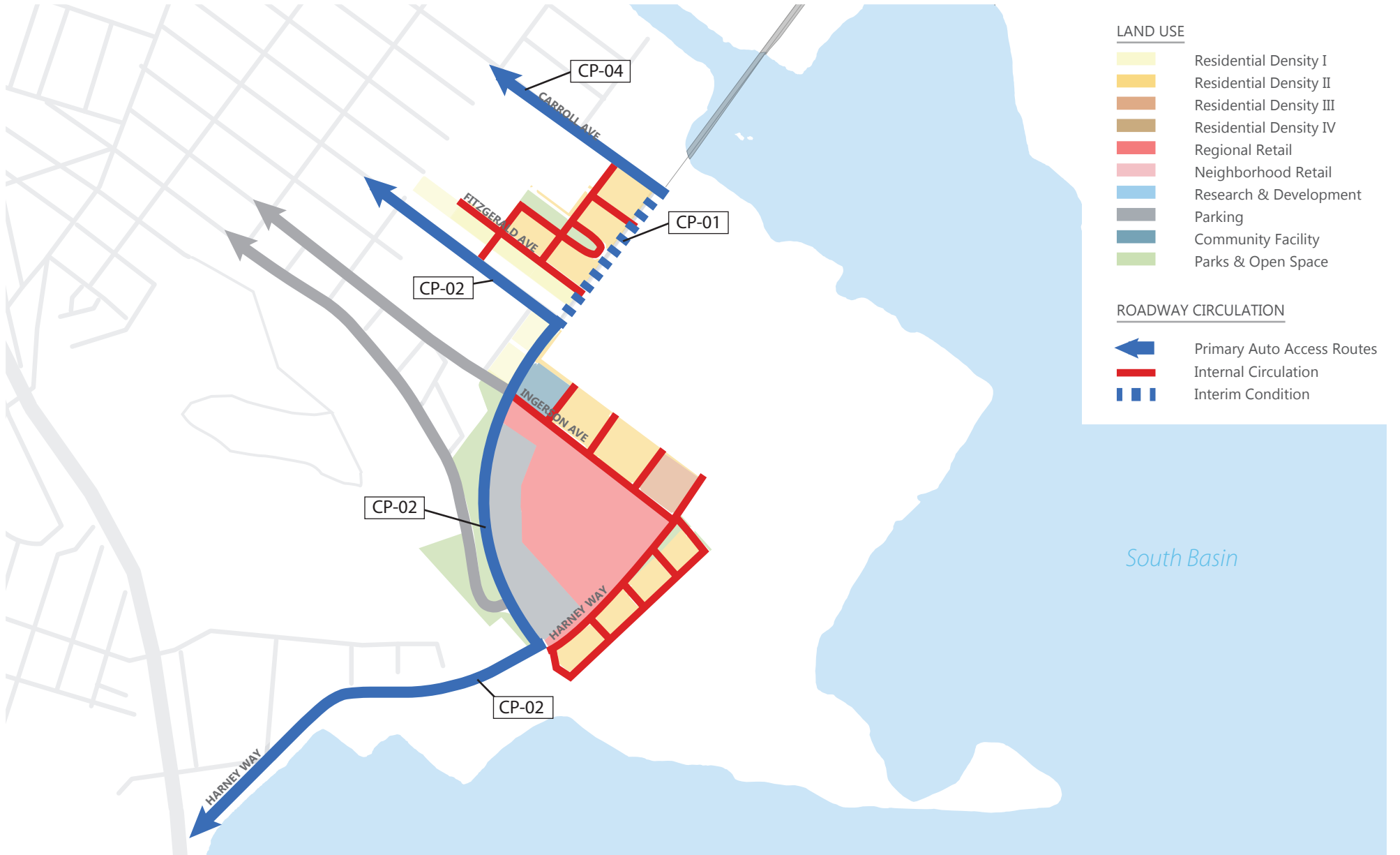
Within Major Phase 1 in Candlestick Point, the development will occur in five sub-phases, CP-01 through CP-05. CP-01 includes construction of 325 residential dwelling units on the Alice Griffith site, which will generate approximately 100 PM peak hour auto trips, based on the methodology described in the EIR. As part of this sub-phase, a portion of Arelious Walker will be 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 would be constructed. During this initial period, this segment of Arelious Walker would provide 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 would be consistent with and would support the final configuration of Arelious Walker Drive. The interim configuration of Arelious Walker Drive is shown in **Appendix D**.

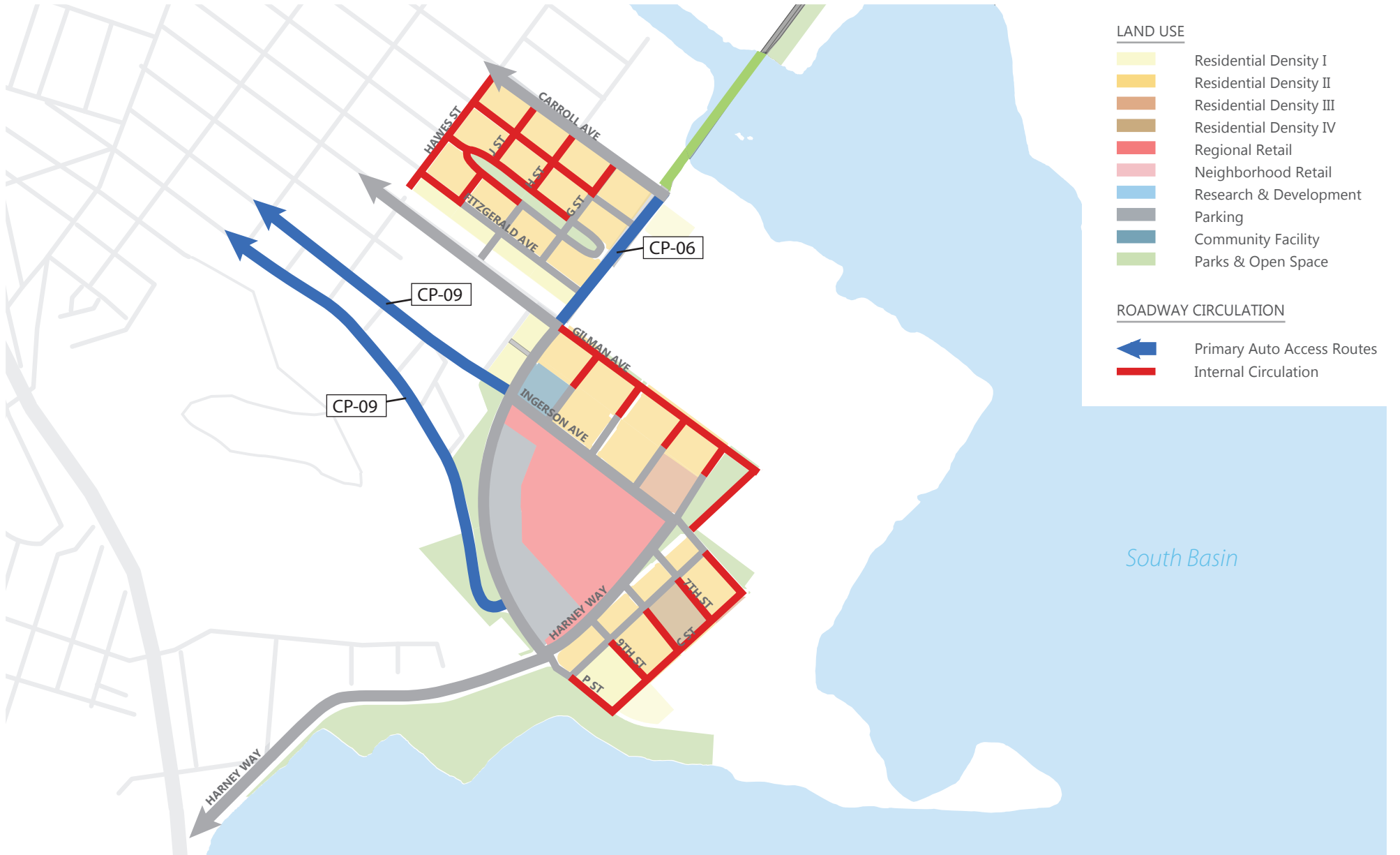


TABLE 2 - PROJECT STREET SEGMENT IMPROVEMENTS - CANDLESTICK POINT

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
Arelious Walker Drive, Carroll Avenue to Gilman Avenue	Interim Two-Lane Condition (See Appendix D)	N/A		No	CP-01 (Adjacency)
	Ultimate Condition (See description above)	No	Implementation of BRT	Yes	CP-06 (Approximately 3,500 PM Peak Hour Vehicle Trips) 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 Appendix B)	Yes	3,537 PM Peak Hour Vehicle Trips or Implementation of BRT ^c	No	CP-02 (Adjacency)
	Long-Term (See Appendix B)	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-09
Ingerson Avenue, Arelious Walker Drive to Third Street	Resurface and Restripe	No	Demolition of Candlestick Park	No	CP-09
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-04 (Approximately 3,200 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	HP-06 (Reconstruction of Crisp Avenue) ^f

- 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.
- 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.
- Based on trip rates by land use used in the EIR for Variant 2A – Housing Variant.
- As summarized in the project's Infrastructure Plan.
- 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.
- Although improvements to Ingalls Street were proposed as part of the Candlestick Point development, they, along with improvements to Thomas Avenue and Griffith Street will not be necessary until development levels at Hunters Point Shipyard necessitate the provision of a southern access roadway via Crisp Avenue. Until this time, there will not be a complete route to connect Candlestick Point and the Hunters Point Shipyard and these roadway improvements offer no meaningful benefit.





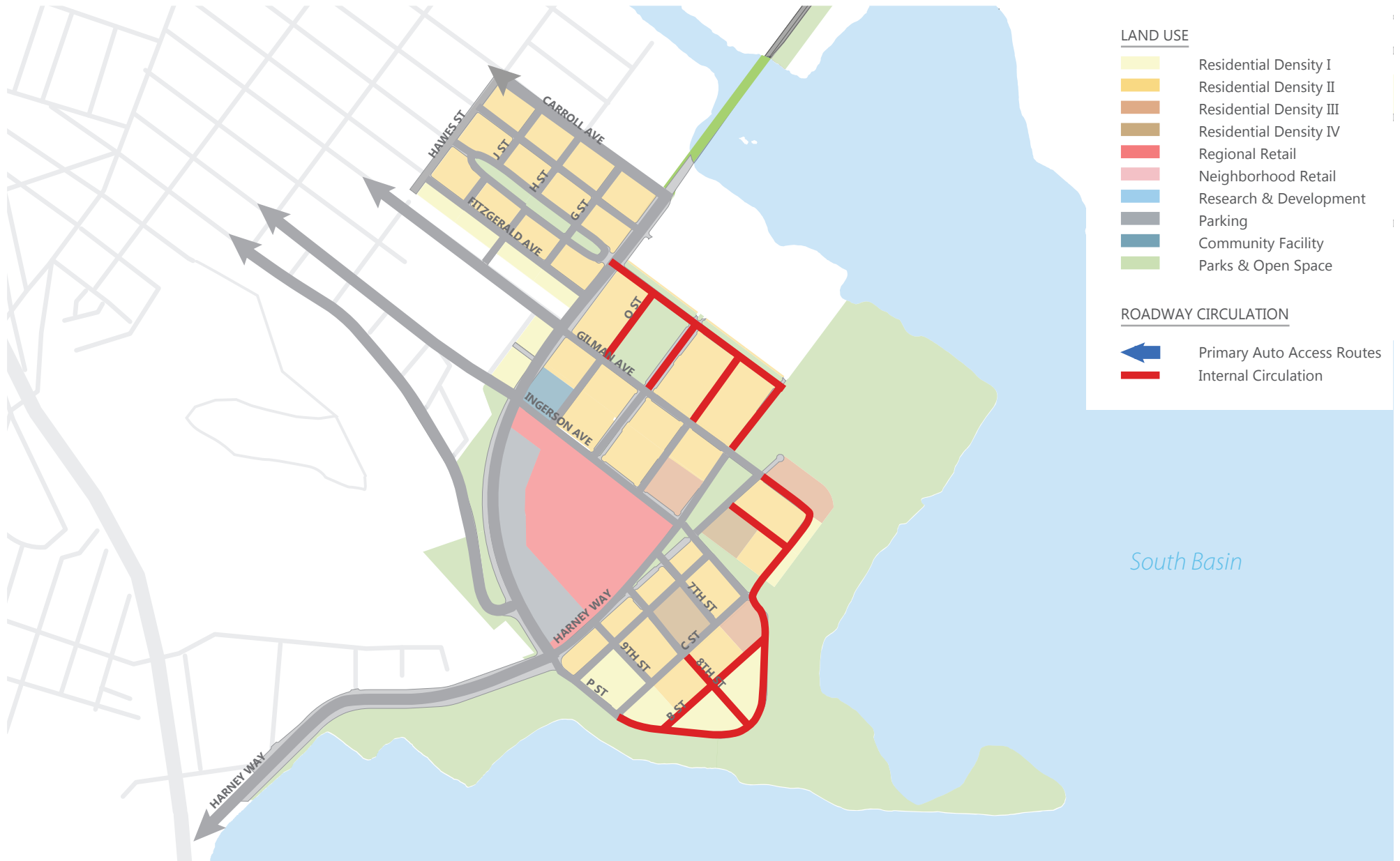
LAND USE

- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

ROADWAY CIRCULATION

- Primary Auto Access Routes
- Internal Circulation









As proposed, providing only one travel lane in each direction along Arelious Walker Drive should be adequate for this small number of units expected as part of CP-01, and will essentially serve 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.

Sub-phase CP-02 would develop the 635 ksf regional retail center, 150 ksf of office space, a 220-room hotel, 280 additional residential units, and possibly a 75 ksf arena/performance venue. 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. Additionally, Gilman Avenue, between Arelious Walker and Third Street would be reconfigured to provide two travel lanes, on-street parking, and 12-foot sidewalks on both sides of the street.

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. 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 is proposed to Mitigation Measure MM TR-16 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. Mitigation Measure MM TR-16 is proposed to be modified as follows:

MM TR-16 Widen Harney Way as shown in Figure 5 in the Transportation Study. Prior to issuance of the ~~grading~~occupancy permit for ~~Development Phase 1 of the Project, Candlestick Point Sub-Phase CP-02,~~ the Project Applicant shall widen Harney Way as shown in Figure 5 in the Transportation Study, with the modification to include a two-way cycletrack, on the southern portion of the project right of way. Prior to the issuance of grading permits for Candlestick Point Major Phases 2, 3 and 4, the Project Applicant shall fund a study to evaluate traffic conditions on Harney Way and determine whether additional traffic associated with the next phase of development would result in the need to modify Harney Way to its ultimate configuration, as shown in Figure 6 in the



Transportation Study, unless this ultimate configuration has already been built. This study shall be conducted in collaboration with the SFMTA, which would be responsible for making final determinations regarding the ultimate configuration. The ultimate configuration would be linked to intersection performance, and it would be required when study results indicate intersection LOS at one or more of the three signalized intersection on Harney Way at mid-LOS D (i.e., at an average delay per vehicle of more than 45 seconds per vehicle). If the study and SFMTA conclude that reconfiguration would be necessary to accommodate traffic demands associated with the next phase of development, the Project Applicant shall be responsible to fund and complete construction of the improvements prior to occupancy of the next phase.

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 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.

Prior to opening of CP-04, the first three subphases would generate about 3,200 vehicle trips, which is approximately the trigger point identified in the project's Infrastructure Plan that would require improvements to the auto route around the Yosemite Slough, that includes Carroll



Avenue, Ingalls Street, Thomas Avenue, and Griffith Avenue. The analysis conducted for the Infrastructure Plan 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 Infrastructure Plan 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 very little development in the Hunters Point Shipyard and substantially more development in Candlestick Point than originally anticipated. As a result, there is likely to be little auto demand for travel between the Hunters Point site and US 101 or between the Candlestick Point and Hunters Point Shipyard sites, making the auto route around Yosemite Slough less critical at such an early stage. Regardless, improvements to Carroll Avenue between Arelious Walker Drive and Ingalls Street are still proposed to be completed as part of CP-04, generally consistent with the Infrastructure Plan triggers, because development at Candlestick Point will still increase demand for east-west travel to the greater Bayview neighborhood. However, improvements to Ingalls Street, Thomas Street, and Griffith Avenue which primarily serve to connect the Hunters Point Shipyard development with the Bayview neighborhood, Candlestick Point, and US 101, will be constructed at a later point, when development levels in the Hunters Point Shipyard development warrant (refer to next section, which discusses timing of improvements for Hunters Point Shipyard for more detail).

Finally, although improvements associated with Carroll Avenue are currently proposed to be constructed prior to occupancy of Subphase CP-04 based on the original Infrastructure Plan analysis, if subsequent technical analysis can demonstrate that because of the location and types of development proposed, improvements to Carroll Avenue are not required until later in the development phasing, at the mutual agreement of the Environmental Review Officer and the Project Sponsor, and with the appropriate addenda to the EIR, the timing may be further modified.

The remaining auto capacity enhancements on Arelious Walker Drive, between Gilman Avenue and Carroll Avenue would be constructed prior to occupancy of the first sub-phase in Major Phase 2 (CP-06). At the end of Major Phase 1 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 3** below, and therefore, no significant impacts would occur as a result of providing this interim condition through Major Phase 1. Detailed LOS calculations are provided in **Appendix C**.

**TABLE 3: INTERIM INTERSECTION OPERATIONS –
ARELIOUS WALKER DRIVE**

Intersection	Arelious Walker/Gilman	
	Delay ²	LOS ²
Interim Condition at completion of Major Phase 1	44	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. As shown in **Figures 2 – 4**, subsequent Major Phases 2 through 4, respectively, 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 Infrastructure Plan improvement phasing requirements are proposed to better respond to land use phasing. As shown in **Table 4**, 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.



TABLE 4 - 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-06 or Based on Transit Phasing
Thomas Avenue, Ingalls Street to Griffith Street	Resurface and Restripe, Streetscape Amenities	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP) ^a	Yes	HP-06 (Reconstruction of Crisp Avenue)
Griffith Street, Thomas Street to Palou Street	Resurface and Restripe, Streetscape Amenities	Yes	Reconstruction of Crisp Avenue	Yes	HP-06 (Reconstruction of Crisp Avenue)
Innes Avenue, Donahue Street to Earl Street	Resurface and Restripe, Streetscape Amenities	Yes	1,000 PM Peak Hour Vehicle Trips	No	HP-01
Crisp Avenue, Palou Avenue to Fischer Street (Diagonal Route)	Resurface, Restripe, Realign	No	Adjacency	No	HP-06 (Adjacency) or Based on Transit Phasing
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-01

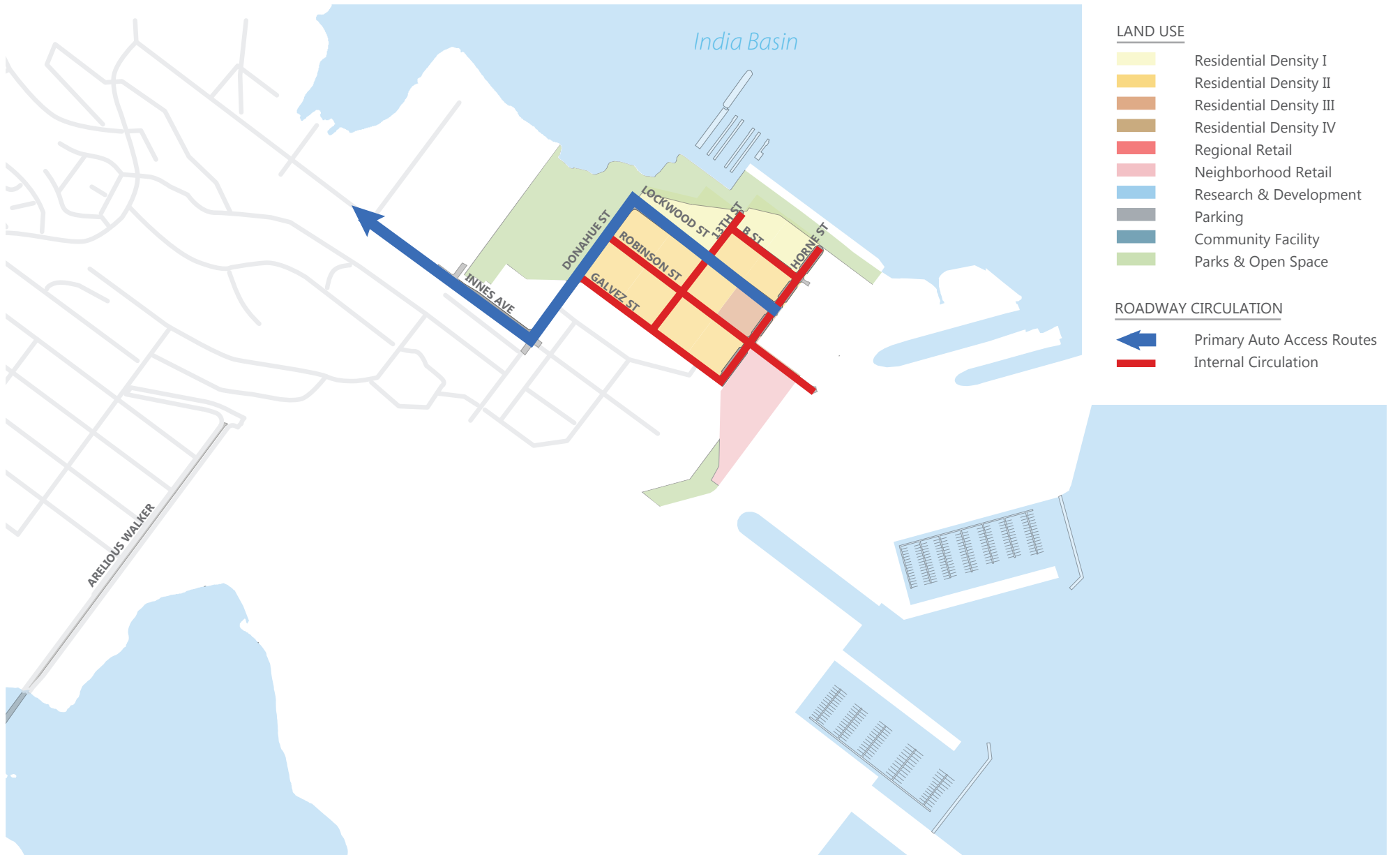
a. Combined total from CP and HP

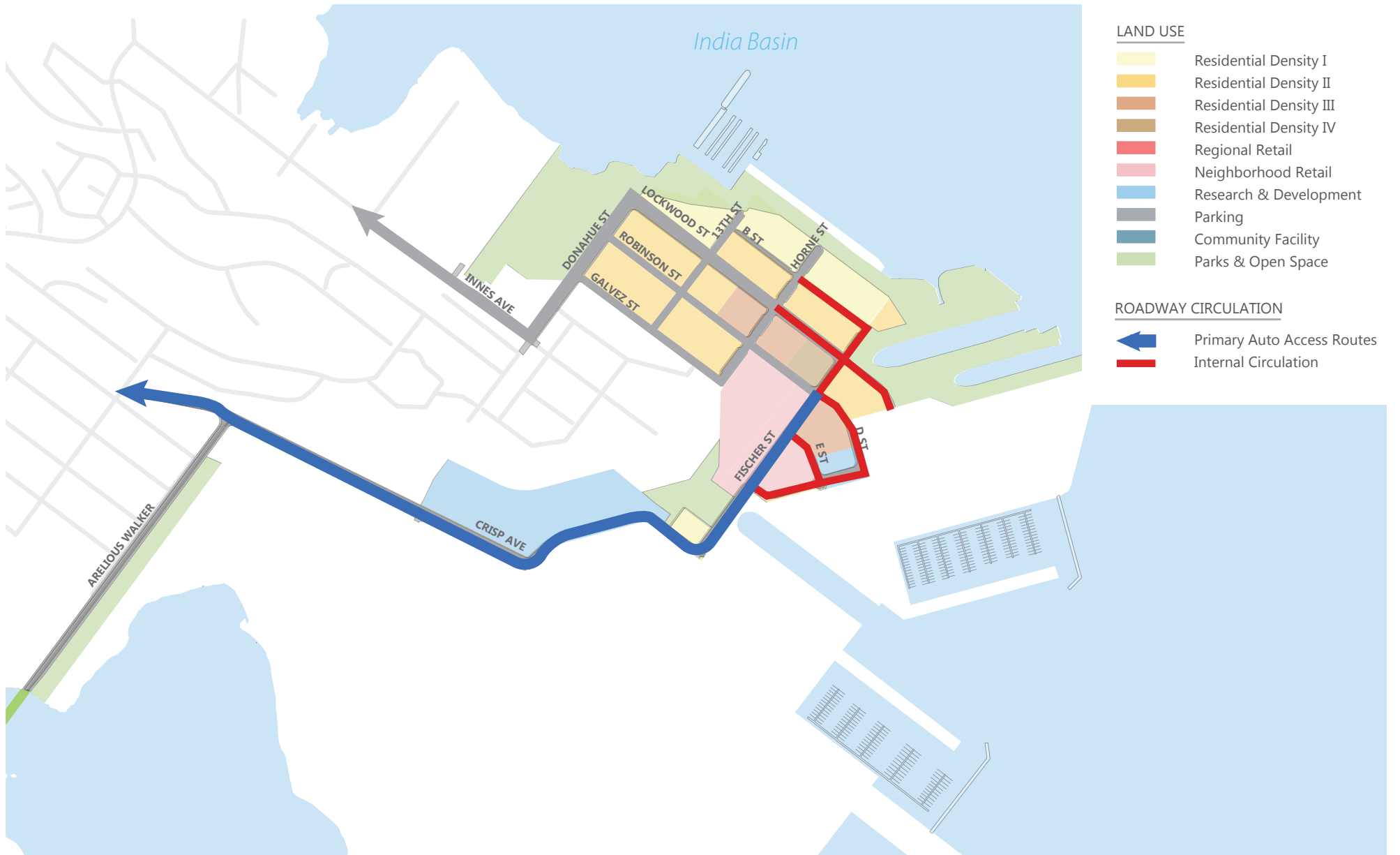
b. Based on trip rates by land use used in the EIR for Variant 2A – Housing Variant.

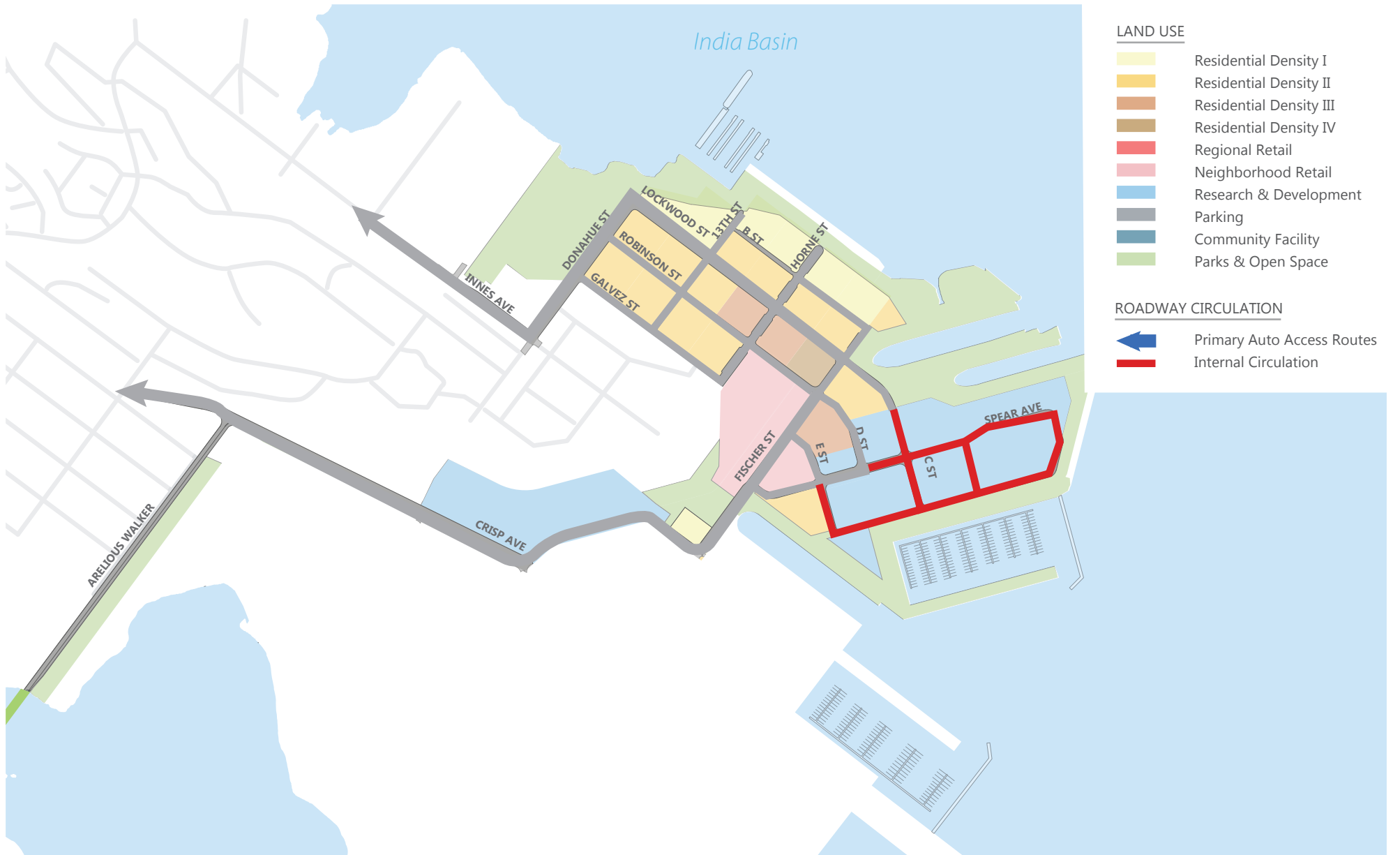
c. As summarized in the project's Infrastructure Plan.

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.

Figures 5 – 8 show the development of land use and roadway infrastructure for Major Phases 1 – 4 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, Donohue Street and Innes Avenue, would be constructed and connected to the HPS North area as part of Major Phase 1. These improvements would be constructed as part of Subphase CP-01, prior to any new trips generated by development in the Hunters Point Shipyard site. This access route accounts for approximately 2/3 of the total auto capacity of the HPS site and will be adequate to serve the development proposed as part of Major Phase 1 in Hunters Point Shipyard, due to its relatively large portion of the total planned auto capacity and its proximity to 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 to Donohue Street and Innes Avenue.







LAND USE

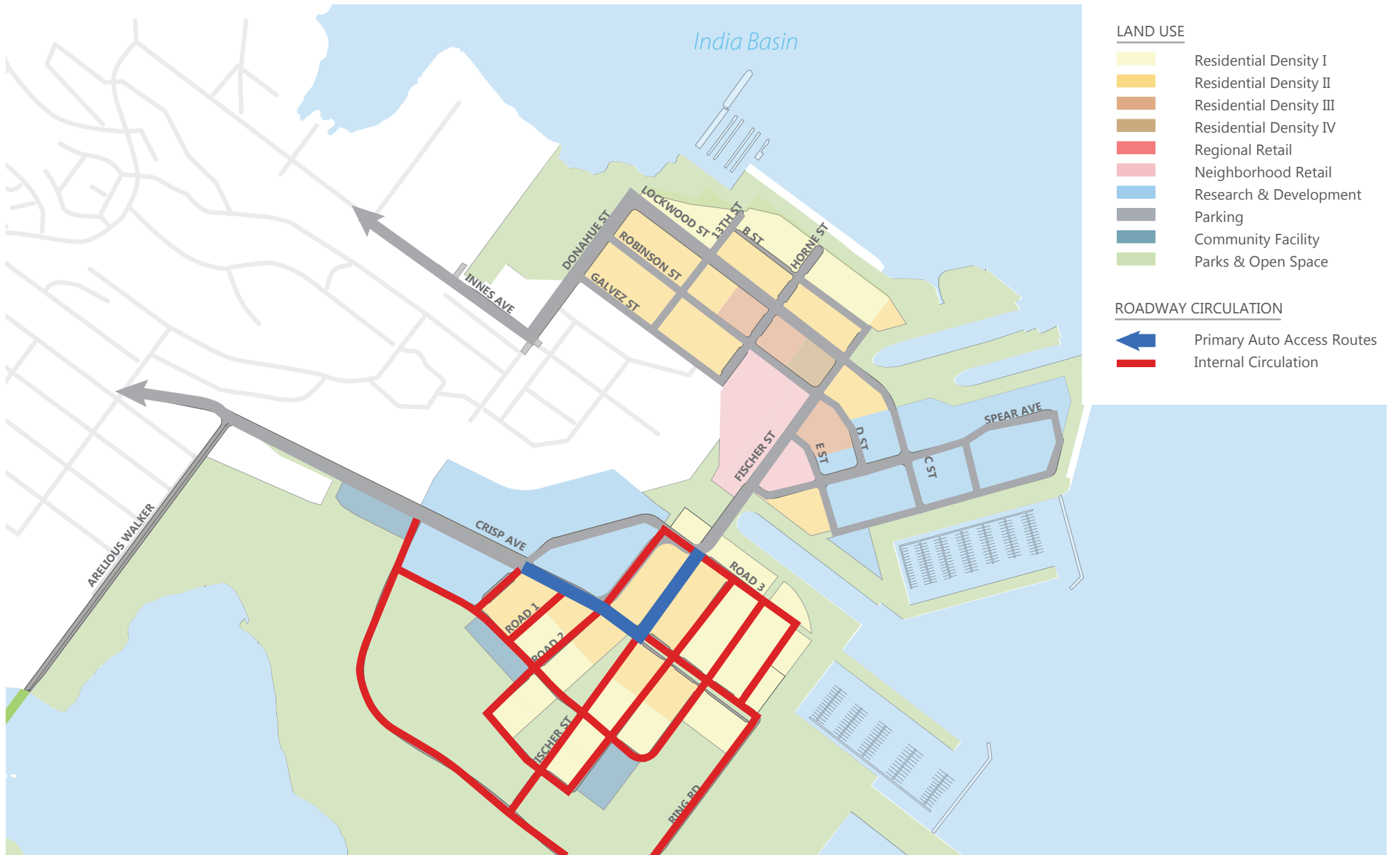
- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

ROADWAY CIRCULATION

- Primary Auto Access Routes
- Internal Circulation



Not to Scale



LAND USE

- Residential Density I
- Residential Density II
- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

ROADWAY CIRCULATION

- Primary Auto Access Routes
- Internal Circulation



Not to Scale



Figure 6 illustrates that the second major auto access route, Crisp Road and Palou Avenue, would be constructed as part of Major Phase 2 in Hunters Point Shipyard. These improvements would be constructed as part of Subphase CP-06, the first development site to be constructed within the southern half of the Hunters Point Shipyard site. This means that 100 percent of the planned auto ingress/egress capacity for the HPS site would be constructed and fully operational before any trips associated with Major Phase 3 in Hunters Point Shipyard are generated, when only approximately 40 percent of the total auto trips associated with the full site buildout would be generated. **Figures 7 and 8** illustrate that 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, similar to Candlestick Point, the major pieces of auto infrastructure will be constructed as part of Major Phases 1 and 2 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 a result, no new 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, and the modified Project is not expected to substantially increase the severity of significant impacts compared to what was described in the FIER, and therefore, no new mitigation measures are required.

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:



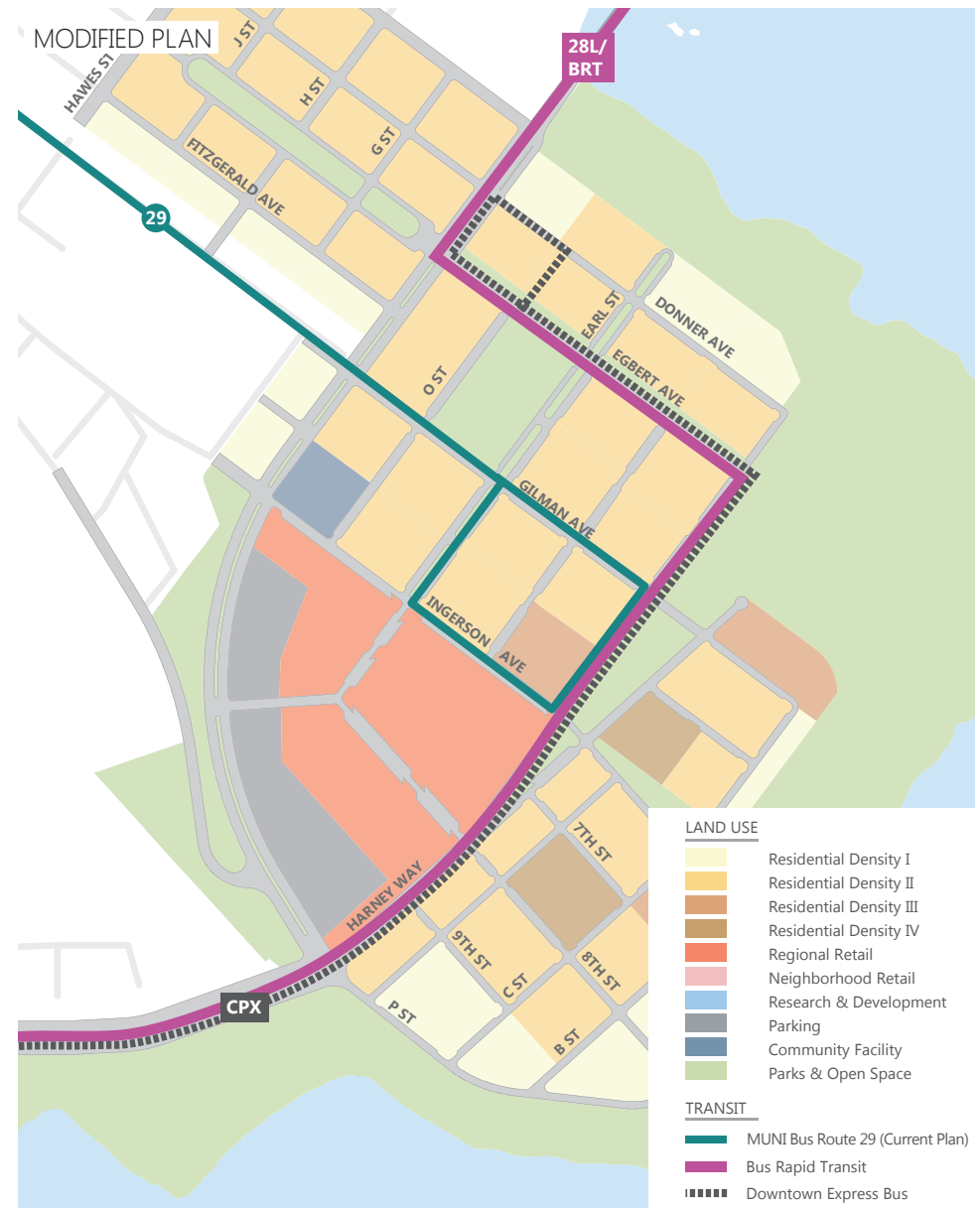
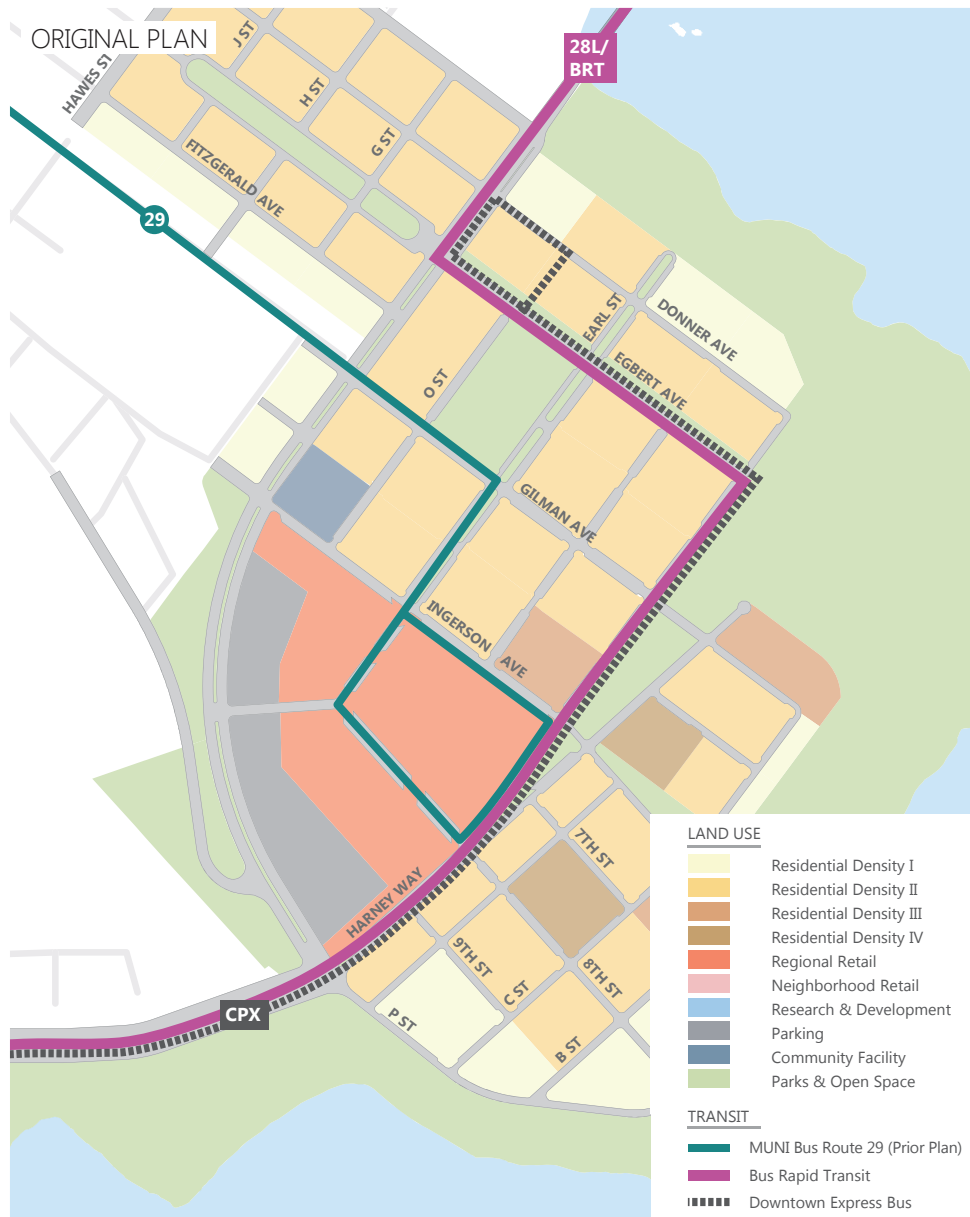
- Transit travel times should be monitored throughout the course of project buildout to determine whether Project-generated traffic is decreasing transit travel speeds.
- If speeds are decreasing, travel time reduction measures should be implemented on the affected corridors. These measures typically 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.

Similar to traffic impacts, the modified Project's transit impacts at buildout as described in Impacts TR-17 through TR-30 will be identical to what was described in the EIR, 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 one-block shift of the Hunters Point Shipyard Transit Center.

Figure 9 illustrates the proposed change to the 29 Sunset routing within Candlestick Point. The original project called for the 29 Sunset to circulate within the Candlestick Point retail center. The revised proposal calls for the 29 Sunset to continue to serve the front of the retail center along Ingerson Avenue, but instead of circulating within the retail center, the route would circulate around the development blocks to the north, so that the 29 Sunset provides more direct service to the high-density residential buildings proposed near the intersection of Gilman Avenue and Harney Way. This minor routing change will, if anything, increase the project's transit mode share by bringing transit service closer to more residential units while continuing to provide direct "front-door" service to the retail center.



Not to Scale



Figure 10 illustrates the proposed changes to routes serving the Hunters Point Shipyard. The changes involve moving the Hunters Point Transit Center one block to the north. The 28L BRT route and the 24 Divisadero would travel an additional block 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. 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 28L BRT and the 24 Divisadero) would travel along Crisp Avenue into the approximate center of Hunters Point South, instead of around the northern perimeter. By providing service into the center of the Hunters Point South, if anything, transit will be more accessible to surrounding development, and transit mode share would, if anything, increase slightly.

Because transit mode share is likely to be only slightly affected by the proposed modifications in CP and HP, the proposed modifications will not likely result in additional significant impacts beyond those identified in the EIR under buildout conditions.

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.

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 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

ORIGINAL PLAN



MODIFIED PLAN





The original and revised transit phasing are shown in **Table 5. Appendix E** 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 original plan and the modified plan. 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 original and modified project, combined with engineering judgment to account for the unique development phasing currently proposed.

To serve the retail center, the 29 Sunset would be extended to the retail center and its frequency would be increased from 10 minutes to its ultimate frequency of 5 minutes. However, because of the substantial amount of development proposed in early phases of the modified project compared to the original project, and the different types of land uses to be constructed initially (i.e., a heavier focus on retail in the early phases than originally anticipated), SFMTA has indicated that operating the other routes ultimately planned to serve Candlestick Point, including the CPX Candlestick Point Express and the 28L BRT route, is not possible in the near term. The CPX Candlestick Point Express is not likely to be particularly effective for non-residential uses, which account for the majority of travel-demand generating uses in the early phases of development in Candlestick Point. Similarly, the 28L BRT would not be desirable in early years because the infrastructure connecting it to Geneva Avenue to the west would not be in place.

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



TABLE 5: TRANSIT PHASING

Route	Frequency	Original Transit Operating Plan		Proposed Revisions	
		Major Phase ^a	Approx. Year	Major Phase ^a / Subphase	Approx. Year
Hunters Point Shipyard					
Hunters Point Express (HPX)	20	1	2017	2 / HP-04	2023
	12	1	2019	2 / HP-05	2024
23 Monterey	15	1	2017	2 / HP-04	2023
24 Divisadero	10	2	2023	3 / HP-09	2029
	7.5	2	2025	3 / HP-12	2030
48 Quintara	15	1	2015	1 / HP-01	2019
	10	1	2019	2 / HP-05	2024
44 O'Shaughnessy	7.5	1	2017	2 / HP-04	2023
	6.5	1	2019	2 / HP-05	2024
Candlestick Point					
56 Rutland ^b	15	N/A	N/A	1 / CP-02	2017
Private Shopping Center Shuttle ^b	7.5	N/A	N/A	1 / CP-02	2017
Candlestick Point Express (CPX)	20	2	2021	N/A	N/A
	15	2	2022	2 / CP-06	2020
	10	3	2027	3 / CP-14	2030
29 Sunset	10	2	2021	N/A	N/A
	5	2	2022	1 / CP-02	2017
Routes Serving Both Sites					
28L/BRT (Includes Construction of Yosemite Slough Bridge)	8	2	2021	2 / CP-07 and HP-04 ^c	2023
	5	2	2022	3 / CP-12 and HP-07 ^d	2028
T Third	6	2	2020	No Change - Not triggered by project development	
	5	3	2025		

Notes:

- a) The original Transit Operating Plan contemplated only three Major Phases of development. The revised phasing breaks the development into four Major Phases each for Candlestick Point and Hunters Point Shipyard.
- b) Temporary until initiation of CPX and/or BRT
- c) Respective sub-phases in CP and HP that reach 20% buildout of Major Phase 2
- d) Respective sub-phases in CP and HP that initiate Major Phase 3

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



Figures 11 and 12 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. The figures compare this information for the original project (the red line) and the modified project (the blue line). It is important to note that the graphs compare the one-way transit capacity in terms of seats per hour with the two-way transit demand. Thus, since the transit capacity to demand ratio is greater than 1.0 at all times, even if all transit trips were traveling in a single direction (all inbound or all outbound), there would be enough transit capacity serving the project site at all times to accommodate the demand. Note also that the information provided for the original project is based on the Stadium Alternative, because year-by-year development phasing was not developed for other Alternatives and Variants. As a result, at buildout, the modified transit service appears to provide slightly less transit service than the original project, when actually, the difference is simply the difference between the Stadium Alternative and Non-Stadium Variant 2a – Housing. **Appendix E** 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 5**, formed the basis for **Figures 11 and 12**.

The figures illustrate that with the proposed changes in development and transit phasing, the level of transit service proposed throughout the development process relative to the types of development anticipated will remain at a similarly robust level as was originally contemplated throughout development and at Project buildout. **Figure 11** illustrates that with the revised development schedule and revised transit phasing, the level of transit service relative to demand will remain similar to or greater than the original project at buildout, which means the transit will remain an attractive option for travelers in the area.

Figure 12 illustrates that once substantial development begins to occur in Hunters Point, the level of transit service relative to demand will actually exceed what was anticipated in the original project, based on the original development and transit implementation phasing until approximately year 2030. After that, the modified project appears to provide less transit service relative to demand than the original project is because the “original” project shown is the stadium alternative and the modified alternative is the Non-Stadium Alternative Variant 2A – Housing, which provides the same level of transit service with slightly higher demand than the Stadium Alternative. As a result, transit service will remain an equally attractive option in Hunters Point under the modified project development and transit phasing as was under the original phasing.

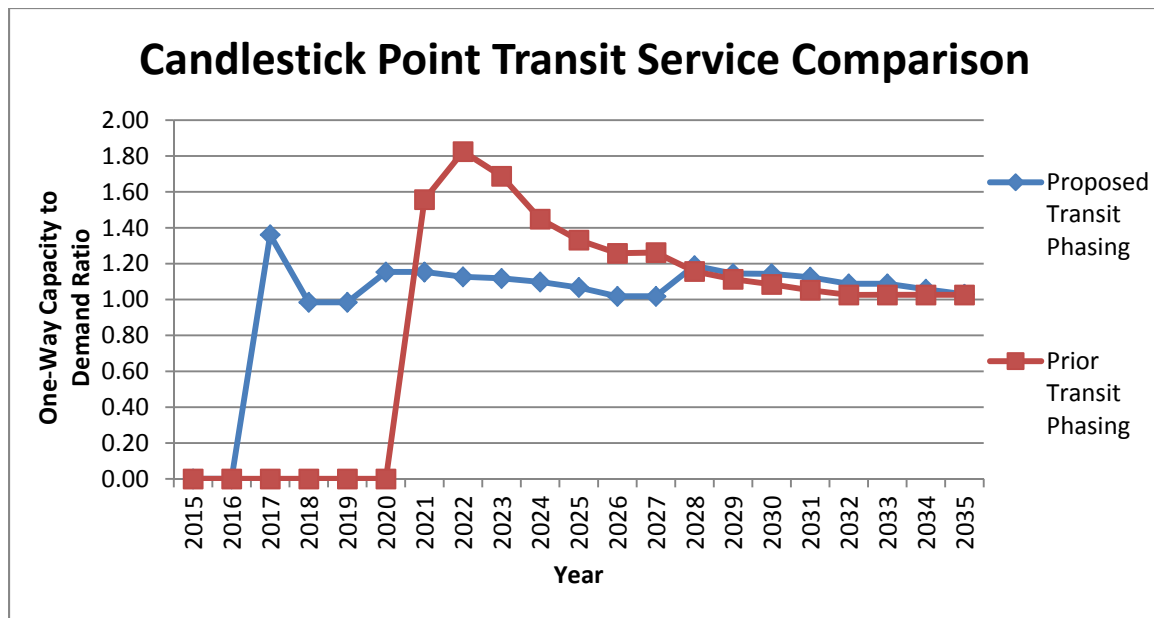


Figure 11 – Comparison of Transit Service Relative to Demand during Project Buildout at Candlestick Point

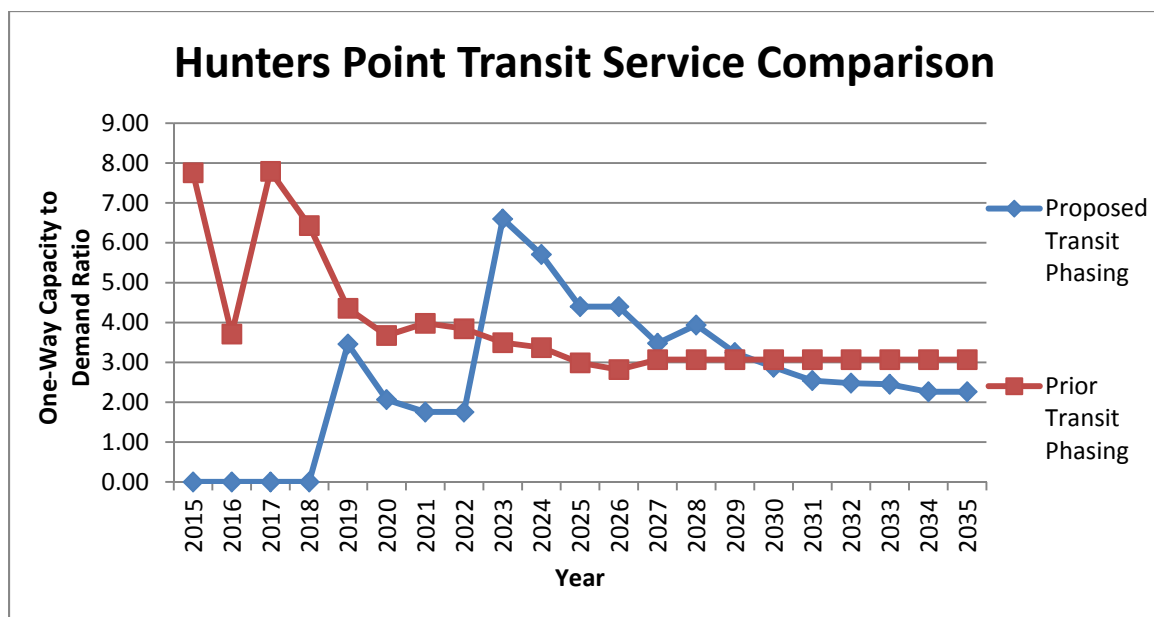


Figure 12 – Comparison of Transit Service Relative to Demand during Project Buildout at Hunters Point Shipyard



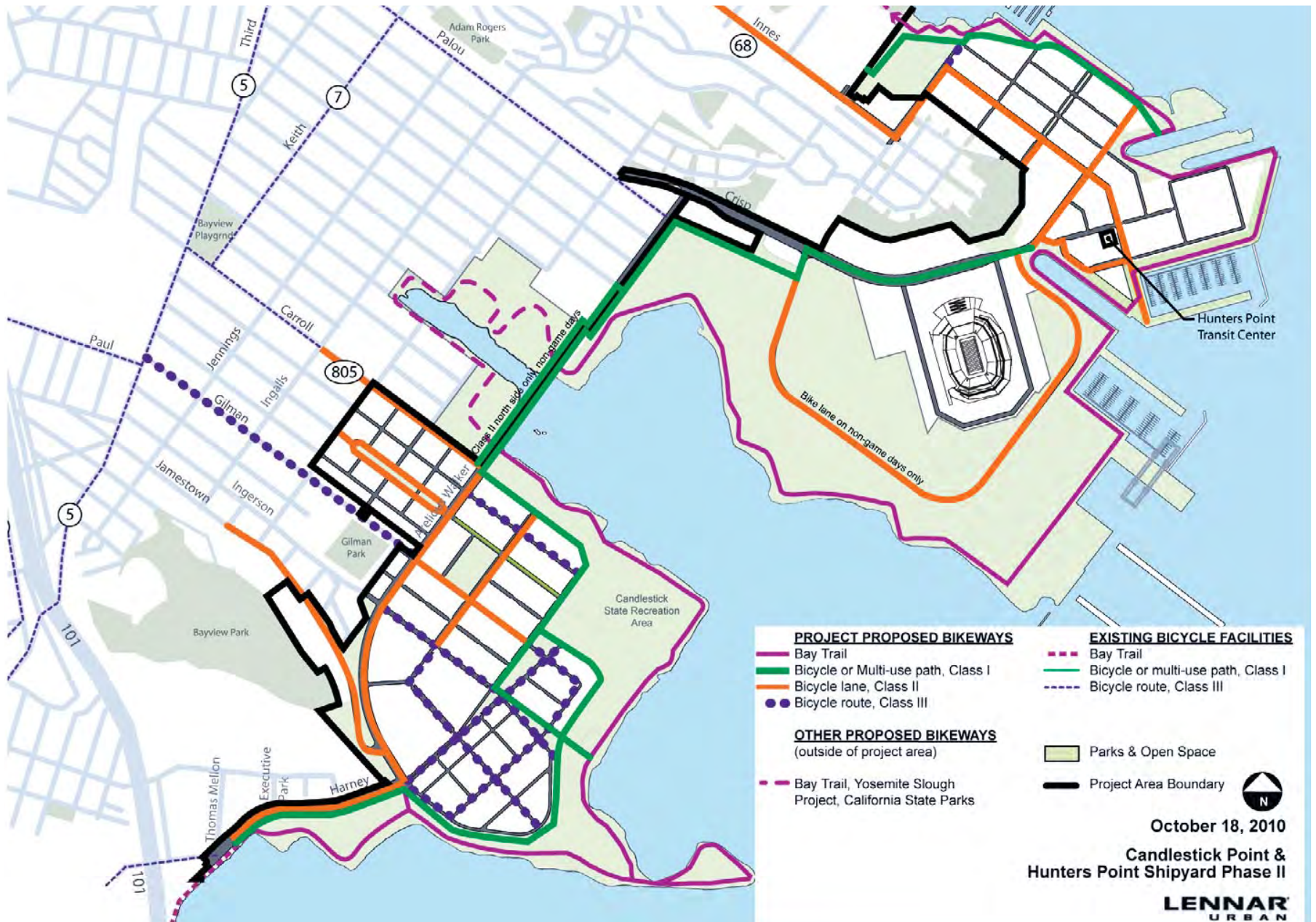
Therefore, transit capacity will be adequate to serve the expected demand, and the mode split (i.e., the percentage of trips made by transit) should remain similar, meaning that there will not be additional significant transit impacts beyond those described in the EIR, nor will the modified Project substantially 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 three "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.

As shown in **Figures 13 and 14**, the modified Project includes refinements to the proposed bicycle network. The changes include replacing the Class II facilities on Arelious Walker Drive with a new, separated, two-way Class I bicycle facility that travels through the heart of the project, and more directly connects the CP and HP project sites. The original bicycle network included Class II facilities on Arelious Walker Drive that connected from the Yosemite Slough Bridge to Harney Way, essentially the only route connecting one end of the Candlestick Point site to the other. The original project also included Class II facilities on Harney Way adjacent to the retail center and the wedge park north of Ingerson Avenue. But, between Ingerson Avenue and Arelious Walker Drive, only Class III facilities were provided, which meant that no dedicated facilities would be provided through the retail core of the project.



Not to Scale





The proposed refinements to the bicycle network would replace the Class II facilities on Arelious Walker with a new Class I two-way cycletrack that travels through the wedge park and the retail center of the Candlestick Point site. The cycletrack will be fully separated from auto traffic, will travel along a route with fewer intersection conflicts, and will provide a flatter topographic route. As a result, it will likely be more desirable to commuters and recreational cyclists, alike. The cycletrack would continue north through the Hunters Point Shipyard site to the Hunters Point transit center and south along Harney Way toward US 101, where ultimately it could be connected to the Bay Trail and/or other regional facilities. When fully-constructed, the new cycletrack facility will provide a dedicated, two-way, Class I facility connecting the Hunters Point Shipyard and Candlestick Point sites to each other and to regional bicycle and transit facilities. Arelious Walker Drive would retain a Class III designation.

In addition, Class II bicycle lanes would be removed from Earl Street to narrow the street and to maximize the space available for public parks on the west side of the street. The narrower street would shorten crossing distances for pedestrians and as a result, improve pedestrian safety and further encourage walking as a primary mode of transportation (reducing demand for transit and auto travel). Earl Street would retain a Class III designation. Given the low speeds anticipated for this street enabled by the narrowing of the street, provision of corner and mid-block bulbouts, and enhanced "sharrow" pavement markings, bicycles will be more comfortably able to share the travel lane with autos.

The revised bicycle network also corrects an error on the proposed bicycle network figure from the Transportation Study and the EIR. Both documents depicted a proposed Class II bicycle facility on Gilman Avenue, between Arelious Walker and Third Street, although the project actually proposed a Class III facility. The project's Transportation Plan bicycle network figure (which is shown in Figure 13) correctly depicted this corridor as a Class III route, and the Final EIR noted that the Draft EIR had incorrectly represented this corridor on the figure. Thus, this is not a project change, but rather a correction of a graphical error.

Class III bicycle route designations have been removed from several streets within the CP South neighborhood, and from Donner Avenue in the CP North neighborhood. Regardless of the bicycle designation, these streets are designed to minimum widths allowed by various City departments in order to encourage traffic to drive slowly. Further, the density of the street grid and dispersion of auto parking throughout the area means that traffic volumes will be dispersed through the network and therefore, relatively low on any individual street. In these cases, the



designation of Class III routes was deemed unnecessary because all of the streets in this part of the project would function well for bicyclists to share travel lanes with traffic. Thus, while a comparison of the graphics may suggest substantial changes to the bicycle network, particularly in the CP South neighborhood due to the removal of a number of Class III routes, the only physical difference on these streets associated with a removal of the Class III designation is that "sharrow" pavement markings and bicycle route signage would not be provided; the change in designation would not affect the physical amount of space allocated for bicycles, nor would it substantially affect the interactions between bicycles and autos.

Changes to the bicycle network in Hunters Point Shipyard include extension of a one-block Class II facility on Horne Street from its originally proposed northern terminus at Robinson to the end of Horne Street, where it will intersect with the Bay Trail. Additionally, Class II bicycle lanes have been added throughout the refined HP South neighborhood.

Finally, the proposed Class II bicycle lanes on Innes Avenue would have resulted in removal of on-street parking along Innes Avenue in the India Basin neighborhood. In response to neighbor concerns regarding the loss of on-street parking, the refined project no longer includes these Class II bicycle lanes, but instead retains the existing Class III bicycle route. However, this does not constitute a new significant impact as Class III bicycle routes are standard treatments provided throughout San Francisco as part of the City's bicycle network. As part of a separate project, the City is investigating opportunities to provide a parallel Class I facility on Hudson Street; however, this is not required as mitigation for project impacts and is being pursued separately.

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. One sidewalk, the west side of Arelious Walker, between Ingerson Avenue and Harney Way, on the opposite side of the street from the retail center, would be reduced to 7 feet; however, this change is expected to be adequate because there are no land uses on the west side of this street, and the design meets minimum ADA requirements. This dimension is analogous to the original project's proposed sidewalk width of 8 feet on the south side of Innes Avenue, near Donohue Street, which is also adjacent to a large hill with no fronting land uses.

Overall, the modified Project includes minor changes with respect to the pedestrian realm 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 in the EIR for Variant 2A - Housing. Specifically, the EIR identified that Variant 2A - Housing would include approximately 2,800 on-street parking spaces (roughly evenly split between Candlestick Point and Hunters Point Shipyard) and between zero and approximately 17,300 off-street spaces. Therefore, the EIR concluded there would be a range of between approximately 2,800 spaces and 20,000 spaces in the entire development area.

The modified Project would reduce on-street parking supply by approximately 450 spaces at Candlestick Point and by approximately 150 spaces at Hunters Point Shipyard. Although the range of off-street parking spaces constructed was projected to be between zero and 17,300 spaces, it is reasonable to expect that the project will build at least 600 off-street spaces, such that



with the loss of 600 on-street spaces, the modified Project will still contain between 2,800 spaces and 20,000 spaces. Therefore, since the modified Project will still provide parking within the range identified in the EIR, 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.

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 continue to include a potential arena/entertainment use near the Candlestick Point retail center. Nothing in the modified Project would substantially change the degree to which the arena use would generate travel demand or access the site, and therefore, the modified Project would not create any new significant impacts or substantially increase the severity of a significant impact compared to what was described in the EIR, and therefore no additional mitigation measures are required.

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 the same 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.

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

A handwritten signature in black ink, appearing to read "Chris Mitchell".

Chris Mitchell, PE
Principal



APPENDIX A

Construction Activities by Phase

Table of Construction Comparison 2010 vs. 2013 (Draft TRC 12/04/2013)								
Construction Workers and Trucks by Phase Hunters Point Shipyard and Candlestick Point								
Project Area / Construction Phase	2010 Construction Duration	2010 Construction Years	2010 Daily Construction Workers	2010 Daily Construction Truck Trips	2013 Construction Duration	2013 Construction Years	2013 Daily Construction Workers	2013 Daily Construction Truck Trips
Hunters Point Shipyard								
Phase 1 - Site Preparation								
Abatement & Demo	2011 - 2015	1 - 5	10 - 63	8 - 48	2014 - 2020	1 - 7	0 - 66	0 - 104
Grading and Infrastructure	2013 - 2017	3 - 7	25 - 130	8 - 288	2014 - 2020	1 - 7	0 - 113	0 - 176
Phase 1 - Building Construction								
Structure/Rough in	2011 - 2016	1 - 6	18 - 100	8 - 32	2014 - 2021	1 - 8	0 - 58	0 - 48
Interior and Exterior Finishes	2011 - 2016	1 - 6	10-70	8 - 32	2014 - 2021	1 - 8	0 - 56	0 - 40
Phase 2 - Site Preparation								
Abatement & Demo	2016 - 2019	6 - 9	13 - 65	8 - 56	2018 - 2024	5 - 11	13 - 76	4 - 80
Grading and Infrastructure	2018 - 2021	8 - 11	38-100	96 - 224	2018 - 2024	5 - 11	25 - 111	8 - 208
Phase 2 - Building Construction								
Structure/Rough in	2016 - 2019	6 - 9	60 - 80	16 - 32	2022 - 2025	9 - 12	10 - 80	8 - 32
Interior and Exterior Finishes	2016 - 2019	6 - 9	25 - 83	16 - 40	2022 - 2025	9 - 12	10 - 55	4 - 24
Phase 3 - Site Preparation								
Abatement & Demo	2020 - 2023	10 - 13	13 - 35	8 -32	2024 - 2030	11 - 17	13 - 48	4 - 48
Grading and Infrastructure	2022 - 2025	12 - 15	35 - 60	24 - 40	2025 - 2030	12 - 17	25 - 95	4 - 80
Phase 3 - Building Construction								
Structure/Rough in	2021 - 2024	11 - 14	16 - 20	8 - 16	2026 - 2030	13 - 17	20 - 40	8 - 32
Interior and Exterior Finishes	2021 - 2025	11 - 15	25 - 35	8 - 16	2027 - 2031	14 - 18	10 - 35	4 - 24
Phase 4 - Site Preparation								
Abatement & Demo	2024 - 2028	14 - 18	13 - 28	8 - 32	2026 - 2033	17 - 20	13 - 185	4 - 200
Grading and Infrastructure	2026 - 2031	16 - 21	18 - 60	8 - 128	2027 - 2033	18 - 20	25 - 146	2 - 232
Phase 4 - Building Construction								
Structure/Rough in	None				2028 - 2034	15 - 21	18 - 76	8 - 64
Interior and Exterior Finishes	2026 - 2031	16 - 21	10-50	8 - 40	2028 - 2034	15 - 21	10 - 80	2 - 64
Candlestick Point								
Phase 1 - Site Preparation								
Abatement & Demo	2013 - 2015	3 - 5	10 - 13	8 - 16	2014 - 2017	1 - 4	13 - 57	4 - 72
Grading and Infrastructure	2013 - 2017	3 - 7	30 - 55	12 - 96	2014 - 2018	1 - 5	25 - 145	4 - 64
Phase 1 - Building Construction								
Structure/Rough in	2013 - 2016	3 - 6	14 - 18	8 - 16	2015 - 2018	2 - 5	18 - 100	8 - 64
Interior and Exterior Finishes	2013 - 2016	3 - 6	8 - 10	4 - 8	2015 - 2019	2 - 6	10 - 63	2 - 36
Phase 2 - Site Preparation								
Abatement & Demo	2016 - 2019	6 - 9	13 - 38	8 - 32	2018 - 2025	5 - 12	13 - 26	4 - 32
Grading and Infrastructure	2018 - 2021	8 - 11	30 - 93	8 - 32	2018 - 2025	5 - 12	25 - 85	4 - 20
Phase 2 - Building Construction								
Structure/Rough in	2016 - 2021	6 - 11	16 - 32	16 - 32	2019 - 2025	6 - 12	18 - 40	8 - 32
Interior and Exterior Finishes	2016 - 2021	6 - 11	10 - 33	8 - 20	2019 - 2026	6 - 13	10 - 46	2 - 20
Phase 3 - Site Preparation								
Abatement & Demo	2020 - 2023	10 - 13	10 - 38	4 - 50	2025 - 2031	12 - 18	13 - 31	4 - 24
Grading and Infrastructure	2022 - 2025	12 - 15	26 - 60	12 - 128	2025 - 2031	12 - 18	25 - 135	4 - 48
Phase 3 - Building Construction								
Structure/Rough in	2021 - 2025	11 - 15	40 - 100	16 - 48	2027 - 2031	14 - 18	18 - 80	8 - 32
Interior and Exterior Finishes	2021 - 2025	11 - 15	20 - 75	16 - 32	2027 - 2032	14 - 19	10 - 66	2 - 28
Phase 4 - Site Preparation								
Abatement & Demo	2024 - 2028	14 - 18	13 - 43	8 - 32	2031 - 2034	18 - 21	13 - 26	4 - 16
Grading and Infrastructure	2026 - 2030	16 - 20	30 - 135	16 - 52	2031 - 2034	18 - 21	25 - 50	4 - 16
Phase 4 - Building Construction								
Structure/Rough in	2024 - 2030	14 - 20	40 - 80	16 - 32	2033 - 2034	20 - 21	18 - 40	8 - 16
Interior and Exterior Finishes	2024 - 2031	14 - 21	30 - 90	16 - 48	2033 - 2035	20 - 22	10 - 56	4 - 32
Yosemite Slough Bridge	2015 - 2016	5 - 6	62 - 78	18- 24	2018 - 2020	5 - 7	62 - 78	16- 24
HPS Off-Site Improvements	2015 - 2017	5 - 7	24 - 30	8 - 12	2018 - 2025	5 - 12	30 - 60	8 - 24
CP Off-Site Improvements	2013 - 2018	3 - 8	24 - 30	8 - 12	2015 - 2023	2 - 10	30 - 56	8 - 24

Notes:

- 2010 data was derived from Table 90, Appendix A3 of the EIR, March 23, 2010
- 2013 Major Phase boundaries differ from 2010 boundaries; in addition, the 2010 project included the Stadium option.
- Values presented in Blue have been added to the 2010 column for completeness as they were not present in the original table in the Final EIR.
- The "Construction Years" column was added for reference purposes, please assume that the "2010" Year 1 is 2011 and the "2013" Year 1 is 2014.
- All worker and truck quantities are approximate, and subject to change pending final design.
- This table does not include trips associated with field management.
- Hunter Point Shipyard Phase 2 "Abatement and Demolition" and "Infrastructure and Grading" have been adjusted to a 2018 start date to accommodate the construction of the Yosemite Slough Bridge, and connecting roadways within HP-05 and HP-06 per the 2013 phasing.
- The main changes associated with Candlestick point relate to the Candlestick Stadium sub phase occurring earlier in the project then what was assumed in the 2010 schedule. This resulted in higher values in the early part of the project but lower in the later part.
- The main changes associated with Hunter Point Shipyard (HPS) relate to the Non Stadium variant, and having that sub phase divided down into several smaller development blocks. This resulted in higher average values across HPS due to construction being spread more evenly across the project years rather than a large amount of work all happening on the front end of the project as in the 2010 project schedule.

Table of Shoreline Improvement Daily Construction Workers Comparison 2010 vs. 2013 (Draft TRC 11/18/2013)						
Construction Workers by Phase and Yearly Barge Trips						
Hunters Point Shipyard and Candlestick Point						
Project Area / Construction Year	2010 Construction Duration (Months)	2010 Daily Construction Workers	2010 Yearly Barge Trips	2013 Construction Duration (Months)	2013 Daily Construction Workers	2013 Yearly Barge Trips
Hunters Point Shipyard						
2015 Shoreline	9	6 - 7	0			
2016 Shoreline	9	18 - 21	6			
2017 Shoreline	9	45 - 50	80			
2018 Shoreline	6	35 - 40	55			
2020 Shoreline				9	18 - 21	6
2021 Shoreline				9	18 - 21	6
2022 Shoreline	5	14 - 16	15	5	11 - 12	20
2023 Shoreline	5	14 - 16	15	9	21 - 24	40
2024 Shoreline				5	21 - 24	30
2025 Shoreline	10	14 - 16	10			
2026 Shoreline	9	42 - 48	40			
2027 Shoreline				3	7 - 8	8
2028 Shoreline				3	7 - 8	8
2029 Shoreline				9	21 - 24	40
2030 Shoreline				7	15 - 17	18
2031 Shoreline				11	22 - 25	28
2032 Shoreline				9	18 - 21	22
2033 Shoreline				2	5 - 7	2
2034 Shoreline				2	5 - 7	2
Candlestick Point						
2018 Shoreline	2	5 - 7	2			
2022 Shoreline	2	5 - 7	2			
2024 Shoreline	2	5 - 7	2	4	5 - 7	2
2026 Shoreline	4	5 - 7	3			
2027 Shoreline	4	5 - 7	3			
2028 Shoreline	6	5 - 7	4	2	5 - 7	2
2029 Shoreline				2	5 - 7	2
2030 Shoreline				4	5 - 7	2
2031 Shoreline				2	5 - 7	2
2033 Shoreline				2	5 - 7	2
2034 Shoreline				2	5 - 7	2

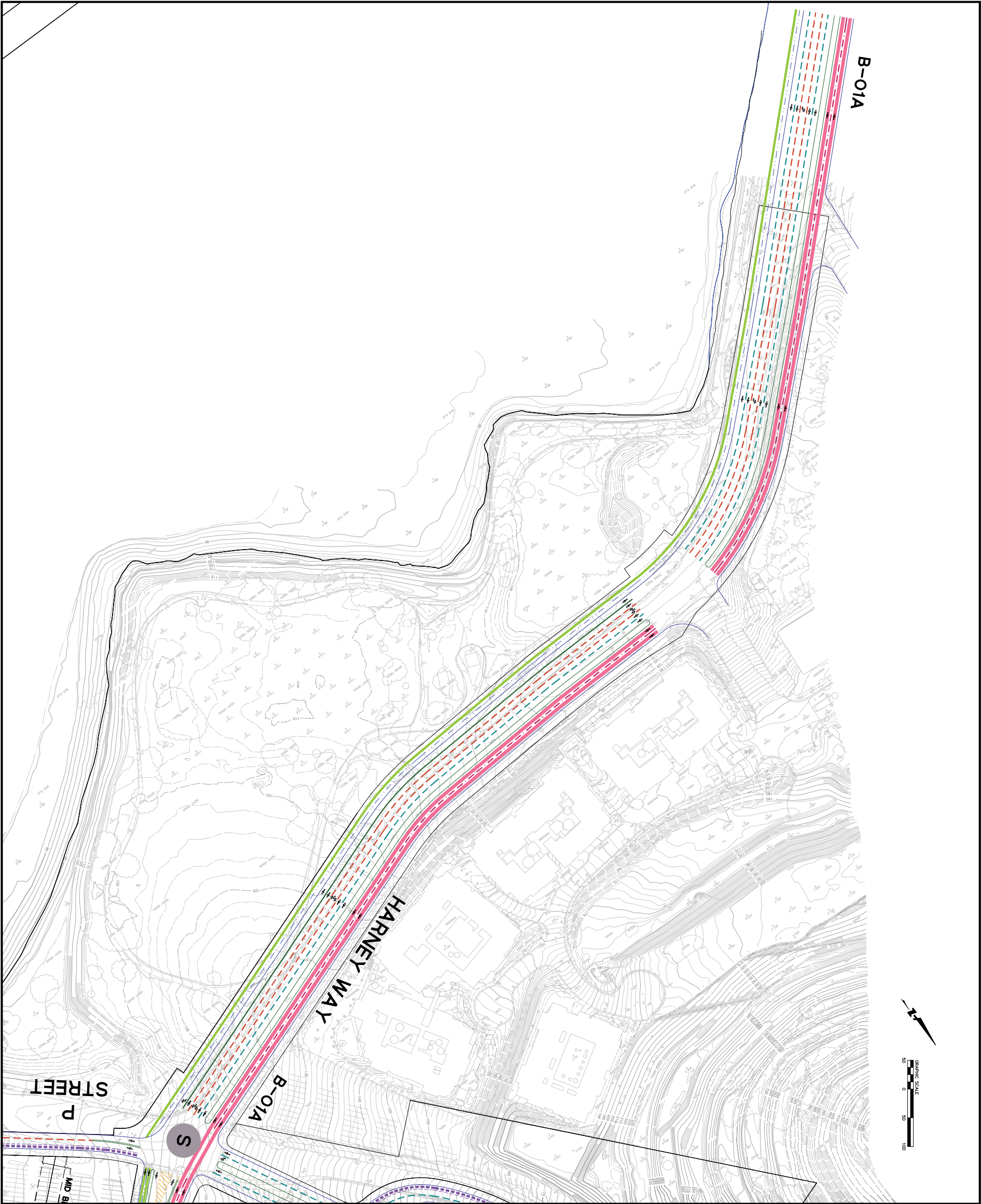
Notes:

1. 2010 data was derived from Table 91, Appendix A3 of the EIR, March 23, 2010
2. 2013 Major Phase boundaries differ from 2010 boundaries; in addition, the 2010 project included the Stadium option.
3. Spaces shaded in grey show that no shoreline work is anticipated for the construction year.
4. All worker and barge quantities are approximate, and subject to change pending final design.
5. Does not include work associated with field management.



APPENDIX B

Harney Way Initial and Long-Term Configuration



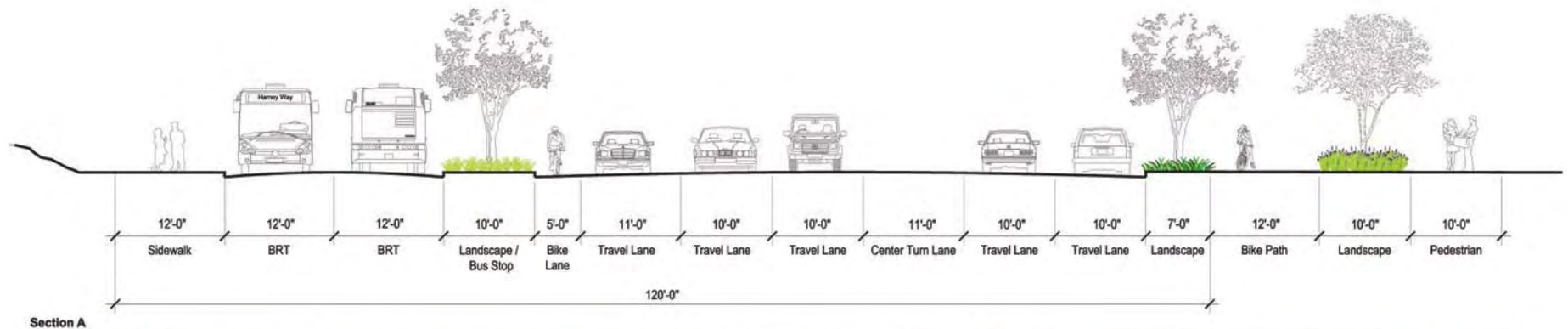
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		Design JRK / HH		
		Drawn JRK		
		Approved TA		
		Job No 20110162		

CANDLESTICK POINT AND HUNTERS POINT SHIPYARD PHASE 2
HARNEY WAY
SAN FRANCISCO CALIFORNIA

**BKF**
ENGINEERS/SURVEYORS/PLANNERS

255 SHORELINE DRIVE, STE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)

Figure 10: Proposed Harney Way Potential Long-Term Configuration





APPENDIX C

Intersection LOS Calculations

ORIGINAL ARELIOUS WALKER DRIVE CONFIGURATION

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.531
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      30.2
Optimal Cycle:        43          Level Of Service:          C
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 2    0    1    1    0          1    0    1    1    0          1    1    0    0    2          0    0    1!    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              320    360    10          70    360    310          340    60    330          10    40    40
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:           320    360    10          70    360    310          340    60    330          10    40    40
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           320    360    10          70    360    310          340    60    330          10    40    40
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:               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 Volume:            320    360    10          70    360    310          340    60    330          10    40    40
Reduct Vol:             0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           320    360    10          70    360    310          340    60    330          10    40    40
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
Final Vol.:            320    360    10          70    360    310          340    60    330          10    40    40
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900    1900    1900          1900    1900    1900          1900    1900    1900          1900    1900    1900
Adjustment:            0.90    0.93    0.93          0.93    0.87    0.87          0.94    0.94    0.73          0.92    0.92    0.92
Lanes:                 2.00    1.95    0.05          1.00    1.07    0.93          1.70    0.30    2.00          0.11    0.45    0.44
Final Sat.:            3432    3428    95          1769    1770    1524          3036    536    2786          193    773    773
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.09    0.11    0.11          0.04    0.20    0.20          0.11    0.11    0.12          0.05    0.05    0.05
Crit Moves:            ****          ****          ****          ****
Green/Cycle:           0.18    0.41    0.41          0.15    0.38    0.38          0.22    0.22    0.22          0.10    0.10    0.10
Volume/Cap:            0.53    0.26    0.26          0.26    0.53    0.53          0.50    0.50    0.53          0.53    0.53    0.53
Uniform Del:           37.5    19.7    19.7          37.3    23.9    23.9          34.0    34.0    34.2          42.9    42.9    42.9
IncremntDel:           0.9    0.1    0.1          0.5    0.4    0.4          0.5    0.5    0.9          3.2    3.2    3.2
InitQueueDel:          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:             38.4    19.8    19.8          37.9    24.3    24.3          34.5    34.5    35.1          46.1    46.1    46.1
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:            38.4    19.8    19.8          37.9    24.3    24.3          34.5    34.5    35.1          46.1    46.1    46.1
LOS by Move:           D    B    B          D    C    C          C    C    D          D    D    D
HCM2kAvgQ:             5    4    4          2    9    9          6    6    6          3    3    3
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.772
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      35.6
Optimal Cycle:        71          Level Of Service:          D
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 2    0    1    1    0          1    0    1    1    0          1    1    0    0    2          0    0    1!    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              570    580    10          110    680    160          390    130    550          10    30    80
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:           570    580    10          110    680    160          390    130    550          10    30    80
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           570    580    10          110    680    160          390    130    550          10    30    80
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:               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 Volume:            570    580    10          110    680    160          390    130    550          10    30    80
Reduct Vol:              0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           570    580    10          110    680    160          390    130    550          10    30    80
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
Final Vol.:            570    580    10          110    680    160          390    130    550          10    30    80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900    1900    1900          1900    1900    1900          1900    1900    1900          1900    1900    1900
Adjustment:            0.90    0.93    0.93          0.93    0.90    0.90          0.94    0.94    0.73          0.89    0.89    0.89
Lanes:                 2.00    1.97    0.03          1.00    1.62    0.38          1.50    0.50    2.00          0.08    0.25    0.67
Final Sat.:            3432    3467    60          1769    2784    655          2692    897    2786          141    422    1125
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.17    0.17    0.17          0.06    0.24    0.24          0.14    0.14    0.20          0.07    0.07    0.07
Crit Moves:           ****          ****          ****          ****
Green/Cycle:           0.22    0.39    0.39          0.14    0.32    0.32          0.26    0.26    0.26          0.09    0.09    0.09
Volume/Cap:            0.77    0.43    0.43          0.43    0.77    0.77          0.57    0.57    0.77          0.77    0.77    0.77
Uniform Del:           36.9    22.5    22.5          39.1    30.9    30.9          32.4    32.4    34.5          44.4    44.4    44.4
IncremntDel:           5.0    0.2    0.2          1.2    3.5    3.5          0.8    0.8    5.2          20.8    20.8    20.8
InitQueueDel:          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:             41.9    22.7    22.7          40.2    34.4    34.4          33.2    33.2    39.7          65.2    65.2    65.2
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:            41.9    22.7    22.7          40.2    34.4    34.4          33.2    33.2    39.7          65.2    65.2    65.2
LOS by Move:           D    C    C          D    C    C          C    C    D          E    E    E
HCM2kAvgQ:             10    7    7          4    14    14          8    8    11          6    6    6
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1029 Harney Way / Jamestown Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.565
Loss Time (sec):      12 (Y+R=4.0 sec) Average Delay (sec/veh):      22.3
Optimal Cycle:        45          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
Lanes:                2    0    0    1    0        0    0    1    0    1        0    0    1!    0    1        0    0    0    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:             230    300          0          0    480    60    100    0    360          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:           230    300          0          0    480    60    100    0    360          0    0    0
Added Vol:             0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:          0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           230    300          0          0    480    60    100    0    360          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:              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 Volume:           230    300          0          0    480    60    100    0    360          0    0    0
Reduct Vol:            0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:          230    300          0          0    480    60    100    0    360          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
Final Vol.:           230    300          0          0    480    60    100    0    360          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    0.98    0.83    0.86    1.00    0.86    1.00    1.00    1.00
Lanes:                2.00    1.00    0.00    0.00    1.00    1.00    0.36    0.00    1.64    0.00    0.00    0.00
Final Sat.:           3432    1862          0          0    1862    1583    581    0    2671          0    0    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.07    0.16    0.00    0.00    0.26    0.04    0.17    0.00    0.13    0.00    0.00    0.00
Crit Moves:          ****              ****              ****
Green/Cycle:          0.12    0.58    0.00    0.00    0.46    0.46    0.30    0.00    0.42    0.00    0.00    0.00
Volume/Cap:           0.56    0.28    0.00    0.00    0.56    0.08    0.56    0.00    0.32    0.00    0.00    0.00
Uniform Del:          41.6    10.8    0.0    0.0    19.9    15.4    29.2    0.0    19.2    0.0    0.0    0.0
IncremntDel:          1.8    0.1    0.0    0.0    0.9    0.0    0.9    0.0    0.1    0.0    0.0    0.0
InitQueueDel:         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:            43.5    10.9    0.0    0.0    20.8    15.4    30.1    0.0    19.3    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:           43.5    10.9    0.0    0.0    20.8    15.4    30.1    0.0    19.3    0.0    0.0    0.0
LOS by Move:          D    B    A    A    C    B    C    A    B    A    A    A
HCM2kAvgQ:            4    5    0    0    11    1    8    0    5    0    0    0
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                        Level Of Service Computation Report
                2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1029 Harney Way / Jamestown Ave
*****
Cycle (sec):           100                Critical Vol./Cap.(X):           1.003
Loss Time (sec):       12 (Y+R=4.0 sec)    Average Delay (sec/veh):       41.1
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
Lanes:                 2    0    0    1    0        0    0    1    0    1        0    0    1!    0    1        0    0    0    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              450    950    0              0    1000    60              80    0    530              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:           450    950    0              0    1000    60              80    0    530              0    0    0
Added Vol:              0    0    0              0    0    0              0    0    0              0    0    0
PasserByVol:           0    0    0              0    0    0              0    0    0              0    0    0
Initial Fut:           450    950    0              0    1000    60              80    0    530              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:               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 Volume:            450    950    0              0    1000    60              80    0    530              0    0    0
Reduct Vol:            0    0    0              0    0    0              0    0    0              0    0    0
Reduced Vol:           450    950    0              0    1000    60              80    0    530              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
Final Vol.:            450    950    0              0    1000    60              80    0    530              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    0.98    0.83          0.85    1.00    0.85          1.00    1.00    1.00
Lanes:                 2.00    1.00    0.00          0.00    1.00    1.00          0.23    0.00    1.77          0.00    0.00    0.00
Final Sat.:            3432    1862    0              0    1862    1583          373    0    2844          0    0    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.13    0.51    0.00          0.00    0.54    0.04          0.21    0.00    0.19          0.00    0.00    0.00
Crit Moves:           ****                      ****                      ****
Green/Cycle:           0.13    0.67    0.00          0.00    0.54    0.54          0.21    0.00    0.34          0.00    0.00    0.00
Volume/Cap:            1.00    0.77    0.00          0.00    1.00    0.07          1.00    0.00    0.54          0.00    0.00    0.00
Uniform Del:           43.5    11.4    0.0           0.0    23.2    11.2          39.3    0.0    26.4          0.0    0.0    0.0
IncremntDel:           43.2    2.9    0.0           0.0    29.2    0.0          37.2    0.0    0.5          0.0    0.0    0.0
InitQueueDel:          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:             86.7    14.3    0.0           0.0    52.5    11.3          76.5    0.0    26.9          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:            86.7    14.3    0.0           0.0    52.5    11.3          76.5    0.0    26.9          0.0    0.0    0.0
LOS by Move:           F    B    A    A    D    B    E    A    C    A    A    A
HCM2kAvgQ:             12    21    0    0    39    1    16    0    8    0    0    0
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REVISED ARELIOUS WALKER DRIVE CONFIGURATION

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.630
Loss Time (sec):      12 (Y+R=4.0 sec) Average Delay (sec/veh):      32.5
Optimal Cycle:        51          Level Of Service:          C
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 1  0  1  1  0          1  0  1  1  0          1  1  0  0  2          0  0  1! 0  0
-----|-----|-----|-----|
Volume Module:
Base Vol:              320  360   10          70  360   310          340   60   330          10  40   40
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:           320  360   10          70  360   310          340   60   330          10  40   40
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           320  360   10          70  360   310          340   60   330          10  40   40
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:               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 Volume:           320  360   10          70  360   310          340   60   330          10  40   40
Reduct Vol:             0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           320  360   10          70  360   310          340   60   330          10  40   40
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
Final Vol.:            320  360   10          70  360   310          340   60   330          10  40   40
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900 1900   1900          1900 1900   1900          1900 1900   1900          1900 1900   1900
Adjustment:            0.93 0.93   0.93          0.93 0.87   0.87          0.94 0.94   0.73          0.92 0.92   0.92
Lanes:                 1.00 1.95   0.05          1.00 1.07   0.93          1.70 0.30   2.00          0.11 0.45   0.44
Final Sat.:           1769 3428    95          1769 1770   1524          3036  536   2786          193  773   773
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.18 0.11   0.11          0.04 0.20   0.20          0.11 0.11   0.12          0.05 0.05   0.05
Crit Moves:            ****              ****              ****              ****
Green/Cycle:           0.29 0.44   0.44          0.17 0.32   0.32          0.19 0.19   0.19          0.08 0.08   0.08
Volume/Cap:            0.63 0.24   0.24          0.24 0.63   0.63          0.60 0.60   0.63          0.63 0.63   0.63
Uniform Del:           31.0 17.3   17.3          36.1 28.8   28.8          37.1 37.1   37.4          44.4 44.4   44.4
IncremntDel:           2.5  0.1    0.1          0.4  1.2    1.2          1.5  1.5    2.5          8.7  8.7    8.7
InitQueueDel:          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:             33.6 17.4   17.4          36.5 30.0   30.0          38.6 38.6   39.9          53.2 53.2   53.2
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:            33.6 17.4   17.4          36.5 30.0   30.0          38.6 38.6   39.9          53.2 53.2   53.2
LOS by Move:           C    B    B          D    C    C          D    D    D          D    D    D
HCM2kAvgQ:              9    4    4          2   10   10          6    6    6          4    4    4
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.949
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):          49.6
Optimal Cycle:        100          Level Of Service:          D
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 1  0  1  1  0          1  0  1  1  0          1  1  0  0  2          0  0  1! 0  0
-----|-----|-----|-----|
Volume Module:
Base Vol:              570  580    10          110  680    160          390  130    550          10  30    80
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:           570  580    10          110  680    160          390  130    550          10  30    80
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           570  580    10          110  680    160          390  130    550          10  30    80
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:               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 Volume:            570  580    10          110  680    160          390  130    550          10  30    80
Reduct Vol:              0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           570  580    10          110  680    160          390  130    550          10  30    80
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
Final Vol.:            570  580    10          110  680    160          390  130    550          10  30    80
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900 1900    1900          1900 1900    1900          1900 1900    1900          1900 1900    1900
Adjustment:            0.93 0.93    0.93          0.93 0.90    0.90          0.94 0.94    0.73          0.89 0.89    0.89
Lanes:                 1.00 1.97    0.03          1.00 1.62    0.38          1.50 0.50    2.00          0.08 0.25    0.67
Final Sat.:           1769 3467    60          1769 2784    655          2692 897    2786          141 422    1125
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.32 0.17    0.17          0.06 0.24    0.24          0.14 0.14    0.20          0.07 0.07    0.07
Crit Moves:           ****          ****          ****          ****
Green/Cycle:           0.34 0.44    0.44          0.16 0.26    0.26          0.21 0.21    0.21          0.07 0.07    0.07
Volume/Cap:            0.95 0.38    0.38          0.38 0.95    0.95          0.70 0.70    0.95          0.95 0.95    0.95
Uniform Del:           32.2 19.2    19.2          37.5 36.5    36.5          36.7 36.7    39.1          46.1 46.1    46.1
IncremntDel:           24.7 0.2    0.2          0.9 19.0    19.0          2.9 2.9    25.3          64.1 64.1    64.1
InitQueueDel:           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:             56.8 19.3    19.3          38.3 55.5    55.5          39.6 39.6    64.3          110.2 110 110.2
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:            56.8 19.3    19.3          38.3 55.5    55.5          39.6 39.6    64.3          110.2 110 110.2
LOS by Move:           E    B    B          D    E    E          D    D    E          F    F    F
HCM2kAvgQ:             22    6    6          3    18    18          9    9    14          7    7    7
*****

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1029 Harney Way / Jamestown Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.565
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      22.3
Optimal Cycle:        45          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
Lanes:                2    0    0    1    0        0    0    1    0    1        0    0    1!    0    1        0    0    0    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:             230    300          0          0    480    60    100    0    360          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:           230    300          0          0    480    60    100    0    360          0    0    0
Added Vol:             0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           230    300          0          0    480    60    100    0    360          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:              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 Volume:           230    300          0          0    480    60    100    0    360          0    0    0
Reduct Vol:            0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           230    300          0          0    480    60    100    0    360          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
Final Vol.:           230    300          0          0    480    60    100    0    360          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    0.98    0.83    0.86    1.00    0.86    1.00    1.00    1.00
Lanes:                2.00    1.00    0.00    0.00    1.00    1.00    0.36    0.00    1.64    0.00    0.00    0.00
Final Sat.:           3432    1862          0          0    1862    1583    581    0    2671          0    0    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:              0.07    0.16    0.00    0.00    0.26    0.04    0.17    0.00    0.13    0.00    0.00    0.00
Crit Moves:          ****              ****              ****
Green/Cycle:           0.12    0.58    0.00    0.00    0.46    0.46    0.30    0.00    0.42    0.00    0.00    0.00
Volume/Cap:            0.56    0.28    0.00    0.00    0.56    0.08    0.56    0.00    0.32    0.00    0.00    0.00
Uniform Del:           41.6    10.8          0.0          0.0    19.9    15.4    29.2    0.0    19.2          0.0    0.0    0.0
IncremntDel:           1.8    0.1          0.0          0.0    0.9          0.0          0.9    0.0    0.1          0.0    0.0    0.0
InitQueueDel:           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:             43.5    10.9          0.0          0.0    20.8    15.4    30.1    0.0    19.3          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:           43.5    10.9          0.0          0.0    20.8    15.4    30.1    0.0    19.3          0.0    0.0    0.0
LOS by Move:           D    B    A    A    C    B    C    A    B    A    A    A
HCM2kAvgQ:             4    5    0    0    11    1    8    0    5    0    0    0
*****

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                        Level Of Service Computation Report
                2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1029 Harney Way / Jamestown Ave
*****
Cycle (sec):           100                Critical Vol./Cap.(X):           1.003
Loss Time (sec):       12 (Y+R=4.0 sec)    Average Delay (sec/veh):       41.1
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
Lanes:                 2    0    0    1    0                0    0    1    0    1                0    0    1!    0    1                0    0    0    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              450  950    0                0 1000    60                80    0    530                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:           450  950    0                0 1000    60                80    0    530                0    0    0
Added Vol:              0    0    0                0    0    0                0    0    0                0    0    0
PasserByVol:           0    0    0                0    0    0                0    0    0                0    0    0
Initial Fut:           450  950    0                0 1000    60                80    0    530                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:               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 Volume:            450  950    0                0 1000    60                80    0    530                0    0    0
Reduct Vol:              0    0    0                0    0    0                0    0    0                0    0    0
Reduced Vol:           450  950    0                0 1000    60                80    0    530                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
Final Vol.:            450  950    0                0 1000    60                80    0    530                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 0.98  0.83                0.85 1.00  0.85                1.00 1.00  1.00
Lanes:                 2.00 1.00  0.00                0.00 1.00  1.00                0.23 0.00  1.77                0.00 0.00  0.00
Final Sat.:            3432 1862    0                0 1862  1583                373    0  2844                0    0    0
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.13 0.51  0.00                0.00 0.54  0.04                0.21 0.00  0.19                0.00 0.00  0.00
Crit Moves:           ****                        ****                        ****
Green/Cycle:           0.13 0.67  0.00                0.00 0.54  0.54                0.21 0.00  0.34                0.00 0.00  0.00
Volume/Cap:            1.00 0.77  0.00                0.00 1.00  0.07                1.00 0.00  0.54                0.00 0.00  0.00
Uniform Del:           43.5 11.4    0.0                0.0 23.2  11.2                39.3  0.0  26.4                0.0  0.0  0.0
IncremntDel:           43.2  2.9    0.0                0.0 29.2  0.0                37.2  0.0  0.5                0.0  0.0  0.0
InitQueueDel:          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:             86.7 14.3    0.0                0.0 52.5  11.3                76.5  0.0  26.9                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:            86.7 14.3    0.0                0.0 52.5  11.3                76.5  0.0  26.9                0.0  0.0  0.0
LOS by Move:           F    B    A                A    D    B                E    A    C                A    A    A
HCM2kAvgQ:             12    21    0                0    39    1                16    0    8                0    0    0
*****

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Interim Arelious Walker Configuration - End of Major Phase 1

MITIG8 - PP Variant 2A PM Sun Nov 24, 2013 19:51:14

Page 1-1

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
*****
Intersection #1034 Arelious Walker Dr / Gilman Ave
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.821
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      43.5
Optimal Cycle:        82          Level Of Service:          D
*****
Street Name:          Arelious Walker Dr          Gilman 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          Include          Include
Min. Green:            0    0    0          0    0    0          0    0    0          0    0    0
Lanes:                 2    0    1    1    0          0    0    1!    0    0          1    1    0    0    2          0    0    1!    0    0
-----|-----|-----|-----|
Volume Module:
Base Vol:              419    426          8          79    506    118          284    94    404          7    22    58
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:           419    426          8          79    506    118          284    94    404          7    22    58
Added Vol:              0    0    0          0    0    0          0    0    0          0    0    0
PasserByVol:           0    0    0          0    0    0          0    0    0          0    0    0
Initial Fut:           419    426          8          79    506    118          284    94    404          7    22    58
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:            428    435          8          81    516    120          290    96    412          7    22    59
Reduct Vol:              0    0    0          0    0    0          0    0    0          0    0    0
Reduced Vol:           428    435          8          81    516    120          290    96    412          7    22    59
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
Final Vol.:            428    435          8          81    516    120          290    96    412          7    22    59
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1900    1900    1900          1900    1900    1900          1900    1900    1900          1900    1900    1900
Adjustment:            0.90    0.93    0.93          0.95    0.95    0.95          0.94    0.94    0.73          0.89    0.89    0.89
Lanes:                 2.00    1.96    0.04          0.11    0.72    0.17          1.50    0.50    2.00          0.08    0.25    0.67
Final Sat.:            3432    3462          65          203    1302    304          2697    893    2786          136    427    1125
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.12    0.13    0.13          0.40    0.40    0.40          0.11    0.11    0.15          0.05    0.05    0.05
Crit Moves:                ****          ****          ****          ****
Green/Cycle:           0.15    0.15    0.15          0.48    0.48    0.48          0.18    0.18    0.18          0.06    0.06    0.06
Volume/Cap:            0.82    0.82    0.82          0.82    0.82    0.82          0.60    0.60    0.82          0.82    0.82    0.82
Uniform Del:           41.1    41.0    41.0          22.2    22.1    22.1          37.7    37.7    39.4          46.2    46.2    46.2
IncremntDel:           10.0    9.8    9.8          6.3    6.2    6.2          1.5    1.5    10.4          37.4    37.4    37.4
InitQueueDel:           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:              51.0    50.8    50.8          28.4    28.3    28.3          39.2    39.2    49.9          83.6    83.6    83.6
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:            51.0    50.8    50.8          28.4    28.3    28.3          39.2    39.2    49.9          83.6    83.6    83.6
LOS by Move:           D    D    D          C    C    C          D    D    D          F    F    F
HCM2kAvgQ:              9    9    9          21    21    21          6    6    9          5    5    5
*****

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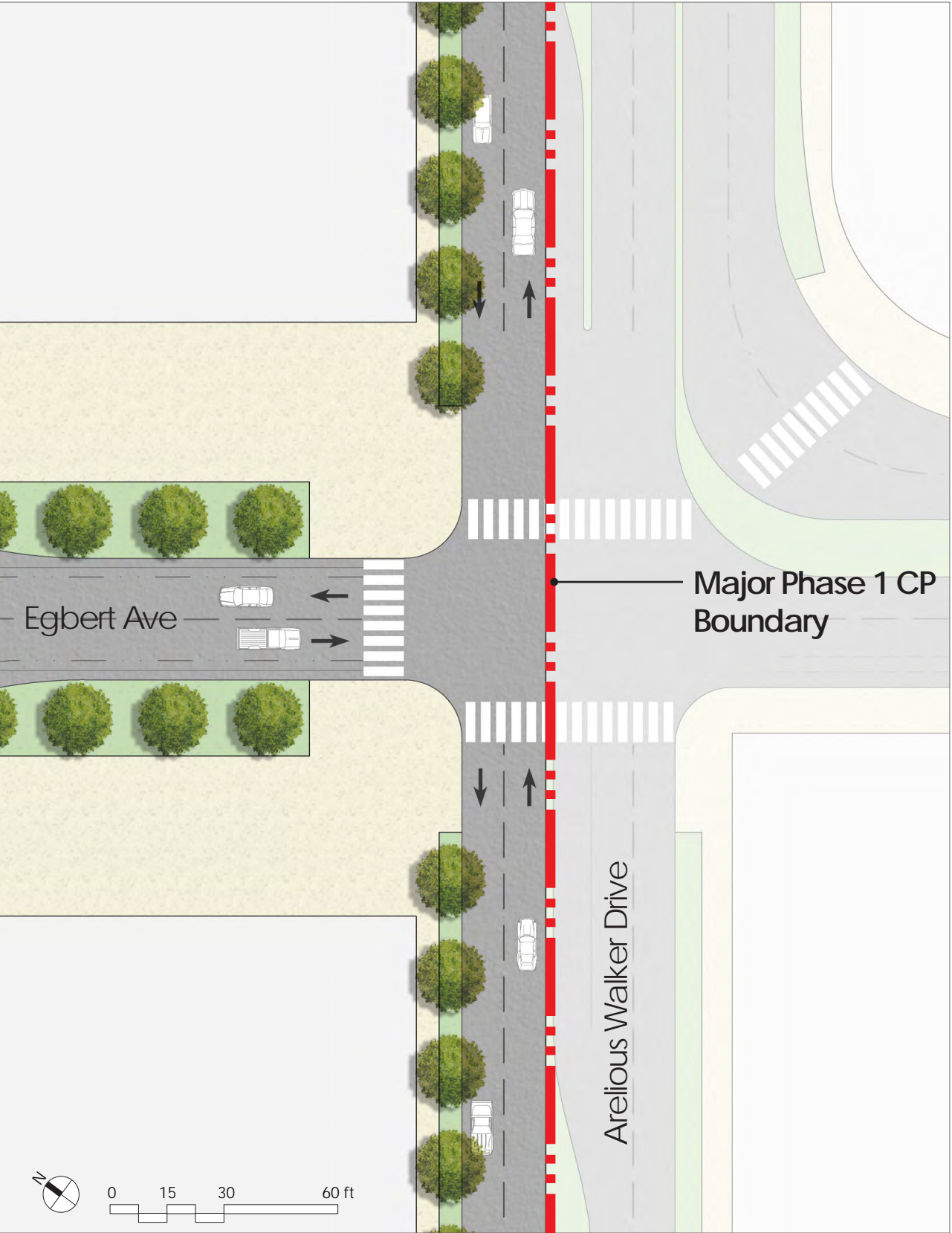
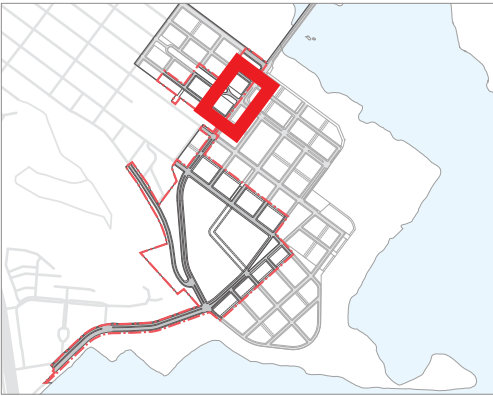


APPENDIX D

Initial Configuration for Arelious Walker Drive

ARELIIOUS WALKER

INTERIM CONDITION



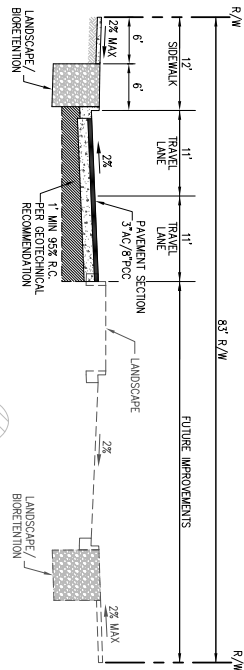
FULL BUILDOUT



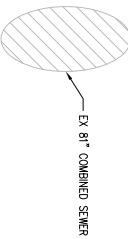
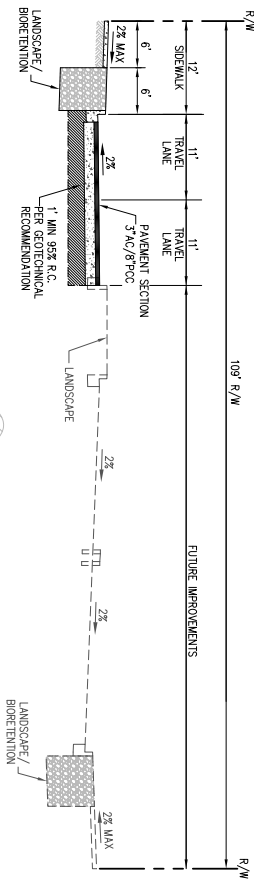


DIAL TOLL FREE
1-800-227-2800
AT LEAST TWO DAYS
BEFORE THE DIS

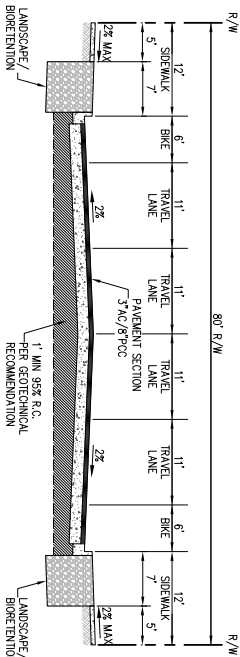
UNDERGROUND SERVICE LEFT OF NORTHERN CALIFORNIA



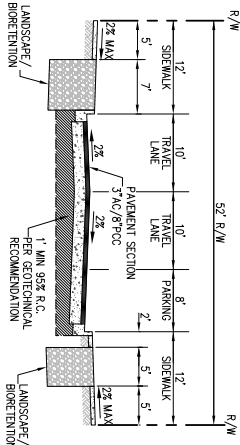
ARROYO WALKER DRIVE
TYPICAL SECTION
(STA 40+00 TO STA 45+60)
NOT TO SCALE



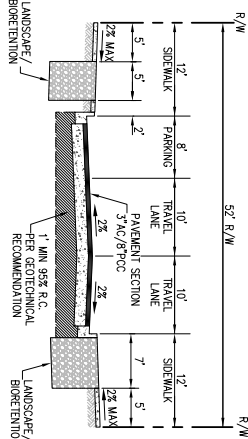
ARROYO WALKER DRIVE
TYPICAL SECTION
(STA 45+60 TO STA 51+20)
NOT TO SCALE



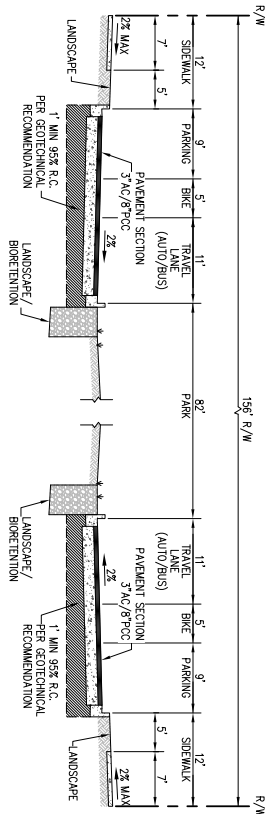
CARROLL AVENUE
TYPICAL SECTION
NOT TO SCALE



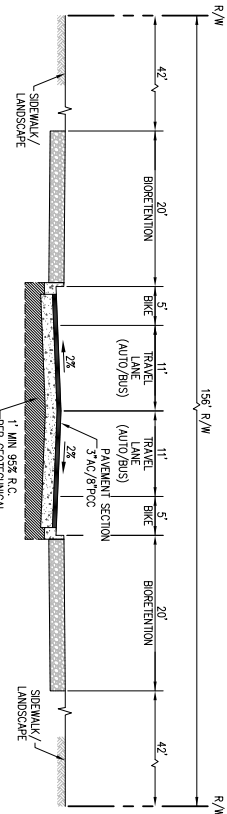
DONNER AVENUE
TYPICAL SECTION
NOT TO SCALE



FITZGERALD AVENUE & G STREET
TYPICAL SECTION
NOT TO SCALE



EGBERT AVENUE
TYPICAL SECTION
(STA 19+60 TO STA 20+60)
NOT TO SCALE



EGBERT AVENUE
TYPICAL SECTION
(STA 22+10 TO STA 23+00)
NOT TO SCALE

65% SUBMITTAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

CANDLESTICK POINT

SUB-PHASE CP-01

IMPROVEMENT PLANS

TYPICAL STREET CROSS SECTIONS

CITY AND COUNTY OF SAN FRANCISCO

CALIFORNIA



Carlson, Barbee
& Gibson, Inc.

CIVIL ENGINEERS • SURVEYORS • PLANNERS
2633 Camino Ramon • San Ramon, CA 94583
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LENNAR
URBAN

DATE:
09/18/2013
DRAWN BY:
1
PROJ. ENGR:
1
PROJ. MGR:
1

NO.	BY	DATE	REVISIONS	APPROVAL

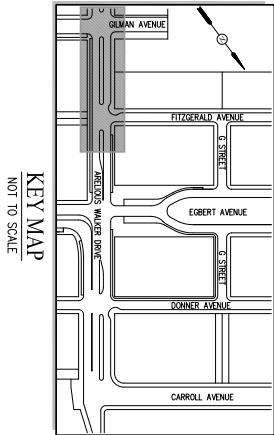
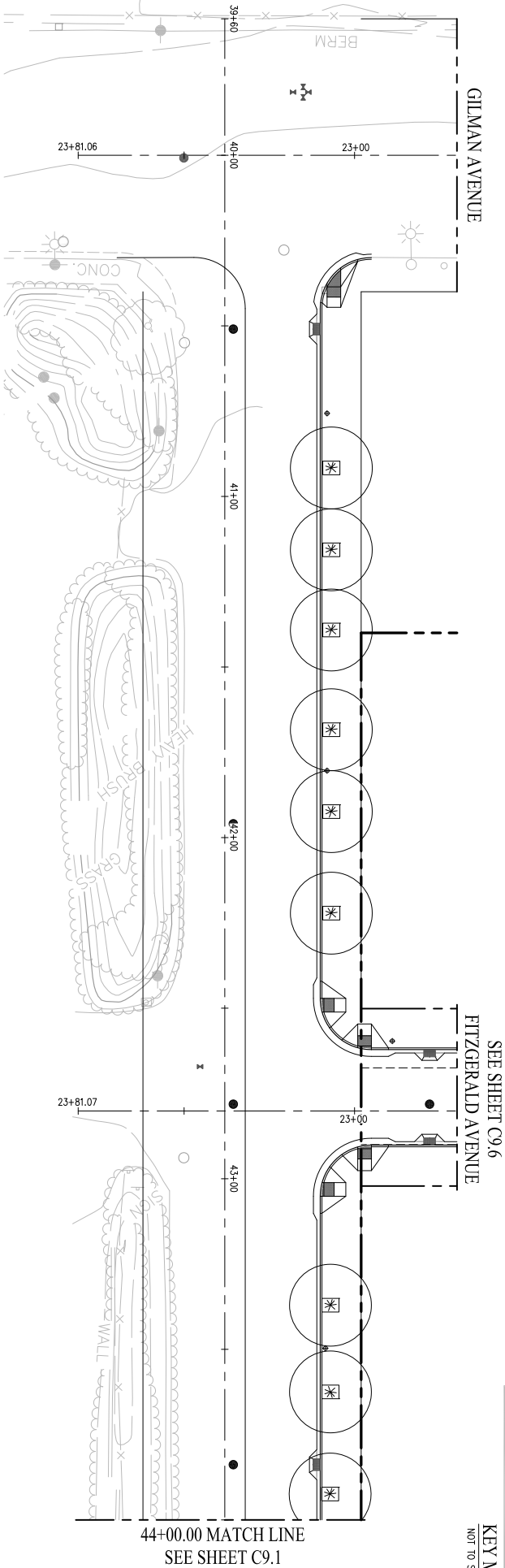
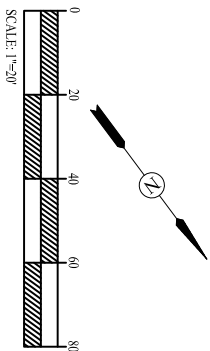
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C1.4
JOB NUMBER
1804-030

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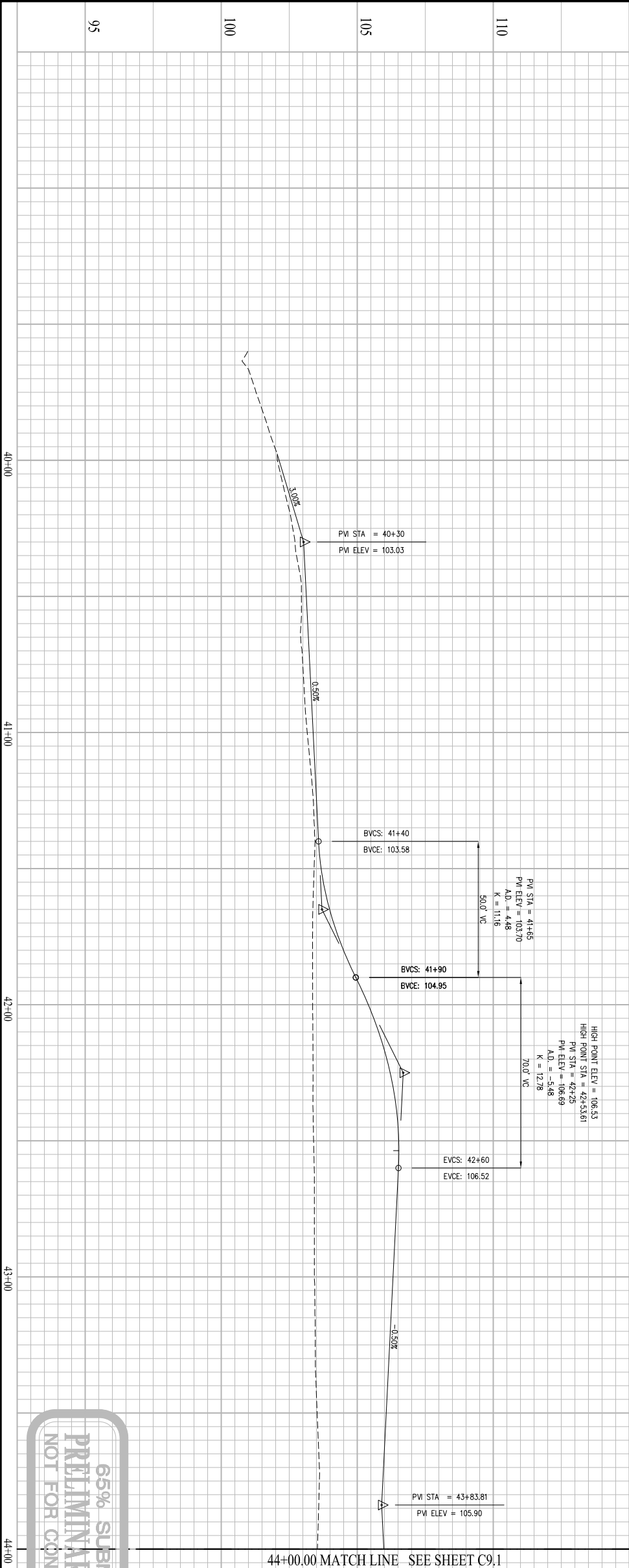


DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS
BEFORE 100 DMS

UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA



ARELIIOUS WALKER DRIVE
SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



65% SUBMITTAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

CANDLESTICK POINT

IMPROVEMENT PLANS

ARELIIOUS WALKER DRIVE SURFACE IMPROVEMENTS

CITY AND COUNTY OF SAN FRANCISCO

SUB-PHASE CP-01

CALIFORNIA



Carlson, Barbee
& Gibson, Inc.

CIVIL ENGINEERS • SURVEYORS • PLANNERS
2633 Camino Ramon • San Ramon, CA 94583
Tel 925-866-0322
www.cbandg.com



LENNAR

URBAN

DATE:
09/18/2013

DRAWN BY:
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PROJ. ENGR:
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PROJ. MGR:
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NO.	BY	DATE	REVISIONS	CITY APPROVAL

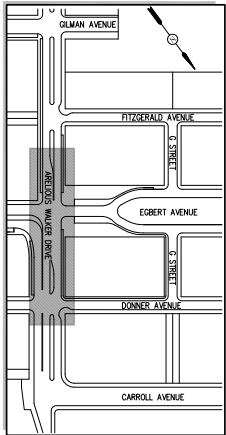
JOB NUMBER
1804-030

SHEET NUMBER
C9.0

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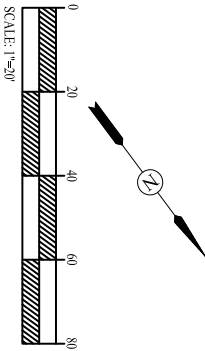
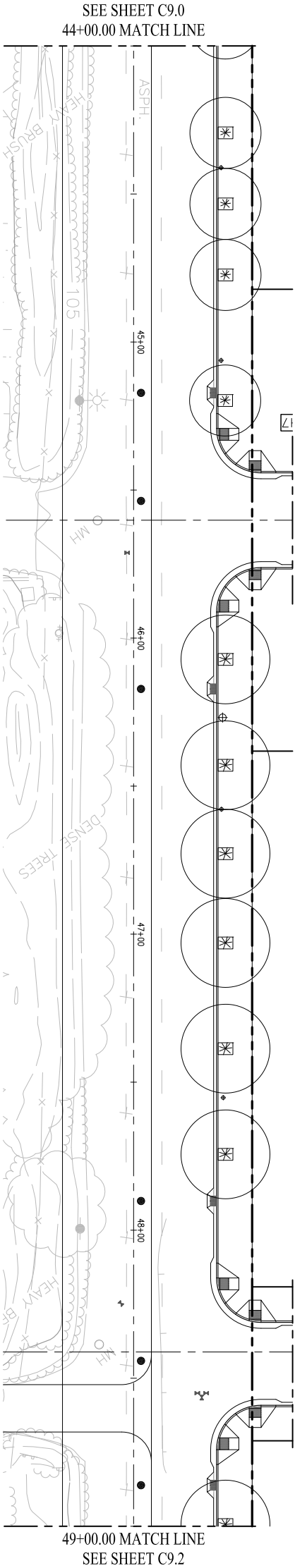


DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS
BEFORE 100 DMS
UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA



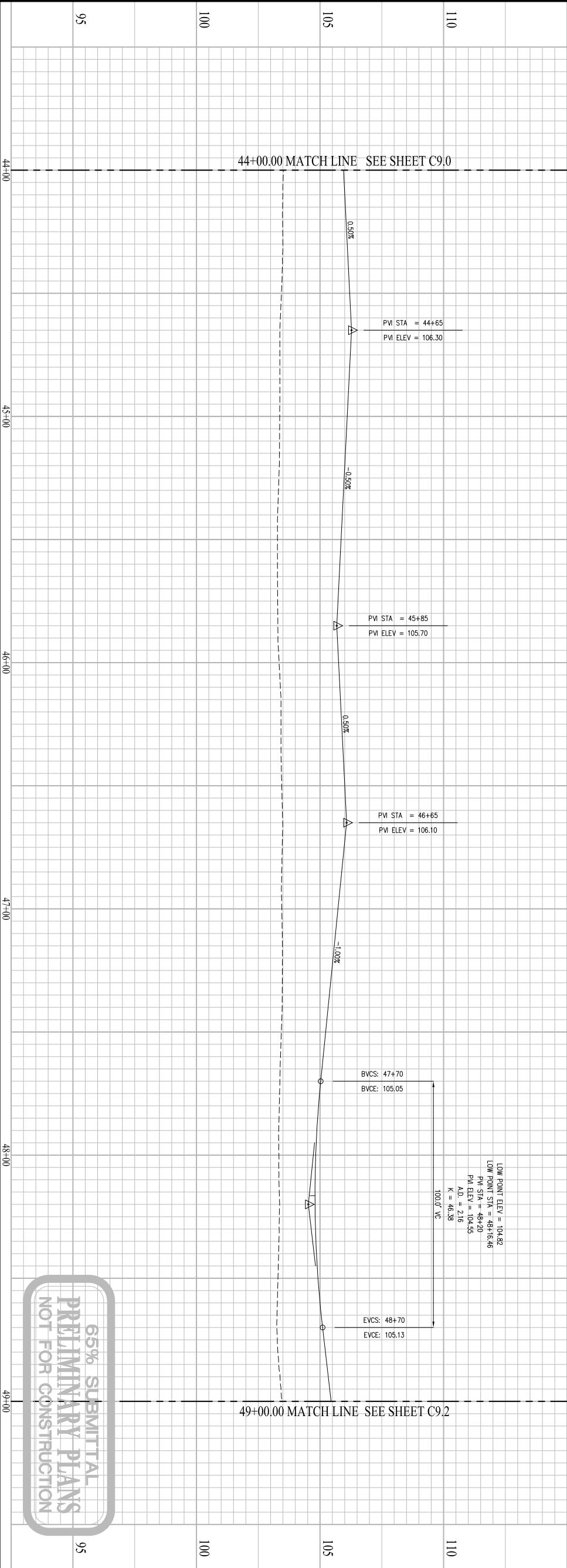
SEE SHEET C9.5
EGBERT AVENUE

SEE SHEET C9.4
DONNER AVENUE



ARELIOS WALKER DRIVE

SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



65% SUBMITTAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

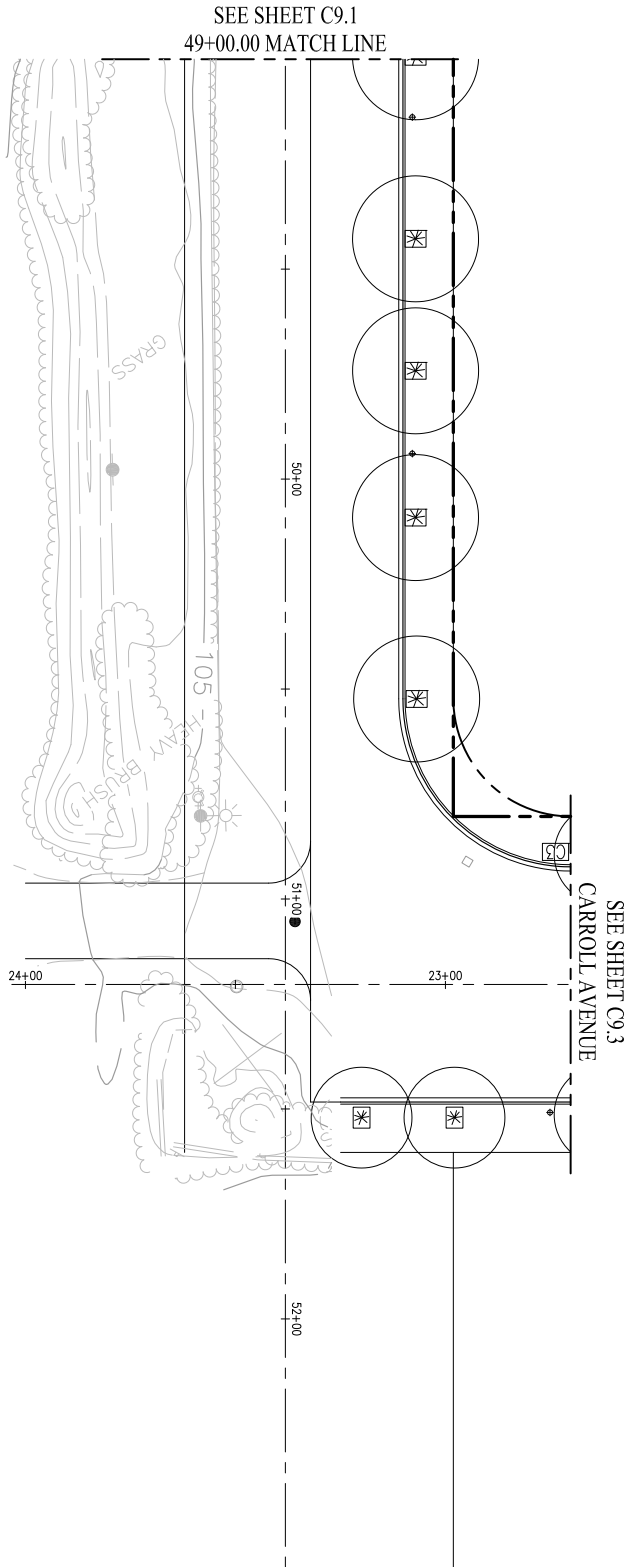
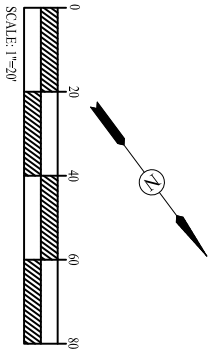
CANDLESTICK POINT IMPROVEMENT PLANS ARELIOS WALKER DRIVE SURFACE IMPROVEMENTS CITY AND COUNTY OF SAN FRANCISCO	SUB-PHASE CP-01	 Carlson, Barbee & Gibson, Inc. CIVIL ENGINEERS • SURVEYORS • PLANNERS 2633 Camino Ramon • San Ramon, CA 94583 Tel 925-866-0322 www.cbangd.com			DATE: 09/18/2013	NO.	BY	DATE	REVISIONS	CITY APPROVAL
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JOB NUMBER 1804-030										

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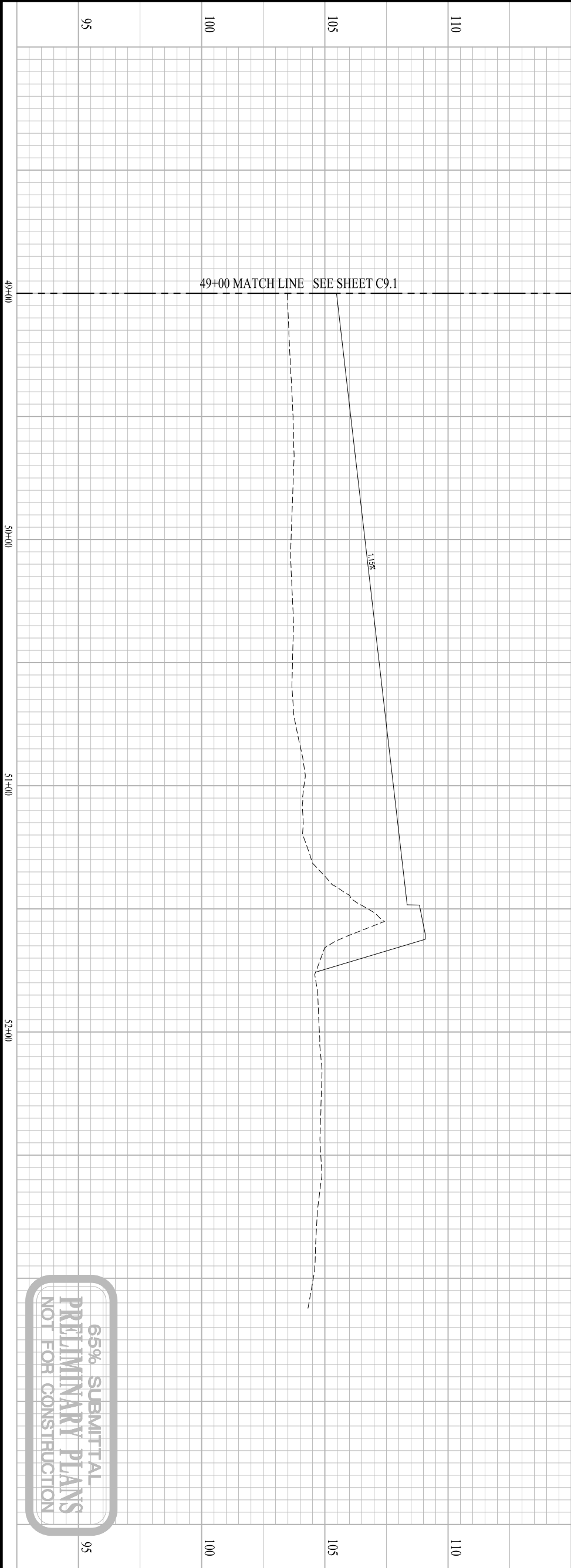
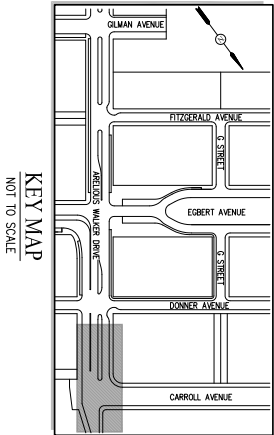


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AT LEAST TWO DAYS
BEFORE 100 DMS

UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA



ARELIIOUS WALKER DRIVE
SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'




NO.	BY	DATE	REVISIONS	CITY APPROVAL

DATE:
09/18/2013

DRAWN BY:
—

PROJ. ENGR:
—

PROJ. MGR:
—







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CANDLESTICK POINT

SUB-PHASE CP-01

IMPROVEMENT PLANS
ARELIIOUS WALKER DRIVE SURFACE IMPROVEMENTS
CITY AND COUNTY OF SAN FRANCISCO
CALIFORNIA

SHEET NUMBER
C9.2

JOB NUMBER
1804-030

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65% SUBMITTAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

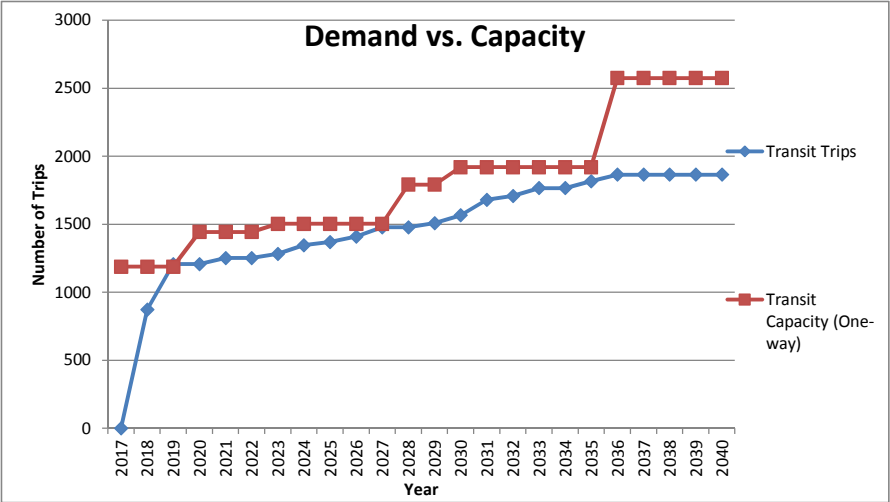
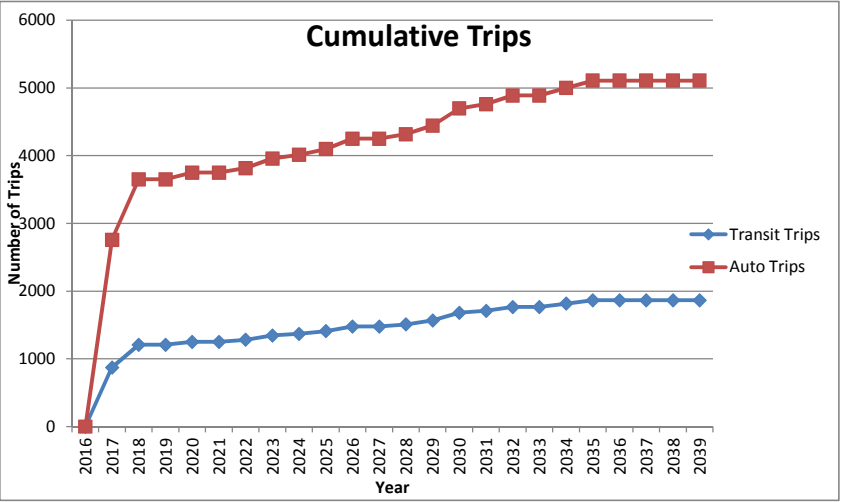


APPENDIX E

Auto and Transit Trip Generation by Year and Transit Phasing Comparison

CP

Trip Rates	Transit	Auto
Residential	0.14	0.31
Office	0.59	1.2
Retail	1.02	3.59
Hotel	0.17	0.36
Community Facilities	0.78	1.6
Parks	0.04	0.04



Land Use (By Year)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential (# of units)	0	605	924	0	322	0	215	452	172	280	495	0	215	410	815	205	410	0	360	345	0	0	0	0	0
Office (ksf)	0	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail (ksf)	0	635	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hotel (# of rooms)	0	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Community Facilities (ksf)	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Land Use (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential (# of units)	0	605	1529	1529	1851	1851	2066	2518	2690	2970	3465	3465	3680	4090	4905	5110	5520	5520	5880	6225	6225	6225	6225	6225	6225
Office (ksf)	0	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175
Retail (ksf)	0	635	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760
Hotel (# of rooms)	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
Community Facilities (ksf)	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Transit Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	85	214	214	259	259	289	353	377	416	485	485	515	573	687	715	773	773	823	872	872	872	872	872	872
Office	0	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103
Retail	0	648	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775
Hotel	0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
Community Facilities	0	0	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Total	0	873	1207	1207	1252	1252	1282	1346	1370	1409	1478	1478	1508	1566	1680	1708	1766	1766	1816	1865	1865	1865	1865	1865	1865

Auto Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	188	474	474	574	574	640	781	834	921	1074	1074	1141	1268	1521	1584	1711	1711	1823	1930	1930	1930	1930	1930	1930
Office	0	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
Retail	0	2280	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728
Hotel	0	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Community Facilities	0	0	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Total	0	2757	3651	3651	3751	3751	3817	3958	4011	4098	4251	4251	4318	4445	4698	4761	4888	4888	5000	5107	5107	5107	5107	5107	5107

Total Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	273	688	688	833	833	929	1134	1211	1337	1559	1559	1656	1841	2208	2299	2484	2484	2646	2802	2802	2802	2802	2802	2802
Office	0	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313
Retail	0	2928	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503
Hotel	0	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116
Community Facilities	0	0	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238
Total	0	3630	4858	4858	5003	5003	5099	5304	5381	5507	5729	5729	5826	6011	6378	6469	6654	6654	6816	6972	6972	6972	6972	6972	6972

Transit Capacity (One-way)	Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
		1188	1188	1188	1444	1444	1444	1504	1504	1504	1504	1504	1792	1792	1920	1920	1920	1920	1920	1920	2575	2575	2575	2575	2575

HPX	20 Minutes [1]		12 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	469	1220	1173	2410
Retail (ksf)	5	0	12.5	71
R&D (ksf)	150	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	115	146	288	304
Approximate Year	2017	2023	2019	2024

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 50% into Major Phase 1, now proposed as 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

CPX	20 Minutes [1]		15 Minutes [2]		10 Minutes [3]	
	Old	New	Old	New	Old	New
Development:						
Residential (DU)	1630	N/A	3588	1529	5545	4905
Retail (ksf)	0	N/A	353	760	365	760
R&D (ksf)	0	N/A	0	0	70	0
Artists (ksf)	0	N/A	0	0	0	0
Community Facilities (ksf)	0	N/A	0	100	0	100
Office (ksf)	0	N/A	75	150	150	150
Hotel (Rooms)	0	N/A	110	220	220	220
Transit Trip Gen Trigger	164	N/A	838	1193	1514	1608
Approximate Year	2021	N/A	2022	2020	2027	2030

[1] Originally contemplated as initiation of Major Phase 2, but because of substantial development in first years, the CPX will begin at 15-minute frequencies.

[2] Originally contemplated as 50% into Major Phase 2, now proposed as prior to first occupancy of Major Phase 2

[3] Originally contemplated as initiation of Major Phase 3, now proposed as 50% into Major Phase 3

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

23 Monterey/24 Divisadero

	23 Monterey: 15 Minutes [1]		24 Divisadero: 10 Minutes [2]		24 Divisadero: 7.5 Minutes [3]	
	Old	New	Old	New	Old	New
Development:						
Residential (DU)	469	1220	2406	2935	2498	3320
Retail (ksf)	5	0	45	100	88	105
R&D (ksf)	150	0	975	1831	1313	2336
Artists (ksf)	0	0	48	0	120	0
Community Facilities (ksf)	0	0	0	0	0	0
Office (ksf)	0	0	0	0	0	0
Hotel (Rooms)	0	0	0	0	0	0
Transit Trip Gen Trigger	115	146	643	636	744	810
Approximate Year	2017	2023	2023	2029	2025	2030

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 20% into Major Phase 2, now proposed 50% into Major Phase 3

[3] Originally contemplated as 50% into Major Phase 2, now proposed as prior to first occupancy of Major Phase 4

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

48 Quintara

	15 Minutes [1]		10 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	1	1	1173	2410
Retail (ksf)	0	0	13	71
R&D (ksf)	0	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	1	1	288	304
Approximate Year	2015	2019	2019	2024

[1] Originally contemplated as initiation of Major Phase 1. No change proposed.

[2] Originally contemplated as 50% into Major Phase 1, now proposed 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

44 O'Shaughnessy

	7.5 Minutes [1]		6.5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	469	1220	1173	2410
Retail (ksf)	5	0	13	71
R&D (ksf)	150	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	115	146	288	304
Approximate Year	2017	2023	2019	2024

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 50% into Major Phase 1, now proposed 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

29 Sunset

	10 Minutes [1]		5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	2413	N/A	3588	605
Retail (ksf)	141	N/A	350	635
R&D (ksf)	0	N/A	0	0
Artists (ksf)	0	N/A	0	0
Community Facilities (ksf)	0	N/A	0	0
Office (ksf)	30	N/A	75	150
Hotel (Rooms)	44	N/A	110	220
Transit Trip Gen Trigger	433	N/A	838	835
Approximate Year	2021	N/A	2022	2017

[1] Originally contemplated as 20% into Major Phase 2, but because of substantial development in the first years, the 29 Sunset will begin at 5-minute frequencies.

[2] Originally contemplated as 50% into Major Phase 2, now proposed 70% into Major Phase 1

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

28L - BRT

	8 Minutes [1]		5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	4819	4548	6100	5915
Retail (ksf)	166	778	415	836
R&D (ksf)	975	0	1298	627
Artists (ksf)	48	0	120	0
Community Facilities (ksf)	0	100	0	100
Office (ksf)	30	150	75	150
Hotel (Rooms)	44	220	110	220
Transit Trip Gen Trigger	1075	1456	1582	1926
Approximate Year	2021	2023	2022	2028

[1] Originally contemplated as 20% into Major Phase 2 (CP + HP), now proposed to remain 20% of Major Phase 2 CP + 20% of Major Phase 2 HP. Interim routes servicing CP include temporary extension of the 56 Rutland and supplemental shuttles

[2] Originally contemplated as 50% into Major Phase 2 (CP + HP), now proposed prior to occupancy of Major Phase 3 CP and Major Phase 3 HP

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

November 22, 2013

MEMORANDUM

To: Chris Kern, and
Jessica Range,
Planning Department, City and County of San Francisco

From: Michael Keinath

Subject: Screening Air Quality Analysis and Health Risk Assessment for the Refinements to the
Candlestick Point-Hunter Point Shipyard Phase II Development Plan

Planning Department Case File No: 2007.0946E

Introduction:

In 2009, ENVIRON International Corporation (ENVIRON) performed four ambient air quality (AAQ) human health risk assessments (HHRA) as part of the Environmental Impact Report (EIR) for the proposed Candlestick Point – Hunters Point Shipyard Phase II Development Plan (herein referred to as “Project”; also known as San Francisco Planning Department Case Number 2007.0946E). The EIR for the Project was certified in July 2010 and since that time the Project proponent, Lennar Urban, and the City of San Francisco, having been working to implement the Project plan. However, during that time, the professional football team, the San Francisco 49ers, has chosen to move to a stadium in Santa Clara, California, obviating the need for rebuilding a stadium on the Project site. Additionally, since the new stadium in Santa Clara will be ready for the fall 2014 football season, the existing stadium at the Project site will be vacant after January 2014. While the overall development program of the Project has not changed (i.e., total square footage by each land use), the phasing of the Project and the uses for particular parcels has changed from what was originally evaluated in 2009. A map showing this revised phasing is presented as Attachment A. To reflect this new phasing, TRC prepared a Construction Workers and Equipment Phasing Plan for the Project dated 11/18/13 (included as Attachment B).

ENVIRON has conducted a screening-level construction HHRA of the revised phasing plan (designated herein as the “2013 Phasing Plan”) to determine if the modified project would result in any new significant impacts not identified in the EIR or substantially increase the severity of an impact. Section III.H.4 of the EIR identified the construction thresholds of significance for toxic air contaminants as:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 1×10^{-5} (10 in one million)
- Ground level concentrations of non-carcinogenic air contaminants/pollutants resulting in a HI greater than 1 for the MEI

As discussed in Impact AQ-2 of the EIR, all impacts were determined to be less than Significant with Mitigation, namely Mitigation Measures AQ 2.1 and 2.2, listed below:

- MM AQ 2.1 Implement Emission Control Device Installation on Construction. To reduce DPM [diesel particulate matter] emissions during Project construction, the Project Applicant shall require construction equipment used for the Project to utilize emission control technology such that 50% of the fleet will meet US EPA Tier 2 standards outfitted with California ARB [Air Resources Board] Level 3 VDECS (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) during the first two years of construction activities, increasing to 75% of the fleet in the third year and 100% of the fleet starting in the fourth year and for the duration of the Project.
- MM AQ 2.2 Implement Accelerated Emission Control Device Installation on Construction Equipment Used for Alice Griffith Parcels. In addition to mitigation measure MM AQ 2.1, in order to minimize the potential impacts to residents living in Alice Griffith from the construction activities in that area, the Project Applicant will require that all construction equipment used in the Alice Griffith parcels (CP01 through CP06) would utilize equipment which meets the US EPA Tier 2 standards outfitted with California ARB Level 3 VDECS (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) throughout the entire duration of construction activities on those parcels.

Below we describe the methods used in this screening level HHRA to determine whether the proposed modifications to the Project Phasing Schedule would result in any new significant impact on air quality beyond those identified in the FEIR or substantially increase the severity of a significant impact.

Approach:

Other than modifications detailed below, for this updated HHRA, ENVIRON followed the methods outlined in Section III.H Air Quality of the EIR. As discussed there, the methods used to analyze the human health effects from emissions of DPM associated with Project construction equipment were developed consistent with Bay Area Air Quality Management District (BAAQMD), California Environmental Protection Agency (Cal/EPA), and United State Environmental Protection Agency (USEPA) risk assessment guidance. The analysis incorporates conservative (i.e., health protective) methodologies for the following: (1) the estimation of emissions, (2) the calculation of airborne concentrations of DPM during construction activities at receptor locations, and (3) the estimation of excess lifetime cancer risks and non-cancer health effects or hazard indices (HIs).

Revised Construction Phasing

As discussed earlier, TRC prepared an updated construction phasing schedule (dated 11/18/13) which included phase duration, construction equipment list and usage, number of construction workers, and number of construction truck trips for:

- Hunter's Point Shipyard
- Candlestick Point
- Development of Shoreline of Hunter's Point Shipyard and Candlestick Point
- Field management for the construction

Emissions Calculation

Emissions from off-road construction equipment associated with Project development as identified by TRC were calculated using CalEEMod[®] default equipment horsepower, load factor, and emission

factors.¹ CalEEMod[®] defaults were developed based on ARB's 2011 In-Use Off-road Equipment Inventory Model.² The original analysis assumed construction would begin in 2010. Therefore, implementation of MM AQ-2.1 has been adjusted to reflect the current construction schedule assuming that the Project would require construction equipment used for the Project to utilize emission control technology such that 50% of the fleet will meet US EPA Tier 2 standards outfitted with California ARB Level 3 VDECS (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) during the first two years of construction activities (2014 and 2015), increasing to 75% of the fleet in the third year (2016), and 100% of the fleet starting in the fourth year (2017) and for the remaining duration of the Project. Similarly, MM AQ-2.2 was evaluated such that 100% of the construction equipment fleet at the Alice Griffith parcels will meet the Tier 2 standards and be outfitted with California ARB Level 3 VDECS for the entire duration of the Project.

Emissions from on-road mobile sources, particularly the running, idling, and starting emissions from worker commute trips and haul truck trips making deliveries and removing materials, were calculated using CalEEMod[®] default emission factors. CalEEMod[®] defaults were developed based on ARB's EMFAC2011 model.³ The worker vehicles were assumed to be 50% light duty vehicles (LDA) and 50% light duty trucks (i.e., 25% LDT1 and 25% LDT2). The haul trucks were assumed to be 100% medium heavy-duty trucks (MHDT). These are the same assumptions used in the 2009 analysis. The distance that the workers and haul trucks would travel along the hauling roads was assumed to be the same as the 2009 analysis. Since the distance that the workers and hauling trips originating from the Field Management phase was unknown, ENVIRON assumed an average travel distance based on the length of the other haul roads. Idling and starting emissions from on-road activity were allotted to the construction parcels. Running emissions from on-road activity were attributed to the hauling roads.

Air Dispersion Modeling

The air dispersion models (using the USEPA AERMOD) were run for the construction emissions as calculated in 2009 and the revised emissions as a method of comparing the impact of the revised phasing plan to the previously modeled receptor locations (as before, ground level receptors were assumed). The modeled receptor grid is presented in Attachment C. A 30 meter by 30 meter grid of volume sources (Attachment D) was developed for the revised construction emissions, with emissions within each parcel evenly distributed throughout the volume sources. The models used the same meteorological and terrain data as were used in the 2009 analysis. Mobile source starting and idling emissions associated with each parcel development were modeled along with the construction off-road equipment emissions through the volume sources. On-road mobile running emissions which occur off-site were not modeled considering the running emissions are likely to be lower due to cleaner engines as a result of the construction beginning in 2014, 4 years later than that assumed in the 2009 analysis.

Health Risk Assessment

The HHRA was conducted in the same way described in the EIR, including the assumption that all PM10 from diesel fueled construction equipment was assumed to be DPM. For this screening level update, the cancer risk was calculated using the total construction DPM emissions and a weighted average exposure factor assuming 9 years of exposure as a child and 13 years as an adult). The chronic HI was conservatively estimated based on the total DPM rather than the maximum year DPM emissions.

¹ <http://www.caleemod.com/>

² http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles

³ http://www.arb.ca.gov/msei/categories.htm#onroad_motor_vehicles

Results:

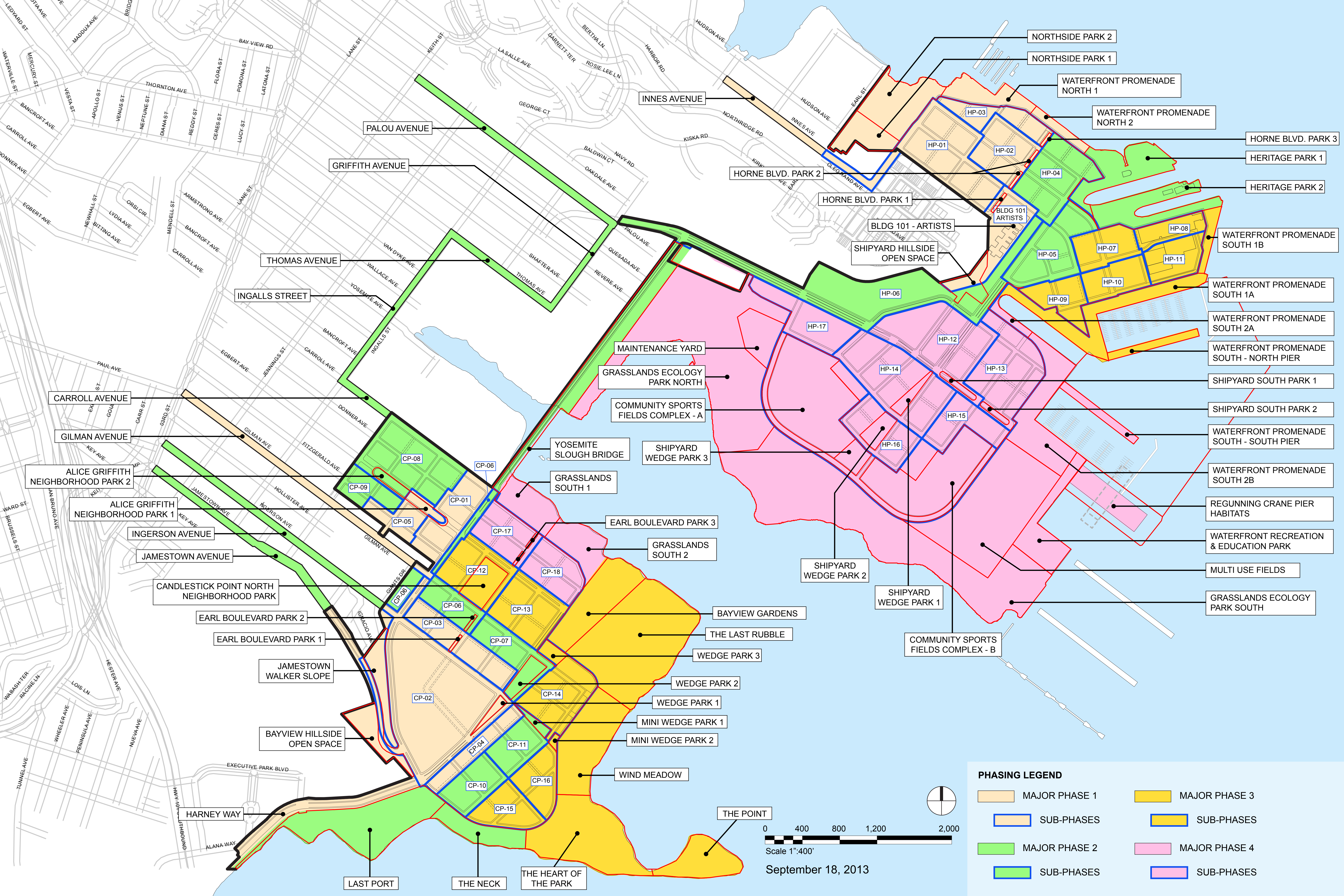
The modified Project with the new phasing schedule, beginning 4 years later than that assumed in the EIR and with the application of mitigation measures MM AQ-2.1 and 2.2. provided in the EIR, results in an excess cancer risk at the maximally exposed sensitive receptor location of less than 3 in a million and would not exceed the threshold of >10.0 in 1 million. The non-cancer impacts would be less than the Chronic Hazard Index (HI) threshold of >1 at the maximally exposed individual location. With mitigation, the results for the modified Project are below the significance thresholds for determining whether construction activities would expose sensitive receptors to substantial levels of DPM.

Implementation of the modified construction schedule would not result in any new significant effects related to emissions of DPM beyond those identified in the EIR or a substantial increase in the severity of a significant impact because:

1. The construction will begin 4 years later than what was assumed in the EIR. The cleaner equipment would reduce the unmitigated portion of the construction emissions during the first three years of construction.
2. Updated analysis pertaining to the application of the mitigation measures reflecting a construction start year of 2014.
3. The DPM emissions were updated using CalEEMod[®] default equipment data which are based on the newer version of OFFROAD (2011). The previous model (OFFROAD2007) overestimated the equipment load factor by 33%.

Therefore, no new mitigation measures would be required.

Attachment A
Revised Construction Phasing



PHASING LEGEND

MAJOR PHASE 1	MAJOR PHASE 3
SUB-PHASES	SUB-PHASES
MAJOR PHASE 2	MAJOR PHASE 4
SUB-PHASES	SUB-PHASES

0 400 800 1,200 2,000
Scale 1"=400'
September 18, 2013

Attachment B
Revised Construction Workers and Equipment Phasing Plan

DRAFT: CPHPSII Project: Construction Workers and Equipment for Hunters Point Shipyard Construction Phase (Revision Date: 11/18/2013)						Major Phase Indicator Subphase Color Coding									
Prepared by TRC for EIR Analysis						1 HP									
						2HP									
						3 HP									
						4 HP									
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2014	1	Site Preparation	Abatement	Bldg 101 Artist	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		10	8	8	4	5		
				Artist Replmt Space	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		10	8	8	4	5		
			Demolition	Bldg 101 Artist	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
				Artist Replmt Space	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
			Grading & Infrastructure	Bldg 101 Artist	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				Artist Replmt Space	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
			Building Construction	Foundation Piles/Structure/Rough-In	Bldg 101 Artist	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		10	8	8	4	5	
				Interior and Exterior Finishes	Bldg 101 Artist	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5	
2015	2	Building Construction	Foundation Piles/Structure/Rough-In	Artist Replmt Space	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		10	8	8	4	5		
			Interior and Exterior Finishes	Artist Replmt Space	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
2016	3	Site Preparation	Abatement	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	5	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
			Demolition	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	8	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13		
			Grading & Infrastructure	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	None								0		
		Building Construction	Foundation Piles/Structure/Rough-In	Artist Replmt Space	None								0		
			Interior and Exterior Finishes	Artist Replmt Space	None								0		
2017	4	Site Preparation	Abatement	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	None								0		
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		25	20	24	16	13		
			Demolition	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	None									0	
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	7	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			38	30	80	64	19		
			Grading & Infrastructure	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19		
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
2018	5	Abatement	Horne Blvd P1	HP-02 (HPS North - 5a, 6a, 5b, 6b)	None									0	
				HP-03 (HPS North - 3a, 3b, 7a, 7b)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				HP-06 (Roadway-YSB Connection)	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	None									0	
			Demolition	Horne Blvd P1	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
				HP-02 (HPS North - 5a, 6a, 5b, 6b)	None									0	
				HP-03 (HPS North - 3a, 3b, 7a, 7b)	6	(2) Man Lifts, (2)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	16	8	13		
				HP-06 (Roadway-YSB Connection)	2	(2) Man Lifts, (1)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			20	16	8	4	10		
		Grading & Infrastructure	Horne Blvd P1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
			HP-02 (HPS North - 5a, 6a, 5b, 6b)	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19			
			HP-03 (HPS North - 3a, 3b, 7a, 7b)	None									0		
			HP-06 (Roadway-YSB Connection)	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18			
		Building Construction	Foundation Piles/Structure/Rough-In	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10		
			Interior and Exterior Finishes	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
		Roadway	Improvements	YS Bridge	9	(1)Excavators, (2)Loaders, (2) Off Road Dump Truck, (1) Dozer, (4) barges, (4) Cranes, (1) Drill Rig, (1)Water Truck	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck, (1) Pile Driver	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (2) Pump Trucks	78	62	24	16	39		
				Innes Ave	10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	15		
			Site Preparation	Abatement	Northside P1	None									0
					Northside P2	None									0
		Horne Blvd P2			1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		10	8	8	4	5		
		HP-03 (HPS North - 3a, 3b, 7a, 7b)			None									0	
Demolition	Northside P1	1		(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			13	10	8	4	7				
	Northside P2	1		(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			13	10	8	4	7				
	Horne Blvd P2	1		(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9				
	HP-03 (HPS North - 3a, 3b, 7a, 7b)	None										0			
Grading & Infrastructure	Northside P1	2		(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	32	24	13				
	Northside P2	4		(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	32	24	13				
	Horne Blvd P2	1		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13				
	HP-03 (HPS North - 3a, 3b, 7a, 7b)	9		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19				
Building Construction	Foundation Piles/Structure/Rough-In	HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10				
		Horne Blvd P1	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	18	14	16	8	9				
	Interior and Exterior Finishes	HP-02 (HPS North - 5a, 6a, 5b, 6b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10				
		HP-01 (HPS North - 1a, 2a, 2b, 1b, 4a, 4b)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5				
Roadway	Improvements	Horne Blvd P1	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5				
		HP-02 (HPS North - 5a, 6a, 5b, 6b)	5	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5				
2020	7	Site Preparation	Abatement	Waterfront Prom N1	None									0	
				Waterfront Prom N2	None										0
				Horne Blvd P3	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		10	8	8	4	5		
				HP-05 (Roadway-YSB Connection)	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
			Demolition	HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	5	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
				Waterfront Prom N1	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
				Waterfront Prom N2	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
				Horne Blvd P3	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	18	14	8	4	9		
				HP-05 (Roadway-YSB Connection)	1	(2) Man Lifts, (2)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13		
				HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	9	(2) Man Lifts, (2)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13		
			Grading & Infrastructure	Waterfront Prom N1	5		(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				Waterfront Prom N2	5		(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				Horne Blvd P3	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				HP-05 (Roadway-YSB Connection)	4		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19		
				HP-06 (Roadway-YSB Connection)	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	35	28	16	8	18		
				HP-04 (HPS North - 8a, 9a, 10a, 8b, 9b, 10b)	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	96	80	19		
		Foundation Piles/Structure/Rough-In	HP-02 (HPS North - 5a, 6a, 5b, 6b)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10			
			Northside P1	None									0		
			Northside P2	None									0		
			Horne Blvd P2	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9			

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Prepared by TRC for EIR Analysis						1 HP									
						2HP									
						3 HP									
						4 HP									
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2027	14	Site Preparation	Demolition	Waterfront Prom S 1b	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
				HP-09 (R&D - 9, 8a)	None							0			
				HP-10 (R&D - 8b, 7)	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane	20	16	24	16	10			
				HP-12 (HPS South - 14, 15a, 15b, 16a, 16b)	None										
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	9	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane		25	20	24	16	13			
			Grading & Infrastructure	Waterfront Prom S 1b	4		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				HP-09 (R&D - 9, 8a)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	35	28	16	8	18			
				HP-10 (R&D - 8b, 7)	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	35	28	40	32	18			
				HP-12 (HPS South - 14, 15a, 15b, 16a, 16b)	11	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		38	30	80	64	19			
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		38	30	80	64	19			
		Building Construction	Foundation Piles/Structure/Rough-in	HP-07 (R&D - 3b, 4)	None							0			
				HP-08 (R&D - 5)	7	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		20	16	16	8	10			
			Interior and Exterior Finishes	HP-07 (R&D - 3b, 4)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
				HP-08 (R&D - 5)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
2028	15	Site Preparation	Abatement	HP-10 (R&D - 8b, 7)	None								0		
				HP-11 (R&D - 6)	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	13	10	16	8	7			
				Shipyards South P1	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	10	8	8	4	5			
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	None							0			
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	6	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	13	10	8	4	7			
			Demolition	HP-10 (R&D - 8b, 7)	None								0		
				HP-11 (R&D - 6)	5	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane	20	16	24	16	10			
				Shipyards South P1	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	8	4	9			
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	None							0			
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	9	(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane		25	20	24	16	13			
			Grading & Infrastructure	HP-10 (R&D - 8b, 7)	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	35	28	40	32	18			
				HP-11 (R&D - 6)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Scraper	35	28	40	32	18			
				Shipyards South P1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		25	20	8	4	13			
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	9	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		38	30	80	64	19			
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		38	30	80	64	19			
		Building Construction	Foundation Piles/Structure/Rough-in	HP-08 (R&D - 5)	None							0			
				Waterfront Prom S 1b	None								0		
				HP-09 (R&D - 9, 8a)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		20	16	16	8	10			
				HP-12	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		20	16	16	8	10			
			Interior and Exterior Finishes	HP-08 (R&D - 5)	None								0		
				Waterfront Prom S 1b	10		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				HP-09 (R&D - 9, 8a)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5			
				HP-12	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	10	8	8	4	5			
		2029	16	Site Preparation	Abatement	HP-11 (R&D - 6)	None								0
						Waterfront Prom S 2a	None								0
						Waterfront Prom S 2b	None								0
						Waterfront Prom SP	None								0
						Shipyards South P 2	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	10	8	8	4	5	
						HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	None								0
						HP-15 (HPS South - 12a, 12b, 13)	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	13	10	8	4	7	
					Demolition	HP-11 (R&D - 6)	None								0
Waterfront Prom S 2a	1					(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	8	4	8			
Waterfront Prom S 2b	2					(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	8	4	8			
Waterfront Prom SP	1					(1) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	16	8	8			
Shipyards South P 2	1					(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	8	4	9			
HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	None												0		
HP-15 (HPS South - 12a, 12b, 13)	4					(2) Man Lifts, (2)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane		25	20	24	16	13			
Grading & Infrastructure	HP-11 (R&D - 6)				None								0		
	Waterfront Prom S 2a			2		(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
	Waterfront Prom S 2b			6		(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck, (1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
	Waterfront Prom SP			3		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	28	22	16	8	14			
	Shipyards South P 2			1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		25	20	8	4	13				
	HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)			9	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		38	30	80	64	19				
	HP-15 (HPS South - 12a, 12b, 13)			None								0			
Building Construction	Foundation Piles/Structure/Rough-in			HP-09 (R&D - 9, 8a)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10		
				HP-10 (R&D - 8b, 7)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10		
				HP-12	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				Shipyards South P1	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	18	14	16	8	9			
	Interior and Exterior Finishes			HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				HP-09 (R&D - 9, 8a)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				HP-10 (R&D - 8b, 7)									0		
				HP-12	10	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Shipyards South P1	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
		Site Preparation	Abatement	Waterfront Prom S 1a	None								0		
				Waterfront Prom NP	None								0		
				Shipyards South BP	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	10	8	8	4	5			
				Shipyards WP 1	1	(1) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	10	8	8	4	5			
				HP-15 (HPS South - 12a, 12b, 13)	None								0		
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	2	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck	13	10	8	4	7			
			Demolition	Waterfront Prom S 1a	2	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	8	4	8			
				Waterfront Prom NP	1	(1) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		15	12	16	8	8			
				Shipyards South BP	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	8	4	9			
				Shipyards WP 1	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	8	4	9			

DRAFT: CPHPSII Project: Construction Workers and Equipment for Hunters Point Shipyard Construction Phase (Revision Date: 11/18/2013)						Major Phase Indicator Subphase Color Coding									
						1 HP									
						2HP									
						3 HP									
						4 HP									
Prepared by TRC for EIR Analysis															
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2030	17		Grading & Infrastructure	Waterfront Prom NP	3		(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Trucks, (1) Dozer	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	28	22	16	8	14		
				Shipyards South BP	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Water Truck, (1) Off Road Dump Truck		(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				Shipyards WP 1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	4	2	13		
				HP-15 (HPS South - 12a, 12b, 13)	5	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	None									0	
			Foundation Piles/Structure/Rough-In	HP-10 (R&D - 8b, 7)	None										0
				HP-11 (R&D - 6)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	20	16	16	8	10		
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				Waterfront Prom S 2a	None									0	
				Waterfront Prom S 2b	None									0	
				Waterfront Prom SP	None									0	
				Shipyards South BP	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				Shipyards South P2	1	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9		
				HP-10 (R&D - 8b, 7)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				HP-11 (R&D - 6)	None									0	
				HP-13 (HPS South - 21a, 21b, 22, 17a, 17b, 18a, 18b, 19a, 19b)	9	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Waterfront Prom S 2a	5		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				Waterfront Prom S 2b	12		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				Waterfront Prom SP	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
		Shipyards South BP	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5				
		HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5				
		Shipyards South P2	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4					
		2031	18		Abatement	Grassland EP South	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7
						Community SFC B	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7
Multituse Field	4					(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
Waterfront R&E Park	4					(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7		
Regunning Crane Pier	None													0	
HP-16 (HPS South - 7a, 7b, 9a, 9b)	None													0	
HP-17 (HPS South 3)	3					(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7		
Grassland EP South	6					(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		(1) Crane	20	16	24	16	10		
Community SFC B	6					(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
Multituse Field	6					(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
	Demolition			Waterfront R&E Park	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10		
				Regunning Crane Pier	1	(1) Man Lifts, (1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			15	12	8	4	8		
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	None									0	
				HP-17 (HPS South 3)	5	(2) Man Lifts, (2)Excavators, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (2)Water Trucks, (1) Crane			25	20	24	16	13		
				Grassland EP South	7	(1)Excavators, (2)Loaders, (1)Bobcat, (2) Off Road Dump Truck, (1)Water Truck		(1) Barge	20	16	120	104	10		
				Community SFC B	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				Multituse Field	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				Waterfront R&E Park	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13		
				Regunning Crane Pier	3	(1)Excavators, (2)Loaders, (1)Bobcat, (2) Off Road Dump Truck, (1)Water Truck		(1) Barge	13	10	8	4	7		
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	4	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19		
	Foundation Piles/Structure/Rough-In			HP-17 (HPS South 3)	None									0	
				HP-11 (R&D - 6)	None									0	
				Waterfront Prom S 1a	None									0	
				Waterfront Prom NP	None									0	
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	7	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				Shipyards South BP										0	
				Shipyards WP 1	None									0	
				HP-15 (HPS South - 12a, 12b, 13)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				HP-11 (R&D - 6)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				Waterfront Prom S 1a	12		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8		
				Waterfront Prom NP	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				HP-14 (HPS South - 5, 6a, 6b, 8a, 8b, 10a, 10b)	8	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Shipyards South BP										0	
				Shipyards WP 1	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7		
				HP-15 (HPS South - 12a, 12b, 13)	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
	Site Preparation	Abatement	Shipyards WP 2 & 3	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7			
			Community SFC A	4	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7			
			HP-17 (HPS South 3)	None									0		
		Demolition	Shipyards WP 2 & 3	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10			
			Community SFC A	6	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	(1) Crane		20	16	24	16	10			
			HP-17 (HPS South 3)	None									0		
		Grading & Infrastructure	Shipyards WP 2 & 3	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	4	2	13			
			Community SFC A	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13			
			HP-17 (HPS South 3)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	38	30	80	64	19			
			HP-15 (HPS South - 12a, 12b, 13)	None									0		
			Foundation Piles/Structure/Rough-In	Grassland EP South	None									0	
				Community SFC B	None									0	
				Multituse Field	None									0	
				Waterfront R&E Park	None									0	
				Regunning Crane Pier	None									0	
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	10	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10		
				HP-15 (HPS South - 12a, 12b, 13)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5		
				Grassland EP South	12		(1) Excavator, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	18	14	16	8	9		
				Community SFC B	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7		
				Multituse Field	6		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7		
	Interior and Exterior Finishes	Waterfront R&E Park	6		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7				
		Regunning Crane Pier	10		(1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	15	12	8	4	8				
		HP-16 (HPS South - 7a, 7b, 9a, 9b)	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5				
		Maintenance Yard	None									0			
		Grassland EP North	None									0			
		Maintenance Yard	None									0			
		Grassland EP North	3	(1)Excavator, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			13	10	24	16	7				
Grading & Infrastructure	Maintenance Yard	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors	25	20	8	4	13					

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Prepared by TRC for EIR Analysis

Major Phase Indicator

Subphase Color Coding

1 HP

2HP

3 HP

4 HP

Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips		
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment
2033	20	Building Construction	Foundation Piles/Structure/Rough-In	Grassland EP North	7	(1)Excavators, (2)Loaders, (1)Bobcat, (2) Off Road Dump Truck, (1)Water Truck		(1) Barge	20	16	120	104	10
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	None								0
				Shipyards WP 2 & 3	None								0
				Community SFC A	None								0
			Interior and Exterior Finishes	HP-17 (HPS South 3)	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Scraper, (2) Off Road Dump Trucks, (1) Dozer		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1) Barge	20	16	16	8	10
				HP-16 (HPS South - 7a, 7b, 9a, 9b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5
				Shipyards WP 2 & 3	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7
				Community SFC A	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7
				HP-17 (HPS South 3)	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5
			Foundation Piles/Structure/Rough-In	HP-17 (HPS South 3)	None								0
				Maintenance Yard	None								0
				Grassland EP North	None								0
				HP-17 (HPS South 3)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	10	8	8	4	5
2034	21	Building Construction	Interior and Exterior Finishes	Maintenance Yard	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7
				Grassland EP North	12		(1) Excavator, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift, (1)Bobcat	(1) Water Truck, (1)Loader	18	14	16	8	9

Draft: CPHPSII Project: Construction Workers and Equipment for Candlestick Point Construction Phase (Revision Date: 11/18/2013) Prepared by TRC for EIR Analysis					Major Phase Indicator Subphase Color Coding										
					1 CP										
					2 CP										
					3 CP										
					4 CP										
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2014	1	Site Preparation	Demolition	CP-01 (Alice Griffith - 1, 2, 4)	2		(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7		
				CP-02 (CP Center)	None								0		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
			Grading & Infrastructure	CP-01 (Alice Griffith - 1, 2, 4)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-02 (CP Center)	None								0		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
2015	2	Site Preparation	Abatement	CP-01 (Alice Griffith - 1, 2, 4)	None								0		
				CP-02 (CP Center)	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	24	16	7		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
			Wedge Park 1	None									0		
				CP-01	None								0		
				CP-02 (CP Center)	10	(4) Man Lifts, (2)Excavators,(2) Off Road Dump Truck, (2)Loaders, (2)Dozer, (2)Water Trucks, (2) Crane			40	32	48	40	20		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
			CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0			
			Wedge Park 1	None								0			
			Grading & Infrastructure	CP-01 (Alice Griffith - 1, 2, 4)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-02 (CP Center)	5	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
			Wedge Park 1	None								0			
			Building Construction	CP-01 (Alice Griffith - 1, 2, 4)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	18	14	16	8	9			
				CP-02 (CP Center)	None								0		
				CP-03 (CP North - 1a, 2a, 10a, 11a)	None								0		
				CP-04 (CP South - 11a, 9a, 8a, 6a)	None								0		
				Interior and Exterior Finishes	CP-01 (Alice Griffith - 1, 2, 4)	None								0	
		CP-02 (CP Center)			None								0		
		CP-03 (CP North - 1a, 2a, 10a, 11a)			None								0		
		CP-04 (CP South - 11a, 9a, 8a, 6a)			None								0		
		Roadways	Improvements	Harney Way	None									0	
		2016	3	Site Preparation	Abatement	Bayview Hillside OS	None								0
						Jamestown Walker	None								0
						CP-02 (CP Center)	None								0
						CP-05 (Alice Griffith - 14, 8, 9)	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7
Demolition	Bayview Hillside OS				None								0		
	Jamestown Walker				None								0		
	CP-02 (CP Center)				None								0		
	CP-03 (CP North - 1a, 2a, 10a, 11a)				1		(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	12	6	7		
CP-04 (CP South - 11a, 9a, 8a, 6a)	1					(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
CP-05 (Alice Griffith - 14, 8, 9)	2				(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks			13	10	16	8	7			
CP-02 (CP Center)	5				(2)Excavators, (1)Loaders,(1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15				
Bayview Hillside OS	None											0			
Grading & Infrastructure	Wedge Park 1				1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
	CP-03 (CP North - 1a, 2a, 10a, 11a)				5	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	6	15			
	CP-04 (CP South - 11a, 9a, 8a, 6a)				6	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
	CP-05 (Alice Griffith - 14, 8, 9)				3	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
Building Construction	CP-01 (Alice Griffith - 1, 2, 4)				None								0		
	CP-02 (CP Center)				5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
	Wedge Park 1				None								0		
	CP-03 (CP North - 1a, 2a, 10a, 11a)				None								0		
	CP-04 (CP South - 11a, 9a, 8a, 6a)			None								0			
	Interior and Exterior Finishes			CP-01 (Alice Griffith - 1, 2, 4)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				CP-02 (CP Center)	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10		
				Wedge Park 1	None								0		
CP-03 (CP North - 1a, 2a, 10a, 11a)				None								0			
CP-04 (CP South - 11a, 9a, 8a, 6a)	None										0				
Roadways	Improvements			Harney Way	10	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	12			
2017	4			Site Preparation	Abatement	CP-05 (Alice Griffith - 14, 8, 9)	None								0
						Bayview Hillside OS	1		(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9
					Demolition	Jamestown Walker	1		(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9
						CP-05 (Alice Griffith - 14, 8, 9)	None								0
					Grading & Infrastructure	Bayview Hillside OS	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15	
		Jamestown Walker	4			(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
		CP-05 (Alice Griffith - 14, 8, 9)	None										0		
		CP-01 (Alice Griffith - 1, 2, 4)	None										0		
		Foundation Piles/Structure/Rough-In	CP-02 (CP Center)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20			
			Bayview Hillside OS	None								0			
			Jamestown Walker	None								0			
			CP-03 (CP North - 1a, 2a, 10a, 11a)	7	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20			
			CP-04 (CP South - 11a, 9a, 8a, 6a)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10			
			CP-05 (Alice Griffith - 14, 8, 9)	None								0			
			Interior and Exterior Finishes	CP-01 (Alice Griffith - 1, 2, 4)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5		
				CP-02 (CP Center)	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10		
		Bayview Hillside OS		None								0			
		Wedge Park 1		2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
		CP-03 (CP North - 1a, 2a, 10a, 11a)		7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5			
		CP-04 (CP South - 11a, 9a, 8a, 6a)		12	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5			
		CP-05 (Alice Griffith - 14, 8, 9)		None								0			
		2018		5	Site Preparation	Abatement	AG Neighborhood P1	None							
			CP-06 (CP North - 1b, 2b, 6, 7)				None								0
			Demolition			AG Neighborhood P1	None								0
						CP-06 (CP North - 1b, 2b, 6, 7)	1		(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7
			Grading & Infrastructure			AG Neighborhood P1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13
						CP-06 (CP North - 1b, 2b, 6, 7)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (2) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	33	26	16	8	17
			Building Construction		Bayview Hillside OS	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9	
Jamestown Walker	3				(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck		18	14	16	8	9			
CP-04 (CP South - 11a, 9a, 8a, 6a)	6				(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	20	16	16	8	10			
CP-05 (Alice Griffith - 14, 8, 9)	3				(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	18	14	16	8	9			
Bayview Hillside OS	4				(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5			

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					1 CP											
					2 CP											
					3 CP											
					4 CP											
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips					
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment			
			Interior and Exterior Finishes	Jamestown Walker	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5			
				CP-04 (CP South - 11a, 9a, 8a, 6a)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5			
				CP-05 (Alice Griffith - 14, 8, 9)	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			10	8	8	4	5			
		Roadways	Improvements	Gilman Ave	3	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	12	8	12				
2019	6	Site Preparation	Abatement	CP-06 (CP North - 1b, 2b, 6, 7)	None								0			
				Earl Blvd Park 1 & 2	None								0			
				CP-07 (CP North- 10b, 11b)	None								0			
			Demolition	CP-06 (CP North - 1b, 2b, 6, 7)	None								0			
				Earl Blvd Park 1 & 2									0			
				CP-07 (CP North- 10b, 11b)	1		(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
			Grading & Infrastructure	CP-06 (CP North - 1b, 2b, 6, 7)	None								0			
				Earl Blvd Park 1 & 2	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13			
				CP-07 (CP North- 10b, 11b)	6	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15				
				AG Neighborhood P1	None								0			
		Building Construction	Foundation Piles/Structure/Rough-In	CP-06 (CP North - 1b, 2b, 6, 7)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck, (1) Pile Driver	40	32	16	8	20				
				AG Neighborhood P1	3		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
			Interior and Exterior Finishes	CP-06 (CP North - 1b, 2b, 6, 7)	7	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	16	8	10				
				CP-07 (CP North- 10b, 11b)	None								0			
2020	7	Site Preparation	Abatement	CP-07 (CP North- 10b, 11b)	None								0			
				CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	3	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	8	4	7			
				CP-07 (CP North- 10b, 11b)	None								0			
			Demolition	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	4	(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	16	8	7				
				CP-07 (CP North- 10b, 11b)	None								0			
				Grading & Infrastructure	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	5	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	8	4	15			
		Building Construction	Foundation Piles/Structure/Rough-In	CP-06 (CP North - 1b, 2b, 6, 7)	None								0			
				Earl Blvd Park 1 & 2	None								0			
				CP-06 (CP North - 1b, 2b, 6, 7)	None								0			
			Interior and Exterior Finishes	Earl Blvd Park 1 & 2	1		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
2021	8	Site Preparation	Abatement	Wedge Park 2	None									0		
				CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	None									0		
				CP-09 (Alice Griffith - 15, 16, 13)	1	(2) Man Lifts, (1)Loader, (1) Rough Terrain Fork lift	(1) Water Truck		13	10	16	8	7			
			Demolition	Wedge Park 2	None									0		
				CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	None									0		
				CP-09 (Alice Griffith - 15, 16, 13)	3		(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	16	8	7			
			Grading & Infrastructure	Wedge Park 2	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13			
				CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	5	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	8	4	15				
				CP-09 (Alice Griffith - 15, 16, 13)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	8	4	15				
				Foundation Piles/Structure/Rough-In	CP-07 (CP North- 10b, 11b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
		Interior and Exterior Finishes	CP-07 (CP North- 10b, 11b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	32	16	8	10					
		2022	9	Site Preparation	Abatement	AG Neighborhood P2	None									0
						CP-09 (Alice Griffith - 15, 16, 13)	None									0
						CP-10 (CP South - 11b, 9b)	None									0
Demolition	AG Neighborhood P2				None									0		
	CP-09 (Alice Griffith - 15, 16, 13)				None									0		
	CP-10 (CP South - 11b, 9b)				1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9				
Grading & Infrastructure	AG Neighborhood P2				1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13			
	CP-09 (Alice Griffith - 15, 16, 13)				None									0		
	CP-10 (CP South - 11b, 9b)				4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15				
	Foundation Piles/Structure/Rough-In				CP-07 (CP North- 10b, 11b)	None								0		
Building Construction	Foundation Piles/Structure/Rough-In			Wedge Park 2	None									0		
				CP-08	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck	18	14	16	8	9			
				CP-07 (CP North- 10b, 11b)	None								0			
	Interior and Exterior Finishes			Wedge Park 2	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)		10	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5							
2023	10	Site Preparation	Abatement	CP-10 (CP South - 11b, 9b)	None									0		
				CP-11 (CP South - 8b, 6b)	None									0		
				CP-10 (CP South - 11b, 9b)	None									0		
			Demolition	CP-11 (CP South - 8b, 6b)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9				
				CP-10 (CP South - 11b, 9b)	None									0		
				Grading & Infrastructure	CP-11 (CP South - 8b, 6b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
		Building Construction	Foundation Piles/Structure/Rough-In	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	5	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck	18	14	16	8	9			
				AG Neighborhood 2	None									0		
				CP-09 (Alice Griffith - 15, 16, 13)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift		(1) Cement Truck, (1) Pump Truck	18	14	16	8	9			
			Interior and Exterior Finishes	CP-08 (Alice Griffith - 11, 12, 17, 18, 19, 20)	10	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5				
AG Neighborhood 2	3			(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7						
Roadways	Improvements	CP-09 (Alice Griffith - 15, 16, 13)	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5						
		Ingerson Ave	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	28	22	12	8	14						
		Jamestown Ave	6	(1)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	28	22	12	8	14						
		Last Port	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7						
2024	11	Site Preparation	Abatement	The Neck	None									0		
				CP-11 (CP South - 8b, 6b)	None									0		
				Last Port	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7				
			Demolition	The Neck	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	13	10	8	4	7			
				CP-11 (CP South - 8b, 6b)	None									0		
				Last Port	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13			
		Grading & Infrastructure	The Neck	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13				
			CP-11 (CP South - 8b, 6b)	None									0			
			CP-09 (Alice Griffith - 15, 16, 13)	None									0			
			Foundation Piles/Structure/Rough-In	CP-10 (CP South - 11b, 9b)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20			
Interior and Exterior Finishes	CP-09 (Alice Griffith - 15, 16, 13)	None									0					
CP-10 (CP South - 11b, 9b)	3	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10								
2025	12	Site Preparation	Abatement	Mini Wedge Park 1	None									0		
				CP-12 (CP North - 3a, 3b)	None									0		
				Mini Wedge Park 1	None									0		
			Demolition	CP-12 (CP North - 3a, 3b)	1	(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	16	8	7				
				Mini Wedge Park 1	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13			
				CP-12 (CP North - 3a, 3b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (2) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	33	26	16	8	17				
		Building Construction	Foundation Piles/Structure/Rough-In	CP-10 (CP South - 11b, 9b)	None									0		
				Last Port	None									0		
				The Neck	None									0		
			Interior and Exterior Finishes	CP-11 (CP South - 8b, 6b)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20			
				CP-10 (CP South - 11b, 9b)	None									0		
				Last Port	5		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
				The Neck	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7			
				CP-11 (CP South - 8b, 6b)	3	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10				
	Abatement	CP-12 (CP North - 3a, 3b)	None									0				
		CP-13 (CP North - 8a, 8b, 9a, 9b)	None									0				

Draft: CPHPSII Project: Construction Workers and Equipment for Candlestick Point Construction Phase (Revision Date: 11/18/2013) Prepared by TRC for EIR Analysis					Major Phase Indicator Subphase Color Coding										
					1 CP										
					2 CP										
					3 CP										
					4 CP										
Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips				
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment		
2026	13	Site Preparation	Demolition	CP-12 (CP North - 3a, 3b)	None								0		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	1		(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	18	14	16	8	9			
			Grading & Infrastructure	CP-12 (CP North - 3a, 3b)	None								0		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	8	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15		
		Building Construction	Foundation Piles/Structure/Rough-In	CP-11 (CP South - 8b, 6b)	None									0	
				Mini Wedge Park 1	None									0	
				CP-11 (CP South - 8b, 6b)	None									0	
		Interior and Exterior Finishes	Mini Wedge Park 1	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7			
2027	14	Site Preparation	Abatement	Bldv North Park	None								0		
				CP Neighborhood	None								0		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	None								0		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	None								0		
			Demolition	Bldv North Park	None								0		
				CP Neighborhood	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	4	2	7			
				CP-13 (CP North - 8a, 8b, 9a, 9b)	None								0		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
			Grading & Infrastructure	Bldv North Park	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
				CP Neighborhood	2	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	None								0		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
		Building Construction	Foundation Piles/Structure/Rough-In	CP-12 (CP North - 3a, 3b)	2	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
			Interior and Exterior Finishes	CP-12 (CP North - 3a, 3b)	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	16	8	10		
		2028	15	Site Preparation	Abatement	Bldv Park South	None								0
						Wedge Park 3	None								0
						Bayview Gardens	None								0
						CP-14 (CP South - 4a, 2a, 4b, 2b)	None								0
					Demolition	Bldv Park South	None								0
Wedge Park 3	None												0		
Bayview Gardens	1					(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7			
CP-14 (CP South - 4a, 2a, 4b, 2b)	None												0		
Grading & Infrastructure	CP-15 (CP South - 10b, 10a, 12b)				1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
	Bldv Park South				1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
	Wedge Park 3				1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
	Bayview Gardens				3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
Building Construction	Foundation Piles/Structure/Rough-In				CP-14 (CP South - 4a, 2a, 4b, 2b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15		
					CP-15 (CP South - 10b, 10a, 12b)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15		
					CP-12 (CP North - 3a, 3b)	None								0	
					Bldv Park North	None								0	
					CP Neighborhood	None								0	
Interior and Exterior Finishes	CP-13 (CP North - 8a, 8b, 9a, 9b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20					
	CP-12 (CP North - 3a, 3b)	None								0					
	Bldv Park North	1	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck		13	10	4	2	7					
	CP Neighborhood	5	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck		13	10	4	2	7					
	CP-13 (CP North - 8a, 8b, 9a, 9b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10					
2029	16	Site Preparation	Abatement	The Last Rubble	None								0		
				CP-15 (CP South - 10b, 10a, 12b)	None								0		
				CP-16 (CP South - 7a, 7b, 12a)	None								0		
				The Last Rubble	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7			
			Demolition	CP-15 (CP South - 10b, 10a, 12b)	None								0		
				CP-16 (CP South - 7a, 7b, 12a)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
				The Last Rubble	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				CP-15 (CP South - 10b, 10a, 12b)	None								0		
			Grading & Infrastructure	CP-16 (CP South - 7a, 7b, 12a)	4	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck	(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15			
				CP-15 (CP South - 10b, 10a, 12b)	None								0		
2030	17	Site Preparation	Abatement	CP-13 (CP North - 8a, 8b, 9a, 9b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
				Bldv Park South	None								0		
				Wedge Park 3	None								0		
				Bayview Gardens	None								0		
			Demolition	CP-14 (CP South - 4a, 2a, 4b, 2b)	4	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
				CP-13 (CP North - 8a, 8b, 9a, 9b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10			
				Bldv Park South									0		
				Wedge Park 3	2	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck		13	10	4	2	7		
			Grading & Infrastructure	Bayview Gardens	6	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck		13	10	8	4	7		
				CP-14 (CP South - 4a, 2a, 4b, 2b)	5	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10		
2031	18	Site Preparation	Abatement	Wind Meadow	None								0		
				Mini Wedge 2	None								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		
				Wind Meadow	1	(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		13	10	8	4	7			
			Demolition	Mini Wedge 2	None								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	1	(1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
				Wind Meadow	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13		
				Mini Wedge 2	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	4	2	13		
			Grading & Infrastructure	CP-17 (CP North - 4a, 5a, 4b, 5b)	7	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (2) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	33	26	16	8	17		
				CP-15 (CP South - 10b, 10a, 12b)	None								0		
2032	19	Site Preparation	Abatement	The Heart of Park	None								0		
				The Point	None								0		
				CP-16 (CP South - 7a, 7b, 12a)	3	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	(1) Pile Driver	40	32	16	8	20		
				CP-15 (CP South - 10b, 10a, 12b)	None								0		
			Grading & Infrastructure	The Heart of Park	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck		13	10	8	4	7		
				The Point	8	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck		13	10	8	4	7		
				CP-16 (CP South - 7a, 7b, 12a)	3	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		
			Demolition	CP-18 (CP North - 7a, 6a, 7b, 6b)	None								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		
2033	20	Site Preparation	Abatement	CP-18 (CP North - 7a, 6a, 7b, 6b)	1	(2) Man Lifts, (1)Excavators,(1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks		18	14	16	8	9			
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		
				CP-18 (CP North - 7a, 6a, 7b, 6b)	1								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		
			Grading & Infrastructure	CP-18 (CP North - 7a, 6a, 7b, 6b)	1								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		
				CP-18 (CP North - 7a, 6a, 7b, 6b)	1								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		
			Demolition	CP-18 (CP North - 7a, 6a, 7b, 6b)	1								0		
				CP-17 (CP North - 4a, 5a, 4b, 5b)	None								0		

Draft: CPHPSII Project: Construction Workers and Equipment for Candlestick Point Construction Phase (Revision Date: 11/18/2013)

Prepared by TRC for EIR Analysis

Major Phase Indicator
Subphase Color Coding
1 CP
2 CP
3 CP
4 CP

Year	Project Year	Horizontal (Site Prep) or Vertical Duration (Building Const.)	Construction Phase Type	Project Sub Phase	Duration (Months)	Construction Equipment			Daily Construction Workers		Daily Construction Truck Trips		
						Full Time	1/2 Time	1/4 Time	Max Number of Workers	Avg. Number of Workers	Max Number of Truck Trips	Avg. Number of Truck Trips	Number of On Site Equipment
2032	19		Grading & Infrastructure	CP-18 (CP North - 7a, 6a, 7b, 6b)	7	(2)Excavators, (1)Loaders, (1)Bobcat, (1)Compactors, (1)Water Truck, (1) Off Road Dump Truck		(1) Grader, (1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers	30	24	16	8	15
				CP-16 (CP South - 7a, 7b, 12a)	None								0
			Foundation Piles/Structure/Rough-In	Wind Meadow	None								0
				Mini Wedge 2	None								0
				CP-16 (CP South - 7a, 7b, 12a)	None								0
			Interior and Exterior Finishes	Wind Meadow	8		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7
				Mini Wedge 2	2		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	4	2	7
2033	20		Site Preparation	Abatement	Earl Blvd Park 3	None							0
				Abatement	Grassland S1	None							0
				Abatement	CP-18 (CP North - 7a, 6a, 7b, 6b)	None							0
				Demolition	Earl Blvd Park 3	1		(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7
					Grassland S1	1		(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7
					CP-18 (CP North - 7a, 6a, 7b, 6b)	None							0
			Grading & Infrastructure	Earl Blvd Park 3	1	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13
				Grassland S1	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	(1) Asphalt Layer, (1) Soil stabilizer, (1) Roller, (1) Dozers, (1)Compactors,	25	20	8	4	13
				CP-18 (CP North - 7a, 6a, 7b, 6b)	None								0
				Foundation Piles/Structure/Rough-In	CP-17 (CP North - 4a, 5a, 4b, 5b)	6	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	20	16	16	8	10
				Interior and Exterior Finishes	CP-17 (CP North - 4a, 5a, 4b, 5b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		10	8	8	4	5
2034	21		Site Preparation	Abatement	Grassland S2	None							0
				Demolition	Grassland S2	1		(1) Man Lifts, (1) Off Road Dump Truck, (1)Loaders, (1)Dozer, (1)Water Trucks	13	10	8	4	7
				Grading & Infrastructure	Grassland S2	3	(1)Excavators, (1)Loaders, (1)Bobcat, (1) Off Road Dump Truck	(1)Water Truck	25	20	8	4	13
			Building Construction	Foundation Piles/Structure/Rough-In	CP-17 (CP North - 4a, 5a, 4b, 5b)	None							0
					Earl Blvd Park 3	None							0
					Grassland S1	None							0
					CP-18	7	(1)Excavators, (1)Loaders,(1)Water Trucks, (1)Cranes, (1) Man Lift	(1) Cement Truck, (1) Pump Truck	40	32	16	8	20
					CP-17 (CP North - 4a, 5a, 4b, 5b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Pile Driver	10	8	8	4	5
				Interior and Exterior Finishes	Earl Blvd Park 3	1		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	13	10	8	4	7
					Grassland S1	10		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	13	10	8	4	7
					CP-18 (CP North - 7a, 6a, 7b, 6b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift		20	16	8	4	10
					CP-18 (CP North - 7a, 6a, 7b, 6b)	None							0
2035	22		Building Construction	Foundation Piles/Structure/Rough-In	CP-18 (CP North - 7a, 6a, 7b, 6b)	None							0
				Foundation Piles/Structure/Rough-In	Grassland S2	None							0
			Interior and Exterior Finishes	CP-18 (CP North - 7a, 6a, 7b, 6b)	4	(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift			20	16	8	4	10
				Grassland S2	10		(1)Loader, (1) Man Lift, (1) Sweeper, (1) Rough Terrain Fork Lift	(1) Water Truck	13	10	8	4	7

Construction Phase	Yearly Average Duration (months)	Daily Construction Workers		Daily Construction Truck Trips ¹	Daily Construction Truck Trips ¹	Yearly Barge Trips		Construction Equipment ^{2,3}	Construction Equipment ²	Construction Equipment ²
		Max. Number of workers	Avg. Number of workers	Max. Number of truck trips	Avg. Number of truck trips					
Hunters Point Shipyard										
2020 Shoreline Demolition and Improvements (Waterfront Prom N1+ N2)	9	21	18	0	0	6	6	(1) Floating Platforms, (1) Bobcat		
2021 Shoreline Demolition and Improvements (Waterfront Prom N1 + N2)	9	21	18	0	0	6	6	(2) Floating Platforms, (1) Bobcat	(1) Cranes, (1)Barge, (1) Bobcat	
2022 Shoreline Demolition and Improvements (Heritage Parks 1)	5	12	11	0	0	20	4	(4) Floating Platforms, (4) Cranes, (2) Excavator, (2) Bobcat	(2)Barge	
2023 Shoreline Demolition and Improvements (Heritage Parks 1 +2)	9	24	21	0	0	40	7	(4) Floating Platforms, (4) Cranes, (2) Excavator, (2) Bobcat	(2)Barge	
2024 Shoreline Demolition and Improvements (Heritage Park 2)	5	24	21	0	0	30	7	(2) Floating Platforms, (2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2027 Shoreline Demolition and Improvements (Waterfront Prom S 1b)	3	8	7	0	0	8	4	(2) Floating Platforms, (2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2028 Shoreline Demolition and Improvements (Waterfront Prom S 1b)	3	8	7	0	0	8	4	(2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2029 Shoreline Demolition and Improvements (Waterfront Prom S 2b, Waterfront Prom South 2a)	9	24	21	0	0	40	7	(2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2030 Shoreline Demolition and Improvements (Waterfront Prom S 2b, Waterfront Prom S 2a, Waterfront Prom S 1a, Waterfront Prom NP)	7	17	15	0	0	18	7	(4) Floating Platforms, (4) Cranes, (2) Excavator, (2) Bobcat	(2)Barge	
2031 Shoreline Demolition and Improvements (Grassland EP South, Waterfront R&E Park, Waterfront Prom S 1a, Waterfront Prom NP, Regunning Crane Pier)	11	25	22	0	0	28	11	(2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2032 Shoreline Demolition and Improvements (Grassland EP South, Waterfront R&E Park, Regunning Crane Pier)	9	21	18	0	0	22	9	(2) Cranes, (1) Excavator, (1) Bobcat	(1)Barge	
2033 Shoreline Demolition and Improvements (Grassland EP North)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2034 Shoreline Demolition and Improvements (Grassland EP North)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
Candlestick Point										
2024 Shoreline Improvements (Last Port + The Neck)	4	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2028 Shoreline Improvements (Bayview Gardens)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2029 Shoreline Improvements (The Last Rubble)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2030 Shoreline Improvements (The Point + The Heart of the Park)	4	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2031 Shoreline Improvements (Wind Meadow)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2033 Shoreline Improvements (Grasslands S1)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge
2034 Shoreline Improvements (Grasslands S2)	2	7	5	0	0	2	3	(1) Excavator		(1) Crane, (1) Barge

SOURCE: MACTEC

Note:

1. Number of truck trips making deliveries, and number of truck trips required for materials removal, see assumptions for trip details.
 2. The construction equipment in this table identifies what will be required in addition to the equipment already onsite performing infrastructure work.
 3. It should be assumed that all Floating Platforms referenced in the "Construction Equipment" columns will be propane or electric powered.
- (2) = Number of pieces of specified equipment.

Assumptions

Each truck will be able to carry 15 cy of material
Each barge will be able to carry 2500 tons of material
Hunters Point Shipyard import fill will be brought on site by barge (100%)
Candlestick Point import fill will be brought on site by barge (50%), and sourced on site (50%).
Quantities do not account for work performed by Navy.

Construction Phase	Yearly Average Duration (months)	Daily Construction Workers		Daily Construction Truck Trips ¹			Construction Equipment ³	Construction Equipment ³	Construction Equipment ³
		Max. Number of workers	Avg. Number of workers	Max. Number of truck trips	Avg. Number of truck trips	Number of on site equipment	Full Time	1/2 Time	1/4 Time
Field Management 2014	12	20	16	4	2	8		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2015	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2016	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2017	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2018	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2019	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2020	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2021	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2022	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2023	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2024	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2025	12	25	20	8	4	10		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2026	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2027	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2028	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2029	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2030	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2031	12	15	12	8	4	10		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2032	12	25	20	4	2	6		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2033	12	25	20	4	2	6		(6)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2034	12	15	12	4	2	6		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	
Field Management 2035	12	15	12	4	2	6		(2)Onsite Field Trucks, Backup Equipment (see note 2): (1)Loaders, (1)Haul Trucks, (1)Water Trucks, (1) Man Lift	

Note:

1. Number of truck trips making deliveries, and number of truck trips required for materials removal, see assumptions for trip details.
 2. Back up equipment is kept onsite to minimize downtime if a piece of equipment breaks down and needs replacement. Typically this equipment will not be used on a day to day basis.
 3. It should be assumed that all Man Lifts referenced in the "Construction Equipment" columns will be propane or electric powered.
 4. Hunters Point and Candlestick Point will each utilize a new dedicated crushing plant located near the Bay. The crushing plants will be comprised of 1 loader, 1 hammer, 1 screener, 1 crusher and an adjacent batch plant. Each crushing plant will operate ½ time.
- (2) = Number of pieces of specified equipment.

Assumptions

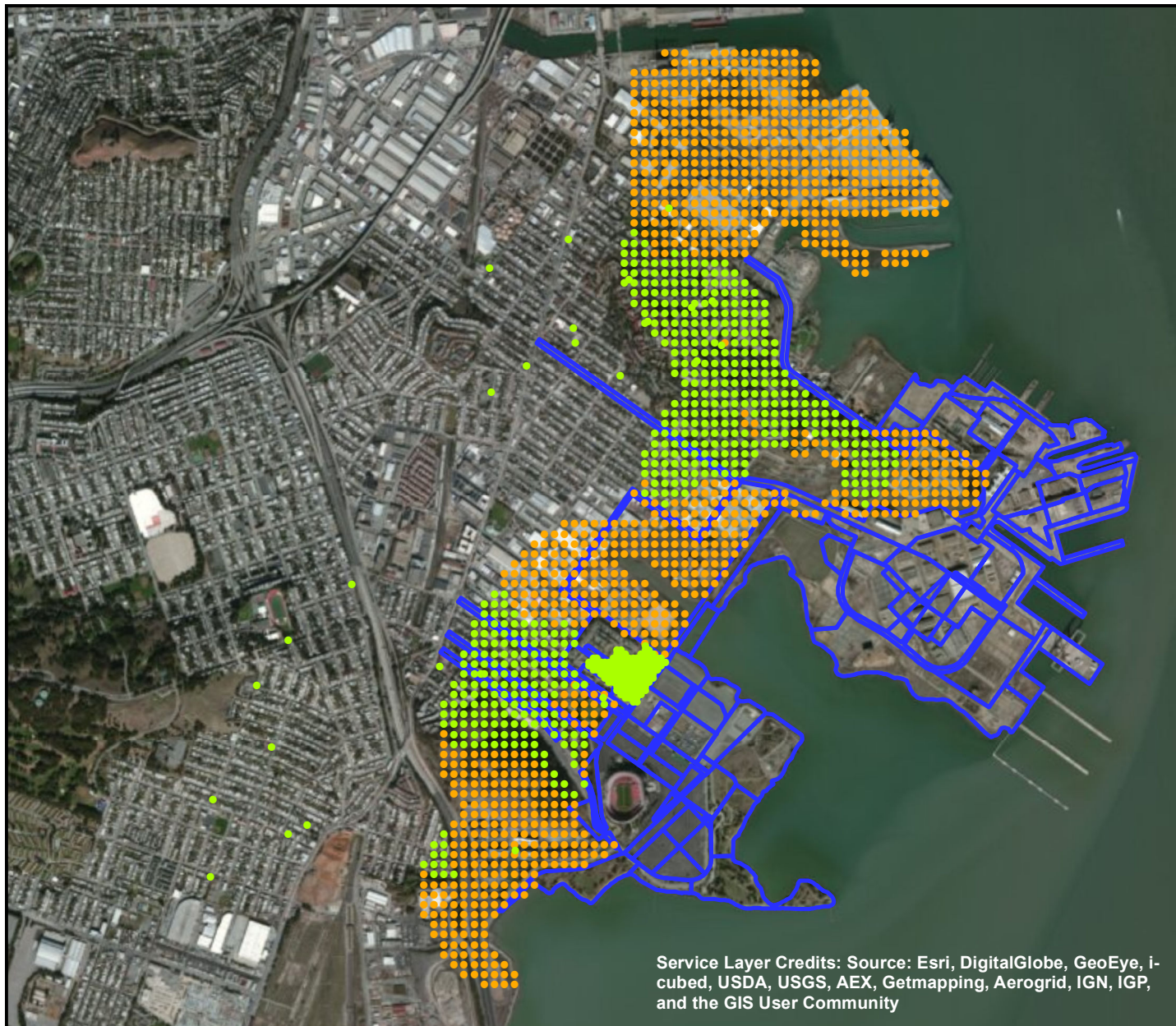
Max. number of round trips to 8 total trips

Each truck will be able to carry 20 tons of material

Personal vehicle trips to and from the construction site were not included in the truck trip calculations and are estimated to be 1 trip for every 2 workers as incentives will be offered for use of mass transit and car/van pooling.

Import fill will be brought onto the site through two primary modes; Trucks (60%) and Barge (40%).

Quantities do not account for concurrent remediation work occurring at Hunters Point Shipyard.



Legend

- Resident/Sensitive (Adult & Child)
- Worker
- Property Boundary

0 500 1,000
Meter

0 2,500 5,000
Feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Proposed Receptor Location Refinements to the Candlestick Point - Hunters Point Shipyards Phase II Development Plan San Francisco, California



Attachment
C



Legend

◆ Modeled Volume Source

Sources are modeled at
30 meter spacing within the grid.

0 500 1,000
Meter

0 1,000 2,000
Feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



**Modeled Source Location
Refinements to the Candlestick Point - Hunters Point
Shipyard Phase II Development Plan
San Francisco, California**



Attachment
D

Transit Improvement Phasing - DRAFT FOR DISCUSSION PURPOSES ONLY

Annual Costs Based on Hunters Point Development

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Begin Hunters Point Express (HPX)	20	192	2	146	\$ 770,659	\$ 3,024,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,794,659	\$ 770,659	\$ 770,659	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	12	320	2	304	\$ 1,284,431	\$ 5,040,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,300,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431	\$ 1,284,431
Extend 23-Monterey	15	256	2	146	\$ 381,469	\$ 414,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 795,469	\$ 381,469	\$ 381,469	\$ 381,469	\$ 381,469	\$ 381,469	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Extend 24-Divisadero	7.5	512	3	532	\$ 1,493,197	\$ 2,760,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,839,197	\$ 1,493,197	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	6	640	3	636	\$ 3,373,144	\$ 5,520,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,133,144	\$ 3,373,144	\$ 3,373,144	\$ 3,373,144	\$ 3,373,144	\$ 3,373,144	\$ 3,373,144
Extend 48-Quintara	15	256	1	1	\$ 127,173	\$ 180,000	\$ -	\$ -	\$ -	\$ 307,173	\$ 127,173	\$ 127,173	\$ 127,173	\$ 127,173	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	10	384	2	304	\$ 507,216	\$ 1,260,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,587,216	\$ 507,216	\$ 507,216	\$ 507,216	\$ 507,216	\$ 507,216	\$ 507,216	\$ 507,216	\$ 507,216	\$ 507,216	\$ 507,216	\$ 507,216
Extend 44-O'Shaughnessy	7.5	512	1	73	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	6.5	591	2	304	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PM Transit Trips from HP Dev'l Area							0	0	0	74	124	146	146	257	356	462	462	584	589	754	895	1013	1039	1051	1139	1139
HP generated Annual Cost							\$ -	\$ -	\$ -	\$ 307,173	\$ 127,173	\$ 4,717,301	\$ 1,279,301	\$ 1,279,301	\$ 5,269,116	\$ 2,173,116	\$ 2,173,116	\$ 5,630,844	\$ 3,284,844	\$ 7,924,791	\$ 5,164,791	\$ 5,164,791	\$ 5,164,791	\$ 5,164,791	\$ 5,164,791	\$ 5,164,791

Annual Costs Based on Candlestick Point Development

		One-Way Capacity Serving Project Site		Trigger (PM Peak	Yearly O&M																						
Improvement	Headway (min.)	(pax/hr)	Major Phase	Hour Transit Trips	Costs	Capital Costs	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
Begin Candlestick Point Express (CPX)	15	256	2	1193	\$ 1,786,049	\$ 6,624,000	\$ -	\$ -	\$ 8,410,049	\$ 1,786,049	\$ 1,786,049	\$ 1,786,049	\$ 1,786,049	\$ 1,786,049	\$ 1,786,049	\$ 1,786,049	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	12	320	3	1464	\$ 2,679,075	\$ 9,936,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,991,075	\$ 2,679,075	\$ 2,679,075	\$ 2,679,075	\$ 2,679,075	\$ 2,679,075	\$ 2,679,075	\$ 2,679,075	\$ 2,679,075	\$ 2,679,075	
Extend 29-Sunset	10	384	1	239	\$ 108,806	\$ 243,000																					
	5	768	1	835	\$ 1,001,718	\$ 2,673,000	\$ 3,674,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718	\$ 1,001,718		
Total PM Transit Trips from CP Dev'l Area							1123	1168	1193	1193	1238	1238	1268	1332	1356	1395	1464	1464	1494	1552	1666	1694	1752	1752	1802	1851	
CP generated Annual Cost							\$ 3,674,718	\$ 1,001,718	\$ 9,411,767	\$ 2,787,767	\$ 2,787,767	\$ 2,787,767	\$ 2,787,767	\$ 2,787,767	\$ 2,787,767	\$ 2,787,767	\$ 6,992,793	\$ 3,680,793	\$ 3,680,793	\$ 3,680,793	\$ 3,680,793	\$ 3,680,793	\$ 3,680,793	\$ 3,680,793	\$ 3,680,793	\$ 3,680,793	\$ 3,680,793

Annual Costs Based on Total Development

		One-Way Capacity																									
Improvement	Headway (min.)	Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
Begin/Extend 28L/BRT	8	480	2	1456	\$ 3,930,543	\$ 6,426,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,356,543	\$ 3,930,543	\$ 3,930,543	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	5	768	3	1926	\$ 4,942,586	\$ 7,803,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,319,586	\$ 4,942,586	\$ 4,942,586	\$ 4,942,586	\$ 4,942,586	\$ 4,942,586	\$ 4,942,586	\$ 4,942,586	\$ 4,942,586	\$ 4,942,586	
T-Third	6	2020	2		\$ -	\$ 35,530,000	\$ -	\$ -	\$ -	\$ -	\$ 17,765,000	\$ -	\$ -	\$ -	\$ -	\$ 17,765,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	5		3		\$ 5,120,219	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,560,110	\$ 2,560,110	\$ 2,560,110	\$ 2,560,110	\$ 2,560,110	\$ 5,120,219	\$ 5,120,219	\$ 5,120,219	\$ 5,120,219	\$ 5,120,219	\$ 5,120,219	\$ 5,120,219	\$ 5,120,219	\$ 5,120,219	\$ 5,120,219		
Total PM Transit Trips from HP/CP Dev'l Area							1123	1168	1193	1267	1362	1384	1414	1589	1712	1857	1926	2048	2083	2306	2561	2707	2791	2803	2941	2990	
Combined dev'l costs							\$ -	\$ -	\$ -	\$ -	\$ 20,325,110	\$ 2,560,110	\$ 2,560,110	\$ 12,916,653	\$ 6,490,653	\$ 26,815,762	\$ 11,439,805	\$ 10,062,805	\$ 10,062,805	\$ 10,062,805	\$ 10,062,805	\$ 10,062,805	\$ 10,062,805	\$ 10,062,805	\$ 10,062,805	\$ 10,062,805	
Total Operating & Maintenance Costs							\$ 1,001,718	\$ 1,001,718	\$ 2,787,767	\$ 2,914,940	\$ 5,475,050	\$ 6,627,178	\$ 6,627,178	\$ 10,557,721	\$ 11,451,536	\$ 14,011,645	\$ 15,916,714	\$ 17,028,442	\$ 17,028,442	\$ 18,908,389	\$ 18,908,389	\$ 18,908,389	\$ 18,908,389	\$ 18,908,389	\$ 18,908,389	\$ 18,908,389	
Total Capital Costs							\$ 2,673,000	\$ -	\$ 6,624,000	\$ 180,000	\$ 17,765,000	\$ 3,438,000	\$ -	\$ 6,426,000	\$ 3,096,000	\$ 17,765,000	\$ 4,689,000	\$ 2,346,000	\$ -	\$ 2,760,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Notes:

General: Note that triggers are based on total site transit trip generation; only a fraction of the "trigger" amount will travel on each transit route.

Transit Improvement Phasing - DRAFT FOR DISCUSSION PURPOSES ONLY

Stadium Option

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2013	2014	2015	2016	2017	2018	2019	2020
Begin Hunters Point Express (HPX)	20	192	1	115	\$ 562,581	\$ 2,688,000	\$ -	\$ 3,250,581	\$ 562,581	\$ 562,581	\$ -	\$ -	\$ -	\$ -
	12	320	1	288 [2]	\$ 937,634	\$ 4,480,000	\$ -	\$ -	\$ -	\$ -	\$ 2,729,634	\$ 937,634	\$ 937,634	\$ 937,634
Extend 23-Monterey	15	256	1	115 [1]	\$ 278,472	\$ 368,000	\$ -	\$ 646,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ 278,472
Extend 24-Divisadero	10	384	2	643 [1]	\$ 1,090,034	\$ 2,760,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	7.5	512	2	744 [2]	\$ 2,462,395	\$ 5,520,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Extend 48-Quintara	15	256	1	1 [3]	\$ 92,837	\$ 160,000	\$ 252,837	\$ 92,837	\$ 92,837	\$ 92,837	\$ -	\$ -	\$ -	\$ -
	10	384	1	288 [2]	\$ 370,268	\$ 1,120,000	\$ -	\$ -	\$ -	\$ -	\$ 1,330,268	\$ 370,268	\$ 370,268	\$ 370,268
Extend 44-O'Shaughnessy	7.5	512	1	115 [1]	\$ -	\$ -	\$ -	C&O	O	O	\$ -	\$ -	\$ -	\$ -
	6.5	591	1	288 [2]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	C&O	O	O	O
Begin Candlestick Point Express (CPX)	20	192	2	164 [3]	\$ 977,862	\$ 4,416,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,393,862	\$ 977,862
	15	256	2	838 [2]	\$ 1,303,816	\$ 5,888,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	10	384	3	1514 [3]	\$ 1,955,725	\$ 8,832,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Extend 29-Sunset	10	384	2	433 [1]	\$ 79,429	\$ 216,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	5	768	2	838 [2]	\$ 731,254	\$ 2,376,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Begin/Extend 28L/BRT	8	480	2	1075 [1, 4]	\$ 2,869,297	\$ 5,712,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	5	768	2	1582 [2, 4]	\$ 3,608,088	\$ 6,936,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Annual Costs							\$ 252,837	\$ 3,989,890	\$ 933,890	\$ 933,890	\$ 4,338,375	\$ 1,586,375	\$ 6,980,237	\$ 2,564,237

T-Third	7.5	1616			\$ 1,650,964	\$ 23,800,000
Construct Hunters Point Shipyard Transit	N/A	N/A	1	onstruction of HPS Stadium		

Notes:

General: Note that triggers are based on total site transit trip generation; only a fraction of the "trigger" amount will travel on each transit route.

1. Initial route extensions based on 20% of buildout of Major Phase (based on Stadium Option land uses)
2. Based on 50% buildout of Major Phase (based on Stadium Option land uses)
3. Based on initiation of Major Phase. In the case of the CPX, this is because completion of Major Phase 1 will include some residential development that could be served by the CPX, but not likely enough until full buildout of Major Phase 1. In the case of the 48-Quintara, the route would be extended as part of the TEP. Initial route will depend on which streets are constructed.
4. Includes total of trips generated by CP and HP. In the case of the 28L, this means 20% buildout of Major Phase II.
5. Under Non-Stadium Option, implementation of Hunters Point Transit Center based on service improvements to HPX, 48-Quintara, and 44-O'Shaughnessy.
6. C = Capital Costs, O = Yearly O&M Costs

Transit Improvement Phasing - DRAFT FOR DISCUSSION PURPOSES ONLY

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Stadium Option		Yearly O&M Costs	Capital Costs																		
			Major Phase	Trigger (PM Peak Hour Transit Trips)																				
							2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
Begin Hunters Point Express (HPX)	20	192	1	115	\$ 562,581	\$ 2,688,000	N	C+O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	12	320	1	288 [2]	\$ 937,634	\$ 4,480,000	N	N	N	N	C+O	O	O	O	O	O	O	O	O	O	O	O	O	O
Extend 23-Monterey	15	256	1	115 [1]	\$ 278,472	\$ 368,000	N	C+O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Extend 24-Divisadero	10	384	2	643 [1]	\$ 1,090,034	\$ 2,760,000	N	N	N	N	N	N	N	N	N	N	C+O	N	N	N	N	N	N	N
	7.5	512	2	744 [2]	\$ 2,462,395	\$ 5,520,000	N	N	N	N	N	N	N	N	N	N	N	C+O	O	O	O	O	O	O
Extend 48-Quintara	15	256	1	1 [3]	\$ 92,837	\$ 160,000	C+O	O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	10	384	1	288 [2]	\$ 370,268	\$ 1,120,000	N	N	N	N	C+O	O	O	O	O	O	O	O	O	O	O	O	O	O
Extend 44-O'Shaughnessy	7.5	512	1	115 [1]	\$ -	\$ -	N	C+O	O	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	6.5	591	1	288 [2]	\$ -	\$ -	N	N	N	N	C+O	O	O	O	O	O	O	O	O	O	O	O	O	O
Total PM Transit Trips from HP Dev'l Area							40	168	199	243	453	528	575	575	575	646	722	745	867	913	913	913	913	
Begin Candlestick Point Express (CPX)	20	192	2	164 [3]	\$ 977,862	\$ 4,416,000	N	N	N	N	N	N	C+O	O	N	N	N	N	N	N	N	N	N	N
	15	256	2	838 [2]	\$ 1,303,816	\$ 5,888,000	N	N	N	N	N	N	N	N	C+O	O	O	O	O	N	N	N	N	N
	10	384	3	1514 [3]	\$ 1,955,725	\$ 8,832,000	N	N	N	N	N	N	N	N	N	N	N	N	C	O	O	O	O	O
Extend 29-Sunset	10	384	2	433 [1]	\$ 79,429	\$ 216,000	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	5	768	2	838 [2]	\$ 731,254	\$ 2,376,000	N	N	N	N	N	N	N	N	C+O	O	O	O	O	O	O	O	O	O
Total PM Transit Trips from CP Dev'l Area							29	42	62	90	137	150	177	344	966	1320	1421	1444	1513	1695	1717	1803	1872	
Begin/Extend 28L/BRT	8	480	2	1075 [1, 4]	\$ 2,869,297	\$ 5,712,000	N	N	N	N	N	N	N	N	C+O	N	N	N	N	N	N	N	N	N
	5	768	2	1582 [2, 4]	\$ 3,608,088	\$ 6,936,000	N	N	N	N	N	N	N	N	N	C+O	O	O	O	O	O	O	O	O
Total PM Transit Trips from HP/CP Dev'l Area							69	210	261	333	590	677	752	919	1541	1966	2143	2189	2380	2608	2630	2716	2785	
T-Third	7.5	1616			\$ 1,650,964	\$ 23,800,000																		
Construct Hunters Point Shipyard Transit C	N/A	N/A	1	Construction of HPS Stadium																				

Notes:

General: Note that triggers are based on total site transit trip generation; only a fraction of the "trigger" amount will travel on each transit route.

- Initial route extensions based on 20% of buildout of Major Phase (based on Stadium Option land uses)
- Based on 50% buildout of Major Phase (based on Stadium Option land uses)
- Based on initiation of Major Phase. In the case of the CPX, this is because completion of Major Phase 1 will include some residential development that could be served by the CPX, but not likely enough until full buildout of Major Phase 1. In the case of the 48-Quintara, the route would be extended as part of the TEP. Initial route will depend on which streets are constructed.
- Includes total of trips generated by CP and HP. In the case of the 28L, this means 20% buildout of Major Phase II.
- Under Non-Stadium Option, implementation of Hunters Point Transit Center based on service improvements to HPX, 48-Quintara, and 44-O'Shaughnessy.
- C = Capital Costs, O = Yearly O&M Costs

Hunter's Point Phase 1

Year	New PM Transit Trips	Total New PM Transit Trips
2013	40	40
2014	128	168
2015	31	199
2016	44	243
2017	210	453
2018	74	528
2019	47	575
<i>Total</i>	<i>575</i>	<i>575</i>

Hunter's Point Phase 2

Year	New PM Transit Trips	Total New PM Transit Trips
2022	71	646
2023	76	722
2024	23	745
2025	122	867
2026	45	913
<i>Total</i>	<i>338</i>	<i>913</i>

Candlestick Phase 1

Year	New PM Transit Trips	Total New PM Transit Trips
2013	29	29
2014	13	42
2015	20	62
2016	28	90
2017	47	137
2018	13	150
2019	13	163
<i>total</i>	<i>163</i>	<i>163</i>

Candlestick Phase 2

Year	New PM Transit Trips	Total New PM Transit Trips
2019	14	177
2020	167	344
2021	622	966
2022	354	1320
2023	101	1421
2024	23	1444
2025	69	1513
<i>total</i>	<i>1350</i>	<i>1513</i>

Candlestick Phase 3

Year	New PM Transit Trips	Total New PM Transit Trips
2026	182	1695
2027	22	1717

2028	87	1803
2029	68	1872
<i>total</i>	359	1872

Hunter's Point Phase 1

Year	Retail	Retail trip gen	R&D	R&D Trip gen	Artist	Hotel	Hotel Trip gen	Arena
2013		0.75		0.19			N/A	
2014		0.75	500	0.19			N/A	
2015		0.75		0.19			N/A	
2016	10	0.75		0.19			N/A	
2017	74	0.75	84	0.19	225		N/A	
2018	25	0.75		0.19			N/A	
2019	16	0.75	138	0.19			N/A	
<i>Total</i>	125		722		225			

Hunter's Point Phase 2

Year	Retail	Retail trip gen	R&D	R&D Trip gen	Artist	Hotel	Hotel Trip gen	Arena
2022		0.75	373	0.19			N/A	
2023		0.75	400	0.19			N/A	
2024		0.75	123	0.19			N/A	
2025		0.75	643	0.19			N/A	
2026		0.75	239	0.19			N/A	
<i>Total</i>			1,778					

Candlestick Phase 1

Year	Retail	Retail trip gen	Office	Office Trip gen	Artist	Hotel	Hotel Trip gen	Arena
2013		0.95		0.64			0.15	
2014		0.95		0.64			0.15	
2015		0.95		0.64			0.15	
2016		0.95		0.64			0.15	
2017		0.95		0.64			0.15	
2018		0.95		0.64			0.15	
2019		0.95		0.64			0.15	
<i>total</i>								

Candlestick Phase 2

Year	Retail	Retail trip gen	Office	Office Trip gen	Artist	Hotel	Hotel Trip gen	Arena
2019		0.95		0.64			0.15	
2020	35	0.95		0.64			0.15	
2021	515	0.95	150	0.64			0.15	75
2022	211	0.95		0.64		220	0.15	
2023		0.95		0.64			0.15	
2024		0.95		0.64			0.15	
2025		0.95		0.64			0.15	
<i>total</i>	760		150			220		75

Candlestick Phase 3

Year	Retail	Retail trip gen	Office	Office Trip gen	Artist	Hotel	Hotel Trip gen	Arena
------	--------	-----------------	--------	-----------------	--------	-------	----------------	-------

2026	0.95	0.64	0.15
2027	0.95	0.64	0.15
2028	0.95	0.64	0.15
2029	0.95	0.64	0.15
<i>total</i>			

Residential	Res trip gen	Total New PM Transit Trips
310	0.13	40
255	0.13	128
239	0.13	31
280	0.13	44
1,068	0.13	210
426	0.13	74
68	0.13	47
2,646		575

2646

Residential	Res trip gen	Total New PM Transit Trips
	0.13	71
	0.13	76
	0.13	23
	0.13	122
	0.13	45
		338

Residential	Res trip gen	Total New PM Transit Trips
225	0.13	29
98	0.13	13
155	0.13	20
214	0.13	28
361	0.13	47
100	0.13	13
100	0.13	13
1,253		163

Residential	Res trip gen	Total New PM Transit Trips
110	0.13	14
1,030	0.13	167
289	0.13	622
929	0.13	354
775	0.13	101
177	0.13	23
529	0.13	69
3,839		1,350

Residential	Res trip gen	Total New PM Transit Trips
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1,402	0.13	182
168	0.13	22
666	0.13	87
526	0.13	68
2,762		359

total phase1	1,253
total phase 2	3,839
total phase 3	2,762



March 28, 2013

Mr. Peter Albert, SFMTA
and Mr. Wells Lawson, Successor Agency to the Redevelopment Agency
1 South Van Ness Avenue
San Francisco, CA 94103

Subject: DRAFT Proposed Methodology for Monitoring and Measuring Transit-Related Impacts due to the Candlestick Point – Hunters Point Shipyard Phase II Redevelopment Plan

Dear Peter and Wells:

As you recall, the Candlestick Point – Hunters Point Shipyard Phase II Redevelopment Plan (“Project”) Environmental Impact Report (“EIR”) identified a number of impacts to transit travel time due to Project-related and other long-term Cumulative development-related traffic congestion in the study area. The EIR included a number of Mitigation Measures aimed at reducing the severity of those impacts. However, because of the somewhat conservative nature of the methodology used to identify those impacts, the Mitigation Measures called for transit travel times to be monitored over time to determine whether impacts materialized to the extent predicted.

This letter outlines a proposed methodology to monitor transit performance during the build-out of the Candlestick Point / Hunters Point Shipyard Redevelopment Plan Phase II Project (“Project”). The monitoring is intended to fulfill the requirements of a number of Mitigation Measures developed as part of the project’s entitlement process.

BACKGROUND

As part of the Project’s Transportation Plan, transit service to the Project area will be substantially increased through a combination of new routes, extensions of existing routes, and increased service frequency. The Project’s Transportation Plan includes a schedule that describes the level of Project build-out at which these various transit improvements should occur, as well as an operational analysis to determine the number of new vehicles that would be required to achieve the specified service frequencies. This data was carried into the Project’s Fiscal Impact Report, which concluded that revenues to the City associated with this new development would be



adequate to fund the anticipated levels of transit service through the buildout of the Project and in perpetuity after the project is completed and the transit service is fully deployed¹.

The Project's EIR identified the potential that transit travel speeds may deteriorate by year 2030 due to three factors associated with the cumulative effects of the Project and other anticipated development in the area:

- **Traffic congestion delay** – As traffic congestion increases in the area, traffic delays result in delays to transit.
- **Transit re-entry delay** – As there is more traffic on the street, it becomes more difficult and time-consuming for transit vehicles to pull back into traffic after pulling out of the traffic stream to load and unload passengers.
- **Passenger boarding delay** – Although increased ridership is generally a positive development, the amount of time a transit vehicle has to stop to load and unload passengers increases as the number of passengers boarding and unloading increases.

A significant impact was projected to occur if the Project were to cause delays to transit routes such that an additional bus² would be required (beyond those already projected to be needed to extend/expand service under baseline congestion levels) to maintain proposed headways. The determination of whether a new bus would be needed was based on whether Project-associated transit delays would increase travel times by more than 1/2 of the proposed service frequency or whether SFMTA's cost and scheduling model, which accounts for driver breaks and scheduled layovers, determined an additional bus would be required. For each route, whichever was the more conservative approach was used. The project's EIR identified a number of significant impacts to transit travel time (based on Table 27, p. 38 in the supplemental memorandum *CP-HPS Phase II Development Plan Transportation Study – Project Variant 2A*, LCW Consulting and Fehr & Peers, March 15, 2010). Table 1 summarizes the Project's impacts associated with transit delay.

¹ As noted in the Project's EIR and in the Transportation Plan, SFMTA retains the ability to modify transit service at any time as part of its ongoing responsibility to serve the entire City and to respond to changing travel patterns over time. The planned transit service is based on the best available forecasts of ridership demands.

² For impacts to the T-Third, the impact would occur if an additional LRV were required. However, for purposes of this memo, the term "bus" is used to generally refer to a bus or LRV.



TABLE 1
SUMMARY OF TRANSIT TRAVEL TIME IMPACTS

Impact	Affected Routes	Roadway Segment	Project-Related Increases to Round-Trip Travel Time¹	Additional Buses Required due to Project²
TR-21	9-San Bruno	San Bruno Avenue and Bayshore Boulevard, between Sunnydale Avenue and Jerrold Avenue	9:31	1
TR-22	23-Monterey	Between Ingalls Street/Oakdale Avenue and Glen Park BART Station	2:21	0
	24-Divisadero	Between Hunters Point Shipyard and Mission Street	16:59	2
	44-O'Shaughnessy	Between Hunters Point Shipyard and the Glen Park BART Station	14:45	2
TR-23	29-Sunset	Between Candlestick Point and Mission Street	33:20	3
TR-24	48-Quintara-24 th Street	Between Hunters Point Shipyard and 24 th Street BART Station	12:09	1
TR-25	54-Felton	Between Jerrold Avenue/Earl Street and Mission Street	9:05	1
TR-26	T-Third	Third Street, between Thomas Avenue and Jerrold Avenue ³	5:47	1
TR-27	28L-19 th Avenue/Geneva Limited	Between Hunters Point Shipyard and Mission Street	3:02	1
Total				12

Notes:

1. Based on the Variant 2A, as defined in the supplemental memorandum *CP-HPS Phase II Development Plan Transportation Study – Project Variant 2A*, LCW Consulting and Fehr & Peers, March 15, 2010. See Table 27, on p. 38. Numbers shown are for the PM peak hour which was the worst-case condition, and reflect the total travel time increases in both directions.
2. Based on the Variant 2A, as defined in the supplemental memorandum *CP-HPS Phase II Development Plan Transportation Study – Project Variant 2A*, LCW Consulting and Fehr & Peers, March 15, 2010. See Table 28, on p. 39. Numbers shown are for the PM peak hour which was the worst-case condition. These numbers reflect the additional vehicles that would be required as a result of overall Project-related congestion in the area, and are in addition to those required to operate the increased service existing traffic conditions and those required to account for other non-Project related contributions to traffic congestion in the area.
3. Represents the section of Third Street in which the T-Third line operates in mixed flow travel lanes

Source: *CP-HPS Phase II Development Plan Transportation Study – Project Variant 2A*, LCW Consulting and Fehr & Peers, March 15, 2010



MITIGATION MONITORING

In order to monitor increases to transit delays, a baseline transit travel time must be established for each route. The baseline transit travel times should be established prior to construction of the Project in order to fully capture the effects of Project-related delays. For many routes, the Project would involve extending and/or modifying the route, such that baseline travel times measured on the existing routes may not be directly applicable to future travel times on a modified route. In these cases the existing average travel speeds will be identified and applied to the length of the future route to establish a theoretical baseline.

In all cases, baseline travel times should be derived and averaged based on SFMTA's GPS data for all typical weekdays (Tuesday through Thursday, non-holiday, while school is in session). For example, the baseline travel times could be the average of all runs through the subject corridor on Tuesdays, Wednesdays and Thursdays between 4 PM and 6 PM in April 2012. The same data should be collected every two years subsequent, during the same time period, and compared to baseline conditions to determine whether significant increases have occurred, based on Table 4, above.

Note that should the SFMTA independently fund and implement features that improve transit travel times along the corridor, the benefits of those improvements shall be measured using the same methodology, and credited toward the baseline against which project and cumulative impacts are measured. For example, if baseline travel times are 3 minutes and SFMTA implements transit priority treatments measured to reduce the travel times by 30 seconds along a corridor, the new baseline shall be 2 minutes and 30 seconds. A subsequent monitoring of travel times that indicates they have risen to 4 minutes shall count as an increase of 1 minute and 30 seconds (above the new baseline) and not 1 minute (above the original baseline).

A proposed methodology to establish baseline travel times for each route is provided below.

9-SAN BRUNO

Travel times and delays for the 9-San Bruno line are measured on San Bruno Avenue and Bayshore Boulevard, between Sunnydale Avenue and Jerrold Avenue. Note that since publication of the EIR, the SFMTA has modified service along this corridor such that two routes are provided: the 9-San Bruno operates local and limited service along the route and express service is provided



by a new 8-Bayshore Express, which operates on a similar route. For purposes of this discussion, to remain consistent with the analysis in the EIR, references to the 9-San Bruno refer to local, limited, and express service offered by the 9-San Bruno and 8-Bayshore routes. Since the 9-San Bruno local service is likely to experience the greatest amount of delay because of the frequency of stops, it will likely be the first route along this corridor to experience delays reaching the level of significance. Therefore, we recommend monitoring only that route.

No changes to the route structure are proposed as part of the Project; therefore, no adjustments to baseline travel times are required in order to create an even comparison to conditions with the Project.

23-MONTEREY

Travel times and delays for the 23-Monterey line are measured along the route from the intersection of Ingalls Street/Oakdale Avenue and the Glen Park BART Station. No changes to the route structure are proposed as part of the Project; therefore, no adjustments to baseline travel times are required in order to create an even comparison to conditions with the Project.

24-DIVISADERO

Travel times and delays for the 24-Divisadero line are measured along the route from the proposed Hunters Point Transit Center in the Hunters Point Shipyard Project site and Mission Street. The existing route terminates at the Oakdale/Palou T-Third Station, at the intersection of Palou Avenue and Third Street. The Project would extend the route into the Hunters Point Transit Center. This means that baseline travel times for a route identical to that proposed under Project conditions cannot be measured directly. To obtain a theoretical baseline travel time that covers a similar route to that proposed under Project buildout conditions, the average travel speed between the route's current terminus at Palou Avenue/Third Street and Mission Street shall be reported³. This speed shall then be applied to the proposed route extension, between Palou Avenue/Third Street and the proposed Hunters Point Transit Center, which is approximately 1.9 miles. The sum of observed travel time between Mission Street and the route's existing terminus at Palou Avenue/Third Street and the extrapolated travel times associated with the route

³ A similar process was followed to establish a baseline travel time for the environmental analysis against which project and cumulative delays were measured.



extension into the Hunters Point Shipyard shall form the baseline travel time against which increases in overall delays shall be measured during Project buildout.

29-SUNSET

Travel times and delays for the 29-Sunset line are measured along the route from Mission Street to the proposed terminus in the regional retail center within Candlestick Point. The existing route travels from Mission Street and Persia Avenue, along Persia Avenue, Mansell Street, San Bruno Avenue, and Paul Avenue to Third Street. East of Third Street, the 29-Sunset makes a loop on Keith Street, Fitzgerald Avenue, Hawes Street, Ingerson Avenue, Giants Drive, and Gilman Avenue back to Third Street. The Project would replace the loop east of Third Street and instead extend the route along Gilman Avenue into Candlestick Point. This means that baseline travel times for a route identical to that proposed under Project conditions cannot be measured directly. To obtain a theoretical baseline travel time that covers a similar route to that proposed under Project buildout conditions, the average travel speed between Mission Street and the intersection of Third Street/Paul Avenue/Gilman Avenue shall be reported. This speed shall then be applied to the proposed route extension, along Gilman Avenue east of Third Street into the proposed Candlestick Point shopping center, which is approximately 1.0 miles. The sum of observed travel time between Mission Street and the Paul Avenue/Gilman Avenue/Third Street intersection and the extrapolated travel times associated with the route extension into the Candlestick Point regional retail site shall form the baseline travel time against which increases in overall delays shall be measured during Project buildout.

44-O'SHAUGHNESSY

Travel times and delays for the 44-O'Shaughnessy line are measured along the route from the proposed Hunters Point Transit Center in the Hunters Point Shipyard Project site and the Glen Park BART Station. The existing route travels from the Glen Park BART Station, along Silver Avenue and Palou Avenue, through the Hunters View neighborhood to the intersection of Ingalls Street/Middlepoint Road/Innes Avenue. From there, the route travels northwest along Middlepoint Road and Evans Avenue to its terminus at Third Street and Evans Avenue. The Project would re-route the 44-O'Shaughnessy such that instead of continuing northwest from the Ingalls Street/Middlepoint Road/Innes Avenue intersection, it would instead travel east along Innes Avenue into the project site, terminating at the Hunters Point Transit Center.



Because the route would change under Project conditions, baseline travel times for a route identical to that proposed under Project conditions cannot be measured directly. To obtain a theoretical baseline travel time that covers a similar route to that proposed under Project buildout conditions, the average travel speed between the portion of the existing route between the Glen Park BART Station and the Ingalls Street/Middlepoint Road/Innes Avenue intersection shall be reported. This speed shall then be applied to the proposed route modification, between the Ingalls Street/Middlepoint Road/Innes Avenue intersection and the proposed Hunters Point Transit Center, which is approximately 1.3 miles. The sum of observed travel time between Mission Street and the route's existing terminus at Palou Avenue/Third Street and the extrapolated travel times associated with the route extension into the Hunters Point Shipyard shall form the baseline travel time against which increases in overall delays shall be measured during Project buildout.

48-QUINTARA-24TH STREET

Travel times and delays for the 48-Quintara-24th Street are measured along the route from the proposed Hunters Point Transit Center in the Hunters Point Shipyard Project site and the 24th Street BART Station. The existing route travels from the 24th Street BART Station, along 24th Street, across US 101 via 23rd Street near San Francisco General Hospital, then along 26th Street and 25th Street to Pennsylvania Street, north on Pennsylvania Street and then east to Third Street along 22nd Street. The Project would re-route the 44-O'Shaughnessy such that it would turn south onto Connecticut Street from 25th Street, and travel across Cesar Chavez Street to Evans Avenue. It would then continue east along Evans Avenue, Middlepoint Road and Innes Avenue into the Project site terminating at the Hunters Point Transit Center. The 48-Quintara-24th Street would essentially replace the 19-Polk route, which currently covers the same path from Connecticut Street/25th Street to the intersection of Innes Avenue and Donohue Street, at the outer edge of the Hunters Point Shipyard site.

Because the route would change under Project conditions, baseline travel times for a route identical to that proposed under Project conditions cannot be measured directly. To obtain a theoretical baseline travel time that covers a similar route to that proposed under Project buildout conditions, the average travel time between the portion of the existing 48-Quintara-24th Street route between the 24th Street BART Station and the 25th Street/Connecticut Street intersection should be combined with the average travel time of the existing 19-Polk route between the intersection of 25th Street/Connecticut Street and the intersection of Innes Avenue/Donohue



Street. The weighted average travel speed of the two segments (i.e., the total combined travel time divided by the total combined route distance) should be applied to the proposed extension of the new 48-Quintara-24th Street from the intersection of Innes Avenue/Donohue Street to the proposed Hunters Point Transit Center, which is approximately 0.7 miles. The sum of observed travel times for the designated portions of the existing 48-Quintara-24th Street and the 19th Polk as well as the extrapolated travel time associated with the route extension into the Hunters Point Shipyard shall form the baseline travel time against which increases in overall delays shall be measured during Project buildout.

54-FELTON

Travel times and delays for the 54-Felton line are measured along the route from the intersection of Mission Street/Geneva Avenue to the intersection of Jerrold Avenue/Earl Street. The existing route has a somewhat meandering route through the Bayview neighborhood, and as part of the Transit Effectiveness Project, SFMTA intends to simplify the route by eliminating segments along Revere Avenue, LaSalle Avenue and Cashmere Street, and by bridging the gap along Ingalls Street between Revere Street and LaSalle Avenue. See the Project's Transportation Plan for further details about the route revisions.

Ultimately, the portion of the route between the Mission Street/Geneva Avenue intersection and Ingalls Street/Revere Avenue would remain unchanged. The new portion of the route within the study segment would be along Ingalls Street from Revere Avenue to Kiska Road, and then along Kiska Road, Kirkwood Avenue, and Earl Street to the Earl Street/Jerrold Avenue intersection. Because of the planned route changes, baseline travel times for a route identical to that proposed under future conditions cannot be measured directly. To obtain a theoretical baseline travel time that covers a similar route to that proposed under Project buildout conditions, the average travel speed between the Mission Street/Geneva Avenue intersection and Ingalls Street/Revere Avenue shall be reported. This speed shall then be applied to the proposed new portion of the route, along Ingalls Street from Revere Avenue to Kiska Road, and then along Kiska Road, Kirkwood Avenue, and Earl Street to the Earl Street/Jerrold Avenue intersection, which is approximately 0.8 miles. The sum of observed travel time between the Mission Street/Geneva Avenue intersection and Ingalls Street/Revere Avenue and the extrapolated travel times associated with the new portion of the route along Ingalls Street from Revere Avenue to Kiska Road, and then along Kiska Road, Kirkwood Avenue, and Earl Street to the Earl Street/Jerrold Avenue intersection shall



form the baseline travel time against which increases in overall delays shall be measured during Project buildout.

T-THIRD

Travel times and delays for the T-Third light rail line are measured along Third Street, between Thomas Avenue and Jerrold Avenue, generally the section of Third Street in which the T-Third operates in mixed flow travel lanes. No changes to the route structure are proposed as part of the Project; therefore, no adjustments to baseline travel times are required in order to create an even comparison to conditions with the Project.

28L-19TH AVENUE/GENEVA LIMITED

Travel times and delays for the 28L-19th Avenue/Geneva Limited are measured from the Mission Street/Geneva Avenue intersection along Geneva Avenue (including the proposed extension of Geneva Avenue between Bayshore Boulevard and Harney Way) through the Candlestick Point and Hunters Point Shipyard sites to the proposed Hunters Point Transit Center. The route currently operates from the Daly City BART Station along 19th Avenue and Park Presidio Boulevard to the intersection of Park Presidio Boulevard and California Street. Although the character of 19th Avenue and Park Presidio Boulevard are somewhat different than Geneva Avenue, both sections of the existing and proposed route would offer limited bus service and travel speeds are likely somewhat similar. Thus, the theoretical baseline travel time for the 28L-19th Avenue/Geneva Limited shall be determined by extrapolating the existing average travel speed of the route to the study section of the route, which is approximately 3.7 miles (2.0 miles along Geneva Avenue from Mission Street to Bayshore Boulevard and 1.7 miles from Bayshore Boulevard through the Project site to the proposed Hunters Point Transit Center).

MITIGATION TIMING

Mitigation Measures TR-21 through TR-27 were adopted as part of the Project's approval to reduce the severity of Impacts TR-21 through TR-27. Generally, the mitigation measures called for transit priority treatments along specific corridors that would improve transit travel times through the provision of transit-only lanes (which reduce the effects of congestion), bus bulbouts (which reduce the delays associated with pulling back into crowded traffic streams), and other



physical improvements aimed at improving transit speeds and reliability. If those measures are deemed infeasible or otherwise shown not to fully mitigate the Project's impacts, the Project would be responsible for purchasing additional transit vehicles such that proposed headways could be maintained, albeit at the lower projected speeds. The measures would be required as soon as significant impacts would occur. As defined in the EIR, for each route, significant impacts would occur when the Project-related travel demand would cause the need for an additional bus to maintain proposed headways.

Table 2 summarizes the amount of overall transit delay that would occur when the Project's contribution to transit delay would constitute a significant impact.



TABLE 2
TRANSIT MITIGATION MEASURE TRIGGERS¹

Route	Delay due to Cumulative Development (No Project) ²	Delay due to Project (Variant 2A) ³	Total Transit Delay Increase by 2030	Additional Buses Required due to Project Contribution ³	Increment of Project Delay Requiring Mitigation ⁴	Project's % Contribution to Total Delay ⁵	Total Delay at which Project's Contribution Results in Significant Impact ⁶
9-San Bruno	1:06:55	9:31	1:16:26	1	4:46	12.5%	38:13
23-Monterey	18:40	2:21	21:01	0	N/A ⁷	11.2%	N/A ⁷
24-Divisadero	0:57	16:59	17:56	2	5:40	94.7%	5:59
44-O'Shaughnessy	23:18	14:45	38:03	2	4:55	38.8%	12:41
29-Sunset	4:34	33:20	37:54	3	8:20	88.0%	9:29
48-Quintara-24 th Street	13:37	12:09	25:46	1	6:05	47.2%	12:53
54-Felton	20:27	9:05	29:32	1	4:33	30.8%	14:46
T-Third	9:29	5:47	15:16	1	2:54	37.9%	7:38
28L-19 th Avenue/Geneva Limited	7:49	3:02	11:01	1	1:31	27.5%	5:31

Notes:

1. Based on the Variant 2A, as defined in the supplemental memorandum *CP-HPS Phase II Development Plan Transportation Study – Project Variant 2A*, LCW Consulting and Fehr & Peers, March 15, 2010. See Table 27, on p. 38. Numbers shown are for the PM peak hour, which was the worst-case condition for Project impacts.
2. Based on Alternative 1 (No Project), as defined in the *CP-HPS Phase II Development Plan Transportation Study – Final Report*, LCW Consulting and Fehr & Peers, November 9, 2009. See Table 82, on p. 291. Numbers shown are the sum of delays to travel time in both directions for the PM peak hour which was the worst-case condition.
3. As presented in Table 1.
4. Conservatively calculated by dividing total project delays by total number of buses required due to project delays, plus one additional bus assuming that as a worst-case, the delay is on the cusp of requiring an additional bus beyond what is reported. Represents the level of Project contribution to overall delays when Project's contribution is significant.
5. Based on percent of total delays attributed to the Project.
6. Based on percent of project contribution and level of project contribution at which significant impact occurs. For example, on the 9-San Bruno, the Project's contribution to total transit delays becomes a significant impact when the delay reaches 4:46. The Project contributes 12.5% of the total delay to the 9-San Bruno. Therefore, the total delay at which the project's contribution becomes significant is 4:46 / 12.5%, or 38:13.
7. The EIR determined that the Project would not cause a significant impact associated with transit delay to the 23-Monterey, although it would contribute to cumulative impacts. Mitigation Measure TR-22 would mitigate the Project's contribution to significant impacts on the 23-Monterey and would be triggered when the Project contributes significant impacts to the 24-Divisadero or the 44-O'Shaughnessy.

Source: *CP-HPS Phase II Development Plan Transportation Study – Project Variant 2A*, LCW Consulting and Fehr & Peers, March 15, 2010



We hope you have found this information useful. We look forward to discussing this further with you and other City staff to finalize the methodology by which transit impacts should be monitored.

Sincerely,

FEHR & PEERS

A handwritten signature in black ink, appearing to read "Chris Mitchell".

Chris Mitchell, PE
Principal

SF08-0407

HPX	20 Minutes [1]		12 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	469	1220	1173	2410
Retail (ksf)	5	0	12.5	71
R&D (ksf)	150	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	115	146	288	304
Approximate Year	2017	2023	2019	2024

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 50% into Major Phase 1, now proposed as 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

CPX	20 Minutes [1]		15 Minutes [2]		10 Minutes [3]	
	Old	New	Old	New	Old	New
Development:						
Residential (DU)	1630	N/A	3588	1529	5545	4905
Retail (ksf)	0	N/A	353	760	365	760
R&D (ksf)	0	N/A	0	0	70	0
Artists (ksf)	0	N/A	0	0	0	0
Community Facilities (ksf)	0	N/A	0	100	0	100
Office (ksf)	0	N/A	75	150	150	150
Hotel (Rooms)	0	N/A	110	220	220	220
Transit Trip Gen Trigger	164	N/A	838	1193	1514	1608
Approximate Year	2021	N/A	2022	2020	2027	2030

[1] Originally contemplated as initiation of Major Phase 2, but because of substantial development in first years, the CPX will begin at 15-minute frequencies.

[2] Originally contemplated as 50% into Major Phase 2, now proposed as prior to first occupancy of Major Phase 2

[3] Originally contemplated as initiation of Major Phase 3, now proposed as 50% into Major Phase 3

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

23 Monterey/24 Divisadero

	23 Monterey: 15 Minutes [1]		24 Divisadero: 10 Minutes [2]		24 Divisadero: 7.5 Minutes [3]	
	Old	New	Old	New	Old	New
Development:						
Residential (DU)	469	1220	2406	2935	2498	3320
Retail (ksf)	5	0	45	100	88	105
R&D (ksf)	150	0	975	1831	1313	2336
Artists (ksf)	0	0	48	0	120	0
Community Facilities (ksf)	0	0	0	0	0	0
Office (ksf)	0	0	0	0	0	0
Hotel (Rooms)	0	0	0	0	0	0
Transit Trip Gen Trigger	115	146	643	636	744	810
Approximate Year	2017	2023	2023	2029	2025	2030

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 20% into Major Phase 2, now proposed 50% into Major Phase 3

[3] Originally contemplated as 50% into Major Phase 2, now proposed as prior to first occupancy of Major Phase 4

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

48 Quintara

	15 Minutes [1]		10 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	1	1	1173	2410
Retail (ksf)	0	0	13	71
R&D (ksf)	0	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	1	1	288	304
Approximate Year	2015	2019	2019	2024

[1] Originally contemplated as initiation of Major Phase 1. No change proposed.

[2] Originally contemplated as 50% into Major Phase 1, now proposed 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

44 O'Shaughnessy

	7.5 Minutes [1]		6.5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	469	1220	1173	2410
Retail (ksf)	5	0	13	71
R&D (ksf)	150	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	115	146	288	304
Approximate Year	2017	2023	2019	2024

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 50% into Major Phase 1, now proposed 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

29 Sunset

	10 Minutes [1]		5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	2413	N/A	3588	605
Retail (ksf)	141	N/A	350	635
R&D (ksf)	0	N/A	0	0
Artists (ksf)	0	N/A	0	0
Community Facilities (ksf)	0	N/A	0	0
Office (ksf)	30	N/A	75	150
Hotel (Rooms)	44	N/A	110	220
Transit Trip Gen Trigger	433	N/A	838	835
Approximate Year	2021	N/A	2022	2017

[1] Originally contemplated as 20% into Major Phase 2, but because of substantial development in the first years, the 29 Sunset will begin at 5-minute frequencies.

[2] Originally contemplated as 50% into Major Phase 2, now proposed 70% into Major Phase 1

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

28L - BRT

	8 Minutes [1]		5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	4819	4548	6100	5915
Retail (ksf)	166	778	415	836
R&D (ksf)	975	0	1298	627
Artists (ksf)	48	0	120	0
Community Facilities (ksf)	0	100	0	100
Office (ksf)	30	150	75	150
Hotel (Rooms)	44	220	110	220
Transit Trip Gen Trigger	1075	1456	1582	1926
Approximate Year	2021	2023	2022	2028

[1] Originally contemplated as 20% into Major Phase 2 (CP + HP), now proposed to remain 20% of Major Phase 2 CP + 20% of Major Phase 2 HP. Interim routes servicing CP include temporary extension of the 56 Rutland and supplemental shuttles

[2] Originally contemplated as 50% into Major Phase 2 (CP + HP), now proposed prior to occupancy of Major Phase 3 CP and Major Phase 3 HP

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.



December 11, 2013

Mr. Chris Kern
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

Subject: DRAFT 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

Dear Chris:

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. Since that time, the Housing/R&D Variant (Variant 2A) has been advanced as the project. Since the certification of the EIR, a number of refinements have been proposed to Variant 2A. 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.

TRAVEL DEMAND

At buildout, the project will contain the same land uses, the same levels of transit service, and a comparable roadway grid as was assumed in the EIR for Variant 2A. The primary factors that influence the project's travel demand have not changed; therefore, the project's travel demand forecasts as described in the EIR remain valid for conducting this assessment.

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

As described in the FEIR, 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 FEIR 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 originally conceived and described in the FEIR. However, the original 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. The revised phasing proposed for the project will likely 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. The acceleration of construction in Candlestick Point is associated with demolition of Candlestick Park and construction of the Candlestick Point retail center and several blocks of housing surrounding the site. 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 modified Project compared to the original project is provided in **Appendix A**. Note that the comparison shown in the Appendix is for the 2010 Stadium Alternative and the 2013 Modified Project.

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 significant and unavoidable localized construction-related traffic impacts as were originally described in Impact TR-1 the FEIR. 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 FEIR or 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 FEIR, the Project would generate substantial amounts of new vehicular traffic resulting in a number of significant impacts and mitigation measures. More specifically, the FEIR 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 FEIR 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 FEIR 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 FIER 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 FEIR identified Impact TR-10, which describes the effect of Project-related traffic spilling over into nearby residential neighborhood streets. The FEIR determined this impact to be significant, and referenced other mitigation measures described elsewhere in the FEIR (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 FEIR determined that the impact would remain significant and unavoidable with mitigation.

The FEIR 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 FEIR 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.

Overall, at buildout, the modified Project will contain the same land uses, the same levels of transit service, and a comparable roadway grid as was assumed in the FEIR for Variant 2A. The primary factors that influence the Project's travel demand have not changed; therefore, the modified Project's travel demand forecasts for buildout conditions will be identical to those described in the FEIR.

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 FEIR's discussion of traffic impacts is based on project buildout, and as noted above, changes to the project's internal roadway network are minor and no changes to the external roadway network are proposed at project buildout.

With respect to the internal roadway network, refinements have been made 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 to better accommodate transit, bicyclists, and on-street parking based on recent SFMTA design guidance for travel lane widths. Specifically, changes fall into one of several categories. The categories of modifications, and their potential for creating new impacts, are discussed below:

- **Establish consistent design principles.** The revisions reflect recent direction from SFMTA regarding cross-section dimensions for various street components, such as width of parking lanes, width of travel lanes, and width of bicycle lanes. While there have been some refinements to specific lane dimensions, all auto and transit travel lanes will continue to be within a range of 10-12 feet, consistent with the range of widths analyzed



in the original EIR. Parking lanes will be 8-feet wide, increasing to 9-feet when adjacent to Class II bicycle lanes, which is also within the range of between 7-9 feet for on-street parking included in the original EIR. Class II bicycle lanes will be 6-feet wide, except when adjacent to (9-foot wide) on street parking, in which case they will be 5-feet wide. Bicycle lanes between 5-6 feet wide are consistent with the range of bicycle lanes included in the original EIR. Sidewalks have been made more consistent such that they are nearly always either 12- or 15-feet wide, which is consistent with the range of sidewalk widths described in the original EIR.

- **Establish a more consistent BRT alignment.** The modifications also reflect direction from SFMTA regarding converting the BRT from a two-way, side-running alignment to a center-running alignment, where possible, to be consistent with other priority transit corridors in San Francisco. Generally, this affects the Hunters Point Shipyard site more than the Candlestick Point site. However, within Candlestick Point, adjacent to the wedge park, the BRT and auto lanes have been re-oriented so that both auto lanes are on the east side of the wedge park and both BRT lanes are on the west side of the wedge park, essentially offering similar benefits as center-running BRT, since the BRT lanes would essentially be operating in an exclusive roadway. Overall, SFMTA has determined that center-running BRT tends to be quicker and more reliable because left-turns at intersections, which conflict with the center-running BRT, can more easily be controlled by special signal phasing than right turns, which conflict with the side-running proposal. As a result, the changes should, if anything, result in a faster and more reliable BRT route.
- **Reorientation of some streets in Candlestick Point.** The original transportation network analyzed in the EIR had one east-west residential street in Candlestick Point parallel to and between Ingerson Avenue and Gilman Avenue and one street parallel to and between Egbert Street and Gilman Avenue. The original plan had north-south mid-block breaks (also referred to as alleys) on either side of Earl Street (parallel to Earl Street). However, with the proposed changes to the BRT-only roadway on the west side of the wedge park, the east-west streets would dead-end at the wedge park, potentially forcing autos to turn into the BRT lanes. To respond, the functionality of these streets was switched, essentially converting these two east-west residential streets into mid-block breaks and the two north-south mid-block breaks described above into residential streets. Overall, this swap will result in approximately the same level of auto capacity in the area and is anticipated to result in only minor, localized changes to auto circulation.



- **Revised bicycle network.** The project modifications include a new cycletrack facility that closes 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 101¹ replacing the originally-proposed Class II bicycle lanes on both sides of the street. Refer to the bicycle impacts section of this letter for further discussion. Illustrations of the revised configuration of the first phase of Harney Way are provided in **Appendix B**. In other locations Class II bicycle lanes have been proposed to be converted to Class III routes. Refer to the discussion of bicycle impacts for further discussion of the changes to the bicycle network.
- **Yosemite Slough Bridge.** The bridge width is currently proposed to be four feet wider than the previously-approved non-stadium alternative, but substantially narrower than the approved stadium alternative, and therefore, within the range of bridge widths considered in the EIR. The additional four feet will accommodate bicycle and pedestrian circulation on both sides of the bridge and will accommodate maintenance vehicles on both sides of the bridge. Overall, the additional width will provide more space for bicycles and pedestrians, and better allow for maintenance to occur with minimal disruption to BRT service.
- **Reorientation of Street Grid in Hunters Point South.** Streets in the Hunters Point South neighborhood have been re-oriented to allow for the BRT route to penetrate the center of the neighborhood at the intersection of Crisp Avenue / Fischer Street. This should, if anything, further promote the use of transit from the Hunters Point South neighborhood. Overall, the size and density of the street grid in Hunters Point South is similar to what was originally approved in the EIR for Variant 2A - Housing, and therefore, transportation capacity is expected to be similar.

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 Arellous Walker Drive – that does affect vehicular capacity at buildout.

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.



Currently, Arelious Walker Drive is a short roadway between Gilman Avenue and Carroll Avenue that provides access to parking areas for Candlestick Park stadium. As previously proposed in the CP/HPS Phase II redevelopment plan and analyzed in the EIR, Arelious Walker Drive would be extended south to Harney Way and north to Carroll Avenue after the demolition of Candlestick Park. It would serve as one of the primary auto arterial streets both into and through the Candlestick Point site. As approved, Arelious Walker Drive would have two travel lanes, a bicycle lane and on-street parking on the east side (northbound) of the street and three travel lanes, a bicycle lane and on-street parking on the west side (southbound) of the street. The sidewalk on the east side was proposed to be 22 feet to allow for the addition of a third northbound lane in the future, should traffic conditions warrant. The intersections of Arelious Walker Drive/Gilman Avenue and Arelious Walker Drive/Harney Way would both be signalized as part of the project.

One of the proposed modifications to the Project is to narrow the ultimate cross section of Arelious Walker Drive to include only two travel lanes and no on-street parking and no Class II bicycle lane in each direction (i.e., a travel lane was removed from the southbound side of the street and more conventional sidewalks have been proposed on each side of the street, and on-street parking and bicycle lanes have been eliminated). The bicycle lanes have been replaced by a two-way cycle track running through the heart of the project along Harney Way (see bicycle impacts section for more discussion). Two-way Bus Rapid Transit (BRT) lanes would be provided between Egbert Street and Carroll Avenue.

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 CP/HPS Phase II, 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. The intersections of Arelious Walker Drive/Gilman Avenue and Arelious Walker Drive/Harney Way were included in the analysis.

Below, **Table 1** summarizes the intersection LOS for both intersections at full project buildout with the original Arelious Walker Drive configuration and with the proposed change to the ultimate configuration (i.e., two through lanes in each direction instead of three). As shown, with the

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.



proposed change to the ultimate configuration, both study intersections would operate within the City's LOS D threshold at full project buildout conditions.

TABLE 1: INTERSECTION OPERATIONS – ARELIOUS WALKER DRIVE

Intersection	Arelious Walker/Gilman				Arelious Walker/Harney Way			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay ²	LOS ²	Delay ²	LOS ²	Delay ²	LOS ²	Delay ²	LOS ²
Original Arelious Walker Drive Configuration at Buildout	30	C	36	C	22	C	41	D
Revised Arelious Walker Drive Configuration at Buildout	33	C	50	D	22	C	41	D

Notes:

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

Source: Fehr & Peers, 2009 and 2013.

Therefore, because travel demand would be consistent with what was described in the EIR, and there would be no changes to auto capacity associated with project refinements, other than the change described above, which would not result in additional significant impacts, the EIR's conclusions for Impacts TR-2 through TR-16, remain unchanged from what was described 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.

Timing of Traffic Improvements

Although, for purposes of assessing transportation impacts, the modified Project will be essentially the same as evaluated in the FEIR at buildout, the project development phasing has changed. The phasing of traffic improvements was set forth in the *Infrastructure Plan – Candlestick Point Development and Hunters Point Shipyard Phase 2 Development*, August 3, 2010 (Infrastructure Plan). An analysis of the revised 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 from the Infrastructure Plan are proposed to better respond to land use phasing. As shown in **Table 2**, all roadway improvements are scheduled to be implemented at the same triggers or sooner (relative to development levels) than proposed in the FEIR, with the exception of Jamestown Avenue and Ingerson Avenue. 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 vehicular capacity along the streets, so in terms of assessing traffic impacts, this modification is not material.

Figures 1 – 4, attached, illustrate the auto access routes that would be available based on the modified 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 includes construction of 325 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 FEIR. As part of this sub-phase, a portion of Arelious Walker will be 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 would be constructed. During this initial period, this segment of Arelious Walker would provide 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 would be consistent with and would support the final configuration of Arelious Walker Drive. The interim configuration of Arelious Walker Drive is shown in **Appendix C**.



TABLE 2 - 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
Arelious Walker Drive, Carroll Avenue to Gilman Avenue	Interim Two-Lane Condition (See Appendix C)	N/A		No	CP-01 (Adjacency)
	Ultimate Condition (See description above)	No	Implementation of BRT	Yes	CP-06 (Approximately 3,500 PM Peak Hour Vehicle Trips) 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 Appendix B)	Yes	3,537 PM Peak Hour Vehicle Trips or Implementation of BRT ^c	No	CP-02 (Adjacency)
	Long-Term (See Appendix B)	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-09
Ingerson Avenue, Arelious Walker Drive to Third Street	Resurface and Restripe	No	Demolition of Candlestick Park	No	CP-09
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-04 (Approximately 3,200 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	HP-06 (Reconstruction of Crisp Avenue) ^f

- The cross-section for Yosemite Slough Bridge has been modified from what is shown in the FEIR for the Non-Stadium alternative. However, at 49-feet in width, the structure would be smaller than the bridge approved in the Stadium scenario.
- 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.
- Based on trip rates by land use used in the FEIR for Variant 2A – Housing Variant.
- As summarized in the project's Infrastructure Plan.
- 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.
- Although improvements to Ingalls Street were proposed as part of the Candlestick Point development, they, along with improvements to Thomas Avenue and Griffith Street will not be necessary until development levels at Hunters Point Shipyard necessitate the provision of a southern access roadway via Crisp Avenue. Until this time, there will not be a complete route to connect Candlestick Point and the Hunters Point Shipyard and these roadway improvements offer no meaningful benefit.



Figure 1 – CP Major Phase 1

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Figure 2 – CP Major Phase 2

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Figure 3 – CP Major Phase 3

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Figure 4 – CP Major Phase 4

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As proposed, providing only one travel lane in each direction along Arelious Walker Drive should be adequate for this small number of units expected as part of CP-01, and will essentially serve 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.

Sub-phase CP-02 would develop the 635 ksf regional retail center, 150 ksf of office space, a 220-room hotel, 280 additional residential units, and possibly a 75 ksf arena/performance venue. 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 FEIR. Additionally, Gilman Avenue, between Arelious Walker and Third Street would be reconfigured to provide two travel lanes, on-street parking, and 12-foot sidewalks on both sides of the street.

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. 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 is proposed to Mitigation Measure MM TR-16 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. Mitigation Measure MM TR-16 is proposed to be modified as follows:

MM TR-16 Widen Harney Way as shown in Figure 5 in the Transportation Study. Prior to issuance of the ~~grading~~occupancy permit for ~~Development Phase 1 of the Project, Candlestick Point Sub-Phase CP-02,~~ the Project Applicant shall widen Harney Way as shown in Figure 5 in the Transportation Study, with the modification to include a two-way cycletrack, on the southern portion of the project right of way. Prior to the issuance of grading permits for Candlestick Point Major Phases 2, 3 and 4, the Project Applicant shall fund a study to evaluate traffic conditions on Harney Way and determine whether additional traffic associated with the next phase of development would result in the need to modify Harney Way to its ultimate configuration, as shown in Figure 6 in the



Transportation Study, unless this ultimate configuration has already been built. This study shall be conducted in collaboration with the SFMTA, which would be responsible for making final determinations regarding the ultimate configuration. The ultimate configuration would be linked to intersection performance, and it would be required when study results indicate intersection LOS at one or more of the three signalized intersection on Harney Way at mid-LOS D (i.e., at an average delay per vehicle of more than 45 seconds per vehicle). If the study and SFMTA conclude that reconfiguration would be necessary to accommodate traffic demands associated with the next phase of development, the Project Applicant shall be responsible to fund and complete construction of the improvements prior to occupancy of the next phase.

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 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.

Prior to opening of CP-04, the first three subphases would generate about 3,200 vehicle trips, which is approximately the trigger point identified in the project's Infrastructure Plan that would require improvements to the auto route around the Yosemite Slough, that includes Carroll



Avenue, Ingalls Street, Thomas Avenue, and Griffith Avenue. The analysis conducted for the Infrastructure Plan 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 Infrastructure Plan 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 very little development in the Hunters Point Shipyard and substantially more development in Candlestick Point than originally anticipated. As a result, there is likely to be little auto demand for travel between the Hunters Point site and US 101 or between the Candlestick Point and Hunters Point Shipyard sites, making the auto route around Yosemite Slough less critical at such an early stage. Regardless, improvements to Carroll Avenue between Arelious Walker Drive and Ingalls Street are still proposed to be completed as part of CP-04, generally consistent with the Infrastructure Plan triggers, because development at Candlestick Point will still increase demand for east-west travel to the greater Bayview neighborhood. However, improvements to Ingalls Street, Thomas Street, and Griffith Avenue which primarily serve to connect the Hunters Point Shipyard development with the Bayview neighborhood, Candlestick Point, and US 101, will be constructed at a later point, when development levels in the Hunters Point Shipyard development warrant (refer to next section, which discusses timing of improvements for Hunters Point Shipyard for more detail).

Finally, although improvements associated with Carroll Avenue are currently proposed to be constructed prior to occupancy of Subphase CP-04 based on the original Infrastructure Plan analysis, if subsequent technical analysis can demonstrate that because of the location and types of development proposed, improvements to Carroll Avenue are not required until later in the development phasing, at the mutual agreement of the Planning Department and the Project Sponsor, and with the appropriate addenda to the EIR, the timing may be further modified.

The remaining auto capacity enhancements on Arelious Walker Drive, between Gilman Avenue and Carroll Avenue would be constructed prior to occupancy of the first sub-phase in Major Phase 2 (CP-06). At the end of Major Phase 1 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 3** below, and therefore, no significant impacts would occur as a result of providing this interim condition through Major Phase 1.

**TABLE 3: INTERIM INTERSECTION OPERATIONS –
ARELIIOUS WALKER DRIVE**

Intersection	Arelious Walker/Gilman	
	Delay ²	LOS ²
Interim Condition at completion of Major Phase 1	44	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. As shown in **Figures 2 – 4**, subsequent Major Phases 2 through 4, respectively, 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 Infrastructure Plan improvement phasing requirements are proposed to better respond to land use phasing. As shown in **Table 4**, 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 FEIR.



TABLE 4 - 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-06 or Based on Transit Phasing
Thomas Avenue, Ingalls Street to Griffith Street	Resurface and Restripe, Streetscape Amenities	Yes	3,131 PM Peak Hour Vehicle Trips (CP & HP) ^a	Yes	HP-06 (Reconstruction of Crisp Avenue)
Griffith Street, Thomas Street to Palou Street	Resurface and Restripe, Streetscape Amenities	Yes	Reconstruction of Crisp Avenue	Yes	HP-06 (Reconstruction of Crisp Avenue)
Innes Avenue, Donahue Street to Earl Street	Resurface and Restripe, Streetscape Amenities	Yes	1,000 PM Peak Hour Vehicle Trips	No	HP-01
Crisp Avenue, Palou Avenue to Fischer Street (Diagonal Route)	Resurface, Restripe, Realign	No	Adjacency	No	HP-06 (Adjacency) or Based on Transit Phasing
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-01

a. Combined total from CP and HP

b. Based on trip rates by land use used in the FEIR for Variant 2A – Housing Variant.

c. As summarized in the project's Infrastructure Plan.

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.

Figures 5 – 8 show the development of land use and roadway infrastructure for Major Phases 1 – 4 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, Donohue Street and Innes Avenue, would be constructed and connected to the HPS North area as part of Major Phase 1. These improvements would be constructed as part of Subphase CP-01, prior to any new trips generated by development in the Hunters Point Shipyard site. This access route accounts for approximately 2/3 of the total auto capacity of the HPS site and will be adequate to serve the development proposed as part of Major Phase 1 in Hunters Point Shipyard, due to its relatively large portion of the total planned auto capacity and its proximity to 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 to Donohue Street and Innes Avenue.



Figure 5 – HP Major Phase 1

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Figure 6 – HP Major Phase 2

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Figure 7 – HP Major Phase 3

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Figure 8 – HP Major Phase 4

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Figure 6 illustrates that the second major auto access route, Crisp Road and Palou Avenue, would be constructed as part of Major Phase 2 in Hunters Point Shipyard. These improvements would be constructed as part of Subphase CP-06, the first development site to be constructed within the southern half of the Hunters Point Shipyard site. This means that 100 percent of the planned auto ingress/egress capacity for the HPS site would be constructed and fully operational before any trips associated with Major Phase 3 in Hunters Point Shipyard are generated, when only approximately 40 percent of the total auto trips associated with the full site buildout would be generated. **Figures 7 and 8** illustrate that 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, similar to Candlestick Point, the major pieces of auto infrastructure will be constructed as part of Major Phases 1 and 2 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 a result, no new significant traffic impacts are expected as a result of the modified Project or the modified phasing compared to the traffic impacts described in the FEIR, and the modified Project is not expected to substantially increase the severity of significant impacts compared to what was described in the FIER, and therefore, no new mitigation measures are required.

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

The FEIR 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 FEIR 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 effected 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 FEIR 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.

Similar to the traffic impacts, the modified Project's transit impacts at buildout as described in Impacts TR-17 through TR-30 will be identical to what was described in the FEIR, 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 one-block shift of the planned Hunters Point Shipyard Transit Center.

Figure 9 illustrates the proposed change to the 29 Sunset routing within Candlestick Point. The original project called for the 29 Sunset to circulate within the Candlestick Point retail center. The revised proposal calls for the 29 Sunset to continue to serve the front of the retail center along Ingerson Avenue, but instead of circulating within the retail center, the route would circulate around the development blocks to the north, so that the 29 Sunset provides more direct service to the high-density residential buildings proposed near the intersection of Gilman Avenue and Harney Way. This minor routing change will, if anything, increase the project's transit mode share by bringing transit service closer to more residential units while continuing to provide direct "front-door" service to the retail center.



Figure 9 – CP Transit Route Changes

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Figure 10 illustrates the proposed changes to routes serving the Hunters Point Shipyard. The changes involve moving the Hunters Point Transit Center one block to the north. The 28L BRT route and the 24 Divisadero would travel an additional block 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. 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 28L BRT and the 24 Divisadero) would travel along Crisp Avenue into the approximate center of Hunters Point South, instead of around the northern perimeter. By providing service into the center of the Hunters Point South, if anything, transit will be more accessible to surrounding development, and transit mode share would, if anything, increase slightly.

Because transit mode share is likely to be only slightly affected by the proposed modifications in CP and HP, the proposed modifications will not likely result in additional significant impacts beyond those identified in the FEIR under buildout conditions.

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.

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 FEIR if modifications result in:

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



Figure 10 – HP Transit Route Changes

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The original and revised transit phasing are shown in **Table 5. Appendix D** 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 original plan and the modified plan. 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 original and modified project, combined with engineering judgment to account for the unique development phasing currently proposed.

To serve the retail center, the 29 Sunset would be extended to the retail center and its frequency would be increased from 10 minutes to its ultimate frequency of 5 minutes. However, because of the substantial amount of development proposed in early phases of the modified project compared to the original project, and the different types of land uses to be constructed initially (i.e., a heavier focus on retail in the early phases than originally anticipated), SFMTA has indicated that operating the other routes ultimately planned to serve Candlestick Point, including the CPX Candlestick Point Express and the 28L BRT route, is not possible in the near term. The CPX Candlestick Point Express is not likely to be particularly effective for non-residential uses, which account for the majority of travel-demand generating uses in the early phases of development in Candlestick Point. Similarly, the 28L BRT would not be desirable in early years because the infrastructure connecting it to Geneva Avenue to the west would not be in place.

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



TABLE 5: TRANSIT PHASING

Route	Frequency	Original Transit Operating Plan		Proposed Revisions	
		Major Phase ^a	Approx. Year	Major Phase ^a / Subphase	Approx. Year
Hunters Point Shipyard					
Hunters Point Express (HPX)	20	1	2017	2 / HP-04	2023
	12	1	2019	2 / HP-05	2024
23 Monterey	15	1	2017	2 / HP-04	2023
24 Divisadero	10	2	2023	3 / HP-09	2029
	7.5	2	2025	3 / HP-12	2030
48 Quintara	15	1	2015	1 / HP-01	2019
	10	1	2019	2 / HP-05	2024
44 O'Shaughnessy	7.5	1	2017	2 / HP-04	2023
	6.5	1	2019	2 / HP-05	2024
Candlestick Point					
56 Rutland ^b	15	N/A	N/A	1 / CP-02	2017
Private Shopping Center Shuttle ^b	7.5	N/A	N/A	1 / CP-02	2017
Candlestick Point Express (CPX)	20	2	2021	N/A	N/A
	15	2	2022	2 / CP-06	2020
	10	3	2027	3 / CP-14	2030
29 Sunset	10	2	2021	N/A	N/A
	5	2	2022	1 / CP-02	2017
Routes Serving Both Sites					
28L/BRT (Includes Construction of Yosemite Slough Bridge)	8	2	2021	2 / CP-07 and HP-04 ^c	2023
	5	2	2022	3 / CP-12 and HP-07 ^d	2028
T Third	6	2	2020	No Change - Not triggered by project development	
	5	3	2025		

Notes:

- a) The original Transit Operating Plan contemplated only three Major Phases of development. The revised phasing breaks the development into four Major Phases each for Candlestick Point and Hunters Point Shipyard.
- b) Temporary until initiation of CPX and/or BRT
- c) Respective sub-phases in CP and HP that reach 20% buildout of Major Phase 2
- d) Respective sub-phases in CP and HP that initiate Major Phase 3

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



Figures 11 and 12 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. The figures compare this information for the original project (the red line) and the modified project (the blue line). It is important to note that the graphs compare the one-way transit capacity in terms of seats per hour with the two-way transit demand, thus is a basic measure of the overall level of transit service relative to demand. Note also that the information provided for the original project is based on the Stadium Alternative, because year-by-year development phasing was not developed for other Alternatives and Variants. As a result, at buildout, the modified transit service appears to provide slightly less transit service than the original project, when actually, the difference is simply the difference between the Stadium Alternative and Non-Stadium Variant 2a – Housing. **Appendix D** 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 5**, formed the basis for **Figures 11 and 12**.

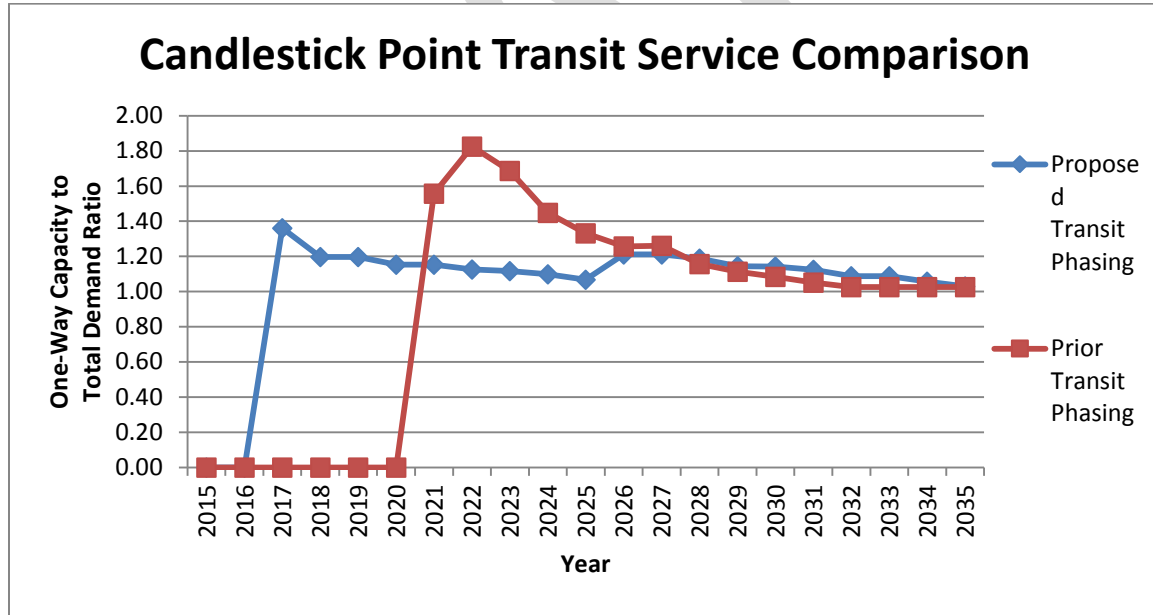


Figure 11 – Comparison of Transit Service Relative to Demand during Project Buildout at Candlestick Point

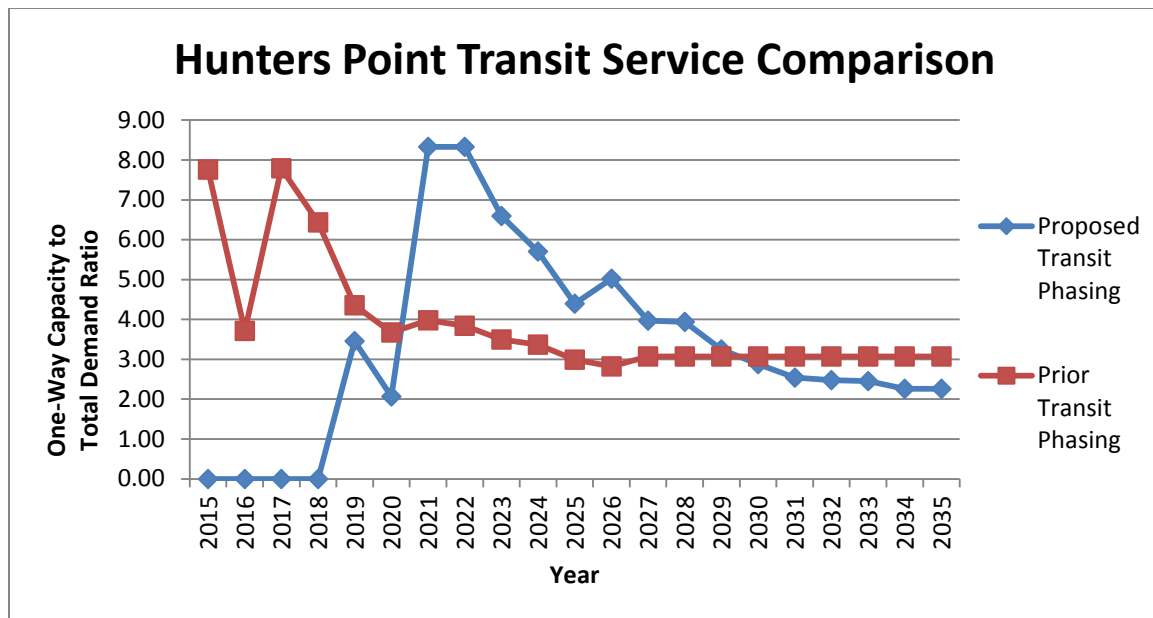


Figure 12 – Comparison of Transit Service Relative to Demand during Project Buildout at Hunters Point Shipyard

The figures illustrate that with the proposed changes in development and transit phasing, the level of transit service proposed throughout the development process relative to the types of development anticipated will remain at a similarly robust level as was originally contemplated throughout development and at Project buildout.

Figure 11 illustrates that with the revised development schedule and revised transit phasing, the level of transit service relative to demand will remain similar to or greater than the original project at buildout, which means the transit will remain an attractive option for travelers in the area.

Figure 12 illustrates that once substantial development begins to occur in Hunters Point, the level of transit service relative to demand will actually exceed what was anticipated in the original project, based on the original development and transit implementation phasing until approximately year 2030. After that, the modified project appears to provide less transit service relative to demand than the original project is because the “original” project shown is the stadium alternative and the modified alternative is the Non-Stadium Alternative Variant 2A – Housing, which provides the same level of transit service with slightly higher demand than the Stadium Alternative. As a result, transit service will remain an equally attractive option in Hunters Point under the modified project development and transit phasing as was under the original phasing.



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 FEIR, 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 FEIR 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 three "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.

As shown in **Figures 13 and 14**, the modified Project includes refinements to the proposed bicycle network. The changes include replacing the Class II facilities on Arelious Walker Drive with a new, separated, two-way Class I bicycle facility that travels through the heart of the project, and more directly connects the CP and HP project sites. The original bicycle network included Class II facilities on Arelious Walker Drive that connected from the Yosemite Slough Bridge to Harney Way, essentially the only route connecting one end of the Candlestick Point site to the other. The original project also included Class II facilities on Harney Way adjacent to the retail center and the wedge park north of Ingerson Avenue. But, between Ingerson Avenue and Arelious Walker Drive, only Class III facilities were provided, which meant that no dedicated facilities would be provided through the retail core of the project.



Figure 13 – Originally-Approved Bicycle Network

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Figure 14 – Proposed Revised Bicycle Network

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The proposed refinements to the bicycle network would replace the Class II facilities on Arelious Walker with a new Class I two-way cycletrack that travels through the wedge park and the retail center of the Candlestick Point site. The cycletrack will be fully separated from auto traffic, will travel along a route with fewer intersection conflicts, and will provide a flatter topographic route. As a result, it will likely be more desirable to commuters and recreational cyclists, alike. The cycletrack would continue north through the Hunters Point Shipyard site to the Hunters Point transit center and south along Harney Way toward US 101, where ultimately it could be connected to the Bay Trail and/or other regional facilities. When fully-constructed, the new cycletrack facility will provide a dedicated, two-way, Class I facility connecting the Hunters Point Shipyard and Candlestick Point sites to each other and to regional bicycle and transit facilities. Arelious Walker Drive would retain a Class III designation.

In addition, Class II bicycle lanes would be removed from Earl Street to narrow the street and to maximize the space available for public parks on the west side of the street. The narrower street would shorten crossing distances for pedestrians and as a result, improve pedestrian safety and further encourage walking as a primary mode of transportation (reducing demand for transit and auto travel). Earl Street would retain a Class III designation. Given the low speeds anticipated for this street enabled by the narrowing of the street, provision of corner and mid-block bulbouts, and enhanced "sharrow" pavement markings, bicycles will be more comfortably able to share the travel lane with autos.

The revised bicycle network also corrects an error on the proposed bicycle network figure from the Transportation Study and the EIR. Both documents depicted a proposed Class II bicycle facility on Gilman Avenue, between Arelious Walker and Third Street, although the project actually proposed a Class III facility. The project's Transportation Plan bicycle network figure (which is shown in Figure 13) correctly depicted this corridor as a Class III route, and the Final EIR noted that the Draft EIR had incorrectly represented this corridor on the figure. Thus, this is not a project change, but rather a correction of a graphical error.

Class III bicycle route designations have been removed from several streets within the CP South neighborhood, and from Donner Avenue in the CP North neighborhood. Regardless of the bicycle designation, these streets are designed to minimum widths allowed by various City departments in order to encourage traffic to drive slowly. Further, the density of the street grid and dispersion of auto parking throughout the area means that traffic volumes will be dispersed through the network and therefore, relatively low on any individual street. In these cases, the



designation of Class III routes was deemed unnecessary because all of the streets in this part of the project would function well for bicyclists to share travel lanes with traffic. Thus, while a comparison of the graphics may suggest substantial changes to the bicycle network, particularly in the CP South neighborhood due to the removal of a number of Class III routes, the only physical difference on these streets associated with a removal of the Class III designation is that "sharrow" pavement markings and bicycle route signage would not be provided; the change in designation would not affect the physical amount of space allocated for bicycles, nor would it substantially affect the interactions between bicycles and autos.

Changes to the bicycle network in Hunters Point Shipyard include extension of a one-block Class II facility on Horne Street from its originally proposed northern terminus at Robinson to the end of Horne Street, where it will intersect with the Bay Trail. Additionally, Class II bicycle lanes have been added throughout the refined HP South neighborhood.

Finally, the proposed Class II bicycle lanes on Innes Avenue would have resulted in removal of on-street parking along Innes Avenue in the India Basin neighborhood. In response to neighbor concerns regarding the loss of on-street parking, the refined project no longer includes these Class II bicycle lanes, but instead retains the existing Class III bicycle route. However, this does not constitute a new significant impact as Class III bicycle routes are standard treatments provided throughout San Francisco as part of the City's bicycle network. As part of a separate project, the City is investigating opportunities to provide a parallel Class I facility on Hudson Street; however, this is not required as mitigation for project impacts and is being pursued separately.

[Note to reviewer: The change from Class II to Class III on Innes Ave was a deal cut by Supervisor Maxwell with the India Basin residents, and was made just days before the approval hearing, so none of the figures or EIR text describes it. Was that change somehow incorporated into the project approval somewhere that I can cite, or is that actually a change that we're clearing now?]

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 FEIR 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 FEIR 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. One sidewalk, the west side of Arellio Walker, between Ingerson Avenue and Harney Way, on the opposite side of the street from the retail center, would be reduced to 7 feet; however, this change is expected to be adequate because there are no land uses on the west side of this street, and the design meets minimum ADA requirements. This dimension is analogous to the original project's proposed sidewalk width of 8 feet on the south side of Innes Avenue, near Donohue Street, which is also adjacent to a large hill with no fronting land uses.

Overall, the modified Project includes minor changes with respect to the pedestrian realm and impacts are expected to be similar to Impacts TR-33 and TR-34, as described in the FEIR and no new significant impacts or mitigation measures would be required.

IMPACTS TR-35 AND TR-36: PARKING

The FEIR 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 in the FEIR. However, the resultant parking supply would continue to be within the range contemplated in the FEIR, specifically between 2,043 spaces (assuming all of these would be on-street and zero off-street would be provided) and



approximately 19,000 on- and off-street spaces). Therefore the conclusions in the FEIR related to parking, as described in Impacts TR-35 and TR-36, remain valid, and no new significant impacts have been identified and no new mitigation measures would be required.

[Note to reviewers: In response to City Attorney comments, we are working to try to quantify the changes to on-street parking supply. In general, the changes are relatively small compared to the total proposed supply, but we will quantify in order to illustrate this.]

IMPACT TR-37: LOADING

The FEIR 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 FEIR 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 FEIR 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 FEIR 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 FEIR concluded that the arena's impacts to traffic congestion and transit operations would remain significant and unavoidable.

The FEIR 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 continue to include a potential arena/entertainment use near the Candlestick Point retail center. Nothing in the modified Project would substantially change the degree to which the arena use would generate travel demand or access the site, and therefore, the modified Project would not create any new significant impacts or substantially increase the severity of a significant impact compared to what was described in the FEIR, and therefore no additional mitigation measures are required.

IMPACT TR-56: AIR TRAFFIC IMPACTS

The FEIR 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 FEIR'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 FEIR 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 FEIR 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 FEIR, 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 FEIR, since the modified Project would generate the same 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 FEIR.

CONCLUSION

In conclusion, the modified Project would not change or alter any of the FEIR'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 FEIR'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

Construction Activities by Phase



APPENDIX B

Harney Way Initial and Long-Term Configuration



APPENDIX C

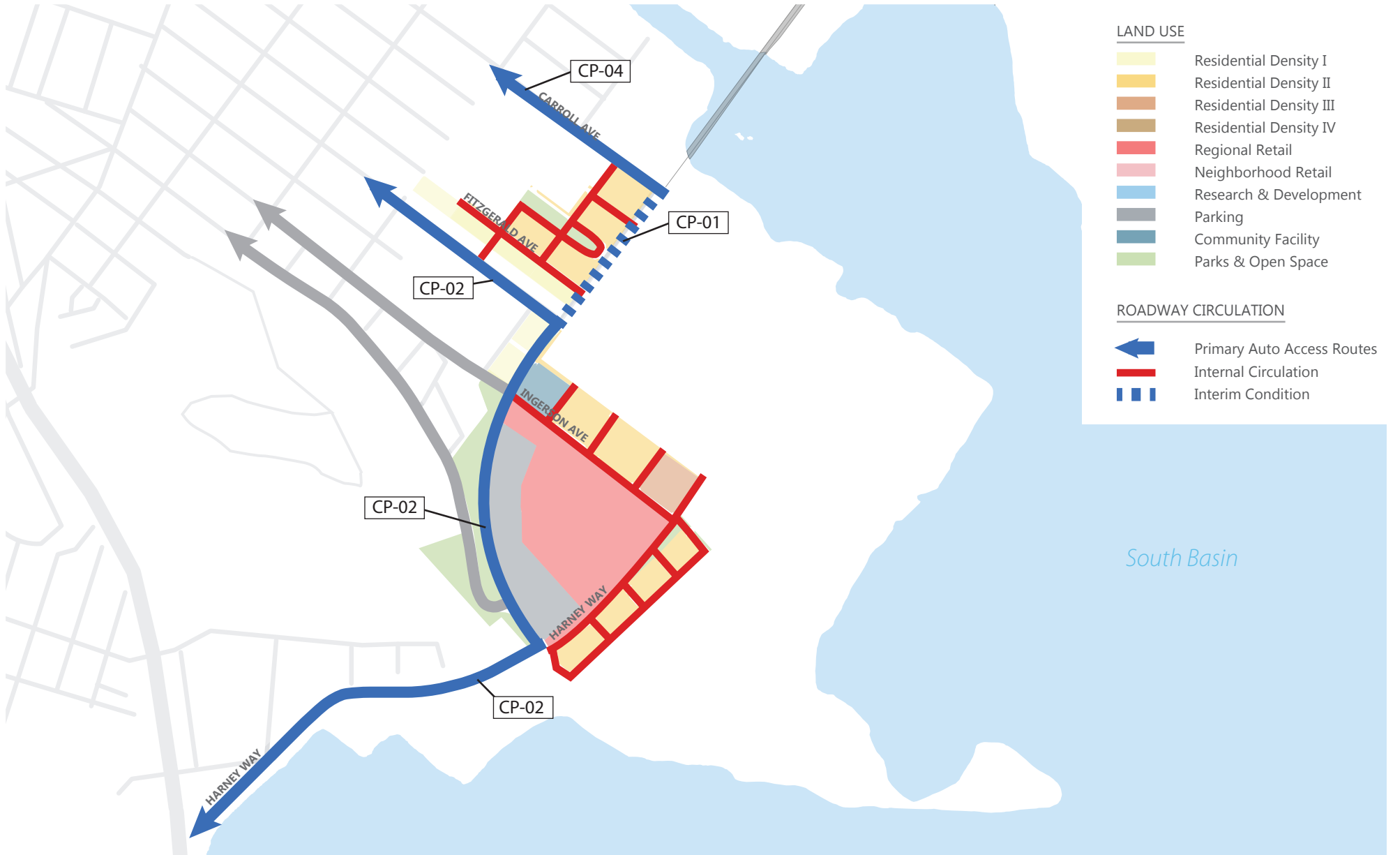
Initial Configuration for Arelious Walker Drive

[Note to reviewer: This Appendix is still the engineering drawings for the initial phase. We are preparing a schematic version in plan view that shows the initial configuration, and how it relates to the ultimate configuration; however, this is not likely to be completed until Friday, Dec. 6. We will provide it when it is complete.]



APPENDIX D

Auto and Transit Trip Generation by Year and Transit Phasing Comparison





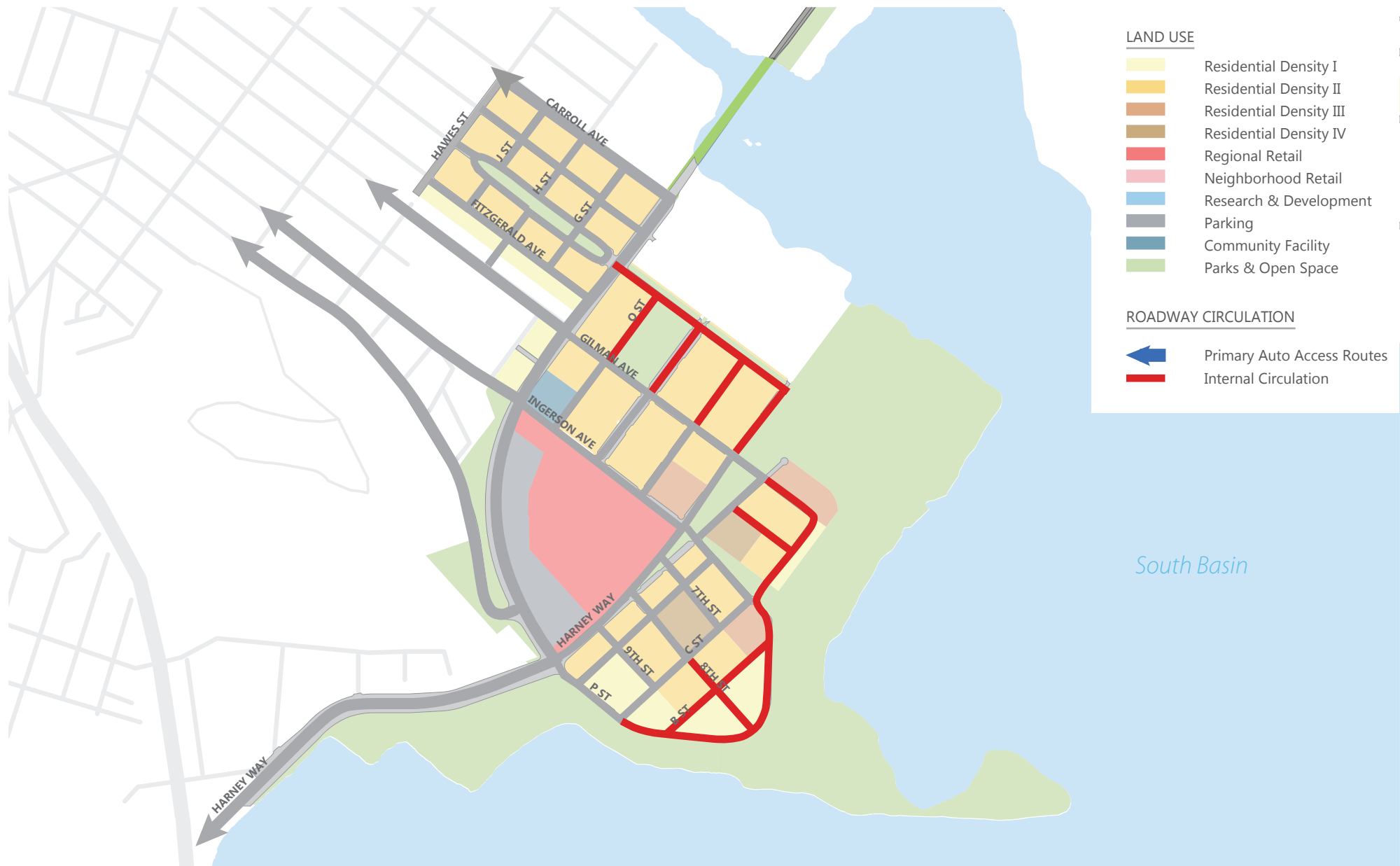
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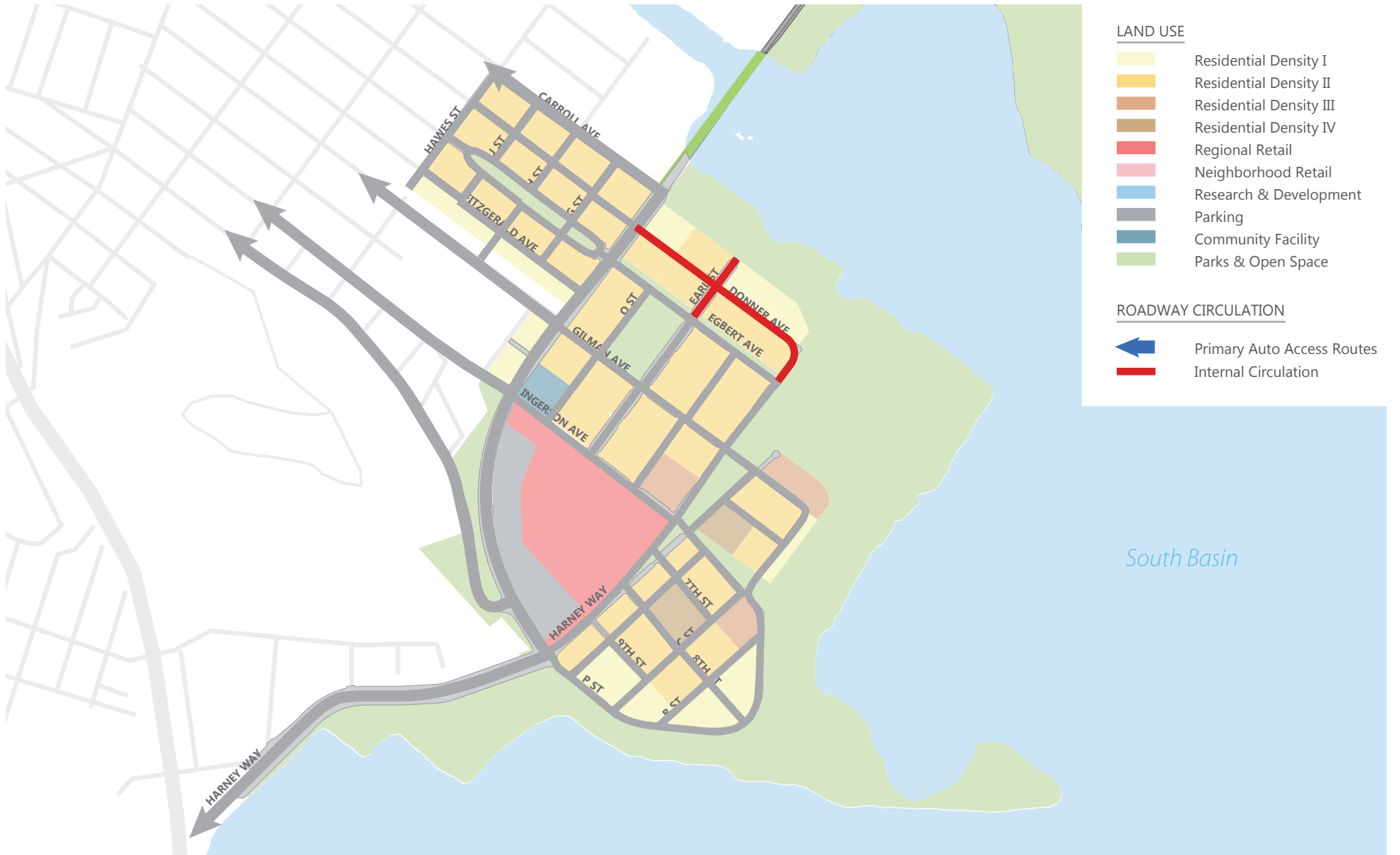
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- Residential Density III
- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

ROADWAY CIRCULATION

- Primary Auto Access Routes
- Internal Circulation







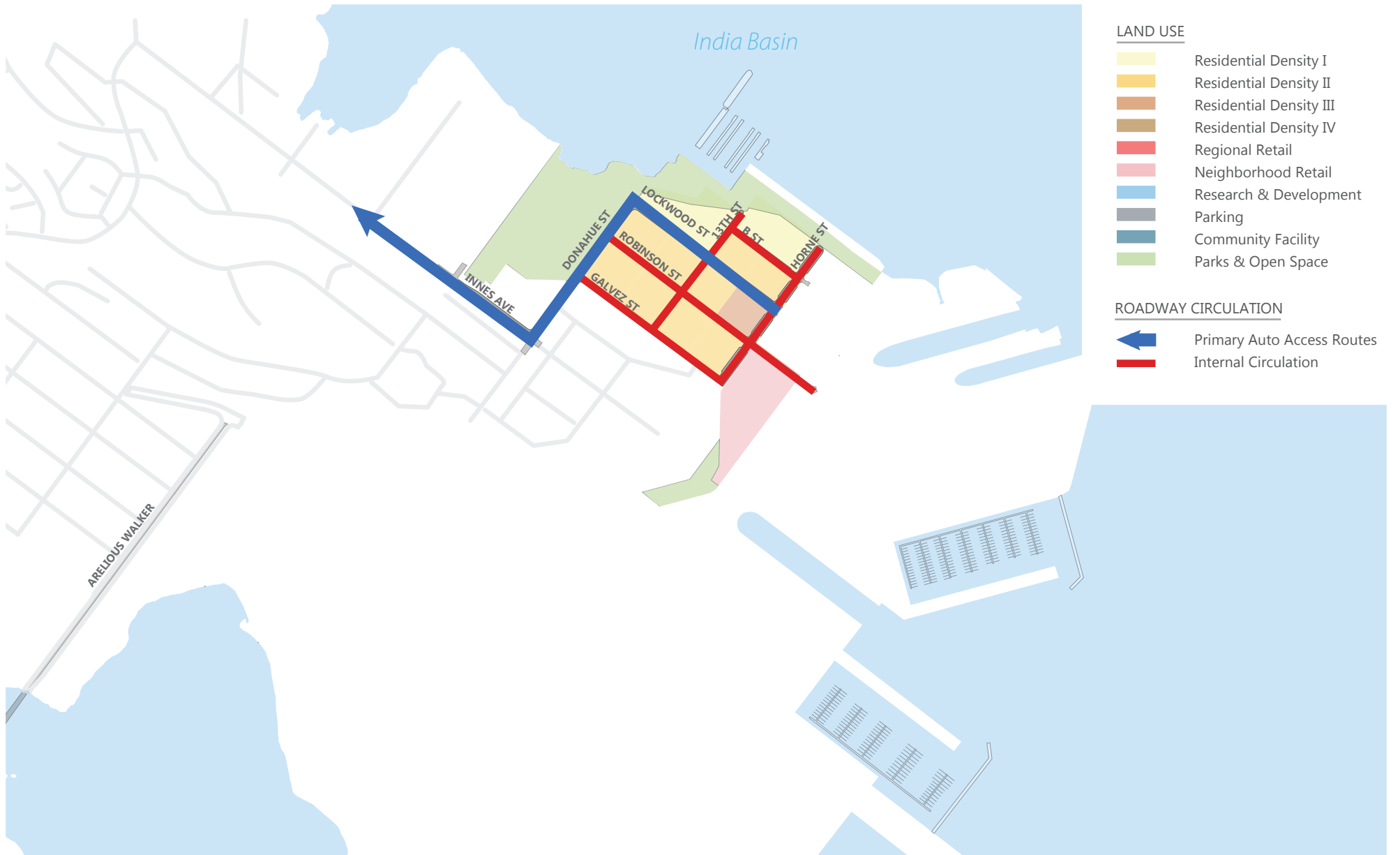
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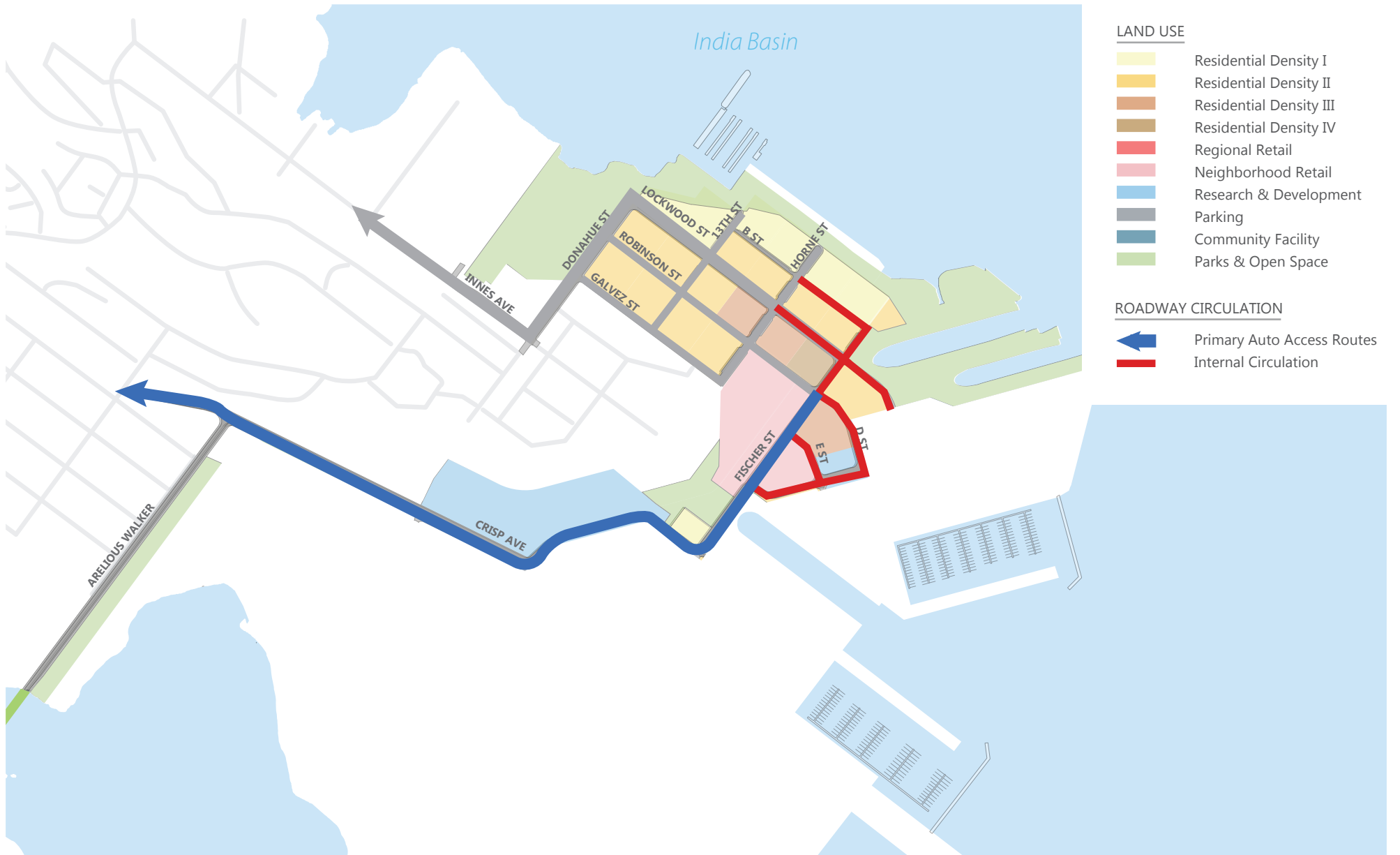
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- Parks & Open Space

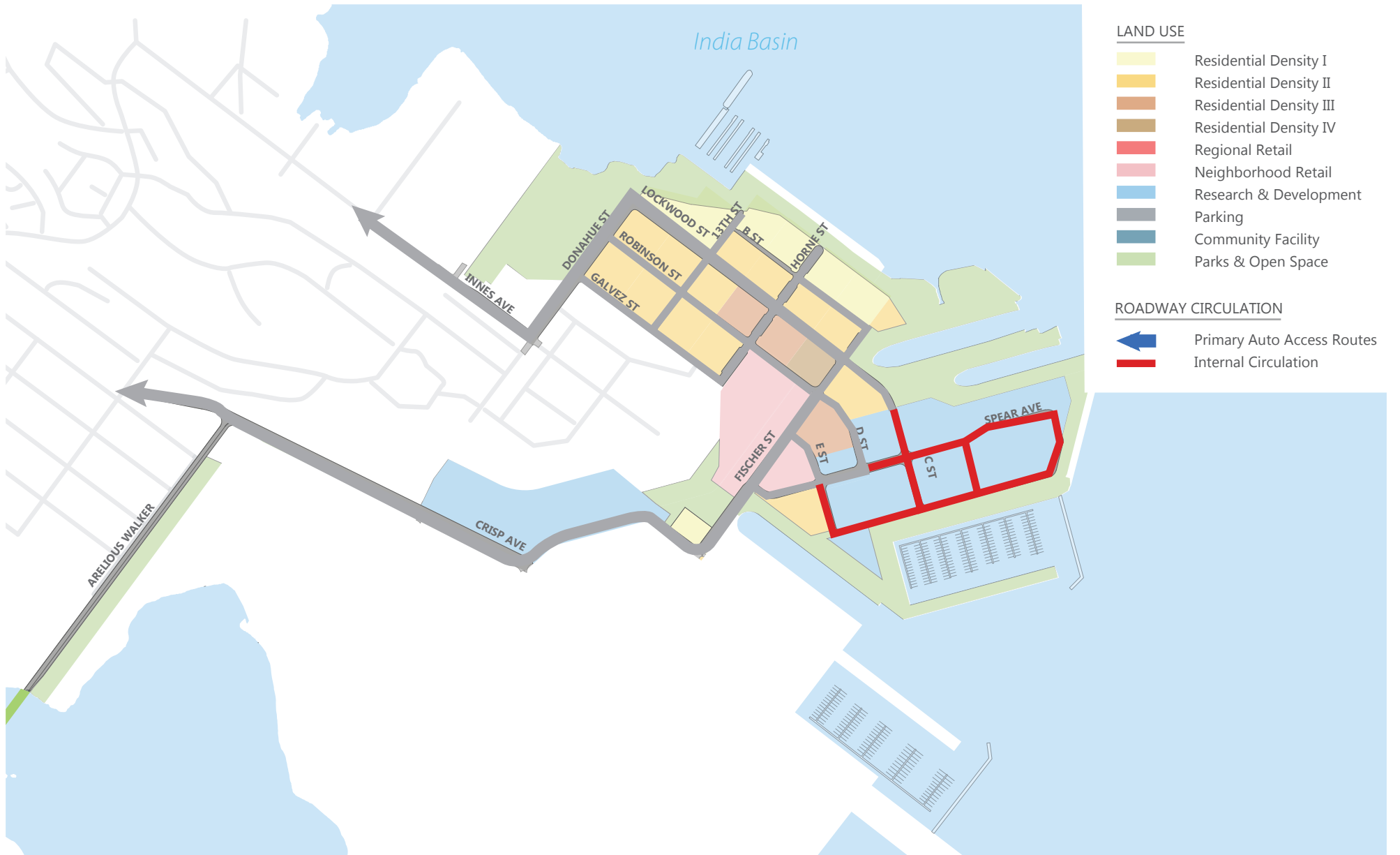
ROADWAY CIRCULATION

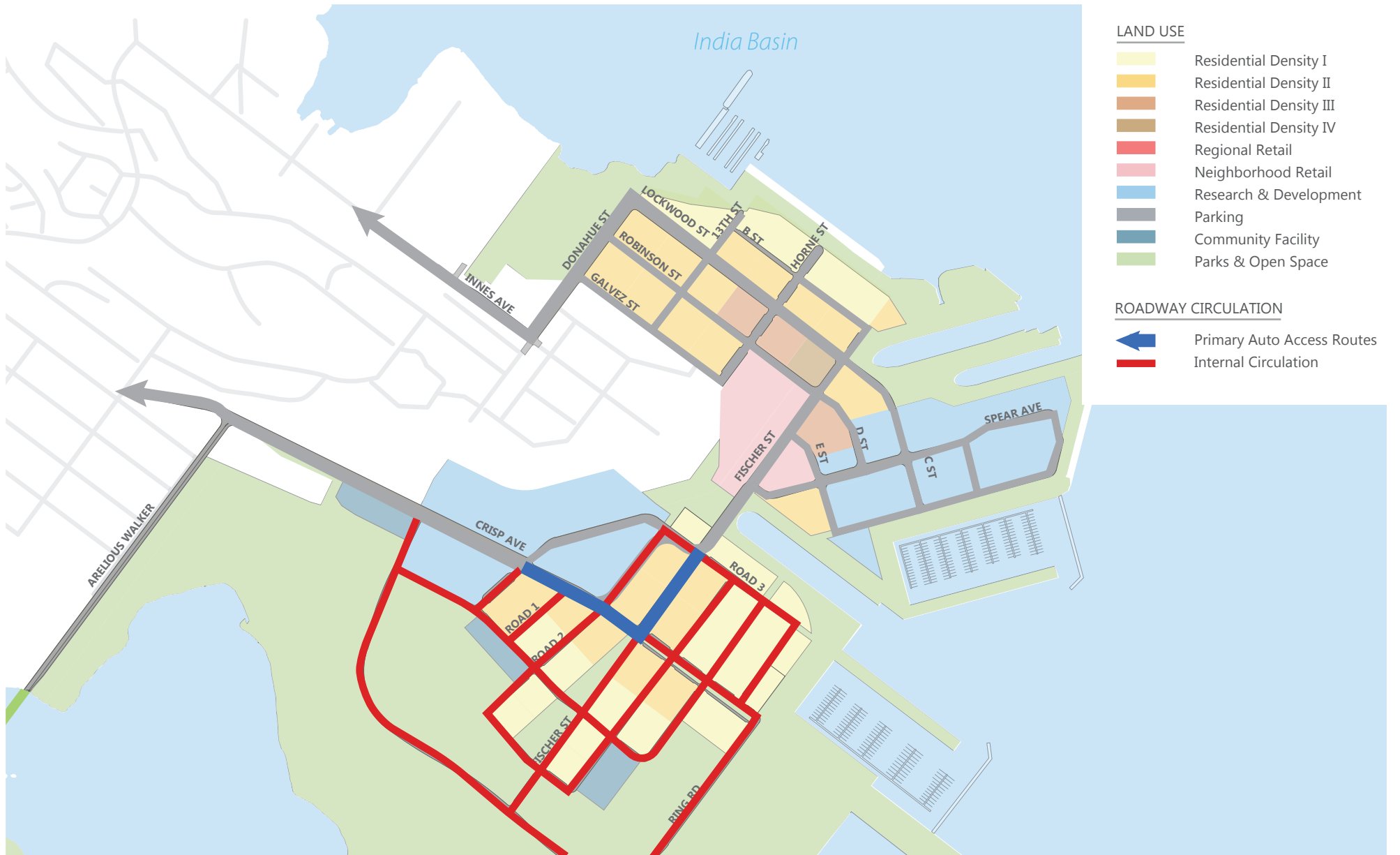
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LAND USE

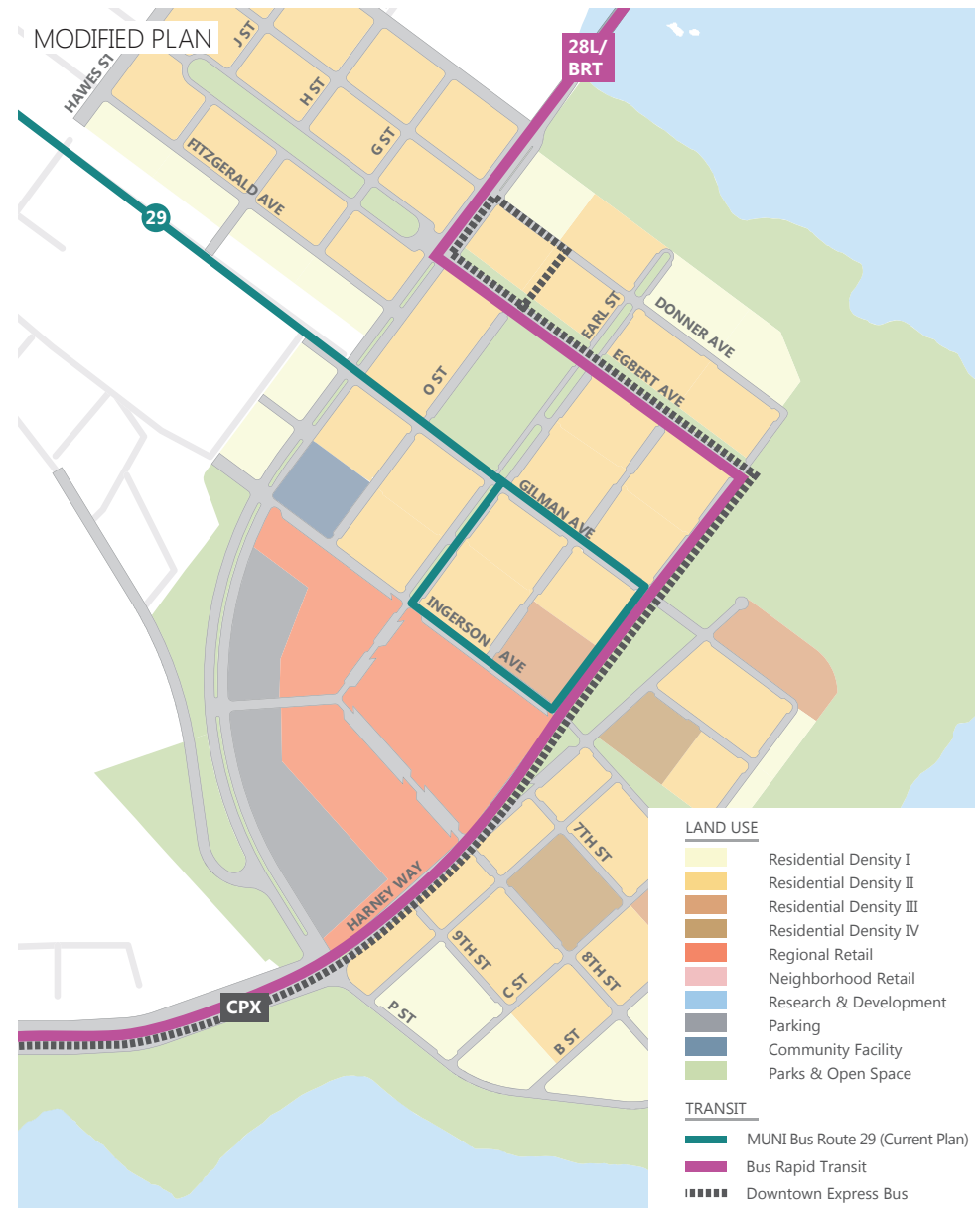
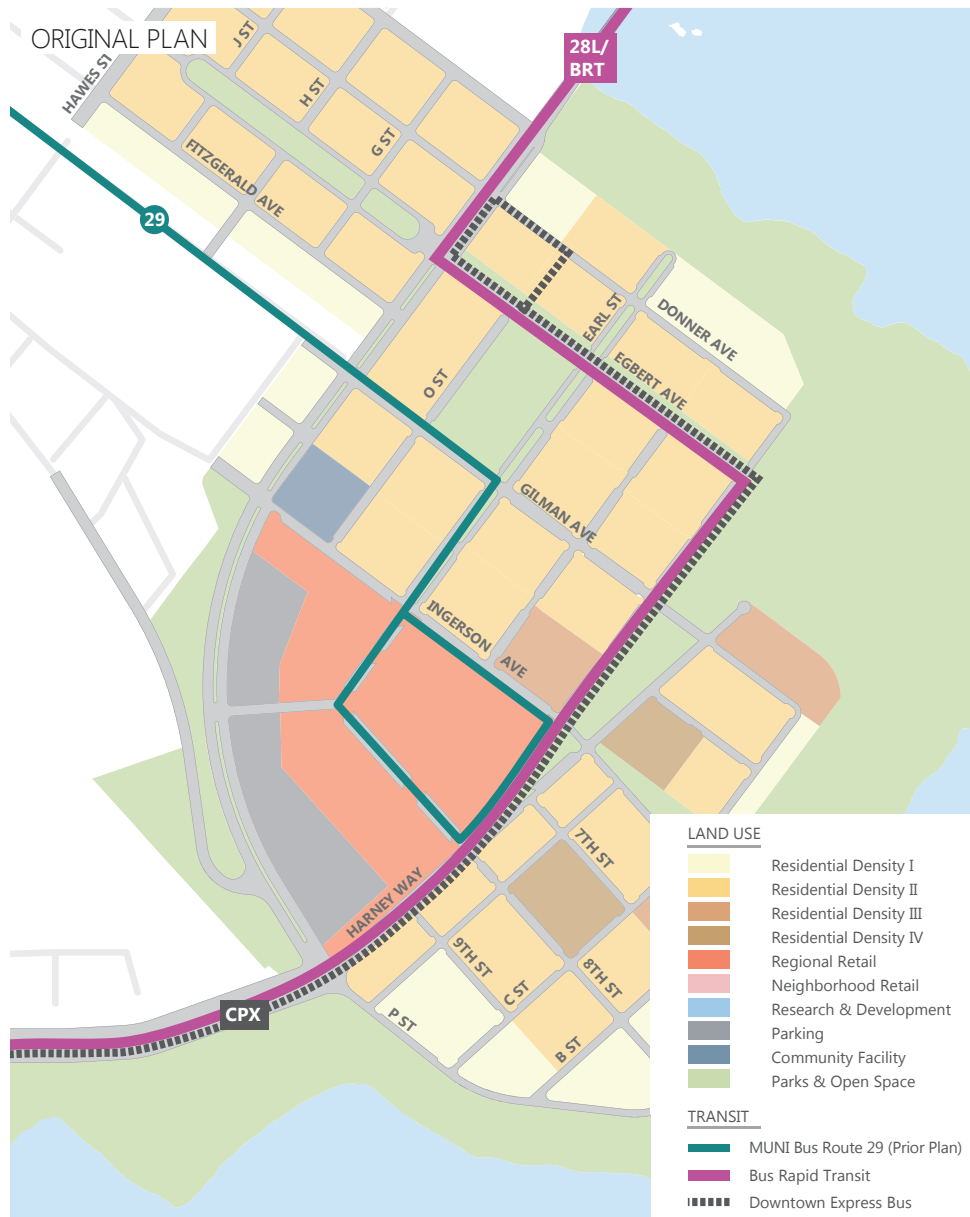
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- Residential Density IV
- Regional Retail
- Neighborhood Retail
- Research & Development
- Parking
- Community Facility
- Parks & Open Space

ROADWAY CIRCULATION

- Primary Auto Access Routes
- Internal Circulation



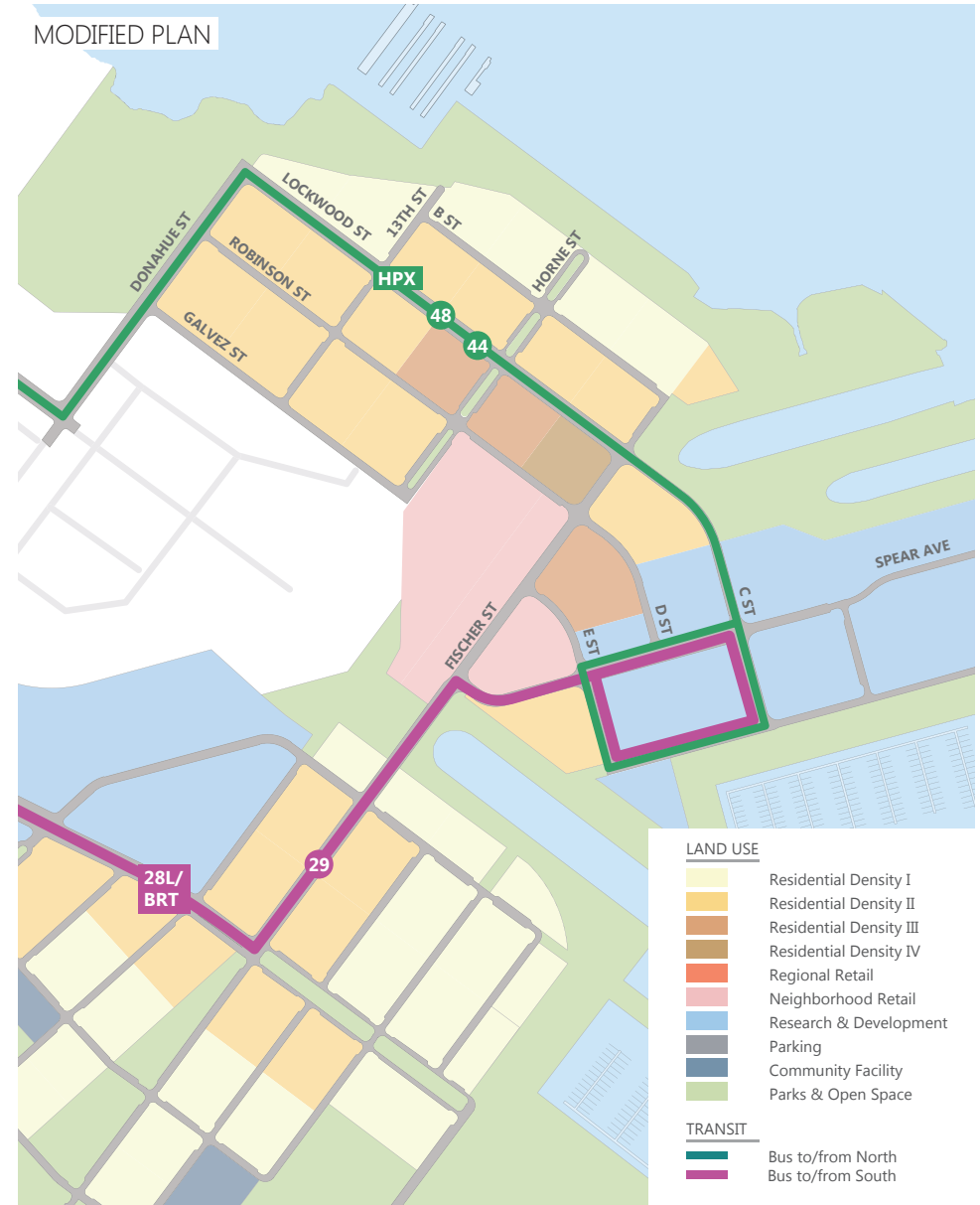
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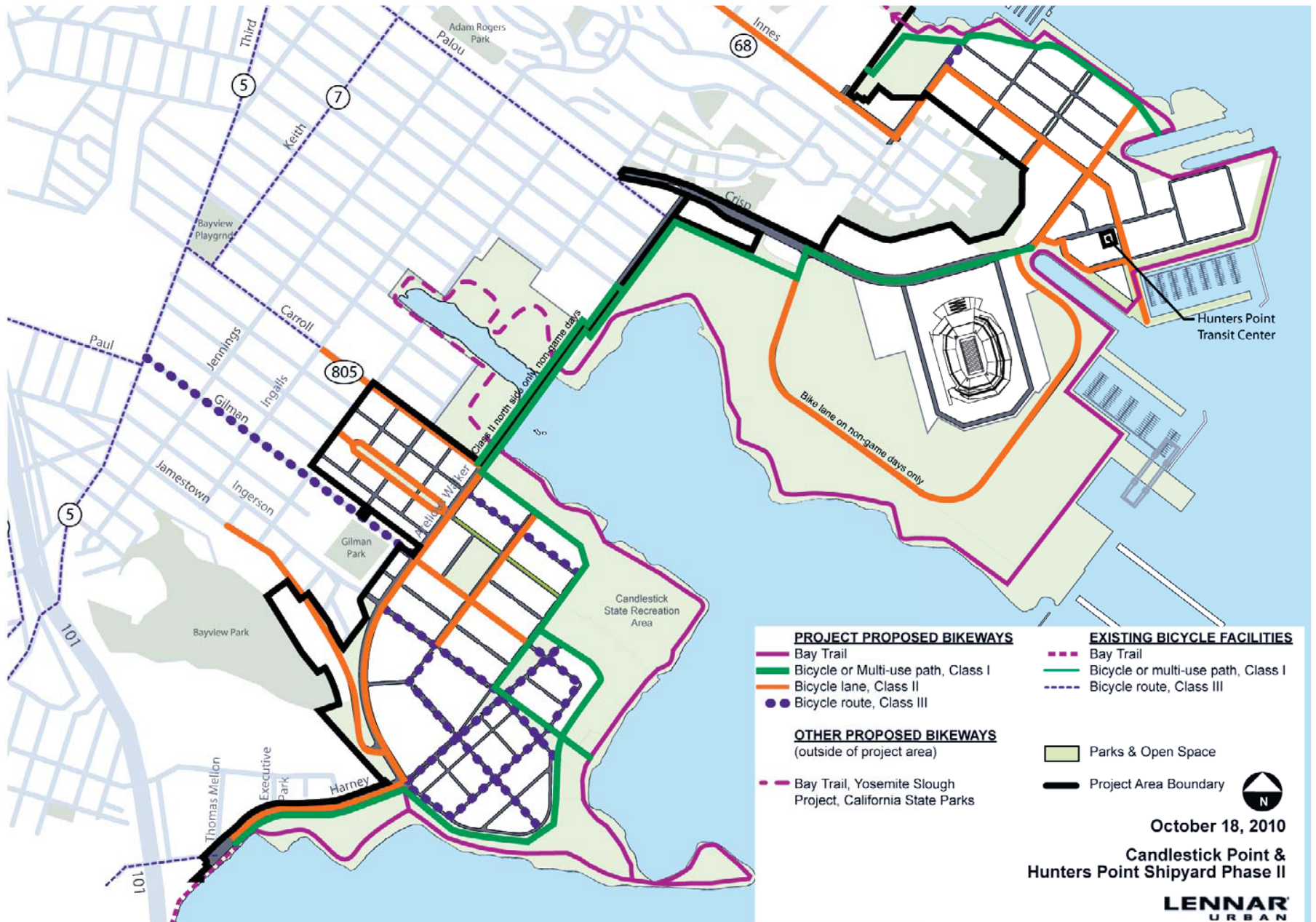


ORIGINAL PLAN



MODIFIED PLAN





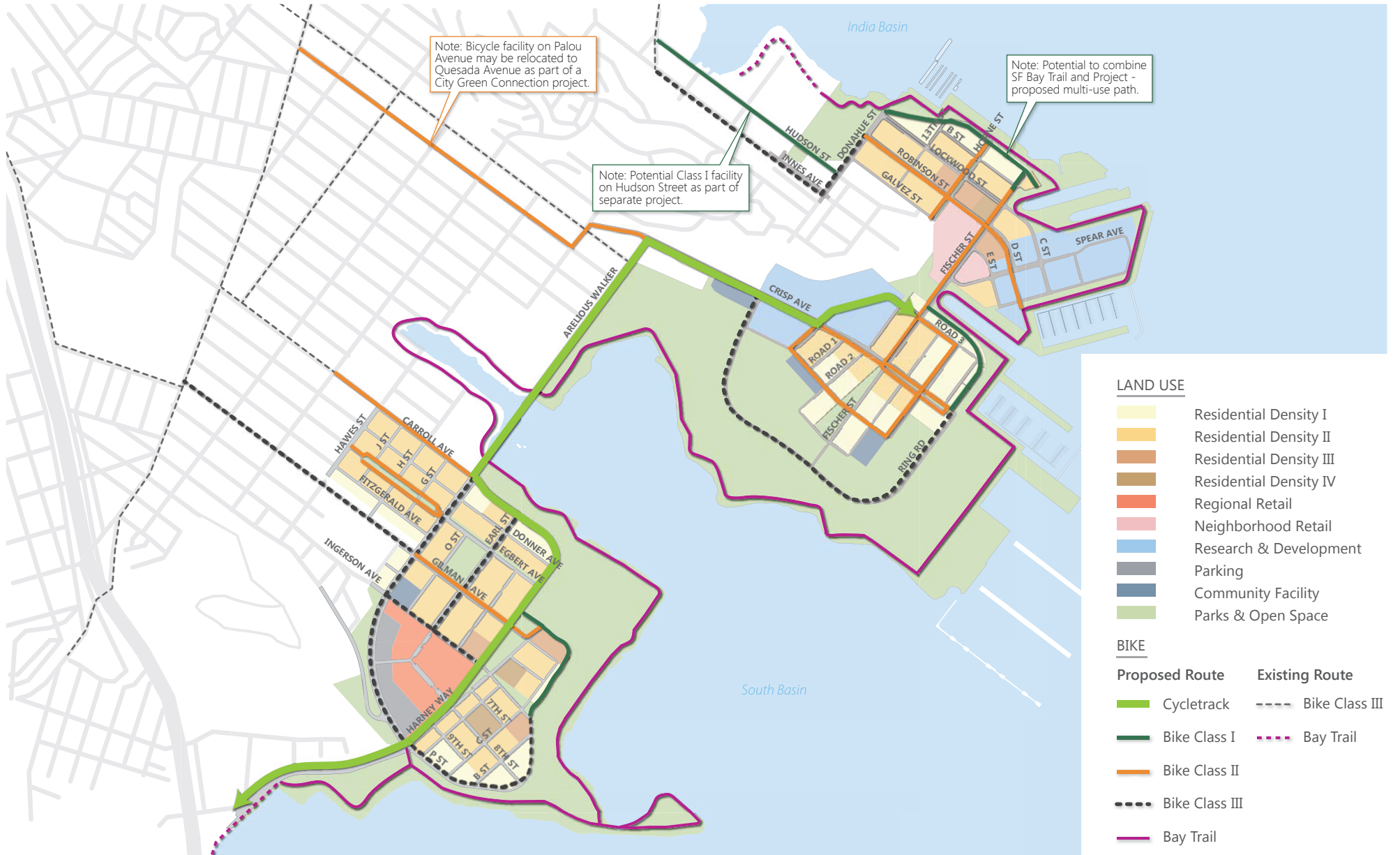


Table of Construction Comparison 2010 vs. 2013 (Draft TRC 12/04/2013)								
Construction Workers and Trucks by Phase Hunters Point Shipyard and Candlestick Point								
Project Area / Construction Phase	2010 Construction Duration	2010 Construction Years	2010 Daily Construction Workers	2010 Daily Construction Truck Trips	2013 Construction Duration	2013 Construction Years	2013 Daily Construction Workers	2013 Daily Construction Truck Trips
Hunters Point Shipyard								
Phase 1 - Site Preparation								
Abatement & Demo	2011 - 2015	1 - 5	10 - 63	8 - 48	2014 - 2020	1 - 7	0 - 66	0 - 104
Grading and Infrastructure	2013 - 2017	3 - 7	25 - 130	8 - 288	2014 - 2020	1 - 7	0 - 113	0 - 176
Phase 1 - Building Construction								
Structure/Rough in	2011 - 2016	1 - 6	18 - 100	8 - 32	2014 - 2021	1 - 8	0 - 58	0 - 48
Interior and Exterior Finishes	2011 - 2016	1 - 6	10-70	8 - 32	2014 - 2021	1 - 8	0 - 56	0 - 40
Phase 2 - Site Preparation								
Abatement & Demo	2016 - 2019	6 - 9	13 - 65	8 - 56	2018 - 2024	5 - 11	13 - 76	4 - 80
Grading and Infrastructure	2018 - 2021	8 - 11	38-100	96 - 224	2018 - 2024	5 - 11	25 - 111	8 - 208
Phase 2 - Building Construction								
Structure/Rough in	2016 - 2019	6 - 9	60 - 80	16 - 32	2022 - 2025	9 - 12	10 - 80	8 - 32
Interior and Exterior Finishes	2016 - 2019	6 - 9	25 - 83	16 - 40	2022 - 2025	9 - 12	10 - 55	4 - 24
Phase 3 - Site Preparation								
Abatement & Demo	2020 - 2023	10 - 13	13 - 35	8 -32	2024 - 2030	11 - 17	13 - 48	4 - 48
Grading and Infrastructure	2022 - 2025	12 - 15	35 - 60	24 - 40	2025 - 2030	12 - 17	25 - 95	4 - 80
Phase 3 - Building Construction								
Structure/Rough in	2021 - 2024	11 - 14	16 - 20	8 - 16	2026 - 2030	13 - 17	20 - 40	8 - 32
Interior and Exterior Finishes	2021 - 2025	11 - 15	25 - 35	8 - 16	2027 - 2031	14 - 18	10 - 35	4 - 24
Phase 4 - Site Preparation								
Abatement & Demo	2024 - 2028	14 - 18	13 - 28	8 - 32	2026 - 2033	17 - 20	13 - 185	4 - 200
Grading and Infrastructure	2026 - 2031	16 - 21	18 - 60	8 - 128	2027 - 2033	18 - 20	25 - 146	2 - 232
Phase 4 - Building Construction								
Structure/Rough in	None				2028 - 2034	15 - 21	18 - 76	8 - 64
Interior and Exterior Finishes	2026 - 2031	16 - 21	10-50	8 - 40	2028 - 2034	15 - 21	10 - 80	2 - 64
Candlestick Point								
Phase 1 - Site Preparation								
Abatement & Demo	2013 - 2015	3 - 5	10 - 13	8 - 16	2014 - 2017	1 - 4	13 - 57	4 - 72
Grading and Infrastructure	2013 - 2017	3 - 7	30 - 55	12 - 96	2014 - 2018	1 - 5	25 - 145	4 - 64
Phase 1 - Building Construction								
Structure/Rough in	2013 - 2016	3 - 6	14 - 18	8 - 16	2015 - 2018	2 - 5	18 - 100	8 - 64
Interior and Exterior Finishes	2013 - 2016	3 - 6	8 - 10	4 - 8	2015 - 2019	2 - 6	10 - 63	2 - 36
Phase 2 - Site Preparation								
Abatement & Demo	2016 - 2019	6 - 9	13 - 38	8 - 32	2018 - 2025	5 - 12	13 - 26	4 - 32
Grading and Infrastructure	2018 - 2021	8 - 11	30 - 93	8 - 32	2018 - 2025	5 - 12	25 - 85	4 - 20
Phase 2 - Building Construction								
Structure/Rough in	2016 - 2021	6 - 11	16 - 32	16 - 32	2019 - 2025	6 - 12	18 - 40	8 - 32
Interior and Exterior Finishes	2016 - 2021	6 - 11	10 - 33	8 - 20	2019 - 2026	6 - 13	10 - 46	2 - 20
Phase 3 - Site Preparation								
Abatement & Demo	2020 - 2023	10 - 13	10 - 38	4 - 50	2025 - 2031	12 - 18	13 - 31	4 - 24
Grading and Infrastructure	2022 - 2025	12 - 15	26 - 60	12 - 128	2025 - 2031	12 - 18	25 - 135	4 - 48
Phase 3 - Building Construction								
Structure/Rough in	2021 - 2025	11 - 15	40 - 100	16 - 48	2027 - 2031	14 - 18	18 - 80	8 - 32
Interior and Exterior Finishes	2021 - 2025	11 - 15	20 - 75	16 - 32	2027 - 2032	14 - 19	10 - 66	2 - 28
Phase 4 - Site Preparation								
Abatement & Demo	2024 - 2028	14 - 18	13 - 43	8 - 32	2031 - 2034	18 - 21	13 - 26	4 - 16
Grading and Infrastructure	2026 - 2030	16 - 20	30 - 135	16 - 52	2031 - 2034	18 - 21	25 - 50	4 - 16
Phase 4 - Building Construction								
Structure/Rough in	2024 - 2030	14 - 20	40 - 80	16 - 32	2033 - 2034	20 - 21	18 - 40	8 - 16
Interior and Exterior Finishes	2024 - 2031	14 - 21	30 - 90	16 - 48	2033 - 2035	20 - 22	10 - 56	4 - 32
Yosemite Slough Bridge	2015 - 2016	5 - 6	62 - 78	18- 24	2018 - 2020	5 - 7	62 - 78	16- 24
HPS Off-Site Improvements	2015 - 2017	5 - 7	24 - 30	8 - 12	2018 - 2025	5 - 12	30 - 60	8 - 24
CP Off-Site Improvements	2013 - 2018	3 - 8	24 - 30	8 - 12	2015 - 2023	2 - 10	30 - 56	8 - 24

Notes:

- 2010 data was derived from Table 90, Appendix A3 of the EIR, March 23, 2010
- 2013 Major Phase boundaries differ from 2010 boundaries; in addition, the 2010 project included the Stadium option.
- Values presented in Blue have been added to the 2010 column for completeness as they were not present in the original table in the Final EIR.
- The "Construction Years" column was added for reference purposes, please assume that the "2010" Year 1 is 2011 and the "2013" Year 1 is 2014.
- All worker and truck quantities are approximate, and subject to change pending final design.
- This table does not include trips associated with field management.
- Hunter Point Shipyard Phase 2 "Abatement and Demolition" and "Infrastructure and Grading" have been adjusted to a 2018 start date to accommodate the construction of the Yosemite Slough Bridge, and connecting roadways within HP-05 and HP-06 per the 2013 phasing.
- The main changes associated with Candlestick point relate to the Candlestick Stadium sub phase occurring earlier in the project then what was assumed in the 2010 schedule. This resulted in higher values in the early part of the project but lower in the later part.
- The main changes associated with Hunter Point Shipyard (HPS) relate to the Non Stadium variant, and having that sub phase divided down into several smaller development blocks. This resulted in higher average values across HPS due to construction being spread more evenly across the project years rather than a large amount of work all happening on the front end of the project as in the 2010 project schedule.

Table of Shoreline Improvement Daily Construction Workers Comparison 2010 vs. 2013 (Draft TRC 11/18/2013)						
Construction Workers by Phase and Yearly Barge Trips						
Hunters Point Shipyard and Candlestick Point						
Project Area / Construction Year	2010 Construction Duration (Months)	2010 Daily Construction Workers	2010 Yearly Barge Trips	2013 Construction Duration (Months)	2013 Daily Construction Workers	2013 Yearly Barge Trips
Hunters Point Shipyard						
2015 Shoreline	9	6 - 7	0			
2016 Shoreline	9	18 - 21	6			
2017 Shoreline	9	45 - 50	80			
2018 Shoreline	6	35 - 40	55			
2020 Shoreline				9	18 - 21	6
2021 Shoreline				9	18 - 21	6
2022 Shoreline	5	14 - 16	15	5	11 - 12	20
2023 Shoreline	5	14 - 16	15	9	21 - 24	40
2024 Shoreline				5	21 - 24	30
2025 Shoreline	10	14 - 16	10			
2026 Shoreline	9	42 - 48	40			
2027 Shoreline				3	7 - 8	8
2028 Shoreline				3	7 - 8	8
2029 Shoreline				9	21 - 24	40
2030 Shoreline				7	15 - 17	18
2031 Shoreline				11	22 - 25	28
2032 Shoreline				9	18 - 21	22
2033 Shoreline				2	5 - 7	2
2034 Shoreline				2	5 - 7	2
Candlestick Point						
2018 Shoreline	2	5 - 7	2			
2022 Shoreline	2	5 - 7	2			
2024 Shoreline	2	5 - 7	2	4	5 - 7	2
2026 Shoreline	4	5 - 7	3			
2027 Shoreline	4	5 - 7	3			
2028 Shoreline	6	5 - 7	4	2	5 - 7	2
2029 Shoreline				2	5 - 7	2
2030 Shoreline				4	5 - 7	2
2031 Shoreline				2	5 - 7	2
2033 Shoreline				2	5 - 7	2
2034 Shoreline				2	5 - 7	2

Notes:


1. 2010 data was derived from Table 91, Appendix A3 of the EIR, March 23, 2010
2. 2013 Major Phase boundaries differ from 2010 boundaries; in addition, the 2010 project included the Stadium option.
3. Spaces shaded in grey show that no shoreline work is anticipated for the construction year.
4. All worker and barge quantities are approximate, and subject to change pending final design.
5. Does not include work associated with field management.

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PLOT DATE: 11-19-13 PLOTTED BY: som



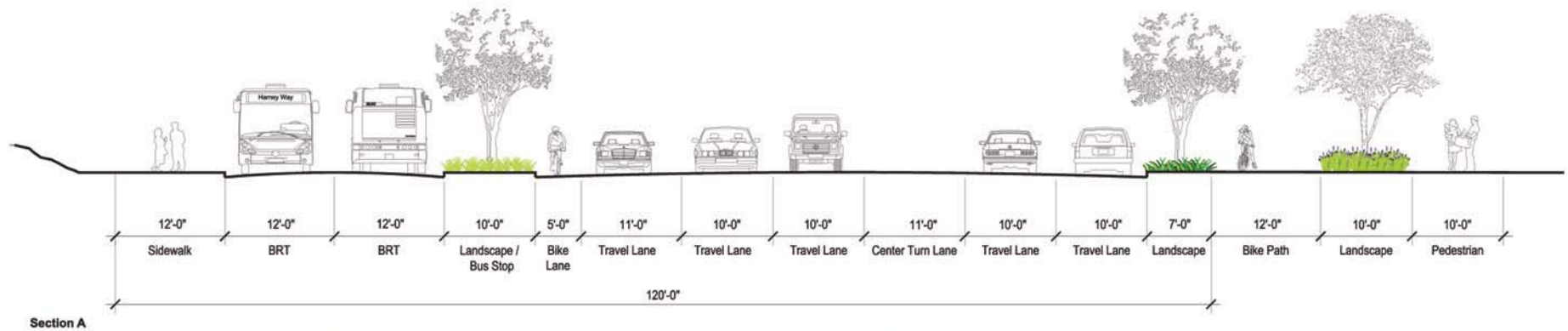
6	OF	10
Drawing Number: 6		
Date 7/26/13	No.	Revisions
Scale SEE DWG		
Design JRK/JH		
Drawn JRK		
Approved TA		
Job No 2011062		

CANDLESTICK POINT AND HUNTERS POINT SHIPYARD PHASE 2
HARNEY WAY
SAN FRANCISCO
CALIFORNIA

**BKF**
ENGINEERS/SURVEYORS/PLANNERS

255 SHORELINE DRIVE, STE 200
REDWOOD CITY, CA 94065
650/482-6300
650/482-6399 (FAX)

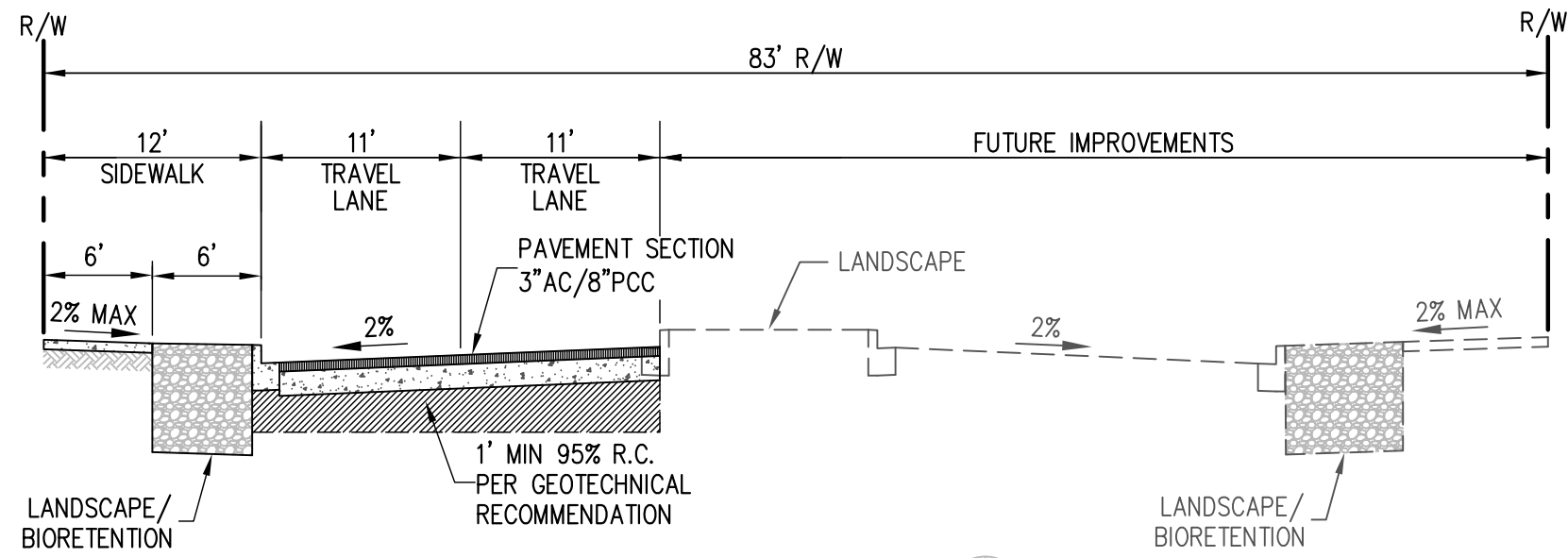
Figure 10: **Proposed Harney Way Potential Long-Term Configuration**





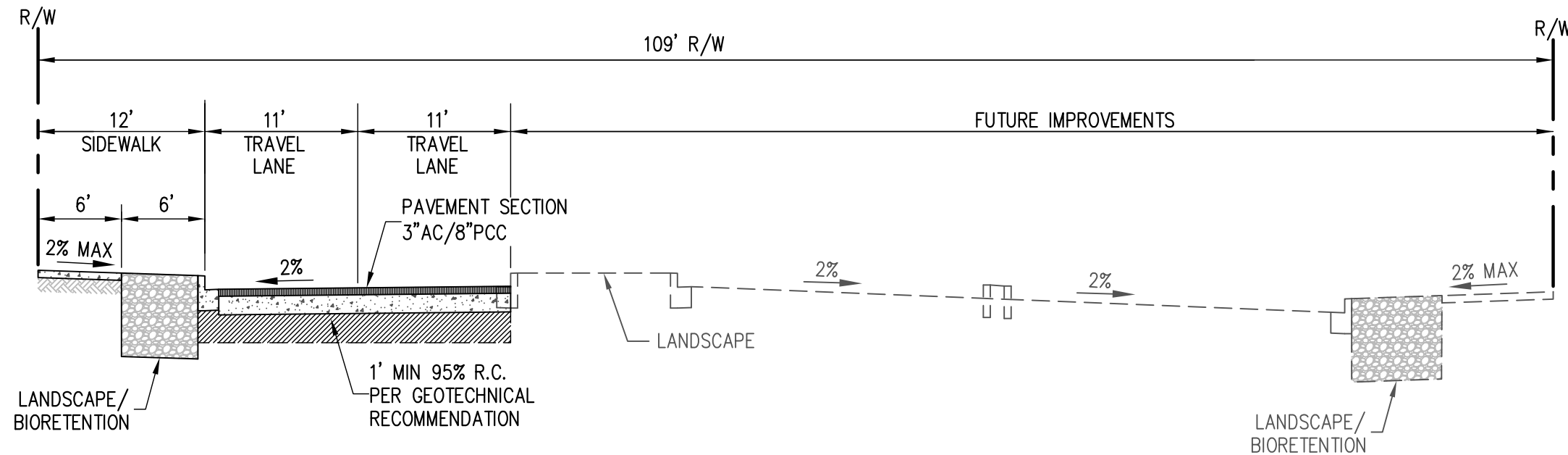
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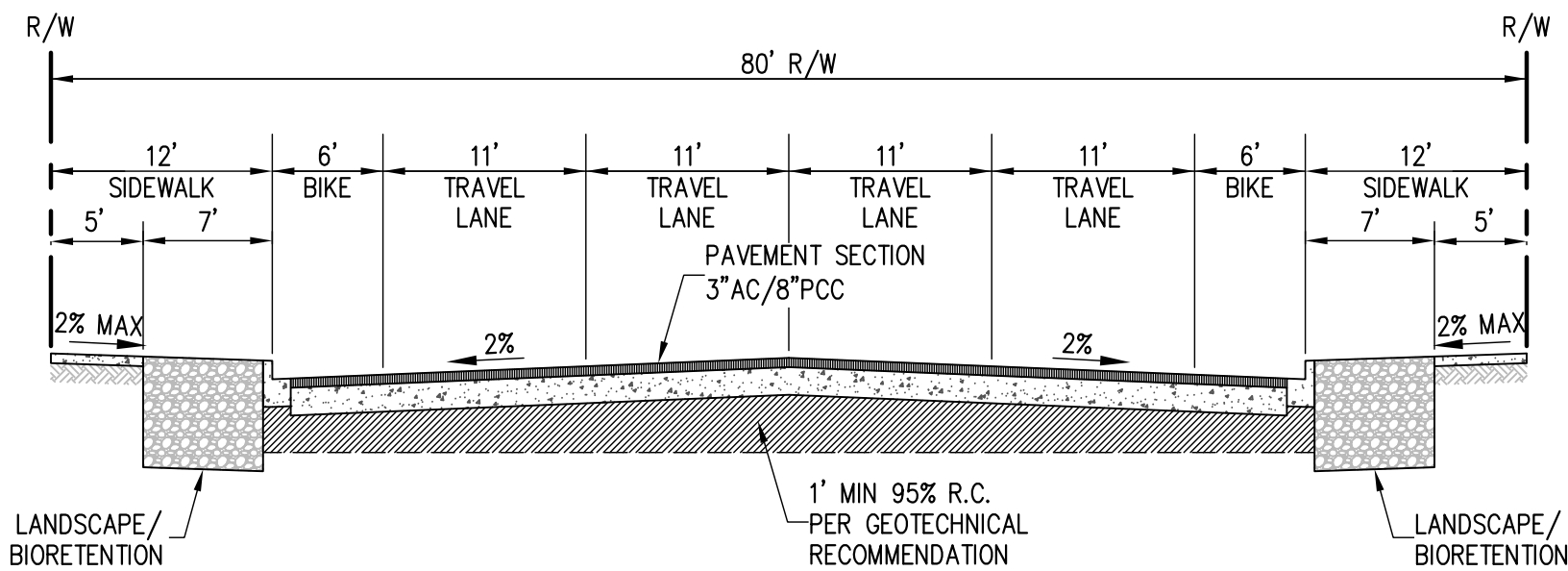
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(STA 40+00 TO STA 45+60)
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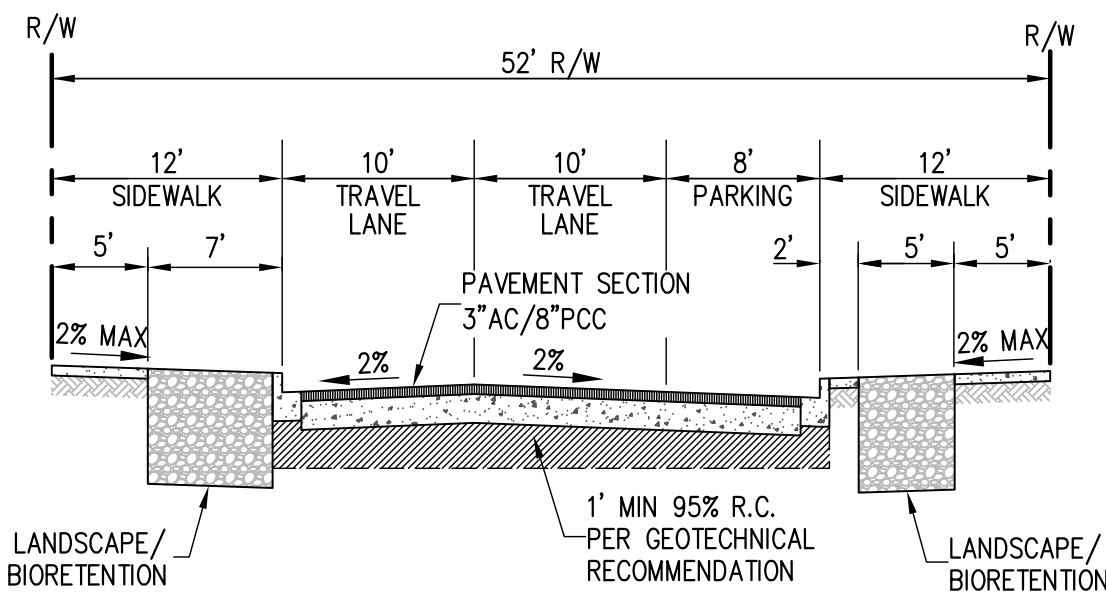
ARELIOS WALKER DRIVE TYPICAL SECTION

(STA 45+60 TO STA 51+20)
NOT TO SCALE



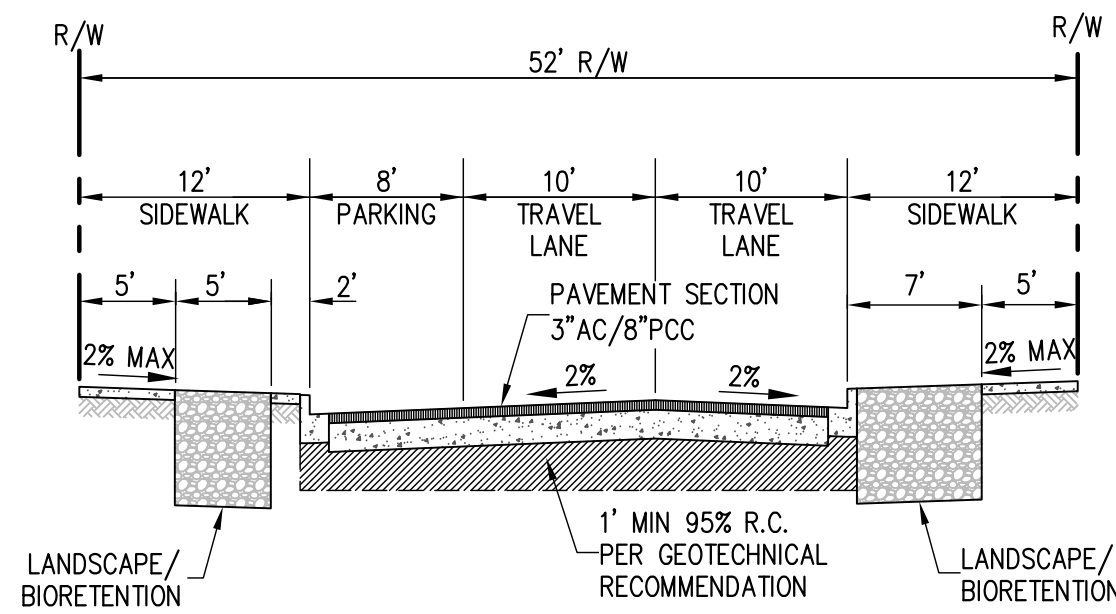
CARROLL AVENUE TYPICAL SECTION

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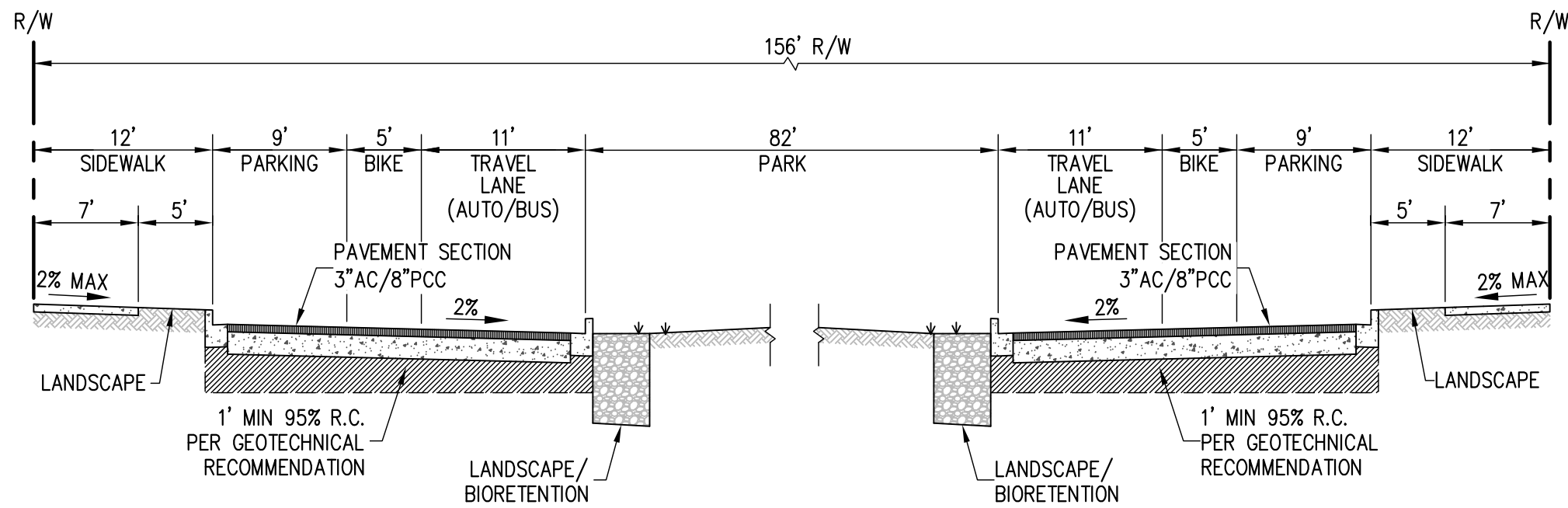
DONNER AVENUE TYPICAL SECTION

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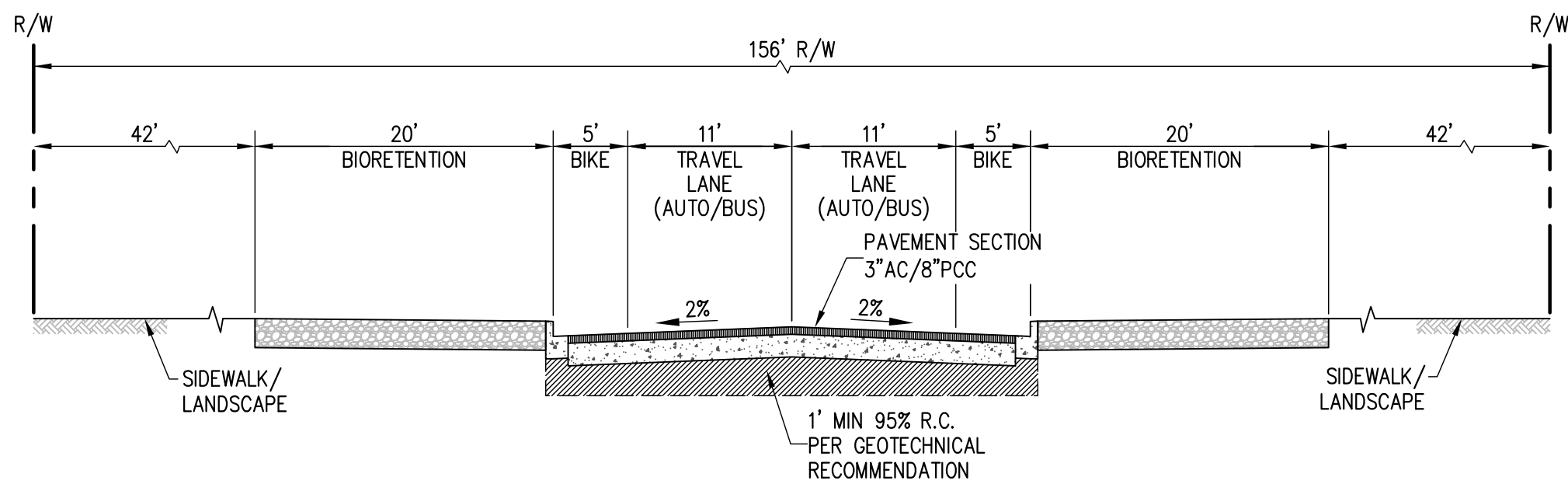
FITZGERALD AVENUE & 'G' STREET TYPICAL SECTION

NOT TO SCALE



EGBERT AVENUE TYPICAL SECTION

(STA 19+60 TO STA 20+60)
NOT TO SCALE



EGBERT AVENUE TYPICAL SECTION

(STA 22+10 TO STA 23+00)
NOT TO SCALE

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PRELIMINARY PLANS
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DATE	DRAWN BY	PROJ. ENGR.	PROJ. MGR.	NO.	BY	DATE	REVISIONS	APPROVAL
09/18/2013

LENNAR
URBAN



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SUB-PHASE CP-01
CALIFORNIA

IMPROVEMENT PLANS
TYPICAL STREET CROSS SECTIONS

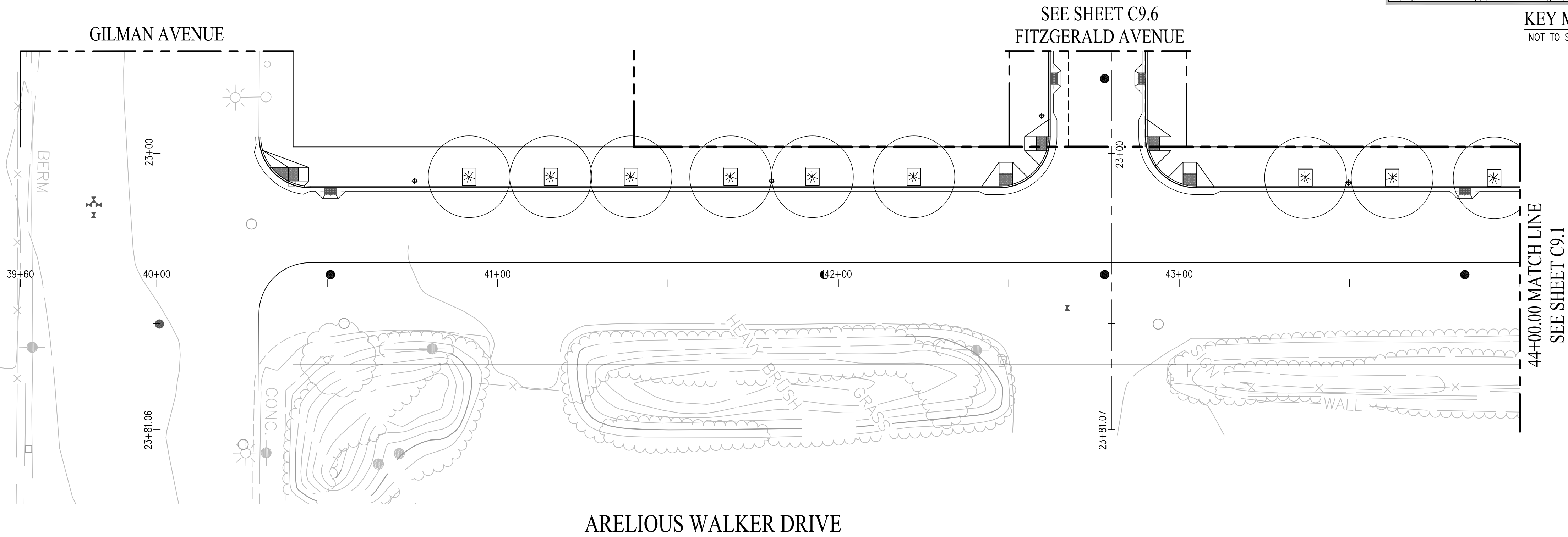
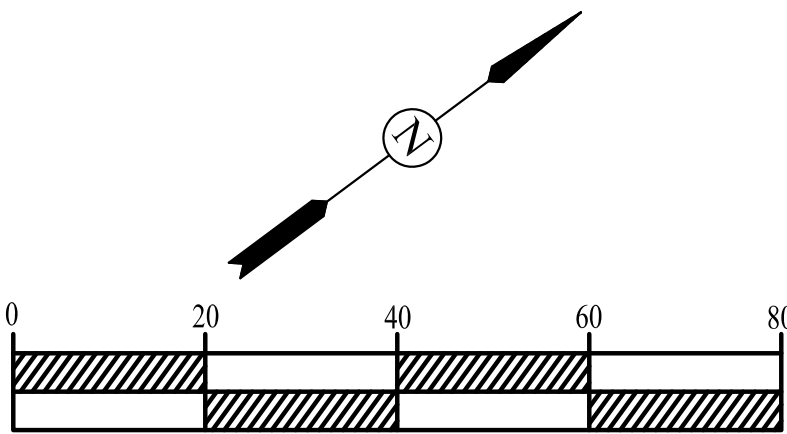
CANDLESTICK POINT
CITY AND COUNTY OF SAN FRANCISCO

SHEET NUMBER
C1.4
JOB NUMBER
1804-030



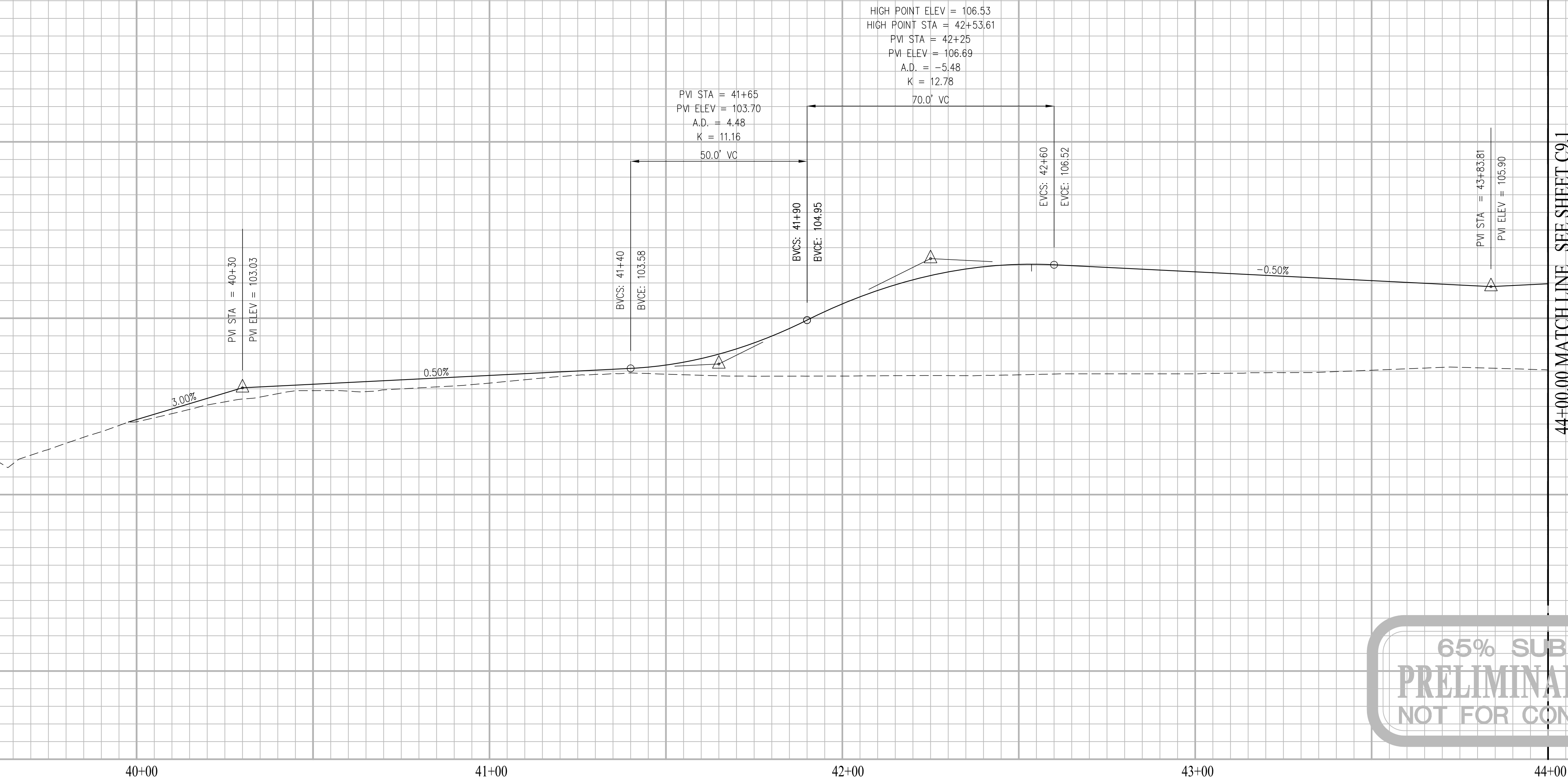
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ARELIIOUS WALKER DRIVE

SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



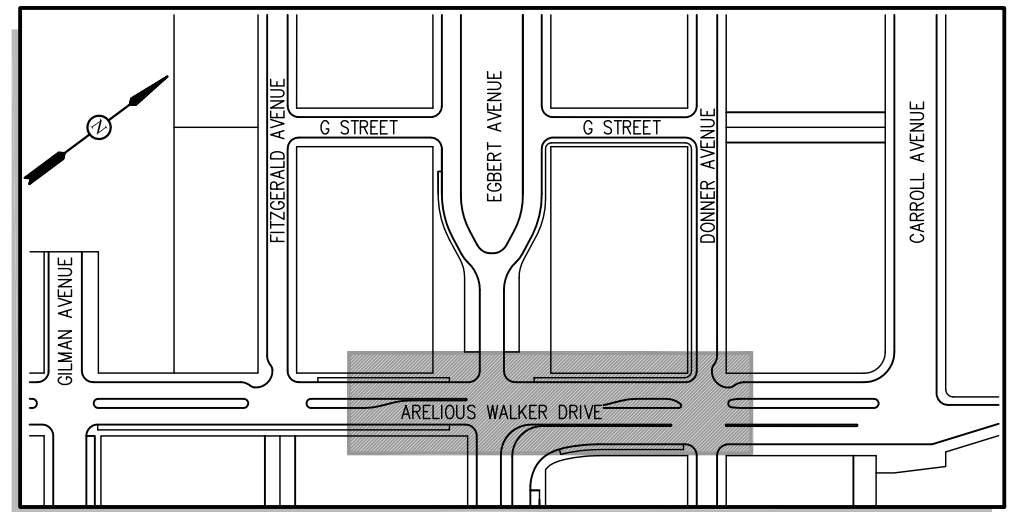
65% SUBMITTAL
PRELIMINARY PLANS
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CANDLESTICK POINT		SUB-PHASE CP-01		IMPROVEMENT PLANS		ARELIIOUS WALKER DRIVE SURFACE IMPROVEMENTS		CITY AND COUNTY OF SAN FRANCISCO		CALIFORNIA	
SHEET NUMBER		C9.0		JOB NUMBER		1804-030					
DATE:		09/18/2013		DRAWN BY:		...		PROJ. ENGR:		...	
LENNAR		URBAN		REGISTERED PROFESSIONAL ENGINEER		J. STEVEN LONITZER		No. 41637		CIVIL	
STATE OF CALIFORNIA				DATE:		09/18/2013		BY		NO.	
REVISIONS				APPROVAL							

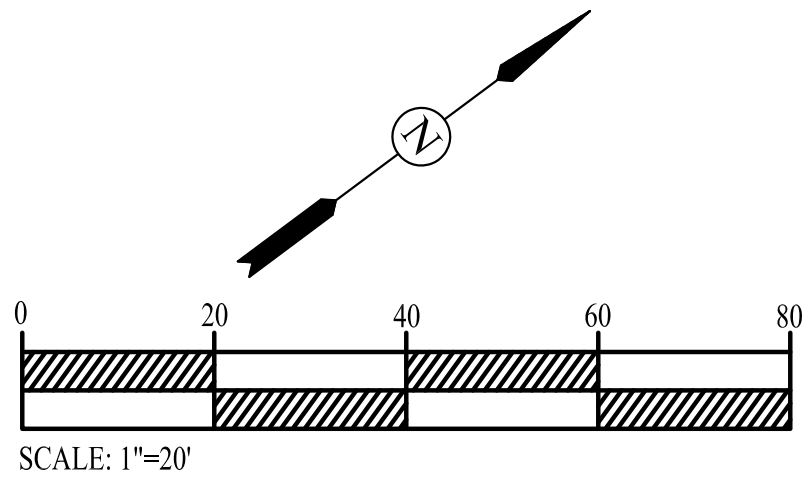
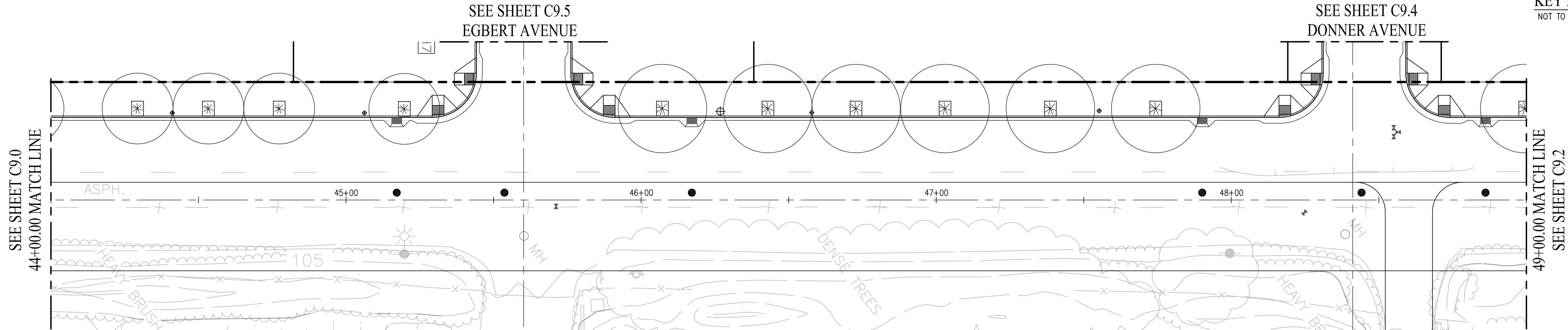


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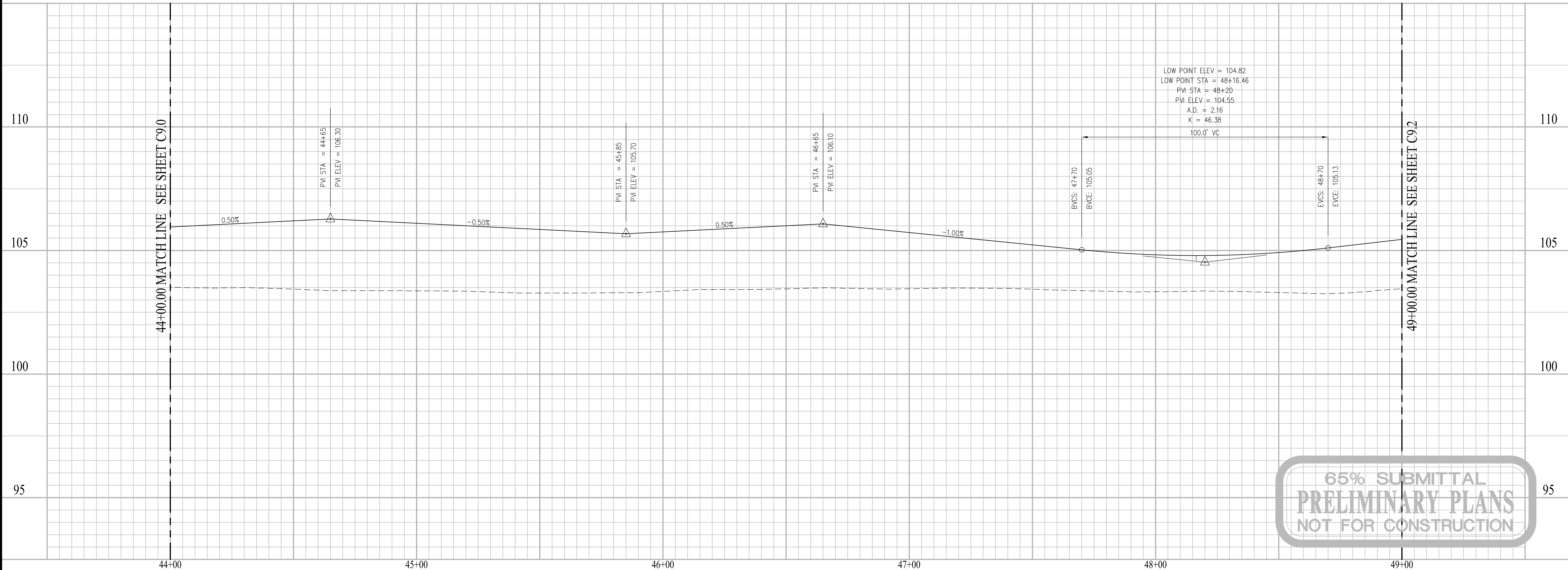


KEY MAP
NOT TO SCALE



ARELIIOUS WALKER DRIVE

SCALE: HORIZONTAL 1" = 20'
VERTICAL 1" = 2'



65% SUBMITTAL
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

DATE	DRAWN BY	PROJ. ENGR.	PROJ. MGR.	NO.	BY	DATE	REVISIONS	BY	APPROVAL
09/18/2013						



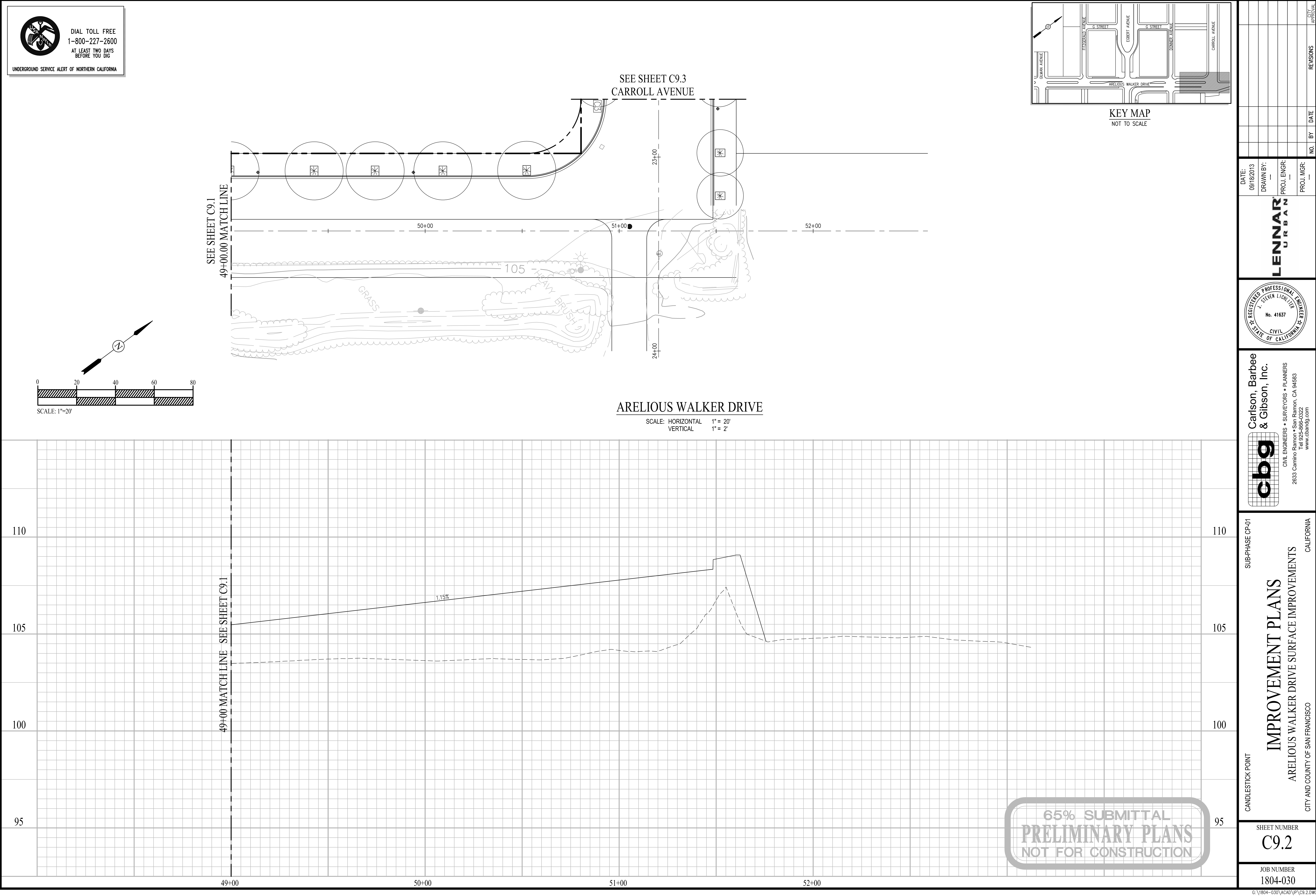
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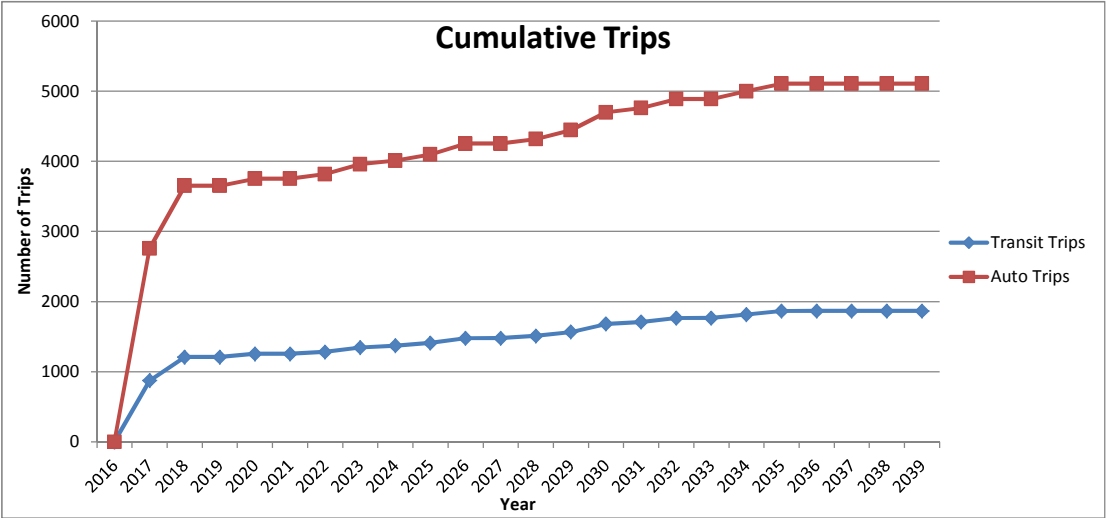
SUB-PHASE CP-01

IMPROVEMENT PLANS
ARELIIOUS WALKER DRIVE SURFACE IMPROVEMENTS
CITY AND COUNTY OF SAN FRANCISCO CALIFORNIA

SHEET NUMBER	C9.1
JOB NUMBER	1804-030



CP



Trip Rates	Transit	Auto
Residential	0.14	0.31
Office	0.59	1.2
Retail	1.02	3.59
Hotel	0.17	0.36
Community Facilities	0.78	1.6
Parks	0.04	0.04

Land Use (By Year)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential (# of units)	0	605	924	0	322	0	215	452	172	280	495	0	215	410	815	205	410	0	360	345	0	0	0	0	0
Office (ksf)	0	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail (ksf)	0	635	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hotel (# of rooms)	0	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Community Facilities (ksf)	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Land Use (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential (# of units)	0	605	1529	1529	1851	1851	2066	2518	2690	2970	3465	3465	3680	4090	4905	5110	5520	5520	5880	6225	6225	6225	6225	6225	6225
Office (ksf)	0	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175	175
Retail (ksf)	0	635	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760
Hotel (# of rooms)	0	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
Community Facilities (ksf)	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Transit Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	85	214	214	259	259	289	353	377	416	485	485	515	573	687	715	773	773	823	872	872	872	872	872	872
Office	0	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103
Retail	0	648	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775
Hotel	0	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
Community Facilities	0	0	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Total	0	873	1207	1207	1252	1252	1282	1346	1370	1409	1478	1478	1508	1566	1680	1708	1766	1766	1816	1865	1865	1865	1865	1865	1865

Auto Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	188	474	474	574	574	640	781	834	921	1074	1074	1141	1268	1521	1584	1711	1711	1823	1930	1930	1930	1930	1930	1930
Office	0	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
Retail	0	2280	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728
Hotel	0	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Community Facilities	0	0	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Total	0	2757	3651	3651	3751	3751	3817	3958	4011	4098	4251	4251	4318	4445	4698	4761	4888	4888	5000	5107	5107	5107	5107	5107	5107

Total Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential	0	273	688	688	833	833	929	1134	1211	1337	1559	1559	1656	1841	2208	2299	2484	2484	2646	2802	2802	2802	2802	2802	2802
Office	0	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313
Retail	0	2928	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503
Hotel	0	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116
Community Facilities	0	0	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238
Total	0	3630	4858	4858	5003	5003	5099	5304	5381	5507	5729	5729	5826	6011	6378	6469	6654	6654	6816	6972	6972	6972	6972	6972	6972

HPX	20 Minutes [1]		12 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	469	1220	1173	2410
Retail (ksf)	5	0	12.5	71
R&D (ksf)	150	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	115	146	288	304
Approximate Year	2017	2023	2019	2024

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 50% into Major Phase 1, now proposed as 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

CPX	20 Minutes [1]		15 Minutes [2]		10 Minutes [3]	
	Old	New	Old	New	Old	New
Development:						
Residential (DU)	1630	N/A	3588	1529	5545	4905
Retail (ksf)	0	N/A	353	760	365	760
R&D (ksf)	0	N/A	0	0	70	0
Artists (ksf)	0	N/A	0	0	0	0
Community Facilities (ksf)	0	N/A	0	100	0	100
Office (ksf)	0	N/A	75	150	150	150
Hotel (Rooms)	0	N/A	110	220	220	220
Transit Trip Gen Trigger	164	N/A	838	1193	1514	1608
Approximate Year	2021	N/A	2022	2020	2027	2030

[1] Originally contemplated as initiation of Major Phase 2, but because of substantial development in first years, the CPX will begin at 15-minute frequencies.

[2] Originally contemplated as 50% into Major Phase 2, now proposed as prior to first occupancy of Major Phase 2

[3] Originally contemplated as initiation of Major Phase 3, now proposed as 50% into Major Phase 3

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

23 Monterey/24 Divisadero

	23 Monterey: 15 Minutes [1]		24 Divisadero: 10 Minutes [2]		24 Divisadero: 7.5 Minutes [3]	
	Old	New	Old	New	Old	New
Development:						
Residential (DU)	469	1220	2406	2935	2498	3320
Retail (ksf)	5	0	45	100	88	105
R&D (ksf)	150	0	975	1831	1313	2336
Artists (ksf)	0	0	48	0	120	0
Community Facilities (ksf)	0	0	0	0	0	0
Office (ksf)	0	0	0	0	0	0
Hotel (Rooms)	0	0	0	0	0	0
Transit Trip Gen Trigger	115	146	643	636	744	810
Approximate Year	2017	2023	2023	2029	2025	2030

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 20% into Major Phase 2, now proposed 50% into Major Phase 3

[3] Originally contemplated as 50% into Major Phase 2, now proposed as prior to first occupancy of Major Phase 4

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

48 Quintara

	15 Minutes [1]		10 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	1	1	1173	2410
Retail (ksf)	0	0	13	71
R&D (ksf)	0	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	1	1	288	304
Approximate Year	2015	2019	2019	2024

[1] Originally contemplated as initiation of Major Phase 1. No change proposed.

[2] Originally contemplated as 50% into Major Phase 1, now proposed 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

44 O'Shaughnessy

	7.5 Minutes [1]		6.5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	469	1220	1173	2410
Retail (ksf)	5	0	13	71
R&D (ksf)	150	0	375	90
Artists (ksf)	0	0	0	0
Community Facilities (ksf)	0	0	0	0
Office (ksf)	0	0	0	0
Hotel (Rooms)	0	0	0	0
Transit Trip Gen Trigger	115	146	288	304
Approximate Year	2017	2023	2019	2024

[1] Originally contemplated as 20% into Major Phase 1, now proposed as prior to first occupancy of Major Phase 2

[2] Originally contemplated as 50% into Major Phase 1, now proposed 50% into Major Phase 2

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

29 Sunset

	10 Minutes [1]		5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	2413	N/A	3588	605
Retail (ksf)	141	N/A	350	635
R&D (ksf)	0	N/A	0	0
Artists (ksf)	0	N/A	0	0
Community Facilities (ksf)	0	N/A	0	0
Office (ksf)	30	N/A	75	150
Hotel (Rooms)	44	N/A	110	220
Transit Trip Gen Trigger	433	N/A	838	835
Approximate Year	2021	N/A	2022	2017

[1] Originally contemplated as 20% into Major Phase 2, but because of substantial development in the first years, the 29 Sunset will begin at 5-minute frequencies.

[2] Originally contemplated as 50% into Major Phase 2, now proposed 70% into Major Phase 1

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

28L - BRT

	8 Minutes [1]		5 Minutes [2]	
	Old	New	Old	New
Development:				
Residential (DU)	4819	4548	6100	5915
Retail (ksf)	166	778	415	836
R&D (ksf)	975	0	1298	627
Artists (ksf)	48	0	120	0
Community Facilities (ksf)	0	100	0	100
Office (ksf)	30	150	75	150
Hotel (Rooms)	44	220	110	220
Transit Trip Gen Trigger	1075	1456	1582	1926
Approximate Year	2021	2023	2022	2028

[1] Originally contemplated as 20% into Major Phase 2 (CP + HP), now proposed to remain 20% of Major Phase 2 CP + 20% of Major Phase 2 HP. Interim routes servicing CP include temporary extension of the 56 Rutland and supplemental shuttles

[2] Originally contemplated as 50% into Major Phase 2 (CP + HP), now proposed prior to occupancy of Major Phase 3 CP and Major Phase 3 HP

NOTE: Land uses shown are hypothetical and presented for informational use only. Uses represent total land uses projected to be on-line at the end of calendar year in which trigger is reached, and thus may be greater than the land uses that trigger the additional service. Additionally, years identified assume transit service would be implemented when identified triggers are exceeded.

Candlestick Point / Hunters Point Shipyard Phase 2
Transit Expansion Plan
Muni Fiscal Model

	Year										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
REVENUES											
EcoPass - Resident	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 259,740	\$ 409,860	\$ 587,520	\$ 752,760	\$ 1,320,300	\$ 1,578,420
Farebox Recovery	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,584	\$ 8,584	\$ 156,751	\$ 151,014	\$ 276,852	\$ 593,685
Advertising (1)	-	-	-	-	-	2,985	2,985	30,031	30,031	51,014	111,112
Prop K Sales Tax (2)	-	-	-	-	1,389	19,422	94,681	109,774	395,576	212,324	409,129
On-Street Parking (3)	-	-	-	-	-	-	-	395,327	405,942	573,656	600,194
Parking Tax (4)	-	-	-	-	-	-	-	969,438	986,464	1,255,470	1,298,035
Parking Fees and Fines (5)	-	-	-	-	412	83,325	131,248	266,225	321,651	538,464	626,995
State Sales Tax (AB 1107) (6)	-	-	-	-	943	13,194	64,321	74,574	268,734	144,242	277,941
TDA Sales Tax (7)	-	-	-	-	1,887	26,388	128,642	149,149	537,468	288,484	555,882
Other (8)	-	-	-	-	41	8,306	13,083	26,538	32,063	53,675	62,500
Gas Tax (Prop. 42) (9)	-	-	-	-	-	-	-	-	-	-	-
Subtotal	\$0	\$0	\$0	\$0	\$4,672	\$421,944	\$853,405	\$2,765,327	\$3,881,702	\$4,714,481	\$6,113,891
COSTS											
Operations and Maintenance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,173	\$ 127,173	\$ 1,279,301	\$ 1,279,301	\$ 2,173,116	\$ 4,733,225
Capital Costs	-	-	-	-	-	18,184	18,184	365,505	365,505	678,275	1,938,745
Facilities	-	-	-	-	-	-	-	-	-	-	2,106,105
Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 145,358	\$ 145,358	\$ 1,644,805	\$ 1,644,805	\$ 2,851,391	\$ 8,778,076
NET Income (Loss)	\$ -	\$ -	\$ -	\$ -	\$ 4,672	\$ 276,586	\$ 708,047	\$ 1,120,521	\$ 2,236,897	\$ 1,863,090	\$ (2,664,185)
Cumulative Cash Flow	\$ -	\$ -	\$ -	\$ -	\$ 4,672	\$ 281,258	\$ 989,305	\$ 2,109,826	\$ 4,346,723	\$ 6,209,813	\$ 3,545,628
<i>Unadjusted GF Contribution - 6.65% of GF Revenue</i>	<i>\$ -</i>	<i>\$ 5,398</i>	<i>\$ 4,687</i>	<i>\$ 23,741</i>	<i>\$ 30,321</i>	<i>\$ 178,614</i>	<i>\$ 237,649</i>	<i>\$ 572,457</i>	<i>\$ 813,719</i>	<i>\$ 1,000,563</i>	<i>\$ 1,171,648</i>
Net Annual Impact to Muni	\$ -	\$ 5,398	\$ 4,687	\$ 23,741	\$ 34,993	\$ 455,200	\$ 945,696	\$ 1,692,978	\$ 3,050,616	\$ 2,863,653	\$ (1,492,537)
GENERAL FUND ADJUSTMENT MODEL											
Baseline General Fund Revenue	\$ 1,945,000,000	\$ 1,964,450,000	\$ 1,984,094,500	\$ 2,003,935,445	\$ 2,023,974,799	\$ 2,044,214,547	\$ 2,064,656,693	\$ 2,085,303,260	\$ 2,106,156,292	\$ 2,127,217,855	\$ 2,148,490,034
Net Project-Generated General Fund Revenue Growth	\$ 81,168	\$ 70,488	\$ 357,001	\$ 455,956	\$ 2,685,928	\$ 3,573,665	\$ 8,608,369	\$ 12,236,370	\$ 15,046,056	\$ 17,618,765	\$ 17,618,765
Baseline Citywide GF Contribution (6.65%)	\$ 129,342,500	\$ 130,641,323	\$ 131,946,972	\$ 133,285,448	\$ 134,624,645	\$ 136,118,882	\$ 137,537,319	\$ 139,245,123	\$ 140,873,112	\$ 142,460,550	\$ 144,046,235
Adjusted GF Allocation (%)	6.650%	6.650%	6.650%	6.650%	6.650%	6.650%	6.650%	6.650%	6.650%	6.650%	6.650%
Citywide GF Contribution with Increased Service	129,342,500	130,641,323	131,946,972	133,285,448	134,624,645	136,118,882	137,537,319	139,245,123	140,873,112	142,460,550	144,046,235
Allocation for Increased Service	-	-	-	-	-	-	-	-	-	-	-
Final Adjusted General Fund Contribution	-	5,398	4,687	23,741	30,321	178,614	237,649	572,457	813,719	1,000,563	1,171,648
Net Cash Flow to Muni after GF Adjustments	-	5,398	4,687	23,741	34,993	455,200	945,696	1,692,978	3,050,616	2,863,653	(1,492,537)
Net Cumulative Cash Flow to Muni after GF Adjustments	\$ -	\$ 5,398	\$ 10,085	\$ 33,826	\$ 68,819	\$ 524,019	\$ 1,469,715	\$ 3,162,693	\$ 6,213,308	\$ 9,076,961	\$ 7,584,424

Candlestick Point / Hunters Point Shipyard f
Transit Expansion Plan
Muni Fiscal Model

	2021	Year 2022	2023	2024	2025	Buildout 2026	2027	2028	2029	2030	2031	2032
REVENUES												
EcoPass - Resident	\$ 1,906,740	\$ 2,303,640	\$ 2,563,380	\$ 3,032,100	\$ 3,486,240	\$ 3,816,720	\$ 4,219,560	\$ 4,792,500	\$ 5,061,420	\$ 5,249,880	\$ 5,475,060	\$ 5,673,240
Farebox Recovery	\$ 1,939,698	\$ 2,482,367	\$ 2,702,931	\$ 2,643,365	\$ 3,477,829	\$ 3,430,792	\$ 3,508,298	\$ 3,388,672	\$ 3,336,837	\$ 3,302,001	\$ 3,261,892	\$ 3,227,883
Advertising (1)	237,381	292,582	318,679	318,679	422,909	422,909	443,873	443,873	443,873	443,873	443,873	443,873
Prop K Sales Tax (2)	557,931	720,197	782,295	709,588	823,014	919,457	792,914	874,415	1,025,292	838,264	1,007,450	879,075
On-Street Parking (3)	1,379,325	2,256,280	2,712,189	2,906,971	3,589,507	3,843,203	3,843,203	3,843,203	3,843,203	3,843,203	3,843,203	3,843,203
Parking Tax (4)	2,547,722	3,954,316	4,685,570	4,997,992	6,092,746	6,499,661	6,499,661	6,499,661	6,499,661	6,499,661	6,499,661	6,499,661
Parking Fees and Fines (5)	888,579	1,167,532	1,335,906	1,526,653	1,796,126	1,947,449	2,075,299	2,257,244	2,342,501	2,402,509	2,473,887	2,536,964
State Sales Tax (AB 1107) (6)	379,029	489,265	531,450	482,057	559,113	624,631	538,664	594,032	696,530	569,473	684,409	597,198
TDA Sales Tax (7)	758,058	978,529	1,062,901	964,114	1,118,226	1,249,262	1,077,328	1,188,064	1,393,059	1,138,946	1,368,818	1,194,395
Other (8)	88,575	116,381	133,165	152,179	179,040	194,124	206,869	225,005	233,504	239,485	246,601	252,888
Gas Tax (Prop. 42) (9)	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	\$10,683,038	\$14,761,088	\$16,828,467	\$17,733,699	\$21,544,751	\$22,948,208	\$23,205,669	\$24,106,670	\$24,875,878	\$24,527,294	\$25,304,852	\$25,148,379
COSTS												
Operations and Maintenance	\$ 10,112,113	\$ 12,463,579	\$ 13,575,307	\$ 13,575,307	\$ 18,015,364	\$ 18,015,364	\$ 18,908,390	\$ 18,908,390	\$ 18,908,390	\$ 18,908,390	\$ 18,908,390	\$ 18,908,390
Capital Costs	3,114,361	3,666,255	3,903,257	5,536,091	7,075,387	7,075,387	7,409,979	7,409,979	7,391,794	7,391,794	7,044,474	7,044,474
Facilities	2,106,105	2,106,105	2,106,105	2,106,105	2,106,105	2,106,105	2,106,105	2,106,105	2,106,105	2,106,105	2,106,105	2,106,105
Subtotal	\$ 15,332,579	\$ 18,235,939	\$ 19,584,670	\$ 21,217,503	\$ 27,196,857	\$ 27,196,857	\$ 28,424,474	\$ 28,424,474	\$ 28,406,289	\$ 28,406,289	\$ 28,058,969	\$ 28,058,969
NET Income (Loss)	\$ (4,649,541)	\$ (3,474,851)	\$ (2,756,203)	\$ (3,483,804)	\$ (5,652,105)	\$ (4,248,649)	\$ (5,218,805)	\$ (4,317,804)	\$ (3,530,411)	\$ (3,878,996)	\$ (2,754,117)	\$ (2,910,590)
Cumulative Cash Flow	\$ (1,103,913)	\$ (4,578,764)	\$ (7,334,967)	\$ (10,818,771)	\$ (16,470,876)	\$ (20,719,525)	\$ (25,938,330)	\$ (30,256,134)	\$ (33,786,545)	\$ (37,665,541)	\$ (40,419,658)	\$ (43,330,247)
<i>Unadjusted GF Contribution - 6.65% of GF Revenue</i>	<i>\$ 1,413,475</i>	<i>\$ 1,822,938</i>	<i>\$ 2,048,453</i>	<i>\$ 2,088,374</i>	<i>\$ 2,358,542</i>	<i>\$ 2,576,151</i>	<i>\$ 2,544,948</i>	<i>\$ 2,721,444</i>	<i>\$ 2,839,689</i>	<i>\$ 2,760,248</i>	<i>\$ 2,913,232</i>	<i>\$ 2,859,475</i>
Net Annual Impact to Muni	\$ (3,236,066)	\$ (1,651,913)	\$ (707,750)	\$ (1,395,430)	\$ (3,293,563)	\$ (1,672,498)	\$ (2,673,856)	\$ (1,596,360)	\$ (690,722)	\$ (1,118,748)	\$ 159,115	\$ (51,115)
GENERAL FUND ADJUSTMENT MODEL												
Baseline General Fund Revenue	\$ 2,169,974,934	\$ 2,191,674,684	\$ 2,213,591,430	\$ 2,235,727,345	\$ 2,258,084,618	\$ 2,280,665,464	\$ 2,303,472,119	\$ 2,326,506,840	\$ 2,349,771,909	\$ 2,373,269,628	\$ 2,397,002,324	\$ 2,420,972,347
Net Project-Generated General Fund Revenue Growth	\$ 21,255,263	\$ 27,412,606	\$ 30,803,809	\$ 31,404,123	\$ 35,466,794	\$ 38,739,114	\$ 38,269,899	\$ 40,923,972	\$ 42,702,096	\$ 41,507,487	\$ 43,808,007	\$ 42,999,619
Baseline Citywide GF Contribution (6.65%)	\$ 145,716,808	\$ 147,569,305	\$ 149,252,283	\$ 150,764,243	\$ 152,521,169	\$ 154,240,404	\$ 155,725,844	\$ 157,434,149	\$ 159,099,521	\$ 160,582,678	\$ 162,313,887	\$ 163,854,136
Adjusted GF Allocation (%)	6.650%	6.650%	6.650%	6.650%	6.770%	6.770%	6.770%	6.770%	6.770%	6.770%	6.770%	6.770%
Citywide GF Contribution with Increased Service	145,716,808	147,569,305	149,252,283	150,764,243	155,273,431	157,023,690	158,535,935	160,275,066	161,970,490	163,480,411	165,242,859	166,810,902
Allocation for Increased Service	-	-	-	-	2,752,262	2,783,285	2,810,090	2,840,917	2,870,969	2,897,733	2,928,972	2,956,766
Final Adjusted General Fund Contribution	1,413,475	1,822,938	2,048,453	2,088,374	5,110,803	5,359,437	5,355,039	5,562,361	5,710,658	5,657,980	5,842,205	5,816,241
Net Cash Flow to Muni after GF Adjustments	(3,236,066)	(1,651,913)	(707,750)	(1,395,430)	(541,302)	1,110,788	136,234	1,244,557	2,180,247	1,778,985	3,088,088	2,905,651
Net Cumulative Cash Flow to Muni after GF Adjustments	\$ 4,348,357	\$ 2,696,444	\$ 1,988,695	\$ 593,265	\$ 51,963	\$ 1,162,751	\$ 1,298,985	\$ 2,543,542	\$ 4,723,789	\$ 6,502,774	\$ 9,590,862	\$ 12,496,513

Candlestick Point / Hunters Point Shipyard Phase 2
Transit Expansion Plan
Muni Fiscal Model

2015	2020	2025	2032 Buildout
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41,030,000
43,032,000

Light Rail
Buses

Year		2010	2011	2012
4/7/10	Annual Capital Costs	-	-	-
	Cumulative	-	-	-
41,030,000	Light Rail			
<u>44,532,000</u>	Buses			
85,562,000				
	2010			
	2011			
	2012			
	2013			
	2014			
	2015			
	2016			
	2017			
	2018			
	2019			
	2020			
	2021			
	2022			
	2023			
	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
	2030			
	2031			
	2032			
TOTAL		0	0	0
Finance Assumptions, Light Rail:				
Interest		5.0%		
Term		25 years		
Year		2010	2011	2012
Annual Capital Costs		-	-	-

	Cumulative	-	-	-
0	Light Rail			
<u>44,532,000</u>	Buses			
44,532,000				
	2010			
	2011			
	2012			
	2013			
	2014			
	2015			
	2016			
	2017			
	2018			
	2019			
	2020			
	2021			
	2022			
	2023			
	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
	2030			
	2031			
	2032			
TOTAL		0	0	0
Finance Assumptions, Buses				
Interest 5.0%				
Term 14 years				
TOTAL Payments		0	0	0

180,000 3,438,000 0 0 3,096,000 0 4,968,000

note: rb added borders to light rail based on prior version

revised 4/7/10 per Wells 4/7/10 (Muni Fiscal Model-FnP and EPS 040610.xls) note: are these the c

\$ 180,000 \$ - \$ 3,438,000 \$ - \$ 3,096,000

2013	2014	2015	2016	2017	2018	2019
\$ -	\$ -	\$ 180,000	\$ -	\$ 3,438,000	\$ -	\$ 3,096,000
-	-	180,000	180,000	3,618,000	3,618,000	6,714,000
-	-	180,000	-	3,438,000	-	3,096,000

0	0	0	0	0	0	0
	0	0	0	0	0	0
		0	0	0	0	0
			0	0	0	0
				0	0	0
					0	0
						0

0 0 0 0 0 0 0

2013	2014	2015	2016	2017	2018	2019
\$ -	\$ -	\$ 180,000	\$ -	\$ 3,438,000	\$ -	\$ 3,096,000

-	-	180,000	180,000	3,618,000	3,618,000	6,714,000
-	-	180,000	-	3,438,000	-	3,096,000

0	0	0	0	0	0	0
	0	0	0	0	0	0
		18,184	18,184	18,184	18,184	18,184
			0	0	0	0
				347,320	347,320	347,320
					0	0
						312,770

0	0	18,184	18,184	365,505	365,505	678,275
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0	0	18,184	18,184	365,505	365,505	678,275
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17,765,000 5,500,000 17,765,000
 10,755,000 3,723,000 10,800,000 2,760,000 3,312,000

urrent revised numbers? Per Chris Mitchell, these are updated as of 4/20/10 same as 17.765 + buses? YE

\$ 17,765,000 **\$11,637,000** **\$ 5,463,000** **\$ 2,346,000** **\$ 17,800,000** **\$ 20,525,000**

2020	2021	2022	2023	2024	2025	2026
\$ 17,765,000	\$11,637,000	\$ 5,463,000	\$ 2,346,000	\$ 17,800,000	\$ 20,525,000	\$ -
24,479,000	36,116,000	41,579,000	43,925,000	61,725,000	82,250,000	82,250,000
17,765,000				5,500,000	17,765,000	
	11,637,000	5,463,000	2,346,000	12,300,000	2,760,000	-

0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
	0	0	0	0	0	0
		0	0	0	0	0
			0	0	0	0
				390,239	390,239	390,239
					1,260,470	1,260,470
						0

1,260,470	1,260,470	1,260,470	1,260,470	1,650,709	2,911,179	2,911,179
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2020	2021	2022	2023	2024	2025	2026
\$ -	\$11,637,000	\$ 5,463,000	\$ 2,346,000	\$ 12,300,000	\$ 2,760,000	\$ -

6,714,000	18,351,000	23,814,000	26,160,000	38,460,000	41,220,000	41,220,000
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-	11,637,000	5,463,000	2,346,000	12,300,000	2,760,000	-
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0	0	0	0	0	0	0
0	0	0	0	0	0	0
18,184	18,184	18,184	18,184	18,184	18,184	18,184
0	0	0	0	0	0	0
347,320	347,320	347,320	347,320	347,320	347,320	347,320
0	0	0	0	0	0	0
312,770	312,770	312,770	312,770	312,770	312,770	312,770
0	0	0	0	0	0	0
	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616
		551,894	551,894	551,894	551,894	551,894
			237,002	237,002	237,002	237,002
				1,242,595	1,242,595	1,242,595
					278,826	278,826
						0

678,275	1,853,891	2,405,785	2,642,787	3,885,382	4,164,208	4,164,208
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1,938,745	3,114,361	3,666,255	3,903,257	5,536,091	7,075,387	7,075,387
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0 0 0 0 0

\$

\$ 3,312,000 \$ - \$ - - - -

2027	2028	2029	2030	2031	2032	2033	2034
\$ 3,312,000	\$ -	\$ -	\$ -	\$ -	\$ -		
85,562,000	85,562,000	85,562,000	85,562,000	85,562,000	85,562,000		
						Total	
						41,030,000	
3,312,000	-	-	-	-	-	<u>44,532,000</u>	
						85,562,000	

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
390,239	390,239	390,239	390,239	390,239	390,239	390,239	390,239
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179
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2027	2028	2029	2030	2031	2032	2033	2034
\$ 3,312,000	\$ -	\$ -	\$ -	\$ -	\$ -		

44,532,000	44,532,000	44,532,000	44,532,000	44,532,000	44,532,000	Total	0
3,312,000	-	-	-	-	-	<u>44,532,000</u>	<u>44,532,000</u>

0							
0	0						
18,184	18,184	0	0				
0	0	0	0	0			
347,320	347,320	347,320	347,320	0	0		
0	0	0	0	0	0	0	
312,770	312,770	312,770	312,770	312,770	312,770	0	0
0	0	0	0	0	0	0	0
1,175,616	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616
551,894	551,894	551,894	551,894	551,894	551,894	551,894	551,894
237,002	237,002	237,002	237,002	237,002	237,002	237,002	237,002
1,242,595	1,242,595	1,242,595	1,242,595	1,242,595	1,242,595	1,242,595	1,242,595
278,826	278,826	278,826	278,826	278,826	278,826	278,826	278,826
0	0	0	0	0	0	0	0
334,591	334,591	334,591	334,591	334,591	334,591	334,591	334,591
	0	0	0	0	0	0	0

4,498,799	4,498,799	4,480,615	4,480,615	4,133,295	4,133,295	3,820,524	3,820,524
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7,409,979	7,409,979	7,391,794	7,391,794	7,044,474	7,044,474	6,731,704	6,731,704
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2035	2036	2037	2038	2039	2040	2041	2042	2043
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0	0	0						
0	0	0	0					
0	0	0	0	0				
0	0	0	0	0	0			
0	0	0	0	0	0	0		
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
390,239	390,239	390,239	390,239	390,239	390,239	390,239	390,239	390,239
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
0	0	0	0	0			0	0
0	0	0	0	0				0
0	0	0	0	0				

2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179
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2035	2036	2037	2038	2039	2040	2041	2042	2043
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0								
0	0							
551,894	0	0						
237,002	237,002	0	0					
1,242,595	1,242,595	1,242,595	0					
278,826	278,826	278,826	278,826	0				
0	0	0	0	0	0	0	0	
334,591	334,591	334,591	334,591	334,591	334,591	0	0	
0	0	0	0	0	0	0	0	0

2,644,909	2,093,015	1,856,012	613,418	334,591	334,591	0	0	0
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5,556,088	5,004,194	4,767,192	3,524,597	3,245,771	3,245,771	2,911,179	2,911,179	2,911,179
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2044	2045	2046	2047	2048	2049	2050	2051	2052
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1,260,470								
0	0							
0	0	0						
0	0	0	0					
390,239	390,239	390,239	390,239	390,239				
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470			
0	0	0	0	0	0	0		
0	0	0	0	0	0	0	0	0

2,911,179	1,650,709	1,650,709	1,650,709	1,650,709	1,260,470	0	0	0
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2044	2045	2046	2047	2048	2049	2050	2051	2052
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0	0	0	0	0	0	0	0	0	0
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2,911,179	1,650,709	1,650,709	1,650,709	1,650,709	1,260,470	0	0	0
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2053	2054	2055	2056	2057	2058	2059	2060	2061
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0	0	0	0	0	0	0	0	0
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2053	2054	2055	2056	2057	2058	2059	2060	2061
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0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0
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2062	2063	2064	2065	2066	2067	2068
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82,060,000
89,064,000

0	0	0	0	0	0	0	72,779,483
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2062	2063	2064	2065	2066	2067	2068
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0	0	0	0	0	0	0	62,983,192
							135,762,675
0	0	0	0	0	0	0	135,762,675

Hunter's Point Phase 2										Total New PM Transi Trips	Cumulative Transi Trips	Total Residential Transit Trips	Total Non- Residential Transit Trips	Total Residential Units
Year	Retail	Retail trip gen	R&D	R&D Trip gen	Hotel	Hotel Trip gen	Residential	Res trip gen						
2013		0.75		0.19		N/A		0.13				-	-	-
2014		0.75		0.19		N/A		0.13				-	-	-
2015		0.75		0.19		N/A	256	0.13	33	33		33	-	256
2016		0.75		0.19		N/A	278	0.13	36	69		69	-	534
2017		0.75	278	0.19		N/A	259	0.13	86	156		103	53	793
2018	10	0.75		0.19		N/A	201	0.13	34	189		129	60	994
2019	74	0.75	93	0.19		N/A	717	0.13	166	356		222	134	1,711
2020	25	0.75		0.19		N/A	366	0.13	66	422		270	152	2,077
2021	16	0.75	153	0.19		N/A	362	0.13	88	510		317	193	2,439
2022		0.75	414	0.19		N/A	107	0.13	93	603		331	272	2,546
2023		0.75	444	0.19		N/A	101	0.13	98	701		344	357	2,647
2024		0.75	137	0.19		N/A		0.13	26	727		344	383	2,647
2025		0.75	714	0.19		N/A		0.13	136	862		344	518	2,647
2026		0.75	266	0.19		N/A		0.13	50	913		344	569	2,647
Total	125		2,500		-		2,647		913					

Candlestick										Total New PM Transi Trips	Cumulative Transi Trips	Total Residential Transit Trips	Total Non- Residential Transit Trips	Total Residential Units
Year	Retail	Retail trip gen	Office	Office Trip gen	Hotel	Hotel Trip gen	Residential	Res trip gen						
2013		0.95		0.64		0.15		0.13	-			-	-	-
2014		0.95		0.64		0.15		0.13	-			-	-	-
2015		0.95		0.64		0.15	225	0.13	29	29		29	-	225
2016		0.95		0.64		0.15		0.13	-	29		29	-	225
2017		0.95		0.64		0.15	70	0.13	9	38		38	-	295
2018		0.95		0.64		0.15	105	0.13	14	52		52	-	400
2019		0.95		0.64		0.15	334	0.13	43	95		95	-	734
2020		0.95		0.64		0.15	112	0.13	15	110		110	-	846
2021	464	0.95	150	0.64		0.15	246	0.13	569	678		142	537	1,092
2022	199	0.95		0.64	220	0.15	628	0.13	304	982		224	759	1,720
2023	32	0.95		0.64		0.15	380	0.13	80	1,062		380	789	2,100
2024	65	0.95		0.64		0.15	868	0.13	175	1,237		386	851	2,968
2025		0.95		0.64		0.15	841	0.13	109	1,346		495	851	3,809
2026		0.95		0.64		0.15	612	0.13	80	1,426		575	851	4,621
2027		0.95		0.64		0.15	746	0.13	97	1,523		672	851	5,167
2028		0.95		0.64		0.15	1,061	0.13	138	1,661		810	851	6,228
2029		0.95		0.64		0.15	498	0.13	65	1,725		874	851	6,726
2030		0.95		0.64		0.15	349	0.13	45	1,771		920	851	7,075
2031		0.95		0.64		0.15	417	0.13	54	1,825		974	851	7,492
2032		0.95		0.64		0.15	367	0.13	48	1,873		1,022	851	7,859
Total	760		150		220	0.15	7,859		1,873					

Year	Total Cumulative Transit Trips	Total Cumulative Residential Transit Trips	Total Cumulative Non- Residential Transit Trips	Cumulative Residential	Cumulative Non- Residential	Total Residential Units
2013	-	-	-	-	-	-
2014	-	-	-	-	-	-
2015	63	63	-	100%	0%	481
2016	99	99	-	100%	0%	759
2017	194	141	53	73%	27%	1,088
2018	241	181	60	75%	25%	1,394
2019	451	318	134	70%	30%	2,445
2020	532	380	152	71%	29%	2,923
2021	1,189	459	730	39%	61%	3,531
2022	1,586	555	1,031	35%	65%	4,266
2023	1,763	617	1,146	35%	65%	4,747
2024	1,963	720	1,234	37%	63%	5,615
2025	2,209	839	1,369	38%	62%	6,456
2026	2,339	919	1,420	39%	61%	7,068
2027	2,436	1,016	1,420	42%	58%	7,814
2028	2,573	1,154	1,420	45%	55%	8,875
2029	2,638	1,218	1,420	46%	54%	9,373
2030	2,684	1,264	1,420	47%	53%	9,722
2031	2,738	1,318	1,420	48%	52%	10,139
2032	2,786	1,366	1,420	49%	51%	10,506

Year	Total O&M Costs	Total Transit Costs	Total Farebox Recovery	Residential portion of farebox	Non-residential portion of farebox	Net Farebox Recovery	Eco-Pass Revenue
2013	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2014	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 92,837	\$ 127,173	\$ 34,337	\$ 34,337	\$ -	\$ 8,584	\$ 259,740
2016	\$ 92,837	\$ 127,173	\$ 34,337	\$ 34,337	\$ -	\$ 8,584	\$ 409,860
2017	\$ 933,890	\$ 1,279,301	\$ 345,411	\$ 251,547	\$ 93,864	\$ 156,751	\$ 587,520
2018	\$ 933,890	\$ 1,279,301	\$ 345,411	\$ 251,547	\$ 93,864	\$ 156,751	\$ 587,520
2019	\$ 1,586,375	\$ 2,173,116	\$ 586,741	\$ 413,185	\$ 173,556	\$ 276,852	\$ 1,320,300
2020	\$ 3,455,255	\$ 4,733,225	\$ 1,277,971	\$ 912,382	\$ 365,589	\$ 593,685	\$ 1,578,420
2021	\$ 7,381,842	\$ 10,112,113	\$ 2,730,270	\$ 1,054,097	\$ 1,676,174	\$ 1,939,698	\$ 1,906,740
2022	\$ 9,098,413	\$ 12,461,579	\$ 3,365,166	\$ 1,177,066	\$ 2,188,100	\$ 2,482,367	\$ 2,303,640
2023	\$ 9,909,974	\$ 13,575,307	\$ 3,665,333	\$ 1,283,202	\$ 2,382,131	\$ 2,702,931	\$ 2,563,380
2024	\$ 9,909,974	\$ 13,575,307	\$ 3,665,333	\$ 1,362,624	\$ 2,302,709	\$ 2,643,365	\$ 3,032,100
2025	\$ 13,151,216	\$ 18,015,364	\$ 4,864,148	\$ 1,848,425	\$ 3,015,723	\$ 3,477,829	\$ 3,486,240
2026	\$ 13,151,216	\$ 18,015,364	\$ 4,864,148	\$ 1,911,141	\$ 2,953,007	\$ 3,430,792	\$ 3,816,720
2027	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,129,289	\$ 2,975,976	\$ 3,508,298	\$ 4,219,560
2028	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,288,790	\$ 2,816,475	\$ 3,386,672	\$ 4,792,500
2029	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,357,904	\$ 2,747,361	\$ 3,336,837	\$ 5,061,420
2030	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,404,352	\$ 2,700,913	\$ 3,302,001	\$ 5,249,880
2031	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,457,831	\$ 2,647,434	\$ 3,261,892	\$ 5,475,060
2032	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,503,176	\$ 2,602,089	\$ 3,227,883	\$ 5,673,240

Transit Improvement Phasing - DRAFT FOR DISCUSSION PURPOSES ONLY

Annual Costs Based on Hunters Point Development

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Begin Hunters Point Express (HPX)	20	192	1	115	\$ 562,581	\$ 3,024,000	\$ -	\$ -	\$ -	\$ -	\$ 3,586,581	\$ 562,581	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	12	320	1	288 [2]	\$ 937,634	\$ 5,040,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,953,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634
Extend 23-Monterey	15	256	1	115 [1]	\$ 278,472	\$ 414,000	\$ -	\$ -	\$ -	\$ -	\$ 692,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Extend 24-Divisadero	10	384	2	643 [1]	\$ 1,090,034	\$ 2,760,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,436,034	\$ 1,090,034	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	7.5	512	2	744 [2]	\$ 2,462,395	\$ 5,520,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,222,395	\$ 2,462,395	\$ 2,462,395	\$ 2,462,395	\$ 2,462,395	\$ 2,462,395
Extend 48-Quintara	15	256	1	1 [3]	\$ 92,837	\$ 180,000	\$ -	\$ -	\$ 272,837	\$ 92,837	\$ 92,837	\$ 92,837	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	10	384	1	288 [2]	\$ 370,268	\$ 1,260,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,450,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268
Extend 44-O'Shaughnessy	7.5	512	1	115 [1]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	6.5	591	1	288 [2]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PM Transit Trips from HP DevI Area									33	69	156	189	356	422	510	603	700	726	862	913	839	839	839	839
HP generated Annual Cost							\$ -	\$ -	\$ 272,837	\$ 92,837	\$ 4,371,890	\$ 933,890	\$ 4,682,375	\$ 1,586,375	\$ 1,586,375	\$ 1,586,375	\$ 4,743,936	\$ 2,397,936	\$ 6,530,297	\$ 3,770,297	\$ 3,770,297	\$ 3,770,297	\$ 3,770,297	\$ 3,770,297

Annual Costs Based on Candlestick Point Development

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Begin Candlestick Point Express (CPX)	20	192	2	164 [3]	\$ 977,862	\$ 4,968,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,945,862	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	15	256	2	838 [2]	\$ 1,303,816	\$ 6,624,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,959,816	\$ 1,303,816	\$ 1,303,816	\$ 1,303,816	\$ 1,303,816	\$ -	\$ -	\$ -	\$ -
	10	384	3	1514 [3]	\$ 1,955,725	\$ 9,936,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,267,725	\$ 1,955,725	\$ 1,955,725	\$ 1,955,725
Extend 29-Sunset	10	384	2	433 [1]	\$ 79,429	\$ 243,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 322,429	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	5	768	2	838 [2]	\$ 731,254	\$ 2,673,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,161,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254
Total PM Transit Trips from CP DevI Area									29	29	38	52	95	110	678	982	1,062	1,237	1,346	1,425	1,522	1,660	1,725	1,770
CP generated Annual Cost							\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,268,291	\$ 6,121,070	\$ 2,035,070	\$ 2,035,070	\$ 2,035,070	\$ 2,035,070	\$ 5,998,979	\$ 2,686,979	\$ 2,686,979	\$ 2,686,979

Annual Costs Based on Total Development

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Begin/Extend 28L/BRT	8	480	2	1075 [1, 4]	\$ 2,869,297	\$ 6,426,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,295,297	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	5	768	2	1582 [2, 4]	\$ 3,608,088	\$ 7,803,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,985,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088
T-Third	6	1010	2		\$ -	\$ 35,530,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,765,000	\$ -	\$ -	\$ -	\$ -	\$ 17,765,000	\$ -	\$ -	\$ -	\$ -	\$ -
	5	2424	3		\$ 3,737,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,868,880	\$ 1,868,880	\$ 1,868,880	\$ 1,868,880	\$ 1,868,880	\$ 3,737,760	\$ 3,737,760	\$ 3,737,760	\$ 3,737,760	\$ 3,737,760	\$ 3,737,760
Total PM Transit Trips from HP/CP DevI Area									0	0	62	98	194	241	451	532	1,188	1,585	1,762	1,963	2,208	2,338	2,361	2,499
Combined devI costs							\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,633,880	\$ 11,164,177	\$ 6,853,968	\$ 5,476,968	\$ 5,476,968	\$ 25,110,848	\$ 7,345,848	\$ 7,345,848	\$ 7,345,848	\$ 7,345,848	\$ 7,345,848
Total Operating & Maintenance Costs							\$ -	\$ -	\$ 92,837	\$ 92,837	\$ 933,890	\$ 933,890	\$ 1,586,375	\$ 3,455,255	\$ 7,381,842	\$ 9,098,413	\$ 9,909,974	\$ 9,909,974	\$ 13,151,216	\$ 13,151,216	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124
Total Capital Costs							\$ -	\$ -	\$ 180,000	\$ -	\$ 3,438,000	\$ -	\$ 3,096,000	\$ 17,765,000	\$ 11,637,000	\$ 5,463,000	\$ 2,346,000	\$ 20,525,000		\$ 3,312,000		\$ -	\$ -	\$ -

Notes:	Internal check	\$ -	\$ -	\$ 272,837	\$ 92,837	\$ 4,371,890	\$ 933,890	\$ 4,682,375	\$ 21,220,255	\$ 19,018,842	\$ 14,561,413	\$ 12,255,974	\$ 9,909,974	\$ 33,676,216	\$ 13,151,216	\$ 17,115,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124
		\$ -	\$ -	\$ 272,837	\$ 92,837	\$ 4,371,890	\$ 933,890	\$ 4,682,375	\$ 21,220,255	\$ 19,018,842	\$ 14,561,413	\$ 12,255,974	\$ 9,909,974	\$ 33,676,216	\$ 13,151,216	\$ 17,115,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124
		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

General: Note that triggers are based on total site transit trip generation; only a fraction of the "trigger" amount will travel on each transit route.

1. Initial route extensions based on 20% of buildout of Major Phase (based on Stadium Option land uses)

2. Based on 50% buildout of Major Phase (based on Stadium Option land uses)

3. Based on initiation of Major Phase. In the case of the CPX, this is because completion of Major Phase 1 will include some residential development that could be served by the CPX, but not likely enough until full buildout of Major Phase 1. In the case of the 48-Quintara, the route would be extended as part of the TEP. Initial route will depend on which streets are constructed.

4. Includes total of trips generated by CP and HP. In the case of the 28L, this means 20% buildout of Major Phase II.

5. Under Non-Stadium Option, implementation of Hunters Point Transit Center based on service improvements to HPX, 48-Quintara, and 44-O'Shaughnessy.

Hunter's Point Phase 2

Year	Retail	Retail trip gen	R&D	R&D Trip gen	Hotel	Hotel Trip gen	Residential	Res trip gen	Total New PM Transit Trips	Cumulative Transit Trips
2013		0.75		0.19		N/A		0.13		
2014		0.75		0.19		N/A		0.13		
2015		0.75		0.19		N/A	256	0.13	33	33
2016		0.75		0.19		N/A	278	0.13	36	69
2017		0.75	278	0.19		N/A	259	0.13	86	156
2018	10	0.75		0.19		N/A	201	0.13	34	189
2019	74	0.75	93	0.19		N/A	717	0.13	166	356
2020	25	0.75		0.19		N/A	366	0.13	66	422
2021	16	0.75	153	0.19		N/A	362	0.13	88	510
2022		0.75	414	0.19		N/A	107	0.13	93	603
2023		0.75	444	0.19		N/A	101	0.13	98	700
2024		0.75	137	0.19		N/A		0.13	26	726
2025		0.75	714	0.19		N/A		0.13	136	862
2026		0.75	266	0.19		N/A		0.13	50	913
Total	125		2,500		-		2,647		913	

Candlestick

Year	Retail	Retail trip gen	Office	Office Trip gen	Hotel	Hotel Trip gen	Residential	Res trip gen	Total New PM Transit Trips	Cumulative Transit Trips
2013		0.95		0.64		0.15		0.13	-	
2014		0.95		0.64		0.15		0.13	-	
2015		0.95		0.64		0.15	225	0.13	29	29
2016		0.95		0.64		0.15		0.13	-	29
2017		0.95		0.64		0.15	70	0.13	9	38
2018		0.95		0.64		0.15	105	0.13	14	52
2019		0.95		0.64		0.15	334	0.13	43	95
2020		0.95		0.64		0.15	112	0.13	15	110
2021	464	0.95	150	0.64		0.15	246	0.13	569	678
2022	199	0.95		0.64	220	0.15	628	0.13	304	982
2023	32	0.95		0.64		0.15	380	0.13	80	1,062
2024	65	0.95		0.64		0.15	868	0.13	175	1,237
2025		0.95		0.64		0.15	841	0.13	109	1,346
2026		0.95		0.64		0.15	612	0.13	80	1,425
2027		0.95		0.64		0.15	746	0.13	97	1,522
2028		0.95		0.64		0.15	1,061	0.13	138	1,660
2029		0.95		0.64		0.15	498	0.13	65	1,725
2030		0.95		0.64		0.15	349	0.13	45	1,770
2031		0.95		0.64		0.15	417	0.13	54	1,825
2032		0.95		0.64		0.15	367	0.13	48	1,872
total	760		150		220		7,859		1,873	

HP revised retail

118,750		9500	70,300	23750	15200	118750
1.00	-	0.08	0.59	0.20	0.13	1.00
125,000		10,000	74,000	25,000	16,000	125,000

HP revised commercial

2,137,500	237500	-	79800	0	131100	354,350	380000	116,850	610850	227050	2137500
1.00	0.11	-	0.04	-	0.06	0.17	0.18	0.05	0.29	0.11	1.00
2,500,000	277,778	-	93,333	-	153,333	414,444	444,444	136,667	714,444	265,556	#####

CS revised retail

669,500	408,500	175,500	28,025	57,475	669,500
1.00	0.61	0.26	0.04	0.09	1.00
760,000	463,719	199,223	31,813	65,244	760,000

CS revised commercial

Candlestick Point / Hunters Point Shipyard Phase 2
Transit Expansion Plan
Revised Muni Fiscal Model

2010 Analysis	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
COSTS																			
Operations and Maintenance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 127,173	\$ 127,173	\$ 1,279,301	\$ 1,279,301	\$ 2,173,116	\$ 4,733,225	\$ 10,112,113	\$ 12,463,579	\$ 13,575,307	\$ 13,575,307	\$ 18,015,364	\$ 18,015,364	\$ 18,908,390	\$ 18,908,390
Capital Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,184	\$ 18,184	\$ 365,505	\$ 365,505	\$ 678,275	\$ 4,044,850	\$ 5,220,466	\$ 5,772,360	\$ 6,009,362	\$ 7,642,196	\$ 9,181,492	\$ 9,181,492	\$ 9,516,084	\$ 9,516,084
Total Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 145,357	\$ 145,357	\$ 1,644,806	\$ 1,644,806	\$ 2,851,391	\$ 8,778,075	\$ 15,332,579	\$ 18,235,939	\$ 19,584,669	\$ 21,217,503	\$ 27,196,856	\$ 27,196,856	\$ 28,424,474	\$ 28,424,474
REVENUES																			
IncrementalGFContributiontoSFMTA*	0	\$ 5,398	\$ 4,687	\$ 23,741	\$ 30,321	\$ 178,614	\$ 237,649	\$ 625,687	\$ 857,581	\$ 1,044,080	\$ 1,215,118	\$ 1,455,399	\$ 1,863,030	\$ 2,087,512	\$ 2,127,018	\$ 2,395,615	\$ 2,612,640	\$ 2,581,438	\$ 2,757,933
SFMTARevenues	0	\$ -	\$ -	\$ -	\$ 4,644	\$ 558,165	\$ 1,069,733	\$ 3,506,949	\$ 4,706,947	\$ 5,742,903	\$ 7,209,579	\$ 11,418,585	\$ 15,229,467	\$ 17,191,954	\$ 18,260,808	\$ 21,875,007	\$ 23,340,361	\$ 23,795,030	\$ 25,010,691
Total Revenues	\$ -	\$ 5,398	\$ 4,687	\$ 23,741	\$ 34,965	\$ 736,779	\$ 1,307,382	\$ 4,132,636	\$ 5,564,528	\$ 6,786,983	\$ 8,424,697	\$ 12,873,984	\$ 17,092,497	\$ 19,279,466	\$ 20,387,826	\$ 24,270,622	\$ 25,953,001	\$ 26,376,468	\$ 27,768,624
Cumulative Cash Flow	\$ -	\$ 5,398	\$ 10,085	\$ 33,826	\$ 68,790	\$ 660,212	\$ 1,822,236	\$ 4,310,066	\$ 8,229,788	\$ 12,165,380	\$ 11,812,001	\$ 9,353,406	\$ 8,209,963	\$ 7,904,760	\$ 7,075,083	\$ 4,148,848	\$ 2,904,993	\$ 856,987	\$ 201,138

Revised Analysis (Based on New Phasing)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
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Revised Muni Fiscal Model

	2018	2019	2020	2025	2030
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Candlestick Point / Hunters Point Shipyard Phase 2

REVISED Transit Expansion Plan -- 11/15/13

Muni Fiscal Model

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
PHASING ANALYSIS											
2010 Approved Development Schedule											
ApprovedResidential	-	-	-	-	-	502	266	318	293	1,112	460
ApprovedCommercial	-	-	-	-	-	260,000	-	237,500	-	84,000	-
Approved Retail	-	-	-	-	-	-	-	-	10,000	74,000	25,000
Cumulative											
ApprovedResidential	0	0	0	0	0	502	768	1,086	1,379	2,491	2,951
ApprovedCommercial	0	0	0	0	0	260,000	260,000	497,500	497,500	581,500	581,500
Approved Retail	0	0	0	0	0	0	0	0	10,000	84,000	109,000
Revised Development Schedule											
Revised Residential						1,025	325	799	415	507	-
Revised Commercial						399,820	-	-	-	-	-
Revised Retail						760,000	-	-	-	-	-
Cumulative											
Revised Residential	0	0	0	0	0	1,025	1,350	2,149	2,564	3,071	3,071
Revised Commercial	0	0	0	0	0	399,820	399,820	399,820	399,820	399,820	399,820
Revised Retail	0	0	0	0	0	760,000	760,000	760,000	760,000	760,000	760,000

REVENUE ANALYSIS

2010 Analysis

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
REVENUES											
FastPass (1)	\$0	\$0	\$0	\$0	\$0	\$404,040	\$637,560	\$913,920	\$1,170,960	\$2,053,800	\$2,455,320
Farebox Recovery	\$0	\$0	\$0	\$0	\$0	\$7,948	\$7,948	\$145,140	\$139,828	\$256,345	\$549,708
Advertising (2)	\$0	\$0	\$0	\$0	\$0	\$1,267	\$1,267	\$12,744	\$12,744	\$21,648	\$47,151
Prop K Sales Tax (3)	\$0	\$0	\$0	\$0	\$1,389	\$19,422	\$94,681	\$109,774	\$395,576	\$212,324	\$409,129
On-Street Parking (4)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$439,017	\$445,973	\$555,870	\$573,259
Parking Tax Transfer from GF (5)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,338,301	\$1,354,191	\$1,605,255	\$1,644,980
Parking Fees and Fines (6)	\$0	\$0	\$0	\$0	\$392	\$79,169	\$124,703	\$298,896	\$351,559	\$557,496	\$641,612
State Sales Tax (AB 1107) (7)	\$0	\$0	\$0	\$0	\$943	\$13,194	\$64,321	\$74,574	\$268,734	\$144,242	\$277,941
TDA Sales Tax (8)	\$0	\$0	\$0	\$0	\$1,887	\$26,388	\$128,642	\$149,149	\$537,468	\$288,484	\$555,882
Other (9)	\$0	\$0	\$0	\$0	\$33	\$6,737	\$10,611	\$25,434	\$29,915	\$47,439	\$54,597
Gas Tax (Prop. 42) (10)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0	\$4,644	\$558,165	\$1,069,733	\$3,506,949	\$4,706,948	\$5,742,903	\$7,209,579

Revised Analysis

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
REVENUES											
Incremental GF Contribution to SFMTA*					\$5,362	\$4,656	\$23,582	\$30,118	\$177,419	\$236,058	\$568,625
SFMTA Revenues											
FastPass	\$0	\$0	\$0	\$0	\$0	\$861,492	\$1,134,648	\$1,806,192	\$2,154,991	\$2,581,114	\$2,581,114
Farebox Recovery	\$0	\$0	\$0	\$0	\$0	\$465,262	\$534,471	\$704,620	\$792,995	\$900,962	\$900,962
Advertising	\$0	\$0	\$0	\$0	\$0	\$29,322	\$33,684	\$44,407	\$49,977	\$56,781	\$56,781
Prop K Sales Tax	\$0	\$0	\$0	\$0	\$0	\$754,913	\$754,913	\$754,913	\$754,913	\$754,913	\$754,913
On-Street Parking	\$0	\$0	\$0	\$0	\$0	\$420,040	\$482,523	\$636,134	\$715,919	\$813,392	\$813,392
Parking Tax Transfer from GF	\$0	\$0	\$0	\$0	\$0	\$2,132,515	\$2,132,515	\$2,132,515	\$2,132,515	\$2,132,515	\$2,132,515
Parking Fees and Fines	\$0	\$0	\$0	\$0	\$0	\$382,125	\$438,967	\$578,712	\$651,295	\$739,969	\$739,969
State Sales Tax (aa 1107)	\$0	\$0	\$0	\$0	\$0	\$512,849	\$512,849	\$512,849	\$512,849	\$512,849	\$512,849
TDA Sales Tax	\$0	\$0	\$0	\$0	\$0	\$1,025,696	\$1,025,696	\$1,025,696	\$1,025,696	\$1,025,696	\$1,025,696
Other	\$0	\$0	\$0	\$0	\$0	\$32,516	\$37,353	\$49,245	\$55,421	\$62,967	\$62,967
Gas Tax (Prop. 42)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Revenues	\$ -	\$ -	\$ -	\$ -	\$ 5,362	\$ 6,621,385	\$ 7,111,200	\$ 8,275,399	\$ 9,023,989	\$ 9,817,215	\$ 10,149,781

COSTS

Operations & Maintenance							\$1,001,718	\$1,001,718	\$2,787,767	\$2,914,940	\$5,475,050
Capital Costs							\$2,673,000	\$0	\$6,624,000	\$180,000	\$17,765,000

<i>Total Costs</i>	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	3,674,718	\$	1,001,718	\$	9,411,767	\$	3,094,940	\$	23,240,050
NET Income (Loss)	\$	-	\$	-	\$	-	\$	-	\$	5,362	\$	6,621,385	\$	3,436,482	\$	7,273,681	\$	(387,778)	\$	6,722,275	\$	(13,090,269)
Cumulative Cash Flow	\$	-	\$	-	\$	-	\$	-	\$	5,362	\$	6,626,747	\$	10,063,229	\$	17,336,909	\$	16,949,131	\$	23,671,406	\$	10,581,137

Candlestick Point / Hunters F
REVISED Transit Expansion Plan -
Muni Fiscal Model

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
PHASING ANALYSIS												
2010 Approved Development Scheme												
ApprovedResidential	573	760	467	878	860	599	720	1,104	481	349	403	355
ApprovedCommercial	288,000	491,421	400,000	123,000	643,000	123,079	-	-	-	-	-	-
Approved Retail	486,989	199,010	29,500	60,500	-	-	-	-	-	-	-	-
<u>Cumulative</u>												
ApprovedResidential	3,524	4,284	4,751	5,629	6,489	7,088	7,808	8,912	9,393	9,742	10,145	10,500
ApprovedCommercial	869,500	1,360,921	1,760,921	1,883,921	2,526,921	2,650,000	2,650,000	2,650,000	2,650,000	2,650,000	2,650,000	2,650,000
Approved Retail	595,989	794,999	824,499	884,999	884,999	884,999	884,999	884,999	884,999	884,999	884,999	884,999
Revised Development Schedule												
Revised Residential	1,025	832	212	280	495	-	700	795	1,325	425	510	-
Revised Commercial	-	90,000	537,000	-	680,122	24,118	500,000	505,000	313,760	-	-	387,000
Revised Retail	18,000	53,000	5,000	-	-	-	24,000	5,000	-	-	-	-
<u>Cumulative</u>												
Revised Residential	4,096	4,928	5,140	5,420	5,915	5,915	6,615	7,410	8,735	9,160	9,670	9,670
Revised Commercial	399,820	489,820	1,026,820	1,026,820	1,706,942	1,731,060	2,231,060	2,736,060	3,049,820	3,049,820	3,049,820	3,436,820
Revised Retail	778,000	831,000	836,000	836,000	836,000	836,000	860,000	865,000	865,000	865,000	865,000	865,000

REVENUE ANALYSIS

2010 Analysis	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
REVENUES												
FastPass (1)	\$2,966,040	\$3,583,440	\$3,987,480	\$4,716,600	\$5,423,040	\$5,937,120	\$6,563,760	\$7,455,000	\$7,873,320	\$8,166,480	\$8,516,760	\$8,825,040
Farebox Recovery	\$1,796,017	\$2,298,488	\$2,502,714	\$2,447,560	\$3,220,212	\$3,176,659	\$3,248,424	\$3,137,660	\$3,089,664	\$3,057,408	\$3,020,270	\$2,988,781
Advertising (2)	\$100,735	\$124,159	\$135,234	\$135,234	\$179,465	\$179,465	\$188,361	\$188,361	\$188,361	\$188,361	\$188,361	\$188,361
Prop K Sales Tax (3)	\$557,931	\$720,197	\$782,295	\$709,588	\$823,014	\$919,457	\$792,914	\$874,415	\$1,025,292	\$838,264	\$1,007,450	\$879,075
On-Street Parking (4)	\$1,083,795	\$1,658,432	\$1,957,172	\$2,084,806	\$2,532,047	\$2,698,284	\$2,698,284	\$2,698,284	\$2,698,284	\$2,698,284	\$2,698,284	\$2,698,284
Parking Tax Transfer from GF (5)	\$2,811,314	\$4,124,089	\$4,806,569	\$5,098,153	\$6,119,887	\$6,499,661	\$6,499,661	\$6,499,661	\$6,499,661	\$6,499,661	\$6,499,661	\$6,499,661
Parking Fees and Fines (6)	\$889,938	\$1,154,617	\$1,314,300	\$1,495,443	\$1,751,003	\$1,894,604	\$2,016,078	\$2,188,949	\$2,269,953	\$2,326,968	\$2,394,787	\$2,454,718
State Sales Tax (AB 1107) (7)	\$379,029	\$489,265	\$531,450	\$482,057	\$559,113	\$624,631	\$538,664	\$594,032	\$696,530	\$569,473	\$684,409	\$597,198
TDA Sales Tax (8)	\$758,058	\$978,529	\$1,062,901	\$964,114	\$1,118,226	\$1,249,262	\$1,077,328	\$1,188,064	\$1,393,059	\$1,138,946	\$1,368,818	\$1,194,395
Other (9)	\$75,728	\$98,251	\$111,839	\$127,253	\$148,999	\$161,219	\$171,555	\$186,266	\$193,159	\$198,010	\$203,781	\$208,881
Gas Tax (Prop. 42) (10)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$11,418,585	\$15,229,467	\$17,191,954	\$18,260,808	\$21,875,006	\$23,340,362	\$23,795,029	\$25,010,692	\$25,927,283	\$25,681,855	\$26,582,581	\$26,534,394

Revised Analysis

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
REVENUES												
Incremental GF Contribution to SFMTA	\$808,272	\$993,865	\$1,163,805	\$1,404,013	\$1,810,736	\$2,034,741	\$2,074,395	\$2,342,754	\$2,558,907	\$2,527,913	\$2,703,227	\$2,820,681
SFMTA Revenues												
FastPass	\$3,442,606	\$4,141,885	\$4,320,067	\$4,555,402	\$4,971,439	\$4,971,439	\$5,559,775	\$6,227,957	\$7,341,593	\$7,698,797	\$8,127,442	\$8,127,442
Farebox Recovery	\$1,123,070	\$1,330,699	\$1,491,264	\$1,550,891	\$1,801,136	\$1,806,272	\$2,066,925	\$2,344,827	\$2,693,804	\$2,784,309	\$2,892,914	\$2,975,327
Advertising	\$70,779	\$83,864	\$93,983	\$97,741	\$113,512	\$113,836	\$130,263	\$147,777	\$169,771	\$175,475	\$182,319	\$187,513
Prop K Sales Tax	\$772,792	\$825,437	\$830,404	\$830,404	\$830,404	\$830,404	\$854,243	\$859,210	\$859,210	\$859,210	\$859,210	\$859,210
On-Street Parking	\$1,013,913	\$1,201,360	\$1,346,320	\$1,400,151	\$1,626,073	\$1,630,710	\$1,866,028	\$2,116,920	\$2,431,978	\$2,513,686	\$2,611,735	\$2,686,138
Parking Tax Transfer from GF	\$2,165,610	\$2,428,539	\$3,425,092	\$3,425,092	\$4,675,606	\$4,719,950	\$5,683,408	\$6,621,125	\$7,198,023	\$7,198,023	\$7,198,023	\$7,909,584
Parking Fees and Fines	\$922,390	\$1,092,917	\$1,224,792	\$1,273,763	\$1,479,292	\$1,483,510	\$1,697,588	\$1,925,832	\$2,212,451	\$2,286,783	\$2,375,982	\$2,443,668
State Sales Tax (aa 1107)	\$524,985	\$560,759	\$564,133	\$564,133	\$564,133	\$564,133	\$580,329	\$583,703	\$583,703	\$583,703	\$583,703	\$583,703
TDA Sales Tax	\$1,049,989	\$1,121,518	\$1,128,266	\$1,128,266	\$1,128,266	\$1,128,266	\$1,160,656	\$1,167,404	\$1,167,404	\$1,167,404	\$1,167,404	\$1,167,404
Other	\$78,490	\$93,000	\$104,222	\$108,389	\$125,878	\$126,237	\$144,454	\$163,876	\$188,266	\$194,591	\$202,181	\$207,941
Gas Tax (Prop. 42)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Revenues	\$ 11,972,906	\$ 13,873,845	\$ 15,692,349	\$ 16,338,247	\$ 19,126,475	\$ 19,409,499	\$ 21,818,065	\$ 24,501,385	\$ 27,405,108	\$ 27,989,892	\$ 28,904,140	\$ 29,968,610

COSTS

Operations & Maintenance	\$6,627,178	\$6,627,178	\$10,557,721	\$11,451,536	\$14,011,645	\$15,916,714	\$17,028,442	\$17,028,442	\$18,908,389	\$18,908,389	\$18,908,389	\$18,908,389
Capital Costs	\$3,438,000	\$0	\$6,426,000	\$3,096,000	\$17,765,000	\$4,689,000	\$2,346,000	\$0	\$2,760,000	\$0	\$0	\$0

<i>Total Costs</i>	\$ 10,065,178	\$ 6,627,178	\$ 16,983,721	\$ 14,547,536	\$ 31,776,645	\$ 20,605,714	\$ 19,374,442	\$ 17,028,442	\$ 21,668,389	\$ 18,908,389	\$ 18,908,389	\$ 18,908,389
NET Income (Loss)	\$ 1,907,728	\$ 7,246,667	\$ (1,291,372)	\$ 1,790,711	\$ (12,650,170)	\$ (1,196,215)	\$ 2,443,623	\$ 7,472,943	\$ 5,736,719	\$ 9,081,503	\$ 9,995,751	\$ 11,060,221
Cumulative Cash Flow	\$ 12,488,865	\$ 19,735,532	\$ 18,444,161	\$ 20,234,871	\$ 7,584,702	\$ 6,388,487	\$ 8,832,110	\$ 16,305,052	\$ 22,041,772	\$ 31,123,275	\$ 41,119,026	\$ 52,179,247

41,030,000
43,032,000

Light Rail
Buses

		Year	2010	2011	2012
4/7/10	Annual Capital Costs		-	-	-
	Cumulative		-	-	-
41,030,000	Light Rail				
<u>44,532,000</u>	Buses				
85,562,000					
	2010				
	2011				
	2012				
	2013				
	2014				
	2015				
	2016				
	2017				
	2018				
	2019				
	2020				
	2021				
	2022				
	2023				
	2024				
	2025				
	2026				
	2027				
	2028				
	2029				
	2030				
	2031				
	2032				
TOTAL			0	0	0
Finance Assumptions, Light Rail:					
Interest		5.0%			
Term		25 years			
		Year	2010	2011	2012
Annual Capital Costs			-	-	-

	Cumulative	-	-	-
0	Light Rail			
<u>44,532,000</u>	Buses			
44,532,000				
	2010			
	2011			
	2012			
	2013			
	2014			
	2015			
	2016			
	2017			
	2018			
	2019			
	2020			
	2021			
	2022			
	2023			
	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
	2030			
	2031			
	2032			
TOTAL		0	0	0
Finance Assumptions, Buses				
Interest		5.0%		
Term		14 years		
TOTAL Payments		0	0	0

180,000 3,438,000 0 0 3,096,000 0 4,968,000

note: rb added borders to light rail based on prior version

revised 4/7/10 per Wells 4/7/10 (Muni Fiscal Model-FnP and EPS 040610.xls) note: are these the c

\$ 180,000 \$ - \$ 3,438,000 \$ - \$ 3,096,000

2013	2014	2015	2016	2017	2018	2019
\$ -	\$ -	\$ 180,000	\$ -	\$ 3,438,000	\$ -	\$ 3,096,000
-	-	180,000	180,000	3,618,000	3,618,000	6,714,000
-	-	180,000	-	3,438,000	-	3,096,000

0	0	0	0	0	0	0
	0	0	0	0	0	0
		0	0	0	0	0
			0	0	0	0
				0	0	0
					0	0
						0

0 0 0 0 0 0 0

2013	2014	2015	2016	2017	2018	2019
\$ -	\$ -	\$ 180,000	\$ -	\$ 3,438,000	\$ -	\$ 3,096,000

-	-	180,000	180,000	3,618,000	3,618,000	6,714,000
-	-	180,000	-	3,438,000	-	3,096,000

0	0	0	0	0	0	0
	0	0	0	0	0	0
		18,184	18,184	18,184	18,184	18,184
			0	0	0	0
				347,320	347,320	347,320
					0	0
						312,770

0	0	18,184	18,184	365,505	365,505	678,275
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0	0	18,184	18,184	365,505	365,505	678,275
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17,765,000			5,500,000		17,765,000	
	10,755,000	3,723,000	10,800,000	2,760,000		3,312,000

urrent revised numbers? Per Chris Mitchell, these are updated as of 4/20/10 same as 17.765 + buses? YE

\$ 17,765,000	\$11,637,000	\$ 5,463,000	\$ 2,346,000	\$ 17,800,000	\$ 20,525,000	
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2020	2021	2022	2023	2024	2025	2026
\$ 17,765,000	\$11,637,000	\$ 5,463,000	\$ 2,346,000	\$ 17,800,000	\$ 20,525,000	\$ -
24,479,000	36,116,000	41,579,000	43,925,000	61,725,000	82,250,000	82,250,000
17,765,000				5,500,000	17,765,000	
	11,637,000	5,463,000	2,346,000	12,300,000	2,760,000	-

0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
	0	0	0	0	0	0
		0	0	0	0	0
			0	0	0	0
				390,239	390,239	390,239
					1,260,470	1,260,470
						0

1,260,470	1,260,470	1,260,470	1,260,470	1,650,709	2,911,179	2,911,179
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2020	2021	2022	2023	2024	2025	2026
\$ -	\$11,637,000	\$ 5,463,000	\$ 2,346,000	\$ 12,300,000	\$ 2,760,000	\$ -

6,714,000	18,351,000	23,814,000	26,160,000	38,460,000	41,220,000	41,220,000
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-	11,637,000	5,463,000	2,346,000	12,300,000	2,760,000	-
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0	0	0	0	0	0	0
0	0	0	0	0	0	0
18,184	18,184	18,184	18,184	18,184	18,184	18,184
0	0	0	0	0	0	0
347,320	347,320	347,320	347,320	347,320	347,320	347,320
0	0	0	0	0	0	0
312,770	312,770	312,770	312,770	312,770	312,770	312,770
0	0	0	0	0	0	0
	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616
		551,894	551,894	551,894	551,894	551,894
			237,002	237,002	237,002	237,002
				1,242,595	1,242,595	1,242,595
					278,826	278,826
						0

678,275	1,853,891	2,405,785	2,642,787	3,885,382	4,164,208	4,164,208
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1,938,745	3,114,361	3,666,255	3,903,257	5,536,091	7,075,387	7,075,387
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0 0 0 0 0

IS

\$ 3,312,000 \$ - \$ - - - -

2027	2028	2029	2030	2031	2032	2033	2034
\$ 3,312,000	\$ -	\$ -	\$ -	\$ -	\$ -		
85,562,000	85,562,000	85,562,000	85,562,000	85,562,000	85,562,000		
						Total	
						41,030,000	
3,312,000	-	-	-	-	-	<u>44,532,000</u>	
						85,562,000	

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
390,239	390,239	390,239	390,239	390,239	390,239	390,239	390,239
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179
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2027	2028	2029	2030	2031	2032	2033	2034
\$ 3,312,000	\$ -	\$ -	\$ -	\$ -	\$ -		

44,532,000	44,532,000	44,532,000	44,532,000	44,532,000	44,532,000	Total	0
3,312,000	-	-	-	-	-	<u>44,532,000</u>	<u>44,532,000</u>

0							
0	0						
18,184	18,184	0	0				
0	0	0	0	0			
347,320	347,320	347,320	347,320	0	0		
0	0	0	0	0	0	0	
312,770	312,770	312,770	312,770	312,770	312,770	0	0
0	0	0	0	0	0	0	0
1,175,616	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616	1,175,616
551,894	551,894	551,894	551,894	551,894	551,894	551,894	551,894
237,002	237,002	237,002	237,002	237,002	237,002	237,002	237,002
1,242,595	1,242,595	1,242,595	1,242,595	1,242,595	1,242,595	1,242,595	1,242,595
278,826	278,826	278,826	278,826	278,826	278,826	278,826	278,826
0	0	0	0	0	0	0	0
334,591	334,591	334,591	334,591	334,591	334,591	334,591	334,591
	0	0	0	0	0	0	0

4,498,799	4,498,799	4,480,615	4,480,615	4,133,295	4,133,295	3,820,524	3,820,524
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7,409,979	7,409,979	7,391,794	7,391,794	7,044,474	7,044,474	6,731,704	6,731,704
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2035	2036	2037	2038	2039	2040	2041	2042	2043
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0	0	0						
0	0	0	0					
0	0	0	0	0				
0	0	0	0	0	0			
0	0	0	0	0	0	0		
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
390,239	390,239	390,239	390,239	390,239	390,239	390,239	390,239	390,239
1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470	1,260,470
0	0	0	0	0			0	0
0	0	0	0	0				0
0	0	0	0	0				

2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179	2,911,179
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2035	2036	2037	2038	2039	2040	2041	2042	2043
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0								
0	0							
551,894	0	0						
237,002	237,002	0	0					
1,242,595	1,242,595	1,242,595	0					
278,826	278,826	278,826	278,826	0				
0	0	0	0	0	0	0	0	
334,591	334,591	334,591	334,591	334,591	334,591	0	0	
0	0	0	0	0	0	0	0	0

2,644,909	2,093,015	1,856,012	613,418	334,591	334,591	0	0	0
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5,556,088	5,004,194	4,767,192	3,524,597	3,245,771	3,245,771	2,911,179	2,911,179	2,911,179
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2044	2045	2046	2047	2048	2049	2050	2051	2052
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1,260,470
 0 0
 0 0 0
 0 0 0 0
 390,239 390,239 390,239 390,239 390,239
 1,260,470 1,260,470 1,260,470 1,260,470 1,260,470 1,260,470
 0 0 0 0 0 0
 0 0 0 0 0 0 0 0

2,911,179	1,650,709	1,650,709	1,650,709	1,650,709	1,260,470	0	0	0
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2044	2045	2046	2047	2048	2049	2050	2051	2052
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0	0	0	0	0	0	0	0	0	0
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2,911,179	1,650,709	1,650,709	1,650,709	1,650,709	1,260,470	0	0	0
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2053	2054	2055	2056	2057	2058	2059	2060	2061
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0	0	0	0	0	0	0	0	0
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2053	2054	2055	2056	2057	2058	2059	2060	2061
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0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0
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2062	2063	2064	2065	2066	2067	2068
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82,060,000
89,064,000

0	0	0	0	0	0	0	72,779,483
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2062	2063	2064	2065	2066	2067	2068
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0	0	0	0	0	0	0	62,983,192
							135,762,675
0	0	0	0	0	0	0	135,762,675

Hunter's Point Phase 2										Total New PM Trans	Cumulative Trans	Total Residential	Total Non- Residential	Total Residential
Year	Retail	Retail trip gen	R&D	R&D Trip gen	Hotel	Hotel Trip gen	Residential	Res trip gen	Trips	Trips	Trips	Transit Trips	Transit Trips	Units
2013		0.75		0.19		N/A		0.13				-	-	-
2014		0.75		0.19		N/A		0.13				-	-	-
2015		0.75		0.19		N/A	256	0.13	33	33		33	-	256
2016		0.75		0.19		N/A	278	0.13	36	69		69	-	534
2017		0.75	278	0.19		N/A	259	0.13	86	156		103	53	793
2018	10	0.75		0.19		N/A	201	0.13	34	189		129	60	994
2019	74	0.75	93	0.19		N/A	717	0.13	166	356		222	134	1,711
2020	25	0.75		0.19		N/A	366	0.13	66	422		270	152	2,077
2021	16	0.75	153	0.19		N/A	362	0.13	88	510		317	193	2,439
2022		0.75	414	0.19		N/A	107	0.13	93	603		331	272	2,546
2023		0.75	444	0.19		N/A	101	0.13	98	701		344	357	2,647
2024		0.75	137	0.19		N/A		0.13	26	727		344	383	2,647
2025		0.75	714	0.19		N/A		0.13	136	862		344	518	2,647
2026		0.75	266	0.19		N/A		0.13	50	913		344	569	2,647
Total	125		2,500		-		2,647		913					

Candlestick										Total New PM Trans	Cumulative Trans	Total Residential	Total Non- Residential	Total Residential
Year	Retail	Retail trip gen	Office	Office Trip gen	Hotel	Hotel Trip gen	Residential	Res trip gen	Trips	Trips	Trips	Transit Trips	Transit Trips	Units
2013		0.95		0.64		0.15		0.13	-			-	-	-
2014		0.95		0.64		0.15		0.13	-			-	-	-
2015		0.95		0.64		0.15	225	0.13	29	29		29	-	225
2016		0.95		0.64		0.15		0.13	-	29		29	-	225
2017		0.95		0.64		0.15	70	0.13	9	38		38	-	295
2018		0.95		0.64		0.15	105	0.13	14	52		52	-	400
2019		0.95		0.64		0.15	334	0.13	43	95		95	-	734
2020		0.95		0.64		0.15	112	0.13	15	110		110	-	846
2021	464	0.95	150	0.64		0.15	246	0.13	569	678		142	537	1,092
2022	199	0.95		0.64	220	0.15	628	0.13	304	982		224	759	1,720
2023	32	0.95		0.64		0.15	380	0.13	80	1,062		380	789	2,100
2024	65	0.95		0.64		0.15	868	0.13	175	1,237		386	851	2,968
2025		0.95		0.64		0.15	841	0.13	109	1,346		495	851	3,809
2026		0.95		0.64		0.15	612	0.13	80	1,426		575	851	4,421
2027		0.95		0.64		0.15	746	0.13	97	1,523		672	851	5,167
2028		0.95		0.64		0.15	1,061	0.13	138	1,661		810	851	6,228
2029		0.95		0.64		0.15	498	0.13	65	1,725		874	851	6,726
2030		0.95		0.64		0.15	349	0.13	45	1,771		920	851	7,075
2031		0.95		0.64		0.15	417	0.13	54	1,825		974	851	7,492
2032		0.95		0.64		0.15	367	0.13	48	1,873		1,022	851	7,859
Total	760		150		220		7,859		1,873					

Year	Total Cumulative Transit Trips	Total Cumulative Residential Transit Trips	Non- Residential Transit Trips	Cumulative Residential	Cumulative Non- Residential	Total Residential Units
2013	-	-	-	-	-	-
2014	-	-	-	-	-	-
2015	63	63	-	100%	0%	481
2016	99	99	-	100%	0%	759
2017	194	141	53	73%	27%	1,088
2018	241	181	60	75%	25%	1,394
2019	451	318	134	70%	30%	2,445
2020	532	380	152	71%	29%	2,923
2021	1,189	459	730	39%	61%	3,531
2022	1,586	555	1,031	35%	65%	4,266
2023	1,763	617	1,146	35%	65%	4,747
2024	1,963	720	1,234	37%	63%	5,615
2025	2,209	839	1,369	38%	62%	6,456
2026	2,339	919	1,420	39%	61%	7,068
2027	2,436	1,016	1,420	42%	58%	7,814
2028	2,573	1,154	1,420	45%	55%	8,875
2029	2,638	1,218	1,420	46%	54%	9,373
2030	2,684	1,264	1,420	47%	53%	9,722
2031	2,738	1,318	1,420	48%	52%	10,139
2032	2,786	1,366	1,420	49%	51%	10,506

Year	Total O&M Costs	Total Transit Costs	Total Farebox Recovery	Residential portion of farebox	Non-residential portion of farebox	Net Farebox Recovery	Eco-Pass Revenue
2013	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2014	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 92,837	\$ 127,173	\$ 34,337	\$ 34,337	\$ -	\$ 8,584	\$ 259,740
2016	\$ 92,837	\$ 127,173	\$ 34,337	\$ 34,337	\$ -	\$ 8,584	\$ 409,860
2017	\$ 933,890	\$ 1,279,301	\$ 345,411	\$ 251,547	\$ 93,864	\$ 156,751	\$ 587,520
2018	\$ 933,890	\$ 1,279,301	\$ 345,411	\$ 251,547	\$ 93,864	\$ 156,751	\$ 587,520
2019	\$ 1,586,375	\$ 2,173,116	\$ 586,741	\$ 413,185	\$ 173,556	\$ 276,852	\$ 1,320,300
2020	\$ 3,455,255	\$ 4,733,225	\$ 1,277,971	\$ 912,382	\$ 365,589	\$ 593,685	\$ 1,578,420
2021	\$ 7,381,842	\$ 10,112,113	\$ 2,730,270	\$ 1,054,097	\$ 1,676,174	\$ 1,939,698	\$ 1,906,740
2022	\$ 9,098,413	\$ 12,461,579	\$ 3,365,166	\$ 1,177,066	\$ 2,188,100	\$ 2,482,367	\$ 2,303,640
2023	\$ 9,909,974	\$ 13,575,307	\$ 3,665,333	\$ 1,283,202	\$ 2,382,131	\$ 2,702,931	\$ 2,563,380
2024	\$ 9,909,974	\$ 13,575,307	\$ 3,665,333	\$ 1,362,624	\$ 2,302,709	\$ 2,643,365	\$ 3,032,100
2025	\$ 13,151,216	\$ 18,015,364	\$ 4,864,148	\$ 1,848,425	\$ 3,015,723	\$ 3,477,829	\$ 3,486,240
2026	\$ 13,151,216	\$ 18,015,364	\$ 4,864,148	\$ 1,911,141	\$ 2,953,007	\$ 3,430,792	\$ 3,816,720
2027	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,129,289	\$ 2,975,976	\$ 3,508,298	\$ 4,219,560
2028	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,288,790	\$ 2,816,475	\$ 3,386,672	\$ 4,792,500
2029	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,357,904	\$ 2,747,361	\$ 3,336,837	\$ 5,061,420
2030	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,404,352	\$ 2,700,913	\$ 3,302,001	\$ 5,249,880
2031	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,457,831	\$ 2,647,434	\$ 3,261,892	\$ 5,475,060
2032	\$ 13,803,124	\$ 18,908,390	\$ 5,105,265	\$ 2,503,176	\$ 2,602,089	\$ 3,227,883	\$ 5,673,240

Transit Improvement Phasing - DRAFT FOR DISCUSSION PURPOSES ONLY

Annual Costs Based on Hunters Point Development

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Begin Hunters Point Express (HPX)	20	192	1	115	\$ 562,581	\$ 3,024,000	\$ -	\$ -	\$ -	\$ -	\$ 3,586,581	\$ 562,581	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	12	320	1	288 [2]	\$ 937,634	\$ 5,040,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,953,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634	\$ 937,634
Extend 23-Monterey	15	256	1	115 [1]	\$ 278,472	\$ 414,000	\$ -	\$ -	\$ -	\$ -	\$ 692,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ 278,472	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Extend 24-Divisadero	10	384	2	643 [1]	\$ 1,090,034	\$ 2,760,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,436,034	\$ 1,090,034	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	7.5	512	2	744 [2]	\$ 2,462,395	\$ 5,520,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,222,395	\$ 2,462,395	\$ 2,462,395	\$ 2,462,395	\$ 2,462,395	\$ 2,462,395
Extend 48-Quintara	15	256	1	1 [3]	\$ 92,837	\$ 180,000	\$ -	\$ -	\$ 272,837	\$ 92,837	\$ 92,837	\$ 92,837	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	10	384	1	288 [2]	\$ 370,268	\$ 1,260,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,450,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268	\$ 370,268
Extend 44-O'Shaughnessy	7.5	512	1	115 [1]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	6.5	591	1	288 [2]	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PM Transit Trips from HP DevI Area									33	69	156	189	356	422	510	603	700	726	862	913	839	839	839	839
HP generated Annual Cost							\$ -	\$ -	\$ 272,837	\$ 92,837	\$ 4,371,890	\$ 933,890	\$ 4,682,375	\$ 1,586,375	\$ 1,586,375	\$ 1,586,375	\$ 4,743,936	\$ 2,397,936	\$ 6,530,297	\$ 3,770,297	\$ 3,770,297	\$ 3,770,297	\$ 3,770,297	\$ 3,770,297

Annual Costs Based on Candlestick Point Development

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Begin Candlestick Point Express (CPX)	20	192	2	164 [3]	\$ 977,862	\$ 4,968,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,945,862	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	15	256	2	838 [2]	\$ 1,303,816	\$ 6,624,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,959,816	\$ 1,303,816	\$ 1,303,816	\$ 1,303,816	\$ 1,303,816	\$ -	\$ -	\$ -	\$ -
	10	384	3	1514 [3]	\$ 1,955,725	\$ 9,936,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,267,725	\$ 1,955,725	\$ 1,955,725	\$ 1,955,725
Extend 29-Sunset	10	384	2	433 [1]	\$ 79,429	\$ 243,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 322,429	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	5	768	2	838 [2]	\$ 731,254	\$ 2,673,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,161,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254	\$ 731,254
Total PM Transit Trips from CP DevI Area									29	29	38	52	95	110	678	982	1,062	1,237	1,346	1,425	1,522	1,660	1,725	1,770
CP generated Annual Cost							\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,268,291	\$ 6,121,070	\$ 2,035,070	\$ 2,035,070	\$ 2,035,070	\$ 2,035,070	\$ 5,998,979	\$ 2,686,979	\$ 2,686,979	\$ 2,686,979

Annual Costs Based on Total Development

Improvement	Headway (min.)	One-Way Capacity Serving Project Site (pax/hr)	Major Phase	Trigger (PM Peak Hour Transit Trips)	Yearly O&M Costs	Capital Costs	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Begin/Extend 28L/BRT	8	480	2	1075 [1, 4]	\$ 2,869,297	\$ 6,426,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,295,297	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	5	768	2	1582 [2, 4]	\$ 3,608,088	\$ 7,803,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,985,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088	\$ 3,608,088
T-Third	6	1010	2		\$ -	\$ 35,530,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17,765,000	\$ -	\$ -	\$ -	\$ -	\$ 17,765,000	\$ -	\$ -	\$ -	\$ -	\$ -
	5	2424	3		\$ 3,737,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,868,880	\$ 1,868,880	\$ 1,868,880	\$ 1,868,880	\$ 1,868,880	\$ 3,737,760	\$ 3,737,760	\$ 3,737,760	\$ 3,737,760	\$ 3,737,760	\$ 3,737,760
Total PM Transit Trips from HP/CP DevI Area									0	0	62	98	194	241	451	532	1,188	1,585	1,762	1,963	2,208	2,338	2,361	2,499
Combined devI costs							\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,633,880	\$ 11,164,177	\$ 6,853,968	\$ 5,476,968	\$ 5,476,968	\$ 25,110,848	\$ 7,345,848	\$ 7,345,848	\$ 7,345,848	\$ 7,345,848	\$ 7,345,848
Total Operating & Maintenance Costs							\$ -	\$ -	\$ 92,837	\$ 92,837	\$ 933,890	\$ 933,890	\$ 1,586,375	\$ 3,455,255	\$ 7,381,842	\$ 9,098,413	\$ 9,909,974	\$ 9,909,974	\$ 13,151,216	\$ 13,151,216	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124
Total Capital Costs							\$ -	\$ -	\$ 180,000	\$ -	\$ 3,438,000	\$ -	\$ 3,096,000	\$ 17,765,000	\$ 11,637,000	\$ 5,463,000	\$ 2,346,000	\$ 20,525,000		\$ 3,312,000		\$ -	\$ -	\$ -

Notes:	Internal check	\$ -	\$ -	\$ 272,837	\$ 92,837	\$ 4,371,890	\$ 933,890	\$ 4,682,375	\$ 21,220,255	\$ 19,018,842	\$ 14,561,413	\$ 12,255,974	\$ 9,909,974	\$ 33,676,216	\$ 13,151,216	\$ 17,115,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124
		\$ -	\$ -	\$ 272,837	\$ 92,837	\$ 4,371,890	\$ 933,890	\$ 4,682,375	\$ 21,220,255	\$ 19,018,842	\$ 14,561,413	\$ 12,255,974	\$ 9,909,974	\$ 33,676,216	\$ 13,151,216	\$ 17,115,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124	\$ 13,803,124
		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

General: Note that triggers are based on total site transit trip generation; only a fraction of the "trigger" amount will travel on each transit route.

1. Initial route extensions based on 20% of buildout of Major Phase (based on Stadium Option land uses)

2. Based on 50% buildout of Major Phase (based on Stadium Option land uses)

3. Based on initiation of Major Phase. In the case of the CPX, this is because completion of Major Phase 1 will include some residential development that could be served by the CPX, but not likely enough until full buildout of Major Phase 1. In the case of the 48-Quintara, the route would be extended as part of the TEP. Initial route will depend on which streets are constructed.

4. Includes total of trips generated by CP and HP. In the case of the 28L, this means 20% buildout of Major Phase II.

5. Under Non-Stadium Option, implementation of Hunters Point Transit Center based on service improvements to HPX, 48-Quintara, and 44-O'Shaughnessy.

Hunter's Point Phase 2

Year	Retail	Retail trip gen	R&D	R&D Trip gen	Hotel	Hotel Trip gen	Residential	Res trip gen	Total New PM Transit Trips	Cumulative Transit Trips
2013		0.75		0.19		N/A		0.13		
2014		0.75		0.19		N/A		0.13		
2015		0.75		0.19		N/A	256	0.13	33	33
2016		0.75		0.19		N/A	278	0.13	36	69
2017		0.75	278	0.19		N/A	259	0.13	86	156
2018	10	0.75		0.19		N/A	201	0.13	34	189
2019	74	0.75	93	0.19		N/A	717	0.13	166	356
2020	25	0.75		0.19		N/A	366	0.13	66	422
2021	16	0.75	153	0.19		N/A	362	0.13	88	510
2022		0.75	414	0.19		N/A	107	0.13	93	603
2023		0.75	444	0.19		N/A	101	0.13	98	700
2024		0.75	137	0.19		N/A		0.13	26	726
2025		0.75	714	0.19		N/A		0.13	136	862
2026		0.75	266	0.19		N/A		0.13	50	913
Total	125		2,500		-		2,647		913	

Candlestick

Year	Retail	Retail trip gen	Office	Office Trip gen	Hotel	Hotel Trip gen	Residential	Res trip gen	Total New PM Transit Trips	Cumulative Transit Trips
2013		0.95		0.64		0.15		0.13	-	
2014		0.95		0.64		0.15		0.13	-	
2015		0.95		0.64		0.15	225	0.13	29	29
2016		0.95		0.64		0.15		0.13	-	29
2017		0.95		0.64		0.15	70	0.13	9	38
2018		0.95		0.64		0.15	105	0.13	14	52
2019		0.95		0.64		0.15	334	0.13	43	95
2020		0.95		0.64		0.15	112	0.13	15	110
2021	464	0.95	150	0.64		0.15	246	0.13	569	678
2022	199	0.95		0.64	220	0.15	628	0.13	304	982
2023	32	0.95		0.64		0.15	380	0.13	80	1,062
2024	65	0.95		0.64		0.15	868	0.13	175	1,237
2025		0.95		0.64		0.15	841	0.13	109	1,346
2026		0.95		0.64		0.15	612	0.13	80	1,425
2027		0.95		0.64		0.15	746	0.13	97	1,522
2028		0.95		0.64		0.15	1,061	0.13	138	1,660
2029		0.95		0.64		0.15	498	0.13	65	1,725
2030		0.95		0.64		0.15	349	0.13	45	1,770
2031		0.95		0.64		0.15	417	0.13	54	1,825
2032		0.95		0.64		0.15	367	0.13	48	1,872
total	760		150		220		7,859		1,873	

HP revised retail

118,750		9500	70,300	23750	15200	118750
1.00	-	0.08	0.59	0.20	0.13	1.00
125,000		10,000	74,000	25,000	16,000	125,000

HP revised commercial

2,137,500	237500	-	79800	0	131100	354,350	380000	116,850	610850	227050	2137500
1.00	0.11	-	0.04	-	0.06	0.17	0.18	0.05	0.29	0.11	1.00
2,500,000	277,778	-	93,333	-	153,333	414,444	444,444	136,667	714,444	265,556	#####

CS revised retail

669,500	408,500	175,500	28,025	57,475	669,500
1.00	0.61	0.26	0.04	0.09	1.00
760,000	463,719	199,223	31,813	65,244	760,000

CS revised commercial

	# of Transit Trips		
Major Phase	Candlestick Point	Hunter's Point	Total
1	1193	146	1339
2	271	316	587
3	288	348	636
4	99	329	428
Total	1851	1139	2990

Hunters Point Phase 3&4

Land Use (By Year)	Year	2027	2028	2029	2030	2031	2032
Land Use							
Residential (# of units)		0	0	485	385	510	220
Retail (ksf)		0	0	24	5	0	0
R&D (ksf)		680.122	24.118	500	505	313.76	0
Parks (acres)		0	0	0	0	0	0
Community Facilities		0	0	0	0	0	0

Hunters Point Phase 3 Only

Land Use (By Year)	Year	2027	2028	2029	2030	2031	2032
Land Use							
Residential (# of units)		0	0	110	0	0	
Retail (ksf)		0	0	9	0	0	
R&D (ksf)		680.122	24.118	300	505	313.76	
Parks (acres)		0	0	0	0	0	
Community Facilities		0	0	0	0	0	

Hunters Point Phase 4 Only

Land Use (By Year)	Year	2027	2028	2029	2030	2031	2032
Land Use							
Residential (# of units)				375	385	510	220
Retail (ksf)				15	5	0	0
R&D (ksf)				200	0	0	0
Parks (acres)				0	0	0	0
Community Facilities				0	0	0	0

2033	2034
100	0
0	0
0	350
0	0
0	37

Hunters Point Rates

Trip Rates	Transit
Residential	0.12
Retail	0.72
R&D	0.18
Park	0.02
Community Facilities	0.68

Transit Trip

Land Use (By Year)	Year	2027
Land Use		
Residential (# of u		0
Retail (ksf)		0
R&D (ksf)		122
Parks (acres)		0
Community Facili		0

2033	2034

Transit Trip

Land Use (By Year)	Year	2027
Land Use		
Residential (# of u		0
Retail (ksf)		0
R&D (ksf)		0
Parks (acres)		0
Community Facili		0

2033	2034
100	0
0	0
0	350
0	0
0	37

ns by Year Phase 3 Only

2028	2029	2030	2031	2032	2033	2034
0	13	0	0	0	0	0
0	6	0	0	0	0	0
4	54	91	56	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

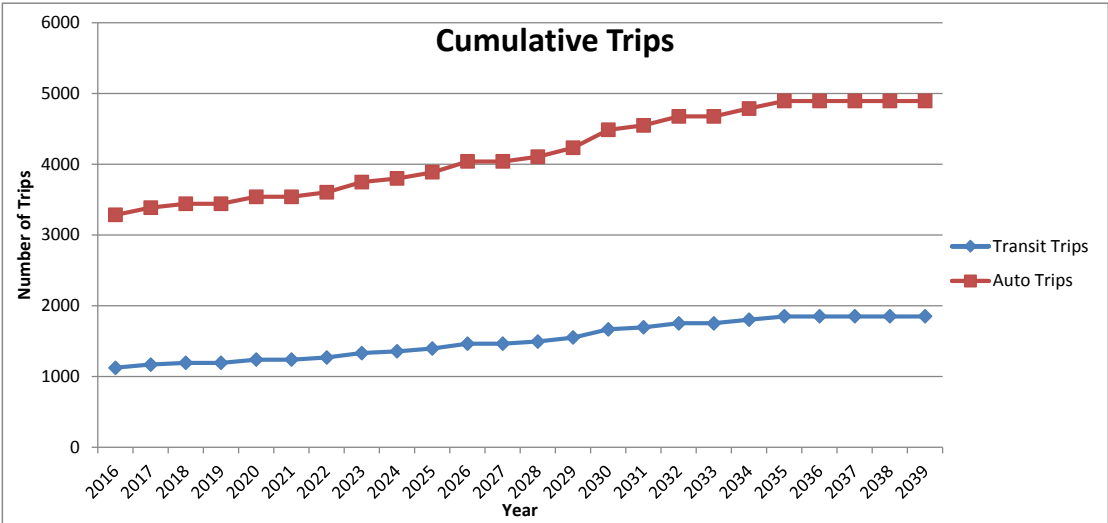
13
6
328
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348

ns by Year Phase 4 Only

2028	2029	2030	2031	2032	2033	2034
0	45	46	61	26	12	0
0	11	4	0	0	0	0
0	36	0	0	0	0	63
0	0	0	0	0	0	0
0	0	0	0	0	0	25

191
14
99
0
25
329

Trip Rates	Transit	Auto
Residential	0.14	0.31
Office	0.59	1.2
Retail	1.02	3.59
Hotel	0.17	0.36
Community Facilities	0.78	1.6
Parks	0.04	0.04



Land Use (By Year)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential (# of units)		1025	325	179	0	322	0	215	452	172	280	495	0	215	410	815	205	410	0	360	345	0	0	0	0
Office (ksf)		150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail (ksf)		760	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hotel (# of rooms)		220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Community Facilities (ksf)		100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Land Use (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential (# of units)		1025	1350	1529	1529	1851	1851	2066	2518	2690	2970	3465	3465	3680	4090	4905	5110	5520	5520	5880	6225	6225	6225	6225	6225
Office (ksf)		150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Retail (ksf)		760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760
Hotel (# of rooms)		220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
Community Facilities (ksf)		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Transit Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential		144	189	214	214	259	259	289	353	377	416	485	485	515	573	687	715	773	773	823	872	872	872	872	872
Office		89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
Retail		775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775	775
Hotel		37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
Community Facilities		78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Total		1123	1168	1193	1193	1238	1238	1268	1332	1356	1395	1464	1464	1494	1552	1666	1694	1752	1752	1802	1851	1851	1851	1851	1851

Auto Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential		318	419	474	474	574	574	640	781	834	921	1074	1074	1141	1268	1521	1584	1711	1711	1823	1930	1930	1930	1930	1930
Office		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail		2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728
Hotel		79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Community Facilities		160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Total		3285	3386	3441	3441	3541	3541	3607	3748	3801	3888	4041	4041	4108	4235	4488	4551	4678	4678	4790	4897	4897	4897	4897	4897

Total Trips (Cumulative)	Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Land Use																									
Residential		462	608	688	688	833	833	929	1134	1211	1337	1559	1559	1656	1841	2208	2299	2484	2484	2646	2802	2802	2802	2802	2802
Office		89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
Retail		3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503	3503
Hotel		116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116
Community Facilities		238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238
Total		4408	4554	4634	4634	4779	4779	4875	5080	5157	5283	5505	5505	5602	5787	6154	6245	6430	6430	6592	6748	6748	6748	6748	6748

	2017	2018	2019	2020	2021	2022	2023	2024
Residential								
HP	-	-	620	415	185	-	810	380
CP	1,025	325	179	-	322	-	215	452
Total	1,025	325	799	415	507	-	1,025	832

Commercial (includes Community Facilities, Office/R&D and hotel @ 681sf/room); assumes no arena and

HP	-	-	-	-	-	-	-	90,000
CP	399,820	-	-	-	-	-	-	-
Total	399,820	-	-	-	-	-	-	90,000

Retail

HP	-	-	-	-	-	-	18,000	53,000
CP	760,000	-	-	-	-	-	-	-
Total	760,000	-	-	-	-	-	18,000	53,000

Transit

HP	
CP	
Total	

2025	2026	2027	2028	2029	2030	2031	2032	2033
40	-	-	-	485	385	510	220	100
172	280	495	-	215	410	815	205	410
212	280	495	-	700	795	1,325	425	510
l stadium)								
537,000	-	680,122	24,118	500,000	505,000	313,760	-	-
-	-	-	-	-	-	-	-	-
537,000	-	680,122	24,118	500,000	505,000	313,760	-	-
5,000	-	-	-	24,000	5,000	-	-	-
-	-	-	-	-	-	-	-	-
5,000	-	-	-	24,000	5,000	-	-	-

2034	2035	2036	2037	2038	2039	2040
-	-	-	-	-	-	-
-	360	345	-	-	-	-
-	360	345	-	-	-	-
387,000	-	-	-	-	-	-
-	-	-	-	-	-	-
387,000	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-