ATTACHMENT B

MITIGATION MONITORING AND REPORTING PROGRAM

CANDLESTICK POINT-HUNTERS POINT SHIPYARD PHASE II DEVELOPMENT PROJECT

Mitigation Monitoring and Reporting Program

SECTION 1: AUTHORITY

This Environmental Mitigation Monitoring and Reporting Program has been prepared pursuant to Section 21081.6 of the *California Environmental Quality Act*, known as CEQA (Public Resources Code Section 21000 et seq.), to provide for the monitoring of mitigation measures required of the Candlestick Point–Hunters Point Shipyard Phase II Development Plan (Project), as set forth in the Final Environmental Impact Report (Final EIR) prepared for the Project. This report will be kept on file in the offices of the San Francisco Redevelopment Agency (Agency), One South Van Ness Avenue, Fifth Floor, San Francisco, CA, 94103 and at the City Planning Department (City), 1650 Mission Street, Fourth Floor, San Francisco, CA, 94103.

SECTION 2: MONITORING SCHEDULE

Prior to the issuance of building permits, while detailed development plans are being prepared for approval by Agency and/or City staff, Agency and/or City staff will be responsible for ensuring compliance with mitigation monitoring applicable to the project construction, development, and design phases. Agency and/or City staff will prepare or cause to be prepared reports identifying compliance with mitigation measures. Once construction has begun and is underway, monitoring of the mitigation measures associated with construction will be included in the responsibilities of designated Agency and/or City staff, who shall prepare or cause to be prepared reports of such monitoring no less than once a month until construction has been completed. Once construction has been completed, the Agency and/or City will monitor the project as deemed necessary.

SECTION 3: CHANGES TO MITIGATION MEASURES

Any substantive change in the monitoring and reporting plan made by Agency and/or City staff shall be reported in writing to the City Environmental Review Officer. Reference to such changes shall be made in the monthly/yearly Environmental Mitigation Monitoring Report prepared by City staff. Modifications to the mitigation measures may be made by City staff subject to one of the following findings, documented by evidence included in the record:

a. The mitigation measure included in the Final EIR and the Mitigation Monitoring and Reporting Program is no longer required because the significant environmental impact identified in the Final EIR has been found not to exist, or to occur at a level which makes the impact less than significant as a result of changes in the project, changes in conditions of the environment, or other factors.

OR

b. The modified or substitute mitigation measure to be included in the Mitigation Monitoring and Reporting Program either provides corrections to text without any substantive change in the intention or meaning of the original mitigation measure, or provides a level of environmental protection equal to or greater than that afforded by the

mitigation measure included in the Final EIR and the Mitigation Monitoring and Reporting Program; and

The modified or substitute mitigation measures do not have significant adverse effects on the environment in addition to or greater than those which were considered by the responsible hearing bodies in their decisions on the Final EIR and the proposed project; and

The modified or substitute mitigation measures are feasible, and the City, through measures included in the Mitigation Monitoring and Reporting Program or other City procedures, can assure their implementation.

SECTION 4: SUPPORT DOCUMENTATION

Findings and related documentation supporting the findings involving modifications to mitigation measures shall be maintained in the project file with the Mitigation Monitoring and Reporting Program and shall be made available to the public upon request.

SECTION 5: FORMAT OF MITIGATION MONITORING MATRIX

The mitigation monitoring matrix on the following pages identifies the environmental issue areas for which monitoring is required, the required mitigation measures, the time frame for monitoring, and the responsible implementing and monitoring agencies.

If any mitigation measures are not being implemented, the Agency and/or City may pursue corrective action. Penalties that may be applied include, but are not limited to, the following: (1) a written notification and request for compliance; (2) withholding of permits; (3) administrative fines; (4) a stop-work order; (5) criminal prosecution and/or administrative fines; (6) forfeiture of security bonds or other guarantees; and (7) revocation of permits or other entitlements.

SECTION 6: DEFINITIONS

For purposes of this MMRP, the following definitions are used:

- **Arena Operator**—An individual who or business that operates the retail business constructed at the Arena site.
- **City's Environmental Review Officer**—The Environmental Review Officer at the San Francisco Planning Department, referred to herein as "ERO."
- **Developer**—An individual who or business that prepares raw land for the construction of buildings or causes to be built physical building space for use primarily by others. This includes contractors of an individual or business that is a developer.
- **Development/Construction Phases**—During construction, three major phases of activities would be expected: abatement and demolition, site preparation and earthwork/grading, and building construction. Within each of these phases are sub-phases generally identified by area. For each parcel, a lot application would be required and individual building permits.
- **Project Applicant**—A Developer or Vertical Developer.
- **Stadium Operator**—An individual who or business that enters into an agreement with the Agency to operate the Stadium constructed at the Stadium site.

- **SFRA**–San Francisco Redevelopment Agency, referred to herein as "Agency" or "SFRA."
- **Vertical Developer**–An individual who or business that constructs urban land uses. This term shall be construed to mean the subsequent developer(s) who constructs or extends urban land uses through subdivision of land and construction or alteration of structures. Vertical developer includes contractors of an individual or business that is a vertical developer.

Ordering and Pagination of Mitigation Measures in Table

Mitigation Measures	*Starts on Page Number*
Section III.D (Transportation and Circulation) MM TR-1 through MM TR-51	MMRP-4
Section III.E (Aesthetics) MM AE-2 through MM AE-7b.2	MMRP-31
Section III.G (Wind) MM W-1a	MMRP-33
Section III.H (Air Quality) MM AQ-2.1 through MM AQ-6.2	MMRP-34
Section III.I (Noise and Vibration) MM NO-1a.1 through MM NO-7.2	MMRP-36
Section III.J (Cultural Resources and Paleontological Resources) MM CP-1b.1 through MM CP-3a	MMRP-40
Section III.K (Hazards and Hazardous Materials) MM HZ-1a through MM HZ-15	MMRP-50
Section III.L (Geology and Soils) MM GE-2a through MM GE-11a	MMRP-62
Section III.M (Hydrology and Water Quality) MM HY-1a.1 through MM HY-14	MMRP-75
Section III.N (Biological Resources) MM BI-4a.1 through MM BI-20a.2	MMRP-95
Section III.O (Public Services) MM PS-1	MMRP-131
Section III.P (Recreation) MM RE-2	MMRP-132
Section III.Q (Utilities) MM UT-2 through MM UT-7a	MMRP-132
Section III.S (Greenhouse Gas Emissions) MM GC-1 through MM GC-4	MMRP-134

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
SECTION III.D (TRANSPORTATION AND CIRCULATION)					
MM TR-1 Candlestick Point–Hunters Point Shipyard Phase II Construction Traffic Management Program. The Project Applicant shall develop and implement a Candlestick Point–Hunters Point Shipyard Phase II Construction Traffic Management Program to minimize impacts of the Project and its contribution to cumulative impacts related to construction activities and construction traffic. The program shall provide necessary information to various contractors and agencies as to how to maximize the opportunities for complementing construction management measures and to minimize the possibility of conflicting impacts on the roadway system, while safely accommodating the traveling public in the area. The program shall supplement and expand, rather than modify or supersede any manual, regulations, or provisions set forth by SFMTA, DPW or other City departments and agencies. Preparation of the Construction Management Program shall be the responsibility of the Project Applicant, and shall be reviewed and approved by SFMTA and DPW prior to initiation of construction. The Project Applicant shall update the program prior to approval of development plans for Phase 2, Phase 3, and Phase 4 of construction to reflect any change to Project development schedule, reflect transportation network changes, to update status of other development construction activities, and to reflect any changes to City requirements. The program shall: ■ Identify construction traffic management practices in San Francisco, as well as other jurisdictions that although not being implemented in the City could provide useful	Project Applicant	Program shall be implemented at first sub-phase application and updated with each subsequent sub-phase application	San Francisco Municipal Transportation Agency (SFMTA)/ Department of Public Works (DPW)/SFRA/DBI	SFRA/DBI	Confirm establishment as part of Phase 1 approval; Project Applicant shall update the program prior to approval of development plans for Phase 1, Phase 3, and Phase 4 SFMTA and DPW to approve program prior to each sub-phase approval; SFMTA and DPW to undertake ongoing enforcement during construction.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
guidance for a project of this size and characteristics. ■ Describe procedures required by different departments and/or agencies in the City for implementation of a construction management plan, such as reviewing agencies, approval process, and estimated timelines. ■ Describe coordination efforts associated with the Navy remediation efforts and scheduling regarding construction vehicle routing via the Crisp gate. ■ Identify construction traffic management strategies and other elements for the Project, and present a cohesive program of operational and demand management strategies designed to maintain acceptable levels of traffic flow during periods of construction activities in the Bayview Hunters Point area. These could include construction strategies, demand management strategies, alternate route strategies, and public information strategies. ■ Coordinate with other projects in construction in the immediate vicinity, so that they can take an integrated approach to construction-related traffic impacts. ■ Present guidelines for selection of construction traffic management strategies.					
MM TR-2 TDM Plan. The Project Applicant shall prepare and implement a final TDM plan, which shall include the following elements: ■ Visitor Variable, Market-Rate Parking Pricing ■ Maximum Permitted Parking Ratios ■ Flexible Parking Management Strategies ■ Unbundled Residential Parking ■ Transit Strategies and Support Strategies	Project Applicant	TDM approval as part of DDA; Timing of mitigation components to be specified within TDM plan.	SFRA	SFRA/CP-HPS Transportation Management Association (TMA)	Confirm establishment of the TDM as part of the Disposition and Development Agreement. Agency to consult with TMA to submit periodic status reports to Agency as specified in the TDM

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
■ Central Transit Hub ■ Enhanced Transit Service and Bicycle Facilities ■ Bicycle Support Facilities ■ Wayfinding Signs ■ EcoPass for Residents ■ Carshare Services ■ Employee TDM Programs > Information Boards/Kiosks > In-building Real-Time transit monitors with sightlines of transit hubs > Commuter Benefits > Employee EcoPass > Carpool/Vanpools > Guaranteed Ride Home Program > Compressed Work Weeks, Flex Time, and Telecommuting ■ CP-HPS Transportation Management Association ■ On-site Transportation Coordinator and Website ■ Targeted Marketing ■ Monitoring of Transportation Demand ■ Monitoring Effectiveness of Congestion-Reducing and Traffic-Calming Efforts The final TDM plan shall be approved as part of the Disposition and Development Agreement (DDA).					Plan.
MM TR-4 Restripe the northbound and southbound approaches of the intersection of Tunnel/Blanken to provide dedicated left-turn lanes adjacent to shared through/right-turn lanes. The restriping would require prohibition of parking for 160 feet in the southbound approach (loss of eight parking	Project Applicant/SFMTA	Monitor the Tunnel/Blanken intersection biannually by undertaking traffic counts after implementation of the	SFRA/SFMTA	SFRA/SFMTA/ Planning Department	Completed upon implementation of restriping of intersection If not needed by completion of Project buildout,

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
spaces) and for 100 feet in the northbound approach (loss of five parking spaces). Implementation of the intersection restriping shall be the responsibility of SFMTA, and shall be implemented when intersection improvements associated with the Visitacion Valley Redevelopment Plan (i.e., signalization) are no longer sufficient to maintain acceptable intersection level of service conditions.		intersection improvements associated with the Visitacion Valley Redevelopment Plan (i.e., signalization). When LOS degrades to unacceptable levels, restripe intersection as indicated.			MM TR-4 will not be required.
MM TR-6 Mitigations and associated fair-share funding measures for cumulative regional roadway system impacts. The City of Brisbane and Caltrans, as part of the Harney Interchange Project, shall account for existing traffic, background traffic growth, and the most recent forecasts of traffic expected to be associated with each of several adjacent development projects, including the Project. The San Francisco County Transportation Authority (SFCTA) shall coordinate with the City of Brisbane and Caltrans to ensure Project-generated vehicle trips are accounted for in the Harney Interchange analyses and design. Mitigations and associated fair-share funding measures for cumulative regional roadway system impacts, including freeway segment impacts, shall be formulated through the current inter-jurisdictional Bi-County Transportation Study effort being led by the SFCTA, or its equivalent. The Project Applicant shall contribute its fair share to the Harney Interchange Project.	Project Applicant/ San Francisco County Transportation Authority (SFCTA))/ SFMTA / SFDPW / Caltrans / City of Brisbane	Ongoing as part of the Harney Interchange Project	SFRA	SFRA	Completed upon payment of fair-share contribution to the Harney Interchange Project.
MM TR-7 Feasibility study of reconfiguring the southbound approach on Illinois Street to provide a dedicated southbound left turn lane and a dedicated right-turn lane. SFMTA shall conduct a	Project Applicant/SFMTA/The Port of San Francisco	Monitor the Amador/Cargo/Illinois intersection biannually by undertaking traffic	SFRA/SFMTA	SFRA/SFMTA/Port of San Francisco	Upon completion of the feasibility study, the applicant shall contribute its fair

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
feasibility study with the Port of San Francisco to determine the feasibility of reconfiguring the southbound approach on Illinois Street to provide a dedicated southbound left turn lane and a dedicated right-turn lane. Sufficient right-of-way is available to implement this improvement; however, provision of two southbound lanes would require narrowing a portion of the island to the west of the southbound approach to Cargo Way. Implementation of the intersection improvements shall be the responsibility of SFMTA and the Port of San Francisco, and shall be implemented when traffic operating conditions with the existing intersection configuration worsens to unacceptable levels. If determined feasible, the Project Applicant shall contribute its fair share to the intersection improvements.		counts five years after occupancy of HPS begins. When LOS degrades to LOS D, SFMTA and the Port of San Francisco shall undertake the feasibility study. Improvements shall be implemented when LOS reaches mid-range LOS D.			share to the intersection improvements.
MM TR-8 Mitigations and associated fair-share funding measures for cumulative regional roadway system impacts. The City of Brisbane, as part of the Geneva Avenue Extension Project, shall account for existing traffic, background traffic growth, and the most recent forecasts of traffic expected to be associated with each of several adjacent development projects, including the Project. The San Francisco County Transportation Authority (SFCTA) and SFMTA shall coordinate with the City of Brisbane to ensure projected traffic volumes are accounted for in the design of the Geneva Avenue Extension. Mitigations and associated fair-share funding measures for cumulative regional roadway system impacts, including freeway segment impacts, shall be formulated through the current interjurisdictional Bi-County Transportation Study effort being led by the SFCTA, or its equivalent. The Project Applicant shall contribute its fair share to the Harney	Project Applicant/San Francisco County Transportation Authority (SFCTA)/ SFMTA / SFDPW / Caltrans / City of Brisbane	Ongoing as part of the Geneva Avenue Extension Project	SFRA	SFRA	Completed upon payment of fair-share contribution to the Geneva Avenue Extension Project

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
Interchange Project.					
MM TR-16 Widen Harney Way as shown in Figure 5 in the Transportation Study. Prior to issuance of the grading permit for Development Phase 1 of the Project, the Project Applicant shall widen Harney Way as shown in Figure 5 in the Transportation Study. Prior to the issuance of grading permits for 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.	Project Applicant/SFDPW	Prior to issuance of Grading Permits for Phase 1 of the Project	SFMTA	SFMTA	Completed when improvements to Harney Way as Shown in Figure 5 of the Transportation Study are final.
	Project Applicant/SFMTA	Prior to the issuance of grading permits for Phases 2, 3 and 4 of the Project, monitor traffic conditions on Harney Way by undertaking traffic counts and performing traffic study.	SFRA/SFMTA	SFRA/SFMTA	Upon completion of the traffic study as directed by the SFMTA
	Project Applicant/SFMTA	Upon completion of the traffic study as determined by the SFMTA, reconfigure Harney consistent with Figure 6, if deemed necessary by SFMTA	SFRA/SFMTA	SFRA/SFMTA	Completed when improvements to Harney Way as Shown in Figure 6 of the Transportation Study are final as required by the SFMTA.
MM TR-17 Implement the Project's Transit Operating Plan. The Project Applicant shall work with SFMTA to develop and implement the Project's Transit Operating Plan. Upon completion of the Project	Project Applicant/SFMTA	The Project Transit Operating Plan shall be submitted as part of the Disposition and Development Agreement prior to	SFRA/SFMTA	SFRA/SFMTA	Upon approval of DDA containing Project Transit Operating Plan

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
build out, elements of the Project Transit Operating Plan shall include: ■ Extension of the 24-Divisadero, the 44-O'Shaughnessy, and the 48-Quintara-24th Street into Hunters Point Shipyard. ■ Increased frequency on the 24-Divisadero to 6 minutes in the AM and PM peak periods. ■ Extension of the 29-Sunset from its current terminus near the Alice Griffith housing development, near Gilman Avenue and Giants Drive, into the proposed Candlestick Point retail area. The 29-Sunset would operate a short line between Candlestick Point and the Balboa Park BART station. This would increase frequencies on the 29-Sunset by reducing headways between buses from 10 minutes to 5 minutes during the AM and PM peak periods between Candlestick Point and the Balboa BART station. Every other bus would continue to serve the Sunset District (to the proposed terminus at Lincoln Drive and Pershing Drive in the Presidio) at 10-minute headways. ■ Convert T-Third service between Bayview and Chinatown via the Central Subway from one-car to two-car trains or comparable service improvement. ■ Extension of the 28L-19th Avenue Limited from its TEP-proposed terminus on Geneva Avenue, just east of Mission Street, into the Hunters Point Shipyard transit center. The 28L-19th Avenue Limited would travel along Geneva Avenue across US-101 via the proposed Geneva Avenue extension and new interchange with US-101, to Harney Way. East of Bayshore Boulevard, the 28L-19th Avenue Limited would operate as BRT, traveling in		project approval. Implementation of roadway improvements and transit service as specified in Transit Operating Plan and Transportation Plan			

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
exclusive bus lanes into the Candlestick Point area. The BRT route would travel through the Candlestick Point retail corridor, and cross over Yosemite Slough into the Hunters Point Shipyard transit center. ■ The 28L-19th Avenue Limited would operate a short line to the Balboa Park BART station. This would increase frequencies on the 28L-19th Avenue Limited by reducing headways between buses from 10 minutes to 5 minutes for the segment between Hunters Point Shipyard and the Balboa Park BART station. Every other bus would continue to the Sunset District (to the proposed terminus at North Point Street and Van Ness Avenue) at 10-minute headways. If the TEP-proposed extension of the 28L has not been implemented by the SFMTA by the time implementation of this measure is called for in the Transportation Study (Appendix D), the Project Applicant shall fund the extension of that line between its existing terminus and Bayshore Boulevard. ■ New CPX-Candlestick Express to downtown serving the Candlestick Point site, traveling along Harney Way (with potential stops at Executive Park), before traveling on US-101 toward downtown, terminating at the Transbay Terminal. ■ New HPX-Hunters Point Shipyard Express to downtown serving the Hunters Point Shipyard site, traveling from the Hunters Point Shipyard Transit Center, along Innes Avenue, with stops at the India Basin and Hunters View areas, before continuing along Evans Avenue to Third Street, eventually entering I-280 northbound at 25th/Indiana. The HPX would continue non-stop					

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
to the Transbay Terminal in Downtown San Francisco.					
The SFMTA may modify or refine components listed above as needed to address changes in the operating environment and service demands, using SFMTA's service planning methodology and public review process, provided that the modifications result in: ■ Similar or higher transit mode share to what was projected in the DEIR. As shown in Table III.D-5 in the DEIR, the Proposed Project is anticipated to generate approximately 20 percent of its external person-trips via transit during the weekday PM peak hour. If modifications to the transit service described above are proposed, SFMTA (or other agency, as appropriate) shall demonstrate that the changes would still provide for a weekday PM peak hour transit mode share for external trips (i.e., outside of the Candlestick Point–Hunters Point Shipyard Phase II Development Area) of approximately 20 percent or greater. ■ Adequate capacity to serve projected transit ridership. Table III.D-17 in the DEIR presents the transit ridership and capacity utilization percentages for three study area cordons. The cordons are described on page III.D-66 of the DEIR and illustrated in Figure 19 in the project's Transportation Study (included in Appendix D of the DIER). As shown in Table III.D-17 in the DEIR, most of the study area cordons are projected to operate well within SFMTA's 85 percent capacity utilization standard. If modifications to the transit service described above are proposed, SFMTA (or other agency, as appropriate) shall demonstrate that the changes would not cause	SFMTA, or other Agency, as appropriate	Prior to implementing any changes to Transit Operating Plan	SFRA/ Planning	SFRA/ Planning	Approval by ERO of proposed revisions to Transit Operating Plan

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
capacity to deteriorate such that the study area cordons as defined in Table III.D-17 in the DEIR would operate above SFMTA's capacity utilization standard. ■ Similar or less severe traffic impacts than identified in Impacts TR-3 through TR-16 in the DEIR. Specifically, if modifications to the transit service described above are proposed, SFMTA (or other agency, as appropriate) shall demonstrate that vehicular traffic congestion (i.e., intersection level of service) would be similar to or better than conditions identified in the DEIR at study intersections along major transit corridors in the study area including Palou Avenue, Gilman Avenue, Harney Way, and Innes Avenue/Hunters Point Boulevard/Evans Avenue. Before implementing any major service changes to the expected components of the Transit Operating Plan, the SFMTA shall submit a memorandum to the San Francisco Planning Department's Environmental Review Officer, describing the proposed changes and technical analysis demonstrating compliance with the above criteria. Nothing in this measure requires the SFMTA to provide any service in advance of the schedule for Transit Improvement Phasing set forth as Table 5 in the Transit Operating Plan or in excess of the criteria set forth above.					
MM TR-21.1 Maintain the proposed headways of the 9-San Bruno. To address Project impacts to the 9-San Bruno, prior to issuance of a grading permit for Development Phase 1, the Project Applicant in cooperation with SFMTA shall conduct a study to evaluate the effectiveness and feasibility of the following improvements which could reduce Project	Project Applicant/SFMTA	Develop monitoring program for traffic and transit operations related to the 9-San Bruno prior to issuance of a grading permit for Phase I.	SFRA/SFMTA	SFRA/SFMTA	Upon completion of a monitoring program as directed and approved by the SFMTA.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
impacts on transit operations along the San Bruno Avenue corridor, generally between Campbell Avenue and Silver Avenue. The study shall create a monitoring program to determine the implementation extent and schedule (as identified below) to maintain the proposed headways of the 9-San Bruno.		As directed by monitoring program, prepare traffic and transit improvement feasibility study to define improvements and schedule.			Feasibility study submitted and approved by SFMTA
■ Install a transit-only lane on northbound San Bruno Avenue for the one-block section (400 feet) between Silliman Street and Silver Avenue. This would involve removal of five metered spaces on the east side of San Bruno Avenue, just south of Silver Avenue. Treatment for transit-only lanes can range from striping to physical elevation changes or barriers to protect transit right-of-way from mixed-flow traffic.		Based on the schedule/thresholds set forth in the feasibility study.	SFRA/SFMTA	SFRA/SFMTA	Completed when improvements identified in feasibility study are implemented.
■ Install a transit-only lane on southbound San Bruno Avenue at the approach to Dwight Street/Paul Avenue. This lane would function as a so-called “queue-jump” lane, allowing buses to bypass queues on southbound San Bruno Avenue at the intersection. The lane should begin approximately 200 feet north of Dwight Street and extend one block (about 300 feet) south of Paul Avenue to Olmstead Street. This would involve the removal of up to 20 on-street parking spaces on the west side of San Bruno Avenue. This treatment could be limited to peak hours only, which would minimize the impact of the parking loss. The segment of San Bruno Avenue between Dwight Street and Olmstead Street is designated as Bicycle Routes #705 and 5 (Class III signed routes).					
■ At the intersection of San Bruno/Silver install signal priority treatments on westbound Silver Avenue, where buses waiting to turn left from					

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
Silver Avenue onto southbound San Bruno Avenue must currently wait through almost an entire signal cycle due to the heavy oncoming traffic on eastbound Silver Avenue. Installation of a transit signal pre-emption at this location that provides a "green" signal for westbound vehicles but holds eastbound vehicles when buses are present would allow transit vehicles to turn left onto San Bruno Avenue without having to wait for opposing eastbound through traffic to clear. The Project Applicant shall fully fund the costs of implementing the transit priority improvements (either the improvements identified above, or alternative improvements of equal or greater effectiveness and comparable cost) as determined by the study and the monitoring program. Other options to be evaluated in the study could include comprehensive replacement of stop-controlled intersections with interconnected traffic signals equipped with transit priority elements.					
MM TR-21.2 Purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 9-San Bruno. Should mitigation measure MM TR-21.1 not be feasible or effective, the Project Applicant shall work with SFMTA to purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 9-San Bruno. Funds for the implementation of this mitigation measure are expected to be generated from a combination of Project revenues that accrue to the City, and other funding sources.	Project Applicant/SFMTA	Based on the schedule/thresholds set forth in the feasibility study.	SFRA/SFMTA	SFRA/SFMTA	Completed when the purchase of additional transit vehicles is funded as determined by the feasibility study.
MM TR-22.1 Maintain the proposed headways of the 23-Monterey, 24-Divisidero and the 44-	Project Applicant/SFMTA	Develop monitoring program for traffic and	SFRA/SFMTA	SFRA/SFMTA	Upon completion of a monitoring program as

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
O'Shaughnessy. To address Project impacts to the 23-Monterey, 24-Divisidero and the 44-O'Shaughnessy, prior to issuance of a grading permit for Development Phase 1, the Project Applicant in cooperation with SFMTA shall conduct a study to evaluate the effectiveness and feasibility of the following improvements which could reduce Project impacts on transit operations along the Palou Avenue corridor, generally between Griffith Street and Newhall Street. The study shall create a monitoring program to determine the implementation extent and schedule (as identified below) to maintain the proposed headways of the 23-Monterey, 24-Divisidero and the 44-O'Shaughnessy.		transit operations related to the 23-Monterey, 24-Divisadero, and the 44-O'Shaughnessy prior to issuance of a grading permit for Phase 1.			directed and approved by the SFMTA.
		As directed by the monitoring program, prepare traffic and transit improvement feasibility study to define improvements and schedule.I.			Feasibility study submitted and approved by SFMTA
■ Convert one of the two westbound travel lanes on Palou Avenue between Keith Street and Newhall Street (three blocks) to a transit-only lane at all times. Treatment for transit-only lanes can range from striping to physical elevation changes to protect right-of-way from mixed-flow traffic. Because the westbound lanes between Third Street and Newhall Street are relatively narrow, parking would likely need to be prohibited on the north side of Palou Avenue between Third Street and Newhall Street (approximately 600 feet) during peak periods to maximize the effectiveness of the transit-only lane. ■ Convert one of the two eastbound travel lanes on Palou Avenue between Newhall Street and Third Street (one block) to a transit-only lane at all times. Because the eastbound travel lanes between Newhall Street are relatively narrow, parking would likely need to be prohibited on	Project Applicant/SFMTA/SFDPW	Based on the schedule/thresholds set forth in the feasibility study.	SFRA/SFMTA	SFRA/SFMTA	Completed when improvements identified in feasibility study are implemented.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
the south side of Palou Avenue between Newhall Street and Third Street (approximately 600 feet) during peak periods to maximize the effectiveness of the transit-only lane. In the eastbound direction, east of Third Street, buses would re-enter the single mixed-flow traffic lane at the bus stop on the far (east) side of Third Street. ■ There are currently pedestrian corner bulbs on the northwest and southwest corners of the intersection of Palou Avenue and Third Street. In order to accommodate the transit-only lanes west of Third Street, these bulbouts would be reconfigured or removed. Although removing pedestrian bulb-outs may increase pedestrian crossing distances and is generally inconsistent with the City's desire to prioritize pedestrian activity, in this case, the improvement would offer substantial benefits to transit travel times by allowing a transit-only lane through a congested intersection. This would be consistent with the City's transit-first policy. ■ During the PM peak period only, prohibit parking on westbound Palou Avenue for the four-block segment between Griffith Street/Crisp Avenue and Keith Street, to provide for a PM peak period curb transit-only lane along this segment. This would create a continuous westbound transit-only lane on Palou Avenue between Griffith Street/Crisp Avenue and Newhall Street during the PM peak period. As an alternative to the bulleted measures above, narrow the existing sidewalks on Palou Avenue from Third Street to Crisp Avenue (seven blocks) from 15 feet to 12 feet in width. The pedestrian					

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
bulb-outs on the west side of Third Street would be removed. The resulting 12-foot-wide sidewalks would be consistent with the Better Streets Plan guidelines. The reduction in sidewalk width would allow for the provision of a 7-foot-wide on-street parking lane, an 11-foot-wide transit-only lane, and a 10-foot-wide mixed-flow lane in each direction on Palou Avenue. This would preserve on-street parking along the corridor and provide a seven-block transit-only lane on Palou Avenue between Griffith Street/Crisp Avenue and Newhall Street. Treatment for transit-only lanes can range from striping to physical elevation changes to protect right-of-way from mixed-flow traffic. Subsequent to publication of the Draft EIR, SFMTA and the Project Applicant conducted an evaluation of this alternative measure and determined that it is a feasible and viable alternative to the four bulleted items above. The Project Applicant shall fully fund the costs of implementing the transit priority improvements (either the improvements identified above, or alternative improvements of equal or greater effectiveness and comparable cost) as determined by the study and the monitoring program. Other options to be evaluated in the study could include signal priority treatments at other signalized intersections including at Bayshore/Cortland, Bayshore/Industrial, and Bayshore/Oakdale.					
MM TR-22.2 Purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 23-Monterey, the 24-Divisadero and the 44-O'Shaughnessy. Should mitigation measure MM TR-22.1 not be feasible or effective, the Project Applicant shall work with SFMTA to purchase additional transit vehicles as necessary	Project Applicant/SFMTA	Based on the schedule/thresholds set forth in the feasibility study.	SFRA/SFMTA	SFRA/SFMTA	Completed when the purchase of additional vehicles is funded as determined by the feasibility study.

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 23-Monterey, the 24-Divisadero, and the 44-O'Shaughnessy. Funds for the implementation of this mitigation measure are expected to be generated from a combination of Project revenues that accrue to the City, and other funding sources.					
MM TR-23.1 Maintain the proposed headways of the 29-Sunset. To address Project impacts to the 29-Sunset, prior to issuance of a grading permit for Development Phase 1, the Project Applicant in cooperation with SFMTA shall conduct a study to evaluate the effectiveness and feasibility of the following improvements which could reduce Project impacts on transit operations along the Gilman Avenue and Paul Avenue corridor, generally between Arelious Walker Drive and Bayshore Boulevard. The study shall create a monitoring program to determine the implementation extent and schedule (as identified below) to maintain the proposed headways of the 29-Sunset.	Project Applicant/SFMTA	Develop monitoring program for traffic and transit operations related to the 29-Sunset prior to issuance of a grading permit for Phase 1.	SFRA/SFMTA	SFRA/SFMTA	Upon completion of a monitoring program as directed and approved by SFMTA
	Project Applicant/SFMTA	As directed by the monitoring program, prepare traffic and transit improvement feasibility study to define improvements and schedule.	SFRA/SFMTA	SFRA/SFMTA	Feasibility study submitted and approved by SFMTA
■ For the five-block segment of Gilman Avenue between Arelious Walker Drive and Third Street, prohibit on-street parking on westbound Gilman Avenue during the AM and PM peak periods to provide for three westbound travel lanes. During the peak periods convert one of the three westbound travel lanes to transit-only. During off-peak periods, parking would be allowed, and buses would travel in one of the two mixed-flow lanes. The peak period transit lanes would impact 90 parking spaces. ■ For the same five-block segment of Gilman Avenue between Arelious Walker Drive and Third Street, restripe the eastbound direction to	Project Applicant/SFMTA/SFDPW	Based on the schedule/thresholds set forth in the feasibility study	SFRA/SFMTA	SFRA/SFMTA	Completed when improvements identified in feasibility study are implemented.

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
provide two travel lanes, one of which would accommodate on-street parking and one of which would be a mixed-flow travel lane. During the AM and PM peak periods, prohibit on-street parking in the eastbound direction, and operate one of the two eastbound lanes as transit-only lanes. The peak period transit lanes would impact 80 parking spaces. ■ As an alternative to the two bulleted measures above, convert one of the two travel lanes in each direction on Gilman Avenue from Third Street to Griffith Street to transit-only. This would allow for the provision of a 7-foot-wide on-street parking lane, an 11-foot-wide transit-only lane, and a 10-foot-wide mixed-flow lane in each direction on Gilman Avenue. This would preserve on-street parking along the corridor and provide four-block transit-only lanes on Gilman Avenue between Griffith Street and Third Street. Treatment for transit-only lanes can range from striping to physical elevation changes to protect right-of-way from mixed-flow traffic. Subsequent to publication of the Draft EIR, SFMTA and the Project Applicant conducted an evaluation of this alternative measure and determined that it is a feasible and viable alternative to the two bulleted items above ■ Prohibit on-street parking on the north side of Paul Avenue, between Third Street and Bayshore Boulevard to create two westbound through lanes. Convert one westbound through lane to transit-only in the AM and PM peak periods. The peak period transit-only lane would impact 40 parking spaces. At the intersection of Paul Avenue and Bayshore Avenue, provide transit signal priority treatment					

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
(i.e., queue jump) to allow transit vehicles to maneuver into the mixed flow left-hand lane, facilitating a left-turn movement immediately west of Bayshore Boulevard from westbound Paul Avenue to southbound San Bruno. The Project Applicant shall fully fund the costs of implementing the transit priority improvements (either the improvements identified above, or alternative improvements of equal or greater effectiveness and comparable cost) as determined by the study and the monitoring program. Other options to be evaluated in the study could include transit priority treatments on San Bruno Avenue, on the portions where the 29-Sunset travels.					
MM TR-23.2 Purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 29-Sunset. Should mitigation measure MM TR-23.1 not be feasible or effective, the Project Applicant shall work with SFMTA to purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 29-Sunset. Funds for the implementation of this mitigation measure are expected to be generated from a combination of Project revenues that accrue to the City, and other funding sources.	Project Applicant/SFMTA	Based on the schedule/thresholds set forth in the feasibility study.	SFRA/SFMTA	SFRA/SFMTA	Completed when the purchase of additional transit vehicles is funded as determined by the feasibility study.
MM TR-24.1 Maintain the proposed headways of the 48-Quintara-24th Street. To address Project impacts to the 48-Quintara-24th Street, prior to issuance of a grading permit for Development Phase 1, the Project Applicant in cooperation with SFMTA shall conduct a study to evaluate the effectiveness and feasibility of the following improvements which could reduce Project impacts on transit operations along the Evans	Project Applicant/SFMTA	Develop monitoring program for traffic and transit operations related to the 48-Quintara-24th Street prior to issuance of a grading permit for Phase 1.	SFRA/SFMTA	SFRA/SFMTA	Upon completion of a monitoring program as directed and approved by SFMTA

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
Avenue corridor, generally between Hunters Point Boulevard and Napoleon Street. The study shall create a monitoring program to determine the implementation extent and schedule (as identified below) to maintain the proposed headways of the 48-Quintara-24th Street.	Project Applicant/SFMTA	As directed by the monitoring program, prepare traffic and transit improvement feasibility study to define improvements and schedule.	SFRA/SFMTA	SFRA/SFMTA	Feasibility study submitted and approved by SFMTA
■ On Evans Avenue, between Jennings Street and Napoleon Street (a nine-block segment—about 6,000 feet), convert one of the two travel lanes in each direction to a transit-only lane at all times. Treatment for transit-only lanes can range from striping to physical elevation changes or barriers to protect transit right-of-way from mixed-flow traffic. The Project Applicant shall fully fund the costs of implementing the transit priority improvements (either the improvements identified above, or alternative improvements of equal or greater effectiveness and comparable cost) as determined by the study and the monitoring program. Other options to be evaluated in the study could include extension of transit only lanes in one or both directions between Napoleon Street and Cesar Chavez Street or onto Hunters Point Boulevard and Innes Avenue.	Project Applicant/SFMTA	Based on the schedule/thresholds set forth in the feasibility study	SFRA/SFMTA	SFRA/SFMTA	Completed when improvements identified in feasibility study are implemented.
Or:					
MM TR-24.2 <u>Purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 48-Quintara-24th Street.</u> Should mitigation measure MM TR-24.1 not be feasible or effective, the Project Applicant shall work with SFMTA to purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to	Project Applicant/SFMTA	Based on the schedule/thresholds set forth in the feasibility study	SFRA/SFMTA	SFRA/SFMTA	Completed when the purchase of additional transit vehicles is funded as determined by the feasibility study

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
headways on the 48-Quintara-24th Street. Funds for the implementation of this mitigation measure are expected to be generated from a combination of Project revenues that accrue to the City, and other funding sources.					
MM TR-25 Purchase additional transit vehicles to mitigate the Project impacts and Project contribution to cumulative impacts to headways on 54-Felton. SFMTA shall purchase additional transit vehicles to mitigate the Project impacts and Project contribution to cumulative impacts to headways on 54-Felton. Funds for the implementation of this mitigation measure are expected to be generated from a combination of Project revenues that accrue to the City, and other funding sources.	Project Applicant/SFMTA	Develop monitoring program for traffic and transit operations related to the 54-Felton prior to issuance of a grading permit for Phase 1.	SFRA/SFMTA	SFRA/SFMTA	Upon completion of a monitoring program as directed and approved by SFMTA.
	Project Applicant/SFMTA	Based on the schedule/thresholds set forth in the feasibility study	SFRA/SFMTA	SFRA/SFMTA	Completed when the purchase of additional transit vehicles is funded as determined by the feasibility study.
MM TR-26.1 Maintain the proposed headways of the T-Third. To address Project impacts to the T-Third, prior to issuance of a grading permit for Development Phase 1 the Project Applicant in cooperation with SFMTA shall conduct a study to evaluate the effectiveness and feasibility of the following improvement that could reduce Project impacts on transit operations along Third Street between Thomas Avenue and Kirkwood Avenue. The study shall create a monitoring program to determine the implementation extent and schedule (as identified below) to maintain the proposed headways of the T-Third.	Project Applicant/SFMTA	Develop monitoring program for traffic and transit operations related to the T-Third prior to issuance of a grading permit for Phase 1.	SFRA/SFMTA	SFRA/SFMTA	Upon completion of a monitoring program as directed and approved by SFMTA.
	Project Applicant/SFMTA	As directed by the monitoring program, prepare traffic and transit improvement feasibility study to define improvements and schedule	SFRA/SFMTA	SFRA/SFMTA	Feasibility study submitted and approved by SFMTA
■ Reconfigure the section of Third Street between Thomas Avenue and Kirkwood	Project Applicant/SFMTA/SFDPW	Based on the schedule/thresholds	SFRA/SFMTA	SFRA/SFMTA	Completed when improvements

Draft Mitigation Monitoring & Reporting Program					
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Avenue (9 blocks) where the light rail vehicles currently share the travel lane with auto traffic to provide a dedicated transit right-of-way, consistent with the rest of the route. This would require either removal of one travel lane in each direction on Third Street, or removal of on-street parking and some sidewalk bulbouts. In addition, left-turns from Third Street in this segment would be restricted in both directions. Treatment for transit-only lanes can range from striping to physical elevation or barriers to protect transit right-of-way from mixed-flow traffic.		set forth in the feasibility study			identified in the feasibility study are implemented.
Implementation of the roadway reconfiguration shall be the responsibility of SFMTA, and shall be implemented when the results of the study described above indicate transit improvements are necessary. The Project Applicant shall fully fund the costs of implementing the transit priority improvements prior to approval of subsequent phases of development.					
MM TR-26.2 Purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the T-Third. Should mitigation measure MM TR-26.1 not be feasible or effective, the Project Applicant shall work with SFMTA to purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the T-Third. Funds for the implementation of this mitigation measure are expected to be generated from a combination of Project revenues that accrue to the City, and other funding sources.	Project Applicant/SFMTA	Based on the schedule/thresholds set forth in the feasibility study	SFRA/SFMTA	SFRA/SFMTA	Completed when the purchase of additional transit vehicles is funded as determined by the feasibility study.
MM TR-27.1 Ensure transit preferential treatment is accounted for in the design of the Geneva Avenue	Project Applicant/SFMTA/SFCTA	Ongoing as part of the Geneva Avenue	SFRA/SFMTA/SFCTA	SFRA/SFMTA/SFCTA	Upon completion of the Geneva Avenue

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
Extension. The City of Brisbane, as part of the Geneva Avenue Extension Project, shall account for existing traffic, background traffic growth, and the most recent forecasts of traffic expected to be associated with each of several adjacent development projects, including the Project. The San Francisco County Transportation Authority (SFCTA) and SFMTA shall coordinate with the City of Brisbane to ensure transit preferential treatment is accounted for in the design of the Geneva Avenue Extension.		Extension Project			Extension Project
MM TR-27.2 Purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 28L-19th Avenue/Geneva Limited. Should mitigation measure MM TR-27.1 not be feasible or effective, the Project Applicant shall work with SFMTA to purchase additional transit vehicles as necessary to mitigate the Project impacts and Project contribution to cumulative impacts to headways on the 28L-19th Avenue/Geneva Limited. Funds for the implementation of this mitigation measure are expected to be generated from a combination of Project revenues that accrue to the City, and other funding sources.	Project Applicant/SFMTA	Develop monitoring program for traffic and transit operations related to the 28L-29th Avenue/Geneva Limited prior to issuance of a grading permit for Phase 1.	SFRA/SFMTA	SFRA/SFMTA	Upon completion of a monitoring program as directed and approved by SFMTA.
	Project Applicant/SFMTA	Based on the schedule/thresholds set forth in the feasibility study	SFMTA	SFMTA	Completed when the purchase of additional transit vehicles is funded as determined by the feasibility study.
MM TR-32 Determine the feasibility of relocating Bicycle Routes #70 and #170. Prior to issuance of the grading permit for Development Phase 1, the Project Applicant shall fund a study to determine the feasibility of relocating Bicycle Routes #70 and #170. The study of the bicycle route relocation, necessary environmental clearance documentation, and implementation shall be the responsibility of SFMTA.	Project Applicant/SFMTA	Prior to issuance of the grading permit for Phase 1	SFRA/SFMTA	SFMTA	Upon completion of the feasibility study.
MM TR-38 Transportation Management Plan	Stadium Operator/SFMTA	Prior to opening day of	SFRA/SFMTA	SFRA/SFMTA	Approval of the

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
(TMP) for the stadium. The stadium operators shall develop and maintain a Transportation Management Plan (TMP) for the stadium. The stadium operator shall work with representatives from the SFMTA, the State Highway Patrol, the Police Department, private charter operators, Caltrain and others on a continuing basis to develop and refine the TMP, as determined appropriate by SFMTA. The final stadium TMP shall be approved by SFMTA. Preparation of the TMP shall be fully funded by the stadium operator, and shall be completed in time for implementation on opening day of the stadium. The following actions shall be included in the TMP: ■ Information on transportation options to the stadium, including game day service by the various regional service providers shall be distributed to season ticket holders, employees, and other patrons if possible. ■ A brochure, information packet, and/or web page providing full information on transit access to the stadium, similar to that currently offered at the 49ers website, shall be updated and maintained. ■ The use of charter buses to the stadium shall be encouraged and expanded. A number of measures shall be considered that could be implemented at low-cost to expand the use of group charters, including reduced parking costs, publicize the groups in 49ers publications and mailings, provide priority parking, provide lounges for bus drivers and provide support services for rooter clubs. ■ Residential Permit Parking Program and/or additional parking restrictions, such as time limits, during game days, particularly in the Bayview Hunters Point areas, shall be explored		the stadium			Transportation Management Plan (TMP) by the SFMTA

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
with residents to reduce potential for intrusion of stadium vehicles into the adjacent neighborhood during a football game or secondary event. ■ The stadium operator shall implement measures to encourage carpools of 4-plus persons per vehicle. ■ The stadium operator shall charge a higher parking cost for low occupancy vehicles. ■ The stadium operator shall develop a separate TDM plan for employees of the stadium and concessionaires. The plan shall consider measures such as providing employees and concessionaires with free or subsidized transit passes to encourage transit use and reduce vehicular travel to the stadium. Employees shall not receive preferential parking. ■ The stadium operator shall develop measures with CPSRA to ensure that game day spectators do not park in CPSRA day use parking lots. Strategies to be explored include limiting parking in CPSRA lots to a limited duration during game days (e.g., to a two-hour period), or an increase in parking fees equivalent to game day parking, and ticketing and enforcement. ■ The TMP shall ensure that regular transit routes operate acceptably near the stadium. The plan should consider providing alternate routes for those transit lines that do not have exclusive right-of-way on game days (48-Quintara-24th Street, 44-O'Shaughnessy, 29-Sunset) onto transit-only facilities such as the BRT right-of-way to the south and Palou Avenue to the north (which would be a transit-only facility on game days).					

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MM TR-39 Transit Service during Game Days. SFMTA shall increase frequency on regularly scheduled Muni routes serving the stadium area on game days. In addition, the stadium operator shall fund additional Muni shuttle service between the stadium and regional transit service, including BART (Balboa Park and/or Glen Park Station) and Caltrain (Bayshore Station). Although the specific frequencies of individual routes should be determined based on patron characteristics that may evolve over time, the increased transit service, taken as an aggregate, should generally compensate for the projected shortfall of 3,600 passengers per hour on the existing and proposed transit lines. Prior to opening day at the new stadium, the City and stadium operator shall determine costs associated with the increased service and determine funding sources. Examples of funding sources that shall be considered include a surcharge on game tickets or other such revenue mechanism. Implementation of increased transit service would be the responsibility of SFMTA and the stadium operator, and would be implemented when projected attendance warrants additional service.	Stadium Operator/SFMTA	Prior to opening day of the stadium	SFRA/SFMTA	SFRA/SFMTA	Approval of gameday transit operating plan by SFMTA.
MM TR-46 Traffic Control Officers. The stadium operator shall develop as part of a stadium Transportation Management Plan (TMP), a strategy for coordinating with representatives of SFMTA and the SF Police Department for deploying traffic control officers in the Project vicinity to increase efficiency of pre- and post-event traffic, similar to what would be in place for football game days. The secondary event component of the stadium TMP shall be approved	Stadium Operator/SFMTA	Prior to opening day of the stadium	SFRA/SFMTA	SFRA/SFMTA	Approval of the Transportation Management Plan (TMP) by the SFMTA

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
by SFMTA. The stadium operator shall fully fund implementation of the secondary event (i.e., non-49ers football events) measures.					
MM TR-47 Transit Service during Secondary Events. SFMTA shall increase frequency on regularly scheduled Muni routes serving the stadium area prior to large special events. In addition, the stadium operator shall fund additional Muni shuttle service between the stadium and regional transit service, including BART (Balboa Park and/or Glen Park stations) and Caltrain (Bayshore station). ■ Routes 24-Divisadero, 28L-19th Avenue Limited, and 44-O'Shaughnessey would already be operating near their maximum frequency. Therefore, this mitigation measure primarily applies to the 48-Quintara-24th Street route and the new HPX service. If each of these routes were increased to have five-minute frequencies (typically considered the maximum frequency that can be regularly maintained), the transit capacity toward the stadium would increase by 828 passengers per hour, for a total of 3,928 passengers. Even with the additional service on these two lines, there would be a shortfall of 1,797 passengers per hour in transit capacity. ■ Additional express service to key regional transit destinations and regional charter express service, similar to what is offered on football game days, would offset a portion of the shortfall in transit capacity. The amount and nature of special service to special stadium events would depend on the type and size of the special event. Generally, the capacity of the express service should compensate for the shortfall of 1,797	Stadium Operator/SFMTA	Prior to opening day of the stadium	SFRA/SFMTA	SFRA/SFMTA	Approval of special-event transit operating plan by SFMTA.

Draft Mitigation Monitoring & Reporting Program					
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passengers per hour for a 37,500-person event (transit supply, would of course, be designed on a case-by-case basis depending on the expected size of the secondary event). ■ SFMTA and the stadium operator shall implement a stadium transportation systems plan similar to that developed for game-day operations (except that the Yosemite Slough bridge shall not be available for private automobiles), on a case-by-case basis depending on the expected size of the secondary event. Prior to opening day at the new stadium, the City and the stadium operator shall determine costs associated with the increased service and determine funding requirements. Examples of funding sources that shall be considered include a surcharge on game tickets, parking or admission surcharge, or other such revenue mechanism. Implementation of increased transit service would be the responsibility of SFMTA and the stadium operator, and would be implemented when projected attendance warrants additional service.					
MM TR-51 Transportation Management Plan (TMP). The arena operator shall develop a Transportation Management Plan (TMP) for coordinating with representatives of SFMTA and the SF Police Department for deploying traffic control officers in the Project vicinity to increase efficiency of pre- and post- event traffic, and for developing incentives to increase transit ridership to the arena. If Variants 1, 2 or 2A are implemented, the TMP shall provide for SFMTA to increase the frequency on regularly scheduled Muni routes (primarily the CPX-Candlestick Express) serving the arena area prior to large events at the arena and for the arena operator to	Arena Operators/SFMTA	Prior to opening day of the Arena	SFRA/SFMTA	SFRA/SFMTA	Approval of the Transportation Management Plan (TMP) by the SFMTA

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
provide additional shuttle service to key regional transit destinations, such as BART, Caltrain, and the T-Third light rail route. Implementation of this mitigation measure would likely speed vehicle entrance and exit to the arena site as well as maintain orderly traffic and transit operations and reduce intrusion onto minor routes to and from the arena. Traffic control officers would facilitate traffic flow at the intersection of Harney/Jamestown which would operate at LOS F conditions with a sell-out arena event. The final arena TMP shall be approved by SFMTA. Preparation of the TMP Plan shall be fully funded by the arena operator, and shall be completed in time for implementation on opening day of the arena.					
		SECTION III.E (AESTHETICS)			
MM AE-2 Mitigation for Visual Character/Quality Impacts During Construction. Construction documents shall require all construction contractors to strictly control the staging of construction equipment and the cleanliness of construction equipment stored or driven beyond the limits of the construction work area. Construction equipment shall be parked and staged on the Project site. Staging areas shall be screened from view at street level with solid wood fencing or green fence. Prior to the issuance of building permits, the Project Applicant (through the construction contractor[s]) shall submit a construction staging, access, and parking plan to the San Francisco Department of Building Inspection for review and approval. On-street parking of construction worker vehicles shall be prohibited. Vehicles shall be kept clean and free of mud and dust before leaving the Project site. Project contractors shall sweep surrounding streets	Project Applicant	Requirements in construction documents: Prior to issuance of first permit for each phase of construction. Implementation of requirements: Ongoing through the construction process	SFRA/DBI	Construction Contractor	SFRA and DBI to review construction documents and construction staging, access, and parking plan. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
used for construction access daily and maintain them free of dirt and debris.					
MM AE-7a.1 Lighting Direction/Fixtures and Screening Walls to Minimize Glare and Light Spill. The Project Applicant shall ensure that all parking lot and other security lighting shall be directed away from surrounding land uses and towards the specific location intended for illumination. State-of-the-art fixtures shall be used, and all lighting shall be shielded to minimize the production of glare and light spill onto surrounding use. All parking structures shall be constructed with screening walls of sufficient height to block spill light from vehicle headlights.	Project Applicant	Submission of lighting plan subject to lot application or open space design document review; prior to issuance of building permit	SFRA/DBI/DPW	SFRA/DBI/DPW	SFRA to review designs and specifications as part of lot application or open space design document review. DBI/DPW to issue permits and approve construction completion
MM AE-7a.2 Low-level/Unobtrusive Light Fixtures. The Project Applicant shall ensure that landscape illumination and exterior sign lighting shall be accomplished with low-level, unobtrusive fixtures	Project Applicant	Submission of lighting plan subject to lot application or open space design document review; prior to issuance of building permit	SFRA/DBI/DPW	SFRA/DBI/DPW	SFRA to review designs and specifications as part of lot application or open space design document review. DBI/DPW to issue permits and approve construction completion
MM AE-7a.3 Lighting Plan. The Developer shall prepare a lighting plan for each sub-Phase of the Project and submit it to the Agency prior to approval of a sub-Phase. Outdoor lighting shall maintain a minimum required illumination, as determined appropriate by the Agency for all parking and pedestrian areas. In addition, the plan shall include details such as beam spreads and/or photometric calculation, location and type of fixtures, exterior colors, details on foundations, and arrangement of exterior lighting such that it does not create glare, hazardous interference on	Project Applicant	Submission of lighting plan prior to sub-Phase approval	SFRA	SFRA	SFRA to review design as part of sub-Phase application; DBI to issue permits and approve construction completion

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
adjacent streets, or properties or result in spill light that would adversely impact sensitive receptors in the project area.					
MM AE-7a.4 Non-reflective Exterior Surfaces to Minimize Glare Impacts. The Project Applicant shall ensure that design of the proposed structures shall include the use of textured or other nonreflective exterior surfaces and nonreflective glass.	Project Applicant	At schematic lot application or open space design review and plan check; prior to issuance of building permit	SFRA/DBI	SFRA/DBI	SFRA to review designs and specifications as part of lot application or open space design application
MM AE-7b.1 Testing of the Field-Lighting System. Prior to opening the stadium, the Stadium Operator shall test the installed field-lighting system to ensure that lighting meets operating requirements in the stadium and minimizes obtrusive spill lighting in the ballpark facility. Testing shall include light-meter measurements at selected locations in the vicinity to measure spill lighting from stadium field-lighting fixtures, permit adjustment of lighting fixtures, and confirm that spill-lighting effects shall be within an acceptable range and compatible with typical street lighting fixtures.	Stadium Operator	Prior to opening day of the Stadium	SFRA/DBI	SFRA/DBI	SFRA to review designs and specifications as part of lot application review; DBI to issue schematic permits and approve construction completion
MM AE-7b.2 Stadium Lighting Orientation and Cut-Off Shields. Prior to opening the stadium, the Stadium Operator shall ensure that stadium lighting is oriented in such a manner to reduce the amount of light shed onto sensitive receptors and incorporate "cut-off" shields as appropriate to minimize any increase in lighting at adjacent properties, providing that it still meets the standard of lighting for football operations.	Stadium Operator	At lot application/ schematic design documents submitted for approval	SFRA/DBI	SFRA/DBI	SFRA to review designs and specifications as part of lot application review; DBI to issue permits and approve construction completion
		SECTION III.G (WIND)			
MM W-1a Building Design Wind Analysis. Prior to design approval of Project buildings for high-rise structures above 100 feet, if recommended by Agency staff, the Project Applicant shall retain a	Project Applicant	At lot application schematic design review and plan check; prior to	SFRA/DBI	SFRA	SFRA to review design and specification as part of lot application

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
qualified wind consultant to provide a wind review to determine if the exposure, massing, and orientation of the building would result in wind impacts that could exceed the threshold of 26-mph-equivalent wind speed for a single hour during the year. The wind analysis shall be conducted to assess wind conditions for the proposed building(s) in conjunction with the anticipated pattern of development on surrounding blocks to determine if the Project building(s) would cause an exceedance of the wind hazard standard. The analysis shall be conducted as directed by the City's wind study guidelines, including, if required, wind tunnel modeling of potential adverse effects relating to hazardous wind conditions. The Agency shall require the Project Applicant to identify design changes that would mitigate the adverse wind conditions to below the threshold of 26-mph-equivalent wind speed for a single hour of the year. These design changes could include, but are not limited to, wind-mitigating features, such as placing towers on podiums with a minimum 15-foot setback from street edges, placement of awnings on building frontages, street and frontage plantings, articulation of building facades, or the use of a variety of architectural materials.		issuance of bldg permit.			schematic design review; DBI to issue permits and approve construction completion
		SECTION III.H (AIR QUALITY)			
MM AQ 2.1 Implement Emission Control Device Installation on Construction. To reduce DPM 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 Level 3 VDECS (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) during the first two years of	Project Applicant	Prior to issuance of construction site permit	SFRA/ DBI	SFRA/DBI	SFRA and DBI to review construction documents; Construction contractor to submit quarterly report and compliance of activity through fourth year of construction, and annually thereafter,

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
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.					until deemed complete by SFRA.
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 though 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.	Project Applicant	Prior to issuance of construction site permit	SFRA /DBI	SFRA/DBI	SFRA and DBI to review construction documents; Construction contractor to submit quarterly report and compliance of activity through duration, until deemed complete by SFRA.
MM AQ-6.1 If a facility with sources of TAC emission wishes to locate on a plot size smaller than 1 acre, an analysis will be required to show the facility, in conjunction with all other TAC emitting facilities in the R&D areas, will not cause thresholds of a residential cancer risk of 10 in one million and a chronic noncancer HI of 1.0 to be exceeded at the nearest residential locations.	Project Applicant	Lot size submitted at time of sub-phase application; if lot size is less than 1 acre, TAC analysis required prior to building occupancy	SFRA/DBI	SFRA/DBI	SFRA and DBI to review sub-phase application; for lots under once acre SFRA and DBI to review TAC analysis prior to building occupancy. ,
MM AQ-6.2 Each facility with sources of TAC emissions on a plot of 1 acre or larger will limit their emissions such that residential cancer risk and chronic non-cancer hazard index evaluated at the facility boundary does not exceed 10 in one million or 1.0, respectively. If these thresholds are exceeded at the boundary, an analysis will be required to show the facility, in conjunction with all other TAC emitting facilities in the R&D areas, will	Project Applicant	Lot size submitted at time of sub-phase application; if lot size is equal to or greater than 1 acre, TAC analysis required annually. If thresholds exceeded, additional analysis required at	SFRA/DBI	SFRA/DBI	Ongoing requirement

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not cause these thresholds to be exceeded at the nearest residential locations.		direction of SFRA			
SECTION III.I (NOISE AND VIBRATION)					
MM NO-1a.1 Construction Document Mitigation to Reduce Noise Levels during Construction. The Project Applicant shall incorporate the following practices into the construction documents to be implemented by the Project contractor: ■ Provide enclosures and mufflers for stationary equipment, shrouding or shielding for impact tools, and barriers around particularly noisy operations on the site ■ Use construction equipment with lower noise emission ratings whenever possible, particularly air compressors ■ Provide sound-control devices on equipment no less effective than those provided by the manufacturer ■ Locate stationary equipment, material stockpiles, and vehicle staging areas as far as practicable from sensitive receptors ■ Prohibit unnecessary idling of internal combustion engines ■ Require applicable construction-related vehicles and equipment to use designated truck routes to access the Project site ■ Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, noise barriers or noise blankets. The placement of such attenuation measures will be reviewed and approved by the Director of Public Works prior to issuance of development permits for construction activities. ■ Designate a Noise Disturbance Coordinator who shall be responsible for responding to	Project Applicant	Prior to issuance of construction site permit	SFRA/DBI/DPW	SFRA/DBI/DPW	Review and approve contract specifications; Project Applicant to submit quarterly report to SFRA

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
complaints about noise during construction. The telephone number of the Noise Disturbance Coordinator shall be conspicuously posted at the construction site and shall be provided to the City. Copies of the construction schedule shall also be posted at nearby noise-sensitive areas.					
MM NO-1a.2 Noise-reducing Pile Driving Techniques and Muffling Devices. The Project Applicant shall require its construction contractor to use noise-reducing pile driving techniques if nearby structures are subject to pile driving noise and vibration. These techniques include pre-drilling pile holes (if feasible, based on soils) to the maximum feasible depth, installing intake and exhaust mufflers on pile driving equipment, vibrating piles into place when feasible, and installing shrouds around the pile driving hammer where feasible. Contractors shall be required to use construction equipment with state-of-the-art noise shielding and muffling devices. In addition, at least 48 hours prior to pile-driving activities, the Project Applicant shall notify building owners and occupants within 500 feet of the Project site of the dates, hours, and expected duration of such activities.	Project Applicant	Prior to issuance of construction site permit	SFRA/DBI/DPW	SFRA /DBI/DPW	Review and approve contract specifications ; Project Applicant to submit quarterly report to SFRA
MM NO-2a Pre-construction Assessment to Minimize Pile Driving Impacts. The Project Applicant shall require its geotechnical engineering contractor to conduct a pre-construction assessment of existing subsurface conditions and the structural integrity of nearby buildings subject to pile driving impacts prior to receiving a building permit. If recommended by the geotechnical engineer, for structures or facilities within 50 feet of pile driving, the Project Applicant shall require ground borne vibration monitoring of nearby structures. Such methods and technologies shall	Project Applicant	Assessment prior to issuance of construction site permit; Monitoring: Ongoing through construction process	SFRA/DBI	SFRA/DBI/DPW	Review and approve corrective measures as identified throughout construction process quarterly report

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be based on the specific conditions at the construction site such as, but not limited to, the following: ■ Pre-pile driving surveying of potentially affected structures. ■ Underpinning of foundations of potentially affected structures, as necessary. ■ The construction plan shall include a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of an excavation. Monitoring results shall be submitted to DBI. In the event of unacceptable ground movement, as determined by DBI inspections, all pile driving work shall cease and corrective measures shall be implemented. The pile driving program and ground stabilization measures shall be reevaluated and approved by DBI.					
MM NO-7.1 Mitigation to Minimize Game/Concert-related Temporary Increases in Ambient Noise Levels at Nearby Residences. To ensure that stadium game-and event-induced interior L_{max} noise levels do not exceed an interior noise level of 60 dBA and interfere with speech and other indoor activities in the existing Hunters Point Hill residential community closest to and north of the proposed Stadium (i.e., as identified by the R3 stadium noise model receiver), the Stadium Operator shall: ■ After stadium operator enters into lease agreement with Agency, send notification of the establishment of a stadium noise mitigation program (SNMP) to the residential property owners in the identified neighborhood potentially affected by noise from the proposed Stadium	Stadium Operator	After stadium operator enters lease agreement with SFRA	SFRA	SFRA	Complete upon payment of qualified property owners as identified by the acoustical survey. Stadium operator to report to SFRA upon establishment SNMP and yearly threshold until SNMP is completely implemented; continue monitoring through creation of ad hoc community working group.

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
■ Allow property owners an appropriate time after the date of notification about the SNMP to apply for the program, with a reminder sent to the owners before the end of the application period ■ Determine if responding property owners meet qualifications ■ Compile for property-owners reference and send to them a summary of standard types of structural acoustical mitigations ■ Choose a qualified acoustical consultant to survey the potentially affected residential units and recommend sound reduction measures appropriate to offset the modeled stadium noise impacts, which may include: > Acoustical upgrades to windows and doors > Acoustical stripping around doors and other openings > Ventilation improvements ■ Estimates cost of recommended sound reduction measures, which shall include labor and materials, permit fees, and City inspections; material costs will, as much as possible, be based on “like-for-like”, that is, for replacement of existing materials similar in quality or appearance ■ Pay each qualifying property owner the amount of this estimate after obtaining a release from future claims for stadium event noise impacts at each property with each property owner responsible for implementing the sound reduction improvements ■ Establish an ad hoc community working group of neighbors to develop a mediation process should any future disputes arise over the effectiveness of the SNMP in eliminating					

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
stadium noise intrusions					
MM NO-7.2 Residential Use Plan Review by Qualified Acoustical Consultant. To ensure that stadium game-and event-induced interior Lmax noise levels do not exceed an interior noise level of 60 dBA and interfere with speech and other indoor activities in the proposed on-site residential uses closest to the proposed Stadium, the Project Applicant shall choose a qualified acoustical consultant to review plans for the new residential uses planned for areas closest to the proposed Stadium and follow their recommendations to provide acoustic insulation or other equivalent measures to ensure that interior peak noise events would not exceed 60 dBA L_{max}.	Project Applicant	Design review lot application	SFRA /DBI	SFRA /DBI	Review in all design documents
SECTION III.J (CULTURAL RESOURCES AND PALEONTOLOGICAL RESOURCES)					
MM CP-1b.1 Mitigation to Minimize Impacts on Historic Resources at HPS Phase II. To reduce the adverse effect on historical resources, prior to any structural demolition and removal activities, the Project Applicant shall retain a professional who meets the Secretary of the of the Interior's Professional Qualifications Standards for Architectural History to prepare written and photographic documentation of the potential Hunters Point Commercial Dry Dock and Naval Shipyard Historic District, as identified in the report titled *Bayview Waterfront Plan Historic Resources Evaluation, Volume II: Draft Historic Resources Survey and Technical Report*, July 2009, prepared by Circa Historic Property Development. The documentation for the property shall be prepared based on the National Park Services' (NPS) Historic American Building Survey (HABS) / Historic American Engineering Record (HAER) Historical Report Guidelines. This type of	Project Applicant	Prior to issuance of any demolition and removal activities of historic resources	SFRA/Planning Department	SFRA	All written and photographic documentation of the potential Hunters Point Commercial Dry Dock and Naval Shipyard Historic District shall be approved by the SFRA prior to issuance and permits for any demolition and removal activities.

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documentation is based on a combination of both HABS/HAER standards (Levels II and III) and NPS new policy for NR-NHL photographic documentation as outlined in the National Register of Historic Places and National Historic Landmarks Survey Photo Policy Expansion (March 2005). The written historical data for this documentation shall follow HABS / HAER Level I standards. The written data shall be accompanied by a sketch plan of the property. Efforts should also be made to locate original construction drawings or plans of the property during the period of significance. If located, these drawings should be photographed, reproduced, and included in the dataset. If construction drawings or plans cannot be located as-built drawings shall be produced. Either HABS / HAER standard large format or digital photography shall be used. If digital photography is used, the ink and paper combinations for printing photographs must be in compliance with NR-NHL photo expansion policy and have a permanency rating of approximately 115 years. Digital photographs will be taken as uncompressed .TIF file format. The size of each image will be 1600x1200 pixels at 300 ppi (pixels per inch) or larger, color format, and printed in black and white. The file name for each electronic image shall correspond with the index of photographs and photograph label. Photograph views for the dataset shall include *(a)* contextual views; *(b)* views of each side of each building and interior views, where possible; *(c)* oblique views of buildings; and *(d)* detail views of character-defining features, including features on the interiors of some buildings. All views shall be referenced on a photographic key. This photograph key shall be on a map of the property and shall					

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show the photograph number with an arrow indicate the direction of the view. Historic photographs shall also be collected, reproduced, and included in the dataset. All written and photographic documentation of the potential Hunters Point Commercial Dry Dock and Naval Shipyard Historic District shall be approved by the SFRA, in consultation with the ERO, prior to any demolition and removal activities.					
MM CP-1b.2 Interpretive Displays Depicting History of HPS. Interpretive displays related to the history of HPS shall be installed at Heritage Park at Dry Dock Nos. 2 and 3. The number and type of displays shall be approved by the SFRA, in consultation with the ERO.	Project Applicant	Schematic design review for Heritage Park	SFRA/Planning Department	SFRA	Displays approved by SFRA; Project Applicant to provide report to SFRA once installed
MM CP-2a Mitigation to Minimize Impacts to Archaeological Resources at Candlestick Point. Based on a reasonable presumption that archaeological resources may be present within the Project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the Project on buried or submerged historical resources. Overview: The Project Applicant shall retain the services of a qualified archaeological consultant having expertise in California prehistoric and urban historical archeology. The archaeological consultant shall undertake an archaeological testing program as specified herein. In addition, the archaeological consultant shall be available to conduct an archaeological monitoring and/or data recovery program if required pursuant to this measure. The archaeological consultant's work shall be conducted in accordance with this measure and with the requirements of the Project Archaeological Research Design and Treatment					

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
Plan (Archeo-Tec. Archaeological Research Design and Treatment Plan for the Bayview Waterfront Project, San Francisco, California, 2009) at the direction of the City's Environmental Review Officer (ERO). In instances of inconsistency between the requirement of the Project Archaeological Research Design and Treatment Plan and of this archaeological mitigation measure, the requirement of this archaeological mitigation measure shall prevail. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review and comment, and shall be considered draft reports subject to revision until final approval by the ERO. Archaeological monitoring and/or data recovery programs required by this measure could suspend construction of the Project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce potential effects on a significant archaeological resource as defined in CEQA Guidelines Section 15064.5(a)(c) to a less-than-significant level.					
Archaeological Testing Program: The archaeological consultant shall prepare and submit to the ERO for review and approval an archaeological testing plan (ATP). The archaeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archaeological resource(s) that potentially could be adversely affected by the Project, the testing method to be used, and the locations recommended for testing. The purpose of the archaeological testing program will be to determine	Project Applicant	Testing Plan: Completed prior to issuance of any permit authorizing soils disturbance Testing program: Completed Prior to commencement of any soils disturbing construction activity Testing Report: Completed prior to	SFRA, ERO	SFRA, ERO	Quarterly MMRP reports to SFRA, to include reporting on any Archeo Mit Measure tasks completed Testing Plan complete upon approval by ERO of Final Testing Plan Testing Program and Report deemed

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
to the extent possible the presence or absence of archaeological resources and to identify and to evaluate whether any archaeological resource encountered on the site constitutes an historical resource under CEQA.		commencement of any soils disturbing activity			complete upon approval by ERO Final Testing Report
At the completion of the archaeological testing program, the archaeological consultant shall submit a written report of the findings for submittal to the ERO. If, based on the archaeological testing program, the archaeological consultant finds that significant archaeological resources may be present, the ERO (in consultation with the archaeological consultant) shall determine if additional measures are warranted. Additional measures that may be undertaken include, but are not necessarily limited to, additional archaeological testing, archaeological monitoring, and/or an archaeological data recovery program. If the ERO determines that a significant archaeological resource is present and that the resource could be adversely affected by the Project, the Project Applicant shall either: a. Re-design the Project so as to avoid any adverse effect on the significant archaeological resource; or b. Implement a data recovery program, unless the ERO determines that the archaeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible.					Prior to project construction demolition and remediation
<u>Archaeological Monitoring Program:</u> If the ERO, in consultation with the archaeological consultant, determines that an Archaeological Monitoring Program (AMP) shall be implemented, the AMP shall include the following provisions, at a minimum:	Project Applicant	Monitoring Program: Development of program work scope prior to commencement of soils disturbing	SFRA; ERO	SFRA; ERO	Quarterly MMRP reports to SFRA, to include reporting on any Archeo Mit Measure tasks completed

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
■ The archaeological consultant, Project Applicant, and ERO shall meet and consult on the scope of the AMP prior to the commencement of any Project-related soils disturbing activities. The ERO, in consultation with the archaeological consultant, shall determine what Project activities shall be archaeologically monitored. In most cases, any soils- disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), and site remediation, shall require archaeological monitoring because of the risk these activities pose to potential archaeological resources and to their depositional context. ■ The archaeological consultant shall train all Project construction personnel who could reasonably be expected to encounter archaeological resources of the expected resource(s), how to identify the evidence of the expected resource(s), and the appropriate protocol in the event of apparent discovery of an archaeological resource. ■ The archaeological monitor(s) shall be present on the Project site according to a schedule agreed upon by the archaeological consultant and the ERO until the ERO has, in consultation with the archaeological consultant, determined that Project construction activities could have no effects on significant archaeological deposits. ■ The archaeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis.		construction activity; monitoring activity to occur during site excavation and construction, as per monitoring program Monitoring Report: Report submitted to ERO upon completion of monitoring Program			Monitoring program and Report deemed Complete upon approval by ERO of Final Monitoring Report

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
■ If an intact archaeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archaeological monitor shall be authorized to temporarily halt demolition/excavation/pile driving/construction activities and equipment until the deposit is evaluated. If, in the case of pile driving activity (foundation, shoring, etc.), the archaeological monitor has cause to believe that the pile driving activity may affect an archaeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archaeological consultant shall immediately notify the ERO of any encountered archaeological deposit. The archaeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archaeological deposit and present the findings of this assessment to the ERO as expeditiously as possible. ■ Whether or not significant archaeological resources are encountered, the archaeological consultant shall submit a written report of the findings of the monitoring program to the ERO.					
Archaeological Data Recovery Program: The archaeological data recovery program shall be conducted in accord with an Archaeological Data Recovery Plan (ADRP). The archaeological consultant, Project Applicant, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archaeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archaeological resource is	Project Applicant	Data Recovery Plan: Development of Program work scope, in conjunction with work scope for Archeo Monitoring Program prior to commencement of soils disturbance construction activity. More specific or	SFRA; ERO	SFRA; ERO	Quarterly MMRP reports to SFRA, to include reporting on any Archeological Mit Measure tasks completed Data Recovery Plan and Program deemed complete upon

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the Project. Destructive data recovery methods shall not be pursued if nondestructive methods are practical. The scope of the ADRP shall include the following elements: ■ Field Methods and Procedures. Descriptions of proposed field strategies, procedures, and operations. ■ Cataloguing and Laboratory Analysis. Description of selected cataloguing system and artifact analysis procedures. ■ Discard and Deaccession Policy. Description of and rationale for field and post-field discard and deaccession policies. ■ Interpretive Program. Consideration of an on-site/off-site public interpretive program during the course of the archaeological data recovery program. ■ Security Measures. Recommended security measures to protect the archaeological resource from vandalism, looting, and other potentially damaging activities. Final Report. Description of proposed report format and distribution of results. ■ Curation. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation		detailed subsequent work scope may be required by ERO upon completion of Archeo Monitoring Program and Report Data Recovery program: Activity to occur during and subsequent to construction activity, as per Data Recovery Program			approval by ERO of Final report indicating completion of data recovery program.

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
facilities, and a summary of the accession policies of the curation facilities.					
Human Remains and Associated or Unassociated Funerary Objects: The treatment of human remains and associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws. This shall include immediate notification of the Coroner of the City and County of San Francisco and in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC), which shall appoint a Most Likely Descendant (MLD) (PRC Sec. 5097.98). The archaeological consultant, Project Applicant, and MLD shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects.	Project Applicant	Upon discovery, if applicable	Coroner; SFRA	Applicant to notify SFRA, Coroner, and, if applicable, California State Native American Heritage Commission	Upon approval by ERO of Final Archaeo Resources Report
Final Archaeological Resources Report: The archaeological consultant shall submit a Draft Final Archaeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archaeological resource and describes the archaeological and historical research methods employed in the archaeological testing/monitoring/data recovery program(s). Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report.	Project Applicant	Upon completion of testing, monitoring and data recovery programs: For Horizontal Developer – prior to determination of substantial completion of infrastructure @ each sub-phase;	SFRA; ERO	SFRA; ERO	Upon approval by ERO of Final Archaeo Resources Report

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Major Environmental Analysis division of the Planning Department shall receive three copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than presented above.		For Vertical Developer – Prior to issuance of Certificate of Temporary or Final Occupancy, whichever occurs first			
MM CP-3a Paleontological Resources Monitoring and Mitigation Program. The Project Applicant shall retain the services of a qualified paleontological consultant having expertise in California paleontology to design and implement a Paleontological Resources Monitoring and Mitigation Program (PRMMP). The PRMMP shall include a description of when and where construction monitoring would be required; emergency discovery procedures; sampling and data recovery procedures; procedures for the preparation, identification, analysis, and curation of fossil specimens and data recovered; preconstruction coordination procedures; and procedures for reporting the results of the monitoring program.	Project Applicant	Design of Paleo Resources Monitoring and Mitigation Program (PRMMP) prior to soils disturbing activity Monitoring of site for paleo resources pursuant to PRMMP, to occur throughout soils disturbing activity	SFRA; ERO	SFRA; ERO	Approval by ERO of final design for PRMMP Quarterly MMRP reports to SFRA, to include reporting on any Paleo Mit Measure tasks completed
The PRMMP shall be consistent with the Society for Vertebrate Paleontology (SVP) Standard Guidelines for the mitigation of construction-related adverse impacts to paleontological resources and the requirements of the designated repository for	Project Paleontologist	During project soils disturbing activities	SFRA, ERO	SFRA, ERO	During project soil disturbing activities. ERO to review and approve PRMMP and determine whether

Draft Mitigation Monitoring & Reporting Program					
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any fossils collected. During construction, earth-moving activities shall be monitored by a qualified paleontological consultant having expertise in California paleontology in the areas where these activities have the potential to disturb previously undisturbed native sediment or sedimentary rocks. Monitoring need not be conducted in areas where the ground has been previously disturbed, in areas of artificial fill, in areas underlain by nonsedimentary rocks (serpentinite, greenstone), or in areas where exposed sediment would be buried, but otherwise undisturbed. The consultant's work shall be conducted in accordance with this measure and at the direction of the City's Environmental Review Officer (ERO). Plans and reports prepared by the consultant shall be submitted first and directly to the ERO for review and comment, and shall be considered draft reports subject to revision until final approval by the ERO. Paleontological monitoring and/or data recovery programs required by this measure could suspend construction of the Project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce potential effects on a significant paleontological resource as previously defined to a less-than-significant level.					suspension of work is required.
SECTION III.K (HAZARDS AND HAZARDOUS MATERIALS)					
MM HZ-1a <u>Article 22A Site Mitigation Plans</u>. (Applies only to Candlestick Point.) Prior to obtaining a site, building or other permit from the City for development activities involving subsurface disturbance at portions of Candlestick Point bayward of the high tide line, the Project Applicant	Project Applicant/SFRA	Prior to obtaining a site, building or other permit from the City for development activities involving subsurface	SFRA/DPH/California Department of Parks and Recreation if CDPR implements improvements	SFRA/DPH/California Department of Parks and Recreation if CDPR implements improvements	Approval of the site mitigation plan consistent with Article 22A

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shall comply with the requirements of San Francisco Health Code Article 22A. If the site investigation required by Article 22A (or, in the case of development activity in CPSRA, which is not subject to Article 22A, a comparable site investigation that is carried out to comply with this measure, and which involves notification to California State Parks if a site mitigation plan is prepared), indicates the presence of a hazardous materials release, a site mitigation plan must be prepared. The site mitigation plan must specify the actions that will be implemented to mitigate the significant environmental or health and safety risks caused or likely to be caused by the presence of the identified release of hazardous materials. The site mitigation plan shall identify, as appropriate, such measures as excavation, containment, or treatment of the hazardous materials, monitoring and follow-up testing, and procedures for safe handling and transportation of the excavated materials, or for protecting the integrity of the cover or for addressing emissions from remedial activities, consistent with the requirements set forth in Article 22A. To the extent that Article 22A does not apply to state-owned land at CPSRA, prior to undertaking subsurface disturbance activities at CPSRA, the Agency and the California Department of Parks and Recreation shall enter into an agreement to follow procedures equivalent to those set forth in Article 22A for construction and development activities conducted at Candlestick Point State Recreation Area.		disturbance at portions of Candlestick Point bayward of the high tide line			
MM HZ-1b <u>Compliance with Requirements Imposed by Cleanup Decision Documents and Property Transfer Documents.</u> (Applies only to HPS Phase II) Prior to obtaining a grading,	Project Applicant	Prior to obtaining a grading, excavation, site, building or other permit from the City	SFRA/DPH	SFRA/DPH	DPH to determine Project Applicant's compliance with Cleanup Decision

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
excavation, site, building or other permit from the City for development activity at HPS Phase II involving subsurface disturbance, the Project Applicant shall submit documentation acceptable to the San Francisco Department of Public Health that the work will be undertaken in compliance with all notices, restrictions and requirements imposed pursuant to a CERCLA ROD, Petroleum Corrective Action Plan, FOST, FOSET or FOSL, including notices, restrictions and requirements imposed in deeds, covenants, leases, easements, and LIFOCs, and requirements set forth in Land Use Control Remedial Design Documents, Risk Management Plans, Community Involvement Plans and health and safety plans. Such restrictions, imposed by federal and state regulatory agencies as a condition on the Navy transfer of the property to the Agency, will ensure that the property after transfer will be used in a manner that is protective of the environment and human health. The City/Agency may choose to implement this measure by requiring these actions as part of amendments to San Francisco Health Code Article 31, which currently sets forth procedural requirements for development in HPS Phase I, or through an equivalent process established by the City or Agency.		for development activity at HPS Phase 2 involving subsurface disturbance			Documents and Property Transfer Documents
MM HZ-2a.1 Unknown Contaminant Contingency Plan. (Applies to Candlestick Point, HPS Phase II, and off-site improvements.) Prior to obtaining the first site, building or other permit for development activities involving subsurface disturbance, the Project Applicant shall prepare and the San Francisco Department of Public Health shall approve a contingency plan to address unknown contaminants encountered during development activities. This plan, the conditions of which shall	Project Applicant	Prior to obtaining the first site, building or other permit for development activities involving subsurface disturbance	SFRA/DPH	SFRA/DPH	DPH to approve contingency plan

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be incorporated into the first permit and any applicable permit thereafter, shall establish and describe procedures for implementing a contingency plan, including appropriate notification to nearby property owners, schools and residents and appropriate site control procedures, in the event unanticipated subsurface hazards or hazardous material releases are discovered during construction. Control procedures would include, but would not be limited to, further investigation and, if necessary remediation of such hazards or releases, including off-site removal and disposal, containment or treatment. In the event unanticipated subsurface hazards or hazardous material releases are discovered during construction, the requirements of this unknown contaminant contingency plan shall be followed. The contingency plan shall be amended, as necessary, in the event new information becomes available that could affect the implementation of the plan. This measure shall be implemented for HPS Phase II through additions to Article 31 or through an equivalent process established by the City or Agency as explained in MM HZ-1b.					
MM HZ-2a.2 Site-Specific Health and Safety Plans. (Applies to Candlestick Point, HPS Phase II, and off-site improvements.) Prior to obtaining the first site, building or other permit for the Project from the City for development activities involving subsurface disturbance, the Project Applicant shall prepare and submit to SFDPH a site-specific health and safety plan (HASP) in compliance with applicable federal and state OSHA requirements and other applicable laws to minimize impacts to public health and the environment. development of the plan shall be required as a condition of any applicable permit. The plan shall include	Project Applicant	Prior to obtaining the first site, building or other permit for the Project from the City for development activities involving subsurface disturbance	SFRA/DPH	SFRA/DPH	DPH to approve HASP.

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identification of chemicals of concern, potential hazards, personal protective equipment and devices, and emergency response procedures. The HASP shall be amended, as necessary, in the event new information becomes available that could affect the implementation of the plan. This measure shall be implemented for HPS Phase II through additions to Article 31 or through an equivalent process established by the City or Agency as explained in MM HZ-1b.					
MM HZ-5a Foundation Support Piles Installation Plan. (Applies to Candlestick Point and HPS Phase II.) Prior to obtaining a permit from the City that authorizes installation of deep foundation piles, the Project Applicant shall prepare and submit a plan acceptable to the City stating that pilot boreholes for each pile would be drilled through the artificial fill materials so the piles can be installed without damage or misalignment and to prevent potentially contaminated fill materials from being pushed into the underlying sediments or groundwater. This measure shall be implemented for Candlestick Point through implementation of mitigation measure MM HZ-1a. This measure shall be implemented for HPS Phase II through additions to Article 31 or through an equivalent process established by the City or Agency as explained in MM HZ-1b.	Project Applicant/ SFRA/DBI	Prior to obtaining a permit from the City that authorizes installation of deep foundation piles	SFRA/DBI/DPH	SFRA/DBI/DPH	DPH/DBI to approve plan
MM HZ-9 Navy-approved workplans for construction and remediation activities on Navy-owned property. (Applies only to the portions of HPS Phase II on Navy-owned property). Construction activities and remediation activities conducted on behalf of the Agency or the Project Applicant, on Navy-owned property shall be	Project Applicant/SFRA/City	Prior to construction and remediation activities on Navy-owned property.	City/SFRA	City/SFRA	Navy to approve construction and remediation activities workplan. Construction Contractor to submit quarterly report of

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conducted in compliance with all required notices, restrictions, or other requirements set forth in the applicable lease, easement, or license or other form of right of entry and in accordance with a Navy-approved workplan. This mitigation measure also requires that such activities be conducted in accordance with applicable health and safety plans, dust control plans, stormwater pollution prevention plans, community involvement plans, or any other documents or plans required under applicable law. The City/Agency will access Navy property through a lease, license, or easement. The City/Agency shall not undertake any activity or approve any Project Applicant activity on Navy-owned property until the Navy and other agencies with approval authority have approved a workplan for the activity. The requirement to comply with the approved work plans shall be incorporated into and made a condition of any City/Agency approvals related to activities on Navy property. This measure shall be implemented for HPS Phase II through a process established by the City or Agency as explained in MM HZ-1b.					compliance activity, until deemed complete by SFRA.
MM HZ-10b Regulatory Agency–Approved Workplans and Permits for Shoreline Improvements. Prior to undertaking any shoreline improvement activities that would affect sediment at HPS Phase II, the Agency or its contractor or Project Applicant shall prepare appropriate design documents and submit to US EPA, DTSC, RWQCB, and, if necessary, the Navy and CDPH for approval. A Dredged Material Management Office (DMMO) permit shall be obtained. The design documents shall incorporate the necessary shoreline improvements required for each specific area (e.g., including, but not limited to, rock buttressing, pile replacement, backfilling, riprap, or	Project Applicant/Construction Contractor/SFRA	Prior to undertaking any shoreline improvement activities that would affect sediment at HPS Phase II	SFRA	US EPA, DTSC, RWQCB, and, if necessary, the Navy and CDPH	Appropriate regulatory agencies to approve f design documents.

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installation of natural-looking shoreline protection using fill and ACB mats) such that remediation (removal of sediment and any necessary dredging) and structural improvements are performed under the same regulatory approvals and permits.					
Prior to undertaking any shoreline improvement activities that could affect contaminated sediments left in place and covered or capped with a Navy-installed remedial measure, or that would involve pile replacement in such areas, the Agency or its contractor or Project Applicant shall prepare appropriate design documents that: (1) describes how the cover or cap would be inspected to determine whether proposed shoreline improvements would adversely affect the cover or cap; and (2) describes how construction activities would be performed to mitigate environmental risk and to restore the cover or cap. The design documents shall be submitted to US EPA, DTSC, RWQCB, and, if necessary, the Navy and CDPH for approval. A DMMO permit shall be obtained, as applicable.					
Prior to undertaking any shoreline improvements that could encounter contaminated sediments, the Agency or its contractor or Project Applicant shall comply with all requirements incorporated into the design documents, work plans, health and safety plans, dust control plans, and any other document or plan required under the Administrative Order of Consent. This includes all restrictions imposed pursuant to a CERCLA ROD, Petroleum Corrective Action Plan, FOSET, including restrictions imposed in deeds, covenants, and requirements set forth in Land Use Control Remedial Design Documents, Risk Management Plans and health and safety plans. Prior to obtaining a grading, excavation, site, building, or other permit from the City that					

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authorizes remedial activities, SFDPH shall confirm that the work proposed complies with the applicable plans required by the Administrative Order of Consent. This measure shall be implemented through additions to Article 31 or through an equivalent process established by the City or Agency as explained in MM HZ-1b.					
MM HZ-12 Compliance with Administrative Order on Consent at Early Transferred Parcels. (Applies only at HPS Phase II.) Prior to undertaking any remediation activities at HPS Phase II on property that the Navy has transferred to the Agency as part of an early-transfer, the Agency or its contractor or Project Applicant shall comply with all requirements incorporated into remedial design documents, work plans, health and safety plans, dust control plans, community involvement plans, and any other document or plan required under the Administrative Order on Consent. This includes all notices, restrictions, and requirements imposed pursuant to a CERCLA ROD, Petroleum Corrective Action Plan, FOSET, including restrictions imposed in deeds, covenants, and requirements set forth in Land Use Control Remedial Design Documents, Risk Management Plans, community involvement plans, and health and safety plans. Prior to obtaining a grading, excavation, site, building, or other permit from the City that authorizes remedial activities, SFDPH shall confirm that the work proposed complies with the applicable plans required by the Administrative Order on Consent. This measure shall be implemented through a requirement in the potential additions to Article 31 imposing requirements to parcels other than Parcel A or through an equivalent process established by the City or Agency.	Project Applicant/ SFRA	Prior to obtaining a grading, excavation, site, building, or other permit from the City that authorizes remedial activities	SFRA/DPH	SFRA/DPH	DPH to determine compliance with Administrative Order on Consent.
MM HZ-15 Asbestos Dust Mitigation Plans and	Project Applicant	Prior to obtaining a	BAAQMD/DPH	BAAQMD/DPH	BAAQMD and DPH to

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Dust Control Plans. Prior to obtaining a grading, excavation, site, building or other permit from the City that includes soil disturbance activities, the Project Applicant shall obtain approval of an Asbestos Dust Mitigation Plan (ADMP) from BAAQMD for areas over 1 acre that potentially contain naturally occurring asbestos and approval of a Dust Control Plan (DCP) from SFDPH for all areas at HPS Phase II and for areas over 0.5 acre at Candlestick Point. Compliance with the ADMP and DCP shall be required as a condition of the permit. The ADMP shall be submitted to and approved by the BAAQMD prior to the beginning of construction, and the Project Applicant must ensure the implementation of all specified dust control measures throughout the construction Project. The ADMP shall require compliance with the following specific control measures to the extent deemed necessary by the BAAQMD to meet its standard: ■ For construction activities disturbing less than one acre of rock containing naturally occurring asbestos, the following specific dust control measures must be implemented in accordance with the asbestos ATCM before construction begins and each measure must be maintained throughout the duration of the construction Project: > Limit construction vehicle speed at the work site to 15 miles per hour > Sufficiently wet all ground surfaces prior to disturbance to prevent visible dust emissions from crossing the property line > Keep all graded and excavated areas around soil improvement operations, visibly dry unpaved roads, parking and staging areas wetted at least three times		grading, excavation, site, building or other permit from the City that includes soil disturbance activities. Ongoing throughout construction activity			approve site specific DCP and ADMP and to monitor compliance throughout construction activity

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
per shift daily with reclaimed water during construction to prevent visible dust emissions from crossing the property line. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour					
> Adequately wet all storage piles, treat with chemical dust suppressants, or cover piles when material is not being added to or removed from the pile					
> Wash down all equipment before moving from the property onto a paved public road					
> Clean all visible track out from the paved public road by street sweeping or a HEPA filter equipped vacuum device within 24 hours					
■ For construction activities disturbing greater than one acre of rock containing naturally occurring asbestos, construction contractors are required to prepare an ADMP specifying measures that will be taken to ensure that no visible dust crosses the property boundary during construction. The plan must specify the following measures, to the extent deemed necessary by the BAAQMD to meet its standard:					
> Prevent and control visible track out from the property onto adjacent paved roads. Sweep with reclaimed water at the end of each day if visible soil material is carried out from property					
> Ensure adequate wetting or covering of active storage piles					
> Hydroseed or apply non-toxic soil stabilizers to disturbed surface areas and storage piles greater than ten cubic yards					

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or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil that will remain inactive for seven days or more. > Control traffic on on-site unpaved roads, parking lots, and staging areas—including a maximum vehicle speed of 15 miles per hour or less > Control earth moving activities > Provide as much water as necessary to control dust (without creating run-off) in any area of land clearing, earth movement, excavation, drillings, and other dust-generating activity > Control dust emissions from off-site transport of naturally occurring asbestos containing materials > Stabilize disturbed areas following construction If required by the BAAQMD, air monitoring shall be implemented to monitor for off-site migration of asbestos dust during construction activities, and appropriate protocols shall be established and implemented for notification of nearby schools, property owners and residents when monitoring results indicate asbestos levels that have exceeded the standards set forth in the plan. The DCP shall be submitted to and approved by the SFDPH prior to the beginning of construction, and the site operator must ensure the implementation of all specified dust control measures throughout the construction Project. The DCP shall require compliance with the following specific mitigation measures to the extent deemed necessary by the SFDPH to achieve no visible dust at the property boundary:					

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■ Submission of a map to the Director of Health showing all sensitive receptors within 1,000 feet of the site. ■ Keep all graded and excavated areas, areas around soil improvement operations, visibly dry unpaved roads, parking and staging areas wetted at least three times per shift daily with reclaimed water during construction to prevent visible dust emissions from crossing the property line. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour ■ Analysis of wind direction and placement of upwind and downwind particulate dust monitors. ■ Record keeping for particulate monitoring results. ■ Requirements for shutdown conditions based on wind, dust migration, or if dust is contained within the property boundary but not controlled after a specified number of minutes. ■ Establishing a hotline for surrounding community members who may be potentially affected by Project-related dust. Contact person shall respond and take corrective action within 48 hours. Post publicly visible signs around the site with the hotline number as well as the phone number of the BAAQMD and make sure the numbers are given to adjacent residents, schools, and businesses. ■ Limiting the area subject to construction activities at any one time. ■ Installing dust curtains and windbreaks on windward and downwind sides of the property lines, as necessary. Windbreaks on windward side should have no more than 50% air					

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porosity. ■ Limiting the amount of soil in trucks hauling soil around the job site to the size of the truck bed and securing with a tarpaulin or ensuring the soil contains adequate moisture to minimize or prevent dust generation during transportation. ■ Enforcing a 15 mph speed limit for vehicles entering and exiting construction areas. ■ Sweeping affected streets with water sweepers at the end of the day. ■ Hiring an independent third party to conduct inspections for visible dust and keeping records of those inspections. ■ Minimizing the amount of excavated material or waste materials stored at the site. ■ Prevent visible track out from the property onto adjacent paved roads. Sweep with reclaimed water at the end of each day if visible soil material is carried out from property For all areas, this measure shall be implemented through Article 22B (areas over one half acre) or for HPS Phase II through a requirement in the potential additions to Article 31 imposing requirements to parcels other than Parcel A or through an equivalent process established by the City or Agency.					
SECTION III.L (GEOLOGY AND SOILS)					
MM GE-2a <u>Mitigation to Minimize Dewatering Impacts during Construction.</u> Prior to the issuance of any permit for a construction activity that would involve dewatering that could affect structures on adjacent or nearby properties, the Applicant shall, in compliance with Section 1803.1 of the *San Francisco Building Code* (SFBC), include in the permit application methods and techniques to	Project Applicant	Prior to the issuance of any permit for a construction activity that would involve dewatering that could affect structures on adjacent or nearby properties	DBI	DBI	Approval of permit applications

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
ensure that dewatering would not lower the water table such that unacceptable settlement (as determined by a California Certified Engineering Geologist [CEG] or California Registered Geotechnical Engineer [GE]) at adjacent or nearby properties would occur. Such methods and technologies shall be based on the specific conditions at the construction site and could include, but are not necessarily limited to, the following: ■ Excavating below the groundwater table in confined areas with steel sheet piling driven below the base elevation of the proposed excavation, installation of bracing to support the excavation walls as required and, if necessary, underpinning the foundations of adjacent structures. Subsequently, the excavation would be carried out and seepage that enters the dammed area would be pumped out. ■ Perform dewatering using methods such as wellpoint systems, drainage ditches, and sump pumps.					
The excavation or dewatering methods shall be monitored to detect ground settlement and to monitor individual dewatering activities in the vicinity of an excavation. Monitoring results shall be submitted to the San Francisco Department of Building Inspection (DBI). In the event of unacceptable ground movement, as determined by DBI inspections and/or the review of monitoring results, all excavation work shall cease and corrective measures (including, for example, different dewatering methods and/or ground stabilization methods) shall be determined by the Project CEG or GE and reviewed and approved by DBI. No construction permit involving dewatering	Project Applicant	During excavation and dewatering activities	DBI	DBI	Approval of corrective measures. Ongoing throughout construction activity

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would be issued until the Project CEG or GE and DBI have approved dewatering and/or ground stabilization methods. The Project CEG or GE shall implement the corrective measures and continue monitoring activities.					
MM GE-3 Mitigation to Minimize Rock Fragmentation Impacts during Construction. Prior to the issuance of any permit for a construction activity that would involve controlled rock fragmentation that could cause settlement or lateral movement of structures on adjacent or nearby properties, the Applicant shall, in compliance with Section 1803.1 of the *San Francisco Building Code* (SFBC), include in the permit application methods and techniques to ensure that controlled rock fragmentation would not cause unacceptable vibration and/or settlement or lateral movement of structures at adjacent or nearby properties. Such methods and technologies shall be based on the specific conditions at the construction site such as, but not limited to, the following: ■ Pre-excavation surveying of potentially affected structures. ■ Underpinning of foundations of potentially affected structures, as necessary.	Project Applicant	Prior to the issuance of any permit for a construction activity that would involve controlled rock fragmentation	DBI	DBI	Approval of permit applications
The excavation plan shall include a monitoring program to detect ground settlement or lateral movement of structures in the vicinity of an excavation. Monitoring results shall be submitted to DBI. In the event of unacceptable ground movement, as determined by DBI inspections, all excavation work shall cease and corrective measures shall be implemented. The controlled rock fragmentation program and ground stabilization measures shall be reevaluated and approved by the DBI.		During controlled rock fragmentation activities	DBI	DBI	Approval of corrective measures. Ongoing throughout controlled rock fragmentation activities

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
MM GE-4a.1 Site-Specific Geotechnical Investigation with Seismic Analyses. Prior to the issuance of any building permits for the Project site: ■ The Applicant shall submit to the San Francisco Department of Building Inspection (DBI) for review and approval a site-specific, design-level geotechnical investigation prepared by a California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE), as well as project plans prepared in compliance with the requirements of the San Francisco Building Code (SFBC), the Seismic Hazards Mapping Act, and requirements contained in CGS Special Publication 117A "Guidelines for Evaluating and Mitigating Seismic Hazards in California." In addition, all engineering practices and analyses of peak ground accelerations and structural design shall be consistent with SFBC standards to ensure that structures can withstand expected ground accelerations. The CEG or GE shall determine and DBI shall approve design requirements for foundations and all other improvements associated with the permit application.	Project Applicant	Prior to issuance of construction site permit	DBI	DBI	Approval of design requirements for foundations and all other improvements associated with the permit application. Ongoing throughout construction activity
■ DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) (PE) to form a Geotechnical Peer Review Committee (GPRC), consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. No permits shall be issued by DBI until the	DBI	Prior to approval of site-specific geotechnical investigations	DBI	DBI	Approval of site-specific geotechnical investigations. Ongoing throughout construction activity.

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GPRC has approved the geotechnical investigation and the Project plans, including the factual determinations and the proposed engineering designs and construction methods. ■ All Project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations. ■ The Project CEG or GE shall be responsible for ensuring compliance with these requirements.					
MM GE-4a.2 Seismic Design Compliance Documentation. Prior to the issuance of building permits for the replacement of the Alice Griffith Public Housing site, the Applicant shall submit any and all seismic design compliance documentation to the HUD, as required by that agency. The Project Developer shall confirm, by copy of all documents submitted, including transmittal, compliance with this requirement to DBI. The Project California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE) shall be responsible for verifying Project compliance with this requirement.	Project Applicant	Prior to the issuance of building permits for the replacement of the Alice Griffith Public Housing site	DBI/HUD	DBI	Approval of site-specific geotechnical investigations for the replacement of the Alice Griffith Public Housing site.
MM GE-4a.3 Site-specific Seismic Analyses to Ensure Safety of Bridge Design. Prior to the issuance of any building permits for the Project site, the California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE) for the Project shall confirm that the design-level geotechnical investigation for the Yosemite Slough bridge is based on Caltrans specifications (*Bridge Design Specifications*, Section 20 of *Bridge Memos to Designers*, *Seismic Design Criteria* as previously described) and meets the San Francisco Department of Public Works Bureau of Engineering (BOE) requirements. The	Project Applicant	Prior to the issuance of building permits for the Yosemite Slough bridge	DPW	DPW	Approval of site-specific geotechnical investigations for the Yosemite Slough bridge

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Project CEG or GE and California Registered Structural Engineer (SE) shall approve bridge design. No building permits shall be issued until the CEG or GE and SE verify that the Project's bridge design complies with all Caltrans specifications and BOE requirements.					
MM GE-5a Site-Specific Geotechnical Investigation with Analyses of Liquefaction, Lateral Spreading and/or Settlement. Prior to issuance of building permits for the Project site: ■ The Applicant shall submit to the San Francisco Department of Building Inspection (DBI) for review and approval a site-specific, design-level geotechnical investigation prepared by a California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE), as well as project plans prepared in compliance with the requirements of the San Francisco Building Code (SFBC), the Seismic Hazards Mapping Act, and requirements contained in CGS Special Publication 117A "Guidelines for Evaluating and Mitigating Seismic Hazards in California." In addition, all engineering practices, and analyses of structural design shall be consistent with SFBC standards to ensure seismic stability, including reduction of potential liquefaction hazards.	Project Applicant/Project Geologist	Prior to issuance of building permits for the Project site	DBI	DBI	Approval of site-specific geotechnical investigations
■ DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) (PE) to form a Geotechnical Peer Review Committee (GPRC), consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all	DBI	Prior to approval of site-specific geotechnical investigations	DBI	DBI/GPRC	Approval of site-specific geotechnical investigations

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necessary geotechnical mitigation measures. No permits shall be issued by DBI until the GPRC has approved the geotechnical investigation and the Project plans, including the factual determinations and the proposed engineering designs and construction methods. ■ All Project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations. ■ The site-specific Project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce liquefaction hazards. The engineering design techniques to reduce liquefaction hazards shall include proven methods generally accepted by California Certified Engineering Geologists, subject to DBI and GPRC review and approval, including, but not necessarily limited to: > Structural Measures o Construction of deep foundations, which transfer loads to competent strata beneath the zone susceptible to liquefaction, for critical utilities and shallow foundations o Structural mat foundations to distribute concentrated load to prevent damage to structures > Ground Improvement Measures o Additional over-excavation and replacement of unstable soil with engineering-compacted fill o Dynamic compaction, such as Deep Dynamic Compaction (DDC) or Rapid Impact Compaction (RIC), to densify loose soils below the groundwater					

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table o Vibro-compaction, sometimes referred to as vibro-floatation, to densify loose soils below the groundwater table o Stone columns to provide pore pressure dissipation pathways for soil, compact loose soil between columns, and provide additional bearing support beneath foundations o Soil-cement columns to densify loose soils and provide additional bearing support beneath foundations ■ The Project CEG or GE shall be responsible for ensuring compliance with these requirements.					
MM GE-6a Site-Specific Geotechnical Investigation with Landslide Risk Analyses. Prior to issuance of building permits for the Project site: ■ The Applicant shall submit to the San Francisco Department of Building Inspection (DBI) for review and approval a site-specific, design-level geotechnical investigation prepared by a California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE), as well as project plans prepared in compliance with the requirements of the San Francisco Building Code (SFBC), the Seismic Hazards Mapping Act, and requirements contained in CGS Special Publication 117A "Guidelines for Evaluating and Mitigating Seismic Hazards in California." In addition, all engineering practices, and analyses of structural design shall be consistent with SFBC standards to ensure seismic stability, including reduction of potential landslide hazards.	Project Applicant	Prior to issuance of building permits for the Project site	DBI	DBI	Approval of site-specific geotechnical investigations

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■ DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) (PE) to form a Geotechnical Peer Review Committee (GPRC), consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. No permits shall be issued by DBI until the GPRC has approved the geotechnical investigation and the Project plans, including the factual determinations and the proposed engineering designs and construction methods. ■ All Project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations. ■ The site-specific Project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce landslide hazards. The engineering design techniques to reduce landslide hazards shall include proven methods generally accepted by California Certified Engineering Geologists, subject to DBI and GPRC review and approval. The design-level geologic and geotechnical studies shall identify the presence of landslides and potentially unstable slopes and shall identify means to avoid the hazard or support the design of engineering procedures to stabilize the slopes, as required by Chapter 18 (Soils and Foundations) of the SFBC, as well as the procedures outlined in CGS Special Publication 117A. SFBC Sections 1803 through 1812 contain the formulae, tables, and graphs by which the	DBI	Prior to approval of site-specific geotechnical investigations	DBI	DBI/GPRC	Approval of site-specific geotechnical investigations

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
Project engineer shall develop the Project's slope-stability specifications, including the appropriate foundation designs for structures on slopes and which would be used by DBI to verify the applicability of the specifications. If the presence of unstable slopes is identified, appropriate support and protection procedures shall be designed and implemented to maintain the stability of slopes adjacent to newly graded or re-graded access roads, work areas, and structures during and after construction, and to minimize potential for damage to structures and facilities at the Project site. These stabilization procedures, including, but not necessarily limited to, the following: > Retaining walls, rock buttresses, screw anchors, or concrete piers > Slope drainage or removal of unstable materials > Rockfall catch fences, rockfall mesh netting, or deflection walls > Setbacks at the toe of slopes > Avoidance of highly unstable areas ■ The Project CEG or GE shall be responsible for ensuring compliance with these requirements.					
MM GE-10a <u>Site-Specific Geotechnical Investigation with Expansive Soils Analyses.</u> Prior to issuance of building permits for the Project site: ■ The Applicant shall submit to the San Francisco Department of Building Inspection (DBI) for review and approval a site-specific, design-level geotechnical investigation prepared by a California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE), as well as project	Project Applicant	Prior to issuance of building permits for the Project site	DBI	DBI/GPRC	Approval of site-specific geotechnical investigations

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
plans prepared in compliance with the requirements of the San Francisco Building Code (SFBC). In addition, all engineering practices, and analyses of structural design shall be consistent with SFBC standards to ensure soils stability, including reduction of potential soil expansion hazards.					
■ DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) (PE) to form a Geotechnical Peer Review Committee (GPRC), consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. No permits shall be issued by DBI until the GPRC has approved the geotechnical investigation and the Project plans, including the factual determinations and the proposed engineering designs and construction methods.	DBI	Prior to approval of site-specific geotechnical investigations	DBI	DBI/GPRC	Approval of site-specific geotechnical investigations
■ All Project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations.					
■ The site-specific Project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce expansive soils hazards. The engineering design techniques to reduce expansive soils hazards shall include proven methods generally accepted by California Certified Engineering Geologists, subject to DBI and GPRC review and approval. The design-level geologic and geotechnical studies shall identify the presence of expansive soils and potentially unstable soils and shall identify					

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means to avoid the hazard or support the design of engineering procedures to stabilize the soils, as required by Chapter 18 (Soils and Foundations) of the SFBC. SFBC Sections 1803 through 1812 contain the formulae, tables, and graphs by which the Project engineer shall develop the Project's soil-stability specifications, including the appropriate foundation designs for structures on expansive soils and which would be used by DBI to verify the applicability of the specifications. If the presence of expansive soils is identified, appropriate support and protection procedures shall be designed and implemented to maintain the stability of soils adjacent to newly graded or re-graded access roads, work areas, and structures during and after construction, and to minimize potential for damage to structures and facilities at the Project site. ■ The Project CEG or GE shall be responsible for ensuring compliance with these requirements.					
MM GE-11a <u>Site-Specific Geotechnical Investigation with Corrosive Soils Analyses.</u> Prior to issuance of building permits for the Project site: ■ The Applicant shall submit to the San Francisco Department of Building Inspection (DBI) for review and approval a site-specific, design-level geotechnical investigation prepared by a California Certified Engineering Geologist (CEG) or California Registered Geotechnical Engineer (GE), as well as project plans prepared in compliance with the requirements of the San Francisco Building Code (SFBC). In addition, all engineering practices, and analyses of structural design	Project Applicant	Prior to issuance of building permits for the Project site	DBI	DBI/GPRC	Approval of site-specific geotechnical investigations

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
shall be consistent with SFBC standards to ensure soils stability, including reduction of potential hazards from corrosive soils.					
■ DBI shall employ a third-party CEG and California Registered Professional Engineer (Civil) (PE) to form a Geotechnical Peer Review Committee (GPRC), consisting of DBI and these third-party reviewers. The GPRC shall review the site-specific geotechnical investigations and the site-specific structural, foundation, infrastructure, and other relevant plans to ensure that these plans incorporate all necessary geotechnical mitigation measures. No permits shall be issued by DBI until the GPRC has approved the geotechnical investigation and the Project plans, including the factual determinations and the proposed engineering designs and construction methods.	DBI	Prior to approval of site-specific geotechnical investigations	DBI	DBI/GPRC	Approval of site-specific geotechnical investigations
■ All Project structural designs shall incorporate and conform to the requirements in the site-specific geotechnical investigations.					
■ The site-specific Project plans shall incorporate the mitigation measures contained in the approved site-specific geotechnical reports to reduce potential hazards from corrosive soils. The engineering design techniques to reduce corrosive soils hazards shall include proven methods generally accepted by California Certified Engineering Geologists, subject to DBI and GPRC review and approval. The design-level geologic and geotechnical studies shall identify the presence of corrosive soils and shall identify means to avoid the hazard, as required by Chapter 18 (Soils and Foundations) of the SFBC. SFBC Sections 1803 through 1812 contain the formulae, tables, and graphs by which the					

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Project engineer shall develop the Project's structural design specifications, including the appropriate foundation designs for structures on corrosive soils and which would be used by DBI to verify the applicability of the specifications. If the presence of corrosive soils is identified, appropriate protection procedures shall be designed and implemented to minimize potential for damage from corrosive soils to structures and facilities at the Project site. ■ The Project CEG or GE shall be responsible for ensuring compliance with these requirements.					
SECTION III.M (HYDROLOGY AND WATER QUALITY)					
MM HY-1a.1 Storm Water Pollution Prevention Plan: Combined Storm Sewer System. In compliance with the Article 4.1 of the Public Works Code and the City's Construction Site Water Pollution Prevention Program, the Project Applicant shall submit a site-specific Storm Water Pollution Prevention Plan (SWPPP) to the SFPUC for approval, prior to initiating construction activities in areas draining to the combined sewer system. The SFPUC requires implementation of appropriate Best Management Practices (BMPs) from the California Stormwater Quality Association Stormwater BMP Handbook- Construction or the Caltrans Construction Site BMPs Manual. In accordance with SFPUC's requirements, the SWPPP shall include: ■ An Erosion and Sediment Control Plan that includes a site map illustrating the BMPs that will be used to minimize on-site erosion and the sediment discharge into the combined sewer system, and a narrative description of	Project Applicant	Submit site-specific SWPPP to SFPUC for approval prior to initiating construction activity in any area draining to *combined* sewer system	SFPUC	SFPUC	SWPPP for each site undergoing construction in areas draining to combined sewer system to be approved by SFPUC
		Inspection before and after storm event, and once per 24-hour period during storm event	SFPUC	SFPUC	Quarterly MMRP reports to SFPUC, to include reporting on compliance with this measure, until completion of construction

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those BMPs. Appropriate BMPs for Erosion and Sediment Control Plan may include: > Scheduling—Develop a schedule that includes sequencing of construction activities with the implementation of appropriate BMPs. Perform construction activities and control practices in accordance with the planned schedule. Schedule work to minimize soil-disturbing activities during the rainy season. Schedule major grading operations for the dry season when practical. Monitor the weather forecast for rainfall and adjust the schedule as appropriate. > Erosion Control BMPs—Preserve existing vegetation where feasible, apply mulch or hydroseed areas with native, non-invasive species, until permanent stabilization is established, and use soil binders, geotextiles and mats, earth dikes and drainage swales, velocity dissipation devices, slope drains, or polyacrylamide to protect soil from erosion. > Wind Erosion BMPs—Apply water or other dust palliatives to prevent dust nuisance; prevent overwatering which can cause erosion. Alternatively, cover small stockpiles or areas that remain inactive for seven or more days. > Sediment Control BMPs—Install silt fences, sediment basins, sediment traps, check dams, fiber rolls, sand or gravel bag barriers, straw bale barriers, approved chemical treatment, and storm drain inlet protection to minimize the discharge of sediment. Employ street sweeping to remove sediment from streets.					

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> Tracking Controls—Stabilize the construction site entrance to prevent tracking of sediment onto public roads by construction vehicles. Stabilize on-site vehicle transportation routes immediately after grading to prevent erosion and control dust. Install a tire wash area to remove sediment from tires and under carriages.					
■ Non-Stormwater Management BMPs that may include water conservation practices; dewatering practices that minimize sediment discharges; and BMPs for: paving and grinding activities; identifying illicit connections and illegal dumping; irrigation and other planned or unplanned discharges of potable water; vehicle and equipment cleaning, fueling, and maintenance; concrete curing and finishing; temporary batch plants; implementing shoreline improvements and working over water. Discharges from dewatering activities shall comply with the SFPUC's Batch Wastewater Discharge Requirements that regulate influent concentrations for various constituents.					
■ Waste Management BMPs shall be implemented for material delivery, use, and storage; stockpile management; spill prevention and control; solid and liquid waste management; hazardous waste management; contaminated soil management; concrete waste management; and septic/sanitary waste management.					
■ SWPPP Training Requirements—Construction personnel will receive training on the SWPPP and BMP implementation.					
■ Site Inspections and BMP Maintenance—An inspector identified in the SWPPP will inspect	SFPUC	Before and after a storm event, and once	SFPUC	SFPUC	Ongoing throughout

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the site on a regular basis, before and after a storm event, and once each 24-hour period during extended storms to identify BMP effectiveness and implement corrective actions if required. The SWPPP shall include checklists that document when the inspections occurred, the results of the inspection, required corrective measures, and when corrective measures were implemented. Required BMP maintenance related to a storm event shall be completed within 48 hours of the storm event.		each 24-hour period during extended storms			construction activity
MM HY-1a.2 Stormwater Pollution Prevention Plan: Separate Storm Sewer System. Consistent with the requirements of the SWRCB General Permit for Storm Water Discharges Associated with Construction and Land Disturbing Activities (Construction General Permit), the Project Applicant shall undertake the proposed Project in accordance with a project-specific Storm Water Pollution Prevention Plan (SWPPP) prepared by Qualified SWPPP Developer, who shall consult with California State Parks on those elements of the SWPPP that cover the Candlestick Park State Recreation Area, including selection of best management practices and other SWPPP improvements. The SFRWQCB, the primary agency responsible for protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. This review is based on the Construction General Permit issued by the SWRCB.	Project Applicant	Submit site-specific SWPPP to SFRWQCB for approval prior to initiating construction activity in any area draining to *separate* storm sewer system (see also MM HY-1a.3 for more specific requirements related to groundwater dewatering)	SFRWQCB	SFRWQCB; SFRA	SWPPP for each site undergoing construction in areas draining to separate storm sewer system to be approved by SFRWQCB
		Construction monitoring and reporting ongoing throughout construction period			Quarterly reporting to SFRWQCB and SFRA, to include reporting on compliance with this measure, until completion of construction
The SWPPP shall include, as applicable, all Best Management Practices (BMPs) required in Attachment C of the Construction General Permit for Risk Level 1 dischargers, Attachment D for Risk Level 2 dischargers, or Attachment E for Risk Level 3 dischargers. In addition, recommended BMPs,		Post construction BMPs monitoring and			Annual post-construction period

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subject to review and approval by the SFRWQCB, include the measures listed below. However, the measures themselves may be altered, supplemented, or deleted during the SFRWQCB's review process, since the SFRWQCB has final authority over the terms of the SWPPP. ■ Scheduling: > To reduce the potential for erosion and sediment discharge, schedule construction to minimize ground disturbance during the rainy season. Schedule major grading operations during the dry season when practical, and allow enough time before rainfall begins to stabilize the soil with vegetation or to install sediment-trapping devices. > Sequence construction activities to minimize the amount of time that soils remain disturbed. > Stabilize all disturbed soils as soon as possible following the completion of ground disturbing work. > Install erosion and sediment control BMPs prior to the start of any ground-disturbing activities. ■ Erosion and Sedimentation: > Preserve existing vegetation in areas where no construction activity is planned or where construction activity will occur at a later date. > Stabilize and re-vegetate disturbed areas as soon as possible after construction with planting, seeding, and/or mulch (e.g., straw or hay, erosion control blankets, hydromulch, or other similar material) except in actively cultivated areas. Planting		maintenance in accordance with SWPPP			reporting to SFRWQCB and SFRA, to include reporting on compliance with this measure

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and seeding shall use native, non-invasive species. > Install silt fences, coir rolls, and other suitable measures around the perimeter of the areas affected by construction and staging areas and around riparian buffers, storm drains, temporary stockpiles, spoil areas, stream channels, swales, down-slope of all exposed soil areas, and in other locations determined necessary to prevent off-site sedimentation. > Install temporary slope breakers during the rainy season on slopes greater than 5 percent where the base of the slope is less than 50 feet from a water body, wetland, or road crossing at spacing intervals required by the SFRWQCB. > Use filter fabric or other appropriate measures to prevent sediment from entering storm drain inlets. > Detain and treat stormwater using sedimentation basins, sediment traps, baker tanks, or other measures to ensure that discharges to receiving waters meet applicable water quality objectives. > Install check dams, where applicable, to reduce flow velocities. Check dams reduce erosion and allow sediment to settle out of runoff. > Install outlet protection/energy dissipation, where applicable, to prevent scour of the soil caused by concentrated high velocity flows. > Implement control measures such as spraying water or other dust palliatives to alleviate nuisance caused by dust.					

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■ Groundwater/Dewatering: > Prepare a dewatering plan prior to excavation specifying methods of water collection, transport, treatment, and discharge of all water produced by construction site dewatering. > Impound water produced by dewatering in sediment retention basins or other holding facilities to settle the solids and provide other treatment as necessary prior to discharge to receiving waters. Locate sedimentation basins and other retention and treatment facilities away from waterways to prevent sediment-laden water from reaching streams. > Control discharges of water produced by dewatering to prevent erosion. > If contaminated groundwater is encountered, contact the SFRWQCB for appropriate disposal options. Depending on the constituents of concern, such discharges may be disallowed altogether, or require regulation under a separate general or individual permit that would impose appropriate treatment requirements prior to discharge to the stormwater drainage system. ■ Tracking Controls: > Grade and stabilize construction site entrances and exits to prevent runoff from the site and to prevent erosion. > Install a tire washing facility at the site access to allow for tire washing when vehicles exit the site. > Remove any soil or sediment tracked off paved roads during construction by street					

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sweeping. ■ Non-stormwater Controls: > Place drip pans under construction vehicles and all parked equipment. > Check construction equipment for leaks regularly. > Wash construction equipment in a designated enclosed area regularly. > Contain vehicle and equipment wash water for percolation or evaporative drying away from storm drain inlets. > Refuel vehicles and equipment away from receiving waters and storm drain inlets, contain the area to prevent run-on and run-off, and promptly cleanup spills. > Cover all storm drain inlets when paving or applying seals or similar materials to prevent the discharge of these materials. ■ Waste Management and Hazardous Materials Pollution Control: > Remove trash and construction debris from the project area daily. > Locate sanitary facilities a minimum of 300 feet from receiving waters. Maintain sanitary facilities regularly. > Store all hazardous materials in an area protected from rainfall and stormwater run-on and prevent the off-site discharge of hazardous materials. > Minimize the potential for contamination of receiving waters by maintaining spill containment and cleanup equipment on site, and by properly labeling and disposing of hazardous wastes. > Locate waste collection areas close to					

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construction entrances and away from roadways, storm drains, and receiving waters. > Inspect dumpsters and other waste and debris containers regularly for leaks and remove and properly dispose of any hazardous materials and liquid wastes placed in these containers. > Train construction personnel in proper material delivery, handling, storage, cleanup, and disposal procedures. > Implement construction materials management BMPs for: > Road paving, surfacing and asphalt removal activities. > Handling and disposal of concrete and cement. ■ BMP Inspection, Maintenance, and Repair: > Inspect all BMPs on a regular basis to confirm proper installation and function. Inspect BMPs daily during storms. > Immediately repair or replace BMPs that have failed. Provide sufficient devices and materials (e.g., silt fence, coir rolls, erosion blankets, etc.) throughout project construction to enable immediate corrective action for failed BMPs. ■ Monitoring and Reporting: > Provide the required documentation for SWPPP inspections, maintenance, and repair requirements. Personnel that will perform monitoring and inspection activities shall be identified in the SWPPP. > Maintain written records of inspections, spills, BMP-related maintenance activities,					

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corrective actions, and visual observations of off-site discharges of sediment or other pollutants, as required by the SFRWQCB. > Monitor the water quality of discharges from the site to assess the effectiveness of control measures. ■ Implement Shoreline Improvements and work over water BMPs to minimize the potential transport of sediment, debris, and construction materials to the Lower Bay during construction of shoreline improvements. ■ Post-construction BMPs: > Re-vegetate all temporarily disturbed areas as required after construction activities are completed. Re-vegetation shall use native, non-invasive species. > Remove any remaining construction debris and trash from the project site and area upon project completion. > Phase the removal of temporary BMPs as necessary to ensure stabilization of the site. > Maintain post-construction site conditions to avoid formation of unintended drainage channels, erosion, or areas of sedimentation. > Correct post-construction site conditions as necessary to comply with the SWPPP and any other pertinent SFRWQCB requirements. ■ Train construction site personnel on components of the SWPPP and BMP implementation. Train personnel that will perform inspection and monitoring activities.					
MM HY-1a.3 Groundwater Dewatering Plan. Prior	Project Applicant	Groundwater	SFRWQCB	SFRWQCB; SFRA	SWPPP for each site

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to commencement of construction activities and to minimize potential impacts to receiving water quality during the construction period, the Project Applicant shall through the proper implementation of this dewatering plan, show compliance with SFRWQCB/NPDES requirements, whichever are applicable. The Dewatering Plan shall specify how the water would be collected, contained, treated, monitored, and/or discharged to the vicinity drainage system or Lower Bay. Subject to the review and approval of the SFRWQCB, the Dewatering Plan shall include, at a minimum: ■ Identification of methods for collecting and handling water on site for treatment prior to discharge, including locations and capacity of settling basins, infiltration basins (where not restricted by site conditions), treatment ponds, and/or holding tanks ■ Identification of methods for treating water on site prior to discharge, such as filtration, coagulation, sedimentation settlement areas, oil skimmers, pH adjustment, and other BMPs ■ Procedures and methods for maintaining and monitoring dewatering operations to ensure that no breach in the process occurs that could result in an exceedance of applicable water quality objectives ■ Identification of discharge locations and inclusion of details on how the discharge would be conducted to minimize erosion and scour ■ Identification of maximum discharge rates to prevent exceedance of storm drain system capacities ■ Additional requirements of the applicable General Permit or NPDES Permit/WDR		Dewatering Plan to be a specific component of SWPPP, to be submitted to SFRWQCB for approval prior to initiating construction activity in any area draining to *separate* sewer system			undergoing construction in areas draining to separate storm sewer system to be approved by SFRWQCB Quarterly reporting to SFRWQCB and SFRA, to include reporting on compliance with this measure, until completion of construction

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(including effluent and discharge limitations and reporting and monitoring requirements, as applicable) shall be incorporated into the Dewatering Plan					
Any exceedance of established narrative or numeric water quality objectives shall be reported to the SFRWQCB and corrective action taken as required by the SFRWQCB and the Dewatering Plan. Corrective action may include increased residence time in treatment features (e.g., longer holding time in settling basins) and/or incorporation of additional treatment measures (e.g., addition of sand filtration prior to discharge).					
MM HY-6a.1 *Regulatory Stormwater Requirements.* The Project Applicant shall comply with requirements of the Municipal Stormwater General Permit and associated City SWMP, appropriate performance standards established in the Green Building Ordinance, and performance standards established by the SFPUC in the San Francisco Stormwater Design Guidelines. The Draft San Francisco Stormwater Design Guidelines have been developed to satisfy the Municipal Stormwater General Permit requirements for new development and redevelopment projects in areas served by separate storm sewers, and are expected to be adopted by December 2009. The Project Applicant shall comply with requirements of the Draft San Francisco Stormwater Design Guidelines. Upon adoption of the Final Stormwater Design Guidelines, the Project shall comply with the Final San Francisco Stormwater Design Guidelines unless discretionary permits have been approved. Per the Draft San Francisco Stormwater Design Guidelines, the Project Applicant shall submit a	Project Applicant	Stormwater Control Plan (SCP) and Stormwater Drainage Master Plan (SDMP) to be submitted to SFPUC as part of development application.	SFPUC; SFRA	SFPUC; SFRA	Approval by SFPUC of SCP and SDMP

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Mitigation Measure	Responsibility for Implementation	Mitigation Timing	Enforcement Responsibility	Monitoring Responsibility	Monitoring Actions/ Verification of Compliance
SCP to the SFPUC, as part of the development application submitted for approval. The SCP shall demonstrate how the following measures would be incorporated into the Project: ■ Low impact development site design principles (e.g., preserving natural drainage channels, treating stormwater runoff at its source rather than in downstream centralized controls) ■ Source control BMPs in the form of design standards and structural features for the following areas, as applicable: > Commercial areas > Restaurants > Retail gasoline outlets > Automotive repair shops > Parking lots ■ Source control BMPs for landscaped areas shall be documented in the form of a Landscape Management Plan that relies on Integrated Pest Management and also includes pesticide and fertilizer application guidelines. ■ Treatment control measures (e.g., bioretention, porous pavement, vegetated swales) targeting the Project-specific COCs: sediment, pathogens, metals, nutrients (nitrogen and phosphorus compounds), oxygen-demanding substances, organic compounds (e.g., PCBs, pesticides), oil and grease, and trash and debris. The SCP shall demonstrate that the Project has the land area available to support the proposed BMP facilities sized per the required water quality design storm. Volume-based BMPs shall be sized to treat runoff resulting from 0.75 inches of rainfall (LEED® SS6.2), and flow-based BMPs shall be sized to treat runoff resulting from a rainfall intensity of					

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0.2 inches per hour. Treatment trains shall be used where feasible. Additional requirements: ■ LEED® SS6.2: BMPs used to treat runoff shall be designed to remove 80 percent of the average annual post-development total suspended solids loads. BMPs are considered to meet these criteria if they are designed in accordance with SFPUC requirements. ■ The SCP shall include an Operations and Maintenance Plan that demonstrates how the treatment control BMPs would be maintained in the long term, what entities would be responsible for BMP maintenance within the public and private rights-of-way, funding mechanisms, and what mechanisms would be used to formalize maintenance and access agreements.					
■ The Project Applicant shall also prepare a Stormwater Drainage Master Plan (SDMP) for approval by the SFPUC. The SDMP shall include plans for the storm drain infrastructure and plans for stormwater management controls (e.g., vegetated swales, dry wells). The storm drain infrastructure shall illustrate conveyance of the 5-year storm event in a separate storm drain piped system, and conveyance of the 100-year storm event in the street and drainage channel rights-of-way.	Project Applicant	Prior to approval of site specific development plans	SFPUC/DPW	SFPUC/DPW	Approval of the SDMP
MM HY-6a.2 Recycled Water Irrigation Requirements. Prior to application of recycled water at the Project site for landscape irrigation, the Project Applicant shall demonstrate compliance with all terms and conditions of the SFPUC's Operations and Maintenance Plan and the Recycled Water General Permit conditions for the	Project Applicant	Prior to application of recycled water at project site for landscaping irrigation, Applicant to submit Operations and Management Plan,	SWRCB/SFPUC	SWRCB/SFPUC	Approval of Operations and Management Plan and Irrigation Management Plan by SFPUC

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use of recycled water. As required by the Recycled Water General Permit, the Project Applicant shall submit an Operations and Maintenance Plan and an Irrigation Management Plan to the SWRCB. The Project Applicant shall also submit the Operations and Maintenance Plan and the Irrigation Management Plan to the SFPUC. Prior to on-site application of recycled water, the Project Applicant shall obtain written confirmation from the SFPUC that the Project Operations and Maintenance Plan and the Irrigation Management Plan is in compliance with the SFPUC's Operations and Maintenance Plan, and other SFPUC requirements for the use of recycled water.		and Irrigation Management Plan to both SWRCB and SFPUC			
		Monthly monitoring of recycled water applied	SWRCB/SFPUC/ SFRA	SWRCB/SFPUC; SFRA	Ongoing reporting to SFPUC and SFRA
All recycled water provided to Project Applicant, pursuant to the Recycled Water General Permit, shall be treated in and managed in conformance with all applicable provisions of the Recycled Water Policy and shall meet Title 22 Requirements for disinfected tertiary recycled water as described in CCR Title 22, sections 60301.230 and 60301.320.					
In accordance with the Recycled Water General Permit, the Project Applicant's Operations and Maintenance Plan shall describe methods and procedures for complying with recycled water regulations, and the maintenance of equipment and emergency backup systems to maintain compliance with the General Permit conditions and California Department of Public Health (CDPH) requirements. The Project Applicant shall ensure that all users of recycled water comply with the Operations and Maintenance Plan by developing educational materials (e.g., pamphlet or brochure) that convey key operational elements (e.g., prevention of cross-connections) of the plan.					
In accordance with the Recycled Water General Permit, the Project Applicant's Irrigation					

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Management Plan shall include measures to ensure the use of recycled water occurs at an agronomic rate while employing practices to minimize application of salinity constituents. The Irrigation Management Plan shall account for soil characteristics, recycled water characteristics, plant species irrigation requirements, climatic conditions, supplemental nutrient additions to support plant growth, and management of impoundments used to store or collect recycled water. The Irrigation Management Plan shall describe any conditions of approval required by the City, CDPH, or SWRCB. The Project Applicant shall implement the following landscape irrigation BMPs in accordance with Recycled Water General Permit Requirements: ■ The Operations and Maintenance Plan shall include leak detection methods and correction within 72 hours of identifying a leak or prior to the release of 1,000 gallons. ■ Recycled water shall not be applied during precipitation events. ■ Impoundment areas shall be managed such that no discharge occurs from storms smaller than the 25-year, 24-hour event. The Project Applicant shall also implement BMPs for general operational controls, protection of workers and the public (e.g., education about not drinking recycled water), and efficient irrigation (e.g., dedicated landscape water meters for monitoring water usage and leak detection). The Project Applicant shall conduct monthly monitoring to quantify the volume of recycled water applied, the locations and total area of application, and the mass of nitrogen and salinity constituents applied.					

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
MM HY-6b.1 Limitations on Stormwater Infiltration. Infiltration BMPs on HPS Phase II shall be prohibited. Alternative BMPs for stormwater quality control, reuse, and treatment shall be used. For instance, biofiltration BMPs can be implemented with an impervious liner and subdrain system to treat stormwater runoff while preventing infiltration. Overland flow (greater than the five-year and up to the 100-year storm) shall be conveyed in lined channels or other conveyances that will not result in infiltration.	Project Applicant	With respect to Hunters Point Shipyard Phase II, the SCP and SDMP referred to in HY-6a.1 will avoid infiltration BMPs	SFPUC	SFPUC	Approval by SFPUC of SCP and SDMP
MM HY-6b.2 Industrial General Permit. The Facility Operator shall apply for an Industrial General Permit prior to operational activities for facilities requiring coverage under the Industrial General Permit, which is determined based on the facility's SIC. The Facility Operator shall comply with all provisions in the Industrial General Permit, including implementation of a SWPPP, to effectively control pollutants to the BAT/BCT during the normal course of operations. Primary components and pollution prevention measures that the SWPPP shall address are described below. The Facility Operator shall refer to the California Stormwater Quality Association Stormwater Best Management Practice Handbook – Industrial and Commercial or equivalent for details on BMP implementation. The SFRWQCB is responsible for overseeing Industrial General Permit activities, including SWPPP compliance. The following BMPs shall be incorporated into the SWPPP. Non-Structural BMPs ■ Good Housekeeping: Good housekeeping generally consists of practical procedures to	Project Applicant/Site Specific Facility Operator	Prior to facility operation	SWRCB/SFPUC	SWRCB/SFPUC	Approval by SFRWQCB

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
maintain a clean and orderly facility. ■ Preventive Maintenance: Regular inspection and maintenance of structural stormwater controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems. ■ Spill Response: Spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak. ■ Material Handling and Storage: Procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to stormwater and authorized non-stormwater discharges. ■ Employee Training: Training of personnel who are responsible for (1) implementing activities identified in the SWPPP, (2) conducting inspections, sampling, and visual observations, and (3) managing stormwater. The SWPPP shall identify periodic dates for such training. Records shall be maintained of all training sessions held. ■ Waste Handling/Recycling: Procedures or processes to handle, store, or dispose of waste materials or recyclable materials. ■ Recordkeeping and Internal Reporting: Procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary, to the appropriate facility personnel. ■ Erosion Control and Site Stabilization: This may include the planting and maintenance of vegetation, diversion of run-on and runoff, placement of sandbags, silt screens, or other					

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sediment control devices, etc. ■ Inspections: This includes, in addition to the preventative maintenance inspections identified above, an inspection schedule of all potential pollutant sources. Tracking and follow-up procedures shall be described to ensure adequate corrective actions are taken and SWPPP revisions are made as needed. ■ Quality Assurance: Procedures to ensure that all elements of the SWPPP and Monitoring Program are adequately conducted. <u>Structural BMPs to be Considered</u> ■ Overhead Coverage: Structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with stormwater and authorized non-stormwater discharges. ■ Retention Ponds: Basins, ponds, surface impoundments, etc. that do not allow stormwater to discharge from the facility. ■ Control Devices: Berms or other devices that channel or route run-on and runoff away from pollutant sources. ■ Secondary Containment Structures: This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills. ■ Treatment: This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc. that reduce the pollutants in stormwater discharges and authorized non-stormwater discharges. However, because of extensive site constraints, use of infiltration BMPs shall be limited.					

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MM HY-6b.3 Clean Marinas California Program. The marina operator shall obtain certification under the Clean Marinas California Program. The Clean Marinas California Program has developed marina BMPs and an inspection and certification process for marinas that meet the program standard for BMP implementation. The marina operator shall implement BMPs that address the following sources of pollution: petroleum containment, topside boat maintenance and cleaning, underwater boat hull cleaning, marina operations, marina debris, boat sewage discharge, solid waste, liquid waste, fish waste, hazardous materials, and stormwater runoff.	Project Applicant	Prior to marina operation	SFRWQCB/SFRA	SFRWQCB/SFRA	Upon certification of the Clean Marinas Program
MM HY-12a.1 Finished Grade Elevations Above Base Flood Elevation. The Project site shall be graded such that finished floor elevations are 3.5 feet above the Base Flood Elevation (BFE), and streets and pads are 3 feet above BFE to allow for future sea level rise, thereby elevating all housing and structures above the existing and potential future flood hazard area. If the FIRM for San Francisco is not finalized prior to implementation of the Project, the Project Applicant shall work with the City Surveyor to revise the City's Interim Floodplain Map. If the FIRM for San Francisco is finalized prior to implementation of the Project, the Project Applicant shall request that the Office of the City Administrator (Floodplain Manager) request a Letter of Map Revision based on Fill (LOMR-F) from FEMA that places the Project outside SFHA and requires that the FIRM is updated by FEMA to reflect revised regulatory floodplain designations.	Project Applicant	Prior to issuance of construction permits	DPW/DBI	DPW/DBI	Upon revision of the City's interim Floodplain Map OR: Upon issuance of LOMAR-F from FEMA
MM HY-12a.2 Shoreline Improvements for Future Sea-Level Rise. Shoreline and public access	Project Applicant	Prior to issuance of construction permits	SFRA/DPW	SFRA/DPW	Upon approval of development permits

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improvements shall be designed to allow future increases in elevation along the shoreline edge to keep up with higher sea level rise values, should they occur. Design elements shall include providing adequate setbacks to allow for future elevation increases of at least 3 feet from the existing elevation along the shoreline. Before the first Small Lot Final Map is approved, the Project Applicant must petition the appropriate governing body to form (or annex into if appropriate) and administer a special assessment district or other funding mechanism to finance and construct future improvements necessary to ensure that the shoreline, public facilities, and public access improvements will be protected should sea level rise exceed 16 inches at the perimeter of the Project. Prior to the sale of the first residential unit within the Project, the governing body shall have acted upon the petition to include the property within the district boundary. The newly formed district shall also administer a Monitoring and Adaptive Management Plan to monitor sea level and implement and maintain the protective improvements.		for shoreline improvements			
MM HY-14 Shoreline Improvements to Reduce Flood Risk. To reduce the flood impacts of failure of existing shoreline structures, the Project Applicant shall implement shoreline improvements for flood control protection, as identified in the Candlestick Point/Hunters Point Development Project Proposed Shoreline Improvements report. Where feasible, elements of living shorelines shall be incorporated into the shoreline protection improvement measures.	Project Applicant	Prior to issuance of construction permits for shoreline improvements	SFRA/DPW	SFRA/DPW	Upon approval of development permits
SECTION III.N (BIOLOGICAL RESOURCES)					
MM BI-4a.1 Wetlands and Jurisdictional/Regulated	Project Applicant	Prior to initiation of	CDFG, the USACE, the	SFRA	Obtain and comply

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
Waters Mitigation for Temporary and/or Permanent Impacts. Wetlands and jurisdictional waters shall be avoided to the maximum extent practicable for all Project components. For example, any measures taken to improve the existing shoreline of Candlestick Point or HPS Phase II for purposes of flood control, erosion control, or repair or stabilization of existing structures shall minimize the amount of fill to be placed in jurisdictional areas. Where avoidance of existing wetlands and drainages is not feasible, and before any construction activities are initiated in jurisdictional areas, the Applicant shall obtain the following permits, as applicable to the activities in question: ■ CWA Section 404 permit from the USACE. ■ Section 10 *Rivers and Harbors Act* Permit from the USACE. ■ CWA Section 401 water quality certification from the RWQCB, and/or Report of Waste Discharge for Waters of the State. ■ CWA Section 402/National Pollution Discharge Elimination System permit from SWRCB [requiring preparation of a Stormwater Pollution Prevention Plan (SWPPP)]. ■ CDFG Section 1602 streambed alteration agreement from CDFG. ■ A permit from the BCDC. ■ Dredging permits from the USACE and BCDC as required, obtained through the Dredged Material Management Office (DMMO) process. Copies of these permits shall be provided to the contractor, along with the construction specifications. The Project Applicant shall be responsible for complying with all of the conditions set forth in these permits, including any financial		construction activities	BCDC, SFRWQCB; and City/SFRA		with applicable permits

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
responsibilities.					
Compensation for impacts to wetlands and jurisdictional waters shall be required to mitigate any permanent impacts to these habitats to less-than significant-levels. Such mitigation shall also be developed (separately from the CEQA process) as a part of the permitting process with the USACE, or for non-USACE-jurisdictional wetlands, during permitting through the SFRWQCB, BCDC, and/or CDFG. The exact mitigation ratio shall be established during the permitting process, and depends on a number of factors, including the type and value of the wetlands permanently affected by the Project; however, mitigation shall be provided at a ratio of no less than 1:1 (at least 1 acre of mitigation for every 1 acre of waters of the US/State permanently filled). Mitigation could be achieved through a combination of on-site restoration or creation of wetlands or aquatic habitats (including removal of on-site fill or structures such as piers, resulting in a gain of wetland or aquatic habitats); off-site restoration/creation; and/or mitigation credits purchased at mitigation banks within the San Francisco Bay Region. However, any mitigation for impacts to jurisdictional waters providing habitat for special-status fish such as the green sturgeon, Central California Coast steelhead, Chinook salmon, and longfin smelt must result in the restoration or creation (at a minimum 1:1 ratio) of suitable habitat for these species, and any mitigation for impacts to jurisdictional wetlands or other waters that are considered EFH by the NMFS must result in the restoration or creation (at a minimum 1:1 ratio) of EFH. Suitably planned mitigation sites may satisfy mitigation requirements for jurisdictional areas, special-status fish, and EFH					

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
simultaneously (i.e., in the same mitigation areas) if the mitigation satisfies all these needs.					
For funding of off-site improvements or purchase of mitigation bank credits, the Project Applicant shall provide written evidence to the City/Agency that either (a) compensation has been established through the purchase of a sufficient number of mitigation credits to satisfy the mitigation acreage requirements of the Project activity, or (b) funds sufficient for the restoration of the mitigation acreage requirements of the Project activity have been paid to the BCDC, CCC, or other entity or agency that offers mitigation credits in the San Francisco Bay Area.	Project Applicant	Prior to initiation of construction activities	CDFG, the USACE, the BCDC, SFRWQCB; and SFRA	SFRA	Written evidence to the City/SFRA for funding of off-site improvements or purchase of mitigation bank credits
For areas to be restored, to mitigate for temporary or permanent impacts, the Project Applicant shall prepare and implement a Wetland and Jurisdictional Waters Mitigation Monitoring Plan (Mitigation Monitoring Plan). The Plan shall be submitted to the regulatory agencies along with permit application materials for approval, along with a copy to the City/Agency. The Project Applicant shall retain a restoration ecologist or wetland biologist to develop the Wetland and Jurisdictional Waters Mitigation and Monitoring Plan, and it shall contain the following components (or as otherwise modified by regulatory agency permitting conditions): 1. Summary of habitat impacts and proposed mitigation ratios, along with a description of any other mitigation strategies used to achieve the overall mitigation ratios, such as funding of off-site improvements and/or purchase of mitigation bank credits 2. Goal of the restoration to achieve no net loss of habitat functions and values	Project Applicant	Prior to initiation of construction activities	CDFG, the USACE, the BCDC, SFRWQCB; and SFRA	SFRA	Preparation and implementation of Wetland and Jurisdictional Waters Mitigation and Monitoring Plan. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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3. Location of mitigation site(s) and description of existing site conditions 4. Mitigation design: ■ Existing and proposed site hydrology ■ Grading plan if appropriate, including bank stabilization or other site stabilization features ■ Soil amendments and other site preparation elements as appropriate ■ Planting plan ■ Irrigation and maintenance plan ■ Remedial measures/adaptive management, etc. 5. Monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.) 6. Contingency plan for mitigation elements that do not meet performance or final success criteria.					
Restoration and/or creation of wetlands or aquatic habitats could occur on site or off site and at one or more locations, as approved by the regulatory agencies. Impacts occurring due to activities on Candlestick Point may be mitigated by restoration or creation activities on HPS Phase II and vice versa. For example, loss of open water habitat that might result from construction of shoreline treatments could potentially be mitigated by the removal of fill or structures from aquatic habitat on HPS Phase II.					
The Project Applicant, or its agent, shall implement the Wetland and Jurisdictional Waters Mitigation Monitoring Plan. At least five years of monitoring (or more if required as a condition of the permits)	Project Applicant	During construction activities, for at least 5 years	CDFG, the USACE, the BCDC, SFRWQCB; and City/SFRA	SFRA	At least 5 years of monitoring, and preparation of annual monitoring reports to

Draft Mitigation Monitoring & Reporting Program					
Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
shall be conducted to document whether the success criteria (that are determined as part of the mitigation plan) are achieved, and to identify any remedial actions that must be taken if the identified success criteria are not met. Annual monitoring reports (described below) shall be submitted to CDFG, the USACE, the BCDC, the City/Agency, and the SFRWQCB. Each report shall summarize data collected during the monitoring period, describe how the habitats are progressing in terms of the success criteria, and discuss any remedial actions performed. Additional reporting requirements imposed by permit conditions shall be incorporated into the Wetland and Jurisdictional Waters Mitigation Monitoring Plan and implemented. Success criteria for specified years of monitoring for vegetated mitigation wetlands are as follows (though these may be subject to change pending development of specific Mitigation and Monitoring Plans and consultation during the permit process): ■ Year 1 after restored areas reach elevations suitable for colonization by wetland plants: 10 percent combined area and basal cover (rhizomatous turf) of all vegetation in the preserve wetland; at least two hydrophytic plants co-dominant with whatever other vegetative cover exists. ■ Year 3 after restored areas reach colonization elevation: 50 percent combined area and basal cover (rhizomatous turf) of all vegetation; prevalence of hydrophytic species in terms of both cover and dominant species composition of the vegetation; native vascular species shall comprise 95 percent of the vegetation in the preserve wetland. ■ Year 5 after restored areas reach colonization					be submitted to CDFG, USACE, BCDC, SFRA, and SFRWQCB. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
elevation: 70 percent combined area and basal cover (rhizomatous turf) of all vegetation; more than 50 percent dominance in terms of both cover and species composition of facultative (FAC), facultative wetland (FACW), and obligate (OBL) species; native vascular species shall comprise 95 percent of the vegetation in the preserve wetlands.					
Other success criteria shall be developed for open water/mud flat habitats (which would not be expected to support vegetation) or for wetland complexes specifically designed to contain extensive areas of channels, pannes, or flats that would not be vegetated. In addition, the final Project design shall avoid substantial adverse effects to the pre-Project hydrology, water quality, or water quantity in any wetland that is to be retained on site. This shall be accomplished by avoiding or repairing any disturbance to the hydrologic conditions supporting these wetlands, as verified through an on-site Wetland Protection Plan that shall be prepared by a restoration ecologist or wetland biologist that is retained by the Project Applicant, and submitted to regulatory agencies for approval, along with a copy to the City/Agency. If such indirect effects cannot be avoided, compensatory mitigation shall be provided for the indirectly affected wetlands at a minimum 1:1 ratio, as described above. Mitigation for indirectly impacted wetlands shall be described in the Wetland and Jurisdictional Waters Mitigation and Monitoring Plan.	Project Applicant	Prior to initiation of construction activities	CDFG, the USACE, the BCDC, SFRWQCB; and City/SFRA	SFRA	Preparation of an on-site Wetland Protection Plan. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.
Project features resulting in impacts to open water areas as a result of the marina, bridge, and breakwater construction shall be designed to be the minimum size required to meet their designated need. The opening in the breakwater shall be large	Project Applicant	During Project design	SFRA	SFRA	Approval of final design

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
enough and positioned such that it would allow for a complete daily exchange of water within the marina that would otherwise result from normal tidal flow, as determined by a coastal engineer and an aquatic biologist. This opening shall be designed to minimize disruption to the local hydrology generated by the breakwater and allow for normal tidal flow to ensure the daily exchange of nutrients.					
MM BI-4a.2 Wetlands and Jurisdictional/Regulated Waters Impact Minimization for Construction-Related Impacts. The Project Applicant shall ensure that the contractor minimizes indirect construction-related impacts on wetlands and jurisdictional/regulated waters throughout the Study Area by implementing the following Best Management Practices (BMPs): ■ Prior to any construction activities on the site, a protective fence shall be installed a minimum of one foot (or greater, if feasible) from the edge of all wetland habitat to be avoided in the immediate vicinity of the proposed construction areas. Prior to initiation of construction activities, a qualified biologist shall inspect the protective fencing to ensure that all wetland features have been appropriately protected. No encroachment into fenced areas shall be permitted during construction and the fence shall remain in place until all construction activities within 50 feet of the protected feature have been completed. ■ Construction inspectors shall routinely inspect protected areas to ensure that protective measures remain in place and effective until all	Project Applicant	Prior to initiation of construction activities	DBI/SFRA ; CDFG, USACE, BCDC, SFRWQCB	DBI/SFRA, in consultation with other regulatory agencies, as necessary	SFRA and DBI to review construction documents and construction staging, access, and parking plan. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
construction activities near the protected resource have been completed. The fencing shall be removed immediately following construction activities. ■ To maintain hydrologic connections, the Project design shall include culverts for all seasonal and perennial drainages that are waters of the United States and/or Waters of the State. ■ Sediment mitigation measures shall be in place prior to the onset of Project construction and shall be monitored and maintained until construction activities have been completed. Temporary stockpiling of excavated or imported material shall occur only in approved construction staging areas. Excess excavated soil shall be disposed of at a regional landfill or at another approved and/or properly permitted location. Stockpiles that are to remain on the site throughout the wet season shall be protected to prevent erosion. ■ Where determined necessary by regulatory agencies, geotextile cushions and other appropriate materials (i.e., timber pads, prefabricated equipment pads, geotextile fabric) shall be used in saturated conditions to minimize damage to the substrate and vegetation. ■ Exposed slopes and banks shall be stabilized immediately following completion of construction activities to reduce the effects of erosion on the drainage system. ■ In highly erodible areas, such as Yosemite Slough, banks shall be stabilized using a non-vegetative material that shall bind the soil initially and break down within a few years. If,					

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during review of the grading permit for this area, the City/Agency determines that more aggressive erosion control treatments are needed, the contractor shall be directed to use geotextile mats, excelsior blankets, or other soil stabilization products. ■ The contractors shall develop a Storm Water Pollution Prevention Plan (SWPPP) prior to construction. As discussed in the Regulatory Framework of the Hydrology and Water Quality section of this EIR, the SWPPP will comply with applicable local, state, and federal requirements. Erosion control BMPs may include, but are not limited to, the application of straw mulch; seeding with fast growing grasses; construction of berms, silt fences, hay bale dikes, stormwater detention basins, and other energy dissipaters. BMPs shall be selected and implemented to ensure that contaminants are prevented from entering the San Francisco Bay during construction and operation of the facilities shall protect water quality and the marine species in accordance with all regulatory standards and requirements. ■ Testing and disposal of any dredged sediment shall be conducted as required by the USACE and the Long-Term Management Strategy (LTMS)[1] ■ All temporarily impacted wetlands and other jurisdictional waters, whether in tidal or non-tidal areas, shall be restored to pre-construction contours following construction. Such impact areas include areas that are					

[1] US Army Corps of Engineers, US Environmental Protection Agency, San Francisco Bay Conservation and Implementation Commission, and San Francisco Bay Regional Water Quality Control Board. Long-term Management Strategy for the Placement of Dredge Material in the San Francisco Bay, Management Plan 2001.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
dewatered (e.g., using coffer dams) and/or used for construction access. Temporarily impacted wetlands that were vegetated prior to construction shall be revegetated in accordance with a Wetlands and Jurisdictional Waters Mitigation and Monitoring Plan as described above. ■ For impacts to tidal habitats: > Conduct all work in dewatered work areas > Install sediment curtains around the worksite to minimize sediment transport > Work only during periods of slack, tide (minimal current) and low wind to minimize transport of sediment laden water					
MM BI-4c Mitigation for Shading Impacts to Jurisdictional/Regulated Waters. Mud flats and aquatic habitats impacted by permanent shading from the Yosemite Slough bridge shall be mitigated by the creation or restoration, either on site, off site, and/or via purchase of mitigation bank credits, at a 0.5:1 (mitigation :impacted) ratio. Aside from the mitigation ratio, such mitigation shall be provided as described for mitigation measure MM BI-4a.1.	Project Applicant	Prior to initiation of construction activities	DBI/SFRA; CDFG, USACE, BCDC, SFRWQCB	DBI/SFRA, in consultation with other regulatory agencies, as necessary	Written evidence to the City/SFRA for funding of off-site improvements or purchase of mitigation bank credits; preparation of Wetland and Jurisdictional Waters Mitigation and Monitoring Plan and subsequent annual monitoring reports for areas to be restored shall be submitted to CDFG, the USACE, the BCDC, the City/SFRA, and the SFRWQCB.
MM BI-5b.1 Avoidance of Impacts to Eelgrass. As the design of shoreline treatments progresses, and a specific Shoreline Treatment Plan is determined,	Project Applicant	During the design of shoreline treatments	NMFS; SFRA	SFRA	Approval of Shoreline Treatment Plan; Construction

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
the Plan shall minimize any in-water construction required for installation of any treatment measures near either of the two eelgrass locations noted above.					Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.
MM BI-5b.2 Eelgrass Survey. Prior to the initiation of construction of the Yosemite Slough bridge or construction of shoreline treatments, an update to the existing eelgrass mapping shall be conducted to determine the precise locations of the eelgrass beds. For the shoreline treatments, this survey shall occur when a final Shoreline Treatment Plan has been prepared. The survey shall be conducted by a biologist(s) familiar with eelgrass identification and ecology and approved by NMFS to conduct such a survey. The area to be surveyed shall encompass the mapped eelgrass beds, plus a buffer of 750 feet around any in-water construction areas on Hunters Point or associated with the Yosemite Slough bridge. Survey methods shall employ either SCUBA or sufficient grab samples to ensure that the bottom was adequately inventoried. The survey shall occur between August and October and collect data on eelgrass distribution, density, and depth of occurrence for the survey areas. The edges of the eelgrass beds shall be mapped. At the conclusion of the survey a report shall be prepared documenting the survey methods, results, and eelgrass distribution within the survey area. This report shall be submitted to NMFS for approval. The survey data shall feed back into the shoreline treatment design process so that Project engineers can redesign the treatments to avoid or minimize any direct impacts to eelgrass beds. If the shoreline treatments can be adjusted so that no direct impacts to eelgrass beds would occur, no	Project Applicant	When a final Shoreline Treatment Plan has been prepared	NMFS; SFRA	SFRA	Submittal of a report for NMFS approval documenting survey methods, results, and eelgrass distribution within the survey area. Submit report and proof of NMFS approval to SFRA.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
further mitigation under this measure would be required for shoreline treatment construction. Management of water quality concerns is addressed through mitigation measure MM BI-5b.4 and shall be required to minimize sediment accumulation on the eelgrass. If direct impacts to eelgrass beds cannot be avoided either by Hunters Point shoreline treatments or Yosemite Slough bridge construction, mitigation measure MM BI-5b.3 shall be implemented.					
MM BI-5b.3 Compensatory Eelgrass Mitigation. If direct impacts to eelgrass beds cannot be avoided, compensatory mitigation shall be provided in conformance with the Southern California Eelgrass Mitigation Policy. Mitigation shall entail the replacement of impacted eelgrass at a 3:1 (mitigation:impact) ratio on an acreage basis, based on the eelgrass mapping described in mitigation measure MM BI-5b.2 and detailed designs of the feature(s) that would impact eelgrass beds. Such mitigation could occur either off site or on site.[2] Off-site mitigation could be achieved through distribution of a sufficient amount of funding to allow restoration or enhancement of eelgrass beds at another location in the Bay. If this option is selected, all funds shall be distributed to the appropriate state or federal agency or restoration-focused non-governmental agency (i.e., CDFG restoration fund, California Coastal Conservancy, Save the Bay, etc). The Project Applicant shall provide written evidence to the City/Agency that either a) compensation has been established through the purchase of a sufficient number of mitigation credits to satisfy the mitigation	Project Applicant	Upon the determination that direct impacts to eelgrass beds cannot be avoided, and off-site mitigation would be appropriate (prior to in-water construction)	NMFS /SFRA	SFRA	Written evidence to the City/SFRA for the compensation of off-site mitigation credits or funds

[2] NMFS, Southwest Regional Office, Southern California Eelgrass Mitigation Policy, as revised August 30, 2005. Website: http://swr.nmfs.noaa.gov/hcd/policies/EELPOLrev11_final.pdf. Accessed July 20, 2009.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
acreage requirements of the Project activity, or b) funds sufficient for the restoration of the mitigation acreage requirements of the Project activity have been paid. These funds shall be applied only to eelgrass restoration within the Bay.					
If on-site mitigation is selected as the appropriate option, the Project Applicant shall retain a qualified biologist familiar with eelgrass ecology (as approved by the City/Agency) to prepare and implement a detailed Eelgrass Mitigation Plan. Unless otherwise directed by NMFS, the Eelgrass Mitigation Plan shall follow the basic outline and contain all the components required of the Southern California Eelgrass Mitigation Policy (as revised in 2005),[3] including: identification of the mitigation need, site, transplant methodology, mitigation extent (typically 3:1 on an acreage basis[4]), monitoring protocols (including frequency, staffing, reviewing agencies, duration, etc), and success criteria. A draft Eelgrass Mitigation Plan shall be submitted to NMFS, for its review and approval prior to implementation, with a copy to the City/Agency. Once the plan has been approved, it shall be implemented in the following appropriate season for transplantation. Restored eelgrass beds shall be monitored for success over a 5-year period.	Project Applicant	Upon the determination that direct impacts to eelgrass beds cannot be avoided, and on-site mitigation would be appropriate (prior to in-water construction)	NMFS/ SFRA	SFRA	Preparation and implementation of an Eelgrass Mitigation Plan if on-site mitigation occurs.
MM BI-5b.4 Eelgrass Water Quality BMPs. To prevent sediment that could be suspended during construction from settling out onto eelgrass, for any	Project Applicant	Prior to and during in-water construction	NMFS/SFRA	SFRA	BMPs deemed appropriate by NMFS

[3] NMFS, Southwest Regional Office, Southern California Eelgrass Mitigation Policy, as revised August 30, 2005. Website: http://swr.nmfs.noaa.gov/hcd/policies/EELPOLrev11_final.pdf. Accessed July 20, 2009.

[4] US Army Corps of Engineers, US Environmental Protection Agency, San Francisco Bay Conservation and Implementation Commission, and San Francisco Bay Regional Water Quality Control Board. Long-term Management Strategy for the Placement of Dredge Material in the San Francisco Bay, Management Plan 2001; Appendix F – ESA and EFH Consultation.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
shoreline treatments within 750 feet of identified eelgrass beds, the Project Applicant shall require the selected contractor to implement appropriate BMPs that could include any or all of the following options, or others deemed appropriate by NMFS: 1. Conduct all work in dewatered work areas 2. Conduct all in-water work during periods of eelgrass dormancy (November 1-March 31) 3. Install sediment curtains around the worksite to minimize sediment transport 4. Work only during periods of slack tide (minimal current) and low wind to minimize transport of sediment laden water					
MM BI-6a.1 Impact Avoidance and Pre-Construction Surveys for Nesting Special-Status and Legally Protected Avian Species. The following measures shall be implemented by the Project Developer to avoid impacts to nesting birds. 1. Not more than 15 days prior to construction activities that occur between February 1 and August 31, surveys for nesting birds shall be conducted by a qualified biologist (one familiar with the breeding biology and nesting habits of birds that may breed in the Project vicinity) that is selected by the Project Developer, and approved by the City/Agency. Surveys shall cover the entire area to be affected by construction and the area within a 250-foot buffer of construction or ground-disturbing activities. The results of the surveys, including survey dates, times, methods, species observed, and a map of any discovered nests, shall be submitted to the City/Agency. If no active avian nests (i.e. nests with eggs or young) are identified on or within 250 feet of	Project Applicant	Not more than 15 days prior to construction activities that occur between February 1 and August 31	CDFG	SFRA	Submittal of nesting bird survey findings to the SFRA and consultation with CDFG as appropriate

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
the limits of the disturbance area, no further mitigation is necessary. Phased construction work shall require additional surveys if vegetation or building removal has not occurred within 15 days of the initial survey or is planned for an area that was not previously surveyed. Alternatively, to avoid impacts, the Project Developer shall begin construction after the previous breeding season for local raptors and other special-status species has ended (after August 31) and before the next breeding season begins (before February 1).					
2. If active nests (with eggs or young) of special-status or protected avian species are found within 250 feet of the proposed disturbance area, a minimum 250-foot no-disturbance buffer zone surrounding active raptor nests and a minimum 100-foot buffer zone surrounding nests of other special-status or protected avian species shall be established until the young have fledged. Project activities shall not occur within the buffer as long as the nest is active. The size of the buffer area may be reduced if a qualified biologist familiar with the species' nesting biology (as approved by the City/Agency) and CDFG determine it would not be likely to have adverse effects on the particular species. Alternatively, certain activities may occur within the aforementioned buffers, with CDFG concurrence, if a qualified biologist monitors the activity of nesting birds for signs of agitation while those activities are being performed. If the birds show signs of agitation suggesting that they could abandon the nest, activities would cease within the buffer area. No action other than avoidance shall be taken without CDFG consultation.					

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
3. Completion of the nesting cycle (to determine when construction near the nest can commence) shall be determined by a qualified biologist experienced in identification and biology of the specific special-status or protected species.					
MM BI-6a.2 Burrowing Owl Protocol Surveys and Mitigation. Because burrowing owls may take refuge in burrows any time of year, species-specific measures are necessary to avoid take of this species. The following measures shall be undertaken by the Project Developer to protect burrowing owls.	Project Applicant	No more than 30 days prior to commencement of construction activities	CDFG	SFRA	Submittal of burrowing owl survey findings to the SFRA and consultation with CDFG as appropriate
Prior to construction activities, focused pre-construction surveys shall be conducted for burrowing owls where suitable habitat is present within the construction areas. Surveys shall be conducted by a qualified biologist (i.e., one who is familiar with burrowing owl ecology and experienced in performing surveys for them, approved by the City/Agency) no more than 30 days prior to commencement of construction activities. These surveys shall be conducted in accordance with the CDFG burrowing owl survey protocol contained within California Burrowing Owl Consortium's April 1995 Burrowing Owl Survey Protocol and Mitigation Guidelines, or any more current equivalent should new guidelines be released before construction.					
1. If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings shall be submitted to the City/Agency and CDFG, and no further mitigation is necessary.					
2. If unoccupied burrows are found during the non-breeding season, prior to construction	Project Applicant	Upon determination that impacts to	CDFG	SFRA	If unoccupied burrows are found during non-

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activities, the Project Developer shall collapse the unoccupied burrows, or otherwise obstruct their entrances to prevent owls from entering and nesting in the burrows. This measure would prevent inadvertent impacts during construction activities.		occupied burrows are unavoidable and prior to construction activities			breeding season, unoccupied burrows will be collapsed. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.
3. If occupied burrows are found, a letter report documenting survey methods and findings (including a map showing the locations of the occupied burrows) shall be submitted to the City/Agency and CDFG. Impacts to the burrows shall be avoided by providing a construction-free buffer of 250 feet during the nesting season (February 1 through August 31). A buffer of 165 feet from the active burrows should be provided during the non-breeding season (September 1 through January 31) if feasible, though a reduced buffer is acceptable during the non-breeding season as long as construction avoids direct impacts to the burrow(s) used by the owls. The size of the buffer area may be reduced if the CDFG determines it would not be likely to have adverse effects on the owls. No Project activity shall commence within the buffer area until a qualified biologist (as approved by the City/Agency) confirms that the burrow is no longer occupied. If the burrow is occupied by a nesting pair, as recommended by the California Burrowing Owl Consortium's April 1995 Burrowing Owl Survey Protocol and Mitigation Guidelines, a minimum of 6.5 acres of foraging habitat contiguous (immediately adjacent) to the burrow shall be maintained until the nesting	Project Applicant	Prior to construction activities upon completion of preconstruction focused surveys for burrowing owls	CDFG	SFRA	If occupied burrows are found, a letter report of findings will be submitted to CDFG and the City/SFRA. Avoidance of occupied burrows and compensatory habitat mitigation, as appropriate, shall occur as stated. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
season is over. If the foraging habitat contiguous to the occupied burrow is currently less than 6.5 acres, the entire foraging habitat shall be maintained until the nesting season is over.					
4. If impacts to occupied burrows are unavoidable, passive relocation techniques approved by CDFG shall be used to evict owls from burrows within the construction area prior to construction activities. However, no occupied burrows shall be disturbed during the nesting season unless a qualified biologist (as approved by the City/Agency) verifies through non-invasive methods that juveniles from the occupied burrows are foraging independently and are capable of independent survival, or verifies the owls have not yet laid eggs. If any breeding owls must be relocated (i.e., after the nesting season has ended), mitigation of impacts to lost foraging and nesting habitat for relocated pairs shall follow guidelines provided in the California Burrowing Owl Consortium's April 1995 Burrowing Owl Survey Protocol and Mitigation Guidelines, which depending upon conditions detailed in the guidance (such as mitigation habitat quality), range from 7.5 to 19.5 acres per pair. This mitigation may take the form of the purchase of credits in a burrowing owl mitigation bank or the preservation and management of the required habitat acreage on site (e.g., in the Grasslands Ecology Park) or off site. If mitigation is provided via on-site or off-site habitat preservation and management, a Burrowing Owl Habitat Management Plan shall be prepared by a qualified biologist and submitted to the CDFG for review and approval, along	Project Applicant	Upon determination that impacts to occupied burrows are unavoidable and prior to construction activities	CDFG	SFRA	If mitigation is required and provided via on-site or off-site habitat preservation and management, a Burrowing Owl Habitat Management Plan to be prepared by qualified biologist and submitted to the CDFG for review and approval, along with a copy to the City/SFRA. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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with a copy to the City/Agency. This plan shall detail the location of the mitigation site, the means of preservation of the site (i.e., via a conservation easement), any enhancement and management measures necessary to ensure that habitat for burrowing owls is maintained in the long term, a monitoring program, and the size of an endowment established for the long-term maintenance of the site.					
MM BI-6b American Peregrine Falcon Nest Protection Measures. To protect the nest of peregrine falcons during construction, the following measures shall be implemented by the Project Developer prior to construction or other disturbance within 500 feet of the Re-gunning crane nest. 1. Not more than 30 days prior to construction activities that occur between February 1 and August 15, surveys for nesting peregrine falcons shall be conducted on the Re-gunning crane, and within a 500-foot buffer surrounding the potential nesting location. Surveys shall be performed by a qualified biologist (i.e., one familiar with falcon biology and nesting) that is selected by the Project Developer, and approved by the City/Agency. The results of the surveys shall be submitted to the City/Agency and the CDFG. If no active peregrine falcon nests, eggs, or breeding activity, are identified on or within 500 feet of the limits of the disturbance area, no further mitigation is necessary. Alternatively, to avoid impacts, the Project Developer can begin construction after the previous breeding season has ended (after August 31) and before the next breeding season begins (before February 1).	Project Applicant	Not more than 30 days prior to construction activities that occur between Feb. 1st and August 15th.	CDFG	SFRA	Survey for nesting peregrine falcons and submittal of results to CDFG and the City/SFRA. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
2. If active peregrine nests or breeding activity are observed within the survey area, a minimum 250-foot no disturbance buffer zone surrounding the nesting location shall be established until the young have fledged. Within this buffer, no Project construction activities shall occur while the nest is active. The size of the buffer area may be reduced if a qualified biologist and CDFG determine it would not be likely to have adverse effects on the falcons. No action other than avoidance shall be taken without CDFG consultation. 3. No new Project construction activity shall commence within the buffer area until young have fledged and the nest is no longer active, or until nesting has been terminated for reasons unrelated to Project activities. Completion of the nesting cycle shall be determined by a qualified biologist who is experienced in peregrine falcon breeding biology (as determined and approved by the City/Agency).					
MM BI-7b <u>Enhancement of Raptor Foraging Habitat.</u> The Draft Parks, Open Space, and Habitat Concept Plan shall implement, at a minimum, the following measures in open space areas outside the CPSRA, and if allowed, within the CPSRA area: ■ Restoration and Management of Grasslands: To maintain grassland-associated wildlife species on the site, grasslands extensive enough to support such species shall be maintained and enhanced through the restoration of native grasses. Such grassland habitat shall not be well manicured or regularly mown. No trees shall be planted within such areas, and shrub cover would be	Project Applicant	Throughout the construction phase	SFRA	SFRA	Approval of Plan by SFRA and, if applicable, by CPSRA. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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limited to a few small, scattered patches of low-statured coastal scrub plants. At a minimum, replacement of non-native grassland impacted at HPS Phase II with native-dominated grassland shall occur at a ratio of 1:1 (1 acre of native-dominated grassland restored: 1 acre of non-native grassland impacted). ■ Increase in Tree/Shrub Cover: Trees and shrubs (particularly natives) shall be planted and maintained outside the designated grassland restoration area to provide foraging habitat for raptors and other migratory birds, and cover for mammals, reptiles, and smaller birds that may serve as raptor prey. While native vegetation shall be favored, site-appropriate non-native trees and shrubs that provide food or structural resources that are particularly valuable to native wildlife shall also be considered. Approximately 10,000 net new trees shall be planted at the Project site and in the community, in addition to trees that will be replaced as required by the Urban Forestry Ordinance or MM BI-14a.					
The elements identified above shall be reviewed and approved by a qualified biologist (one familiar with the ecology of the Project site), and the Draft Parks, Open Space, and Habitat Concept Plan shall be implemented during construction of the Project. This plan shall be approved by the City/Agency prior to construction, and its preparation and implementation shall be the financial responsibility of the Project Applicant.	Project Applicant	Plan to be approved by City/SFRA prior to construction, and implemented throughout the construction phase of the Project	SFRA	SFRA	Approval and implementation of the Draft Parks, Open Space, and Habitat Concept Plan. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.
MM BI-9b Pile Driving Design and Minimization Measures. To minimize impacts on fish and marine mammals, the Project Applicant shall be					

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implemented the following measure to reduce the amount of pressure waves generated by pile driving. The first set of measures shall be implemented during Project design. The second set of measures shall be implemented during construction.					
Design Measures: 1. Engineer structures to use fewer or smaller piles, where feasible, and preferably, solid piles. 2. Design structures that can be installed in a short period of time (i.e., during periods of slack tide when fish movements are lower). 3. Do not use unsheathed creosote-soaked wood pilings. The City/Agency, with consultation from a qualified biologist who is familiar with marine biology, as approved by the City/Agency, shall review the final Project design to ensure that these design requirements have been incorporated into the Project.	Project Applicant	During Project design	DBI/SFRA	DBI/SFRA	Approval of final plans
Construction Measures: 1. Drive piles with a vibratory device instead of an impact hammer if feasible. 2. Restrict pile driving of steel piles to the June 1 to November 30 work window, or as otherwise recommended by NMFS (driving of concrete piles would not be subject to this condition). 3. Avoid installation of any piles during the Pacific herring spawning season of December through February. Consult with the CDFG regarding actual spawning times if pile installation occurs between October and April. 4. If steel piles must be driven with an impact hammer, an air curtain shall be installed to	Project Applicant	During construction activities	DBI/SFRA, in consultation with NMFS and CDFG, if necessary	DBI/SFRA, in consultation with NMFS and CDFG, if necessary	Monitoring of pile driving activities. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
disrupt sound wave propagation, or the area around the piles being driven shall be dewatered using a cofferdam. The goal of either measure is to disrupt the sound wave as it moves from water into air. 5. If an air curtain is used, a qualified biologist shall monitor pile driving to ensure that the air curtain is functioning properly and Project-generated sound waves do not exceed the threshold of 180-decibels generating 1 micropascal (as established by NMFS guidelines). This shall require monitoring of in-water sound waves during pile driving. 6. Unless the area around the piles is dewatered during pile driving, a qualified biologist shall be present during pile driving of steel piles to monitor the work area for marine mammals. Driving of steel piles shall cease if a marine mammal approaches within 250 feet of the work area or until the animal leaves the work area of its own accord.					
MM BI-12a.1 Seasonal Restrictions on In-Water Work. In-water work when juvenile salmonids are moving through the estuary on the way to the ocean or when groundfish and prey species could be directly impacted shall be avoided. Because steelhead are potentially present, the allowed dredge window for this area of the San Francisco Bay is June 1 through November 30. All in-water construction shall occur during this window. If completion of in-water work within this period is not feasible due to scheduling issues, new timing guidelines shall be established and submitted to NMFS and CDFG for review and approval.	Project Applicant	During construction between June 1st and November 30th	NMFS and CDFG	SFRA, in consultation with NMFS and CDFG, as necessary	Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.
MM BI-12a.2 Worker Training. Personnel involved in in-water construction and deconstruction	Project Applicant	Prior to construction activities	DBI/SFRA	DBI/SFRA	Construction Contractor to submit

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activities shall be trained by a qualified biologist (experienced in construction monitoring, as approved by the City/Agency) in the importance of the marine environment to special-status fish, birds, and marine mammals and the environmental protection measures put in place to prevent impacts to these species, their habitats, and Essential Fish Habitat. The training shall include, at a minimum, the following: ■ A review of the special-status fish, birds, and marine mammals and sensitive habitats that could be found in work areas ■ Measures to avoid and minimize adverse effects to special-status fish, birds, marine mammals, their habitats, and Essential Fish Habitat ■ A review of all conditions and requirements of environmental permits, reports, and plans (i.e., USACE permits) MM BI-4a.1 and MM BI-4a.2 would also apply to this impact.					quarterly report of compliance activity, until deemed complete by SFRA.
MM BI-12b.1 Essential Fish Habitat Avoidance and Minimization Measures. The following mitigation measures have been adapted from Amendment 11 of the West Coast Groundfish Plan[5] and Appendix A of the Pacific Coast Salmon Plan.[6] Incorporation of the following, or equivalent mitigation as otherwise required by the USACE or NMFS, would reduce the impacts to Essential Fish Habitat (EFH) to a level considered	Project Applicant	During construction activities	USACE; NMFS	SFRA, in consultation with NMFS and USACE, as necessary	Approval of dredging permits. Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

[5] PFMC 1998. Essential Fish Habitat – West Coast Groundfish, Amendment 11.
[6] PFMC 1999. Appendix A: Identification and description of Essential Fish Habitat, Adverse Impacts, and Recommended Conservation Measures for Salmon. *In* Pacific Coast Salmon Plan (1997) as amended through Amendment 14. Website: http://www.pcouncil.org/salmon/salfmp/a14.html.
[7] National Management Measures to Control Nonpoint Source Pollution from Marinas and Recreational Boating. EPA 841-B-01-005, November 2001.

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
less than significant. Unless modified by the federal permitting agencies (NMFS or USACE), these measures shall be implemented during construction by the Project Applicant. Any reporting required shall be specified in the USACE permits and reports shall be submitted to the USACE and NMFS. ■ If dredging is required, permits will be obtained through the Dredged Material Management Office (DMMO) process, and the following mitigation from the Long-Term Management Strategy (LTMS) shall be implemented: > Dredging shall avoid areas with submerged aquatic vegetation (eelgrass beds or other EFH areas of particular concern) especially where the action could affect groundfish, prey of outmigrating juvenile salmon or groundfish, larval marine species, or habitat for native oysters > Sediments shall be tested for contaminants as per EPA and USACE requirements. Contaminated sediments shall be disposed of in accordance with EPA and USACE guidelines > Slopes of the dredged area shall be gradual enough so that sloughing is unlikely to occur. Verification of these conditions shall be achieved through follow-up bathymetric surveys > To minimize turbidity and potential resuspension of contaminated sediments, dredging shall use suction equipment, or similar equipment, when feasible. Where an equipment type may generate significant turbidity (i.e., clamshell), dredging shall be conducted using					

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adequate engineering and best management practices to control turbidity. These include, but are not limited to, sediment curtains and tidal work windows. ■ All construction equipment used in conjunction with in-water work (pipelines, barges, cranes, etc.) shall avoid wetlands, marshes, and areas of subaquatic vegetation (including eelgrass beds) ■ Upland disposal options shall be considered for all spoils generated by on-site construction, especially if high levels of contaminants are present ■ Maximize the use of clean dredged material for beneficial use opportunities, such as salt marsh restoration ■ Use Best Management Practices (BMPs) for controlling pollution from marina operations, boatyards, and fueling facilities that meet, as applicable, the BMPs listed in the National Management Measures to Control Nonpoint Source Pollution from Marinas and Recreational Boating[7]					
MM BI-12b.2 Deconstruction/Construction Debris Recovery. A Seafloor Debris Minimization and Removal Plan shall be prepared by the Project Applicant and approved by the City/Agency, prior to initiation of in-water deconstruction (dismantling) or construction activities. The Plan shall be implemented during in-water deconstruction or construction activities, and such activities shall be monitored by a qualified biologist who is experienced in construction monitoring (as approved by the City/Agency). The Seafloor Debris Minimization and Removal Plan shall include, at a	Project Applicant	Seafloor Debris Minimization and Removal Plan to be prepared prior to initiation of in-water deconstruction or construction activities; implementation of the plan to occur during in-water deconstruction or construction activities	DBI/SFRA	DBI/SFRA	Approval of Seafloor Debris Minimization and Removal Plan; Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
minimum: ■ Debris field boundaries associated with deconstruction activities ■ Identification of measures taken to minimize the potential for debris to fall into aquatic habitats (i.e., the use of netting below in-water construction or deconstruction areas) ■ Deconstruction equipment, tools, pipes, pilings, and other materials or debris that are inadvertently dropped into the Bay, along with their descriptions and locations ■ Circumstances requiring immediate cessation of deconstruction activities and immediate initiation of search and recovery efforts, including procedures for implementing those recovery efforts ■ How lost debris that is to be removed post-deconstruction is to be identified, who will be conducting search and recovery operations, and the survey methods to be employed to locate lost equipment and materials ■ Criteria that will be used to: ■ Determine whether recovery efforts are appropriate for the object being recovered and do not result in potential environmental impairment greater than if the debris was allowed to remain in place ■ When sufficient effort has been expended to recover a lost object(s) with no success and continued efforts to recover the seafloor debris have diminishing potential for success and/or result in environmental impairment greater than leaving the debris in place ■ Person(s) responsible for implementing the Plan and making the determination on the type of recovery required					

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
■ How debris is to be disposed of or recycled ■ Metrics for determining when recovery efforts will be considered complete					
Following completion of all post deconstruction recovery efforts for seafloor debris, a report shall be prepared by the Project Applicant and submitted to the City/Agency detailing, at a minimum, (1) recovery activities during deconstruction and post-deconstruction, (2) listings of all lost and recovered debris, (3) final disposition of recovered debris, and (4) discussion of what debris could not be recovered and why.	Project Applicant	Following completion of all post deconstruction recovery efforts for seafloor debris	DBI/SFRA	DBI/SFRA	Receipt of report of recovery activities by DBI/SFRA
MM BI-14a <u>Preservation and Replacement of Significant Trees, and Preservation and Planting of Street Trees.</u> Construction activities outside of the Department of Public Works (DPW) jurisdiction could result in the disturbance or removal of a large number of trees. To minimize this impact, the following measures shall be implemented by the Project Applicant in these areas: 1. Avoidance of the removal of trees that meet the size specifications of significant trees in the Public Works Code Article 16 shall occur to the maximum extent feasible, and any such trees that are removed shall be replaced at a minimum of 1:1 (1 impacted:1 replaced). The species used for replacement shall be consistent with DPW recommendations. 2. Street trees shall be planted in all new development areas. The species, size, and locations shall be consistent with the requirements specified in Planning Code Section 143, including, but not limited to, the following:	Project Applicant	During construction activities	DBI/SFRA	DBI/SFRA	Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
a) The street trees installed shall be a minimum of one 24-inch box tree for each 20 feet of frontage of the property along each street or alley, with any remaining fraction of 10 feet or more of frontage requiring an additional tree. Such trees shall be located either within a setback area on the lot or within the public right-of-way along such lot. b) The species of trees selected shall be suitable for the site, and, in the case of trees installed in the public right-of-way, the species and locations shall be subject to the approval by the DPW. Procedures and other requirements for the installation, maintenance, and protection of trees in the public right-of-way shall be as set forth in Public Works Code Article 16.					
3. If a significant tree or street tree will not be removed, but construction activities will occur within the dripline of such trees, a Tree Protection Plan shall be prepared by an International Society of Arboriculture (ISA) certified arborist, in accordance with the Urban Forestry Ordinance. This plan shall be submitted to the Planning Department for review and approval prior to issuance of a demolition or building permit. The Tree Protection Plan shall include measures to protect all parts of a tree from disturbance during construction, and may include the following: a) A site plan with tree species, trunk location, trunk diameter at breast height, and the canopy dripline area within development b) The use of protective fencing to establish	Project Applicant	Prior to issuance of a demolition or building permit	Planning Dept/SFRA	Planning Dept/SFRA	Approval of a Tree Protection Plan

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
an area to be left undisturbed during construction c) Protection specifications, including construction specifications such as boring instead of trenching for utility lines, or tree specifications such as drainage, fertilization, or irrigation measures d) Pruning specifications, if needed, to preserve the health of the tree and allow construction to proceed					
MM BI-18b.1 <u>Maintenance Dredging and Turbidity Minimization Measures for the Operation of the Marina.</u> Maintenance dredging for the marina could remove or generate sediment plumes that could impact special-status species, their habitats, and Essential Fish Habitat (EFH). To minimize this effect, the following measures shall be implemented by the Project Applicant:					
1. Conduct a detailed survey for native oysters in all suitable substrates within the marina, which includes the area between the land and breakwaters, after construction of the new breakwaters. This survey shall be conducted by a qualified oyster biologist at low tides that expose the maximum amount of substrate possible. Surveys can be conducted at any time of year, but late summer and early fall are optimal because newly settled oysters are detectable. This survey shall occur before any construction within the proposed marina location takes place to establish a baseline condition. If few or no oysters are observed on hard substrates that would remain in place after dredging, no further mitigation is required.	Project Applicant	Prior to in-water dredging activities, and at low tides preferably in late summer or early fall	NMFS	SFRA, in consultation with NMFS, as necessary	Approval by NMFS of Survey for native oysters

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Mitigation Measure	***Responsibility for Implementation***	***Mitigation Timing***	***Enforcement Responsibility***	***Monitoring Responsibility***	***Monitoring Actions/ Verification of Compliance***
2. If oysters are found at densities at or above 90 oysters per square meter[8] on suitable oyster-settlement substrates that would be removed or in areas where dredging sediment could settle out onto the oysters, a detailed sediment plume modeling study of the proposed marina operation shall be conducted to determine if the operations and maintenance of the marina would generate a substantial plume of sediment. This model shall include the local bathymetry and sediment information, tidal data, and detailed marina information (number and types of boats, etc). The model shall be prepared by a qualified harbor engineer (as approved by the City/Agency) with direct experience in this type of work within San Francisco Bay, prior to issuance of any permits for the construction of features directly associated with the marina. A report documenting modeling methods, input data, assumptions, results, and implications for increased rates of sedimentation shall be prepared and provided to NMFS during the USACE-directed Section 7 and EFH consultation for the marina. If the model demonstrates minimal sediment resuspension that would settle out before reaching sensitive habitats, no further mitigation is required.	Project Applicant	Prior to issuance of any permits for construction of marina structures	USACE; NMFS	SFRA, in consultation with NMFS and USACE, as necessary	Submittal of a detailed sediment plume modeling study to NMFS
3. If the sediment plume reaches sensitive shoreline habitats (substrates that support native oysters), compensatory mitigation shall be provided by the Project Applicant at a ratio recommended by NMFS for the type of habitat adversely affected. The Project Applicant shall	Project Applicant	Prior to issuance of any permits for construction of marina structures	NMFS	SFRA, in consultation with NMFS, as necessary	Development and approval of an Oyster Restoration Plan

[8] MACTEC Engineering and Consulting, Inc. 2008. *Oyster Point Marina Olympia Oyster Surveys Pre- and Post-Dredging February 2008, Oyster Point Marina, South San Francisco, California*. Prepared for PBS&J; Obernolte. 2009. Personal communication between MACTEC and PBS&J.

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Mitigation Measure	*Responsibility for Implementation*	*Mitigation Timing*	*Enforcement Responsibility*	*Monitoring Responsibility*	*Monitoring Actions/ Verification of Compliance*
retain a qualified oyster biologist (as approved by the City/Agency) to develop an Oyster Restoration Plan that shall be reviewed and approved by the City/Agency. This Plan shall include site selection, substrate installation, and monitoring procedures, and include the following components (unless otherwise modified by NMFS): ■ A suitable site for installation of replacement substrate would be one with adequate daily tidal flow, a location that would not be affected by maintenance dredging or other routine marina maintenance activities, and one that is lacking in appropriate settlement substrate. A location outside of the new breakwaters or in association with any eelgrass mitigation sites would be appropriate. ■ Although oysters would settle on a variety of materials, the most appropriate for restoration purposes is oyster shell. This is typically installed by placing the shell into mesh bags that can then be placed in piles on the seafloor of the mitigation site. Enough shell shall be installed under the guidance of a qualified oyster biologist to make up for the loss attributable to the Project. Mitigation shall occur after construction of all in-water elements of the Project within HPS Phase II. The restoration site shall be monitored on a regular basis by a qualified oyster biologist for a minimum of two years, or until success criteria are achieved if they are not achieved within two years. Monitoring shall involve routine checks (bi-monthly					

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during the winter and monthly during the spring and summer) to evaluate settlement, growth, and survival on the mitigation site. Success shall be determined to have been achieved when settlement and survival rates for oysters are not statistically significantly different between the mitigation site and either populations being impacted (if data are available) or nearby established populations (i.e., Oyster Point Marina).					
MM BI-18b.2 Implement BMPs to Reduce Impacts of Dredging To Water Quality. BMPs established in Appendix I of the Long-Term Management Strategy (LTMS) for management of disposal of dredge material in San Francisco Bay are designed specifically to minimize spread of contaminants Long-Term Management Strategy (LTMS) outside of dredge areas. All of these elements of the LTMS shall be applied to any proposed dredging or construction activities associated with the Project unless otherwise modified by the USACE, BCDC, or SFRWQCB in permit conditions associated with the proposed dredging activities associated with this Project (same as MM BI-19b.2).	Project Applicant	During dredging or construction activities	USACE, BCDC, SFRWQCB	SFRA, in consultation with regulatory agencies, as necessary	Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.
MM BI-19b.1 Work Windows to Reduce Maintenance Dredging Impacts to Fish during Operation of the Marina. According to the Long-Term Management Strategy (LTMS), dredging Projects that occur during the designated work windows do not need to consult with NMFS under the federal *Endangered Species Act* (FESA).[9] The window in which dredging is allowed for the protection of steelhead in the central Bay is June 1	Project Applicant	Dredging activities may not occur between March 1st and November 30th	NMFS	SFRA, in consultation with NMFS, as necessary	Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.

[9] US Army Corps of Engineers, US Environmental Protection Agency, San Francisco Bay Conservation and Implementation Commission, and San Francisco Bay Regional Water Quality Control Board. Long-term Management Strategy for the Placement of Dredge Material in the San Francisco Bay, Management Plan 2001.

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to November 30. The spawning season for the Pacific herring is March 1 to November 30.[10] Therefore, the window that shall be applied to minimize impacts to sensitive fish species (during which dredging activities cannot occur) is March 1 to November 30.					
MM BI-19b.2 Implement BMPs to Reduce Impacts of Dredging To Water Quality. BMPs established in Appendix I of the Long-Term Management Strategy (LTMS) are designed specifically to minimize spread of contaminants outside of dredge areas. All of these elements of the LTMS shall be applied to any proposed dredging or construction activities associated with the Project unless otherwise modified by the USACE, BCDC, or the San Francisco Bay Regional Water Quality Control Board in permit conditions associated with the proposed dredging activities associated with this Project (same as MM BI-18b.2).	Project Applicant	During dredging or construction activities	USACE, BCDC, SFRWQCB	SFRA, in consultation with regulatory agencies, as necessary	Construction Contractor to submit quarterly report of compliance activity, until deemed complete by SFRA.
MM BI-20a.1 Lighting Measures to Reduce Impacts to Birds. During design of any building greater than 100 feet tall, the Project Applicant and architect shall consult with a qualified biologist experienced with bird strikes and building/lighting design issues (as approved by the City/Agency) to identify lighting-related measures to minimize the effects of the building's lighting on birds. Such measures, which may include the following and/or other measures, will be incorporated into the building's design and operation. ■ Use strobe or flashing lights in place of continuously burning lights for obstruction	Project Applicant	During Project design	DBI/SFRA	DBI/SFRA	DBI/SFRA approval of building designs

[10] US Army Corps of Engineers, US Environmental Protection Agency, San Francisco Bay Conservation and Implementation Commission, and San Francisco Bay Regional Water Quality Control Board. Long-term Management Strategy for the Placement of Dredge Material in the San Francisco Bay, Management Plan 2001; Appendix F.

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lighting. Use flashing white lights rather than continuous light, red light, or rotating beams. ■ Install shields onto light sources not necessary for air traffic to direct light towards the ground. ■ Extinguish all exterior lighting (i.e., rooftop floods, perimeter spots) not required for public safety. ■ When interior or exterior lights must be left on at night, the developer and/or operator of the buildings shall examine and adopt alternatives to bright, all-night, floor-wide lighting, which may include: > Installing motion-sensitive lighting. > Using desk lamps and task lighting. > Reprogramming timers. > Use of lower-intensity lighting. ■ Windows or window treatments that reduce transmission of light out of the building will be implemented to the extent feasible. ■ Educational materials will be provided to building occupants encouraging them to minimize light transmission from windows, especially during peak spring and fall migratory periods, by turning off unnecessary lighting and/or closing drapes and blinds at night. ■ A report of the lighting alternatives considered and adopted shall be provided to the City/Agency for review and approval prior to construction. The City/Agency shall ensure that lighting-related measures to reduce the risk of bird collisions have been incorporated into the design of such buildings to the extent practicable.					
MM BI-20a.2 <u>Building Design Measures to Minimize Bird Strike Risk.</u>	Project Applicant	During Project design	DBI/SFRA	DBI/SFRA	DBI/SFRA approval of building designs

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During design of any building greater than 100 feet tall, the Project Applicant and architect will consult with a qualified biologist experienced with bird strikes and building/lighting design issues (as approved by the City/Agency) to identify measures related to the external appearance of the building to minimize the risk of bird strikes. Such measures, which may include the following and/or other measures, will be incorporated into the building's design. ■ Use non-reflective tinted glass. ■ Use window films to make windows visible to birds from the outside. ■ Use external surfaces/designs that "break up" reflective surfaces. ■ Place bird attractants, such as bird feeders and baths, at least 3 feet and preferably 30 feet or more from windows in order to reduce collision mortality. A report of the design measures considered and adopted shall be provided to the City/Agency for review and approval prior to construction. The City/Agency shall ensure that building design-related measures to reduce the risk of bird collisions have been incorporated to the extent practicable.					
SECTION III.O (PUBLIC SERVICES)					
MM PS-1 Site Security Measures During Construction. During site preparation and in advance of construction of individual buildings, fencing, screening, and security lighting shall be provided by the Project Applicant. During non-construction hours the site must be secured and locked, and ample security lighting shall be provided.	Project Applicant	During site preparation and in advance of construction of individual buildings, fencing, screening, and security lighting	DBI/SFRA	DBI/SFRA	DBI/SFRA approval of construction documents. Construction Contractor to submit quarterly report of compliance activity, until deemed

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					complete by SFRA.
		SECTION III.P (RECREATION)			
MM RE-2 Phasing of parkland with respect to residential and/or employment generating uses. Development of the Project and associated parkland shall generally proceed in four phases, as illustrated by Figure II-16 (Proposed Site Preparation Schedule) of Chapter II (Project Description) of this EIR. To ensure that within each phase parks and population increase substantially concurrently, development shall be scheduled such that adequate parkland is constructed and operational when residential and employment-generating uses are occupied. The following standards shall be met: ■ No project development shall be granted a temporary certificate of occupancy if the City determines that the new population associated with that development would result in a parkland-to-population ratio within the Project site lower than 5.5 acres per 1,000 residents/population, as calculated by the Agency. ■ For the purposes of this mitigation measure, in order for a park to be considered in the parkland-to-population ratio, the Agency must determine that within 12 months of the issuance of the temporary certificate of occupancy, it will be fully constructed and operational, and, if applicable, operation and maintenance funding will be provided to the Agency.	Project Applicant	Prior to issuance of a temporary certificate of occupancy	DBI/SFRA	DBI/SFRA	Issuance of a temporary certificate of occupancy
		SECTION III.Q (UTILITIES)			
MM UT-2 Auxiliary Water Supply System.	Project Applicant	Prior to issuance of	San Francisco Fire Dept.	SFFD/SFRA	Approval of

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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 off-site 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.		occupancy permits			Infrastructure Plan; Deemed complete upon issuance of temporary certificate of occupancy.
MM UT-3a <u>Wet-Weather Wastewater Handling.</u> Prior to approval of the Project's wastewater infrastructure construction documents for any new development, the Project Applicant shall demonstrate to the San Francisco Public Utilities Commission (SFPUC), in writing, that there will be no net increase in wastewater discharges during wet-weather conditions from within the Project Area boundary to the Bayside System compared to pre-Project discharges. This may be accomplished through a variety of means, including, but not limited to: ■ Temporary on-site retention or detention of flows to the system ■ Separation of all or a portion of the stormwater and wastewater system at Candlestick Point	Project Applicant	Prior to approval of wastewater infrastructure construction documents for new developments	SFPUC	SFPUC	Approval of wastewater infrastructure construction documents
MM UT-5a <u>Construction Waste Diversion Plan.</u> The Project Applicant shall submit a Construction Waste Diversion Plan to the Director of the San Francisco Department of the Environment demonstrating a plan to divert at least 75 percent of or more of the total construction and demolition debris produced as the result of the Project (such	Project Applicant	Prior to the issuance of building permits	SFRA/Department of the Environment	SFRA/Department of the Environment	Submittal and approval of a Construction Waste Diversion Plan

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as wood, metal, concrete, asphalt, and sheetrock) from landfill interment, which is required by the City's Green Building Ordinance. The Plan shall be submitted and approved by the Director of the San Francisco Department of the Environment before the issuance of building permits. This Plan shall include (1) identification of how much material resulting from demolition of existing facilities could be reused on site (e.g., existing asphalt and concrete could be removed, crushed, reconditioned, and reused as base material for new roadways and parking lots); (2) the extent to which materials could be sorted on site (e.g., through piecemeal demolition of selected facilities to extract recyclable materials), (3) the amount of material that would be transported to an off-site location for separation; and (4) the amount of materials that cannot be reused or recycled and would be interred at a landfill, such as the Altamont Landfill in Livermore.					
MM UT-7a Site Waste Management Plan. The Project Applicant shall prepare a Site Waste Management Plan (SWMP) in cooperation with the Agency to describe the methods by which the Project shall minimize waste generation not otherwise covered by existing City regulatory policies, with the goal of achieving a diversion rate of at least 72 percent, consistent with the City's existing diversion rate in 2008. The SWMP shall be submitted to the Department of Environment (DOE) for approval prior to the issuance of the first development permit for the Project.	Project Applicant	Prior to the issuance of the first development permit	SFRA/ Department of the Environment	SFRA/Department of the Environment	Submittal and approval of a Site Waste Management Plan
SECTION III.S (GREENHOUSE GAS EMISSIONS)					
MM GC-1 Plant up to 10,000 net new trees at the Project site and in the community.	Project Applicant	Throughout the construction phase	SFRA	SFRA	Deemed complete upon issuance of temporary certificate

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					of occupancy.
MM GC-2 Exceed the 2008 Standards for Title 24 Part 6 energy efficiency standards for homes and businesses would by at least 15 percent.	Project Applicant	Throughout the construction phase	SFRA	SFRA	Deemed complete upon issuance of temporary certificate of occupancy.
MM GC-3 Install ENERGY STAR appliances, where appliances are offered by homebuilders.	Project Applicant	Throughout the construction phase	SFRA	SFRA	Deemed complete upon issuance of temporary certificate of occupancy.
MM GC-4 Use light emitting diode (LED) based energy efficient street lighting.	Project Applicant	Throughout the construction phase	SFRA	SFRA	Deemed complete upon issuance of temporary certificate of occupancy.