CANDLESTICK POINT–HUNTERS POINT SHIPYARD PHASE II DEVELOPMENT PLAN PROJECT

Comments & Responses

Volume VII: Comments & Responses (Section A through Letter 49)

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Comments and Responses

A. INTRODUCTION

A.1 Purpose of the Comments and Responses Document

In accordance with Section 15088 of the *California Environmental Quality Act* (CEQA),[1] the City and County of San Francisco (City) Planning Department and the San Francisco Redevelopment Agency (Agency), serving as co-Lead Agencies, have reviewed and considered both written and oral comments on environmental issues raised from agencies, organizations, and persons who reviewed the Draft Environmental Impact Report (EIR) and have prepared written responses to those comments. The Lead Agencies have responded to comments received during the comment period, as well as comments received after the close of the comment period. The comments and responses to all comments received are provided in the Comments & Responses (C&R) document, which is included as Volume VII, Volume VIII, and Volume IX of this EIR. All appendices to the C&R document are contained in Volume X of this EIR.

The Comments and Responses document will be included in the Final EIR, which, together with the Mitigation Monitoring and Reporting Program (MMRP), Findings of Fact, and Statement of Overriding Considerations, serves as the environmental document used by the Lead Agencies when considering approval of the Project. A Final EIR is defined by Section 15362(b) of the CEQA Guidelines as "… containing the information contained in the Draft EIR; comments, either verbatim or in summary received in the review process; a list of persons commenting; and the responses of the Lead Agency to the comments received."

A.2 Environmental Review Process

Lennar Urban filed an Environmental Evaluation application (EE application) with the Planning Department on August 27, 2007. The filing of the EE application initiated the environmental review process. The EIR process provides an opportunity for the public to review and comment upon the Project's potential environmental effects and to further inform the environmental analysis. As a first step in complying with the procedural requirements of CEQA, the Notice of Preparation (NOP) process was used to determine whether any aspect of the Project, either individually or cumulatively, may cause a significant effect on the environment and, if so, to narrow the focus (or scope) of the environmental analysis.

The Agency and City filed the NOP with the California Office of Planning and Research, State Clearinghouse, as an indication that an EIR would be prepared. In turn, the State Clearinghouse distributed the NOP to public agencies and interested parties for a 30-day public review period that began on August 31, 2007. The NOP was distributed to responsible or trustee agencies in accordance

[1] A complete list of acronyms and abbreviations used in this document is provided in Section F.31 (Changes to Chapter VIII [Acronyms/Abbreviations and Glossary]).

with Section 15082 of the CEQA Guidelines. In addition, the NOP was also sent to organizations, companies, and/or individuals that the Agency and the City believed might have an interest in the Project. In response to the NOP, nine comment letters were submitted to the City by public agencies, organizations, and individuals.

The Agency and the City held two public scoping meetings for the EIR, on September 17, 2007, and September 25, 2007. The scoping meetings provided the public and affected governmental agencies with an opportunity to present environmental concerns regarding the Project. Agencies or interested persons that did not respond during the NOP public review period or the scoping meetings also had an opportunity to comment during the public review period for the Draft EIR, as well as at scheduled hearings on the Project.

The Draft EIR for the Candlestick Point–Hunters Point Shipyard Phase II Development Plan (the Project) was circulated on November 14, 2009, for review and comment to the public, other interested parties, agencies that commented on the Initial Study (IS)/NOP, and surrounding jurisdictions for a 45-day public review period that was to conclude on December 28, 2009. However, at the San Francisco Redevelopment Agency Commission (Agency Commission) public hearing conducted on December 15, 2009, the Agency Commission voted to extend the comment period to January 12, 2010, and scheduled a second Agency Commission public hearing on the Project for January 5, 2010. The San Francisco Planning Commission (SFPC) concurred with the Agency Commission's decision to extend the comment period. The Draft EIR was circulated to State agencies for review through the State Clearinghouse. In addition, the Draft EIR was also circulated to federal, regional, or local agencies that have discretionary authority over some aspect of the Project, as well as organizations or individuals that requested a copy of the Draft EIR or those who might have an interest in the Project. Copies of the Draft EIR were also available for public review during normal business hours at the following locations:

San Francisco Planning Department
1650 Mission Street, Fourth Floor
San Francisco, CA 94103

San Francisco Redevelopment Agency
One South Van Ness Street, Fifth Floor
San Francisco, CA 94103

The EIR was also posted for public review at http://www.sfplanning.org and www.sfgov.org/sfra.

After completing the C&R document, and before approving the Project, the Lead Agencies must make the following three certifications as required by Section 15090 of the CEQA Guidelines:

- That the Final EIR has been completed in compliance with CEQA
- That the Final EIR was presented to the decision-making body of the Lead Agency, and that the decision-making body reviewed and considered the information in the Final EIR prior to approving the project
- That the Final EIR reflects the Lead Agency's independent judgment and analysis

Pursuant to Section 15091(a) of the CEQA Guidelines, if an EIR that has been certified for a Project identifies one or more significant environmental effects, the Lead Agency must adopt "Findings of Fact." For each significant impact, the Lead Agency must make one of the following findings:

(1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the EIR.

(2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

(3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Each finding must be accompanied by a brief explanation of the rationale for the finding. The Findings of Fact are presented in a separate stand-alone document that will be presented to the Lead Agencies, if they elect to approve the Project.

Additionally, pursuant to Section 15093(b) of the CEQA Guidelines, when a Lead Agency approves a project that would result in significant unavoidable impacts that are disclosed in the Final EIR, the agency must state in writing its reasons for supporting the approved action. This "Statement of Overriding Considerations" must be supported by substantial information in the record, which includes the Final EIR. Because the Project would result in significant unavoidable impacts, the Lead Agencies would be required to adopt a Statement of Overriding Considerations, if they elect to approve the Project.

Pursuant to Section 15091(d) of the CEQA Guidelines, the Lead Agency must adopt, in conjunction with the findings, a program for reporting or monitoring the changes that it has either required in the Project or made a condition of approval to avoid or substantially lessen environmental effects. These measures must be fully enforceable through permit conditions, agreements, or other measures. This program is referred to as the MMRP, and it is provided as a stand-alone document, separate from this EIR.

A.3 Document Organization

This Comments and Responses document is organized into the following sections:

- Section **A: Introduction**—This section describes the purpose of the C&R document; provides a summary of the environmental review process through certification of the EIR; and describes the organization of the C&R document.
- **Section B: Refinements Since Publication of the Draft EIR**—This section describes refinements to the Project, variants, mitigation measures, and/or alternatives that have occurred since publication of the Draft EIR.
- **Section C: Project Approvals**—This section describes the land uses and components of the Project, variants, and/or alternatives that could be approved. It also describes the various ancillary documents that would require approval along with certification of the EIR, including, but not necessarily limited to, the Design for Development (also sometimes referred to as the D4D), Disposition and Development Agreement (also sometimes referred to as the DDA), and General Plan and Redevelopment Plan amendments.
- **Section D: List of Persons Commenting**—This section contains a list of the agencies, organizations, and individuals who submitted written comments during the public review period or spoke at one or more of the public hearings on the Draft EIR. Letter numbers were assigned to

each comment letter as it was received. Two tables are provided, each showing letter number, commenter, date of comment letter, page number where comment letter begins, and page number where response begins. One of the tables organizes the letters numerically (by letter number) and the other table organizes the letters by federal, state, regional, and local agencies, boards, and commissions; organizations; and individuals.

- **Section E: Comments and Responses**—This section contains responses to all significant environmental issues raised with respect to the contents of the Draft EIR. Each comment letter has been assigned a comment code, and comments in each letter are assigned a number. For example, the letter from the California State Lands Commission is Letter 93. The comments in the letter are numbered beginning 93-1 through the end, and the responses are similarly numbered. The comment letter is inserted in its entirety, followed by the responses to the individual comments.

  Any text changes that clarify or correct information in the Draft EIR in response to a comment on the Draft EIR are contained in this section. Single-underlined text is used to represent language added or modified in the Draft EIR; ~~strikethrough~~ is used to represent language deleted from the Draft EIR. In addition, figures have also been revised and/or added. A figure that is provided to simply clarify a response will only appear in the C&R document and not in the Draft EIR; these figures are assigned a C&R figure number, and they are located in Section E (Comments and Responses) of this document. Revised Draft EIR figures are indicated with the word "Revised" next to the title, and new Draft EIR figures are indicated with the word "New" next to the title.
- **Section F: Draft EIR Revisions**—This section contains all text changes to the Draft EIR, including those that are made in response to comments received or as staff-initiated text changes. The text changes are presented in the order of the Draft EIR table of contents. New and/or revised Draft EIR figures are also located in this section.
- **Section G: References**—This section contains all references used in this document.

B. REFINEMENTS SINCE PUBLICATION OF THE DRAFT EIR

The Draft EIR analyzes the maximum build-out that could occur on the Project site assuming implementation of the Project's land use plan and the proposed amendments to the Bayview Hunters Points (BVHP) and Hunters Point Shipyard (HPS) Redevelopment Plans. Consequently, the Draft EIR assumes a total number of dwelling units for residential uses; a maximum square footage for retail, office, research and development (R&D), community services, and art-related uses; a total number of hotel rooms; a total number of seats for the football stadium and performance venue; a total number of slips for the marina; an overall acreage of parks and open space; and a total number of parking spaces.

Subsequent to circulation of the Draft EIR, the Applicant, City, and Agency have made minor refinements to the Project, two of the variants, and one of the alternatives in response to public comments, to reduce impacts, to provide additional flexibility for Project implementation, and/or to respond to changing construction technologies, community priorities, site-specific urban design goals, and real estate market demands while meeting the Project objectives. This section provides a summary of the refinements that are analyzed in Section F (Draft EIR Revisions) of this document. The Project refinements do not affect the overall maximum development envelope, including the total amount of development or building heights or footprints as compared to what was described and analyzed in the Draft EIR. For example, minor revisions have been made that redistribute some housing units from one

location on Candlestick Point to another on Candlestick Point, but the total amount of units to be developed does not change. Likewise, the effects of refinements of Project variants (Variant 2A and Variant 3 [new Tower Variant D]) are within the range of effects identified in the Draft EIR for the Project and its variants. As substantiated by the analysis provided in Section F (Draft EIR Revisions), none of the proposed refinements results in a new significant environmental impact or a substantial increase in the severity of impacts. Further, there are no new feasible mitigation measures or feasible alternatives that the Project Applicant declines to adopt.

B.1 Project Refinements

Building Preservation

The Project analyzed in the Draft EIR proposed demolishing Buildings 208, 211, 224, 231, and 253 at the HPS Phase II site. These buildings are identified in the Draft EIR as historic resources. Building 208 would now be retained as an element of the cultural landscape, but would not be occupied. The retention of Building 208 would reduce the severity of the historic resources impact and slightly reduce the construction-related impacts of the Project as described in the EIR (i.e., traffic, air quality, and noise), as less building area would be demolished. In all other respects, because the land use plan would not be changed, this refinement would not result in new significant impacts or an increase in the severity of impacts, as described in Section F (Draft EIR Revisions) of this document.

Development Schedule

Recent economic forecasts, as well as updated entitlement, Navy transfer, and permitting schedules, have been used to refine the development schedule for CP-HPS Phase II. Site preparation activities, including demolition and infrastructure construction, would begin 1 to 2 years later than originally planned, and the completion of building construction has been extended from 2029 to 2031, with full occupancy by 2032.

The updated development schedule takes advantage of recent market analyses to refine the Project housing program and provide a steady, deliberate buildup of research and development space. As with the original development schedule, the updated development schedule jump-starts the housing program with the construction of over 3,000 homes in the first phase. However, rather than concentrating the construction of more than 6,000 homes in the following two phases as originally planned, the current schedule provides for the construction of 2,000, 2,500, and 2,800 homes over the following three phases, respectively.

Similarly, research and development space is now anticipated to steadily build over each of the first three development phases, whereas the original schedule front-loaded over 2,275,000 sf of research and development construction in the first phase of development.

Total development remains the same as identified in the Draft EIR. Project Documents provide for the horizontal land development of the Project to be built out in four Major Phases, with vertical development occurring during that period and beyond. Specifically, Major Phase 1 (2011–2019) includes demolition and abatement between 2011 and 2015, utilities and infrastructure improvements from 2013 to 2017, and structural shoreline improvements from 2013 to 2017. The rebuilding of Alice Griffith,

together with the development of 3,160 residential units, 84,000 sf of neighborhood retail, 583,000 sf of R&D, and 38,000 sf of community facilities would occur in Major Phase 1. Also, if the 49ers satisfy the Stadium Conditions, the Developer must build significant infrastructure for the new 49ers stadium. Major Phase 2 (2016–2021) would include development of 2,005 residential units, 635,000 sf of regional retail, 76,000 sf of neighborhood retail, 150,000 sf of office, 150,000 sf hotel, 842,000 sf R&D, the 10,000-seat performance venue, and 50,000 sf of community facilities in CP North, CP Center, HPS North, HPS Village Center, and the R&D District on HPS Phase II. Major Phase 3 (2020–2027) would include development of 2,505 residential units, 90,000 sf of neighborhood retail, and 1,075,000 sf of R&D in CP North, CP Center, CP South, and completion of the R&D District on HPS Phase II. Major Phase 4 would include development of 2,830 residential units and 12,000 sf of community facilities in the Jamestown District and CP South. Full build-out of HPS Phase II would occur by 2027 and full build-out of Candlestick Point would occur in 2031, with final occupancy in 2032.

An environmental analysis of this refinement, with associated illustrative graphics, is contained in Section F (Draft EIR Revisions) of this document. This refinement would not result in any new significant environmental impact or an increase in the severity of any impact identified in the Draft EIR (refer to Appendix A1 [PBS&J, Analysis of Project Development Schedule Modifications and Environmental Impact Report, April 10, 2010], Appendix A2 [PBS&J, Analysis of Revised Development Schedule Compared to the Noise Impacts Analyzed in the Draft EIR, March 25, 2010], Appendix A3 [LCW Consulting, CP-HPS Phase II Development Plan Transportation Study—Revised Project Phasing, March 23, 2010], Appendix A4 [Fehr & Peers, Roadway and Transit Phasing Plan, March 17, 2010], and Appendix A5 [ENVIRON, Updated Project Phasing Effect on Air Quality and Climate Change Analyses Candlestick Point–Hunters Point Shipyard Phase II Development Plan, April 26, 2010]).

B.2 Variant Refinements

Variant 2A: Housing/R&D Variant

A refinement of Variant 2 (Housing Variant)—Variant 2A (Housing/R&D Variant)—has been identified that would allow for additional R&D uses on the stadium site, along with housing, in the event the 49ers do not choose to develop a stadium in the HPS Phase II area. As compared to the Housing Variant (Variant 2, described on Draft EIR pages IV-72 through IV-81), the Housing/R&D Variant (Variant 2A) would relocate 275 residential units from Candlestick Point to HPS Phase II and redistribute 50 residential units within Candlestick Point. The Housing/R&D Variant (Variant 2A) would not develop the uses in the Jamestown District of Candlestick Point that would occur under the Housing Variant (Variant 2). If the parcels on the privately owned block in the Jamestown District and on the four additional privately owned blocks in Candlestick Point North District (currently developed with an RV park) are not acquired by the Project Applicant, the property owners could develop their property under the BVHP Redevelopment Plan via an Owner Participation Agreement or continue the current non-conforming use. The total amount of residential development in the Project would remain at 10,500 units, the same as for the Housing Variant (Variant 2).

An additional 500,000 square feet (sf) of R&D land use would be constructed on the stadium site as compared to the Housing Variant (Variant 2), for a total of 3,000,000 sf of R&D uses at the HPS

Phase II site. The Draft EIR analyzed a total of 5,000,000 sf of R&D uses under the R&D Variant (Variant 1, described on pages IV-4 through IV-12 of the Draft EIR) and 2,500,000 sf under the Housing Variant (Variant 2); therefore, the increased amount of R&D square footage under the Housing/R&D Variant (Variant 2A) (e.g., 3,000,000 sf) would fall within the range of development programs analyzed by the R&D Variant (Variant 1) and the Housing Variant (Variant 2).

The total amount of park acreage with the Housing/R&D Variant (Variant 2A) would be 326.6 acres, which represents a decrease of approximately 10 acres as compared to the Project (which would provide 336.4 acres) and about 22.8 acres less than the Housing Variant (Variant 2) (which would provide 349.4 acres) because of increased development on the stadium site. However, the decrease in park acreage would not reduce park acreage below the identified threshold of 5.5 acres per 1,000 residents, as further described in Section F (Draft EIR Revisions) of this document.

The Housing/R&D Variant (Variant 2A) would not result in any new significant environmental impact or an increase in the severity of any impact identified in the Draft EIR. An environmental analysis of these refinements, with associated illustrative graphics, is contained in Section F (Draft EIR Revisions) of this document. Also refer to Appendix T4 (ENVIRON, Updated Air Quality Analysis Candlestick Point–Hunters Point Shipyard Phase II Development Plan—Updated Variants 2A and 3 [Tower Variant D], Alternative 2, and Subalternative 4A, April 26, 2010), Appendix T5 (ENVIRON, Updated Greenhouse Gas Emissions Calculation for Candlestick Point–Hunters Point Shipyard Phase II Development Plan—Variants 2A and 3 [Tower Variant D], Alternative 2, and Subalternative 4A, March 12, 2010), Appendix T6 (LCW Consulting, CP-HPS Phase II Development Plan Transportation Study—Project Variant 2A, March 15, 2010), and Appendix T7 (LCW Consulting, CP-HPS Phase II Development Plan Transportation Study—Subalternative 4A, April 8, 2010).

Variant 3: Tower Variant D

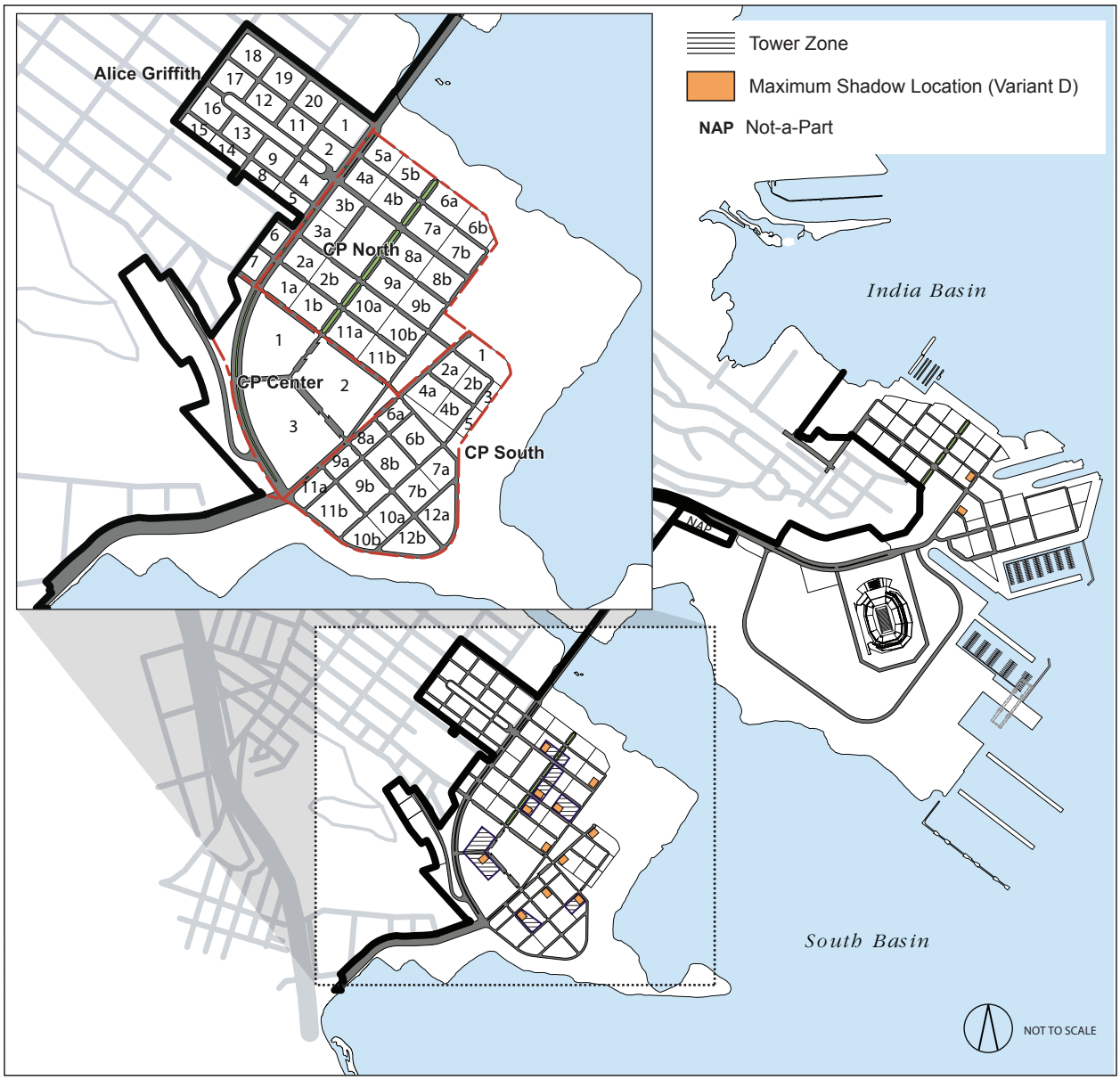
The Draft EIR identified proposed maximum building heights and tower placements for the Project in Figure II-5 (Proposed Maximum Building Heights), Draft EIR page II-12. The Draft EIR also analyzed the effects of different tower placements and heights in the Tower Variant, which considered three alternative tower placements and heights, denoted Tower Variants A, B, and C. (Refer to Draft EIR Section IV.D [Variant 3: Candlestick Point Tower Variants], Draft EIR pages IV-140 through -178.) In implementing the Project, the Design For Development, described in Chapter II (Project Description), would guide building heights, tower placements, and other detailed Project design specifications. Since publication of the Draft EIR, the Design For Development documents have been refined to encourage certain locations for towers based on a variety of tower location principles, including but not limited to clustering towers near the center of the development, formation of skylines, adjacency to transit stops, reducing shadow impacts, maintaining view corridors, and limiting adverse wind effects. Vertical development of the Project would occur over 15 to 20 years, and flexibility in tower locations is needed to ensure that the Project would be able to respond to changing construction technologies, community priorities, site-specific urban design goals, and real estate market demands while meeting the Project objectives. The Design For Development documents would provide this basic flexibility while adhering to the tower location principles described above by creating allowable "tower zones" for high-rise buildings.

Like Variant 3 (Tower Variants A, B, and C), Variant 3 (Tower Variant D) is based on height, bulk, and massing requirements for vertical development within the Project site as described in the Design For Development. The Design For Development identifies specific locations for certain towers and allows towers in certain "tower zones." Where the Design For Development allows placement of towers within a "tower zone," the Tower Variant D analysis assumes a specific tower location within proposed tower zones. Tower Variant D also relocates one tower that is proposed for Candlestick Point South Block 2a under the Project and Tower Variants A, B, and C to a tower zone in Candlestick Point North Block 9b pursuant to refinements in the Design For Development. Figure C&R-1 (Tower Variant D Tower Zones Map) indicates where the Design For Development identifies tower zones and the assumed location of towers within those zones for purposes of the Tower Variant D analysis.

Like Variant 3 (Tower Variants A, B, and C), Variant 3 (Tower Variant D) assumes a 24-story tower at Candlestick Point Center. However, for the purpose of this analysis, Tower Variant D shifts some towers within allowed tower zones to locations that could create more shadow impacts on San Francisco Recreation and Park Department (SFRPD) property. Specifically, towers are shifted within the tower zones at Candlestick Point North Blocks 8a and 9a, and the tower zone at Block 10a. Except for the tower on Block 2a, tower locations at Candlestick Point South remain unchanged relative to the Project (refer to Figure C&R-1). All other tower locations in Candlestick Point and HPS Phase II are unchanged from the Tower Variants analyzed in the Draft EIR. In addition, Tower Variant D would have 12 towers at Candlestick Point, compared to 11 towers with the Project and with Tower Variants A, B, and C.

Tower Variant D also analyzes a 12,500-square-foot maximum floor plate for high-rise towers. The Project described in Draft EIR Chapter II analyzed a 10,500-square-foot maximum floor plate for the towers, built on podiums. The larger floor plate analyzed in Tower Variant D would enable greater efficiency and flexibility in design of floor plans. The proposed size of the podiums analyzed in the Draft EIR would be sufficient to accommodate the larger floor plates and would not change. Therefore, the overall "footprint" of the towers would remain the same, and the amount of impermeable surface would not be increased. The total number of dwelling units proposed with the Project would not change. All other features of Tower Variant D would be the same as the Project, with the same land uses and the same total amount of development, e.g., the total number of residential units.

Any changes in the environmental analysis as a result of these refinements, including graphic illustrations, are reflected in Section F (Draft EIR Revisions) of this document. The impacts of refinements to the Tower Variant would be limited to aesthetics and shadows. No other resource areas would be affected. Overall, these refinements would not result in any new significant environmental impacts or increase the severity of previously identified environmental impacts. Also refer to Appendix T4 (ENVIRON, Updated Air Quality Analysis Candlestick Point–Hunters Point Shipyard Phase II Development Plan—Updated Variants 2A and 3 [Tower Variant D], Alternative 2, and Subalternative 4A, April 26, 2010) and Appendix T5 (ENVIRON, Updated Greenhouse Gas Emissions Calculation for Candlestick Point–Hunters Point Shipyard Phase II Development Plan—Variants 2A and 3 [Tower Variant D], Alternative 2, and Subalternative 4A, March 12, 2010).



SOURCE: Lennar Urban, 2010.

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FIGURE C&R-1

Candlestick Point — Hunters Point Shipyard Phase II EIR

TOWER VARIANT D TOWER ZONES MAP

B.3 Modifications to Mitigation Measures

Since the publication of the Draft EIR, some mitigation measures have been edited to correct typographical errors, add minor information or provisions, or clarify how, by whom, and/or when the measure would be implemented, but do not represent substantive changes in the mitigation measure.

A few mitigation measures were modified as a result of further study and analysis or in response to comments received on the Draft EIR. Those mitigation measures that include more substantive changes, but do not alter any of the significance conclusions in the EIR are identified as revised in Section F (Draft EIR Revisions) of this document and include:

- **MM TR-51**—The revision adds language that clarifies that implementation of the Transportation Management Plan applies to Variants 1, 2, and 2A and conforms the EIR text to the text in Appendix D of the EIR (Transportation Study)
- **MM HY-12a.2**—The Draft EIR describes an Adaptive Management Plan (Section III.M, pages III.M-101 and -102) for ensuring the continuing protection of shoreline, public facilities, and public access improvements should sea level rise occur. Additions to MM HY-12a.2 further amplify specific actions, the timing for these actions, and the parties responsible for establishing the mechanism to fund and implement the Adaptive Management Plan.
- **MM BI-4a.1**—This mitigation measure has been modified to provide greater assurance of wetland restoration success by requiring a greater percentage of native vascular species in the restored wetlands.
- **MM BI-a.2**—This mitigation measure has been modified to clarify how temporarily impacted wetlands would be restored.
- **MM BI-5b.1 and MM BI-5b.2**—The revision removes the qualifier for implementation of mitigation measure MM BI-5b.2 and acknowledges that future locations of eelgrass beds may be different from baseline conditions, thereby necessitating eelgrass surveys prior to all in-water activities at HPS and the Yosemite Slough. This revision ensures that both MM BI-5b.1 and MM BI-5b.2 would be implemented in all identified circumstances.
- **MM BI-9b**—The modification specifies that no unsheathed creosote-soaked wood piling shall be used to ensure additional protections to aquatic organisms and restricts all pile-driving activities during the Pacific herring spawning season to provide additional protection of the Pacific herring.
- **MM HY-13b**—As originally drafted, mitigation measure MM HY-13b required that the Project Applicant obtain a Floodplain Development Permit from the City. However, the City has not established a process for the issuance of such permits. The purpose of mitigation measure MM HY-13b was to reduce the potential of placing structures in a 100-year flood hazard area. This goal is adequately accomplished through mitigation measure MM HY-12a.1 (Finished Grade Elevations above Base Flood Elevations). Hence, mitigation measure MM HY-13b has been deleted, and the analysis instead relies on MM HY-12a.1.

B.4 Subalternative 4A: CP-HPS Phase II Development Plan with Historic Preservation

Some commenters have asked that the Draft EIR include a historic preservation alternative keeping all other Project components the same. Alternative 4 (Reduced CP-HPS Phase II Development, Historic Preservation) was included in the Draft EIR to analyze an alternative with preservation of all five

historically eligible structures (Buildings 208, 211, 224, 231, and 253).[2] Although the text of Alternative 4 in the Draft EIR inadvertently omitted reference to Buildings 208 and 231, this was a typographical error and the text has been revised in the Draft EIR (Section F [Draft EIR Revisions]) to clarify that four buildings would be retained and/or rehabilitated according to the Secretary of the Interior's Standards. (Building 208 is included in the Project, so Alternative 4 has been clarified to indicate that it includes Buildings 211, 224, 231, and 253.) That Alternative 4 includes a reduced development plan compared to the Project does not affect the analysis of the historic preservation component in Alternative 4.

When considering Project approval, the Lead Agencies have the flexibility to approve all or any portion of the Project. This flexibility extends to approving all or any portion of an alternative as well. Therefore, the Lead Agencies could adopt the Project ***and*** the historic preservation component of Alternative 4 without the EIR providing a separate analysis of such an option. Both the Project's land use plan and the historic preservation option were thoroughly analyzed in the Draft EIR. The Project ultimately approved by the Lead Agencies could include a combination of components of the Project, any of the variants, and/or any of the alternatives.

The analysis of the historic preservation component of Alternative 4 would not change regardless of whether that element is combined with a variant, another alternative, or the Project. While not required, a subalternative to Alternative 4—Subalternative 4A (CP-HPS Phase II Development Plan with Historic Preservation)—has been included in the Final EIR to fully respond to comments. This is not a substantially different alternative, but one that combines the Project's development plan with preservation of the historically eligible buildings, both of which were analyzed in the Draft EIR. Similar to Alternative 4, (Draft EIR Chapter VI, pages VI-93 through -126), Subalternative 4A would retain the four historic buildings (Buildings 211, 224, 231, and 253) that would otherwise be demolished under the Project. In order to accommodate the historic preservation component in the Project's development plan, some adjustments in the location and intensity of some of the Project's land uses and a more cost-effective approach for providing sea level rise protection for the historic resources area have been included in this subalternative. In all other respects, Subalternative 4A assumes a development plan that is identical to the Project.

This alternative would preserve the structures and contributing features of the California Register of Historical Resources (CRHR)-eligible Hunters Point Commercial Drydock and Naval Shipyard Historic District. This alternative, like the Project, would retain Drydocks 2 and 3 and four buildings (Buildings 140, 204, 205, and 207) previously identified as historic resources in National Register of Historic Places (NRHP)-eligible Hunters Point Commercial Drydock Historic District. This alternative and the Project would also retain Drydock 4, considered individually eligible for the NRHP, and Building 208, part of the CRHR-eligible historic district. Unlike the Project, Subalternative 4A would retain Buildings 211, 224, 231, and 253. Buildings 211, 231, and 253 would be rehabilitated under the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Secretary's Standards) to accommodate approximately 338,000 gsf of R&D and 1,000 parking spaces. Total floor area for R&D would remain the same as the Project, i.e., 2,500,000 gsf. Building 231 would be reused for parking. Buildings 211 and 253 would accommodate R&D uses. Building 208 would

[2] It should be noted that, since publication of the Draft EIR, the decision has been made to retain Building 208 under all development scenarios

be retained as an element of the cultural landscape, the same as with the Project, and Building 224, the air raid shelter, would be retained as museum space.

As discussed on Draft EIR page III.J-33, the Project proposes to retain the buildings and structures in the potential Hunters Point Commercial Drydock District, identified in 1998 as eligible for listing in the NRHP, including Drydocks 2 and 3 and Buildings 140, 204, 205, and 207 that would be rehabilitated using the Secretary's Standards. As shown in Figure III.J-2, Draft EIR page III.J-23, the Hunters Point Commercial Drydock and Naval Shipyard Historic District encompasses the smaller Hunters Point Commercial Drydock District. Thus, Subalternative 4A would retain all significant historic resources identified in the Draft EIR.

The other uses at HPS Phase II (artists' studios, community services, marina, and football stadium) would be the same as with the Project. Subalternative 4A would include the Yosemite Slough bridge, shoreline improvements, and the State Park land agreement, as with the Project and Alternative 4.

The Project's land use plan would be implemented with Subalternative 4A in terms of total square footage of land uses and district locations. The displaced R&D uses that, as described in the Draft EIR, would have been built at the location of Buildings 211, 224, 231, and 253 would be distributed throughout the remainder of the HPS Phase II. However, the building heights in the R&D District on HPS Phase II immediately west of the site of Buildings 211, 224, 231, and 253 would increase from 85 to 120 feet to accommodate the displaced square footage.

Subalternative 4A would also retain existing grades, allowing railroad spurs and other historic elements to remain. A wave-protection berm is proposed seaward of the eligible historic district to accommodate a 36-inch sea level rise. The San Francisco Bay Trail (Bay Trail) would run on top of the levee. All other components of Subalternative 4A would remain the same as under the Project. An environmental analysis of this subalternative, including appropriate illustrative graphics, is included in Section F (Draft EIR Revisions) of this document. Also refer to Appendix T4 (ENVIRON, Updated Air Quality Analysis Candlestick Point–Hunters Point Shipyard Phase II Development Plan—Updated Variants 2A and 3 [Tower Variant D], Alternative 2, and Subalternative 4A, April 26, 2010), Appendix T5 (ENVIRON, Updated Greenhouse Gas Emissions Calculation for Candlestick Point–Hunters Point Shipyard Phase II Development Plan—Variants 2A and 3 [Tower Variant D], Alternative 2, and Subalternative 4A, March 12, 2010), and Appendix T7 (LCW Consulting, CP-HPS Phase II Development Plan Transportation Study—Subalternative 4A, April 8, 2010).

C. PROJECT APPROVALS

The Project that is being proposed for approval by the San Francisco Planning Commission and the San Francisco Redevelopment Agency is the Project identified in Chapter II of the Final EIR, as modified by the Candlestick Point Tower Variants (Variant 3, Tower Variant D, concerning tower locations) and the 49ers/Raiders Shared Stadium Variant (Variant 5, concerning use of the stadium by both the Raiders and the 49ers).

In addition, the Project proposed for approval would allow an alternative land use development at the stadium site in the event the 49ers do not avail themselves of the stadium site at HPS Phase II. In this

event, in lieu of the stadium and related uses proposed for the Project at the stadium site (including Variant 5), two alternative uses would be allowed at the stadium site: either Variant 1, which provides for an R&D use at the stadium site, or Variant 2A, which provides for a mix of housing and R&D at the stadium site. If a stadium scenario is implemented, it would be modified by implementation of Variant 3 (Tower Variant D).

In sum, the Project as described in Chapter II of the Final EIR, together with Project Variants 1, 2A, 3 (Tower Variant D), and 5 as described in Chapter IV of the Final EIR, constitute the Project that is being proposed for approval.

D. LIST OF PERSONS COMMENTING

Two tables have been provided to identify the government agencies, boards or commissions, organizations, or persons commenting on the Draft EIR, either orally or in writing. Table C&R-1 (Commenters on the Draft EIR [Numerical by Letter Number]) presents them in the order they were received by the City or the Agency, and they are presented with consecutive numbering (e.g., Letter 1, Letter 2, Letter 3, etc.). Table C&R-2 (Commenters on the Draft EIR [Alphabetical by Commenter Type]) presents them first by federal, state, regional, or local agencies, and then by boards and commissions, organizations, and individuals. Within those categories, they are organized alphabetically first, then by date, and lastly by letter number. In this case, they are not presented with consecutive numbering.

Table C&R-1 Commenters on the Draft EIR (Numerical by Letter Number)

Letter No.	*Commenter*	*Date of Comment*	*Page Number Where Comment Letter Begins*	*Page Number Where Responses Begin*
1	Sierra Club	11/25/09	C&R-171	C&R-173
2	People Organized to Win Employment Rights	12/14/09	C&R-175	C&R-177
3	Hunters Point Shipyard Citizen's Advisory Committee	12/16/09	C&R-179	C&R-181
4	Neighborhood Parks Council	12/17/09	C&R-183	C&R-185
5	Loa, Sam	12/17/09	C&R-187	C&R-189
6	Jackson, Espanola	12/17/09	C&R-191	C&R-193
7	City of Brisbane	12/18/09	C&R-195	C&R-199
8	Indian Canyon Nation/Costanoan Indian Research Inc.	01/12/10	C&R-207	C&R-219
9	People Organized to Win Employment Rights	12/21/09	C&R-221	C&R-223
10	San Francisco Bay Trail	12/18/09	C&R-225	C&R-227
11	Alice Griffith Public Housing Tenant Association	11/03/09	C&R-229	C&R-231
12	Asian Pacific Democratic Club	12/17/09	C&R-233	C&R-235
13	Toxic Chem Handout - PC Hearing	12/17/09	C&R-237	C&R-247
14	Positive Directions Equals Change	12/17/09	C&R-249	C&R-251
15	Cavella, Barbara	12/12/09	C&R-253	C&R-255
16	Birkelund, James	12/19/09	C&R-257	C&R-259

Table C&R-1 Commenters on the Draft EIR (Numerical by Letter Number)

Letter No.	Commenter	Date of Comment	Page Number Where Comment Letter Begins	Page Number Where Responses Begin
17	Dale-LeWinter, Marcia	01/04/10	C&R-261	C&R-269
18	Bay Access	12/28/09	C&R-271	C&R-273
19	Whittle, Lola	12/14/09	C&R-275	C&R-277
20	Multiple Commenters	12/14/09	C&R-279	C&R-281
21	Enea, Kristine	12/11/09	C&R-283	C&R-285
22	Parkmerced Residents' Organization	12/09/09	C&R-287	C&R-289
23	Winter, Rhonda	12/08/09	C&R-293	C&R-295
24	City of Brisbane	11/18/09	C&R-297	C&R-299
25	Golden Gate Audubon Society	11/16/09	C&R-301	C&R-303
26	Dodt, Dan	11/13/09	C&R-305	C&R-307
27	Da Costa, Francisco	01/12/10	C&R-309	C&R-325
28	Hamman, Michael	01/04/10	C&R-327	C&R-329
29	Bay Area Council	01/04/10	C&R-331	C&R-333
30	San Francisco Planning + Urban Research Association	01/04/10	C&R-335	C&R-337
31	San Francisco Bay Trail	01/12/10	C&R-339	C&R-345
32	Docomomo/US, Northern California Chapter	01/11/10	C&R-353	C&R-355
33	Antonini, Michael	01/11/10	C&R-357	C&R-359
34	San Francisco Architectural Heritage	01/11/10	C&R-365	C&R-369
35	Hamman, Michael	01/12/10	C&R-373	C&R-379
36	San Francisco Green Party	01/12/10	C&R-385	C&R-393
37	San Francisco Bay Herring Fisherman's Association	01/12/10	C&R-397	C&R-399
38	Da Costa, Francisco	01/11/10	C&R-401	C&R-415
39	City and County of San Francisco, Historic Preservation Commission	01/12/10	C&R-417	C&R-419
40	Gould, Corrina	01/12/10	C&R-433	C&R-435
41	Hamman, Michael	01/12/10	C&R-437	C&R-439
42	Californians for Renewable Energy, Inc.	01/12/10	C&R-441	C&R-583
43	People Organized to Win Employment Rights	01/12/10	C&R-585	C&R-589
44	Neighborhood Parks Council	01/12/10	C&R-603	C&R-605
45	National Trust for Historic Preservation, Western Office, and California Preservation Foundation	01/12/10	C&R-609	C&R-617
46	Visitacion Valley Planning Alliance	01/11/10	C&R-621	C&R-627
47	California State Parks Foundation	01/12/10	C&R-633	C&R-731
48	McRee, Richard	01/12/10	C&R-805	C&R-809
49	Neighborhood Parks Council	01/12/10	C&R-815	C&R-817
50	People Organized to Win Employment Rights	01/12/10	C&R-819	C&R-825

Table C&R-1 Commenters on the Draft EIR (Numerical by Letter Number)

Letter No.	Commenter	Date of Comment	Page Number Where Comment Letter Begins	Page Number Where Responses Begin
51	Simms, Robert	01/12/10	C&R-845	C&R-847
52	People Organized to Win Employment Rights	01/12/10	C&R-849	C&R-857
53	Stokes, Ernest	01/12/10	C&R-863	C&R-865
54	Stancil, Esselene	01/12/10	C&R-867	C&R-869
55	Breast Cancer Action	01/12/10	C&R-871	C&R-873
56	Indian Canyon Nation	01/12/10	C&R-875	C&R-877
57	Franklin, Alice	01/12/10	C&R-879	C&R-881
58	Green Action Health and Environmental Justice	01/12/10	C&R-885	C&R-887
59	Jefferson, Simon	01/12/10	C&R-891	C&R-893
60	Donahue, Vivien	01/12/10	C&R-897	C&R-899
61	Lee, Mishwa	01/12/10	C&R-901	C&R-905
62	Confederation of the Ohlone People	01/11/10	C&R-909	C&R-911
63	Herrera, Catherine	01/11/10	C&R-913	C&R-915
64	San Francisco Tomorrow	01/12/10	C&R-917	C&R-931
65	Joshua, Nyese	01/12/10	C&R-937	C&R-943
66	Tello, Juana	01/12/10	C&R-955	C&R-963
67	Harvey, Carol	01/12/10	C&R-971	C&R-985
68	Technical Assistance Services for Communities	01/12/10	C&R-987	C&R-987
69	People Organized to Win Employment Rights	01/12/10	C&R-997	C&R-1001
70	Tello, Jesse	01/12/10	C&R-1003	C&R-1005
71	California Department of Transportation—Transportation Planning	01/12/10	C&R-1007	C&R-1011
72	Muhammad, Colleen	01/12/10	C&R-1019	C&R-1021
73	Lee, Mishwa	01/12/10	C&R-1023	C&R-1027
74	Matlock, Perry	01/11/10	C&R-1033	C&R-1051
75	Sierra Club	01/12/10	C&R-1053	C&R-1071
76	Whittle, Lola	01/12/10	C&R-1075	C&R-1077
77	City and County of San Francisco, Historic Preservation Commission	01/12/10	C&R-1079	C&R-1081
78	City and County of San Francisco, Human Rights Commission	01/12/10	C&R-1083	C&R-1189
79	San Francisco Bicycle Coalition	01/12/10	C&R-1191	C&R-1193
80	People Organized to Win Employment Rights	12/11/09	C&R-1195	C&R-1197
81	Golden Gate Audubon Society	01/12/10	C&R-1199	C&R-1213
82	Arc Ecology	01/12/10	C&R-1225	C&R-1387
83	Arc Ecology	01/12/10	C&R-1407	C&R-1427
84	Arc Ecology	01/12/10	C&R-1435	C&R-1459
85	Arc Ecology	01/12/10	C&R-1475	C&R-1611

Table C&R-1 Commenters on the Draft EIR (Numerical by Letter Number)

Letter No.	Commenter	Date of Comment	Page Number Where Comment Letter Begins	Page Number Where Responses Begin
86	California State Parks	01/12/10	C&R-1619	C&R-1637
87	San Francisco Bay Trail	01/12/10	C&R-1661	C&R-1667
88	Porter Sumchai, Ahimsa	12/11/09	C&R-1669	C&R-1685
89	Da Costa, Francisco	01/12/10	C&R-1687	C&R-1691
90	Hunters Point Shipyard Citizen's Advisory Committee	01/12/10	C&R-1693	C&R-1699
91	California State Parks	12/23/09	N/A	C&R-1707
92	National Football League	01/12/10	C&R-1709	C&R-1711
93	California State Lands Commission	01/12/10	C&R-1713	C&R-1717
94	Harvey, Carol	01/12/10	C&R-1719	C&R-1721
95	Koepf, Ernie	01/12/10	C&R-1723	C&R-1725
96	Fox, Jill	01/12/10	C&R-1727	C&R-1731
97	Brightline Defense Project	01/12/10	C&R-1737	C&R-1739
98	US Department of the Navy	01/12/10	N/A	C&R-1741
99	City/County Association of Governments of San Mateo	01/12/10	C&R-1743	C&R-1745
100	Shaffer, Linda	01/12/10	C&R-1747	C&R-1751
101	US Department of the Navy	01/14/10	C&R-1753	C&R-1761
102	Literacy for Environmental Justice	01/12/10	C&R-1771	C&R-1777
103	San Francisco Bay Conservation and Development Commission	01/12/10	C&R-1779	C&R-1789
104	Da Costa, Francisco	01/13/10	C&R-1801	C&R-1803
105	Da Costa, Francisco	01/18/10	C&R-1805	C&R-1807
106	Da Costa, Francisco	01/18/10	C&R-1809	C&R-1811
107	Muwekma Ohlone Indian Tribe	01/12/10	C&R-1809	C&R-1811
108	Hunters Point Shipyard Citizen's Advisory Committee	12/18/09	C&R-1827	C&R-1835
109	San Francisco Building and Construction Trades Council	01/04/10	C&R-1837	C&R-1839
110	Singer, Sam	01/05/10	C&R-1841	C&R-1843
111	San Francisco Organizing Project	01/05/10	C&R-1845	C&R-1847
112	San Francisco Chamber of Commerce	01/05/10	C&R-1849	C&R-1851
113	San Francisco Housing Action Coalition	01/05/10	C&R-1853	C&R-1855
114	Hamman, Michael	01/05/10	C&R-1857	C&R-1859
115	Da Costa, Francisco	01/10/10	C&R-1861	C&R-1867
116	Bay Access	01/11/10	C&R-1869	C&R-1873
117	India Basin Neighborhood Association	01/12/10	C&R-1875	C&R-1881
SFRA1	Various commenters spoke at the San Francisco Redevelopment Agency Commission Hearing	12/15/09	C&R-1827	C&R-2005
SFPC	Various commenters spoke at the San Francisco Planning Commission Hearing	12/17/09	C&R-2021	C&R-2129

Table C&R-1 Commenters on the Draft EIR (Numerical by Letter Number)

Letter No.	Commenter	Date of Comment	Page Number Where Comment Letter Begins	Page Number Where Responses Begin
SFRA2	Various commenters spoke at the San Francisco Redevelopment Agency Commission Hearing	01/05/10	C&R-2155	C&R-2181

Table C&R-2 Commenters on the Draft EIR (Alphabetical by Commenter Type)

Letter No.	Commenter	Date of Comment	Page Number Where Comment Letter Begins	Page Number Where Responses Begin
	WRITTEN COMMENTS			
Federal Agencies				
98	US Department of the Navy	01/12/10	N/A	C&R-1741
101	US Department of the Navy	01/14/10	C&R-1753	C&R-1761
State Agencies				
71	California Department of Transportation—Transportation Planning	01/12/10	C&R-1007	C&R-1011
93	California State Lands Commission	01/12/10	C&R-1713	C&R-1717
86	California State Parks	01/12/10	C&R-1619	C&R-1637
91	California State Parks	12/23/09	N/A	C&R-1707
103	San Francisco Bay Conservation and Development Commission	01/12/10	C&R-1779	C&R-1789
Local Agencies, Boards, and Commissions				
39	City and County of San Francisco, Historic Preservation Commission	01/12/10	C&R-417	C&R-419
77	City and County of San Francisco, Historic Preservation Commission	01/12/10	C&R-1079	C&R-1081
78	City and County of San Francisco, Human Rights Commission	01/12/10	C&R-1083	C&R-1189
24	City of Brisbane	11/18/09	C&R-297	C&R-299
7	City of Brisbane	12/18/09	C&R-195	C&R-199
99	City/County Association of Governments of San Mateo	01/12/10	C&R-1743	C&R-1745
10	San Francisco Bay Trail	12/18/09	C&R-225	C&R-227
31	San Francisco Bay Trail	01/12/10	C&R-339	C&R-345
87	San Francisco Bay Trail	01/12/10	C&R-1661	C&R-1667
Organizations				
11	Alice Griffith Public Housing Tenant Association	11/03/09	C&R-229	C&R-231
82	Arc Ecology	01/12/10	C&R-1225	C&R-1387
83	Arc Ecology	01/12/10	C&R-1407	C&R-1427
84	Arc Ecology	01/12/10	C&R-1435	C&R-1459
85	Arc Ecology	01/12/10	C&R-1475	C&R-1611
12	Asian Pacific Democratic Club	12/17/09	C&R-233	C&R-235
18	Bay Access	12/28/09	C&R-271	C&R-273

Table C&R-2 Commenters on the Draft EIR (Alphabetical by Commenter Type)

Letter No.	Commenter	Date of Comment	Page Number Where Comment Letter Begins	Page Number Where Responses Begin
116	Bay Access	01/11/10	C&R-1869	C&R-1873
29	Bay Area Council	01/04/10	C&R-331	C&R-333
55	Breast Cancer Action	01/12/10	C&R-871	C&R-873
97	Brightline Defense Project	01/12/10	C&R-1737	C&R-1739
47	California State Parks Foundation	01/12/10	C&R-633	C&R-731
42	Californians for Renewable Energy, Inc.	01/12/10	C&R-441	C&R-583
62	Confederation of the Ohlone People	01/11/10	C&R-909	C&R-911
32	Docomomo/US, Northern California Chapter	01/11/10	C&R-353	C&R-355
25	Golden Gate Audubon Society	11/16/09	C&R-301	C&R-303
81	Golden Gate Audubon Society	01/12/10	C&R-1199	C&R-1213
58	Green Action Health and Environmental Justice	01/12/10	C&R-885	C&R-887
3	Hunters Point Shipyard Citizen's Advisory Committee	12/16/09	C&R-179	C&R-181
90	Hunters Point Shipyard Citizen's Advisory Committee	01/12/10	C&R-1693	C&R-1699
108	Hunters Point Shipyard Citizen's Advisory Committee	12/18/09	C&R-1827	C&R-1835
117	India Basin Neighborhood Association	01/12/10	C&R-1875	C&R-1881
56	Indian Canyon Nation	01/12/10	C&R-875	C&R-877
8	Indian Canyon Nation/Costanoan Indian Research Inc.	01/12/10	C&R-207	C&R-219
102	Literacy for Environmental Justice	01/12/10	C&R-1771	C&R-1777
20	Multiple Commenters	12/14/09	C&R-279	C&R-281
107	Muwekma Ohlone Indian Tribe	01/12/10	C&R-1809	C&R-1811
92	National Football League	01/12/10	C&R-1709	C&R-1711
45	National Trust for Historic Preservation, Western Office, and California Preservation Foundation	01/12/10	C&R-609	C&R-617
4	Neighborhood Parks Council	12/17/09	C&R-183	C&R-185
44	Neighborhood Parks Council	01/12/10	C&R-603	C&R-605
49	Neighborhood Parks Council	01/12/10	C&R-815	C&R-817
22	Parkmerced Residents' Organization	12/09/09	C&R-287	C&R-289
14	Positive Directions Equals Change	12/17/09	C&R-249	C&R-251
2	People Organized to Win Employment Rights	12/14/09	C&R-175	C&R-177
9	People Organized to Win Employment Rights	12/21/09	C&R-221	C&R-223
43	People Organized to Win Employment Rights	01/12/10	C&R-585	C&R-589
50	People Organized to Win Employment Rights	01/12/10	C&R-819	C&R-825
52	People Organized to Win Employment Rights	01/12/10	C&R-849	C&R-857
69	People Organized to Win Employment Rights	01/12/10	C&R-997	C&R-1001
80	People Organized to Win Employment Rights	12/11/09	C&R-1195	C&R-1197

Table C&R-2 Commenters on the Draft EIR (Alphabetical by Commenter Type)

Letter No.	Commenter	Date of Comment	Page Number Where Comment Letter Begins	Page Number Where Responses Begin
34	San Francisco Architectural Heritage	01/11/10	C&R-365	C&R-369
37	San Francisco Bay Herring Fisherman's Association	01/12/10	C&R-397	C&R-399
79	San Francisco Bicycle Coalition	01/12/10	C&R-1191	C&R-1193
109	San Francisco Building and Construction Trades Council	01/04/10	C&R-1837	C&R-1839
112	San Francisco Chamber of Commerce	01/05/10	C&R-1849	C&R-1851
36	San Francisco Green Party	01/12/10	C&R-385	C&R-393
113	San Francisco Housing Action Coalition	01/05/10	C&R-1853	C&R-1855
111	San Francisco Organizing Project	01/05/10	C&R-1845	C&R-1847
30	San Francisco Planning + Urban Research Association	01/04/10	C&R-335	C&R-337
64	San Francisco Tomorrow	01/12/10	C&R-917	C&R-931
1	Sierra Club	11/25/09	C&R-171	C&R-173
75	Sierra Club	01/12/10	C&R-1053	C&R-1071
68	Technical Assistance Services for Communities	01/12/10	C&R-987	C&R-987
13	Toxic Chem Handout - PC Hearing	12/17/09	C&R-237	C&R-247
46	Visitacion Valley Planning Alliance	01/11/10	C&R-621	C&R-627
Individuals				
33	Antonini, Michael J.	01/11/10	C&R-357	C&R-359
16	Birkelund, James	12/19/09	C&R-257	C&R-259
15	Cavella, Barbara	12/12/09	C&R-253	C&R-255
27	Da Costa, Francisco	01/12/10	C&R-309	C&R-325
38	Da Costa, Francisco	01/11/10	C&R-401	C&R-415
89	Da Costa, Francisco	01/12/10	C&R-1687	C&R-1691
104	Da Costa, Francisco	01/13/10	C&R-1801	C&R-1803
105	Da Costa, Francisco	01/18/10	C&R-1805	C&R-1807
106	Da Costa, Francisco	01/18/10	C&R-1809	C&R-1811
115	Da Costa, Francisco	01/10/10	C&R-1861	C&R-1867
17	Dale-LeWinter, Marcia	01/04/10	C&R-261	C&R-269
26	Dodt, Dan	11/13/09	C&R-305	C&R-307
60	Donahue, Vivien	01/12/10	C&R-897	C&R-899
21	Enea, Kristine	12/11/09	C&R-283	C&R-285
96	Fox, Jill	01/12/10	C&R-1727	C&R-1731
57	Franklin, Alice	01/12/10	C&R-879	C&R-881
40	Gould, Corrina	01/12/10	C&R-433	C&R-435
28	Hamman, Michael	01/04/10	C&R-327	C&R-329
35	Hamman, Michael	01/12/10	C&R-373	C&R-379

Table C&R-2 Commenters on the Draft EIR (Alphabetical by Commenter Type)

Letter No.	Commenter	Date of Comment	Page Number Where Comment Letter Begins	Page Number Where Responses Begin
41	Hamman, Michael	01/12/10	C&R-437	C&R-439
114	Hamman, Michael	01/05/10	C&R-1857	C&R-1859
67	Harvey, Carol	01/12/10	C&R-971	C&R-985
94	Harvey, Carol	01/12/10	C&R-1719	C&R-1721
63	Herrera, Catherine	01/11/10	C&R-913	C&R-915
6	Jackson, Espanola	12/17/09	C&R-191	C&R-193
59	Jefferson, Simon	01/12/10	C&R-891	C&R-893
65	Joshua, Nyese	01/12/10	C&R-937	C&R-943
95	Koepf, Ernie	01/12/10	C&R-1723	C&R-1725
61	Lee, Mishwa	01/12/10	C&R-901	C&R-905
73	Lee, Mishwa	01/12/10	C&R-1023	C&R-1027
5	Loa, Sam	12/17/09	C&R-187	C&R-189
74	Matlock, Perry	01/11/10	C&R-1033	C&R-1051
48	McRee, Richard	01/12/10	C&R-805	C&R-809
72	Muhammad, Colleen	01/12/10	C&R-1019	C&R-1021
88	Porter Sumchai, Ahimsa	12/11/09	C&R-1669	C&R-1685
100	Shaffer, Linda	01/12/10	C&R-1747	C&R-1751
51	Simms, Robert	01/12/10	C&R-845	C&R-847
110	Singer, Sam	01/05/10	C&R-1841	C&R-1843
54	Stancil, Esselene	01/12/10	C&R-867	C&R-869
53	Stokes, Ernest	01/12/10	C&R-863	C&R-865
66	Tello, Juana	01/12/10	C&R-955	C&R-963
70	Tello, Jesse	01/12/10	C&R-1003	C&R-1005
19	Whittle, Lola	12/14/09	C&R-275	C&R-277
76	Whittle, Lola	01/12/10	C&R-1075	C&R-1077
23	Winter, Rhonda	12/08/09	C&R-293	C&R-295
	ORAL COMMENTS			
SFRA1	Various commenters spoke at the San Francisco Redevelopment Agency Commission Hearing	12/15/09	C&R-1827	C&R-2005
SFPC	Various commenters spoke at the San Francisco Planning Commission Hearing	12/17/09	C&R-2021	C&R-2129
SFRA2	Various commenters spoke at the San Francisco Redevelopment Agency Commission Hearing	01/05/10	C&R-2155	C&R-2181

E. COMMENTS AND RESPONSES

This section contains responses to comments on the Draft EIR that were received from government agencies, boards or commissions, organizations, and individuals, either orally or in writing. Consistent with Sections 15088(a) and 15088(b) of the CEQA Guidelines, comments that raise significant environmental issues are provided with responses. Comments that are outside of the scope of CEQA review (i.e., where a comment does not raise an environmental issue, or where it expresses the subjective opinion of the commenter) will be forwarded for consideration to the decision-makers as part of the project approval process; these comments are answered with a general phrase, but no more detailed response is provided. All comments will be considered by the Lead Agencies when making a decision on the Project.

Responses are provided as individual responses that respond to specific comments raised and as master responses that respond to broad issues where there were several public comments on the same issue. Master responses are presented first, followed by individual responses. Each comment letter, in numerical order, is included in its entirety, followed by the responses to the individually numbered comments.

E.1 Master Responses

Master responses are used to address similar comments that were raised in more than one letter and to provide information in a comprehensive, easily located discussion that clarifies and elaborates upon the analyses in the Draft EIR. The master responses address the following topics:

- Master Response 1—SB 18
- Master Response 2—Potential Native American Burial Sites
- Master Response 3—Impacts of the Project on Yosemite Slough (Biological Resources)
- Master Response 4—Purpose and Benefits of the Yosemite Slough Bridge
- Master Response 5—Health of the Bayview Hunters Point Community
- Master Response 6—Seismic Hazards
- Master Response 7—Liquefaction
- Master Response 8—Sea Level Rise
- Master Response 9—Status of the CERCLA Process
- Master Response 10—Pile Driving through Contaminated Soils
- Master Response 11—Parcel E-2 Landfill
- Master Response 12—Naturally Occurring Asbestos
- Master Response 13—Post-Transfer Shipyard Cleanup
- Master Response 14—Unrestricted Use Alternative
- Master Response 15—Proposition P and the Precautionary Principle
- Master Response 16—Notification Regarding Environmental Restrictions and Other Cleanup Issues
- Master Response 17—Enforcement of Environmental Restrictions and Mitigation Measures
- Master Response 18—Traffic Mitigation Measures
- Master Response 19—Proposed BAAQMD Guidelines

Master Response 1: SB 18

Introduction

Overview

This master response addresses concerns raised by commenters about the Senate Bill 18 (SB 18) consultation process; in particular, the concern that the Native American tribes and representatives were not formally consulted on the Project prior to publication of the Draft EIR. This response provides a summary of the requirements of SB 18 and information on the consultation process that will be undertaken to ensure that the concerns of the Native American tribes in the region are addressed with respect to the Project.

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > Planning Commissioner Borden (SFPC-117)
  - > Redevelopment Agency Commissioner Bustos (SFRA2-39)
- Organizations
  - > Arc Ecology (84-12)
  - > Confederation of the Ohlone People (62-1, 62-2, 62-3)
  - > Human Rights Commission (78-1)
  - > Indian Canyon Nation/Costanoan Indian Research Inc. (8-1, 56-1, 56-2, 56-3, 56-4, 56-5, 56-6, 56-7, 56-8)
  - > POWER (People Organized to Win Employment Rights) (52-8)
- Individuals
  - > Bernadette Sambrano (SFPC-77)
  - > Catherine Herrera (63-1)
  - > Corrina Gould (40-1)
  - > Espanola Jackson (SFRA2-2)
  - > Francisco Da Costa (27-1, 27-2, 38-1, 38-2, 89-1, 89-3, 104-1, SFPC-48, SFPC-50)
  - > Mishwa Lee (73-10, 73-11, 73-15, SFPC-29)
  - > Neil McLean (SFPC-104)
  - > Perry Matlock (74-1, 74-4)

Comment Summary

This master response responds to all or part of the following comments: 8-1, 27-1, 27-2, 38-1, 38-2, 40-1, 52-8, 56-1, 56-2, 56-3, 56-4, 56-5, 56-6, 56-7, 56-8, 62-1, 62-2, 62-3, 63-1, 73-10, 73-11, 73-15, 74-1, 74-4, 78-1, 84-12, 89-1, 89-3, 104-1, SFPC-29, SFPC-48, SFPC-50, SFPC-77, SFPC-104, SFPC-117, SFRA2-2, SFRA2-39.

Comments received on the Draft EIR related to SB 18 consultation were focused almost exclusively on issues addressed in Section III.J (Cultural Resources) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.J.

Summary of Issues Raised by Commenters

- The Native American community, including the Indian Canyon Nation, the Mutsun Band of Ohlone/Costanoan people, Confederation of Ohlone People, and the Muwekma Ohlone, desire to be included in the consultation process with regard to the Project

Response

Commenters, including representatives of Native American tribes, asserted that, under SB 18, the City was required to consult with Native American groups during preparation of the Draft EIR regarding potential Project effects on Native American cultural places, and that such consultation did not occur. SB 18, Local and Tribal Intergovernmental Consultation, adopted in 2004, requires California cities or counties to contact and consult with California Native American Tribes before adopting or amending a General Plan or when designating land as open space, for the purposes of protecting Native American Cultural Places. Under *Public Resources Code* (PRC) 5097.9 and 5097.993, Cultural Places are defined as a Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine on private lands; or a Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources (CRHR) pursuant to PRC Section 5024.1, including any historic or prehistoric ruins, any burial ground, or any archaeological or historic site on public lands. The California Native American Tribes are defined as those on the contact list maintained by the California Native American Heritage Commission (NAHC). SB 18 sets out a consultation process but does not mandate any specific steps with regard to protection of Native American Cultural Places. Those steps would be developed between the relevant cities or counties and the appropriate California Native American Tribes.

SB 18 is not part of CEQA, and consultation under SB 18 is not a requirement of the EIR process. Therefore, formal consultation with Native American tribes or organizations during preparation of the Draft EIR was not required as part of the CEQA process. In addition, as a charter city, San Francisco is not subject to many of the SB 18 requirements, because it is codified in a portion of the Government Code that concerns General Plan procedural requirements that do not apply to charter cities or counties.

Nonetheless, the City of San Francisco is currently undertaking outreach with Native American groups on the NAHC list related to the General Plan changes proposed as part of the Project.[3,4,5,6] The Project, as noted in Draft EIR Chapter II (Project Description), Section II.G (Approval Requirements), pages II-80 through II-84, would include amendments to the Bayview Hunters Point Area Plan of the General

[3] John Rahaim, Planning Director, San Francisco Planning Department, letter to Andrew Galvan, The Ohlone Indian Tribe, January 26, 2010.
[4] John Rahaim, Planning Director, San Francisco Planning Department, letter to Ann Marie Sayers, Chairperson, Indian Canyon Band Mutsun Band of Costanoan, January 26, 2010.
[5] John Rahaim, Planning Director, San Francisco Planning Department, letter to Rosemary Cambra, Chairperson, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, January 26, 2010.
[6] John Rahaim, Planning Director, San Francisco Planning Department, letter to Irene Zwierlein, Chairperson, Amah/ Mutsun Tribal Band, January 26, 2010.

Plan. The Project would also include the introduction of Subarea Plans for the Candlestick Point and Hunters Point areas. The outreach that the City is undertaking is intended to elicit a full understanding of concerns that Native American tribes and organizations have about the Project, how the concerns may be addressed, and any other suggestions or recommendations the Native American tribes or organizations may have. As part of that outreach, the Planning Department made available to the Native American groups the background documents prepared as part of Draft EIR Section III.J (Cultural Resources and Paleontological Resources), including *Historical Context for the Archaeology of the Bayview Waterfront Project, San Francisco, California* and *Archaeological Research Design and Treatment Plan for the Bayview Waterfront Project, San Francisco, California*, cited on Draft EIR p. III.J-1.[7]

Further, Planning Department staff and Mayor's Office staff met on February 19, 2010, with Native American/Ohlone representatives who had responded to the Planning Department's January 26, 2010, letters and offer of consultation. At the meeting, a variety of concerns were expressed and various future actions were agreed to, including (1) allowing time for representatives from additional Native American groups to respond to the request for consultation; (2) providing more information regarding prehistoric archaeological sites to interested Ohlone representatives, to the extent permitted by law; and (3) agreeing that the parties would meet again to consult.

Draft EIR Section III.J (Cultural Resources and Paleontological Resources) describes the potential occurrence of Native American sites, including burial sites, sites eligible for listing on the CRHR, or sites on public land, within the Project boundaries. The Draft EIR identifies the Project effects, and mitigation measures that would avoid significant adverse effects on such sites. Refer to Master Response 2 (Potential Native American Burial Sites) for further discussion of consultation with Native American representatives regarding burial sites that would be part of the mitigation measures.

The comments on the Draft EIR on SB 18 consultation do not address the adequacy or completeness of the Draft EIR regarding Project effects on cultural resources, including Native American sites.

Master Response 2: Potential Native American Burial Sites

Introduction

Overview

This master response addresses concerns raised by commenters that the Project site contains Native American burial sites of symbolic and cultural importance that would be disturbed by Project development. This response explains that the Draft EIR acknowledges that the Project site includes prehistoric burial sites of patrimonial importance to the Native American community. The response also explains that Native American burial remains and funerary objects discovered at the Project site would be treated as required by applicable laws, and with efforts to reach an agreement to treat with appropriate dignity such human remains and funerary objects.

[7] The prior name of the Project was the Bayview Waterfront Project. Some of the technical studies completed for the Project use the former name if they were prepared prior to August 2009; however, regardless of name, the reports address conditions at the Project site.

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > Planning Commissioner Borden (SFPC-117)
  - > Redevelopment Agency Commissioner Bustos (SFRA2-39)
- Organizations
  - > Human Rights Commission (78-1)
  - > Indian Canyon Nation/Costanoan Indian Research Inc. (8-1, 56-1, 56-2, 56-3, 56-4, 56-5, 56-6, 56-7, 56-8)
- Individuals
  - > Francisco Da Costa (89-3)
  - > Juana Tello (SFPC-94)

Comments received on the Draft EIR related to Native American burial sites were focused almost exclusively on issues addressed in Section III.J (Cultural Resources) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.J.

Comment Summary

This master response responds to all or part of the following comments: 8-1, 56-1, 56-2, 56-3, 56-4, 56-5, 56-6, 56-7, 56-8, 78-1, 89-3, SFPC-94, SFPC-117, SFRA2-39.

Summary of Issues Raised by Commenters

- The Project site contains Native American burial sites of patrimonial, symbolic, and cultural importance that would be disturbed by Project development.
- The Native American community must be involved in the review of effects on such sites or how burial remains are treated after discovery.

Response

Draft EIR Section III.J (Cultural Resources and Paleontological Resources), pages III.J-2 through III.J-5, provides context on the prehistoric record and historic record of indigenous peoples and describes the settlement pattern of Ohlone/Costanoan tribes in San Francisco. The Draft EIR acknowledges that prehistoric sites in San Francisco may include burial sites of patrimonial importance to Native American groups. Draft EIR page III.J-2 notes that the current understanding of San Francisco prehistory recognizes this importance to Native American culture:

- Prehistoric sites sometimes occur in clusters with a primarily symbolic association with a focal shellmound of greater size and age
- The importance of the primary shellmound may have been in the form of religious/funerary observances and burials even after its abandonment
- Bay Area prehistoric shellmounds may have been planned, intentionally re-created structures (not merely inadvertent dietary refuse accumulations)

- Prehistoric shellmounds were sometimes constructed over pre-existing cemeteries
- Many Bay Area shellmounds were abandoned over the course of a relatively brief period

The Draft EIR page III.J-17 further notes, in relation to past excavations of several shellmounds in the Project vicinity, that there is potential for Native American burials to occur at archaeological sites that could be affected by the Project. Draft EIR pages III.J-18 to -19 describe five indigenous sites that, based on archival research, are known or believed to be located within the boundaries of the Project site (CA-SFR 9, 11, 12, 13, and 14); the sites may currently be under fill or have been destroyed. Undocumented prehistoric sites may also exist within the Project site. Therefore, development of the Project could result in disturbance of previously unrecorded Native American burials and funerary materials.

Impact CP-2a (Change in Significance of Archaeological Resources), Impact of Candlestick Point, Draft EIR page III.J-36, concludes that construction at Candlestick Point would not result in a substantial adverse change in the significance of archaeological resources, including prehistoric Native American, Chinese fishing camp, and maritime-related archaeological remains, because mitigation measure MM CP-2a would reduce potential adverse effects of construction-related activities to archaeological resources at Candlestick Point to less-than-significant levels through implementation of the Project Archaeological Research Design and Treatment Plan (ARDTP).[8] Impact CP-2b (Impact of Hunters Point Shipyard Phase II), Draft EIR III.J-40, and Impact CP-2 (Combined Impact of Candlestick Point and Hunters Point Shipyard Phase II), Draft EIR pages III.J-40 to -41, similarly conclude that impacts on prehistoric Native American resources would be less than significant through implementation of the ARDTP.

To clarify that the Project could affect Native American burial sites of symbolic or cultural importance to present-day Native American tribes and representatives, the following underlined text is added on Section III.J, Draft EIR page III.J-36, Impact CP-2a discussion, as a new sentence three:

> The Project archaeological research has found that archaeological resources expected to be found on the Project site could have important research value and would, therefore, be legally significant under CEQA. Examples of research themes that have been proposed to which expected archaeological resources could contribute significant data include *(i)* the spatial organization and historical development of Chinese fishing camps; *(ii)* effects, adaptations, and resistance of the fishing camps to anti-Chinese fishing legislation (1885-1930s); *(iii)* spatial organization of shipyards and development of local traditions of boat building technology, including that of the scow schooner and Chinese junks; *(iv)* the development, changing function, and inter-settlement relationships of prehistoric shell mounds; *(v)* comparative spatial organization of shell mound sites; *(vi)* changes in prehistoric faunal and biotic exploitation practices; *(vii)* prehistoric changes in social stratification; and *(viii)* the relationship between Hunters Point-Bayview and South of Market area prehistoric settlements. <u>The Project could also disturb potential Native American burial sites of symbolic and cultural importance to present-day Native American tribes and representatives.</u> Any potential archaeological resources, e.g., CA-SFR-9, fishing camps, that are covered by existing development will remain covered and unavailable unless the site is redeveloped.

[8] Archeo-Tec, Archaeological Research Design and Treatment Plan for the Bayview Waterfront Project, San Francisco, California, <u>November</u> 2009, as cited on Draft EIR page III.J-1. The prior name of the Project was the Bayview Waterfront Project. Some of the technical studies completed for the Project use the former name if they were prepared prior to August 2009; however, regardless of name, the reports address conditions at the Project site.

The following underlined text is added on Section III.J, Draft EIR page III.J-40, Impact CP-2b discussion, paragraph three, as a new sentence three:

> Moreover, previous archaeological investigations have shown that prehistoric archaeological sites in the HPS Phase II site tend to be located along the original shoreline. Therefore, it is possible that Project-related construction activities may encounter previously unknown archaeological resources. The Project could also disturb potential Native American burial sites of symbolic and cultural importance to present-day Native American tribes and representatives.

The following underlined text is added on Section III.J, Draft EIR page III.J-40, Impact CP-2 discussion, last paragraph, as a new sentence four:

> As discussed above, the Project site is expected to contain subsurface archaeological resources from the Native American, Chinese fishing village, prehistoric, and maritime development periods, including, but not limited to, CA-SFR-9, CA-SFR-11, CA-SFR-12, CA-SFR-13, and CA-SFR-14. Any potential archeological resources, e.g., fishing camps, that are covered by existing development will remain covered and unavailable unless the site is redeveloped. Construction activities associated with the Project could disturb those archaeological resources, and result in potentially significant impacts. The Project could also disturb potential Native American burial sites of symbolic and cultural importance to present-day Native American tribes and representatives. Refer to Impact CP-2a and Impact CP-2b and associated discussions, above. Mitigation measure MM CP-2a would reduce the Project potentially significant effects on archaeological resources to a less-than-significant level through implementation of the *Archaeological Research Design and Treatment Plan for the Bayview Waterfront Project, San Francisco, California*.

Mitigation measure MM CP-2a would apply to Impacts CP-2a, CP-2b, and CP-2. The measure includes a range of steps, as called for in the ARDTP, for archeological testing, monitoring, and data recovery. Those steps would ensure that archaeological resources, including potential Native American burials, would be identified and significant adverse effects avoided. Mitigation measure MM CP-2a also includes specific steps should human remains or associated or unassociated funerary objects be encountered during Project development, as set forth on page III.J-39 of the Draft EIR:

> 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.

As stated above, Native American burial remains and funerary objects discovered at the Project site would be treated as required by applicable laws, with notification of the NAHC and the Most Likely Descendant, and with reasonable efforts to reach an agreement to treat with appropriate dignity such human remains and associated or unassociated funerary objects. Master Response 1 (SB 18) discusses the consultation process required with Native American groups, separate from the CEQA process. That consultation process could result in agreements for participation by Native American representatives in monitoring of sites during investigation for potential prehistoric materials or remains. Such monitoring

activities would be in addition to requirements for NAHC and Most Likely Descendant notification steps addressed in mitigation measure MM CP-2a.

The ARDTP addresses appropriate consultation with Native American community regarding burials (ARDTP, page 411):

> **Native American Consultation**
>
> The MEA [San Francisco Planning Department Major Environmental Analysis section] may consult with appropriate member(s) members of the Native American community regarding this project prior to the discovery of burials. This consultation would not designate a Most Likely Descendant (MLD), nor replace the legal process whereby the Native American Heritage would appoint the MLD in the event human remains are found.
>
> Stewart ["An Overview of Research Issues for Indigenous Archaeology", as cited in the ARDTP] notes that "archaeology, contrary to how it was practiced in the past, is currently practiced with a sensibility that insists that indigenous peoples have a stake in the management of their ancestral remains, and that the values bound up in those remains, sites, landscapes, etc., are not exclusively scientific." Although this document's [ARDTP] scope is limited to the data potential of prehistoric sites, this does not preclude the value that the site has beyond its informational value.
>
> Topics of consultation might include, but not be restricted to, the opinions and wishes concerning the Bayview Waterfront Project as an Ohlone ancestral site, the cultural value or concerns regarding the site, opinions on publicity, etc. Of particular concern to archaeological consultants are issues regarding the handling, study, and special studies of burials and human remains—issues usually discussed with or otherwise addressed by an MLD.
>
> Especially sensitive issues are whether the MLD and/or the community would permit analysis of human remains of any sort, or even the archaeological excavation of any burials found. There are MLDs in California who categorically refuse permission to conduct osteological description and non-destructive analysis of human burials. Another is the question of the desirability of obtaining radiocarbon dates from shell beads associated with a burial, or the wish to use a small bone fragment from a Native American burial for radiocarbon dating purposes. Another potentially useful analysis which involves destruction of human remains is removal of a tooth from a mandible or maxilla for purposes of mtDNA extraction and characterization.

Refer also to Master Response 1 (SB 18) explaining that the Planning Department has begun a consultation process with Native American tribal representatives. That consultation process will be an avenue for addressing the types of concerns identified in the ARDTP.

Master Response 3: Impacts of the Project on Yosemite Slough (Biological Resources)

Introduction

Overview

In 2006, the California Department of Parks and Recreation (CDPR) approved the Yosemite Slough Restoration Project (Restoration Project). The Restoration Project, sponsored by the California State Parks Foundation would restore tidal wetlands in a 34-acre parcel of Candlestick Point SRA in Yosemite Slough immediately adjacent to the Project site. The Plan would increase the existing tidally influenced area from 9 acres to over 20 acres, create two islands intended for use by nesting birds, and provide nursery areas for fish and benthic organisms, transitional and upland areas to buffer sensitive habitats,

more than 5,000 feet of new interpretive trails with five vista points, approximately 2.5 acres of passive use public areas, an approximately 1,200-square-foot multi-use interpretative center with restroom facilities, new access to the restored area, and additional amenities including parking, fencing, lighting, benches, and drinking water fountains. The restoration design of the slough would also address soil contaminant issues arising from previous fill activities that could affect human and wildlife health. The Restoration Project has not been implemented. It is proposed for construction in an area adjacent to but outside of the Project area, with the exception of a small area that overlaps the proposed location of the Yosemite Slough bridge.

The biological impacts associated with the construction and operation of the Yosemite Slough bridge have been analyzed in Section III-N of the Draft EIR. However, specific concerns have been raised that the development of the Project would negatively impact the proposed/ongoing Restoration Project if it proceeds. Specifically, commenters have stated that development of the Yosemite Slough bridge would release contaminated sediment into the environment, provide an additional source of contaminated runoff into the slough, divide an existing state park, and disrupt existing or future wildlife migration. Some commenters suggested that the effects of the bridge, particularly on the Restoration Project, were not analyzed in the Draft EIR and indicated that maps in the Draft EIR did not clearly indicate whether the Restoration Project was part of the Project area. Specific concerns also included the potential effects of construction-related disturbance while the bridge is being constructed, operational effects of noise, vibration, and exhaust from vehicles using the bridge on wildlife using the area around the bridge, including the restoration site, and effects of shading from the bridge on habitats below. Comments suggested that the Draft EIR did not address these potential impacts in sufficient detail.

This response provides detail regarding how the Draft EIR took the Restoration Project into account in its analysis and why the Project would not significantly impact the Restoration Project or impair or interfere with the goals and objectives of the Restoration Project. This master response addresses these comments with respect to the Restoration Project and biological resources. Traffic issues associated with the proposed bridge are addressed in Master Response 4 (Purpose and Benefits of the Yosemite Slough bridge), and hazardous materials and contamination issues are addressed in Master Response 9 (Status of the CERCLA Process).

This master response has been prepared using the analysis of Project impacts to biological resources in the Draft EIR; references to technical literature; plans for the Restoration Project provided by WRA, Inc., the firm that designed the wetland restoration plan; reference to other relevant sites in the San Francisco Bay area (Bay area); and analysis and inferences drawn from these sources by Stephen C. Rottenborn, Ph.D. Dr. Rottenborn, a principal and senior wildlife ecologist with the ecological consulting firm H. T. Harvey & Associates, is an expert on the wildlife, particularly birds, of the Bay area. Dr. Rottenborn's expert analysis addresses issues raised in the various comments on biological impacts and in particular the Restoration Project. His curriculum vitae is provided in Appendix C&R-1 (Biological Consultant Curriculum Vitae).

This response is organized by the following topics:

- Consideration of Yosemite Slough and the Yosemite Slough Restoration Project in the Draft EIR
- Summary of the Restoration Project
- Discussion of Biological Resource Impacts on Yosemite Slough in the Draft EIR

- Potential Effects of Noise on Wildlife Use of the Yosemite Slough
- Potential Effects of Vehicle Exhaust on Plants and Animals of Yosemite Slough
- Potential Effects of Lighting on Animals of Yosemite Slough
- Wildlife Use and Habitat Conditions at Reference Sites
- Expected Effects of the Bridge on Wildlife Use of Yosemite Slough
- Conclusion

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > California State Parks (86-1, 86-6, 86-12)
  - > Planning Commissioner Lee (SFPC-125)
- Organizations
  - > Arc Ecology (85-25, 85-29)
  - > California State Parks Foundation (47-3, 47-4, 47-5, 47-7, 47-17, 47-18, 47-19, 47-21, 47-22, 47-23, 47-24, 47-35, 47-37, 47-38, 47-40, 47-47, 47-49, 47-50, 47-51, 47-54, 47-56, 47-59, 47-68, 47-70, 47-71, 47-72, 47-73, 47-74, 47-75, 47-77, 47-81, 47-82, 47-86, 47-87, 47-89, 47-93, 47-97)
  - > Golden Gate Audubon Society (81-1, 81-2, 81-4, 81-7, 81-9, 81-10, 81-11, 81-13, 81-14)
  - > Green Action Health and Environmental Justice (SFPC-81, SFPC-826)
  - > San Francisco Bay Conservation and Development Commission (103-9, 103-19)
  - > San Francisco Bay Trail (31-6)
  - > San Francisco Tomorrow (64-2, 64-4)
  - > Sierra Club (75-5, 75-7)
  - > Yosemite Slough Project at Candlestick Recreation Area (SFRA1-78, SFRA1-79)
- Individuals
  - > Linda Richardson (SFPC-4)
  - > Mishwa Lee (61-3, 61-7, 73-6)
  - > Saul Bloom (SFPC-136)

Comments received on the Draft EIR related to the Restoration Project and biological resource impacts were focused almost exclusively on issues addressed in Section III.N (Biological Resources) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.N.

Comment Summary

This master response responds to all or part of the following comments: 31-6, 47-3, 47-4, 47-5, 47-7, 47-17, 47-18, 47-19, 47-21, 47-22, 47-23, 47-24, 47-35, 47-37, 47-38, 47-40, 47-47, 47-49, 47-50, 47-51, 47-54, 47-56, 47-59, 47-68, 47-70, 47-71, 47-72, 47-73, 47-74, 47-75, 47-77, 47-81, 47-82, 47-86, 47-87, 47-89, 47-93, 47-97, 61-3, 61-7, 64-2, 64-4, 73-6, 75-5, 75-7, 81-1, 81-2, 81-4, 81-7, 81-9, 81-10, 81-11, 81-13, 81-14, 85-25, 85-29, 86-1, 86-6, 86-12, 103-9, 103-19, SFRA1-78, SFRA1-79, SFPC-4, SFPC-81, SFPC-82, SFPC-125, SFPC-136.

Summary of Issues Raised by Commenters

- No mention of the Restoration Project in Draft EIR
- The potential effects of construction-related disturbance to the slough
- Operational effects of noise, vibration, and exhaust from vehicles using the bridge on wildlife using the area around the bridge, including the Restoration Project site
- Effects of shading from the bridge on habitats below
- Project would interfere with goals of the Restoration Project

Response

It is important to recognize that CEQA requires that except for special-status species, determinations of significant adverse impacts depend on the regional habitat value of resources and species viability rather than the amount of impact in a specifically defined but very limited habitat.

Impacts to special-status species would be significant (in the absence of mitigation) if the Project would adversely affect any of the following: (1) a species listed as threatened or endangered by the state or federal government at the time the Draft EIR is published; (2) a major population or subpopulation of a species that would result in the regional declines of this species; (3) a relatively large number of individuals within a population that is considered rare or declining; (4) a species' metapopulation (i.e., if one of only a few known populations occurs in the impact zone, or if the species has extremely narrow habitat requirements); or (5) a habitat type or vegetation community in regional decline or that is regionally endemic and recognized as such by the local, state, or federal agencies identified in the Setting section.

Impacts to sensitive or rare species would be less than significant, even without mitigation, if they are not expected to substantially affect species or populations because (1) a relatively small number of non-listed individuals would be impacted; (2) the number of individuals of a non-listed species to be impacted represent a very small fraction of regional populations due to the species' regional abundance; (3) recovery and conservation effects are documented to adequately conserve the species or habitat, and impacts would not affect the recovery or conservation of this species or habitat; or (4) the species or habitat is locally common and fairly abundant in the region. Because such species exist in a broad area, in regionally abundant habitat, such species would not be expected to experience substantial impacts from a project.

Consideration of Yosemite Slough and the Yosemite Slough Restoration Project in the Draft EIR

Confusion regarding whether or not Yosemite Slough was considered part of the Project and whether impacts to portions of Yosemite Slough outside the Project site were analyzed in the Draft EIR stemmed in part from reviewers' interpretations of various figures in the Draft EIR, particularly Figure III.N-1 (Biological Resources Study Area). This figure correctly depicted only the mouth of Yosemite Slough as being within the "Project Boundary," while showing that a slightly greater portion of the slough was within the "Study Area" and the entire slough was within the "Yosemite Slough Watershed Wildlife Study Area." Commenters questioned why these study areas differed.

The purpose of Figure III.N-1 was to indicate the relationships of three different geographic areas: the boundary of the Project site (Project Boundary); the boundary of the area that was covered by the wetland delineation performed for the Project (Study Area); and the boundary of the area in which data on wildlife use had been collected during a study performed by LSA Associates, Inc. and volunteers in 2004 (Yosemite Slough Watershed Wildlife Study Area). The Study Area boundary extended beyond the Project boundary because impacts to wetlands and aquatic habitats, both existing and those that would be present after implementation of the Restoration Project, were anticipated to occur slightly upstream from the Project boundary during construction of the Yosemite Slough bridge. That the Study Area boundary did not include the entire slough does not indicate that the remainder of the slough was not considered in the impact analysis. Rather, as discussed in the following section, the impact analysis considered direct and indirect effects on all biological resources both within and adjacent to the Project boundary, including all of Yosemite Slough and relevant adjacent areas.

Commenters suggested that the Draft EIR did not adequately recognize the Restoration Project as an integral component of the Candlestick Point State Recreation Area (CPSRA) or adequately analyze effects of the bridge on the Restoration Project, and suggested that the bridge would conflict with the goals of the restoration. CEQA initially requires an analysis of the Project's effects against existing baseline conditions. The Restoration Project, although planned and approved, has not been implemented. After analyzing the impacts of a Project against existing conditions, CEQA requires consideration of Project effects in combination with other past, present, and future projects, i.e., a cumulative impact analysis. The Restoration Project was discussed in the cumulative context and was considered one of the "planned and in-process wetland restoration projects within the Bay area" in the cumulative impact analysis on page III.N-118 of the Draft EIR.

In addition, the Draft EIR considered the effects of the Project on the habitats and species that would be expected to use the restoration site in the context of the Draft EIR's assessment of direct and indirect impacts to sensitive habitats and special-status/sensitive species both on- and off-site (Impact BI-3a through Impact BI-12c). Direct, explicit reference to the effects of the CP-HPS Project, including the Yosemite Slough bridge, on the Restoration Project itself was limited in the Draft EIR because the Draft EIR followed the CEQA requirement to assess impacts with respect to the change that the Project would cause to existing, baseline conditions (under which the Restoration Project has not been implemented). The descriptions of Project impacts focused on existing conditions rather than explicitly discussing the future Restoration Project. However, the Draft EIR fully assessed the impacts on the resources that are the focus of the Restoration Project. As explained in more detail below, habitats in the existing slough and along the Candlestick Point and HPS Phase II shorelines contain the same or similar characteristics as the restored slough in terms of the types of habitats and species that could be impacted by the Project. To enable the public to see how the analysis covered the impact areas, this master response more directly correlates the biological analysis with the details of the Restoration Project.

Summary of the Restoration Project

As stated in the Initial Study/Mitigated Negative Declaration (IS/MND) issued by the California State Parks Foundation[9] for the Restoration Project, the goals and objectives of the restoration plan include the following:

- Increase the area subject to tidal influence.
- Restore habitat diversity by re-establishing tidal flats and marsh in areas of present upland fill.
- Improve local foraging and roosting habitat for migratory and resident birds.
- Improve quality of life for the surrounding community.
- Remediate, sequester, or remove contaminated soils to reduce potential for human and wildlife contact.
- Create a clean, beautiful, and local park that the public can visit and view wildlife habitat.
- Create an environmental area that local schools can use for educational field trips.
- Benefit local businesses by increasing the number of visitors coming to the area.
- Connect the Bay Trail through CPSRA with the Bay Trail that is proposed for Hunters Point.

The 12 acres of wetlands would occur through the excavation of three embayments. This would occur with inland excavation only, without dredging and minimal grading. The new wetlands would be vegetated with cordgrasses along the slough, pickleweed within most of the wetland, and gumplant, salt gratt, fat hen, and alkali heath within the traditional areas separating the grasslands from the wetlands.

Excavation on the north and south sides of the slough would create embayments and two isolated nesting islands. A sandy nesting island would be created on the northern side of the slough to provide habitat for birds, which according to the IS/MND for the Restoration Project would include species such as plovers, curlews, and sandpipers. This island would be approximately 0.71 acres in size and would be located in stable areas that would be minimally subject to erosion from tidal action. A second island, approximately 1.34 acres in size, would be created on the southern side of the slough. This island would primarily be constructed to shells with vegetation composed of coyote brush to provide loafing and foraging habitat for birds, which according to the IS/MND would include species such as ducks, western grebes, and greater and lesser scaup. Principal features of the proposed plan are the isolated bird nesting islands. The IS/MND states that the sand, shell, and rocky beaches would provide nesting habitat for a variety of summer nesting shorebirds such as the American avocet, black-necked stilt, and several species of terns. Isolation of the islands from the mainland by tidal channels is intended to protect nesters from feral animal and human disturbance.

The increased areas of cordgrass created in the restored wetland areas would provide refuge and a high quality of foraging area for juvenile fish thus creating a nursery habitat for local and migratory fish. The restored areas of cordgrass and pickleweed with the appropriate imported and amended soils would provide habitat for benthic invertebrates, including various worm and bivalve species. Benthic invertebrates are known to be important sources of food for shorebirds and bottom feeding fish.

[9] California State Parks Foundation. 2006. Initial Study/Mitigated Negative Declaration. Candlestick Point State Recreation Area Yosemite Slough Restoration Project.

Salt marsh vegetation occurs along the shoreline which is alternately exposed by low tides and inundated by high tides on a daily basis, between Mean Low Water and Mean Higher High Water. Low salt marsh typically occurs above Mean Low Water. This zone would be planted with Pacific cordgrass, a native species typically found in this zone. Middle salt marsh occurs around Mean Tide Level and planting in this zone would be primarily pickleweed. Within the zone of irregular flooding by the higher high tides, Mean High Water to Mean Higher High Water, planting would include alkali heath, fleshy jaumea, and salt grass. In areas where the California clapper rail and salt marsh harvest mouse occur, areas of cordgrass and low inter-tidal to mid-tidal ranges are the preferred habitat of California clapper rail, and pickleweed and high marsh areas are the preferred habitat of the salt marsh harvest mouse, both listed species.

The studies and surveys done to prepare the Restoration Plan determined that the potential for presence of any special-status wildlife species within the Yosemite Slough project area is presently low. Occupation by these species is greatly limited by existing site conditions, which either are not suitable or are not of sufficient stature to support most species. The IS/MND states that it is likely that restoration of the site could create native transitional and wetland habitats, which could substantially increase nesting and foraging habitats for wildlife species, particularly for sensitive species such as the western snowy plover, San Francisco common yellowthroat, double-crested cormorant, and the California clapper rail.

The Restoration includes preparation of the Monitoring and Adaptive Management Plan that would set the framework for long-term (5 year) biological monitoring of the project's restored habitats. There is a contingency measure provision that states that if annual or final success criteria are not met, the applicant would prepare an analysis of the cause(s) of failure and, if determined necessary by the Corps, propose remedial action for approval.

As discussed in the following sections, the Draft EIR analyzed impacts of the Project, including the proposed bridge, upon areas subject to tidal influence such as tidal flats and marsh (i.e., impacts to tidal wetlands, mud flats, and aquatic habitats were assessed). The Restoration Project would increase the extent of these habitats, in particular increasing the extent of tidal marsh habitat in Yosemite Slough and restoring more extensive contiguous marshes. The new, restored tidal marsh would increase the extent of vegetated wetlands by approximately 12 acres, which comprises approximately 0.003% of similar baylands and shallow aquatic habitats available within the Bay.[10] The pockets of marsh such as those that could be present on the restoration site after wetland construction are not expected to attract species other than those which currently use the CP-HPS Project site, in Dr. Rottenborn's opinion. Therefore, although the impact assessment in the Draft EIR did not expressly differentiate between impacts to existing wetland, mud flat, and aquatic habitats and those that could be present after implementation of the Restoration Project, the Draft EIR described the types of impacts to those habitats (and associated species) that could occur, considered the significance of those impacts, and prescribed mitigation measures. The intent was to identify impacts and the associated mitigation measures to address impacts to any sensitive habitats or species within the Project's impact areas, whether those habitats and species

[10] Goals Report. 1999. Baylands Ecosystem Habitat Goals. A report of habitat recommendations prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. First Reprint. U.S. Environmental Protection Agency, San Francisco, CA/San Francisco Bay Regional Water Quality Control Board, Oakland, CA.

were on site or off site, and whether the habitats and species currently exist or could exist after implementation of the Restoration Project.

The potential impacts of the bridge on migratory and resident birds, and other taxa, that could use the restoration site were analyzed in the context of existing conditions, as the species expected to use the restoration site after restoration implementation are species that are currently present at least occasionally on the site. The Restoration Project would expand marsh and mud flat habitat, potentially providing more extensive habitat for species associated with vegetated tidal marsh such as marsh wrens, Alameda song sparrows, and possibly Bryant's savannah sparrows. Although implementation of the Restoration Project would increase the potential for these species to breed in Yosemite Slough in small numbers, relative to existing conditions, these species already could potentially occur in low numbers in the marsh remnants on the Project site. Other marsh-associated species, such as the California clapper rail, salt marsh harvest mouse, and salt marsh wandering shrew, are not expected to occur in the restored tidal marsh. The harvest mouse and wandering shrew are not known to occur as far north on the San Francisco Peninsula as the Project site,[11,12,13] and the site is isolated from potential source populations of these low-mobility species by miles of unsuitable habitat. As a result, there is no significant potential for natural colonization of restored tidal marsh in Yosemite Slough by these small mammals. Although the California clapper rail is mobile enough to be able to disperse to the site vicinity from source populations elsewhere, marsh size and proximity to other marshes are important determinants of habitat quality for this species, which typically nests in larger marshes, with more well-developed networks of small tidal channels, than would be restored by the Restoration Project.[14] Based on the small size of the marsh to be restored, Dr. Rottenborn concludes that California clapper rails would not be expected to use the restored marsh to any significant degree. Therefore, these "new" habitat areas are not expected to attract species other than those which currently use Yosemite Slough and South Basin at least occasionally.

The effects of the bridge on the species that might use the "nesting islands," if and when they are proposed as part of the Restoration Project, are not expected to be substantial. In Dr. Rottenborn's assessment of literature and characteristics of these species, suggests it is unlikely that additional species (i.e., those that are not currently present on the site) would actually use those islands for nesting to any significant degree. As noted, the Restoration Project description describes these islands as being created for special-status species such as the double-crested cormorant and snowy plover. In fact, neither species is likely to nest on these islands as described. Neither the cormorant nor the plover nests on such small, low, shell/sandy islands surrounded by tidal water anywhere in the Bay area. Rather, double-crested cormorants breeding in the Bay area nest primarily on electrical transmission towers or larger rocky islands (Ainley 2000).[15] A ground-nesting colony in the San Jose area is located on extensive berms

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[11] Shellhammer, H. S. 2000. Salt marsh harvest mouse. Pages 219-228 *in* Olofson, P.R. (ed.), Goals Project. Baylands ecosystem species and community profiles: life histories and environmental requirements of key plants, fish and wildlife.
[12] Shellhammer, H. S. 2000. Salt marsh wandering shrew. Pages 231-233 *in* Olofson, P.R. (ed.), Goals Project. Baylands ecosystem species and community profiles: life histories and environmental requirements of key plants, fish and wildlife.
[13] U.S. Fish and Wildlife Service. 2010. Draft recovery plan for the tidal marsh ecosystems of northern and central California. February 10, 2010 draft. California/Nevada Operations Office, Sacramento, CA.
[14] U.S. Fish and Wildlife Service. 2010. Draft recovery plan for the tidal marsh ecosystems of northern and central California. February 10, 2010.
[15] Ainley, D. G. 2000. Double-crested cormorant. Pages 323-325 *in* Olofson, P.R. (ed.), Goals Project. Baylands ecosystem species and community profiles: life histories and environmental requirements of key plants, fish and wildlife.

separating (and surrounded by) vast, non-tidal ponds, where the birds are much farther from mainland areas supporting potential mammalian nest predators such as raccoons than would be the case at Yosemite Slough.[16] Consequently, Dr. Rottenborn does not expect that cormorants would nest on small, low islands surrounded by tidal water in Yosemite Slough. Likewise, snowy plovers breeding in the Bay area nest on extensive sandy beaches along the coast or, inside the Bay, in areas providing extensive salt pannes (depressions embedded within salt and brackish marshes), in salt pond bottoms, or on islands of bay sediment within large, non-tidal salt ponds.[17] Based on the known habitat use of this species in the Bay area, Dr. Rottenborn does not expect this species to nest on the shell island that the Restoration Project expected would be vegetated with shrubs such as coyote brush; snowy plovers breed in open/barren to only sparsely vegetated areas.[18,19] Snowy plovers are also not expected to nest on the island that is proposed to be "sandy" due to its small size, exposure to tidal action, and proximity to the proposed marsh and to the human-use areas of the Restoration Project itself. In Dr. Rottenborn's experience with this species and review of the literature on Bay area-breeding snowy plovers, this species is not known to nest in such circumstances anywhere in the Bay area.

There is a low probability that most other island-nesting bird species in the Bay area, such as American avocets, black-necked stilts, Forster's terns, and Caspian terns, would nest on these islands. Unless (or more likely, until) these islands become dominated by vegetation, their substrate might be suitable for nesting by such species. However, small islands subjected to fully tidal conditions are not, in Dr. Rottenborn's experience, used for nesting by these species in south San Francisco Bay. Maintaining these islands free from vegetation is not proposed by the Restoration Project. As a result, these islands may become too densely vegetated to provide suitable breeding habitat for these species. Alternatively, they may be subject to so much tidal wash that colonization by vegetation or nesting by birds is precluded. Regionally abundant ducks (such as mallards), and perhaps western gulls (which nest on Double Rock), may nest on these islands, though again, western gulls are unlikely to nest on islands that are either densely vegetated or are unvegetated due to tidal action. However, Dr. Rottenborn expects the sandy island to be used primarily by foraging and roosting waterbirds. The shell/vegetated island would likely be used primarily by species that currently use the coyote brush-dominated portions of the non-native annual grassland currently present in some areas along the edges of Yosemite Slough and South Basin, and by roosting and foraging waterbirds along the perimeter of the island if open, unvegetated foraging and loafing areas persist.

Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

[16] Bousman, W. G. 2007. Double-crested cormorant. Pages 148-149 *in* Bousman, W. G. (ed.), Breeding Bird Atlas of Santa Clara County. Santa Clara Valley Audubon Society.

[17] Page, G. W., C. M. Hickey, and L. E. Stenzel. 2000. Western snowy plover. Pages 281-284 *in* Olofson, P.R. (ed.), Goals Project. Baylands ecosystem species and community profiles: life histories and environmental requirements of key San Francisco Bay Regional Water Quality Control Board. Plants, Fish and Wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. Oakland, California.

[18] Page, G. W., J. S. and J. C. Warriner, and P. W. C. Paton. 1995. Snowy plover (*Charadrius alexandrinus*). *In* A. Poole and F. Gill (eds.), The Birds of North America, No. 154. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.

[19] U.S. Fish and Wildlife Service. 2007. Recovery plan for the Pacific Coast population of the western snowy plover (*Charadrius alexandrinus nivosus*). California/Nevada Operations Office, Sacramento, CA.

More importantly, limited nesting by special-status species new to the restoration area is not likely to be significantly impacted by the bridge. As noted, most of these species would not be breeding during the winter season. Temporary impacts from light, vibration, and exhaust may be attenuated by the physical separation of the islands from the bridge, since many of the birds using those islands are expected to learn that game-day impacts are not only confined to a few hours but that the people and vehicles using the bridge also cannot physically intrude on the island habitat.

Since the Restoration Project has not been implemented, there is some uncertainty as to how the bridge might affect this future project. It is not known, for example, whether all or just part of the Restoration Project would be constructed prior to construction of the Yosemite Slough bridge, and thus the extent of restored habitats that would be subject to impact by the bridge is unknown. Also, there is an Environmental Protection Agency (US EPA) inquiry into contamination of materials within Yosemite Slough, and it is possible that some remediation of these materials would be required prior to, or simultaneously with, the restoration. Because the US EPA has not yet reached a decision as to whether it would require any such remediation,[20] the timing of such remediation and hence a delay in restoration, if required, is unknown.

Even so, as described in the following sections, Dr. Rottenborn expects the impacts of the proposed CP-HPS Project, including the Yosemite Slough bridge, on the habitats and species either existing in the Project area or expected to occur in the Project area upon completion of the Restoration Project to be comparable to those described in the Draft EIR for existing habitats and species using the slough and the CP-HPS shoreline. Although the Restoration Project would increase the extent of tidal aquatic, mudflat, and (especially) tidal marsh habitat in Yosemite Slough, the type of the potentially affected habitats and species present after implementation of the Restoration Project would be largely similar to the existing conditions. Restoration of marsh habitat in Yosemite Slough would increase the potential for species associated with vegetated tidal marsh such as marsh wrens, Alameda song sparrows, and Bryant's savannah sparrows to nest in the slough (and/or increase the number of pairs that might breed in the slough to some extent), but these species could already be present in the Project area (albeit in low numbers). As described in detail in the following sections, the quantity of impacts to the new/restored habitats, including habitats that might be used by nesting birds associated with tidal marsh habitats, would not be substantially greater than the Project's effects on existing Yosemite Slough conditions. The following sections expand on some of the concerns raised in comments regarding effects on biological resources in the slough. These sections discuss that, while the bridge would have a limited adverse effect on habitat conditions in and wildlife use of the Restoration Project, impacts are either less than significant, or mitigable to less-than-significant levels, and the bridge would not preclude the achievement of the biological goals of the Restoration Project.

Discussion of Biological Resource Impacts on Yosemite Slough in the Draft EIR

The Draft EIR discussed potential impacts of the Yosemite Slough bridge on common species and habitats (Impact BI-2), special-status plants (Impact BI-3b), wetlands and aquatic habitats (Impact BI-4c), fish and marine mammals (Impact BI-9b), native oysters (BI-10c), designated critical habitat for green

[20] Brett Moxley (U.S. EPA), pers. comm. to Stephen C. Rottenborn (H. T. Harvey & Associates), phone conversation on January 28, 2010.

sturgeon and Central California Coast steelhead (Impact BI-11c), essential fish habitat (Impact BI-12c), wildlife movement and wildlife nursery sites (Impact BI-13b), and local policies or ordinances protecting biological resources (Impact BI-14b). These discussions did not separately distinguish impacts to existing biological resources from impacts to biological resources that may be expected to occur in the future following implementation of the Restoration Project by State Parks, because although some habitats, such as intertidal mud flat and tidal salt marsh, would be more extensive once restoration occurs, the species and habitat types that would be present following restoration are comparable to the types of species and habitats currently present at Yosemite Slough. Therefore, the Project-specific and cumulative impact analysis performed in the Draft EIR considered direct and indirect effects of the bridge, including its construction and use, on biological resources that are currently present, and that would be present after restoration has been completed, both on- and off-site. To better understand these issues, the full effect on the Restoration Project will be outlined.

As discussed in the Draft EIR, construction of the Yosemite Slough bridge is expected to affect common species and habitats, sensitive habitats such as wetlands, mud flats, and aquatic habitats, and potentially some special-status wildlife species. The Draft EIR prescribed measures (MM BI-4a.1, MM BI-4a.2, MM BI-4c, MM BI-5b.1 through MM BI-5b.4, MM BI-9b, MM BI-12a.1, MM BI-12a.2, MM BI-12b.1, MM BI-12b.2, and MM BI-14a) to mitigate potentially significant impacts to less than significant levels. As identified in mitigation measure MM BI-4a.1 on pages III.N-59-62 of the Draft EIR, the permanent loss of aquatic, mud flat, and essential fish habitats as a result of the placement of bridge piers within the slough would be mitigated by replacement of such habitat through creation or restoration at a minimum 1:1 ratio. In addition, the following text has been added to mitigation measure MM BI-4a.2 (on page III.N-63 of the Draft EIR, before the last square bullet beginning with "For impacts to tidal habitats") to ensure temporarily impacted sensitive habitats would be restored to their pre-construction condition following the completion of construction activities:

…

- *Testing and disposal of any dredged sediment shall be conducted as required by the USACE and the Long-Term Management Strategy (LTMS)*[790]
- *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 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 Water Mitigation and Monitoring Plan as described above.*
- *For impacts to tidal habitats: …*

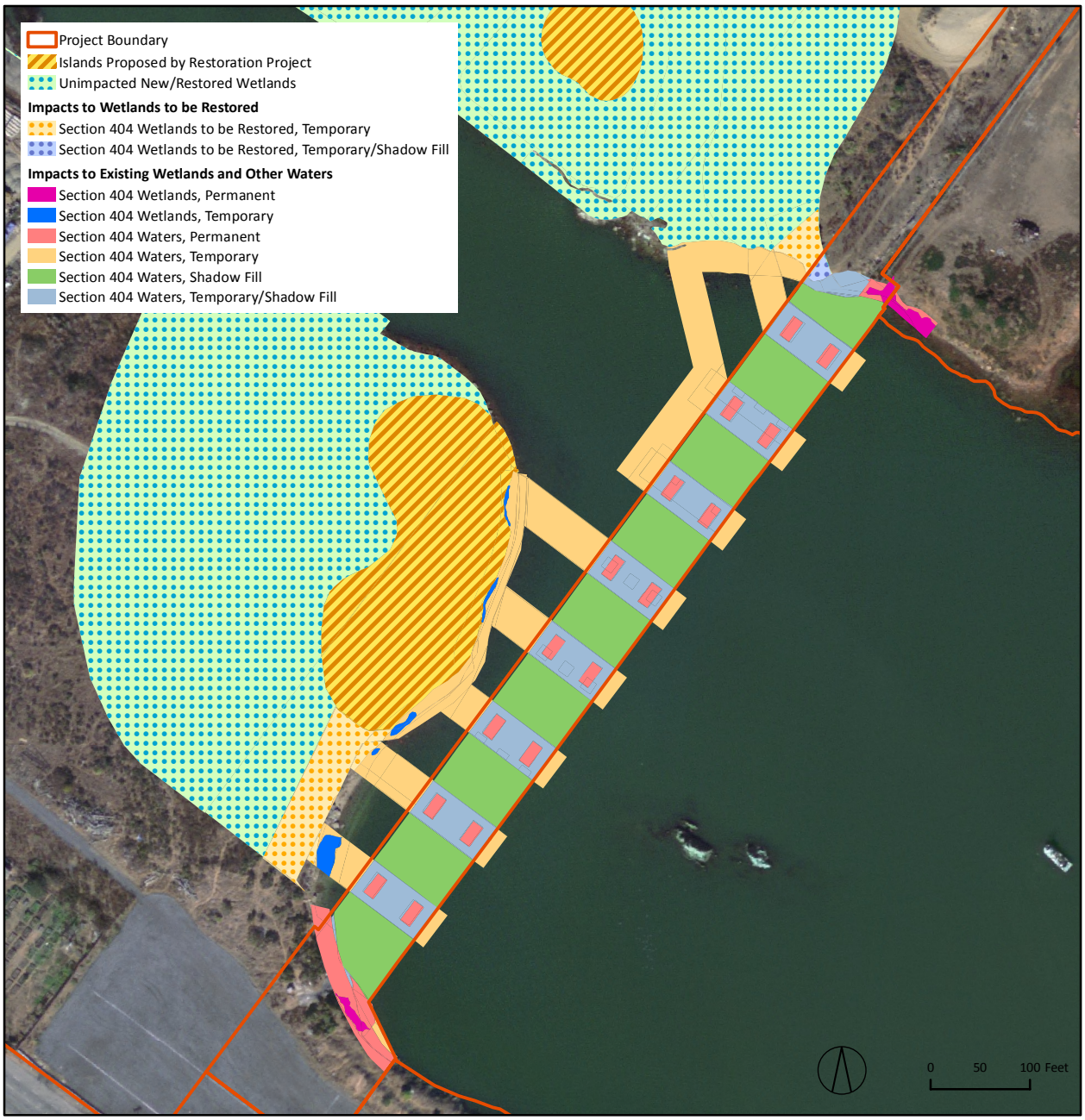
Several commenters questioned why the Draft EIR explicitly analyzed impacts to future wetlands that may be constructed as part of the US Department of the Navy (Navy) wetland mitigation on HPS but did not explicitly analyze the potential impacts to wetlands that would be created by the Restoration Project. Neither the Navy's wetland mitigation nor the Restoration Project is currently in place, and thus neither project comprises part of the existing CEQA baseline. They are future potential impacts which are likely or foreseeable impacts, and are assessed based on the likelihood and timing of occurrence. To more explicitly explain the extent of possible impacts to wetland and aquatic/mud flat habitats that would be present after the Restoration Project is implemented, the proposed bridge footprint and temporary construction/access areas were overlaid electronically on final plans for Phase I of the

restoration plan (on the north side of Yosemite Slough) provided by WRA, Inc., the firm that designed the wetland restoration plan, on 19 January 2010 and 50 percent plans for Phase II (on the south side) provided by WRA on 4 February 2010. The text of the cumulative impact analysis has been revised in the Final EIR to include an assessment of the resulting changes in acreages of impacts to jurisdictional habitats that would be affected, as described in further detail below and depicted in Figure III.N-7 (Impacts to Wetlands and Other Waters after Yosemite Slough Wetland Restoration). This more detailed explanation and calculation of acreages clarifies the extent of the potential impact if the Restoration Project is constructed in accordance with the designs provided by WRA prior to construction of the bridge. The assessment does not result in a new significant impact or a substantial increase in the magnitude of an impact because the Draft EIR had already identified impacts to wetlands and other waters resulting from construction of the Yosemite Slough bridge as a significant impact, and the impacts to "new" wetlands that would be restored by the Restoration Project do not substantially increase the magnitude of these impacts over those assessed in the Draft EIR. Although approximately 12 acres of new tidally influenced habitats, predominantly tidal marsh, are proposed to be constructed by the Restoration Project, bridge construction access would result in temporary impacts to only 0.21 acre of new vegetated tidal marsh that is proposed as part of the Restoration Project, and less than 0.01 acre of wetlands that would be restored by the Restoration Project would be permanently impacted by shading as a result of being located directly under the bridge. The bridge would result in no permanent fill of new/restored wetland, aquatic, or mud flat habitat other than in existing conditions as created by the Restoration Project. Rather, while temporary impacts to wetlands and other waters would increase slightly, permanent impacts to these sensitive habitats would be reduced if the Restoration Project is implemented prior to bridge construction because shoreline improvements that would otherwise be constructed as part of the Project would then not be necessary on the south side of Yosemite Slough west of the bridge. A total of 0.03 acre of permanent impacts to existing wetlands and 0.19 acre of permanent impacts to existing Section 404 waters along the Yosemite Slough shoreline (off site) that were originally identified for the Project would not occur if Phase II of the restoration plan is implemented prior to bridge construction (though these existing jurisdictional areas would be temporarily impacted during bridge construction).

The mitigation measures that were previously described in the Draft EIR would, as originally intended, apply to any impacts to wetland and aquatic habitats, whether such habitats currently exist or are restored by the Restoration Project prior to bridge construction. Therefore, the mitigation measures for impacts to new wetland, aquatic, and mud flat habitats on the Restoration Project site were identified in the Draft EIR.

To more directly respond to public concerns, the following text has been added to the cumulative impacts discussion (before the first partial paragraph on page III.N-122 of the Draft EIR) to provide a more detailed discussion of impacts to future wetland and aquatic habitat in consideration of the Restoration Project:

> In response to public concerns, impacts to future wetland and aquatic habitat in consideration of the Yosemite Slough Restoration Project have been quantified. If the Restoration Project is implemented before the Yosemite Slough bridge is constructed, then the bridge would impact not only existing wetlands, aquatic habitats, and mud flats, but also sensitive habitats that have been restored by the Yosemite Slough Restoration Project. Based on the final Phase I Restoration Plan



SOURCE: HT Harvey, 2010; Moffat & Nichol, 2009; Mactec, 2010; PBS&J, 2010. PBS&J 05.07.10

FIGURE III.N-7 Candlestick Point - Hunters Point Shipyard Phase II EIR

IMPACTS TO WETLANDS AND OTHER WATERS AFTER YOSEMITE SLOUGH WETLAND RESTORATION [New]

(on the north side of Yosemite Slough) provided by WRA, Inc. (the firm that designed the restoration plans) on 19 January 2010 and 50 percent plans for Phase II of the Restoration Plan (on the south side of Yosemite Slough) provided by WRA on 4 February 2010, additional impacts to sensitive habitats were calculated and are illustrated by Figure III.N-7 (Impacts to Wetlands and Other Waters after Yosemite Slough Wetland Restoration). Bridge construction access would result in temporary impacts to 0.21 acre of new vegetated tidal marsh that is proposed as part of the Yosemite Slough Restoration Project, but the CP-HPS Project would result in no permanent fill of new/restored wetland, aquatic, or mud flat habitat. Further, if the Restoration Project is implemented prior to bridge construction, shoreline improvements that would otherwise have been constructed to extend along the southern Yosemite Slough shoreline will not be necessary. Therefore, 0.03 acre of permanent impacts to wetlands and 0.19 acre of permanent impacts to Section 404 waters along the southern Yosemite Slough shoreline (off site) that were originally identified for the Project would not occur if Phase II of the Restoration Plan is implemented prior to bridge construction (though these existing jurisdictional areas would be temporarily impacted during bridge construction). Temporary impacts would be mitigated through implementation of mitigation measures MM BI-4a.1 and MM BI-4a.2, as required by the Project. Based on the plans for the restoration site provided by WRA as described above, less than 0.01 acre of wetlands that would be restored by the Restoration Project would be impacted by shading as a result of being located directly under the shadow of the bridge. If additional vegetated wetlands are proposed within the bridge footprint as design for Phase II of the Restoration Plan proceeds, such that additional shading impacts to vegetated wetlands would occur, and if such wetlands are constructed prior to construction of the bridge, mitigation for such impacts will be provided by the CP-HPS Project at a 1:1 ratio as described above.

In addition to new wetlands and other waters that are restored (i.e., from existing nonjurisdictional areas) by the Restoration Project, it is also possible that wetland vegetation would colonize some areas near the proposed bridge site that are currently unvegetated "other waters" as a result of planting or changes in hydrology or sediment accretion that occur as a result of the Restoration Project. As a result, some bridge impact areas that are currently aquatic or mud flat habitat could be vegetated at the time of bridge construction, resulting in a slight increase in impacts to vegetated wetlands due to construction access or, possibly, shading and a concomitant decrease in impacts to other waters. However, such areas were already considered impacted "other waters" in the Draft EIR, and they would be very limited in extent. Impacts to vegetated wetlands, whether currently existing or existing at the time of construction, would be mitigated via implementation of mitigation measures MM BI-4a.1 and MM BI-4a.2, as described in the Draft EIR.

The construction of the Yosemite Slough bridge and approach roads would also impact limited areas of upland habitat, including upland transitional habitat located immediately upslope from restored wetlands and a proposed buffer zone located immediately upslope from the transitional habitat within the proposed restoration site. Impacts to upland transitional and buffer habitat would be predominantly temporary, occurring during bridge construction, with approximately 600 square feet of potential, temporary impacts to upland transitional and buffer habitats on the Restoration Project site (based on an overlay of the bridge plans over the Restoration Project plans provided by WRA). Such temporarily impacted areas would be restored to their pre-construction conditions following bridge construction. Approximately 170 square feet of upland transitional and buffer habitat would be permanently impacted by the bridge abutment on the northern side of the slough. Approximately 1.5 acres of additional upland areas within the Restoration Project site would be permanently impacted by the bridge approach roads, including areas on both the north and south sides of the slough. These upland areas would be planted

with native shrubs, grasses, and forbs.[21] The upland transitional, buffer zone, and upland habitats on the Restoration Project site that would be impacted by the CP-HPS Project are similar to non-native annual grassland and landscaped areas at Candlestick Point and on portions of HPS Phase II, as described in Section III.N of the Draft EIR. Impacts to such upland habitat types and the plant and animal species associated with them were evaluated in Impact BI-2 (Common Species and Habitats) on pages III.N-50 to -55 of the Draft EIR. The additional impact to 1.5 acres within the Restoration Project site would not substantially increase Project effects on upland grassland or landscaped habitat or the species using these habitats due to the limited extent of such additional impacts. Furthermore, as discussed in Impact BI-2 (Common Species and Habitats) in the Draft EIR, any plant or wildlife species occurring in regionally abundant upland habitats on the Restoration Project site is itself regionally abundant, and any adverse effects of the CP-HPS Project on the abundance of such species on the restoration site would not substantially affect regional populations of these species. Upland transitional habitat occurring on the upland side of tidal marsh is a less abundant habitat regionally; however, its importance is tied closely to the value of the adjacent wetlands to species that may require upland transitional areas during high tides. Because the Yosemite Slough is not expected to support rare species such as the California clapper rail or salt marsh harvest mouse, for which upland transitional zones might be particularly valuable, the loss of 170 square feet of upland transitional and buffer habitat due to construction of the bridge would not result in a substantial impact to either the quality of the Restoration Project or the species that use it. Given the very limited nature of the upland and upland transitional habitats on the restoration site that would be impacted, such impacts are not expected to result in substantial reductions in the populations of any particular species, either on the site itself or regionally. Therefore, impacts to upland and upland transitional habitats in the Restoration Project area would not introduce a new significant impact.

Commenters also noted that a portion of the funding for the Restoration Project consisted of in-lieu fees paid as mitigation for wetland impacts by other projects and questioned whether the regulatory permits for those other projects would require revision if wetlands on the restoration site were impacted by the Project. It is not expected that the regulatory agencies would re-open the permitting for those other projects or require any additional mitigation or coordination on the part of the applicants for those projects. Rather, the regulatory agencies are expected to require the CP-HPS Project Applicant to obtain permits prior to engaging in any activity that could impact any such mitigation wetlands and to compensate for any such impacts through the implementation of the mitigation measures identified in the Draft EIR and/or other permit conditions.

Commenters suggested that potential effects of shading from the bridge on wetlands and other habitats below the bridge were not adequately discussed in the Draft EIR. This impact was discussed in Impact BI-4c. Although the bridge would be high enough to continue to let some light under the bridge, the potential for permanent loss of vegetated wetlands as a result of shading from the bridge was considered a potentially significant impact in the Draft EIR. The Draft EIR discussed the possibility that shading from the bridge would be great enough to result in the loss of vegetated wetlands (which would include both existing wetlands and any wetlands that have been restored as part of the Restoration Project) and prescribed mitigation via restoration at a 1:1 ratio (the same as for wetlands that are lost due to outright filling). To determine the extent of potentially vegetated wetlands that would be restored by

[21] California State Parks Foundation. 2006. Initial Study/Mitigated Negative Declaration. Candlestick Point State Recreation Area Yosemite Slough Restoration Project.

the Restoration Project and yet be located under the shadow of the bridge, the proposed bridge footprint has been overlaid electronically on final plans for Phase I of the Restoration Project (on the north side of Yosemite Slough) and 50 percent plans for Phase II (on the south side) provided by WRA, Inc. This overlay indicates that less than 0.01 acre (313 square feet) of new/restored vegetated tidal wetlands would be located under the shadow of the bridge. Further, although shading during early morning hours (when the sun is east of the bridge) would extend outside the bridge footprint into the restored tidal marsh to some extent, indirect sunlight during these morning hours and direct insolation during the afternoon would allow substantial sunlight to reach vegetated habitats, allowing for the development and maintenance of marsh vegetation in the restoration site in areas that are outside the immediate bridge footprint. If additional vegetated wetlands are proposed within the bridge footprint as design for Phase II of the restoration plan proceeds, such that additional shading impacts to vegetated wetlands would occur, and if such wetlands are constructed prior to construction of the bridge, mitigation for such impacts would be provided by the CP-HPS Project at a 1:1 ratio as described in the cumulative impact analysis.

The effects of shading on mud flat and aquatic habitat would be less substantial than on vegetated wetlands. Tidal marshes around the bay export nutrients and organic material to other estuarine habitats, including mud flats and aquatic habitats.[22,23] As a result, mud flats and aquatic habitats gain some of their productivity from organic matter exported from marshes in addition to photosynthesis within the mud flats and water column, and thus shading would not eliminate the base for mud flat and aquatic food webs within the shaded area. Also, shading would not affect habitat structure (e.g., height and density of vegetation) in these unvegetated habitats as it would in vegetated wetlands. As a result, shading is not expected to have substantial impacts to the aquatic and intertidal organisms using these habitats under the bridge, and these habitats would retain much of their existing ecological functions and values after the bridge has been constructed. Nevertheless, the Draft EIR (MM BI-4c on page III.N-68) specified that shading impacts to mud flat and aquatic habitats that are not permanently impacted by bridge piers but that are within the bridge footprint must be compensated via creation or restoration at a 0.5:1 ratio to acknowledge that some reduction in functions and values of these habitats would occur as a result of shading.

Some commenters suggested that shading from new high-rise buildings on Candlestick Point or Hunters Point Shipyard would also shade wetlands to the point that adverse effects would occur. The potential locations of shadows cast by all buildings proposed by the Project were predicted and were mapped in the Draft EIR on Figure III.F-2 for Candlestick Point and on Figure III.F-15 for HPS Phase II. As indicated by those figures, shadows cast by new buildings constructed by the Project on HPS Phase II would not reach any portion of the Restoration Project site, and only a very limited area on the southernmost portion of the Restoration Project site would be subject to any shading from buildings to be constructed on Candlestick Point. Comparing Figure III.F-2 and the 50 percent wetland restoration plans for Phase II of the Restoration Project provided by WRA, less than ½-acre of new, restored wetlands on the Restoration Project site would be subject to any shading from new buildings. The

[22] Kneib, R. T., C. A. Simenstad, M. L. Nobriga, and D. M. Talley. 2008. Tidal marsh conceptual model. Sacramento (CA): Delta Regional Ecosystem Restoration Implementation Plan.
[23] Atwater, B. F., S. G. Conard, J. N. Dowden, C. W. Hedel, R. L. MacDonald, W. Savage. 1979. History, landforms, and vegetation of the estuary's tidal marshes. Pages 347-385 in San Francisco Bay: the urbanized estuary. Pacific Division of the American Association for the Advancement of Science.

analysis of shade distribution during different times of year and times of day presented in Section III.F of the Draft EIR indicates that shading of any portion of the Restoration Project's new wetlands would be very infrequent, and most of the time there would be no shading of these areas. Therefore, it is expected that ample sunlight would reach these wetlands to allow for the development and maintenance of vegetated tidal marsh.

Potential Effects of Noise on Wildlife Use of Yosemite Slough

The effects of noise on wildlife have received quite a bit of research attention,[24] but the results of most studies cannot be directly applied to the Yosemite Slough site. Many such studies focused on the effects of very loud noise, such as that produced by low overflights of military aircraft,[25] rather than on the much less acute noise that would be associated with the proposed bus rapid transit (BRT) buses, vehicles, and human use of the Yosemite Slough bridge. The effects of noise and vibrations on invertebrates, reptiles, and amphibians have not been well studied, and studies of noise effects on fish suggest that "normal traffic noise would not be sufficiently great to disturb those species that have been looked at so far" [26] and in the case of the Project, the principal traffic noises would only occur for a few hours 10 to 12 days a year.

Most studies of noise effects have focused on birds. Some studies of grassland and woodland birds have found reduced abundance of birds in closer proximity to roadways.[27,28,29] However, the results of many studies documenting similar results do not conclusively identify noise or vehicular movements as the mechanism for the observed results; for example habitat changes were not controlled well enough to identify noise as the reason for reduced abundance near roads. Furthermore, several studies cited by Kaseloo and Tyson (2004) have demonstrated that habitat quality may be of much greater importance than proximity to roads in determining wildlife distribution, with birds occurring more abundantly in roadside areas providing higher-quality habitat than in lower-quality habitat farther from roads. Therefore, while a number of studies have documented adverse effects of roads on abundance and behavior of birds, other studies indicate a tolerance of proximity to roads in roadside areas providing high-quality habitat.

Most studies have investigated the effects of occasional, very loud noises such as low aircraft overflights or the distribution of wildlife in relation to proximity to very busy roads with thousands of vehicle

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[24] Kaseloo, P.A. and K.O. Tyson. 2004. Synthesis of noise effects on wildlife populations. Report No. FHWA-HEP-06016.

[25] Baker, M. and G. Belliveau (eds.) Effects of noise on wildlife conference, Proceedings. Happy Valley - Goose Bay, Labrador. Aug. 22-23, 2000. Institute for Environmental Monitoring and Research.

[26] Kaseloo, P.A. and K.O. Tyson. 2004. Synthesis of noise effects on wildlife populations. Report No. FHWA-HEP-06016.

[27] Foppen, R. and R. Reijnen. 1994. The effects of car traffic on breeding bird populations in woodland. II. Breeding dispersal of male willow warblers (*Phylloscopus trochilus*) in relation to the proximity of a highway. Journal of Applied Ecology 31(1):95-101.

[28] Reijnen, R. and R. Foppen. 1994. The effects of car traffic on breeding bird populations in woodland. I. Evidence of reduced habitat quality for willow warblers *(Phylloscopus trochilus*) breeding close to a highway. Journal of Applied Ecology 31(1):85-94.

[29] Reijnen, R., R. Foppen, C. ter Braak, and J. Thissen. 1995. The effects of car traffic on breeding bird populations in woodland: III. Reduction of density in relation to the proximity of main roads. Journal of Applied Ecology 32(1):187-202.

trips/day. In contrast, the Yosemite Slough bridge would be used only by BRT buses except during the 10 to 12 days/year, and half dozen or so hours on those days, in which vehicles entering or exiting the new stadium would be using the bridge. During those few game days, both traffic noise and the number of vehicles are expected to result in greater disturbance than on days when only buses would use the bridge. While the amount of such game-day noise, vibration, and human activity on the bridge, and the degree to which such factors would disturb wildlife using Yosemite Slough, are unknown, it is reasonable to expect that these factors would disturb wildlife to a greater extent than everyday BRT use on non-game days. Due to the timing of the NFL football season, these effects would primarily occur during the avian nonbreeding season (i.e., in fall and early winter). During that season, the slough is currently used primarily by foraging and loafing waterfowl, shorebirds, gulls, and large waders. After implementation of the Restoration Project, those species may be complemented by somewhat larger numbers of marsh-associated birds, such as marsh wrens and sparrows, than currently use the slough. Disturbance by game-day traffic is expected to cause waterbirds foraging and loafing in open areas to either move farther from the bridge than would be the case on non-game days, or to leave the slough entirely. Small passerines (i.e., perching birds) using tidal salt marsh and upland habitats may also move farther from the bridge or may spend more time in vegetated cover than usual on game days, if they are not tolerant of (or if they do not habituate to) such disturbance. As discussed in "Expected Effects of the bridge on Wildlife Use of Yosemite Slough" below, birds that are permanent residents are expected to return to their normal activities and territories after game-day disturbance subsides, and nonbreeding birds may either return to their use of areas closer to the bridge or would find foraging and loafing habitat elsewhere around the Bay. Other wildlife taxa, such as mammals and reptiles, may show greater avoidance of areas close to the bridge on game days than during non-game days. On game days, they may thus move to areas either within the Restoration Project site or on the east side of the bridge that are farther from the bridge, or they may spend more time in the cover of vegetation during game days. However, due to the limited mobility of these species, they are not expected to move long distances, and it is likely that they also would return to areas closer to the bridge (or increase their activity in areas closer to the bridge) after game-day activity subsides.

On all other days, one bus would cross the bridge every 2.5 minutes, on average, during peak commute periods and every 5 minutes the remainder of the day. The hybrid buses that would be used on this BRT route would have a maximum noise level (from pull-away after a stop to 35 miles per hour [mph]) of 70 to 75 A-weighted decibel scale (dBA) at the source, roughly equivalent to the sound of freeway traffic at a distance of 50 feet. Some studies have documented that such noise levels have effects on some birds, while others have found no long-term effects on birds of much higher noise levels (as reviewed by Kaseloo and Tyson 2004). For example, a US Department of the Interior report on the Environmental Impact of the Big Cypress Swamp Jetport, addressing B-720 jet flyovers at altitudes of 500 to 5,000 ft, indicated that birds were not observed to be flushed or disturbed at noise levels ranging from 75 to 96.5 dBA.[30] Another study reviewed by Kaseloo and Tyson reported no significant effect of jet overflights on wading birds at levels of 55 to 100 dBA. Further, while there are no established criteria relating traffic noise and animal behavior, the analyses of noise effects on wildlife often employ higher impact thresholds than the 70 to 75 dBA noise levels that would result from BRT bus use, or even game-day traffic use, of the Yosemite Slough bridge. For example, the Bay area to Central Valley High-Speed

[30] US Environmental Protection Agency (US EPA). 1971. Effects of noise on wildlife and other animals. NTID300.5.

Train Program Environmental Impact Report/Environmental Impact Statement used a sound exposure level of 100 dBA as its impact threshold.[31]

The ambient noise to which animals are currently exposed at Yosemite Slough, and to which animals would be exposed after implementation of the Restoration Project, is already relatively high, at least intermittently. The closest noise measurement to Yosemite Slough (recorded during the preparation of the Draft EIR) was taken in a vacant lot within the Project site along Carroll Avenue, across from Alice Griffith Neighborhood Park residences. The ambient noise level at this location was measured at 64.8 decibels, and the primary source of noise at this location was generated from traffic (Table III.I-6 [Existing Peak-Hour Traffic Noise Measurements (L_{eq})] of Section III.I [Noise and Vibration]). In addition, the industrial and storage uses of the properties on the south side of Yosemite Slough that are outside both the Yosemite Slough restoration area and the CP-HPS Project site, and that would thus not be subject to change as a result of either project, are the source of considerable ambient noise. Back-up signals on equipment, truck noise from the adjacent truck storage yard, and machinery from adjacent industrial areas contribute to noise levels in the area,[32] and any wildlife using Yosemite Slough, both currently and following restoration, would have to be habituated to such noise levels. Thus, the noise levels at Yosemite Slough on non-game-days following bridge construction can be characterized as having moderately high ambient noise levels, as expected of this urban location, punctuated every 2.5 minutes (during commute periods) to 5 minutes (during non-commute periods) by somewhat increased noise levels as a BRT bus passes over the bridge. Based on the available information on noise effects on wildlife and observations of wildlife use of other urban wetland areas in the Bay area, Dr. Rottenborn has inferred that such BRT traffic may result in a small reduction in use of areas near the bridge by wildlife, or temporary effects on wildlife behavior when a bus passes by, but such noise is expected to affect a relatively small proportion of the Yosemite Slough area and is not expected to substantially reduce wildlife use of the restoration site (as discussed in greater detail in "Expected Effects of the bridge on Wildlife Use of Yosemite Slough" below).

Potential Effects of Vehicle Exhaust on Plants and Animals of Yosemite Slough

There is some evidence that urban air pollution, including exhaust from vehicles, may adversely affect vegetation.[33] However, the effects of vehicle exhaust on plants and animals have not been well-studied, especially in natural situations (as opposed to lab conditions), and there is no evidence to suggest that exhaust from vehicles using the Yosemite Slough bridge would result in substantial adverse effects on wildlife or plant communities. The hybrid buses that the BRT system would operate are low-emission vehicles. The infrequency with which such buses would be crossing the bridge, the low-emission nature of these buses, and the absence of other traffic on the bridge during non-game days limits the potential for exhaust from vehicles using the bridge to affect plants and animals in the slough. Furthermore, wind levels that are characteristic of the San Francisco Bay shoreline are expected to disperse exhaust, and

[31] California High-Speed Rail Authority and Federal Railroad Administration. 2008. *Bay Area to Central Valley High-Speed Train (HST) Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS)*. Final. Volume 1: Chapters. May. Sacramento, CA and Washington, D.C.

[32] S. Rottenborn, H. T. Harvey & Associates, pers. obs. during January 6, 2010 site visit.

[33] Honour, S. L., J. N. B. Bell, T. W. Ashenden, J. N. Cape, and S. A. Power. 2009. Responses of herbaceous plants to urban air pollution: Effects on growth, phenology and leaf surface characteristics. Environmental Pollution 157:1279-1286.

there is no evidence that exhaust emissions could concentrate in any particular area near the bridge in concentrations or for durations great enough to result in adverse ecological effects.

Effects of deposition of certain emissions, such as nitrogen compounds, on plant communities in Yosemite Slough are not expected to be substantial. Adverse effects of nitrogen deposition have been documented in very nitrogen-poor plant communities, such as serpentine grasslands, where nitrogen deposition has the potential to alter plant and animal community composition by allowing plants that cannot tolerate low-nitrogen conditions to persist.[34] However, wetlands such as those along Yosemite Slough are comparatively nitrogen-rich, and thus addition of nitrogen in exhaust would not be expected to affect plant or animal communities. Also, flushing of intertidal wetlands by tides prevents the accumulation of any compounds that may be present in exhaust in tidal wetlands.

Exhaust emissions would be higher on the 10 to 12 days/year in which stadium traffic is using the bridge. However, there is no evidence that such emissions would result in such acute effects, before exhaust can be dispersed by wind, on those few days that substantial adverse effects on any plant or animal species would occur particularly given the temporary nature of such impacts (i.e., for a few hours before and after football games during those 10 to 12 days/year). In fact, since most games occur on Sundays, they would be during periods in which normal, weekday freeway emissions would not occur. Also, as discussed under "Expected Effects of the bridge on Wildlife Use of Yosemite Slough" below, most birds (and possibly mammals and reptiles) are expected to maintain a slight buffer between most of their activities and the bridge, a buffer that would likely be somewhat greater on game days than during other times of the year as discussed in "Potential Effects of Noise on Wildlife Use of Yosemite Slough" above. Thus exposure to exhaust from vehicles using the bridge is not expected to result in any adverse effects on the health of wildlife using Yosemite Slough, even on game days.

Potential Effects of Lighting on Animals of Yosemite Slough

Some commenters suggested that lighting associated with the Project, including lights on the Yosemite Slough bridge and headlights from vehicles traveling around the project site, could adversely affect wildlife use of Yosemite Slough. Lighting in and adjacent to more natural areas on the Project site, including Yosemite Slough, is expected to increase as a result of the Project. Some night lighting would be required on the bridge but the effect of lighting is unclear. Artificial lighting has been demonstrated to cause changes in the physiology and behavior of a number of animal taxa; while some animals take advantage of artificial lighting to more easily detect prey at night, or take advantage of prey concentrations attracted to artificial lights, other animals are adversely affected by artificial lighting.[35] In more remote areas that are not already subjected to urban lighting, an increase in night lighting could disrupt behavior of animals, potentially increase predation on some nocturnal animals, and result in displacement of the most sensitive species from areas with increased lighting. However, Yosemite Slough is already subjected to some night lighting, including considerable night lighting from the stadium and parking lots during evening games at Monster Park. As a result, wildlife currently using the site are habituated to the lighting present within this urban area.

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[34] Weiss, S. B. 1999. Cars, cows, and checkerspot butterflies: nitrogen deposition and management of nutrient-poor grasslands for a threatened species. Conservation Biology 13:1476-1486.
[35] Rich, C. and T. Longcore (eds.). 2006. Ecological consequences of artificial night lighting. Island Press, Washington, D.C.

As discussed in Impact AE-7a of the Draft EIR, the final lighting design has not been completed, but the Project has developed standards for lighting in certain areas. Lighting in open space areas would be very limited and low-intensity. Area lighting would be subject to restrictions on fixture height, would be oriented toward the ground, or would be screened to minimize illumination in off-site areas such as Yosemite Slough. Headlights of vehicles using nearby roads and of buses using the bridge would be elevated above the slough, especially when on and near the bridge, and thus would not directly illuminate the aquatic and wetland habitats that are either currently present in the slough or that would be present following restoration. The increase in vehicular traffic on game days would result in a potential increase in indirect lighting of the slough by headlights due simply to the number of vehicles using their headlights that might be present, but again, these vehicles would be elevated above the slough, so that they would not directly illuminate the restored aquatic and wetland habitats. Therefore, the increase in lighting of Yosemite Slough as a result of the CP-HPS Project is not expected to be substantial.

In addition, the Draft EIR includes mitigation measures that reduce spill light and require shielding of light fixtures to reduce light pollution (refer to mitigation measures MM AE-7a.1 through MM AE-7a.3). Mitigation measure MM AE-7a.1 restricts light fixture direction and prescribes state-of-the-art light fixtures and shielding; mitigation measure MM AE-71.a requires the use of low-level and unobtrusive light fixtures for landscape illumination and exterior sign lighting; and mitigation measure MM AE-7a.3 requires the Applicant to prepare a Lighting Plan for each phase of the Project to be approved by the Agency prior to issuance of building permits to minimize glare and prevent spill light.

Given the urban context in which Yosemite Slough occurs, species using the area are already habituated to some lighting. Further, wildlife use of other urban sites, including many of the reference sites discussed in the following section, indicates the ability of the species that currently use the Yosemite Slough site, and that would use it following implementation of the Restoration Project, to habituate to both fixed and vehicular lighting. As a result, Dr. Rottenborn has inferred that increased lighting is not expected to result in a significant impact to wildlife use of Yosemite Slough.

Wildlife Use and Habitat Conditions at Reference Sites

One of the major reasons why studies of the effects of noise or lighting on wildlife conducted in other areas and situations may be difficult to apply to the Yosemite Slough bridge project is that many wildlife species are known to habituate to stimuli that do not result in obvious harm to them. Many species are known to habituate to loud noises, movement of large equipment, artificial lighting, and other human activities. Providing an extreme but relevant example, some wildlife species even tolerate airport noise to the point that wildlife control is often required at airports to minimize the risk of airplane strikes. For example, as recently as December 2009, the abundance of waterbirds foraging near runways at Oakland International Airport was so great that lethal control of some birds by United States Department of Agriculture (USDA) wildlife services officials was necessary.[36] These birds were habituated to the extremely loud noise of airplane landings and take-offs, focusing instead on the resources present in the waters surrounding the runways.

There are a number of locations around the San Francisco Bay area where mud flat, aquatic, and marsh habitats occur in close proximity to areas of high-volume traffic, noise, and human use, and where

[36] http://www.ktvu.com/news/22091151/detail.html.

wildlife (particularly birds) use areas in spite of this high human activity due to the high habitat quality those areas provide. Dr. Rottenborn concludes such areas serve as potential reference sites for the Yosemite Slough bridge in terms of allowing for at least some prediction of the effects of the bridge structure, traffic, and human use on wildlife use and habitat conditions at Yosemite Slough, and on the potential for wildlife using Yosemite Slough (either in its current or restored condition) to habituate to the bridge and vehicular use of the bridge. These reference areas, which Dr. Rottenborn has visited on a number of occasions to observe birds, include:

- Coyote Creek Reach 1A waterbird pond and South Coyote Slough (San Jose): heavily used by waterfowl, shorebirds, and gulls even though it is 500 feet from the Newby Island Sanitary Landfill entrance (heavily used by garbage trucks 6 days/week), 750 feet from Interstate 880, 150 feet from a two-lane interstate frontage road, and 100-200 feet from a recycling facility and associated storage loud that is subject to loud noise from heavy equipment, recycling operations, and even noisemakers intentionally employed to attempt to deter nuisance birds
- San Jose-Santa Clara Water Pollution Control Plant (San Jose): the settling ponds, which are bisected by numerous levee roads, support large numbers of waterfowl, shorebirds, and other birds despite frequent movement of noisy, heavy equipment throughout the plant (within 10 feet or less of the edges of the settling ponds)
- Pond A16, New Chicago Marsh, and Triangle Marsh (Alviso): Pond A16 and New Chicago Marsh support large numbers of waterfowl, gulls, and shorebirds, including nesting terns on islands and nesting snowy plovers in salt pannes, and Triangle Marsh supports high densities of marsh-nesting species, despite the proximity of these areas to active railroad tracks and recreational use of surrounding levees
- Shoreline Park (Mountain View): Shoreline Lake, the Coast Casey Forebay, Charleston Slough, and the Palo Alto Flood Control Basin support large numbers of waterbirds and marsh birds despite very heavy use by pedestrians, cyclists, golfers, and (on Shoreline Lake) boaters and despite the fact that this complex of habitats is bisected by a number of trails that are heavily used by pedestrians and cyclists
- Palo Alto Baylands (Palo Alto): supports high densities of a variety of waterbirds and marsh species despite heavy recreational use and its proximity to an adjacent landfill (with an entrance less than 150 feet from tidal marsh), water treatment plant (120 feet from tidal marsh), and airport taxiways and runways 75-100 feet from tidal marsh and lagoons
- South Bayside System Authority Plant (Redwood City): ponds adjacent to this water treatment plant, and encircled by a road used by trucks and other vehicles less than 10 feet from pond edges, with an adjacent dog park 65 feet from pond edges, support very high densities of waterfowl and shorebirds, as well as nesting terns on islands and nesting herons and egrets in ornamental trees around the plant, despite plant noise and frequent movement by trucks
- Crissy Field (San Francisco): supports at least locally high numbers and diversity of waterbirds despite intensive recreational use
- East San Francisco Bay shoreline along I-580 north of the Bay Bridge: heavily used by foraging shorebirds on lower tides, even though I-580 traffic lanes are within 50 feet of the bay shoreline

At all of these locations, heavy wildlife use (particularly by birds) occurs in close proximity to loud noise, high human activity, and/or heavy vehicular traffic because these birds are habituated to such activities and because the natural resources provided by the habitats on these reference sites are important to birds. These reference locations provide important, high-quality habitat for these species despite a level

of human activity and noise similar to or even exceeding that expected at Yosemite Slough. Based on the habituation to such human activity by birds that he has observed at these reference locations, Dr. Rottenborn has inferred that bird use of Yosemite Slough, either in its current or restored condition, is not expected to be substantially reduced as a result of everyday, operational effects of noise, movement of buses, or human activity on the Yosemite Slough bridge. Birds at these reference locations do respond to sudden or excessive stimuli, such as sudden and unusually loud noises or very close approach by humans or dogs, by flushing or otherwise altering their behavior. Similarly, sporadic, temporary increases in disturbance levels at Yosemite Slough (e.g., unusually heavy traffic or noise occurring during the 10-12 game days/year) would likewise be expected to have a greater effect than everyday noise and vehicular movements occurring on non-game days.

There are also locations within the Bay area where birds regularly fly across roads that are wider and/or more heavily used by traffic than the Yosemite Slough bridge would be, even on game days. Such locations include the following:

- Highway 92 in Hayward, where waterbirds move between the Eden Landing Ecological Reserve on the south side of the highway and Hayward Regional Shoreline on the north (and between the Bay mudflats adjacent to each of these two areas) by flying over the highway
- Highway 84 in Menlo Park and Fremont, where birds move between ponds and along the bayshore on both ends of the Dumbarton Bridge by flying over the highway
- Highway 37 west of Vallejo, where birds move between San Pablo Bay to the south and the Napa River and associated marshes to the north by flying over the highway
- Highway 101 southeast of Mill Valley, where birds move between the portions of upper Richardson Bay on either side of the highway by flying over the highway

In each of these cases, birds fly across highways that are much more heavily traveled than the Yosemite Slough bridge would be as they move between important foraging areas on both sides of these roads. Based on these examples, Dr. Rottenborn has inferred that waterbirds using Yosemite Slough, either in its present condition or after implementation of the Restoration Project, would move between Yosemite Slough and South Basin/San Francisco Bay areas to the east if they perceive the habitat value of Yosemite Slough to be high enough.

Further, there are a number of locations in the Bay area where marsh habitat exists immediately adjacent to freeways supporting much higher traffic volumes, and thus much higher exhaust emissions, than would be supported by the Yosemite Slough bridge. Such examples include:

- Palo Alto Flood Control Basin along Highway 101 and its frontage road in Palo Alto
- Marshes near Inner Bair Island along Highway 101 in Redwood City
- Tidal salt marsh at the Bay edge at the I-80/I-880 junction at the east end of the Bay Bridge in Oakland
- Tidal marsh along Highway 37 at the San Pablo Bay National Wildlife Refuge

Traffic volume is consistently heavier on these highways than would be the case on the Yosemite Slough bridge even on game days, yet marsh vegetation persists in these reference areas. Based on these examples, Dr. Rottenborn has inferred that the much lower overall exhaust emissions that would result from traffic use of the Yosemite Slough bridge, even on game days, would not result in substantial

adverse effects on habitats of the slough, including tidal salt marsh that would be restored by the Restoration Project.

Expected Effects of the bridge on Wildlife Use of Yosemite Slough

Prior to construction of the bridge, pre-construction surveys for nesting birds would be conducted in accordance with MM BI-6a.1 if construction commences between February 1 and August 31, and buffers around active nests would be maintained to avoid impacts to such nests. Thus, bridge construction would not result in the loss of active nests of birds in surrounding areas such as the Yosemite Slough restoration site. To clarify that MM BI-6a.1 pertains to construction in Yosemite Slough, the text for Impact BI-6b, on page III.N-75 of the Draft EIR, has been revised as follows:

> Similar to development at Candlestick Point, … Implementation of mitigation measures MM BI-6a.1 and MM BI-6a.2 (as detailed in Impact BI-6a), both at HPS Phase II and Yosemite Slough, would reduce the effects of Project construction and implementation on nesting special-status and legally protected avian species to less-than-significant levels.

During construction of the bridge, construction equipment and personnel would be operating not only within the bridge footprint, but in adjacent areas on either side of the bridge. Potential construction-related impacts of the Project, including the bridge, are discussed in Impact BI-2 through Impact BI-15b of the Draft EIR. The number of pieces of heavy equipment and construction personnel and the magnitude of construction-related noise (e.g., pile driving) and vibrations associated with these construction activities are expected to disturb wildlife in Yosemite Slough and adjacent portions of South Basin while construction is ongoing. Wildlife use of the slough, at least in areas relatively close to the construction area, are expected to be low during the construction period, as few species would tolerate such high levels of disturbance. However, such activities are temporary in nature, and construction-related disturbance of wildlife would not have long-term effects on wildlife use of Yosemite Slough and South Basin. Small mammals, reptiles, and slender salamanders that are displaced or disturbed by construction activities are expected to retreat to areas farther from the bridge, where habitat would be present to support these species while construction is ongoing. After construction has been completed and habitat within temporary impact areas restored, these small animals are expected to eventually move back into areas disturbed during bridge construction and occupy habitat closer to the bridge. Being more mobile, birds are expected to respond more readily to construction, both by moving away from areas of high disturbance during construction and quickly moving back in to occupy suitable habitat after construction has been completed.

Previous studies reported in the literature provide no clear evidence as to the longer-term effects of the bridge on wildlife use of Yosemite Slough. While studies conducted under circumstances different from those present on the Project site document adverse effects of noise and artificial lighting on wildlife under those specific circumstances, the phenomenon of habituation by wildlife to stimuli such as noise, lighting, and movement of people and vehicles is well documented. As an expert on birds of the Bay area, Dr. Rottenborn has observed the results of such habituation in the form of heavy wildlife use of high-quality habitat areas, such as the reference sites listed in the previous section, despite noise and human activity that in some areas exceeds what would occur on the Yosemite Slough bridge. Based on relevant literature coupled with extrapolations from observations of wildlife throughout the Bay area, the expected effects of the bridge on wildlife use of the slough, as described in the following paragraphs

(which pertain to the effects of the bridge either under existing conditions or after implementation of the Restoration Project) can be assumed.

There would likely be some adverse impacts from the bridge on wildlife species, especially birds, during game days. However, these game-day impacts are very limited in area and temporary, being of much shorter duration than the ongoing human activities to which birds have habituated on the reference sites listed above. While the local impact on waterbird use of the slough would be expected, no substantial effect on the regional abundance of such species would occur, for two reasons:

1. There are numerous other locations throughout the Bay area that can be used by nonbreeding waterbirds as foraging and loafing sites. Many waterbirds using the Bay during migration and winter make regular movements between foraging and loafing or roosting sites, or between high-tide and low-tide foraging areas, and they are thus capable of making regular, fairly long-distance movements. If waterbirds are displaced from Yosemite Slough, they would be able to move to other locations providing suitable habitat.
2. Waterbirds using Yosemite Slough represent a very small fraction of the regional abundance of these species, because waterbirds expected to use the slough regularly are regionally common species, and because Yosemite Slough represents such a small proportion of the regional availability of waterbird habitats. For example, Yosemite Slough currently provides approximately 10 acres of tidally influenced habitats (primarily aquatic and mud flat habitat, with some vegetated tidal marsh), and the Restoration Project would restore 12 acres more of tidally influenced habitat (primarily vegetated wetlands).[37] In comparison, the San Francisco Bay estuary provides approximately 262,000 acres of baylands (which include 30,000 acres of tidal mud flats and 40,000 acres of tidal marsh) and 180,000 acres of shallow bay/channel habitat.[38] Combined with the limited and very temporary effect of game-day impacts, the impact on the Yosemite Slough would not be a substantial adverse effect.

Such habitat is valuable wherever it occurs, for a variety of reasons, which is why the Draft EIR required mitigation for impacts resulting from direct fill and shading of wetland, aquatic, and mud flat habitat.

Other wildlife taxa, such as mammals and reptiles, may show greater avoidance of areas close to the bridge on game days than during non-game days. On game days, they may thus move to areas either within the Restoration Project site or on the east side of the bridge that are farther from the bridge, or they may spend more time in the cover of vegetation during game days. Movement by such species under the bridge may be inhibited, or in the worst case, may cease altogether on game days. However, due to the limited mobility of these species, they are not expected to move long distances, and they are expected to return to areas closer to the bridge, increase their activity in areas closer to the bridge, and continue movement under the bridge after game-day activity subsides. If noise and vibrations are great enough, fish may also avoid areas immediately adjacent to the bridge during game days, but such effects would be short-lived, and on non-game days, fish are expected to continue to move in and out of the slough by swimming under the bridge.

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[37] California State Parks Foundation. 2006. Initial Study/Mitigated Negative Declaration. Candlestick Point State Recreation Area Yosemite Slough Restoration Project.

[38] Goals Report. 1999. Baylands Ecosystem Habitat Goals. A report of habitat recommendations prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. First Reprint. U.S. Environmental Protection Agency, San Francisco, CA/San Francisco Bay Regional Water Quality Control Board, Oakland, CA.

On non-game days, wildlife species are expected to make greater use of the areas under and immediately surrounding the bridge. During high-water conditions, fish would continue to swim under the bridge and use adjacent aquatic habitats as they currently do, and it is expected that swimming and diving birds would do the same to some extent given the height of the bridge above the water. During low tides, shorebirds, gulls, and other waterbirds are expected to use mud flats adjacent to the bridge. Terrestrial animals can continue to move along the shoreline, beneath the bridge, and marsh animals, which are expected to dominate the largely vegetated marsh that is planned for the portions of the restoration area closest to the bridge, would use tidal salt marsh areas there. Thus, as has been observed at a number of other sites around the Bay area, wildlife is expected to largely habituate to the bridge and its use, and the bridge would not conflict with the Restoration Project's objective of improving local foraging and roosting habitat for migratory and resident birds (or any of its other objectives).

However, some reduction in wildlife use of the bridge footprint and immediately adjacent areas, relative to the existing condition or the condition anticipated following Yosemite Slough restoration, is expected to occur. The movement of and noise associated with people and vehicles would likely have some effect on wildlife use of the immediate vicinity of the bridge. In many areas around the Bay, Dr. Rottenborn has observed waterbirds maintaining a buffer between themselves and shoreline edges supporting roads, tall vegetation, or structures. It is possible that this buffer is maintained due to the perceived threat from humans or vehicles moving along the shoreline, the perceived threat from predators that may be hiding along the shoreline, or a defense against the perceived threat from predators that may be blocked from view by structure along the shoreline. The presence of the Yosemite Slough bridge may impede the line of sight between wildlife on the ground or in the water and more distant areas; some animals may maintain some distance between the bridge and their activities out of concern that they would not be able to detect approaching predators when they are too close to the bridge. Collectively, these factors are expected to result in a localized reduction in the number of individuals of some species in areas immediately adjacent to the bridge.

Bird use of the nesting islands proposed to be created as part of the Restoration Project may be affected by the presence of the bridge to some degree as well, although the physical separation of these islands from the bridge limits adverse effects. However, as discussed previously, it is unlikely that these proposed nesting islands would provide high-quality nesting habitat for many bird species, particularly waterbirds. As a result, the presence of the bridge is not expected to result in substantial effects to any waterbirds, and particularly any nesting waterbirds, using these islands.

Any reduction in use of the immediate bridge footprint, the roads between the proposed stadium and Candlestick Point, and their vicinity, compared to existing conditions and to potential conditions following Yosemite Slough restoration, is not expected to rise to the level of a significant impact, for reasons discussed in Impact BI-2 (page III.N-50) of the Draft EIR and for the reasons described for game-day circumstances above. The area in which the abundance of species such as waterfowl, shorebirds, or marsh bird species could potentially be reduced represents an extremely small impact on habitat for such species that is available in the region (which, on the scale of habitat use by these species, would be considered the entire San Francisco Bay area). Most of the waterbird species that use Yosemite Slough do not breed there, and most of the individual waterfowl, gulls, terns, shorebirds, cormorants, and grebes that might forage in Yosemite Slough originate from breeding sites outside the Bay Area.

While non-breeding habitat is important to these species, the abundance of these species in the region (i.e., the Bay Area) is not necessarily a strict function of habitat availability in the Bay Area; conditions and factors associated with breeding grounds and migratory routes affect these species' populations in general, so that the number of individuals that use the Bay Area may not be limited by the availability of habitat in the region. In that case, the loss of a small proportion of habitat available to these species in the Bay Area would not be expected to result in any measurable reduction in the regional abundance of these species. Even assuming that regional availability of foraging or roosting habitat is limiting regional populations of these waterbird species, the proportion of the regional populations of these species that would be adversely affected by the bridge would be extremely small, and this impact does not rise to the threshold of a significant impact. Similarly, all the mammals and reptiles (and the single amphibian species) occurring in the terrestrial portions of the site are regionally abundant and widespread species. As a result, any reduction in abundance of these species that may occur as a result of the bridge would have a negligible effect on the regional abundance of these species, and thus the impact to these species would be less than significant.

Conclusion

There is no substantial evidence that special-status species are significantly impacted by the Project. As indicated in the Draft EIR and in this master response, impacts to wildlife in Yosemite Slough are less than significant because the species involved (1) are a small number of non-listed individuals, (2) represent a very small fraction of large regional abundance, (3) would not substantially affect the recovery or conservation of the species, and (4) are mostly locally common and abundant in the region. In addition, the localized impacts on the Yosemite Slough are minimally invasive, and the effects are temporary, mitigated, or insignificant to a real extent. For these reasons the biological impacts of the Project on Yosemite Slough are determined to be less than significant with implementation of mitigation measures proposed in the Draft EIR.

Master Response 4: Purpose and Benefits of the Yosemite Slough Bridge

Introduction

Overview

This master response addresses comments made questioning the need for the Yosemite Slough bridge.

This response is organized by the following topics:

- Introduction
- Transportation Plan Objectives and Regulatory Context
- Discussion of the Yosemite Slough Bridge and Alternative Routes

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > California State Parks (86-12)

  - > Planning Commissioner Antonini (SFPC-120)
  - > San Francisco Bay Conservation and Development Commission (BCDC) (103-15)
- Organizations
  - > Arc Ecology (82-28, 82-29, 82-32, 82-33, 82-34, 82-45, 82-46, 82-48, 82-50, 82-53, 82-55, 82-56, 82-57, 82-62, 82-63, 82-64, 82-65, 82-66, 82-67, 83-37, 83-38, 83-42, 83-45, 83-48, 83-54, 83-55, 83-56, 83-57, 83-58, 83-59, 84-20, SFPC-127)
  - > California State Parks Foundation (47-4, 47-7, 47-14, 47-31, 47-53, 47-58, 47-73, 47-104, 47-110, 47-111)
  - > Golden Gate Audubon Society (81-4, 81-5)
  - > San Francisco Tomorrow (64-3)
- Individuals
  - > Jaron Browne (SFPC-24)
  - > Linda Richardson (SFPC-4)
  - > Mishwa Lee (61-2)
  - > Robert Simms (51-2)
  - > Saul Bloom (SFPC-127, SFPC-136)

Comments received on the Draft EIR related to the Yosemite Slough bridge with respect to transportation issues were focused almost exclusively on issues addressed in Section III.D (Transportation and Circulation) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.D.

Comment Summary

This master response responds to all or part of the following comments: 47-4, 47-7, 47-14, 47-31, 47-53, 47-58, 47-73, 47-104, 47-110, 47-111, 51-2, 61-2, 64-3, 81-4, 81-5, 82-28, 82-29, 82-32, 82-33, 82-34, 82-45, 82-46, 82-48, 82-49, 82-50, 82-53, 82-55, 82-56, 82-57, 82-62, 82-63, 82-64, 82-65, 82-66, 82-67, 83-37, 83-38, 83-42, 83-45, 83-48, 83-54, 83-55, 83-56, 83-57, 83-58, 83-59, 84-20, 86-12, 103-15, SFPC-4, SFPC-24, SFPC-127, SFPC-120, SFPC-127, SFPC-136.

Summary of Issues Raised by Commenters

- Pedestrian and bicycle circulation between Candlestick Point and Hunters Point Shipyard can be accommodated by other routes that do not involve a new bridge
- Alternate alignments are available for the BRT that do not involve a new bridge
- The same Stadium ingress and egress capacity is available by other means than the bridge

Response

Introduction

Due to geography, topography and the current extent and condition of infrastructure, Candlestick Point and the Hunters Point Shipyard are comparatively isolated from the transit and roadway networks serving the City and region, and less accessible for pedestrians and bicyclists. These deficiencies have

been identified as top community concerns in the extensive local and citywide planning efforts for the Project - and across southeastern San Francisco more generally.[39]

As part of the City's transportation goals and plans, and to serve the increased travel demands from the project, a new Bus Rapid Transit (BRT) network has been proposed. BRT service generally provides faster and more reliable service compared to traditional local bus routes through the use of transit-exclusive lanes, signal priority treatments, pre-paid ticketing, and generally reduced conflicts with other vehicles. In the case of the Project, BRT service would link the area with the Bayview, Executive Park, Brisbane Baylands, and Visitacion Valley neighborhoods, and connect to Caltrain, BART and the T-Third light-rail and numerous Muni bus lines. In developing the Project's overall Transportation Plan, a key element of the overall system would be to provide the most direct route of travel for the BRT system, as well as bicycles and pedestrians, between the Hunters Point Shipyard, Candlestick Point, and destinations to the west.

A key goal of the Transportation Plan is also to provide effective ingress and egress for a possible new stadium site for the San Francisco 49ers. The NFL has stressed that an essential feature of any stadium access plan is the ability to clear the stadium parking lots within an hour or less. The City is also concerned that residential areas are not unduly impacted by stadium traffic.

The Draft EIR concluded that both these of these goals could best be realized by the construction of the Yosemite Slough bridge. The Yosemite Slough bridge would be 902 feet long, linking Candlestick Point and the Hunters Point Shipyard. To accommodate transportation needs for the stadium development alternative, as noted throughout the Draft EIR, the Bridge would be 81 feet wide. It includes an east-side bicycle/pedestrian path, two exclusive BRT lanes, and a west-side bicycle/pedestrian path that would be converted to four lanes of stadium automobile traffic on game days only. Without a stadium, the west-side path would be eliminated for a narrower 41-foot-wide bridge with one east-side bicycle/pedestrian path and two BRT lanes.

This master response includes a detailed description of the bridge and a discussion of alternatives to a bridge considered, in terms of meeting the BRT, pedestrian, cyclist, and game-day traffic goals.

Transportation Plan Objectives and Regulatory Context

Consistent with the policies endorsed by San Francisco voters with the passing of Proposition G in June 2008,[40] the Project's Transportation Plan was developed to improve integration of the Candlestick Point and Hunters Point Shipyard sites with each other, with the rest of the Bayview neighborhood, and with other regional transportation facilities. Further, the Transportation Plan was developed to provide the necessary infrastructure for conditions with a new NFL stadium in the Hunters Point Shipyard site.

The Transportation Plan was also developed within the context of other policies already adopted by the City of San Francisco, including the City's "Transit-First" policy, which consists of ten principles that

[39] Results of community outreach associated with the *Bayview Hunters Point Neighborhood Transportation Plan*, San Francisco County Transportation Authority, February 2010.

[40] Proposition G, passed by San Francisco voters in June 2008 includes Policies 4(2) and 4(5), which generally state that the Project should provide transportation and associated infrastructure that integrates the Project with the Bayview neighborhood as well as integrates the Candlestick Point and Hunters Point Shipyard sites with each other.

generally promote the importance of transit use, bicycling, and walking as alternatives to travel by private automobile.

These guiding principles were used to formulate the Transportation Plan, which generally prioritizes transit, walking, and bicycling between the Candlestick Point and Hunters Point sites, and between the Project and the rest of the Bayview, and provides adequate automobile access for a new NFL stadium.

Discussion of the Yosemite Slough Bridge and Alternative Routes

The Draft EIR concluded that the Yosemite Slough Bridge would best achieve three primary transportation functions, consistent with the overall City goals. First, the Bridge's BRT lanes allow a more direct route (approximately ⅔ mile shorter) between the Project neighborhoods and to and from BART, Caltrain, Muni light rail and local buses than an alternative route around the slough. Secondly, the Bridge provides pedestrians and cyclists a more direct connection between Hunters Point Shipyard and Candlestick Point, avoiding a diversion through or near the industrial area around Yosemite Slough not well suited for other types of traffic. Finally, the bridge provides automobile access between the NFL stadium site and US-101, via a planned reconstructed interchange at Harney Way, which is the only route that can meet NFL standards for traffic egress; other routes would create substantial risks that the NFL would not approve a stadium in the area.

For each of these three transportation functions, the analysis determined that the Yosemite Slough bridge would provide a superior and necessary function compared to alternatives without the bridge. A detailed discussion of each of these transportation functions, and why alternatives, such as routing transit, bicycles, pedestrians, and game day automobile traffic around Yosemite Slough, are not as effective in meeting City transportation goals, is provided below.

1. Bus Rapid Transit (BRT) Service

As described in the Draft EIR, the proposed bridge would serve a new bus rapid transit (BRT) route traveling between the Hunters Point Shipyard and the Balboa Park BART Station, through Candlestick Point, serving the Project and all existing neighborhoods along the Geneva Avenue corridor. This corridor was identified in the City's recent Transit Effectiveness Project (TEP) as part of the City's Rapid Network, which is comprised of high-volume transit corridors that serve as the backbone to the City's transit network.

The Project would extend transit service from the Geneva Avenue corridor into the Project site, providing crucial linkages between the Project and regional transit services, including Caltrain and BART, as well as other local routes that connect to the Geneva Avenue corridor. As shown on Figure III.D-9 (Proposed Transit Improvements), Draft EIR page III.D-49, the Project would extend or increase service on seven total transit routes that would serve the Project site. The transit routes that are planned to serve the Project site were selected because they would generally radiate out in different directions from the Project site, providing comprehensive service throughout the City. As part of this strategy, the BRT route would provide the only direct connections between the Project and Caltrain.[41,42]

[41] Regional planning studies have proposed an extension of Caltrain from its current northern terminus at the 4th Street / King Street station to Downtown San Francisco. If this extension is constructed, both the CPX and HPX express bus

A fundamental component of BRT service is direct, fast, and reliable travel in dedicated right-of-way, typically with signal priority given to the BRT vehicles. When these elements are combined, the BRT service takes on a higher-quality character than typical local bus service. In order to provide such a service in the Project study area, transit travel along the BRT corridor has been prioritized, including providing dedicated right-of-way, transit signal priority, implementing proof-of-payment systems to minimize boarding times, and providing the most direct route of travel between key destinations.

To provide a rapid connection between the Hunters Point Shipyard and points to the west, including Candlestick Point, the Bayshore Caltrain station, the T-Third light-rail line, and the Balboa Park BART station, in a manner consistent with the City of San Francisco's Transit First Policy, two primary options were considered: a new bridge over Yosemite Slough and a route around Yosemite Slough using an abandoned railroad right-of-way owned by the Navy. One variation of the potential route around Yosemite Slough is illustrated in Figure VI-1 (Alternative 2 Circulation Plan Right-of-Way for Bus Rapid Transit), which is further discussed and presented in Response to Comment 82-27. Other routes have similar or greater impacts.

The potential BRT routes (either across a new bridge or on a route around Yosemite Slough) were compared to determine whether the route around Yosemite Slough, avoiding a new bridge, would meet the functional requirements of BRT service. The comparisons of the two routes with respect to the Project's transit objectives are summarized below.

- **Efficient BRT travel times.** The proposed bridge would minimize BRT travel times, particularly between major development and regional transit connections (e.g., Caltrain, T-Third light-rail service, and BART). As indicated in the Draft EIR, the bridge would reduce BRT travel times by at least 5 minutes compared to a route around Yosemite Slough. The estimate of travel time around Yosemite Slough was developed based on data regarding average vehicle travel speeds provided by SFMTA. That data notes that local bus service travels an average speed of 7 miles per hour (mph), while BRT service typically travels at 10 mph or greater. Although, without the bridge, the BRT would travel in exclusive right-of-way along part of the route around the slough, due to the large number of right-angle turns through signalized intersections, the analysis assumes that the BRT would operate at speeds more similar to local bus service through this portion (i.e., 7 mph). The route across the bridge would operate more similar to typical BRT speeds (i.e., 10 mph). Because it would have no intersections, no turns, and no conflicting bicycle, pedestrian, or traffic streams,

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lines would provide direct service from the Project site to Downtown San Francisco, where riders could technically transfer to Caltrain. However, this would require many passengers to travel north from the Project into Downtown San Francisco, and then travel south on Caltrain to their destination. Because this would require a substantial amount of redundant travel, this is not considered a practical option, and the connection to Caltrain via the BRT route would remain the only viable connection from the Project.

[42] Since the closure of the Paul Avenue Caltrain Station in 2005, the San Francisco County Transportation Authority (SFCTA) has initiated a study of a potential new station at Oakdale Avenue. If constructed, this new station would also be served by two transit lines that also serve the Project site: the 24-Divisadero and the 44-O'Shaughnessy. There has been no environmental analysis of this new station, nor has there been a commitment of funding to construct or provide service to this station. However, even if a new station at Oakdale Avenue were constructed, the Bayshore Station is likely to be a more desirable connection to Caltrain from the Project. Due to the extensive amount of relatively high-density, transit-oriented development planned around the Bayshore Station and the anticipated extension of the T-Third light-rail line to the station, the Bayshore Station is likely to have more robust and higher-frequency service than what would likely be provided at a new Oakdale Station. Therefore, the BRT connection to the Bayshore Station is considered a high-priority feature of the Project's Transportation Plan.

travel across the bridge, which is a straight path with no stops, may actually permit higher speeds, potentially closer to 25 mph depending on other BRT criteria.

The distance across the Yosemite Slough Bridge (from Carroll Avenue to Shafter Avenue) is approximately 0.4 mile. The distance on the route around the slough is approximately 1 mile, a difference of 0.6 mile. The travel time for the BRT route across the bridge (assuming an average 10 to 20 mph travel speed) would be approximately 1.25 to 2.5 minutes. The travel time for the BRT route around the slough (assuming an average 7 mph travel speed) would be 8.7 minutes, an increase of over 6 to 7.5 minutes.

To predict transit mode choice for this analysis, a linear regression model was developed based on travel behavior surveys of San Francisco residents.[43] Development of the model involved identifying independent variables that can be used to predict transit ridership based on a number of factors. The analysis found five factors that have a statistically valid relationship to a traveler's likelihood to choose transit for a particular trip in San Francisco. Those factors include drive time, parking cost, transit wait time, the number of transfers involved in the transit trip, and the transit travel time. A more detailed discussion of the methods used in the transportation analysis to forecast transit mode choice are described in Appendix K of the Transportation Study.

Based on this model, a 5-minute difference in travel time associated with the route around Yosemite Slough would result in a ridership decrease of approximately 15 percent for users of the BRT traveling to or from the Hunters Point Shipyard. As a point of reference, the US Census found that the average commute trip in San Francisco was approximately 30 minutes in 2002.[44] A 5-minute increase in travel time would result in an increase of between 15 and 20 percent to the typical commute. As noted, the proposed BRT route could be 6 to 7.5 minutes faster, enhancing these benefits.

Although the effect of adopting the route around Yosemite Slough would be substantial for those affected, they represent only a portion of the Project's total transit riders. As noted throughout the Transportation Study and the Draft EIR, the only travelers affected by the Yosemite Slough Bridge or lack thereof are those travelers who would use the BRT service to and from the Hunters Point Shipyard. Transit riders from the rest of the Project who use other transit routes would not be affected. Similarly, passengers from Candlestick Point who use the BRT to travel to points west would also be unaffected.

- **BRT reliability.** Surveys conducted of transit users in San Francisco as part of SFMTA's Transit Effectiveness Project have shown that many users view transit reliability, that is, the regularity and predictability of service, as more important than travel times. Reliability problems tend to grow over the course of a transit route. A small deviation from planned schedules at the beginning of a transit route can easily lead to a much larger deviation further along in the route. It is this phenomenon which leads to "vehicle bunching" in which a long period of time will pass with no transit vehicle arrivals at a stop, and then multiple vehicles arrive almost simultaneously.

  Because of its importance in the mind of riders, reliability on the BRT route should be ensured within the Project site, particularly in the westbound direction, which would be at the start of the BRT route. Reliability problems at this location could cascade into much larger problems outside of the study area.

  The proposed bridge would maximize the reliability of the BRT route by providing the most direct, conflict-free right-of-way. Even under scenarios involving use of the former Navy railroad

[43] *Bay Area Travel Survey*, Public Data Release #3 (Metropolitan Transportation Commission (MTC), March 2005.
[44] American Community Survey 2002, US Census Bureau.

right-of-way, travel around the slough would require travel through a primarily industrial business area and through several additional intersections, most of which would require traffic signals that, even with transit signal priority treatments, would add delays and decrease transit service reliability when compared to the exclusive right-of-way provided by the proposed bridge.[45] Further, the route would require between four and seven 90-degree turns, depending on the ultimate alignment, which require substantial slowing and are uncomfortable to passengers. Each of these elements introduces some uncertainty into the overall travel time, which affects route reliability.

Features that would degrade the BRT route with respect to service reliability and travel times would be inconsistent with the goals of implementing such service. For example, according to the *Countywide Transportation Plan* (San Francisco County Transportation Authority, 2004):

> The centerpiece of the [New Expenditure Plan (NEP)] is the development of a Network of Rapid Bus and Rail Transit corridors. Together, rapid transit corridors, both at street level and underground, will create an integrated citywide network of high speed transit, resulting in increased service reliability, shorter travel times and better, seamless connectivity between transit services provided by multiple transit operators throughout the city.

Whether the Hunters Point Shipyard would be home to a football stadium, additional research & development, or additional housing, BRT must offer fast, direct, and reliable transit connections to Muni light rail, BART and Caltrain if transit is to be viable and competitive in serving these destinations. A comparison of the two routes shows that the Yosemite Slough Bridge would provide the most reliable travel times (i.e., the least variation from bus to bus) between the Hunters Point Shipyard and points west because it would introduce the least number of variables (e.g., traffic signals, street crossings, speed changes at turns, etc.).

- **BRT safety.** The safest environment for the BRT is to minimize the number of intersections the route must traverse and maximize the visibility of the system. An alternate route around the slough would require travel through a number of closely spaced intersections, increasing conflicts and the potential for collisions between the BRT and autos, pedestrians, and cyclists. A non-stop bridge with no conflicting traffic concerns would be superior.
- **BRT operating costs.** It is well known that transit agencies across the country face a constant struggle to reduce operating costs, and the SFMTA is no exception. The proposed bridge would help the SFMTA to provide this new service more cost-effectively by reducing travel times compared to conditions without the bridge. Due to the anticipated high frequency of service, a route around Yosemite Slough that was 5 minutes longer in travel time than a route on the proposed bridge would require additional vehicles to maintain proposed vehicle spacing. For the BRT route, which is proposed to operate at frequencies of 5 minutes between buses, an additional 5 minutes of travel time in each direction would require an additional bus in each direction for a total of two additional vehicles (capital cost of $2.4 million) and additional operating and maintenance cost for SFMTA (approximately $850,000 annually).[46]
- **Adaptability to possible future light rail.** According to *A Vision for Rapid Transit in San Francisco* (San Francisco Municipal Railway, 2002):

[45] Other routes around Yosemite Slough that did not traverse as many intersections were considered. However, those routes would involve construction of new roadways immediately adjacent to Yosemite Slough, which would create many of the effects to Yosemite Slough that the proposed bridge may cause. Therefore, these routes were not considered further as alternatives to the bridge.

[46] Based on Transit Cost Estimation Model developed by San Francisco MTA in 2008 for use with the Transit Effectiveness Project (TEP).

> Bus Rapid Transit is appropriate in corridors with high ridership where there is sufficient right-of-way to provide dedicated lanes. Bus Rapid Transit does not require as much capital infrastructure as [light-rail transit (LRT)], and may serve as the first phase of implementing light-rail transit.

One key feature of the proposed BRT route and other BRT routes currently under study in San Francisco is that they not preclude future conversion to light rail. While light rail is not currently proposed for this route, it is important to recognize this as a key transit route within the City and long-term growth and transit plans may make converting this route to light rail desirable in the future.

Should SFMTA decide to pursue that course in the future, the proposed bridge would be the most compatible with light rail, by minimizing sharp turns and angles that would be required by taking alternate routes around Yosemite Slough.[47] Although the proposed route around Yosemite Slough may physically accommodate light rail, it would provide a much less desirable operating environment for light rail due to the number of turns and crossings involved, and increased construction costs.

- **Effects on local industrial businesses.** Provision of an alternate route around Yosemite Slough would likely involve using Carroll Avenue, Hawes Street, Armstrong Avenue, the former Navy railroad right-of-way, and Shafter Avenue. On most of these facilities, despite the slower travel speeds, additional turns, and additional signalized intersections, the BRT route could be provided within exclusive right-of-way without substantial changes to the subject facilities. However, to provide exclusive transit lanes and maintain mixed flow travel lanes on Shafter Avenue would require prohibition of on-street parking, which would affect existing industrial businesses that rely on the on-street parking for loading/unloading. This would be inconsistent with City policies to retain Production, Distribution, and Repair (PDR) uses. In particular, the *San Francisco General Plan* Policy 8.1 (Maintain industrial zones for production, distribution, and repair activities in the Northern Gateway, South Basin, Oakinba, and India Basin Industrial Park subdistricts) supports retention of PDR uses in the Bayview.

  Alternatively, this route could involve narrowing of existing sidewalks on Shafter Avenue from 15-feet to 11-feet, which would be inconsistent with the City's Draft Better Streets Plan. Although the Project proposes exceptions to the Draft Better Streets Plan minimum recommended sidewalk widths on Ingalls Street and Innes Avenue, such exceptions are generally discouraged when other options are available. Other potential routes around Yosemite Slough using existing roadways would have similar negative effects to the adjacent industrial area.

  In this case, the Yosemite Slough Bridge would help maintain existing sidewalk widths along Shafter Avenue and ensure that on-street parking/loading spaces along Shafter Avenue are maintained.

Based on the analysis described above, the Yosemite Slough bridge was determined to be substantially superior to alternative routes around the slough and would provide the quality of service associated with bus rapid transit. Based on these findings, SFMTA has stated that the additional travel time, cost, reduced ridership, and overall affect on route reliability associated with a route around Yosemite Slough would likely impact Muni's ability to operate the service to the Hunters Point Shipyard.[48]

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[47] The current bridge designs are not proposed to be constructed to structurally support light rail since no rail is currently planned for this route; instead, the bridge could be retrofitted in the future if light rail were to be initiated.

[48] Personal communication with Peter Albert, Manager, SFMTA Urban Planning Initiatives Program and Peter Strauss, Manager, SFMTA Muni Service Planning (since retired)

2. Gameday Traffic Associated with New NFL Stadium

The second transportation function of the Yosemite Slough Bridge is to accommodate vehicular traffic demands associated with the proposed new NFL stadium. Despite the Project's goals of increasing transit, walking, and bicycling as primary access modes to the stadium, a substantial number of patrons will continue to arrive via automobile. Based on recent stadium projects across the country and conversations with the NFL, a parking lot clearance time of approximately one hour or less for a typical game is required. Failure to provide adequate clearance time immediately following games is unlikely to be acceptable to the NFL or to the San Francisco 49ers, and could substantially impede or eliminate the stadium alternative, a major goal of the City.

Based on the proposed parking supply and typical gameday attendance and game departure patterns (as described in the Draft EIR) the egress capacity requirement for a new stadium is 11,000 vehicles per hour immediately following a game. Individual travel lanes near the stadium could accommodate approximately 1,000 vehicles per hour provided that certain targeted traffic measures are employed. These measures include the provision of a traffic management center in the stadium and the presence of traffic control officers at key intersections. The effect would be such that traffic exiting the stadium is prioritized and intersections are manually controlled (at both stop sign controlled and signal controlled intersections), stops are minimized, and exiting traffic is generally given priority over cross traffic, i.e., traffic is waved through stop signs and signals and opposing streams of traffic are held for longer periods than normal. Under these conditions, individual travel lanes near the stadium could accommodate approximately 1,000 vehicles per hour.

Project Constraints

The section of Crisp Road between Fitch Street and Griffith Street has been designed to its maximum width of 77 feet, and could accommodate five lanes of traffic: three peak direction auto travel lanes, one off-peak auto/bus travel lane, and one peak direction transit-only lane. Transit traveling in the off-peak direction would travel in mixed-flow auto lane between Griffith Street and Fitch Street.

Widening Crisp Road to the south to accommodate additional travel lanes would involve acquisition of property, demolition of existing buildings, and disruption to existing businesses, and is not considered feasible. Crisp Road cannot be widened to the north without major earthwork due to a large hill, which is not considered feasible. Converting the westbound transit-only lane on this section of Crisp Road to mixed-flow to accommodate additional vehicular traffic would violate the City's Transit First policy, which generally calls for prioritizing transit circulation over private autos.[49] Therefore, no additional auto travel lanes can be provided on Crisp Road, between Fitch Street and Griffith Street, and no additional traffic could use this route under any alternate plan.

[49] A transit-only lane is more important in the westbound direction in the post-game scenario because that is the direction that most transit, including private shuttles, regular Muni service, and gameday express service would be traveling. There would only be minimal transit service traveling to the stadium in the eastbound direction immediately following games, and therefore, providing a dedicated travel lane for transit in this direction for a short distance is less vital.

The Draft EIR Transportation Plan

To meet the NFL's requirements, the Transportation Plan has been designed to accommodate 11 exiting travel lanes. Draft EIR Figure III.D-13 (Stadium Game Day Traffic Control Plan) illustrates the exiting plan for post-game conditions at the stadium. To the north, Innes Avenue provides egress for 4,000 vehicles per hour via four outbound (away from the stadium) lanes and one inbound (toward the stadium) lane. The inbound lane is necessary to provide vehicular access to non-stadium development at the Hunters Point Shipyard and does not affect the egress calculations. To the south, Crisp Road could accommodate seven exiting lanes, each also serving approximately 1,000 vehicles per hour, for a total of 7,000 vehicles in the hour immediately following games.

Under the Transportation Plan, three of the seven lanes on Crisp Road travel past Fitch Street, turning south on Griffith Street, west on Thomas Avenue, and south again on Ingalls Street. One of these three lanes then turns west on Carroll Avenue and exits onto Third Street; the other two lanes continue down Ingalls Street, turn west on Gilman Avenue, then exit to Third Street. Both the Carroll Avenue and Gilman Avenue exits onto Third Street will likely have capacities of less than 1,000 vehicles per hour per lane due to conflicts with the T-Third light-rail service and relatively higher cross-traffic volumes along Third Street that must be served.

The remaining four lanes coming from Crisp Road travel south on Fitch Street, cross the slough on the bridge, and intersect with Arelious Walker Drive south of the slough. These four lanes continue on Arelious Walker Drive until exiting onto US-101. The Transportation Plan closely approximates the NFL's egress requirements.

The comments to the Draft EIR, in addition to independent analysis, identify two alternative routes to provide vehicular egress from the stadium. Neither of the alternatives includes the use of a bridge. The alternatives all maintain the use of the Innes Avenue route included in the Transportation Plan. As noted, Innes Avenue will accommodate four lanes of traffic allowing 4,000 vehicles per hour to exit to the north. Thus, in order to the meet the NFL standards, a viable alternate plan must provide for 7,000 vehicles to exit the stadium to the south and west within approximately an hour. The alternatives are discussed below.

Alternate Route 1: South on Fitch Street and West on Other East/West Streets between Palou Avenue and Shafter Avenue

The Yosemite Slough Bridge would not be constructed under this option. Innes Avenue would still provide an egress capacity of 4,000 vehicles per hour. Likewise, the Crisp Road-to-Griffith Street-to-Thomas Avenue route would remain unchanged from the Transportation Plan and would provide egress for 3,000 vehicles per hour. Mitigation measure MM TR-23 would be implemented, and Palou would be widened accordingly to accommodate two westbound lanes of post-game traffic in addition to a transit-only lane in each direction. The remaining four (of seven) lanes on Crisp Road would turn south on Fitch Street, which would connect to four east-west streets: Palou Avenue, Quesada Avenue, Revere Avenue, and Shafter Avenue.

Palou Avenue

Under this alternative route, on non-game days, Palou Avenue would have one auto travel lane in each direction, in addition to transit-only lanes. On game days, both auto travel lanes could be converted to peak direction lanes, and Palou Avenue could handle two lanes of stadium egress traffic. This traffic on Palou Avenue would ultimately be destined for the Harney Way interchange to the south, or other US-101 interchanges to the west. If the traffic were bound for Harney Way, it would likely turn south onto Third Street from Palou Avenue. As noted in the Transportation Plan, travel lanes crossing or turning onto Third Street would have a capacity of less than 1,000 vehicles per hour due to the signal priority given to light-rail vehicles and substantial vehicular traffic on Third Street.

This route relies on the implementation of MM TR-23, which requires the widening of Palou Avenue. MM TR-23 was identified as feasible to mitigate the impacts to transit travel times due to overall congestion, although it holds certain drawbacks. Specifically, it would increase pedestrian crossing distances, narrow sidewalks, and create a less desirable environment for pedestrians and residents of Palou Avenue. While these trade-offs were considered acceptable for purposes of improving transit travel times (and consistent with the City's Transit First policy), they would not be considered acceptable or consistent with the City's Transit First policy for purposes of accommodating additional vehicular traffic to or from the new stadium. If implemented as a project element to serve stadium traffic, this measure might be required sooner than if it were simply being used to mitigate the significant transit impacts identified in the Draft EIR. While mitigation measure MM TR-23 could provide a modest improvement to auto exit capacity, it would come at the expense of the pedestrian realm along Palou Avenue.

Quesada Avenue, Revere Avenue, and Shafter Avenue

Sending traffic down Quesada Avenue, Revere Avenue, or Shafter Avenue would require traffic to cross Griffith Avenue, conflicting with that street's ability to carry traffic from the stadium. These lanes would need to queue while traffic from Griffith passed, and then traffic on Griffith would need to queue while these three lanes cleared. Although this bottleneck might allow traffic ahead of this section to clear, it would still decrease the pace of egress traffic and the capacity of each of the affected routes.

This problem might potentially be resolved if another route were identified beyond Crisp Road and Fitch Street, such as Hawes Avenue, to provide additional vehicle capacity to the east-west streets traveling through the Bayview toward Third Street. Such a scenario, however, would require six lanes of traffic to continue on Palou past Griffith Street: the four lanes that would run on Palou and the additional two lanes that would exit on Hawes or some other identified street. Creating six lanes of traffic in this area would likely require condemnation and is not considered feasible.

Alternate Route 1 would, therefore, accommodate 4,000 vehicles per hour to the north along Innes Avenue and 3,000 vehicles per hour to the south along the Crisp Road-to-Griffith Street-to -Thomas Avenue route segment. It is not clear how many more vehicles would be accommodated under Alternate Route 1 associated with vehicles using Quesada Avenue, Revere Avenue, or Shafter Avenue, because of the cross traffic conflict at Griffith Avenue. It is reasonable to assume that there would be an overall increase in traffic flow, but the increase would not approach 1,000 vehicles per hour per lane. An optimistic calculation might peg the combined additional vehicle flow from these routes at 2,000 cars per

hour. At a total of 9,000 vehicles per hour, Alternate Route 1 would be 18 percent lower than the required 11,000 vehicles per hour (based on the NFL's criteria).

Alternate Route 2: Use Rail Right-of-Way around Yosemite Slough for Auto Traffic

The Yosemite Slough Bridge would not be constructed under this option. Innes Avenue would still provide an egress capacity of 4,000 vehicles per hour. Likewise, the Crisp Avenue-to-Griffith Street-to-Thomas Avenue route would remain unchanged from the Transportation Plan and would provide egress for 3,000 vehicles per hour. Mitigation measure MM TR-23 would be implemented, and Palou would be widened accordingly to accommodate two westbound lanes of post-game traffic in addition to a transit-only lane in each direction.

Under this route, two additional lanes of traffic (2,000 vehicles per hour) are routed south along Fitch Street, generally following the abandoned rail right of way, formerly used by the US Navy. The two lanes of traffic follow the abandoned rail line around the western edge of the slough while heading south. After passing the slough, these two lanes of traffic would turn east down either Yosemite Avenue or Armstrong Avenue. In either case, the two lanes would continue east and eventually turn south to intersect with Arelious Walker Drive.

The three lanes of traffic coming from Thomas Avenue, turn south at Ingalls Street just like the route described in the Transportation Plan. The lanes then split at the intersection of Ingalls Street and Carroll Avenue. Two of the lanes head east on Carroll Avenue; these lanes eventually join the two lanes of traffic that followed the abandoned rail line around the slough. Thereafter, the combined four lanes of traffic exit south on Arelious Walker Drive, the same as the Transportation Plan. Routing traffic west down Carroll Avenue carries the benefit of not exiting traffic onto Third Street which, as described in the Transportation Plan, conflicts with the operation of the T-Third Rail Service. The third lane of traffic travelling on Ingalls Street continues southbound before turning west on Gilman Avenue, and then exiting onto Third Street. This lane of traffic would experience capacity of less than 1,000 vehicles per hour at Third Street because of conflicts with the T-Third light-rail service and substantial cross-traffic on Third Street.

These five lanes of traffic—the three lanes on Ingalls Street and the two lanes on the abandoned rail line—could accommodate 5,000 vehicles per hour. As previously mentioned, the Innes Avenue route to the north provides egress exiting capacity of 4,000 vehicles per hour. Thus, together these two routes accommodate an egress capacity of up to 9,000 vehicles per hour. The final egress needs of 2,000 vehicles could not be fully met through the use of mitigation measure MM TR-23, under which Palou would be widened to accommodate two westbound lanes of post-game traffic in addition to a transit-only lane in each direction This is because the vehicular capacity would be considerably less than 1,000 vehicles per lane at Third Street, due to the conflicts associated with signal priority granted to T-Third light-rail service and substantial cross-traffic volumes on Third Street. While it is possible that the T-Third Rail Service schedule could be modified for game days, those changes might reasonably cause hardship for regular riders that rely on the T-Third Rail Service for transportation. As described, Alternate Route 2 would be closer to, but would still not meet the NFL's standards for egress traffic leaving the stadium.

Alternate Route 2 is not, however, consistent with the City's transit goals or the goal of efficient BRT service. Under this route, BRT service cannot operate directly from the Balboa Park BART Station and the Bayshore Caltrain Station to the stadium as the only available route around the slough is occupied by auto traffic. The lack of BRT service to the stadium would decrease connectivity from the stadium site to regional transit connections and proposed residential developments near Geneva Avenue.

Conclusion

Alternate Routes 1 and 2 are subject to a high number of subtle variations, although they broadly represent the circulation options for conditions without a Yosemite Slough bridge. Alternate Route 2 closely approximates the required egress clearance capacity but it comes with negative drawbacks, including elimination of BRT service from the Balboa Park BART Station and the Bayshore Caltrain Station and more serious conflicts with the operation of the T-Third light-rail service. In Alternate Route 1, the overall stadium exit capacity would be substantially below what is necessary to accommodate a new NFL stadium in Hunters Point Shipyard. The amount of time it would take to empty the stadium parking lot would increase substantially, increasing idling time, vehicle queues, and driver frustration.

The Transportation Plan, relying on the Yosemite Slough bridge, closely approximates the required exit capacity. The bridge would carry four lanes of auto traffic into/out of the stadium site prior to a game and after the game is over. These four lanes represent approximately 35 percent of all game day traffic. Without the bridge, this traffic would be forced to use other local roadways that are not capable of handling this amount of traffic, as described above.

The bridge also provides transit, bicycle, and pedestrian access to the stadium. During game days, similar to non-game days, the bridge would feature two dedicated lanes that would be used for BRT service and additional shuttle service to carry patrons between regional transit hubs and the stadium. Under scenarios without the bridge, transit travel times would be longer, reducing the appeal of transit by adding further delays and unreliability to transit service. The bridge would provide an important bicycle and pedestrian linkage to the stadium. Based on information from the team, 49ers patrons have consistently expressed a desire for additional transit service on game days. The Yosemite Slough bridge is a necessary component of delivering this service as it provides direct connections to the Bayshore Caltrain Station, Balboa Park BART Station, the T-Third light-rail line, and to other destinations served along the Geneva Avenue Rapid Network.

3. Bicycle and Pedestrian Circulation

One of the fundamental goals of the Project's Transportation Plan is to enable walking and bicycling, thereby reducing demand for parking and discouraging automobile use. Walking and bicycling distances between Candlestick Point and Hunters Point Shipyard would be shorter with the Yosemite Slough Bridge.

Currently, approximately two percent of all trips made during the PM peak hour in the Bayview neighborhood are by bicycle (2000 Bay Area Travel Survey [BATS 2000], Metropolitan Transportation Commission, 2000). On a typical day, just over two percent of all trips within San Francisco are made by bicycle, which is more than double the national average of one percent of all trips made by bicycle.

Although no distinction is made in the data of existing peak hour trips in the Bayview between recreational and non-recreational trips, the majority of trips taking place during evening commute periods are typically work or shopping-related, and not recreational.

The travel demand forecasts for the Project conservatively assume that a similar portion of new Project-generated trips will be made by bicycle. This translates to over 250 bicycle trips in the AM peak hour, nearly 450 bicycle trips in the PM peak hour, and over 4,000 bicycle trips per day. This conservative assumption was made in the analysis to ensure that the vehicular and transit demand was not underestimated, but in reality, based on the substantial improvement to bicycle facilities proposed by the Project, it is likely that the bicycle mode share will be higher than the existing two percent, and the number of cyclists during the PM peak hour could be greater than 250.

Without the bridge, the walking and cycling distance from the center of the Candlestick Point development area to the center of the Hunters Point Shipyard development area would increase by nearly ⅔ mile, or 50 percent compared to conditions with the bridge. Pedestrians and cyclists would travel through an industrial area along Ingalls Street with a relatively large portion of heavy trucks and few pedestrian or bicycle amenities. This route would also involve crossing several additional intersections.

Some of these differences may be resolved or reduced with construction of the proposed Bay Trail route around Yosemite Slough. Under these conditions, the additional distance to travel between the two sites would be ⅓ mile, compared to conditions with the bridge. The current design of the Bay Trail calls for an ADA-compliant, 12-foot-wide path made of decomposed granite. There would be lighting provided only at select locations along the trail (parking lots, overlook decks, etc.), and the facility would operate during park hours from 8:00 A.M. to sunset.

In general, an additional ⅓ to ⅔ mile is not a substantial increase for cyclists, particularly if the Bay Trail is constructed and a smooth route free of conflicting trucks and other industrial vehicle traffic is provided. However, the bridge does provide a better environment for pedestrians, who are more sensitive to increases in walking distance. Additionally, because the bridge would be lit, it would provide a better sense of personal security during evening hours, which are generally when the recreational fields at the Hunters Point Shipyard would be in use.

Master Response 5: Health of Bayview Hunters Point Community

Introduction

Overview

A number of comments on the Draft EIR have reflected concerns that the disproportionately adverse health outcomes observed among Bayview Hunters Point (BVHP) neighborhood residents and specifically among children within the community are related to effects of exposures to physical hazards (e.g., toxic chemicals) associated with the Shipyard. These comments have concerned a number of adverse health outcomes, including shorter life spans, excessive cancer incidence, higher asthma and bronchitis prevalence and morbidity. Comments also suggest that dust generated from construction on Parcel A has led to an increase in asthma and other illnesses. This response provides information on health outcomes among residents in the Bayview community, explores potential relationships to the

Shipyard and redevelopment activities, describes environmental and health investigations that have been conducted in response to community concerns about environmental hazards, explores other environmental and social causes of adverse community health outcomes, and describes City actions to protect environmental health in the community. Overall, data do not support the contention that poorer health outcomes in BVHP are resulting from current conditions at the Shipyard.

This response is organized by the following topics:

- Health Outcomes in BVHP
- Potential Pathways for Environmental Exposure from Shipyard Conditions
- Shipyard-Specific Environmental Health Investigations
- Non-Shipyard Environmental Hazards
  - > Industrial Use Conflicts
  - > Housing Conditions
- Social and Economic Conditions Impacting Community Health
  - > Food Resources
  - > Park and Recreational Resources
  - > Violence/Crime
  - > Income and Poverty
- City Actions to Reduce Environmental Risk to Bayview Hunters Point Residents

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > None
- Organizations
  - > Arc Ecology (83-3, 84-47, 84-48)
- Individuals
  - > Alonzo Walker (SFPC-83)
  - > Dan Solberg (SFRA1-37)
  - > Daniel Landry (SFPC-26)
  - > Esselene Stancil (SFPC-20)
  - > Francisco Da Costa (105-3)
  - > Jaron Browne (SFPC-23)
  - > Jesse Tello (70-2, SFPC-21)
  - > Juana Tello (66-1)
  - > Leborea Peach Smoore (SFPC-25)
  - > Willie Ratcliff (SFPC-107)

Comments on the Draft EIR related to the health of the BVHP community were primarily focused on existing conditions related to environmental remediation at the Shipyard, which are addressed in Section III.K (Hazards and Hazardous Materials) of the Draft EIR, but also to some degree in the

Setting section of Section III.H (Air Quality). This master response provides further discussion to update the analysis in Section III.H and Section III.K of the Draft EIR.

Comment Summary

This master response responds to all or part of the following comments: 66-1, 70-2, 83-3, 84-47, 84-48, 105-3, SFRA1-37, SFPC-20, SFPC-21, SFPC-23, SFPC-25, SFPC-26, SFPC-83, SFPC-107.

Summary of Issues Raised by Commenters

- Comments raised issues regarding community health issues, higher risks and occurrences of cancer, asthma, and respiratory illness, existing hazardous materials, children's' health, soil contamination, site remediation, release of hazardous materials due to geologic activity or construction and operation activities, additional concern regarding Superfund sites, lack of adequate medical care, lack of dust mitigation to control the potential for releasing asbestos, and higher mortality rates

Response

Health Outcomes in BVHP

In general, it is well established that residents of BVHP have poorer health outcomes than San Francisco as a whole. BVHP has the highest rates of low birth weight babies (13 percent of all 2008 BVHP babies were less than 2,500 grams, or less than 5.5 pounds) and highest rates of teen pregnancy in the City (42 of every 1,000 females aged 15 to 19 years old gave birth in BVHP, compared to 20 of every 1,000 citywide). BVHP and the Tenderloin have the lowest percentage of mothers receiving pre-natal care in their first trimester (66 percent).

Although hospitalization rates for asthma and pneumonia in BVHP decreased between 2004 and 2007, BVHP residents have substantially higher rates of hospitalizations and emergency room visits for preventable conditions such as asthma, congestive heart failure, diabetes, and urinary tract infections. Table C&R-3 (Hospitalization and Emergency Room Rates per 1,000 persons for Preventable Conditions [2005-2007 pooled discharge data]) provides the hospital rate and emergency room rate for the BVHP community as compared to the average for the City of San Francisco.

Table C&R-3 Hospitalization and Emergency Room Rates per 1,000 persons for Preventable Conditions (2005–2007 pooled discharge data)

	Bayview		*SF Average*	
Health Condition	*Hosp. Rate*	*ER rate*	*Hosp. rate*	*ER rate*
Asthma	27	105.8	6.3	25.4
Diabetes	30.3	27.9	8.3	7.9
Chronic obstructive pulmonary disease (COPD)	11.4	27.8	4.9	5.3
Adult congestive heart failure	39.0	12.1	14.4	3.7
Pneumonia	48.9	33	23.1	14.5
Kidney/Urinary tract infections	18.2	n/a	7.6	n/a

SOURCE: Data compiled by Health Matters in SF, from the California Office of Statewide Health Planning and Development (OSHPD). For more info, visit: http://www.healthmattersinsf.org/index.php

Life expectancy is a key metric of population health and a recent study of the region found that residents of BVHP live fewer years than residents in most other neighborhoods, as evidenced by Table C&R-4 (2004 Leading Causes of Years of Life Lost [YLL] for BVHP [Zip Code 94124]).[50] According to the 2004 San Francisco Community Health Needs Assessment, the top ten leading causes of premature years of life lost in BVHP (ZIP code 94124) are violence, ischemic heart disease, tracheal/bronchial/lung cancer, HIV/AIDS, cerebrovascular disease (often caused by hypertension), poisonings, nephritis/nephrosis (also known as kidney disease), other cardiovascular diseases, chronic obstructive pulmonary disease or COPD (often associated with chronic bronchitis and emphysema), and congenital anomalies (also known as birth defects).

Table C&R-4 2004 Leading Causes of Years of Life Lost (YLL) for BVHP (ZIP Code 94124)

Rank	*Cause*	*YLLs*	*Deaths*	*Avg YLLs/Death*
1	Violence	1,020	18	57.3
2	Ischemic heart disease	592	40	14.8
3	Tracheal/Bronchial/Lung Cancer	386	22	17.5
4	HIV/AIDS	384	10	38.4
5	Cerebrovascular Disease	350	27	13
6	Poisonings	268	8	33.5
7	Nephritis/nephrosis	221	9	24.6
8	Other Cardiovascular Diseases	221	13	17
9	Chronic obstructive pulmonary disease (COPD)	189	9	20.9
10	Other Congenital Anomalies	185	3	61.8

SOURCE: 2004 Community Health Needs Assessment, Building a Healthier San Francisco. http://www.healthmattersinsf.org/index.php?module=htmlpages&func=display&pid=26

BVHP residents lose more years of life due to violence than from any other cause. In 2004, 25 percent of all San Francisco deaths from violence and 27 percent of all premature years of life lost due to violence occurred in BVHP.[51] As noted on the Health Matters in SF website, "The high ranking of violence as a cause of YLLs reflects not just the number of deaths from it, but also the fact that victims of death from violence are overwhelmingly younger than those dying from other high-ranking causes of premature mortality."[52]

By comparison, BVHP deaths from ischemic heart disease (BVHP's #2 leading cause of YLL) represent less than 4 percent of the City's total deaths and 8 percent of the City's total years of life lost from ischemic heart disease. BVHP deaths from tracheal/bronchial/lung cancer (BVHP's #3 leading cause of

[50] Bay Area Regional Health Inequities Initiative (BARHII). 2008. Health Inequities in the Bay Area.
[51] Specifically, 71 people died in 2004 from violence in San Francisco, 18 of those deaths (or 25 percent) occurred in Bayview. Years of life lost is a measure of assessing premature mortality. Of the 3773 years of life lost (YLL) from the 71 deaths from violence in San Francisco, 1020 YLL (or 27 percent) were from Bayview.
[52] 2007 Community Health Assessment Mortality Data Key Findings: http://www.healthmattersinsf.org/index.php?module=htmlpages&func=display&pid=29

YLL) represent 6 percent of the City's total deaths and 6 percent of the City's total years of life lost from tracheal/bronchial/lung cancer.[53]

As demonstrated in the data above and stated concerns, asthma and lung cancer are major health issues in BVHP. Risk factors for lung cancer include tobacco smoking, exposure to secondhand smoke, exposure to radon or asbestos, arsenic in drinking water, family history of lung cancer, diet low in fruits and vegetables, and air pollution.[54] Exposure to tobacco smoke, either directly by smoking or through secondhand exposure, contributes to 90 percent of lung cancer nationwide.[55] Risk factors for asthma include family history, exposure to dust mites, cockroaches & secondhand smoke, and being overweight. Triggers for asthma attacks include respiratory infections, pollen, mold, pet dander, dust mites and cockroaches, tobacco smoke (both from smoking and secondhand smoke), air pollution, household and workplace chemicals, stress, and vigorous exercise.[56]

Potential Pathways for Environmental Exposure from Shipyard Conditions

Physical and chemical environmental hazards at the Shipyard site are discussed in detail in the Draft EIR, Section III.K. Currently, specific areas at the Shipyard site require remediation to meet appropriate standards for residential and other uses planned as part of the Project. As stated in Draft EIR, Section III.K, on page III.K-2, the Navy is remediating the Shipyard to meet standards acceptable for planned future uses and this remediation would occur regardless of whether the Project development proceeds or not.

A harmful exposure to current residents in BVHP to Shipyard environmental hazards would require exposure to contaminated soil or water mediated through ingestion, inhalation, or drinking. At present, there are few pathways that would expose community residents to Shipyard hazards. No food is grown on the Shipyard nor is the Shipyard a source of drinking water for residents. Contaminated sites have restricted access and, therefore, are generally not physically accessible to residents and are covered with roads, buildings, asphalt and clean soil and vegetation limiting potential inhalation exposure. The predominant wind direction is away from the community.

Construction phase activities do pose potential for airborne exposure to constituents in contaminated soil, particularly during remediation activities. Possible hazards associated with the construction phase of Project development are assessed in detail and mitigation measures are identified in the Draft EIR, Section III.K, pages III.K-53 through -109. The evaluation and response to risks related to naturally occurring asbestos is discussed in Master Response 12 (Naturally Occurring Asbestos). Development

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[53] Specifically, 1,056 people died in 2004 from ischemic heart disease in San Francisco, 40 of those deaths (or 3.8 percent) occurred in Bayview. Of the 12,617 years of life lost (YLL) from the 1,056 deaths from ischemic heart disease in San Francisco, 592 YLL (or 8 percent) were from Bayview. 361 people died in 2004 from tracheal/bronchial/lung cancer in San Francisco, 22 of those deaths (or 6 percent) occurred in Bayview. Of the 5,947 years of life lost (YLL) from the 361 deaths from tracheal/bronchial/lung cancer in San Francisco, 386 YLL (or 6 percent) were from Bayview.

[54] Fact Sheets on Lung Cancer, Northern California Cancer Center. http://www.nccc.org/site/c.foJNIXOyEpH/b.3362225/k.8D60/Fact_Sheets.htm

[55] Fact Sheets on Lung Cancer, Northern California Cancer Center. http://www.nccc.org/site/c.foJNIXOyEpH/b.3362225/k.8D60/Fact_Sheets.htm

[56] California Breathing/CDPH. June 2007. http://www.californiabreathing.org/images/stories/publications/asthmaburdenreport.pdf

work and remediation activity is being conducted in accordance with Federal, State and local regulations and under the oversight of associated regulatory agencies to prevent off-site exposures and hazards as outlined in Section III.K of the Draft EIR.

Shipyard-Specific Environmental Health Investigations

A number of environmental investigations have been conducted by public agencies in response to specific concerns about environmental hazards at the Shipyard. In January 2003, the San Francisco Department of Public Health (SFDPH) reported on an analysis of Hospital Admissions Data during the Hunters Point Shipyard Fire of August 2000. The brush fire occurred on the Parcel E-2 landfill at the Hunters Point Shipyard on August 16, 2000 but continued to smolder under the surface for a number of weeks. A study was conducted to ascertain whether this fire, in the form of particulate matter or hazardous chemicals, resulted in measurable and observable health effects to community residents by examining discharge data from all hospital admissions not only in San Francisco. Data did not suggest increases in hospital admissions for asthma or other respiratory illnesses among BVHP residents relative to admissions Citywide during the time of the landfill fire.

Criteria air pollutants and toxic air contaminants have also been measured within the community. In November 2006, the Department of the Environment reported on the results of the Bayview Community Air Monitoring Project (BayCAMP) which measured a number of air pollutants for one year at a site located in the BVHP community. This report concluded that, in general, the levels of air contaminants measured at the BayCAMP site were comparable to, or lower than, those measured at other locations within the Bay Area. Acute (short-term) health risks associated with the toxic air contaminants monitored at the BayCAMP site are similar to levels measured in Fremont and elsewhere in the city, while they are significantly lower than those measured in San Jose. Similarly, chronic (long-term) health risks associated with the toxic air contaminants monitored at the BayCAMP site are similar to levels measured elsewhere in the City and in San Jose. Projected cancer risks associated with toxic air contaminants monitored at the BayCAMP site are similar to those for the compounds measured in San Jose, and lower than that for the levels measured in the other Bay Area sites. Peak ozone levels measured at BayCAMP were slightly above state standards, but similar to measurements at comparison sites. However, the annual average concentration was much lower than the annual average at comparison sites and well below state and federal standards. For all other criteria pollutants, BayCAMP measurements complied with federal and state limits and were similar to or less than those at comparison sites.

Non-Shipyard Environmental Hazards

Exposure to environmental hazards may be occurring due to other sources within the community, but unrelated to the Shipyard. Historically, BVHP housed a number of industrial operations including the Hunters' Point power plant. Current notable industrial sources include the Southeast Water Pollution Control Plant and cement production and diesel bus storage on Port property adjacent to neighborhoods.

Industrial Use Conflicts

Currently, BVHP is home to 39 percent of the City's industrial land. The close location between industrially zoned land and residential areas may create land use conflicts and potential health hazards for

nearby residents. Environmental conflicts from industrial uses may be related to noise, exhaust or ventilation systems, industrial processes, or freight traffic.

Extensive research demonstrates that living in proximity to busy roadways is linked to negative health outcomes, including exacerbation of respiratory diseases, sleep disruption and cognitive disturbance, and unintentional (traffic) injuries.[57] Exposures to roadway vehicle pollutants are significant for BVHP residents, but generally lower than for the city as a whole. Forty-two percent of BVHP residents live within a traffic-related air quality hazard area (or within 150 meters of streets with 0.2 micrograms per cubic meter [$\mu g/m^3$] or greater of particulate matter 2.5 micrometers [$PM_{2.5}$] in diameter or less), which is lower than the city average of 68 percent. Thirty-eight percent of BVHP households live within 150 meters of designated truck routes, compared to 47 percent citywide. Although roughly 25 percent of the City's stationary sources of air pollution are located in BVHP, a smaller proportion of people live within 300 meters of the source compared to the city average (1 percent vs. 4 percent). Table C&R-5 (Environmental Conditions Potentially Impacting BVHP Health) describes the various environmental conditions that could affect the health of BVHP residents and compares it to the same conditions for residents throughout the City.

Table C&R-5 Environmental Conditions Potentially Impacting BVHP Health

Condition	*BVHP*	*Citywide*
% of Total Brownfield reuse sites	25%	—
% of Total leaking underground fuel tanks	31%	—
% Land zoned for Industrial uses	39%	7%
% Land zoned for Residential uses	25%	54%
Average daytime and nighttime outdoor noise levels (in Decibels)	66dB	62dB
Proportion of households living within 150 meters of designated truck routes	38%	47%
Proportion of streets with 0.2 $\mu g/m^3$ or greater of $PM_{2.5}$[a]	32%	27%
Proportion of households living within 150 meters of streets with 0.2 $\mu g/m^3$ or greater of $PM_{2.5}$	42%	68%
Proportion households living within 300 meters of major industrial stationary sources of air pollution	1%	4%

SOURCE: Information from SFDPH Healthy Development Measurement Tool. http://thehdmt.org/neighborhoods/compare (accessed on March 5, 2010)

a. A microgram per cubic meter ($\mu g/m^3$) is one one-millionth of a gram of substance per cubic meter of air. $PM_{2.5}$ are air pollutants with a diameter of 2.5 micrometers or less, small enough to invade airways. These particles generally come from activities that burn fossil fuels, such as traffic, smelting, and metal processing.

Housing Conditions

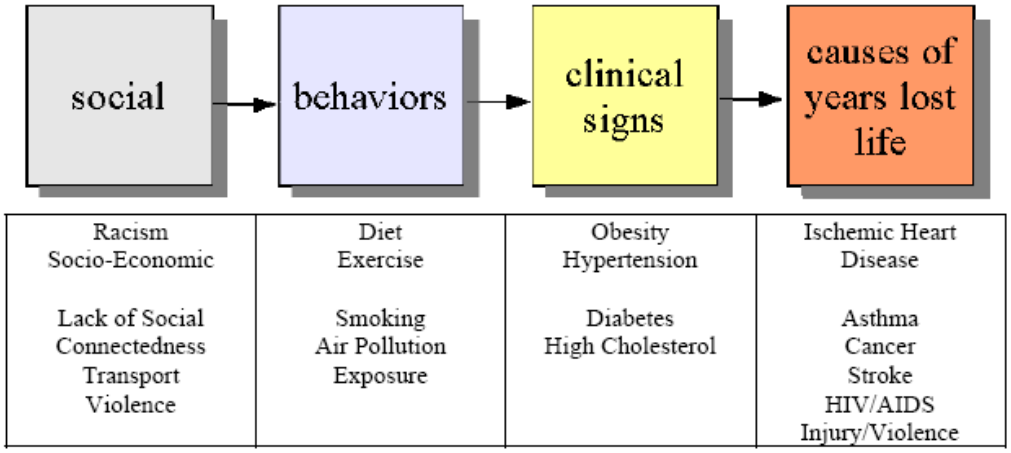
Although more than half of BVHP residents own their own homes (57 percent), a higher percentage of both homeowners and renters struggle financially to pay rent. One in four BVHP residents live in overcrowded living conditions, compared to one in seven residents citywide. BVHP is home to the majority of San Francisco's public housing projects, the majority of which are housed in buildings originally designed as temporary housing for Shipyard workers during World War II. Bayview has a high concentration of substandard and poorly maintained housing, with poor ventilation, pests such as

[57] http://thehdmt.org/objectives/view/55

cockroaches, vermin and dust mites, and mold. Substandard housing conditions can lead to poor indoor air quality contributing to higher rates of asthma and other respiratory diseases.

Social and Economic Conditions Impacting Community Health

Over the past two decades, researchers have demonstrated that social and economic conditions impact health significantly. Inequitable distribution of health protective resources like healthy food, recreational space, and opportunities for high quality education, and living wage employment, result in the clustering of health disparities across neighborhoods, and significant differences in the residents' quality and length of life.[58] The diagram below from SFDPH illustrates how social conditions impact behaviors, which impact clinical symptoms resulting in premature years of life lost due to morbidity and mortality.



In general, BVHP has fewer options for accessing healthy foods, poorer performing schools, fewer jobs, poor housing conditions, fewer banks and credit unions, and a higher proportion of industrial and contaminated lands, compared to other neighborhoods in San Francisco.[59] Although the neighborhood does have a number of community assets that can positively impact health, such as strong civic engagement, community participation, and greater access to public open space, the historic context of economic deprivation, environmental racism and social marginalization following the closure of the Naval Shipyard has contributed to significant health inequities.[60] Table C&R-6 (Neighborhood Conditions Impacting Health Outcomes) compares neighborhood health resources in BVHP relative to San Francisco as a whole.

[58] ACPHD. Life and Death from Unnatural Causes: Health and Social Inequity in Alameda County. 2008.
[59] SFDPH, BVHP Neighborhood Profile in SFDPH's Healthy Development Measurement Tool, www.thehdmt.org.
[60] SFDPH, *Health Programs in Bayview Hunter's Point and Recommendations for Improving the Health of Bayview Hunter's Point Residents*, July 5, 2006; San Francisco Human Rights Commission. *Environmental Racism: A Status Report & Recommendations*, December 2003.

Table C&R-6 Neighborhood Conditions Impacting Health Outcomes

Condition	*BVHP*	*Citywide*
Proportion of population within ½ mile of a supermarket	63%	84%
Retail Environmental Food Index (REFI)[a]	3.5	3.18
Proportion of households with ¼ mile access to community garden	11%	25%
Proportion of households within ½ mile of a farmer's market	49%	35%
Proportion of population within ½ mile from bank or credit union	44%	80%
Weighted average Academic Performance Index (API) of API rated schools in neighborhood	661	764
Number of requests per seats available at public schools in neighborhood	1.1	3.3
% of students attending neighborhood elementary (K–5) school	30%	36%
Proportion of households living in overcrowded conditions	24%	14%
Proportion of population within ¼ mile of a neighborhood or regional park	98%	88%
Proportion of population within ¼ mile of a recreation facility	96%	86%
Density of off-sale alcohol outlets per square mile	6.1	18
Density of fast food outlets per square mile	1	4.7

SOURCE: Information from SFDPH Healthy Development Measurement Tool. http://thehdmt.org/neighborhoods/compare (accessed on March 5, 2010)

a. The Retail Food Environment Index (RFEI) is a ratio describing the relative abundance of different types of retail food outlets in a given area. The RFEI is constructed by dividing the total number of fast-food restaurants and convenience stores by the total number of supermarkets and produce vendors (produce stores and farmers markets) in the area. The result is the ratio of retail food outlets that offer little in the way of fruits and vegetables and other healthy foods to those in which fruits and vegetables are readily available. The higher the RFEI index, the more likely consumers would find unhealthy food options.

The following paragraphs briefly describe a couple of the major social and economic conditions impacting community health in BVHP.

Food Resources

Research has found that the absence of a supermarket in a neighborhood predicts lower fruit and vegetable consumption and an increased prevalence of overweight and obesity. Being overweight or obese are risk factors for heart disease, asthma, diabetes and various forms of cancer. Bayview has one of the worst retail food environments in the city, with little access to fresh fruits and vegetables. Although Bayview has a lower density of fast food and alcohol outlets per square mile compared to the city average, almost all of the fast food and alcohol outlets are concentrated along Third Street near residential areas.

Park and Recreational Resources

Proximity to neighborhood parks near one's home is associated with increased physical activity in children and adults, reduced stress and depression, and better self-rated health. Although quantitatively, a higher percentage of households live near neighborhood parks and recreational facilities than San Francisco residents citywide, the qualitative experience of residents is quite different. Factors such as perceived and actual safety, gang lines, limited hours of operation, limited transportation, lack of lighting, the quality of the facilities, and the presence of major roads, highways, buildings, or gates can limit access to the facilities.

Violence/Crime

Cumulatively, community violence results in increased social isolation and depression and decreased mobility and physical activity. Physical inactivity is a major determinant of ischemic heart disease and stroke, overweight/obesity, hypertension, diabetes, and high cholesterol.[61] Witnessing and experiencing community violence causes longer-term behavioral and emotional problems in youth.[62]

The rate of homicide in BVHP between 2005 and 2007 was the highest in San Francisco and almost five times the city average (1.4 homicides per 1,000 BVHP residents vs. 0.3 per 1,000 SF residents). Rates of physical assault, rape/sexual assault, and property crimes are also higher than the city average. Risk factors for violence and crime include: poverty and economic disparity; discrimination and oppression, negative family dynamics, firearms, media violence, alcohol and other drugs, incarceration and re-entry, experiencing and/or witnessing violence, community deterioration, illiteracy and academic failure, truancy, mental illness, and traditional gender socialization.[63]

Community violence impacts the perceived safety of a neighborhood, limiting social interactions between neighbors, the ability of children to walk to school and play outside, the accessibility of local resources (especially for the elderly), and adversely impacting on social cohesion.[64] Specifically, only 28 percent of residents in District 10 (which includes Bayview, Potrero Hill, and Visitacion Valley) stated that they feel very safe or safe at night, compared to 52 percent of residents citywide. During the day, residents of District 10 felt safer (72 percent feel very safe or safe) but still less frequently than residents citywide 84 percent.

Income and Poverty

Income is one of the strongest and most consistent predictors of health and disease in public health research literature. Higher income and accumulated or inherited wealth make it easier to buy health insurance and medical care, healthy foods, and quality childcare, and to live in a safe neighborhood with good schools and recreational facilities.[65] Poor health can mean lower earnings, creating a cycle between income and health that can continue across lifetimes and generations. Unemployment is associated with premature mortality, cardiovascular disease, hypertension, depression, and suicide.[66]

According to the 2000 Census, 21 percent of the BVHP population lives in poverty, almost twice the citywide average. In 2000, unemployment in BVHP was double the rate of San Francisco (10 percent vs. 5 percent). In 2007, the per capita income of BVHP residents was roughly half the citywide average

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[61] SFDPH. San Francisco Burden of Disease & Injury Study: Determinants of Health. http://www.healthysf.org/bdi/outcomes/94124.htm

[62] Perez-Smith AM, Albus KE, Weist MD. Exposure to violence and neighborhood affiliation among inner-city youth. J Clin Child Psychol. 2001:30(4):464-72. Ozer EJ, McDonald KL. Exposure to violence and mental health among Chinese American urban adolescents. J Adolesc Health. 2006:39(1):73-9.

[63] Preventing Violence: A Primer, Prevention Institute, 2009. http://www.preventioninstitute.org/component/jlibrary/article/id-144/127.html.

[64] Fullilove MT, Heon V, Jimenez W, Parsons C, Green LL, Fullilove RE. Injury and anomie: effects of violence on an inner-city community. Am J Public Health. 1998:88(6):924-7.

[65] http://www.commissiononhealth.org/Income.aspx.

[66] Jin RL, Shah CP, Svoboda TJ. The impact of unemployment on health: a review of the evidence. The Journal of the Canadian Medical Association. 1995:153, 529–540.

($18,258 vs. $34,946) and the median household income was two-thirds the citywide average ($46,323 vs. $73,528). In December 2009, statewide African American and Latino unemployment rates in December 2009 were higher than Whites (14 percent vs. 11 percent).[67] Given that over 50 percent of the population in BVHP is African American and/or Latino, it is assumed that the economic depression has disproportionately impacted BVHP residents.

City Actions to Reduce Environmental Risk to Bayview Hunters Point Residents

In September 2006, the SFDPH issued a report entitled *Health Programs in Bayview Hunters Point and Recommendations for Improving the Health of Bayview Hunters Point Residents*. The report discusses a number of factors responsible for poor health in turn, and presents recommendations for further work addressing each factor. The report notes substandard housing, poor quality of food resources, exposure to tobacco smoke, and economic all contribute to the relatively higher disease burden in the community. Recommendations for community health included efforts to improve residents' access to nutrition foods and safe neighborhood parks, as well as educational efforts to address tobacco use and other behaviors that negatively affect health. Appendix A of this report lists and describes 59 different programs that service the BVHP community that address issues ranging from gun violence prevention to HIV early intervention.

The city has conducted a number of coordinated actions to support public health in the past decade, including public health agency collaboration on land use and redevelopment planning and implementation. A number of City actions listed below are specifically responsive to environmental health needs and concerns of community residents.

- Facilitated the decommissioning of the PG&E Hunter's Point Power Plant
- Implemented truck route plan to reroute freight trucks away Third Street and residential areas and convert San Francisco Department of Public Works (DPW)/San Francisco Public Utilities Commission (SFPUC)/San Francisco Fire Department (SFPD) heavy vehicles to biodiesel fuel
- Constructed the electrified Third Street light-rail line, deployed non-diesel buses preferentially in BVHP and retrofitted remaining diesel buses with emissions reduction equipment
- Provided staffing for public schools Tools for Schools program to protect and improve school air quality
- Implemented a home environmental assessment program for asthma patients conducted by environmental health inspectors and San Francisco General Hospital Medical Clinic (SFGHMC) asthma clinic case managers
- Approved and implemented more stringent requirements to control the dispersion of construction dust during the first phase of Shipyard development (Health Code Article 31)
- Developed, approved, and implemented the country's first health code requirements for protecting new residential construction from traffic pollutants (Health Code Article 38)
- Implementing the HOPE SF program to rebuild dilapidated San Francisco Housing Authority (SFHA) public housing beginning with the Hunters View's project
- Developing an environmental education center for youth at Heron's Head Park with a community environmental justice organization

[67] http://www.bls.gov/lau/ptable14full2009.pdf.

In summary, BVHP has poorer health outcomes relative to other neighborhoods in San Francisco. These disparities may be attributed to significant historical and current social, economic, and environmental inequities (i.e., the cumulative impact of higher unemployment, substandard housing, reduced access to nutritious food resources, and limited retail services, and community violence). The close proximity of residential and industrial uses in BVHP also contributes to unhealthy environmental conditions for many residents. The City and County of San Francisco has acknowledged the existence of community health disparities for many years and responded with a number of actions, including infrastructure and redevelopment initiatives as well as social and health programs to address health and welfare concerns in BVHP.

Nevertheless, there is currently no evidence to suggest that current and recent Shipyard conditions and activities are exacerbating BVHP health disparities. The Draft EIR analyzes how hazards at the Shipyard would be addressed during Project construction and identifies mitigation measures.

Master Response 6: Seismic Hazards

Introduction

Overview

Comments have been raised suggesting that the Draft EIR has not adequately addressed seismicity and the associated potential seismic hazards at the site. This master response addresses comments made concerning the potential for earthquakes and seismic hazards on the Project site given its proximity to major area faults. The response also discusses the site-specific geotechnical and seismic studies that would be required for the Project prior to issuance of any permits.

This response is organized by the following topics:

- Introduction
- Site-Specific, Design-Level Geotechnical and Seismic Studies
- Mitigation Measures to Address Potential Seismic Hazards
- Amplification
- Seismic Effects on Movement or Exposure to Toxics

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - None
- Organizations
  - Breast Cancer Action (55-3)
  - Green Action Health and Environmental Justice (58-8, SFRA1-83)
  - POWER (52-3, 69-1)
  - San Francisco Green Party (36-4)
- Individuals
  - Ahimsa Porter Sumchai (SFRA2-18)

> Carol Harvey (67-2, 94-1)
> Colleen Muhammad (72-2)
> Dan Solberg (SFRA1-39)
> Daniel Landry (SFPC-26)
> Espanola Jackson (6-1, SFPC-8)
> Jaron Brown (SFRA1-43)
> Juana Tello (66-5, 66-13)
> Tim O'Miles (SFRA2-36)
> Willie Ratcliff (SFPC-107)

Comments received on the Draft EIR related to seismic activity were focused almost exclusively on issues addressed in Section III.L (Geology and Soils) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.L.

Comment Summary

This master response responds to all or part of the following comments: 6-1, 36-4, 52-3, 55-3, 66-5, 66-13, 67-2, 69-1, 72-2, 94-1, SFRA1-39, SFRA1-43, SFRA1-83, SFPC-8, SFPC-26, SFPC-107, SFRA2-18, SFRA2-36.

Summary of Issues Raised by Commenters

- Draft EIR has not adequately addressed seismic hazards
- Concern expressed regarding an earthquake or seismic activity mobilizing soil or groundwater contaminants

Response

Introduction

The entire San Francisco Bay Area is in a seismically active region. Seismic activity associated with a large earthquake on a nearby fault can potentially result in seismic hazards such as groundshaking, fault rupture, liquefaction, lateral spreading, ground settlement, ground oscillation, and seismic slope instability. As evidenced by the level of development throughout the San Francisco Bay, successful building construction is possible in a seismically active zone and can be readily accomplished even where seismic hazards are thought to exist through the implementation of appropriate structural and foundation design and/or ground improvement measures.

Seismic hazards for the site are defined in general terms in the Draft EIR; the Draft EIR is not intended to be a design-level document to address site-specific seismic hazards or mitigation of associated hazards. However, the Draft EIR points out that for final design, site-specific design-level seismic and geotechnical studies are required and appropriate mitigation measures, including ground improvement and/or structural design measures, would be implemented. This master response is intended to direct the reader to specific sections and figures in the Draft EIR that address these issues.

The Draft EIR states that the Project site is in a seismically active region (Section III.L, Draft EIR page III.L-11). Figure III.L-2 (Regional Fault Map) identifies the active nearby faults that could potentially

generate an earthquake. Seismic activity associated with a large earthquake on a nearby fault could potentially result in seismic hazards at the site such as groundshaking, fault rupture, liquefaction, lateral spreading, ground settlement, ground oscillation, and seismic slope instability. Each of these potential seismic hazards is further discussed in the Draft EIR as follows:

- Groundshaking is expected to occur at the site during a large earthquake on one of the nearby faults. The intensity of seismic shaking or strong ground motion during an earthquake at any particular location is dependent on a number of factors, including the distance and direction of the site from the earthquake epicenter, the earthquake magnitude, and the geologic conditions at and in the vicinity of the site. Site-specific seismic and geotechnical studies would be undertaken prior to final design to evaluate the peak ground acceleration from an earthquake expected at the site and the structure would be designed to accommodate the anticipated groundshaking under the peak ground acceleration (Draft EIR page III.L-40).
- No known active faults cross the site, rendering hazards from fault rupture at the site unlikely (Draft EIR page III.L-14).
- Refer to Section III.L, Impact GE-5, and Master Response 7 (Liquefaction) for a discussion regarding the potential for and mitigation of liquefaction and liquefaction-induced seismic hazards, including lateral spread, sand boils, and ground settlement, at the site (Draft EIR pages III.L-40 through -46).
- Earthquake-induced settlement, other than that associated with liquefaction (refer to Master Response 7), which occurs only in soil below the groundwater level, could potentially occur in areas where loose sand is present above the groundwater (differential compaction). The upper fill layer at the site has been characterized as a heterogeneous mix of gravel, sand, silt, and clay that contains varying amounts of debris (wood, glass, etc.). There could be zones of soil within this layer above the groundwater level that contain loose sand. Because of the heterogeneous nature of the fill layer, settlements resulting from differential compaction could occur both uniformly and differentially, unless mitigation measures such as ground improvement and/or structural/foundation solutions are implemented (Draft EIR page III.L-16).
- Portions of the site have been mapped in a zone designated to have the potential for seismically induced landslides (Seismic Hazard Map, Figure III.L-3). Hazards associated with seismically induced landslides can be mitigated using methods generally accepted by California Certified Engineering Geologists (CEG) and California Registered Geotechnical Engineers (GE), including ground improvement and/or structural/foundation solutions (Impact GE-6 and mitigation measure MM GE-6 [Seismically Induced Landslides], Draft EIR pages III.L-46 through 49).
- Ground oscillation is a phenomenon where the surface soil layer, riding on a buried liquefied layer, is thrown back and forth by the shaking and can be severely deformed. While areas of the site have been identified as containing potentially liquefiable soils, there is no evidence of a broadly spanning buried liquefiable layer above or below the existing groundwater table on which the surface layer could be oscillated. Therefore, the potential for this hazard at the site would be considered low. Furthermore, mitigation measures MM GE-4a.1, MM GE-4a.2, and MM GE-4a.3, which would be implemented where liquefiable soils are identified, would also reduce the risk of damage to structures from ground deformation (Draft EIR page III.L-16).

Site-Specific, Design-Level Geotechnical and Seismic Studies

As discussed on page III.L-18 of the Draft EIR, the State has regulations protecting the public from geo-seismic hazards that are contained in California Public Resources Code (PRC) Division 2, Chapter 7.8

(the Seismic Hazards Mapping Act) and 2007 California Code of Regulations (CCR), Title 24, Part 2 (the California Building Code [CBC]). The Seismic Hazard Mapping Act was passed in 1990 following the Loma Prieta earthquake to reduce threats to public health and safety and to minimize property damage caused by earthquakes. The Act requires site-specific geotechnical investigations to identify potential seismic hazards and formulate corrective measures prior to permitting of developments designed for human occupancy within the Zones of Required Investigation. The Seismic Hazard Map for the City and County of San Francisco shows portions of the Project site to be within a Zone of Required Investigation for liquefaction potential. For projects in a hazard zone, the Department of Building Inspections (DBI) requires that the geologic and soil conditions of the Project site be investigated and appropriate mitigation measures, if any, incorporated into development plans.

The Draft EIR points out that site-specific, design-level geotechnical and seismic studies, which are also discussed and described in mitigation measures MM GE-4a.1 and MM GE-4a.2 (Seismically induced groundshaking, Section III.L, pages III.L-37 and -38), MM GE-5a (Seismically induced ground failure, Section III.L, pages III.L-42 and -43) and MM GE-6a (Seismically induced landslides, Section III.L, page III.L-47) would be performed prior to issuance of any building permits to identify the potential for seismic hazards at the site. These studies would consist of geotechnical investigations with site-specific seismic analysis and would provide ground improvement/mitigation and/or foundation design recommendations to address potential seismic hazards, should they exist. Seismic studies would evaluate the anticipated site-specific peak ground accelerations that would induce groundshaking so that the structure (foundation and superstructure) can be designed to accommodate the anticipated shaking. All Project structural designs would incorporate and conform to the requirements and recommendations in the site-specific geotechnical and seismic investigations. Furthermore, the City's DBI permit application, review, and inspection process ensures that structures would be designed and built to Code. The geotechnical engineer would review Project plans and specifications and observe ground improvement and foundation installation to check for conformance to the geotechnical and seismic recommendations and requirements.

Mitigation Measures to Address Potential Seismic Hazards

Mitigation measures to address potential seismic hazards include structural measures and ground improvement methods (Section III.L, MM GE-4a.1, MM GE-4a.2, MM GE-5a, and MM GE-6a, Draft EIR pages III.L-37 through -47). As discussed above, all structures, including the foundation (below ground portion) and superstructure (above ground portion), would be designed to accommodate the anticipated groundshaking under the peak ground acceleration (as determined by the site-specific seismic study) and other potential seismic hazards, including earthquake-induced ground settlement (refer to Master Response 7 for a discussion of liquefaction mitigation measures). Foundation mitigation measures could include the construction of deep foundations, which transfer building loads to competent soil or rock below the zone where seismic densification/differential compaction could potentially occur, or use of a structural, sufficiently reinforced mat foundation and/or a geotextile/geogrid beneath structures to distribute loads and reduce the potential for damage to the structure from earthquake-induced ground settlement. Ground improvement measures could include (1) overexcavation and replacement of soil potentially subject to earthquake-induced settlement with engineered compacted fill; (2) dynamic compaction (such as deep dynamic compaction or rapid impact compaction) to densify the loose soil;

and (3) stone columns, soil-cement columns, or rammed aggregate piers (RAPs) to densify the loose soil and provide additional bearing support beneath building foundations.

As described in MM GE-6a, Draft EIR page III.L-47, if the design-level, site-specific geologic, seismic, and geotechnical studies identify the presence of landslides that could be triggered by an earthquake, recommendations for slope stabilization procedures shall be provided and implemented. Slope stabilization procedures could include (1) use of retaining walls, rock buttresses, screw anchors, or concrete piers; (2) provision of slope drainage or removal of unstable materials; (3) provision of rockfall catch fences, rockfall mesh netting or deflection walls; (4) provision of setbacks at the toe of slopes; and/or (5) avoidance of highly unstable areas.

Amplification

Comments have been raised suggesting that the Draft EIR has not adequately addressed amplification, a phenomena associated with seismic hazards, at the site. Amplification effects can occur when seismic waves travel through soft soils underlain by shallow bedrock. During the design-level site-specific seismic hazards assessment, appropriate attenuation relationships would be selected to account for amplification effects. All structures and improvements would be designed based on the procedures in ASCE 7-05 Chapters 11.4 and 21.2in accordance with the 2007 *California Building Code*, Chapter 21.

Seismic Effects on Movement or Exposure to Toxics

As discussed in Section III.K.1, Draft EIR page III.K-2, there are substantial ongoing remediation programs at known hazardous material release sites at portions of the Project site from former Navy operations throughout HPS Phase II. These are the only known hazardous material release sites requiring remediation at the Project site; there are no known hazardous material release sites requiring remediation at Candlestick Point, or at locations where off-site improvements are proposed, based on the results of investigations to date and a review of government agency databases. The Navy is providing soil and groundwater remediation (cleanup) at the HPS Phase II site to reduce chemical concentrations to meet cleanup levels approved by federal and state regulatory agencies. After completion of cleanup activities, chemicals present in concentrations below these cleanup levels would remain. Although residual chemicals may remain in soil after cleanup, the residual chemicals would be located under a physical barrier (e.g., soil cover, pavement, concrete building foundation) that prevents human exposure to these residual chemicals. It is also expected that federal and state regulatory agencies would allow a group of naturally occurring metals associated with fill material derived from native bedrock to remain under a final cover in concentrations above risk levels. In this scenario, the cover would limit exposure and protect humans from long-term health risks even if breaches in the cover temporarily occur. Operation and maintenance plans for these covers would be carried out to periodically monitor and repair any breaches. Breach of the cover would be required to be repaired so that no long-term health risk would occur. Therefore, even if ground rupture were to occur, contaminants and naturally occurring metals would not be released at levels presenting a concern to human or ecological health.

Section III.K of the Draft EIR page III.K-17 describes how surface covers are being installed or existing surface covers are expected to be required to remain in place as part of the Navy's Comprehensive Environmental Cleanup and Liability Act (CERCLA) program (refer to Master Response 9 [Status of CERCLA Process]), to support the development (e.g., building slabs, pavement for roads, concrete for

sidewalks, soil or grass for landscaped areas) and minimize exposure to background metals (refer to Master Response 15 [Proposition P and the Precautionary Principle]). These covers would meet certain specifications of thickness and be maintained to prevent breaches.

Anticipated sea level rise is being taken into account during the development design process to ensure preservation of the planned land uses (refer to Master Response 8 [Sea Level Rise] for a discussions of sea level rise and potential exposure to toxics). Additionally, when specific buildings are being designed, this anticipated sea level rise would be taken into consideration when establishing surrounding grades, ground floor elevations and, if incorporated into a building, the type of below grade parking garage and associated foundation type to prevent groundwater infiltration. Note that in areas where below grade structures are installed below the groundwater table there are several well tested methodologies that have been used with success to prevent groundwater intrusion into these below grade structures. As stated in Master Response 8, the buildings would be designed for the anticipated groundwater levels to prohibit groundwater from entering basements.

In addition, the site is also known to contain a landfill, and possibly other areas of debris disposal. Under CCR Title 27, Section 21090, all closed landfills are required to have an engineered landfill cap if landfill materials are left on site. The landfill cap is intended to maintain a protective seal to keep moisture and rain from penetrating the landfill waste and prevent exposure of the public and the environment to the disposed waste. If the Navy proposes and US EPA concurs that engineered caps may be placed on top of an area of known or suspected residual contamination (typically a landfill) in order to prevent unsafe exposures from chemicals allowed by the regulators to be left on site, site-specific geotechnical studies, which would evaluate maximum potential earthquakes and liquefaction potential, would be used in the design of such caps to minimize potential breaches. In addition, operation and maintenance plans for these caps would be developed and be required to be carried out to monitor for and repair potential breaches should they occur. Additionally, emergency response plans would be carried out following major seismic events at which time caps and covers would be investigated for potential or actual breaches and repaired. Please also see Master Response 8 (Sea Level Rise) for discussion of effect of sea level rise on caps and covers.

Master Response 7: Liquefaction[68]

Introduction

Overview

Comments have been raised suggesting that the Draft EIR has not adequately addressed liquefaction potential and mitigation of potential liquefaction-associated hazards at the site. This master response provides further information on the subject of liquefaction at the Project site and discusses specific hazards that could be connected with or amplify liquefaction potential, such as sea level rise or hazardous

[68] Liquefaction is a phenomenon in which saturated, cohesionless soil experiences a temporary loss of strength due to the buildup of excess pore water pressure, especially during cyclic loading such as that induced by earthquakes. Soil most susceptible to liquefaction is loose, clean, saturated, uniformly graded, fine-grained sand and silt of low plasticity that is relatively free of clay.

materials. The response also describes the design-level studies that would be required prior to issuance of any permits for the Project and the mitigation measures that would be implemented for the Project.

This response is organized by the following topics:

- Introduction
- Liquefaction Potential and Associated Hazards
- Site-Specific, Design-Level Liquefaction Studies
- Liquefaction Effects on Hazardous Materials
- Sea Level Rise Effects on Liquefaction Potential
- Mitigation Measures to Potential Liquefaction-Related Hazards

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - None
- Organizations
  - Breast Cancer Action (55-3)
  - POWER (52-2, 52-3, 69-1)
  - San Francisco Green Party (36-4)
- Individuals
  - Al Symon (SFPC-35)
  - Carol Harvey (67-2, 67-4, 94-1)
  - Cecille Caterson (SFRA1-83)
  - Daniel Landry (SFPC-26)
  - Espanola Jackson (6-1)
  - Francisco Da Costa (105-1)
  - Jaron Brown (SFPC-24)
  - Jessie Tello (SFPC-21)
  - Juana Tello (66-5, 66-13, SFPC-94)
  - Karissa Cole (SFRA1-54)
  - Nyese Joshua (65-1, 65-4)
  - Saul Bloom (SFPC-133)
  - Starr Miles (SFPC-75)
  - Vivien Donahue (60-4)
  - Willie Ratcliff (SFPC-107)

Comments received on the Draft EIR related to liquefaction and hazardous materials were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) and III.L (Geology and Soils) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K and Section III.L.

Comment Summary

This master response responds to all or part of the following comments: 6-1, 36-4, 52-2, 52-3, 55-3, 60-4, 65-1, 65-4, 66-5, 66-13, 67-2, 67-4, 69-1, 94-1, 105-1, SFRA1-54, SFRA1-83, SFPC-21, SFPC-24, SFPC-26, SFPC-35, SFPC-75, SFPC-94, SFPC-107, SFPC-133.

Summary of Issues Raised by Commenters

- Liquefaction has not been adequately addressed in EIR
- Concern expressed regarding the effect sea level rise can have on liquefaction potential
- Concern expressed regarding the risk liquefaction poses for release of hazardous materials

Response

Introduction

The potential for liquefaction associated with strong to very strong groundshaking during a major earthquake exists throughout the San Francisco Bay Area, as well as in many other seismically active areas throughout the world. Liquefaction can result in ground failure if the potential for liquefaction is not mitigated through engineering design or ground improvement. Throughout San Francisco, including the Marina, Embarcadero, Financial District, South of Market Street, and Mission Bay neighborhoods, many buildings have been successfully constructed within potentially liquefiable zones through the implementation of proper foundation design and/or ground improvement.

Comments have been raised suggesting that the Draft EIR has not adequately addressed liquefaction potential and mitigation of potential liquefaction-associated hazards at the site. Liquefaction potential and associated hazards for the site are defined in general terms in Section III.L (Geology and Soils) of the Draft EIR; the Draft EIR is not intended to provide detailed individualized hazards assessments of each potential building site and the detailed design-specifications that would be used at each individual site to mitigate liquefaction hazards. Instead, the Draft EIR identifies the potential types of liquefaction hazards that may exist at the site and the approaches that can be used to mitigate these hazards along with the performance criteria that would be imposed on the development to assure that these techniques would fully mitigate the potential site hazards identified. The EIR points out that for final design, site-specific design-level liquefaction studies, as well as recommendations for appropriate techniques to be implemented to avoid the hazards, are required. Ground improvement and/or structural design measures would be implemented to fully mitigate liquefaction hazards. This master response is intended to direct the reader to specific sections and figures in the Draft EIR that address these issues.

Liquefaction Potential and Associated Hazards

Section III.L of the Draft EIR states that the project site is in an area of San Francisco that has been designated as potentially liquefiable (Section III.L, page III.L-15, Figure III.L-3 [Seismic Hazard Map]). Figure III.L-1 (Geologic Map) illustrates that the majority of the site is covered by artificial fill, which is a heterogeneous mix of gravel, sand, silt, and clay that contains varying amounts debris (wood, concrete, glass, etc.). There could be zones of soil within this layer that contain loose granular soil that may be susceptible to liquefaction. However, because of the heterogeneous nature of the fill, liquefaction within the fill is expected to occur in random layers and pockets, limiting the extent of seismically induced

settlement and lateral spreading[69] to localized zones within the fill. Section III.L points out that there is a hydraulically placed sand fill in the vicinity of the southeast-facing shoreline of Parcels D and E at HPS Phase II that consists of a thick unit of predominantly uniform loose, dredged sand and is, therefore, more susceptible to liquefaction.

Flow failure, lateral spreading, differential settlement, loss of bearing strength, ground fissures, and sand boils are evidence of liquefaction. The Draft EIR indicates that, based on existing data, there is little or no risk of large translational ground movements at the site as a result of liquefaction. However, should liquefaction occur, there are five commonly recognized liquefaction-associated hazards, which site-specific, design-level studies should address. Design-level liquefaction studies, which are further described in mitigation measures MM GE-4 in Section III.L (Geology and Soils) of the EIR, would address five general types of localized potential hazards, and provide treatment methods, Mitigation measures require that the structure be designed to accommodate potential liquefaction-associated hazards or ground treatment/site improvement techniques are implemented prior to construction. The specific potential liquefaction-associated hazards at the site are (1) potential foundation bearing failure, or large foundation settlements caused by ground softening, (2) potential structural and/or site settlements, (3) localized lateral displacement; "lateral spreading" and/or lateral compression, (4) flotation of light structures with basements, or underground storage structures, and (5) hazards to lifelines (utilities critical to emergency response). The response below explains the regulatory scheme that exists in California to address these liquefaction hazards and how the project would mitigate hazards.

Site-Specific, Design-Level Liquefaction Studies

The State has regulations protecting the public from geo-seismic hazards, such as liquefaction, that are contained in California *Public Resources Code* Division 2, Chapter 7.8 (the *Seismic Hazards Mapping Act*) and 2007 *California Code of Regulations* (CCR), Title 24, Part 2 (the *California Building Code* [CBC]). The *Seismic Hazard Mapping Act* was passed in 1990 following the Loma Prieta earthquake to reduce threats to public health and safety and to minimize property damage caused by earthquakes. The Act requires site-specific geotechnical investigations to identify potential seismic hazards and formulate corrective measures prior to permitting of developments designed for human occupancy within the Zones of Required Investigation. The Seismic Hazard Map for the City and County of San Francisco shows portions of the Project site to be within a Zone of Required Investigation for liquefaction potential. For projects in a hazard zone, the DBI requires that the geologic and soil conditions of the Project site be investigated and appropriate mitigation measures, if any, incorporated into development plans. Measures that can be employed, depending on the specific site conditions, include (1) overexcavation and replacement of potentially liquefiable soil with engineered compacted fill, (2) compaction grouting to densify the loose, potentially liquefiable soil, (3) dynamic compaction (deep dynamic compaction or rapid impact compaction) to densify the loose, potentially liquefiable soil, (4) vibro-compaction (also known as vibro-flotation) to densify the loose, potentially liquefiable soil, (5) stone columns to provide pathways for pore pressure to dissipate in potentially liquefiable soil, thus reducing the potential for liquefaction-induced settlement, and (6) soil-cement columns to densify the loose, potentially liquefiable soil and provide

[69] Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

additional bearing support beneath building foundations. Alternatively, if appropriate and depending on the specific site conditions, the structure can be designed to accommodate the potential liquefaction-associated hazards, such as ground settlement. Mitigation measures, including structural measures and ground improvement techniques are discussed in the EIR in Section III.L, pages III.L-42 and -43.

Section III.L, page III.L-15 points out that site-specific, design-level liquefaction studies, which are also further discussed and described in mitigation measures MM GE-4a.1 and MM GE-4a.2 (Seismically induced groundshaking, Section III.L, pages III.L-37 and -38) and MM GE-5a (Seismically induced ground failure, Section III.L, pages III.L-42 and -43) would be performed prior to issuance of any building permits. These studies would consist of geotechnical investigations with site-specific seismic analysis and would provide ground improvement and/or other mitigative recommendations to address potential liquefaction-related ground hazards, should they exist. The recommendations would identify the specific recommended techniques for achieving the site-specific performance goals to mitigate liquefaction-related hazards (e.g., performance standards for specific ground improvement techniques, such as the level of densification to which the soil needs to be improved to mitigate liquefaction). Available, possible techniques, as discussed above in this document and identified in the EIR in Section III.L, pages III.L-42 and -43 include overexcavation and replacement of liquefiable soil, compaction grouting, deep dynamic compaction, vibro-compaction and stone or soil-cement columns. All project structural designs would incorporate and conform to the requirements and recommendations in the geotechnical investigations. Furthermore, the geotechnical engineer would review project plans and specifications and observe ground improvement and foundation installation to check for compliance to the geotechnical recommendations and requirements.

Liquefaction Effects on Hazardous Materials

As discussed in Section III.K.1, Draft EIR page III.K-2, there are substantial ongoing remediation programs at known hazardous material release sites at portions of the Project site from former Navy operations throughout HPS Phase II. These are the only known hazardous material release sites requiring remediation at the Project site; there are no known hazardous material release sites requiring remediation at Candlestick Point, or at locations where off-site improvements are proposed, based on the results of investigations to date and a review of government agency databases. The Navy is providing soil and groundwater remediation (cleanup) at the site to reduce chemical concentrations to meet cleanup levels developed to protect human health and the environment and approved by Federal and State regulatory agencies. After completion of cleanup activities, chemicals present in concentrations below these goals would remain. It is also expected that regulators would allow a group of naturally occurring metals associated with fill material derived from native bedrock to remain under a final cover in concentrations above risk levels. The cover in this scenario would limit exposure and protect humans from long-term health risks even if breaches in the cover temporarily occur. Operation and maintenance plans for these covers would be carried out to periodically monitor and repair any breaches. Therefore, even if ground rupture were to occur, naturally occurring metals would not be released at levels presenting a concern to human or ecological health; further if such metals are allowed to be left in place and covered, any breach of the cover would be required to be repaired so that no long-term health risk would occur. Section III.K (Hazards and Hazardous Materials), Draft EIR page III.K-17, describes how surface covers are being installed or remaining in place as part of the Navy's cleanup program (refer to Master Response 9 [Status

of CERCLA Process]), to support the development (e.g., building slabs, pavement for roads, concrete for sidewalks, soil or grass for landscaped areas), and minimize exposure to background metals (refer to Master Response 15 [Proposition P and the Precautionary Principle]), these covers would meet certain specifications of thickness and be maintained to prevent breaches.

In addition, the site is known to have a landfill, and possibly other area of debris disposal. Under CCR Title 27 Section 21090, all closed landfills are required to have an engineered landfill cap if landfill materials are left onsite. The landfill cap is intended to maintain a protective seal to keep moisture and rain from penetrating the landfill waste and prevent exposure of the public and the environment to the disposed waste. If the Navy proposes and US EPA concurs that engineered caps may be placed on top of an area of known or suspected residual contamination (typically a landfill) in order to prevent unsafe exposures from chemicals allowed by the regulators to be left on site, site-specific geotechnical studies, which would evaluate maximum potential earthquake and liquefaction potential, would be used in the design of such caps to minimize potential breaches or damage to the cap during a seismic event. Operation and maintenance plans for these caps would be carried out to monitor and repair any damage that occurs to the cap as a result of a seismic event. Additionally, emergency response plans would be carried out following major flooding and seismic (refer to Master Response 6 [Seismic Hazards]) events, at which time caps and covers would be investigated for potential breaches and repaired.

Sea Level Rise Effects on Liquefaction Potential

Concern has been raised regarding the impacts of future sea level rise on site liquefaction susceptibility. If sea level should rise in the future, it would be anticipated that there is a corollary rise in the groundwater table elevation. As liquefaction can only occur in saturated soils located below the groundwater table, this would cause soil not currently beneath the groundwater table to become saturated and potentially susceptible to liquefaction in the future. Site design would accommodate a future sea level rise of 36 inches (refer to Master Response 8 [Sea Level Rise]). To account for the future impact of sea level rise, design-level liquefaction analysis and modeling would be based on a groundwater table elevation that assumes groundwater is 36 inches higher than present conditions. Since liquefaction occurs only in soil below the groundwater table and the groundwater table would be higher because of sea level rise, depending on the site-specific soil conditions, the thickness of the liquefiable layer and corresponding liquefaction-induced settlement could be increased. Another, mitigating consideration, however, is that as the groundwater level rises, the thickness of soil that would potentially be subject to seismically induced differential compaction settlement (loose non-saturated sand above the groundwater level) would decrease. Depending on site-specific soil conditions, the settlement of soil induced by liquefaction (saturated soil below the groundwater) and the settlement of soil induced by differential compaction (non-saturated soil above the groundwater) would be expected to be of similar magnitude; therefore, the overall impact on the site from liquefaction would be unaffected or negligibly affected by sea level rise. Thus, the net effect of sea level rise on seismically induced settlement (increased thickness of potentially liquefiable layer and decreased thickness of layer subject to differential compaction) is expected to be minimal.

Mitigation Measures to Potential Liquefaction-Related Hazards

Mitigation measures that can reduce or avoid potential liquefaction-related hazards include structural measures and ground improvement methods. Structural measures could include the construction of deep foundations, which transfer building loads to competent soil or rock below the potentially liquefiable zone, or use of a structural, sufficiently reinforced mat foundation to distribute loads and reduce the potential for damage to the structure from liquefaction-induced ground settlement with flexible utility connections to allow some settlement beneath the buildings. If liquefaction estimates are such that these treatments would not address liquefaction and settlement-related impacts adequately, ground improvement measures could include (1) overexcavation and replacement of potentially liquefiable soil with engineered compacted fill, (2) compaction grouting to densify the loose, potentially liquefiable soil, (3) dynamic compaction (deep dynamic compaction or rapid impact compaction) to densify the loose, potentially liquefiable soil, (4) vibro-compaction (also known as vibro-flotation) to densify the loose, potentially liquefiable soil, (5) stone columns to provide pathways for pore pressure to dissipate in potentially liquefiable soil, thus reducing the potential for liquefaction-induced settlement, and (6) soil-cement columns to densify the loose, potentially liquefiable soil and provide additional bearing support beneath building foundations. These ground improvement methods are identified in the EIR in Section III.L, pages III.L-42 and -43. Performance standards that must be achieved are set forth in the geotechnical report recommendations specific to the site-specific ground improvement technique. For example, for compaction grouting, a minimum Standard Penetration Test (SPT) blow count in the compaction-grouting-improved soil would be specified that must be tested and achieved prior to construction.

Master Response 8: Sea Level Rise

Introduction

Overview

Several comments have been received regarding the project's approach to addressing sea level rise. These comments largely focus on the method for estimating total sea level rise; how the Project would be designed to accommodate sea level rise over time; and how sea level rise could impact other site conditions, such as groundwater, contamination, liquefaction, seismicity, and infrastructure. This master response specifically addresses:

- The approach used in addressing coastal flooding potential with and without sea level rise allowances
- The methodology used in developing sea level rise estimates
- The strategy developed to provide continued protection against future sea level rise

Responses to specific comments on sea level rise that are not covered in this master response are provided separately. Also, other topics indirectly related to sea level rise that were brought up in the comments are presented in separate master responses, including Master Response 6 (Seismic Hazards), Master Response 7 (Liquefaction), Master Response 11 (Parcel E-2 Landfill), and Master Response 13 (Post-Transfer Shipyard Cleanup).

This response is organized by the following topics:

- Introduction
- Approach to Address Sea Level Rise Effects on Flooding
  - > Coastal Flooding Studies
  - > Literature on Sea Level Rise
  - > Summary and Adopted Approach
- Mitigation Measures for Potential Sea Level Rise Hazards Related to Hydrology and Flooding
  - > Shoreline Protection
  - > Storm Drain System
  - > Development Areas
  - > Adaptation Strategy
  - > Potential Adaptation Measures
- Other Sea Level Rise–Related Issues
  - > Sea Level Rise Effects on Seismicity
  - > Sea Level Rise Effects on Liquefaction
  - > Sea Level Rise Effects on Movement of or Exposure to Toxics
  - > Mitigation Measures for Other Potential Sea Level Rise Hazards

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > California State Parks (86-9)
  - > Planning Commissioner Borden (SFPC-112)
  - > Redevelopment Agency President Swig (SFRA2-37)
- Organizations
  - > Arc Ecology (82-19)
  - > Golden Gate Audubon Society (81-25)
  - > Green Action Health and Environmental Justice (58-1, 58-3, 58-5, 58-6, 58-7)
  - > Hunters Point Shipyard Citizen's Advisory Committee (90-3, 90-10)
  - > POWER (People Organized to Win Employment Rights) (43-19, 50-3, 50-26, 50-32, 50-33, 52-4, 52-5)
  - > San Francisco Green Party (36-2, 36-3, 36-4, 36-5, SFRA1-87)
- Individuals
  - > Al Symon (SFPC-35)
  - > Alice Franklin (57-1, 57-2, 57-3, 57-4, 57-6)
  - > Carol Harvey (67-1, 67-2, 94-1, SFRA2-28)
  - > Colleen Muhammad (72-2)
  - > Eric Brooks (SFPC-102)
  - > Espanola Jackson (6-1, SFPC-8)
  - > Francisco Da Costa (SFRA2-4)

> Juana Tello (SFPC-94)
> Mishwa Lee (73-1, 73-4, SFPC-31)
> Nyese Joshua (65-4, 65-35)
> Starr Miles (SFPC-75)
> Tim O'Miles (SFRA2-36)
> Vivien Donahue (60-4)

Comments received on the Draft EIR related to sea level rise were focused primarily on issues presented in Section II.F.2 (Site Preparation and Earthwork/Grading) and Section III.M (Hydrology and Water Quality) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section II.F.2 and Section III.M.

Comment Summary

This master response responds to all or part of the following comments: 6-1, 36-2, 36-3, 36-4, 36-5, 43-19, 50-3, 50-26, 50-32, 50-33, 52-4, 52-5, 57-1, 57-2, 57-3, 57-4, 57-6, 58-1, 58-3, 58-5, 58-6, 58-7, 60-4, 65-4, 65-35, 67-1, 67-2, 72-2, 73-1, 73-4, 81-25, 82-19, 86-9, 90-3, 90-10, 94-1, SFRA1-87, SFPC-8, SFPC-31, SFPC-35, SFPC-75, SFPC-94, SFPC-102, SFPC-112, SFRA2-4, SFRA2-28, SFRA2-36, SFRA2-37.

Summary of Issues Raised by Commenters

- Method for estimating sea level rise at the Project site
- How the Project would be designed to accommodate sea level rise over time
- Potential impacts of sea level rise on site conditions, such as groundwater, contamination, liquefaction, seismicity, and infrastructure

Response

Introduction

With respect to flooding, the Federal Emergency Management Agency (FEMA) maps flood zones based on potential flooding caused by rainfall, or a combination of rainfall, tides, storm surge, and waves. Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

The traditional approach to designing coastal developments is as specified by FEMA and local agency guidance policies, which is to set interior grades throughout a community such that finished floor elevations for buildings (e.g., the elevation of the first floor of inhabitable space) would be at or above the present-day Base Flood Elevation (BFE) (e.g., the water surface elevation that would occur during a 100-year flood event). Improvements along the shoreline are required only to protect nearby structures or facilities against storm wave run-up and overtopping during a flood event that has a one percent chance of occurring, as specified by FEMA (sometimes referred to as the "One Percent Annual Chance of Occurrence Event").

The modest amount of sea level rise that has been estimated by the National Oceanic and Atmospheric Administration (NOAA) based on historical observations is about 8 inches over the past century, which is consistent with the estimates that traditional coastal developments have included in their design. However, based on climate change studies over the past two decades, the rate of sea level rise appears to be accelerating and climate change models are predicting greater rates of sea level rise in the future in response to warmer temperatures and melting ice caps.

In California, Executive Order S-13-08, which was issued in November 2008, recognizes the impact that sea level rise may have on coastal development in California. The executive order directs the California Resources Agency to request that the National Academy of Sciences convene an independent panel to complete the first California Sea Level Rise Assessment report. The report, to be completed by December 2010, would advise how California communities should plan for sea level rise.

Regional and local agencies have also taken a more proactive approach in addressing the issue of sea level rise. For example, the San Francisco Bay Conservation and Development Commission (BCDC), in a recently released study (BCDC 2009), is recommending that Bayfront developments consider a 16-inch sea level rise value by 2050 (mid-term) and a 55-inch sea level rise value by 2100 (long-term). The California State Coastal Conservancy (SCC) has issued a similar guidance policy (SCC 2009) with the same mid-term and long-term values. These values were based on work by the California Climate Change Center (CCCC 2006).

Although no specific design criteria related to sea level rise have been formally adopted by federal, state, or local agencies, this Project must be designed to account for sea level rise as part of the planning process to prevent future flooding or loss of infrastructure resulting from shoreline erosion. Therefore, a project-specific approach was developed to address sea level rise for this Project. This approach is described in this master response, in this document.

Approach to Address Sea Level Rise Effects on Flooding

Section II.F.2, pages II-69 to II-70, and MM HY-12a.1 and MM HY-12a.2, pages III.M-100 to -103 of the Draft EIR provide a discussion of the project-specific study of and approach to address sea level rise. The study and approach are expanded upon in this master response in response to the comments raised on the Draft EIR.

As part of project planning studies, an assessment of existing shoreline conditions and anticipated sea level rise within the Project site was completed to develop planning and design guidance for the various phases of the project (Moffatt & Nichol 2009a, 2009b). The studies included:

1. A condition assessment of the existing shoreline and shoreline structures, along with a comprehensive review of as-built conditions
2. A coastal engineering analysis of tidal, wind-wave, and storm-wave processes for the Project site and vicinity, with the objective of developing recommendations for development and open-space grades for the Project, as well as edge treatment along the Project shoreline
3. A review of published, peer-reviewed literature related to sea level rise, with the objective of developing sea level rise allowance estimates for the future
4. A review of guidance and policy documents from state and regional agencies to establish design parameters for shoreline elevation and grades for development areas and open-space

5. Development of a strategy to address sea level rise at the Project site

A summary of the coastal flooding studies and the literature on sea level rise is provided in the following sections. The subsequent section, Mitigation Measures for Potential Sea Level Rise Hazards Related to Hydrology and Flooding, provides details related to the strategy developed for addressing future sea level rise at the Project site.

Coastal Flooding Studies

The primary factors that influence coastal flooding are water levels, which are influenced by a combination of astronomical tides and storm surges, and wave overtopping, which is caused by wind waves. Because these factors do not occur independent of each other (i.e., both are present at any given time), it is necessary to estimate the frequency of their combined occurrence. Tidal information was collected from NOAA gauges, which shows that the tidal range along the Project shoreline is between elevations -0.23 to 6.5 feet NAVD88. This analysis resulted in 10- and 100-year return period tides (meaning tides that would occur once in 10 or 100 years) of elevation +8.5 and +9.5 feet NAVD88, respectively. (NAVD88 is a vertical control datum established for the purposes of vertical control surveying in the United States of America based upon the General Adjustment of the North American Datum of 1988.) The BFE used for the purpose of establishing development and open-space grades was, therefore, estimated to be +9.5 feet NAVD88. As previously mentioned, the approach to designing coastal developments is to set finished floor elevations for buildings at or above the present-day BFE.

One of the primary methods recommended by FEMA for the purpose of estimating the total potential run-up along the shoreline is outlined by the Technical Advisory Committee on Flood Defense—The Netherlands. The analysis resulted in One Percent Annual Chance of Occurrence Event for wave run-up elevations ranging from +10.5 feet to +14.3 feet NAVD88 along the Hunters Point Shipyard shoreline and +11.6 feet to 15.3 feet NAVD88 along the Candlestick Point shoreline. Recommended perimeter elevations were then developed based on allowable overtopping rates to achieve safe conditions for pedestrians during the One Percent Annual Chance of Occurrence Event for wave run-up. This resulted in an additional one foot of elevation for the most exposed portions of the perimeter (meaning those areas that are not provided some degree of protection from existing structures).

Allowances for sea level rise based on the literature described below were then added to these minimum required grades in the interior and along the perimeter, and a strategy for the future was then developed for higher sea level rise estimates such that the level of protection provided when the Project is constructed continues into the future.

Literature on Sea Level Rise

This section presents a summary of the most commonly quoted estimates of sea level rise in scientific and planning literature, with particular reference to California and San Francisco Bay. This portion of the Master Response provides a summary of technical papers written on the topic of sea level rise and. due to the subject matter and the sources reviewed, can be highly technical.

Thousands of journal articles, newspaper stories, and publications on the topic of climate change and associated sea level rise have been published in the past 20 years. For purposes of this literature review, eight documents that are widely recognized as credible sources in the scientific community were

reviewed. They are summarized here briefly, listed in reverse chronological order as Documents A through H, and they are also listed in the References provided in Section G of this document (Reference Numbers 10-17). Additional documents that are less well recognized, but are illustrative of ongoing development in the scientific, engineering, and planning communities, are also listed in the References section of this document.

A summary of the sea level rise estimates presented in the reviewed literature is presented in Table C&R-7 (Summary of Reviewed Documents to Determine Sea Level Rise Estimates) and discussed in greater detail in the following paragraphs.

Table C&R-7 Summary of Reviewed Documents to Determine Sea Level Rise Estimates

	Sea Level Rise Estimate/Projection		
Document	*inches*	*meters*	*Time frame (years)*
California Climate Change Center, 2009	24 to 55	0.6 to 1.4	2000–2100
CALFED Bay-Delta Program, 2007	20 to 55	0.5 to 1.4	2100
Intergovernmental Panel on Climate Change, 2007 (AR4)	7 to 30	0.18 to 0.76	1990–midpoint of 2090–2099
Rahmstorf, 2007	20 to 55	0.5 to 1.4	1990–2100
California Climate Change Center, 2006	8 to 31	0.2 to 0.8	2000–2100
Intergovernmental Panel on Climate Change, 2001 (TAR)	4 to 35	0.09 to 0.88	1990–2100
US Environmental Protection Agency, 1995	5 to 34	14 to 86	2100
National Research Council, 1987	20, 39, and 59	0.5, 1.0, and 1.5	2100

Since building structures are generally "immovable," whereas a shoreline protection system and/or storm drain system can be adapted to keep up with changing sea levels, different planning horizons need to be adopted for different elements of this project. In searching for guidance policies from agencies, the most relevant and recent policy statements that can be used are from BCDC and the SCC. The SCC's policy statement on climate change includes the following:

> Prior to the completion of the National Academies of Science report on sea level rise, consistent with Executive Order S-13-08, the Conservancy will consider the following sea level rise scenarios in assessing project vulnerability and, to the extent feasible, reducing expected risks and increasing resiliency to sea level rise:
>
> a. 16 inches (40 cm) by 2050
> b. 55 inches (140 cm) by 2100

The strategy for the Project is founded on using mid-term sea level rise values for the shoreline edge and storm drainage system. For a long-term planning horizon (for example, beyond 50 years from now), the evolving nature of climate change and sea level rise science needs to be recognized, and no single sea level rise value should be relied upon at this point in time. Instead, an adaptive management strategy should be put in place such that improvements for sea level rise beyond the mid-term planning horizon can be designed and implemented as sea levels rise.

A more detailed discussion of the strategy for addressing sea level rise for this Project is provided at the conclusion of the discussion of the various documents that were reviewed to determine the rate of sea level rise that could occur (Documents A through H).

Document A: California Climate Change Center, 2009 (Estimated range of 24 to 55 inches Sea Level Rise by 2100)

This assessment forms the basis of the increase of 55 inches (140 cm) by 2100 specified by the SCC. It was prepared as a contribution to the second California Climate Change Scenarios Assessment, which was mandated by Executive Order S-3-05 to "report to the Governor and the State Legislature by January 2006 and biannually thereafter on the impacts to California of global warming". The assessment, which replaces the earlier 2006 assessment (CCCC 2006), was prepared by nine respected academics.

The assessment provides two sets of sea level rise estimates. Each set of estimates is based on a subset of the temperature projections provided in the *2007 IPCC Report* (refer to Document C, below). Specifically, two of the climate changes emission scenarios (A2 and B1) and a subset of the Global Circulation Models (those providing sufficiently detailed output data) were used. The assessment assumes that sea level rise along the California coast would continue to match global rates.

The first set of sea level rise estimates uses Rahmstorf's semi-empirical method (Document D, described below) to estimate sea level rise based on the temperature projections contained in the Intergovernmental Panel on Climate Change Fourth Assessment Report.

The second set of sea level rise estimates further includes a method by Chao et al (2008) to account for the twentieth century growth of dams and reservoirs. By impounding water, these structures may have artificially decreased the rate of sea level rise in the twentieth century. Correcting for this possible decrease would increase the future rate of sea level rise.

The resulting range of projections for sea level rise between 2000 and 2100 is from 24 inches (60 cm) to 55 inches (140 cm). The increase of 55 inches by 2100 specified by the SCC is based on the upper limit of these projections.

Document B: CALFED Bay-Delta Program, 2007 (Estimated range of 20 to 55 inches by 2100)

This memorandum was prepared by the CALFED Independent Science Board, a committee consisting of nine respected academics, to examine the array of sea level rise projections available in published reports and, based on current scientific understanding, advise the CALFED Science Program about which projections are most appropriate for incorporating into ongoing planning for the California Delta. The report does not include any modeling or stand-alone analysis. However, as part of the Delta Vision strategy that is being developed as a guidance and policy document for the California Department of Water Resources, it has been widely quoted as a basis for flood planning in the San Francisco Bay Area.

The conclusions of the Independent Science Board are summarized as follows:

- The board recommends that planning efforts use three approaches to incorporate sea level rise uncertainty.
- First, given the inability of current physical models to accurately simulate historic and future sea level rise, until future model refinements are available, it is prudent to use existing empirically based models for short to medium term planning purposes. The most recent empirical models project a midrange rise this century of 28 to 39 in. (70 to 100 cm) with a full range of variability of 50 to 140 cm (20 to 55 in.). It is important to acknowledge that these empirical models also do not include dynamical instability of ice sheets and likely underestimate long-term sea level rise.

- Secondly, the Board recommends adopting a concept that the scientific and engineering community has been advocating for flood management for some time. This involves developing a system that cannot only withstand a design sea level rise, but also minimizes damage and loss of life for low-probability events or unforeseen circumstances that exceed design standards.
- Finally, the Board recommends the specific incorporation of the potential for higher-than-expected sea level rise rates into long term infrastructure planning and design. In this way, options that can be efficiently adapted to the potential for significantly higher sea level rise over the next century could be favored over those that use "fixed" targets for design."

As a clarification, the *current physical models* referenced by the Independent Science Board are the models included in the 2007 IPCC Report (refer to Document C. below); while the *most recent empirical models* quoted correspond to the work of Stefan Rahmstorf (refer to Document D, below).

Document C: Intergovernmental Panel on Climate Change, 2007 (AR4) (Estimated range of 7 to 30 inches by 2100)

This report is often referred to as AR4 (the Fourth Assessment Report of the IPCC). It contains an exceptionally detailed synthesis of the available peer-reviewed science of climate change and sea level modeling and has received contributions and comment from a vast array of respected researchers in the field.

The AR4 gives a widely quoted projection of 7 inches (18 cm) to 23 inches (59 cm) for sea level rise in the twenty-first century. These are considered 5 to 95 percent ranges. The AR4 includes a second set of projections—from 7 inches (18 cm) to 30 inches (76 cm)—that include a scaled-up ice discharge term. The projections cover the period from 1990 to the midpoint of 2090–2099; the AR4 does not provide sea level rise values at intermediate periods (e.g., to 2050).

The models described in the AR4 give reasonable hindcasts of observed sea level rise between 1993 and 2003, although they under-predict observed sea level rise between 1961 and 2003.

The uncertainty in the quoted projections derives from two main sources:

- Different greenhouse gas emission scenarios—the IPCC defines six future scenarios of world population and economy that predict different levels of greenhouse gas emissions. The AR4 stresses that no scenario can be considered more likely than another.
- The second and larger uncertainty is associated with limitations to current scientific knowledge. The range of sea level rise projections for a given scenario is based on the range of results from 17 independently developed and peer-reviewed general circulation models (GCMs).

Compared to the 2001 IPCC Report, known as the Third Assessment Report (TAR) refer to Document F, below), the projections in the AR4 are 7 to 30 inches by 2100 as opposed to 4 to 35 inches (9 cm to 88 cm) between 1990 and 2100. The reasons for the differences are as follows:

- The projections in the AR4 are to the midpoint of the period 2090 to 2099, while those in the TAR are to 2100.
- The TAR included some small additional contributions (e.g., 0.5 cm additional rise in the twenty-first century due to permafrost), which are not included in the AR4.

- The modeling uncertainties have been decreased with improved information and modeling capabilities. The TAR uses simple climate models to estimate sea level rise, which are less detailed than the atmosphere-ocean general circulation models used in the AR4.

Mechanisms that may lead to sea level rise are not included in the AR4 projections unless there is a broad scientific consensus that they are well understood with quantifiable implications. In particular, the projections do not include potentially large and nonlinear effects such as an accelerated loss of the Antarctic and Greenland Ice Sheets because there are no broadly accepted models of these processes. It is not even known whether ice sheet discharge would increase or decrease sea level rise in the short term. However, the projections do include the best current understanding of polar ice dynamics.

Critics of the IPCC (Oppenheimer et al. 2007) have generally focused on its scientific conservatism. In particular, many planners have expressed concern that the upper limits of the IPCC projections do not represent a worst-case scenario. However, the scientific community has not attempted further synthesis of the wide range of available models and potential contributions to future sea level rise. Few numerical predictions of total sea level rise have been published in the peer-reviewed literature since dissemination of the AR4.

Document D: Rahmstorf, 2007 (Estimated range of 20 to 55 inches by 2100)

Stefan Rahmstorf of the Potsdam Institute for Climate Impact Research in Germany developed a semi-empirical approach to predict sea level rise. This semi-empirical model assumes that the initial rate of sea level rise is proportional to the increase in temperature relative to a previous equilibrium temperature:

$$\frac{dH}{dt} = a(T - T_0)$$

In this formula, H is the global mean sea level, t is time, T is the global mean temperature, T_0 is the previous equilibrium temperature value, and a is an empirically derived proportionality constant. Rahmstorf fits this linear relationship with available observations of global sea level and global mean temperature between 1880 and 2001. This fit provides a proportionality constant, which allows him to use the temperature projections from the IPCC's 2001 TAR to project future sea level rise. An increase of 28 to 39 inches (70–100 cm) between 1990 and 2100 is obtained by using the best fit to the proportionality constant a and the range of temperature projections from the TAR. An increase of 20 to 55 inches (50–140 cm) is obtained by adding one standard deviation to the derived value of a. These are the values discussed by the CALFED Independent Science Board (refer to Document B).

Rahmstorf's work is, in part, based on the observation that the TAR under-predicts sea level rise from 1990 to 2006 (Rahmstorf et al. 2007), whereas the semi-empirical approach predicts sea level rise from 1990 to 2006 better than the TAR. However, Rahmstorf's work suggests that the 2007 AR4 adequately describes sea level rise from 1993 to 2003, although global measurements are still near the upper limits of the AR4 modeling range. Because the rate of global sea level rise has slowed since 2005 (Cazenave et al. 2008), this observation may be a less strong argument in favor of the semi-empirical approach than it was in early 2007. In addition, published comments on this paper have argued that it misuses statistical methods (Holgate et al. 2007; Schmith et al. 2007). However, it has been widely quoted by authors, particularly in the planning and policy fields, who are critical of the IPCC's focus on scientific consensus.

Document E: California Climate Change Center, 2006 (Estimated range of 8 to 31 inches by 2100)

The CCCC comprises the California Energy Commission, Scripps Institution of Oceanography at the University of California at San Diego, and the University of California at Berkeley. The CCCC report on sea level rise was based on the Atmosphere-Ocean General Circulation Model simulation results prepared by IPCC in AR4. However, at the time the CCCC report was published, the AR4 report was in preparation, with only partial results available. For example, the modeling of sea level rise associated with thermal expansion was complete for only a subset of the emissions scenarios, and the component of sea level rise associated with ice melt had not been finalized. The CCCC report used additional models (Hulme et al. 1995) to develop a full range of estimates of eustatic sea level rise. The results (20 to 80 cm or 8 to 31 inches between 2000 and 2100) are similar to those in the AR4 report. Given that the AR4 report has now been published, it seems reasonable to treat the sea level rise projections in the CCCC result as superseded.

The CCCC report goes on to discuss the potential implications of sea level rise for exacerbating storm effects (e.g., high surf combined with high tides) and on the Delta levees. This discussion uses an illustrative sea level rise increase of 12 inches (30 cm) in the twenty-first century. This illustrative value lies within the range published in the AR4, so that the CCCC report remains current in its discussion of implications.

Document F: Intergovernmental Panel on Climate Change, 2001 (TAR) (Estimated range of 4 to 35 inches by 2100)

The Third Assessment Report (TAR) of the IPCC, like the fourth (e.g., AR4), is a detailed synthesis of the available peer-reviewed science. It is similar to the AR4 in being consensus-driven – potential contributions to sea level rise are not included unless there is broad agreement that they are quantitatively understood.

The TAR projects a sea level rise of 4 to 35 inches (9 to 88 cm) between 1990 and 2100. As with the AR4, the largest contribution to the uncertainty is associated with modeling uncertainties, and in particular with the potential for dynamic ice sheet instability. The West Antarctic Ice Sheet (WAIS) is particularly called out in regard to uncertainty.

Document G: US Environmental Protection Agency, 1995 (Estimated range of 5 to 34 inches by 2100)

The focus of this report is on an explicit probabilistic assessment of different sea level rise scenarios for the 21st century. The report bases its modeling on earlier IPCC work (IPCC 1990, IPCC 1992) and creates a simplified model that captures the dependence of the IPCC projections of sea level rise on 35 major uncertainties. The main contributions to sea level rise in this model are thermal expansion together with ice melt in Greenland, the Antarctic, and small glaciers. The report develops a probability distribution for each of these 35 variables through a literature review and by discussion with a panel of expert reviewers. Finally, the report develops explicit probability distributions for the potential future sea level rise (specifically, the increase in sea level rise relative to an increase at the current rate). Results are given both for a mix of future emissions scenarios used by the IPCC in 1990, and for each emission scenario.

The report is careful to state that:

> … our probability estimates are not based on statistics. Our estimates simply convey what the probability of various rates of sea level rise would be if one is willing to assume that the experts we polled are each equally wise and that their collective wisdom reflects the best available knowledge […] Our projections are less like a statistical weather forecast and more like handicapping a horse race.

For San Francisco, the 5 to 95 percent range for the global average sea level rise, assuming the current rate of global average sea level rise, is the central value of 1.8 mm/year or 5 to 34 inches (14 to 86 cm) between 1990 and 2100. The 1 to 99 percent range (the widest range reported) is -2 to +44 inches (-4 to +112 cm). These percentages are cumulative probabilities; therefore, the 1percent value indicates that there is a 1percent chance that the value would not be exceeded.

Document H: National Research Council (NRC), 1987 (Estimated range of 20 to 59 inches by 2100)

The focus of this document is on the anticipated effects of sea level rise and the recommended responses. The report does not make specific projections of sea level rise: rather, it adopts three plausible conditions of 20 inches, 39 inches, and 59 inches (50, 100, and 150 cm) by 2100. Also, this document serves as the basis for recent United States Army Corps of Engineers (USACE) (July 2009) document.

Summary and Adopted Approach

As described above and summarized in Table C&R-7, the estimates of sea level rise in the literature vary widely, from an observed value of 8 inches per century to a modeled value of about 35-inches per century based on IPCC high estimates. Semi-empirical studies by Rahmstorf and news articles have stated that sea level rise over the next 100 years could be substantially higher than that suggested by IPCC and could be as much as 55 inches by 2100. This sea level rise estimate was adopted by the CALFED Independent Science Board as a plausible, albeit high, value, and was also used as a basis for some of the estimates prepared by the CCCC. It is also the basis for the long-term estimate recommended by BCDC and SCC. High-resolution global altimetry data (which measures the altitude of an object above a fixed level) through the end of 2009 suggest that in the last two decades, global mean sea level has increased at a rate close to the upper end of the IPCC projections. This corresponds to an increase in global mean sea level of around 10 inches by 2050 and 30 inches by 2100.

From the above, what is clear is that the science of climate change and sea level rise is evolving, implying that it is prudent to develop community designs that can accommodate various levels of sea level rise over the planning horizon, rather than design to a specific report or estimate.

In developing numerical allowances for future sea level rise for the CP-HPS Phase II project, two considerations went into the selection of a set of sea level rise projections and a planning horizon:

- First, the importance of distinguishing between scientific projections (prepared by the IPCC and by Rahmstorf) and illustrative cases (by the NRC).
- Second, the evolving and improving nature of the science of climate change and sea level rise. This fact does not necessarily lead to a narrower spread of projections over time. For example, ice sheet dynamics is a very active research field, and measurements of the polar ice caps are showing rapid

melt in some areas. Improving measurement techniques could potentially highlight new mechanisms that were not previously understood.

Figure C&R-2 (Sea Level Rise Projections) illustrates the different projections of sea level rise reviewed and from 2000 to 2100 based on the literature discussed previously. The shapes on the curves are approximate, based on available data. Where rates of sea level rise were not provided in the literature or where the studies have been superseded by more recent studies, ranges are shown for the year 2100. The curves in Figure C&R-2 show projections from the following reports:

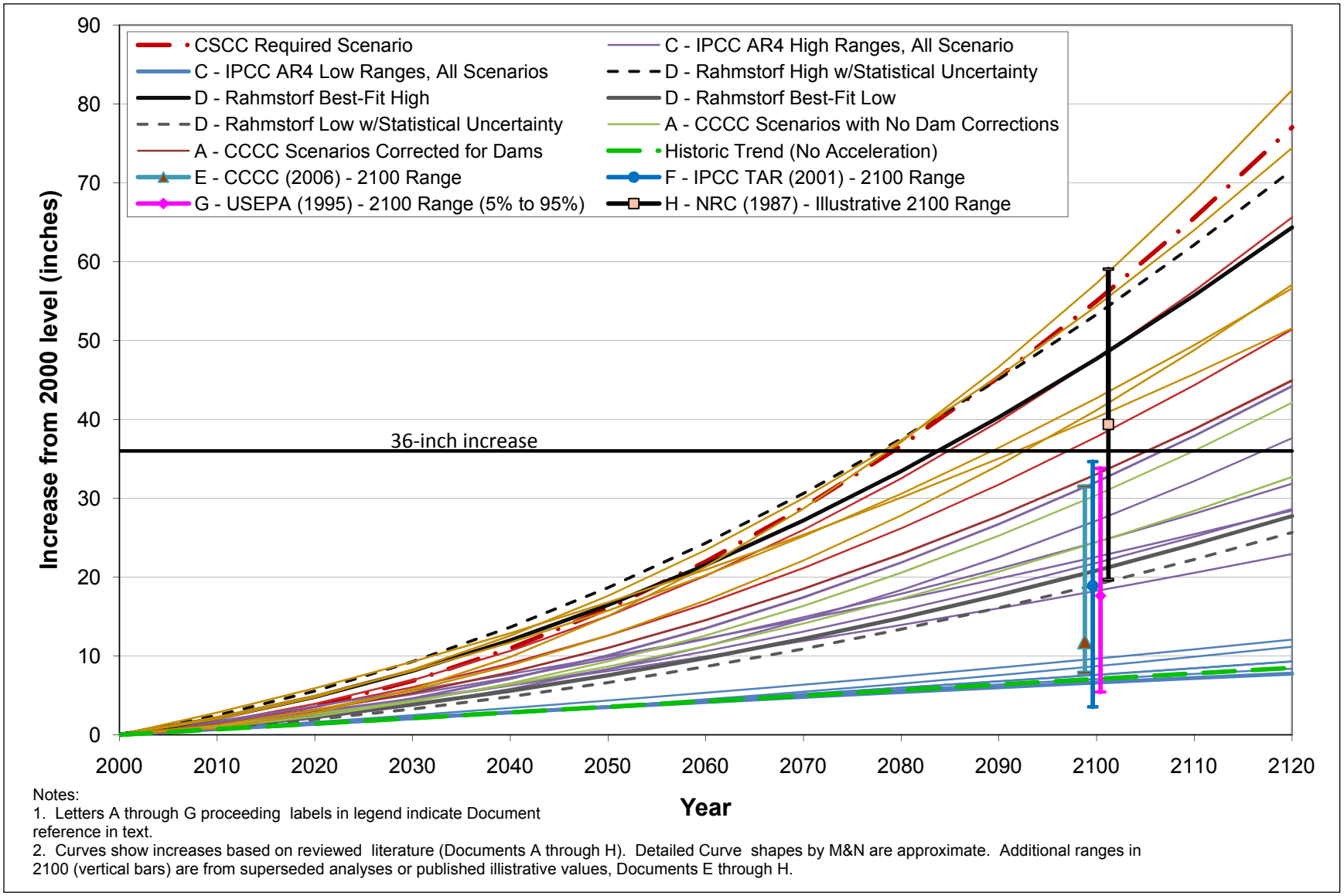
- **California Climate Change Center, 2009.** This report includes a number of projections, largely based on the IPCC AR4 temperature projections and the semi-empirical approach of Rahmstorf.
- **Intergovernmental Panel on Climate Change, 2007.** This report provides low, mid-level, and high values for six independent emissions scenarios, with and without a scaled-up ice discharge term. Thus, in principal, a total of 36 different estimates are available. Figure C&R-2 shows the low and high values for the different scenarios including the scaled-up ice discharge term.
- **Rahmstorf, 2007.** This paper includes four projections: low and high values based on the low and high temperature projections of the TAR (IPCC 2001), both with and without inclusion of a statistical uncertainty in an empirically derived proportionality constant. Figure C&R-2 shows all four curves.

The upper limit of sea level rise provided by the NRC in Document H is similar to Rahmstorf's upper curve; however the NRC curves are *not* projections, but rather illustrative cases. Finally, the figure shows how sea level would increase if there were no acceleration, based on the current (1961–2003) global average increase of 1.8 mm/year (IPCC 2007).

Recent news articles, based in part on recent measurements of ice cap melt, have stated that the increase in sea level rise over the next 100 years could be double that previously calculated. However, this doubling is relative to the IPCC predictions, which provide much lower curves. Therefore, these recent measurements do not change the conclusions stated above.

Since building structures are generally "immovable," whereas a shoreline protection system and/or storm drain system can be adapted to keep up with changing sea levels, different planning horizons need to be adopted for different elements of this project. In searching for guidance policies from agencies, the most relevant and recent policy statements that can be used are from BCDC and the SCC. The SCC's policy statement on climate change includes the following:

> Prior to the completion of the National Academies of Science report on sea level rise, consistent with Executive Order S-13-08, the Conservancy would consider the following sea level rise scenarios in assessing project vulnerability and, to the extent feasible, reducing expected risks and increasing resiliency to sea level rise:
>
> a. 16 inches (40 cm) by 2050
> b. 55 inches (140 cm) by 2100



Notes:
1. Letters A through G proceeding labels in legend indicate Document reference in text.
2. Curves show increases based on reviewed literature (Documents A through H). Detailed Curve shapes by M&N are approximate. Additional ranges in 2100 (vertical bars) are from superseded analyses or published illustrative values, Documents E through H.

SOURCE: Moffat & Nichol, 2010.

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FIGURE C&R-2

Candlestick Point — Hunters Point Shipyard Phase II EIR

SEA LEVEL RISE PROJECTIONS

The strategy for the Project is founded on using mid-term sea level rise values for the shoreline edge and storm drainage system. For a long-term planning horizon (for example, beyond 50 years from now), the evolving nature of climate change and sea level rise science needs to be recognized, and no single sea level rise value should be relied upon at this point in time. Instead, an adaptive management strategy should be put in place such that improvements for sea level rise beyond the mid-term planning horizon can be designed and implemented as sea levels rise.

Project Design and Mitigation Measures for Potential Sea Level Rise Hazards Related to Hydrology and Flooding

Section II.F.2, pages II-69 to -70, MM HY-12a.1 and MM HY-12a.2, pages III.M-100 to -103, of the Draft EIR discusses the measures planned to address sea level rise. In response to comments on the Draft EIR, an expanded discussion of the adaptive management strategy that would be used for this Project and specific mitigation measures that would be used for the development areas, storm drainage system, and shoreline protection are presented here. Based on the coastal study, literature review, and numerous discussions with other City agencies (including SFPUC and DPW), the following strategy for protection against sea level rise has been incorporated into the project. It is comprised of four separate components:

- Construction of a shoreline protection system that is initially built to accommodate a mid-term rise in sea level of 16 inches, with a design that is adaptable to meet higher than anticipated values in the mid-term, as well as for the long-term
- Construction of a storm drainage system that is initially built to accommodate a mid-term rise in sea levels of 16 inches, with a design that is adaptable to meet higher than anticipated sea level rise values (similar to the first bullet)
- Construction of buildings and vital transportation infrastructure at elevations that would not be exceeded by flood waters, even if the shoreline protection does not function, for existing conditions and over a longer-term as compared to the two above
- Formation of an Adaptation Strategy that would include preparing an Adaptive Management Plan that outlines an institutional framework, monitoring triggers, a decision-making process, and creates an entity with taxing authority that would pay for infrastructure improvements necessary to adapt to higher than anticipated sea levels

The Project design for sea level rise, therefore, meets both near-term and longer-term objectives; in addition, it incorporates an adaptive management strategy to address improvements related to sea level rise in the future. Each element of construction was designed to a specific planning horizon as described below. Implementation of mitigation measures MM HY-12a.1 and MM HY-12a.2 would require that all housing be elevated out of the floodplain by grading and fill, that the City's Interim Floodplain Maps (or the FEMA maps, if adopted prior to Project implementation) be updated to reflect finished grade elevations, and that open space setbacks be put in place to allow protection against future sea level rise.

Shoreline Protection

For the perimeter system, it is not preferable to build a high wall around the Project for a design condition that may not happen for several decades for a couple of primary reasons: one, it would pose a visual obstruction, and, two, it would severely limit public access. At the same time, it is not prudent to build to current sea level conditions and keep raising the grade and/or structures as sea levels rise.

Therefore, an interim sea level rise estimate for the year 2050, as put forth by BCDC and the SCC, was selected as the design criteria to use for design and initial construction—that sea level is 16 inches higher than the existing conditions, which would ensure that adaptive management construction activities are not triggered until at least the year 2050. Mitigation measure MM HY-12a.2 provides for the protection of the Project site from sea level rise over the life of the Project by requiring the design to be adaptable to higher levels of sea level rise by leaving a significant development setback such that future improvements can be made. A funding source to construct these improvements is required by MM HY-12a.2 and would also be part of the Adaptation Plan.

Storm Drain System

The storm drain system would be constructed with an initial sea level rise allowance of 16 inches and, per MM HY-12a.2, would be adaptable to higher levels of sea level rise with minimal intervention. The system would function as a gravity-drained system until about 2050. After that date, the mitigation measure requires that a portion of the Adaptation Strategy would be implemented, which would consist of installing storm drain pumps or other system for which the establishment of a funding mechanism is provided for in the mitigation measure.

Development Areas

In accordance with MM HY-12a.1, all buildings and entrances to subterranean parking and streets would be set at an elevation that is 36-inches higher than the existing BFE. This 36-inch sea level rise allowance, plus a freeboard of 6 inches, is proposed to be used for finished floor elevations of all buildings. This would ensure that even if no shoreline protection improvements are undertaken, or in the event of a slope failure along the shoreline, neither buildings nor transportation infrastructure would be flooded when water levels rise 42 inches higher than current BFE. Additionally, this allowance provides subterranean parking a minimum of approximately 36 inches between parking finish floor and present groundwater levels. This increase in elevation would provide flood protection beyond the 2080 time frame according to the most aggressive sea level rise, and well beyond 2100 according to the highest IPCC projection (refer to Figure C&R-2).

Adaptation Strategy

As a part of MM HY-12a.2, a project-specific sea level rise Adaptation Strategy would be implemented to provide guidance, identify relevant stakeholders, define appropriate management actions and triggers, and establish a project-specific funding mechanism. It would be administered by an entity created for the Project that would have taxing authority and funding responsibility.

The strategy envisions incorporating ongoing measurements of sea level rise from the scientific community into a Monitoring Program that would guide the decision-making process for future improvements. The Monitoring Program would include protocols to compare observed changes in sea level with the as-built perimeter elevations, using updates of changes in sea level provided by the NOAA, National Geodetic Survey, or other appropriate agencies. The Monitoring Program would be administered by a public entity with similar funding responsibilities as a Community Facilities District (CFD). This entity would guide the decision-making process for implementation of future improvements, such as raising the perimeter.

The Adaptive Management Plan would define specific triggers for action, based on observed changes in sea level arising from ongoing measurements obtained during the Monitoring Program. The Plan would require 5- or 10-year updates based on observed changes in sea levels, as well as any other effects of climate change (i.e., more or less extreme storm wave conditions). The initial strategy, as well as any updates, would be coordinated with relevant stakeholders, including the City and County of San Francisco, State Parks, FEMA, and BCDC.

Future improvements that may be needed to respond to sea level rise are as follows:

- When the mean sea level rises 16 inches above existing values, the crest elevation of the shoreline protection system would be raised 20 inches and storm drain system pumps would be installed
- When the mean sea level rises 36 inches above existing values, the shoreline protection system would be improved to act as a flood barrier

Potential Adaptation Measures

The proposed development setback distances would enable a variety of future perimeter modifications to accommodate at least 55-inches, with the ability to accommodate sea level rise even higher than 55 inches. The adaptive management strategy described above is based on elevation and structural characteristics of the shoreline along the project boundaries. The varied nature of this shoreline, ranging from protected and unprotected slopes, beaches, seawalls, and wharves, results in a multitude of potential adaptive management measures.

Perimeter adaptations would likely include a combination of the following components in response to varying land uses and wave run-up characteristics at different locations around the Project site:

- Raising the shoreline embankment in place to function as a storm surge or flood barrier
- Constructing a series of embankments of increasing heights away from the water. Land between sets of embankments could hold periodic wave overtopping that "drain out" between high tides
- Constructing sea walls, particularly along Parcel B where they would also function as a public amenity
- Where feasible, "lay back" the shoreline to create cobblestone beaches or tidal marshes that limit wave run-up and overtopping, rather than increasing embankment heights

Other Sea Level Rise–Related Issues

Sea Level Rise Effects on Seismicity

Seismicity can be described as the relative frequency and geographic and historical distribution of earthquakes (refer to Master Response 6 [Seismic Hazards]). The intensity of seismic shaking or strong ground motion during an earthquake at any particular location is dependent on a number of factors, including the distance and direction of the site from the earthquake epicenter, the earthquake magnitude, and the geologic (soil and rock) conditions at and in the vicinity of the seismic event. The frequency, intensity, and distribution of earthquakes are unrelated to the groundwater level; that is, fluctuations in the groundwater level do not increase or decrease the likelihood or intensity of an earthquake. Other than to increase the thickness of the potentially liquefiable layer (by an amount proportional to the sea level rise), sea level rise would have a negligible effect on seismicity or potential seismic hazards at the site.

As discussed in the Draft EIR Section III.M.2 (Setting), page III.M-13, the potential hazard related to tsunamis in San Francisco Bay have been analyzed in regional studies. The expected 100-year tsunami wave run-up elevation at South Basin (which is adjacent to both Candlestick Point and HPS Phase II) is +4.8 feet (National Geodetic Vertical Datum [NGVD29]) or -3.8 feet (San Francisco City Datum [SFCD]). As discussed in the Draft EIR Impact HY-15 (Seiche, Tsunami, and Mudflows), page III.M-106, the development of the Project site, which takes sea level rise into account, as described above, would be protected from tsunami wave run-up with increases in sea levels up to 46 inches, if shoreline improvements were to fail during the seismic event.

Sea Level Rise Effects on Liquefaction

The discussion following Impact GE-5, Draft EIR page III.L-46, states:

> … The structural design review required by MM GE-4a.1, MM GE-4a.2, MM GE4a.3, and MM GE-5a would ensure that all necessary methods and techniques would be incorporated in the design for Project foundations and structures to reduce potential impacts from ground failure or liquefaction to a less-than-significant level.

Additionally, as stated in Master Response 7 (Liquefaction), the potential for liquefaction is discussed, including site-specific geotechnical investigation and seismic analysis that would be completed prior to final design and construction. To account for the future impact of sea level rise, design-level liquefaction analysis and modeling would be based on a range of groundwater table elevations that are higher than existing conditions. Recommended mitigation measures for liquefaction, which would be developed during the geotechnical investigation and seismic analysis, and may include structural design measures and/or ground improvement, would be implemented at each site as determined necessary by the Lead Agency. Refer to Master Response 7 (Liquefaction) for a discussion of the potential for and mitigation of liquefaction and liquefaction-induced seismic hazards, including lateral spread, sand boils, and ground settlement at the site.

Sea Level Rise Effects on Movement of or Exposure to Toxics

Sea levels will increase over time and, therefore, there is a potential for residual levels of contaminants to interact with potentially rising levels of groundwater. As discussed the Draft EIR in Section III.K.1, page III.K-2, there are substantial ongoing remediation programs at known hazardous material release sites in throughout HPS Phase II (refer to Master Response 13 [Post Transfer Shipyard Cleanup]). There are no known hazardous material release sites requiring remediation at Candlestick Point, or at locations where off-site improvements are proposed, based on the results of investigations to date and a review of government agency databases. The Navy is providing soil and groundwater remediation (cleanup) at the HPS site to reduce chemical concentrations to meet cleanup levels approved by federal and state regulatory agencies. If the potential for the interaction with groundwater were to present a risk to human health or the environment, further remedial activities would be required by law. Additionally, the Institutional Controls placed on areas with residual contaminants, as described in Section III.K.2, would require actions to maintain the protection to the environment and prevent human exposure.

Mitigation Measures for Other Potential Sea Level Rise Hazards

Sea level rise impacts and associated mitigation measures are described in Section III.M (Hydrology and Water Quality) of the Draft EIR. Anticipated sea level rise is being taken into account during the

development design process to ensure preservation of the planned land uses. When specific buildings are designed, anticipated sea level rise would be taken into consideration when establishing grades, ground floor elevations and, if incorporated into a building, the type of below grade parking garage and associated foundation type to prevent groundwater infiltration. In areas where below grade structures are installed below the groundwater table, there are several well-tested methodologies that are successful at preventing groundwater intrusion into these below grade structures. As stated above, the development areas, including buildings would be designed for increased levels of sea level rise. This allowance would provide protection to sub grade levels against sea level rise and prohibit groundwater from entering basements.

Residual chemicals in soil (refer to Master Response 15 [Proposition P and the Precautionary Principle]) largely consist of certain specific metals, which are typically associated with the rock and soil that were historically used to fill in the Bay to expand the Shipyard; thus, they are not part of a "spill" or "release" of contaminants, but rather reflect metal concentrations normally associated with Franciscan Formation bedrock and/or reflect metals concentrations normally associated with the type and quality of soil used during the period the Shipyard was filled. The metals that are found in soil at the Shipyard are predominantly immobile (meaning they are not readily soluble) and, therefore, would not dissolve into groundwater at concentrations of concern and cause problems associated with human health effects or ecological effects. Thus, a rise in the groundwater level caused by a rise in sea level would not mobilize these metals. As a further protective measure, there would be a strict prohibition against pumping groundwater for domestic, commercial, industrial or irrigation purposes. Any groundwater pumped to support construction efforts would be disposed of in accordance with San Francisco Public Utilities Commission discharge requirements.

Although residual chemicals may remain in soil after cleanup, the residual chemicals would be located under a physical barrier (e.g., soil cap, pavement, office building) that prevents human exposure to the residual chemicals. This requirement to cover the entire site to prevent access to residual contamination is required by the Navy CERCLA clean up documents, which have been approved by the US EPA, DTSC, and the Regional Water Quality Control Board. Furthermore, the requirement to install a cover is one that would be a requirement of each landowner within the former Shipyard.

Currently, existing groundwater contamination would be remediated prior to development to levels that would allow safe reuse of the property (refer to Master Response 9 [Status of CERCLA Process]). After remediation is complete, there may still be low levels of residual volatile organic compound (VOC)–affected groundwater and soil that, in turn, could cause the potential for vapor intrusion into buildings constructed over these areas. In order to address this potential, the Navy would conduct a subsurface soil vapor sampling program to define areas where this vapor intrusion may be an issue. If this soil vapor sampling program results in the definition of areas where vapor intrusion could be an issue, the data would be used to properly design vapor mitigation systems to be constructed within and underneath building foundations. These vapor mitigation systems are common, well tested, and protective of building occupants, whether they include residential or commercial occupants. All soil vapor sampling programs, definition of areas requiring vapor controls, and the design and installation of vapor mitigation systems would be overseen and approved by the regulators (US EPA, DTSC, and RWQCB).

Furthermore, any soil vapor mitigation system would be subject to periodic inspection and maintenance to ensure proper operation.

VOC vapors occur in soil that is not totally saturated with water. Therefore, if sea level were to rise and if there was an associated rise in groundwater, generation of VOC vapors would actually be reduced. VOC vapors migrate from impacted soil and groundwater into soil pore spaces that would become saturated due to this higher groundwater level.

If the potential for the interaction with groundwater were to present a risk to human health or the environment then further remedial activities would be required by law. Additionally, the Institutional Controls placed on areas with residual contaminants, as described in Section III.K.2, would enforce action to maintain the protection to the environment and prevent human exposure.

Sea level rise would not compromise covers and/or engineered caps that may be placed on top of an area of known or suspected residual contamination. Operation and maintenance plans for these covers and caps would be carried out to monitor and repair potential breaches. Additionally, emergency response plans would be carried out following major flooding events, at which time caps and covers would be investigated for potential breaches and repaired. These caps and covers would prevent contaminates from interacting with the environment and retain in place any sea level rise interaction with residual contamination. Master Response 9 (Status of the CERCLA Process), Master Response 11 (Parcel E-2 Landfill), Master Response 12 (Naturally Occurring Asbestos), and Master Response 13 (Post-Transfer Shipyard Cleanup) further discuss the cleanup process and residual contamination that could remain on the Project site after transfer.

Master Response 9: Status of the CERCLA Process

Introduction

Overview

Comments have been raised asking for clarification of the CERCLA process at HPS Phase II and the status of the various HPS parcels within the CERCLA process. The Navy is conducting the environmental cleanup at HPS, and will do so independent of whether this project proceeds or not. The Navy conducts the cleanup in accordance with a process set forth in an agreement between the Navy, US EPA, the state Department of Toxic Substances Control (DTSC), and the regional water quality control board (RWQCB). That agreement is called the Federal Facilities Agreement (FFA). This ongoing remedial program is required to implement all remedial actions necessary to protect human health and the environment from risks associated with hazardous materials released into soil or groundwater, in consideration of the uses contemplated by the Project. This master response is intended to direct the reader to specific sections and figures in the Draft EIR that address these issues.

This response is organized by the following topics:

- Introduction
- Summary of Navy Cleanup Process
- Navy Radiological Cleanup Process

- Current Status of Navy Clean-up Activities at HPS Phase II
  - Parcel B
  - Parcels C and UC-2
  - Parcel D (including new Parcels D-1, D-2, UC-1, and G)
  - Parcel E
  - Parcel E-2
  - Parcel F

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - California Department of Transportation—Transportation Planning (71-11)
  - Planning Commissioner Borden (SFPC-111, SFPC-113, SFPC-114, SFPC-118, SFPC-119)
  - San Francisco Bay Conservation and Development Commission (BCDC) (103-6)
- Organizations
  - Breast Cancer Action (55-1, 55-4)
  - Green Action Health and Environmental Justice (58-1)
  - POWER (People Organized to Win Employment Rights) (50-6, 52-1, 52-3, 69-1)
  - San Francisco Green Party (36-6, 36-7)
- Individuals
  - Ahimsa Porter Sumchai (SFPC-46)
  - Bernadette Sambrano (SFPC-78)
  - Car Green Action Health and Environmental Justice (SFRA1-83)
  - Carol Harvey (67-2, 67-3)
  - Dan Solberg (SFRA1-38)
  - Daniel Landry (SFRA2-34)
  - Francisco Da Costa (SFPC-51)
  - Jaron Browne (SFPC-23)
  - Juana Tello (66-3, 66-4, 66-5, 66-8, 66-12, 66-16)
  - Juana Tello (SFRA1-59)
  - Michael E. Boyd (SFPC-39)
  - Nyese Joshua (65-4, 65-31, 65-33, SFPC-59)
  - Perry Matlock (74-3)
  - Starr Miles (SFPC-74)
  - Willie Ratcliff (SFPC-107)

Comments received on the Draft EIR related to the CERCLA process were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K.

Comment Summary

This master response responds to all or part of the following comments: 36-6, 36-7, 50-6, 52-1, 52-3, 55-1, 55-4, 58-1, 65-4, 65-31, 65-33, 66-3, 66-4, 66-5, 66-8, 66-12, 66-16, 67-2, 67-3, 69-1, 71-11, 74-3, 103-6, SFRA1-38, SFRA1-59, SFRA1-83, SFPC-23, SFPC-39, SFPC-46, SFPC-51, SFPC-59, SFPC-74, SFPC-78, SFPC-107, SFPC-111, SFPC-113, SFPC-114, SFPC-118, SFPC-119, SFRA2-34.

Summary of Issues Raised by Commenters

- Inquiring about the status of the cleanup on the various Shipyard parcels

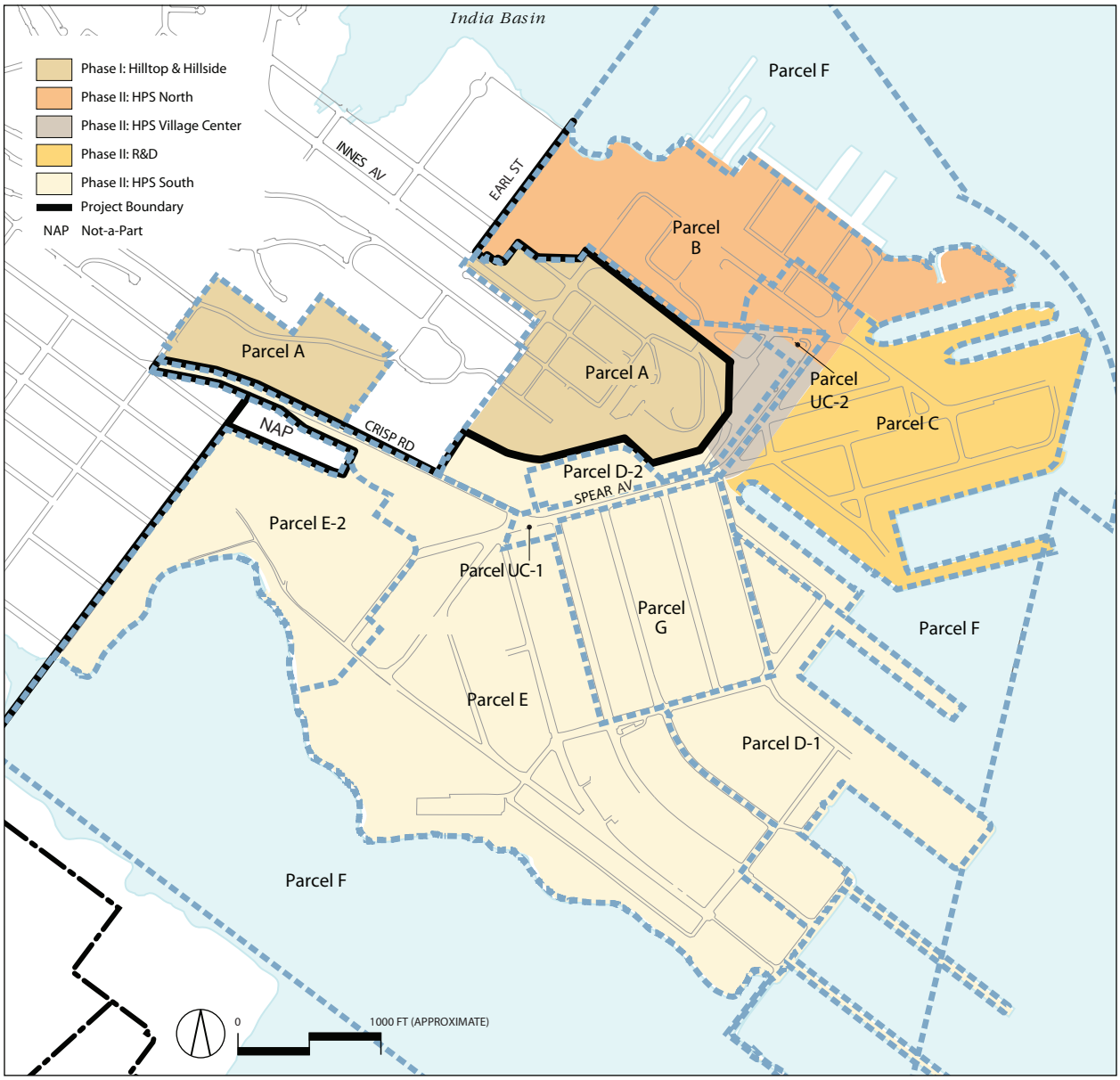
Response

Introduction

The *Comprehensive Environmental Cleanup and Liability Act* (CERCLA) process is defined in general terms in the Draft EIR in Section III.K.1 (Introduction), page III.K-2. A summary of the steps in the CERCLA process is presented below. Revised Figure III.K-5 (Hunters Point Shipyard Phase II Navy Parcel Overlay) and new Figure III.K-6 (Status of CERCLA Process) provide a map of the various parcels that are described below and illustrate the steps in the CERCLA process and the current status of the parcels in that process. For greater detail on these steps and status, consult the Draft EIR, pages III.K-11 through -26. As stated in the Draft EIR, the goal of the EIR is not to assess the adequacy or impacts of the Navy's remediation actions but instead to assess the impacts of implementing the Project. The relevant environmental regulatory agencies would require performance of the remedial activities that the Navy is undertaking regardless of whether this Project or any other development proposals were proceeding. Potential environmental effects of the remedial activities (i.e., of soil excavation, soil transport, and operation of treatment systems) have been, and will continue to be, evaluated by the Navy and regulatory agencies in conjunction with the approval process for specific remedial actions, and appropriate environmental controls have been, and will continue to be, incorporated into the design and implementation of those remedial actions. Therefore, although the Draft EIR evaluates the potential for construction and occupancy of the Project to affect, or be affected by, hazardous materials release sites, it does not evaluate the potential impacts of the specific remedial activities conducted as part of the ongoing programs that the Navy is conducting as required by CERCLA and the FFA.

Summary of Navy Cleanup Process

The Navy is carrying out each of the steps listed below for each parcel (or subparcel in some cases) at the Shipyard. Each step results in the preparation of a document which is available to the public at the official document repository which the Navy is required to maintain for the project (located at the San Francisco Public Library located at 100 Larkin Street, San Francisco, California). All of the documents related to the Navy's remedial actions that are referenced in the Draft EIR or these responses to comments are also available at the San Francisco Redevelopment Agency, One South Van Ness Avenue, Fifth Floor, as part of File No. ER06.05.07, or at the Planning Department, 1650 Mission Street, Fourth Floor, San Francisco, CA 94103 as part of File No. 2007.0946E. Many of these documents (e.g., the Feasibility Study and Proposed Plan) are made available in draft form for public review and comment



SOURCE: Lennar Urban, 2009.

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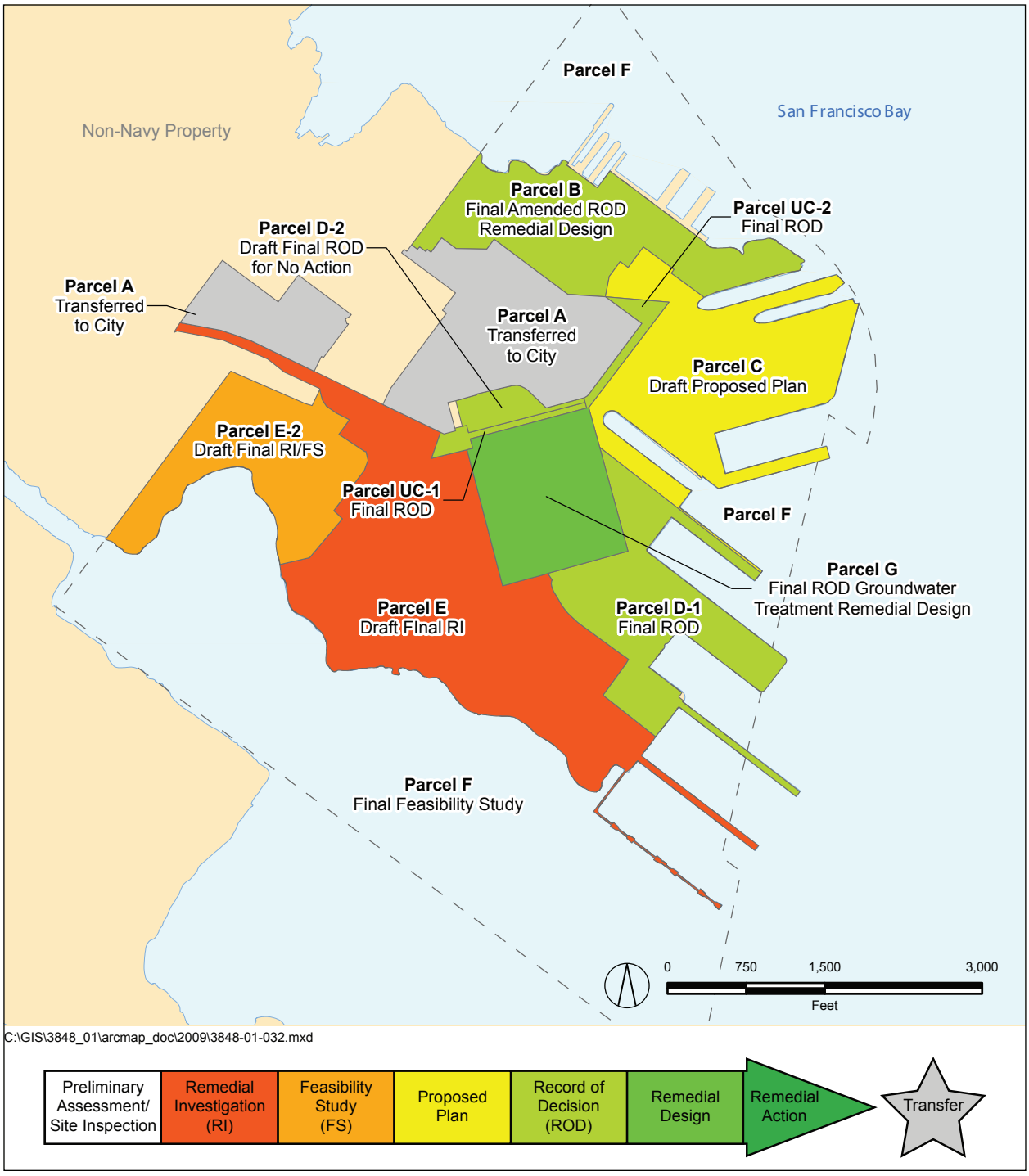
Candlestick Point — Hunters Point Shipyard Phase II EIR

HUNTERS POINT SHIPYARD PHASE II NAVY PARCEL OVERLAY [REVISED]

FIGURE III.K-5



SOURCE:PBS&J, 2010.

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Candlestick Point — Hunters Point Shipyard Phase II EIR

STATUS OF CERCLA PROCESS [NEW]

FIGURE III.K-6

before they are finalized. Pursuant to the Community Involvement Plan implemented by the Navy and approved by the regulatory agencies, various types of community outreach activities are conducted in association with each of these steps.

- **Preliminary Assessment/Site Inspection**—An initial review of the site, including review of historic records and visual inspections. Sampling and analysis of soil, surface water, and/or groundwater may occur to evaluate whether the site needs to move to the next phase for further investigations.
- **Remedial Investigation**—A closer look including collecting and analyzing samples to assess risk to human health and the environment. Treatability studies may occur in conjunction with or alongside physical investigation and alternative evaluation. A Removal Action may also be performed at this point.
- **Feasibility Study**—Results of the risk assessment, along with other data collected during the Remedial Investigation, are used to evaluate cleanup alternatives that have been screened for effectiveness, implementability, and cost.
- **Proposed Plan**—A fact sheet that describes cleanup alternatives evaluated in the Feasibility Study and explains the preferred alternative. This step requires a meeting to be held to provide information to the public and allow the public to comment on the preferred cleanup alternative.
- **Record of Decision (ROD)**—The selected cleanup alternative is documented and publicized in this document. A summary and responses to all comments on the Proposed Plan are included in this document.
- **Remedial Design**—A design for implementing the selected cleanup alternative is prepared. A fact sheet is sent to the public before the Navy begins work on the cleanup.
- **Remedial Action**—The cleanup remedy is carried out and the public is kept informed.

Navy Radiological Cleanup Process

As part of the CERCLA process at HPS, the Navy is surveying for radionuclides at structures, former building sites, and areas potentially impacted by radiological activities. The Navy is decontaminating structures found to contain radionuclides above established remedial goals. The Navy is removing all of the storm drains and sanitary sewer lines across HPS, testing soil below the lines for radionuclides, excavating materials and soils that contain radionuclides above established remedial goals and disposing of these materials and soils at off-site facilities. The Navy is seeking to have structures and areas of the sewer system and storm drain system that are impacted with radionuclides cleared for unrestricted use related to the radionuclides. But, in the Parcel B ROD, the Navy has identified a remedial approach for two areas of Parcel B that would result in a restricted use designation for radionuclides. For example, the ROD for Parcel B proposes a restricted use designation for a large fill area in Parcel B referred to as IR-07 and IR-18. This area of Bay fill has not been found to contain radionuclides but the Navy has determined that the presence of radionuclides in the fill cannot be ruled out, as described in more detail in Master Response 13 (Post-Transfer Shipyard Conditions). The Navy proposed remediation consisting of conducting a surface scan and removing any radiological anomalies detected to a depth of 1 foot (the maximum effective depth of the surface scan). A 1-foot-thick layer of clean soil would be added above the screened and radiologically cleared surface. A demarcation layer would be installed on the new soil surface and a new 2-foot-thick soil cover would be constructed over all of IR-07 and IR-18 area that may contain radionuclides. When the property transfers, institutional controls would be imposed that would

restrict use of the property to recreational uses and open space and require the Agency to maintain the soil cover in place. Radiological related activities and potential impacts at Hunter's Point Naval Shipyard that may result during the Project construction and implementation as a result are discussed in Section III.K.2 (Setting) page III.K-9 and page III.K-27 of the Draft EIR. The Draft EIR references the Historical Radiological Assessment (HRA) for more information about the radiological impacts to the site (Reference #313 of Section III.K [Hazards and Hazardous Materials] of the Draft EIR). The Agency will not accept radiologically impacted property for transfer until the Navy has completed radiological surveys, investigations, and cleanup as approved by Federal and State regulatory agencies.

Current Status of Navy Clean-up Activities at HPS Phase II

Parcel B

The Navy has completed the preliminary investigation, site inspection, remedial investigation, feasibility study, proposed plan, and ROD. The Navy issued an initial ROD in 1997, prepared a remedial design, and proceeded with remedial action implementation. After a decade of work and additional study, it developed a revised remedy. The Navy issued an amended ROD in 2009.

The Navy has been carrying out remediation of radiologically impacted sewers and storm drains and buildings since 2007 and this work is expected to be completed by early 2010. Remediation means that the sewers and storm drains are removed from the ground and adjacent soil is excavated until confirmed clean. The Navy has completed the remedial design (RD) for Installation Restoration (IR) Sites IR-07 and IR-18, an area of fill in the northwestern area of the parcel. This RD includes plans for remediation of near-shore sediments and construction of a protective revetment along the shore of San Francisco Bay in IR-07. The Navy is completing a remedial design for the remaining work on the rest of the Parcel. Also, under California law, the corrective action work plan for the petroleum hydrocarbon program in Parcel B was finalized in 2009, fieldwork has been completed, and reporting is ongoing. For further detail on the status of Parcel B, refer to pages III.K-13 through -18 of the Draft EIR.

Parcels C and UC-2

The Navy has completed the preliminary investigation, site inspection, remedial investigation, feasibility study and proposed plan and a ROD is currently being prepared. The ROD will describe the remedial actions that have been approved by the Navy, the US EPA, and the state regulatory agencies for remediating soil and groundwater in Parcel C. A study to evaluate methods to clean up solvents and metals in groundwater (known as a "treatability study) is in progress at Buildings 134, 211, 231, and 253 in the eastern area of Parcel C. There is a draft final ROD for UC-2, which is a utility corridor along Fisher Avenue that has recently been separated from Parcel C. For further detail on the status of Parcel C, refer to pages III.K-18 and -19 of the Draft EIR.

Parcel D (including new Parcels D-1, D-2, UC-1 and G)

The original Parcel D consisted of 101 acres of the southeast-central portion of HPS. After completing the preliminary investigation/site assessment, remedial investigation, and feasibility study for Parcel D, the Navy prepared a Proposed Plan that presented a proposal for remedial action to be selected in the ROD for the entire Parcel. Although the Proposed Plan covered all of Parcel D, for final remedy selection, the Navy divided Parcel D into four new parcels: Parcels D-l, D-2, G, and UC-l (UC" stands

for Utility Corridor). One combined ROD for Parcels D-1 and UC-l was issued and separate draft RODs were prepared for Parcel D-2 and Parcel G.

- **Parcel D-1**—The Final Parcel D-1 ROD was issued in 2009. A groundwater treatability study was recently completed for Parcels D-1 and G and the final treatability study report will be issued and describes the success of the treatment method to clean up solvents and metals in groundwater. For further detail on the status of Parcel D-1, refer to pages III.K-19 through -21 of the Draft EIR.
- **Parcel D-2**—Radiologically impacted sewers and storm drains were recently removed for clean up in Parcel D-2. The Parcel D-2 Removal Action Completion Report is being prepared. The final "No Further Action" ROD for Parcel D-2 is expected in spring 2010. The property will then be ready to be transferred after the Navy issues, with the concurrence of regulators, a Finding of Suitability to Transfer. For further detail on the status of Parcel D-2, refer to pages III.K-19 through -21 of the Draft EIR.
- **Parcels UC-1**—The Navy is currently cleaning up radiologically impacted sewer and storm drain lines along Spear Avenue in Parcel UC-1. There is a Final ROD for UC-1. For further detail on the status of Parcel UC-1, refer to pages III.K-19 through -21 of the Draft EIR.
- **Parcel G**—The Navy issued a final ROD for Parcel G in March 2009. A draft Remedial Design document is currently under review. These documents call for excavation and off-site disposal of contaminated soils and installing soil covers; treating groundwater at specific locations by injecting chemicals or biological nutrients to break down the chemicals, along with groundwater monitoring; and continuing the removal of radiologically contaminated building materials and soils. For further detail about the status of Parcel G, refer to page III.K-21 of the Draft EIR.

Parcel E

The Navy has completed the preliminary assessment/site investigation and the remedial investigation, and has prepared a draft feasibility study (FS) for Parcel E that provides and evaluates a list of various methods, known as remedial alternatives, to address impacts to soil and groundwater. The Navy began a groundwater treatability study in 2009. For further detail on the status of Parcel E, refer to pages III.K-22 through -24 of the Draft EIR.

Parcel E-2

The Navy has completed the preliminary assessment/site investigation is expected to issue the final combined remedial investigation and FS (RI/FS) Report for Parcel E-2 in spring 2010. This report will provide information on the distribution of impacts to soil and groundwater in Parcel E-2 and evaluates a list of available alternatives to clean up the impacts. In addition, an addendum to the FS is being prepared to address radiological impacts in Parcel E-2. For more information about Parcel E-2, refer to Master Response 11 (Parcel E-2 Landfill) and pages III.K-22 through -24 of the Draft EIR.

Parcel F

The Navy has completed the preliminary assessment/site investigation and a combined remedial investigation/feasibility study, as well an updated feasibility study. A Proposed Plan is expected to be issued in 2011. For further detail about the status of Parcel F, refer to pages III.K-26 and -27 of the Draft EIR.

Master Response 10: Pile Driving through Contaminated Soils

Introduction

Overview

Comments have been raised suggesting that the Draft EIR has not adequately addressed the potential effects of pile driving through contaminated soil at the site. This master response addresses the ongoing remediation programs in process on the site and describes the mitigation measures that would ensure that pile driving is not done through contaminated soil or, if it cannot be avoided, require the implementation of methods that case the pile through the contaminated zone and allow the pile installation through zones of contamination without adversely impacting the environment or spreading the contamination to other subsurface layers.

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > California State Parks (86-3)
  - > Planning Commissioner Borden (SFPC-111)
- Organizations
  - > Arc Ecology (82-4)
  - > Breast Cancer Action (55-5)
- Individuals
  - > Carol Harvey (67-4)
  - > Francisco Da Costa (105-1)
  - > Karissa Cole (SFPC-15)
  - > Nyese Joshua (65-1, 65-34)
  - > Sam Lao (SFPC-69)

Comments received on the Draft EIR related to hazardous materials were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K.

Comment Summary

This master response responds to all or part of the following comments: 55-5, 65-1, 65-34, 67-4, 82-4, 86-3, 105-1, SFPC-15, SFPC-69, SFPC-111.

Summary of Issues Raised by Commenters

- Pile driving through contaminated soil could cause spread of the contamination

Response

It is likely that deep foundations would be required for support of some new buildings and structures at the site including Yosemite Slough bridge and other structures near the Bay where soft sediments are present near the ground surface. To provide adequate support for these structures, the foundations may extend below the soft sediments into competent soil or bedrock.

As discussed in Section III.K.1, Draft EIR page III.K-2, there are substantial ongoing remediation programs at known hazardous material release sites at portions of the Project site from former Navy operations throughout HPS Phase II. These are the only known hazardous material release sites requiring remediation at the Project site; there are no known hazardous material release sites requiring remediation at Candlestick Point, or at locations where off-site improvements are proposed, based on the results of investigations to date and a review of government agency databases. The Navy is providing soil and groundwater remediation (cleanup) at the site to reduce chemical levels to meet cleanup levels approved by federal and state regulatory agencies (refer to Master Response 9 [Status of CERCLA Process]). Residual chemicals in soil, largely consisting of certain specific metals which are typically associated with the rock and soil that were historically used to fill in the Bay to expand the Shipyard, may remain. These chemicals are not part of a "spill" or "release" of contaminants, but rather reflect metals concentrations normally associated with Franciscan Formation bedrock and/or reflect metals concentrations normally associated with the type and quality of soil used during the period the Shipyard was filled. Therefore, the site should not be contaminated and pile driving should not present any concern of cross-contamination. However, should contamination still be a concern at the site, there are available pile installation methods that case the pile through the contaminated zone and allow the pile installation through zones of contamination without adversely impacting the environment or spreading the contamination to other subsurface layers. Section III.K, page III.K-63 through III.K-66 points out the potential impacts related to installation of foundation or utility support piles and mitigation measure MM HZ-5a (Foundation Support Piles Installation Plan, Section III.K, page III.K-65) would be performed prior to issuance of any building permits.

Additionally, if contaminants were encountered in a location where piles are to be installed, the site mitigation plan required by Article 22A and mitigation measure MM HZ-1a would specify procedures necessary to prevent pile installation from creating a vertical conduit for chemicals occurring in shallow groundwater to move along the pile to deeper groundwater zones, and avoid degradation of the deeper groundwater. The measure would require all excess fill or native soil materials generated during pile driving to be properly managed. Implementation of mitigation measures MM HZ-1a and MM HZ-2a.1 would ensure the safe handling of potentially contaminated materials encountered during improvement or installation of underground utilities and effects on human health and the environment would be reduced to a less-than-significant level.

Master Response 11: Parcel E-2 Landfill

Introduction

Overview

This master response addresses comments made on the method for cleaning the Parcel E-2 landfill located on the west side of the Shipyard near Yosemite Slough. Comments were also made concerning radiation on the site, the past brush fire, methane and landfill gas, and other hazards such as liquefaction, sea level rise, and seismic hazards.

This master response is organized by the following topics:

- Parcel E-2 and Landfill Remedial Process
- Radiation Assessments and Remedial Investigations
- Parcel E-2 Alternatives for Remediation
- Removal Actions and Other Remediation Actions Taken
- Liquefaction, Sea Level Rise, and Seismic Hazards

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - None
- Organizations
  - Arc Ecology (85-19)
  - Breast Cancer Action (55-5)
  - Green Action Health and Environmental Justice (58-1, SFRA1-83)
  - POWER (People Organized to Win Employment Rights) (52-3, 69-1)
  - San Francisco Green Party (36-6)
  - Technical Assistance For Communities (TASC) (68-2)
- Individuals
  - Ahimsa Porter Sumchai (SFRA1-23, SFPC-46)
  - Bernadette Sambrano (SFPC-79)
  - Carol Harvey (67-2, 67-3, 67-4)
  - Dan Solberg (SFRA1-38)
  - Diane Wesley Smith (SFRA1-61)
  - Francisco Da Costa (105-1, SFPC-51)
  - Jaron Browne (SFPC-23, SFPC-24)
  - Juana Tello (66-4, SFRA1-59, SFPC-94)
  - Karissa Cole (SFRA1-54, SFPC-15)
  - Nyese Joshua (65-1, 65-34, SFPC-59)
  - Sam Lao (SFPC-69)
  - Saul Bloom (SFPC-134)

> Starr Miles (SFPC-74)
> Willie Ratcliff (SFPC-107)

Comments received on the Draft EIR related to hazardous materials and the landfill were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K.

Comment Summary

This master response responds to all or part of the following comments: 36-6, 52-3, 55-5, 58-1, 65-1, 65-34, 66-4, 67-2, 67-3, 67-4, 68-2, 69-1, 85-19, 105-1, SFRA1-23, SFRA1-38, SFRA1-54, SFRA1-59, SFRA1-61, SFRA1-83, SFPC-15, SFPC-23, SFPC-24, SFPC-46, SFPC-51, SFPC-59, SFPC-69, SFPC-74, SFPC-79, SFPC-94, SFPC-107, SFPC-134.

Summary of Issues Raised by Commenters

- The landfill should be excavated and cleaned, not covered or capped
- If landfill is not cleaned properly, there would be adverse health effects
- Radiation on the site has not been adequately analyzed
- Methane and other landfill gas has not been adequately considered
- Other factors could influence spread of contamination, such as sea level rise, seismic activity, or liquefaction

Response

Parcel E-2 and Landfill Remediation Process

The Navy is remediating Parcel E-2 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The remediation process and the current status of the various parcels in the Shipyard are discussed in Master Response 9 (Status of the CERCLA Process). The Navy has completed the preliminary assessment and site investigation for Parcel E-2, and has also published a Draft Final Parcel E-2 RI/FS Report (Draft Final RI/FS).[70] The Navy has also performed various removal actions at the parcel. Remediation of radiological materials in the E-2 landfill generally consists of: surveying structures, former building sites, and radiologically impacted areas; decontaminating buildings; disposing of excavated materials and soils at off-site facilities; and conducting surveys to ensure that sites are safe.

Radiation Assessment and Remedial Investigations

The Navy assessed radiological and other potential hazards at Parcel E-2 through preparation of a comprehensive base-wide radiological assessment, and also through the Parcel E-2 specific Remedial Investigation and Feasibility Study. As discussed in Section III.K.2 beginning on page III.K-27 of the Draft EIR, the Navy prepared the Historical Radiological Assessment (HRA) to identify all sites that have a potential for or are known to contain radioactive contamination based on historical information.

[70] Engineering/Remediation Resources Group, *Draft Final Remedial Investigation / Feasibility Study Report for Parcel E-2*, February 1, 2009.

These sites are identified as radiologically impacted sites and include: sites where radioactive materials were used or stored; sites where known spills, discharges, or other activities involving radioactive materials have or may have occurred, that could have resulted in the release or spread of contamination; and sites where radioactive materials might have been disposed of or buried. The Draft Final RI/FS provides information on the distribution of impacts to soil and groundwater in Parcel E-2 and addresses in detail radiological impacts in an addendum.[71] The Draft Final RI/FS Report addressed CERCLA hazardous substances except for radionuclides. The radiological addendum presents characterization data for radionuclides at Parcel E-2, quantifies the potential risk to future site users, and develops and evaluates remedial alternatives for potential radionuclides of concern at Parcel E-2. Both nonradiological and radiological contaminants would be addressed together in the proposed plan and record of decision documents which are anticipated to be completed in 2011.

The Draft Final Parcel E-2 RI/FS Report identifies four distinct but contiguous areas contained within Parcel E-2 (refer to Figure 2 in the RI/FS):

- The "Landfill Area," which comprises the closed industrial landfill and its immediate perimeter
- The "East Adjacent Area," located to the east of the Landfill Area
- The "Panhandle Area," located west and southwest of the Landfill Area
- The "Shoreline Area," located at the interface with San Francisco Bay

The HRA concluded that low levels of radiological contamination exist within Parcel E-2 including in the following areas (refer to RI/FS Figure 3):

- Experimental Ship-Shielding Area
- Installation Restoration (IR) Site 01/21 (which encompasses most of the land area at Parcel E-2)
- IR Site 02 (located partially within Parcel E-2)
- Metal Slag Area
- Parcel E-2 shoreline
- Storm drains and sanitary sewer system

Most of the land area within Parcel E-2, except for small portions of the East Adjacent Area, is considered radiologically impacted. RI sampling and analysis results indicate that concentrations of radioactive chemicals in surface soil pose a potential unacceptable risk to future site users, and remedial alternatives should be evaluated to address the potential risks. Although the extent of radioactive contamination in subsurface soil has not been defined, the radiological addendum to the Draft Final RI/FS conservatively assumes, consistent with the findings of the HRA, that potential radioactive chemicals may be present in subsurface soil at Parcel E-2 and therefore require analysis of remedial alternatives as do non-radioactive chemicals in soil.

Groundwater radionuclide data from two investigations, performed in 2002 and 2008, were compared with drinking water standards and were found not to exceed the standards at statistically significant levels. As a result, groundwater does not appear to have been impacted by radionuclides. However, the

[71] Engineering/Remediation Resources Group, *Draft Final Radiological Addendum to the Remedial Investigation /Feasibility Study Report for Parcel E-2,* March 2, 2010.

RI/FS Report concluded that non-radioactive chemicals in groundwater within and in close proximity to the Landfill Area require analysis of remedial alternatives. The RI/FS Report evaluated remedial alternatives for groundwater that include monitoring, institutional controls, source removal, and containment. Note, as documented in the Draft Final RI/FS Report, A-aquifer groundwater is not a potential source of drinking water.

Parcel E-2 Alternatives for Remediation

The method of remediation of Parcel E-2 and the landfill is determined through the CERCLA process. The CERLCA process is a regulatory process that is independent of the project, requires the selected remedy to be protective of human health and the environment in light of planned future land use, and provides opportunity for public participation. Through CERCLA, the Navy has identified four alternatives for remediation of the Parcel E-2 area, as discussed below.

Determining Remediation Options

Independent of whether the Project proceeds or not, the Navy is required by law and is conducting comprehensive remediation activities at HPS, including at Parcel E-2. The Navy has not yet issued a formal decision about how it intends to remediate the landfill. That decision, known as "remedy selection," will have to be concurred in by US EPA and the other FFA signatories, which include the Cal/EPA's Department of Toxics Substances Control (DTSC) and San Francisco Bay Regional Water Quality Control Board (RWQCB), implemented under their supervision, and then they will have to concur in the Navy's decision that it has fully implemented the remedy. US EPA and the other FFA signatories may determine that restrictions must be placed on the property to protect human health and the environment while the remediation is ongoing and after the remediation is complete. Refer to Section III.K.2 of the Draft EIR and the subsection entitled, "Regulatory Process for Cleanup Process at HPS Phase II," beginning on page III.K-31 for a discussion of why restrictions may be placed on the property and the nature of these possible restrictions. Refer to Master Response 17 (Enforcement of Environmental Restrictions and Mitigation Measures) for a discussion of the enforcement of those restrictions.

As noted above, the CERCLA process is presently ongoing at Parcel E-2, and the Navy has prepared a Draft Final RI/FS for Parcel E-2. The City and County of San Francisco regularly reviews and comments on Navy documents related to the CERCLA process. The Navy has received comments from the FFA signatories, the City of San Francisco Department of Public Health, and Arc Ecology, technical consultant for the Citizen's Advisory Committee and is in the process of responding to comments and revising the RI/FS. Parcel E-2 is proposed for use as open space. The remedial alternatives identified in the Draft Final RI/FS summarized below, with the exception of Alternative 1 (No Action), are compatible with the open space land use, and if necessary would include restrictions on uses and activities to protect human health and the environment during and after Project development. As a general matter, the voters and the Board of Supervisors have taken the position that the Navy should remediate the Shipyard to be compatible with unrestricted use to the extent it is feasible to do so. Refer to Master Response 14 (Unrestricted Use Alternative) and Master Response 15 (Proposition P and the Precautionary Principle) for discussions of an unrestricted use alternative and Proposition P, respectively. In any case, as indicated in Section III.K.2, pages III.K-31 through III.K-36, the Agency would not

accept fee transfer of the E-2 area until the Navy has completed the approved remediation and issued a FOST concurred upon by the US EPA, DTSC, and RWQCB. Upon transfer, the Agency and any developer on E-2 would be required to comply with any environmental restrictions placed on the property by the regulatory agencies. Thus, regardless of the remedial alternative selected by the Navy, the Project would not be expected to result in adverse effects to humans or the environment. The City's Health Department would continue to review Navy documents to ensure that the selected remedial alternative would effectively protect human health and the environment and gives due consideration to input from members of the Bayview/HPS community. The CERCLA documents are also being reviewed and approved by federal and state regulatory agencies. The public is invited to participate in the Navy's Community Involvement Plan and comment on documents prepared as part of the CERCLA process (see Master Response 9).

Formal Alternatives for Remediation

The Navy's remedial objective is to prevent exposure to radionuclides at levels exceeding remediation goals. The Draft Final RI/FS Report for Parcel E-2 developed four remedial alternatives for Parcel E-2 that are also presented in the radiological addendum. The four remedial alternatives for Parcel E-2 are:

- Alternative 1: No Action
- Alternative 2: Excavate and Dispose of Solid Waste, Soil, and Sediment (including monitoring and institutional controls)
- Alternative 3: Contain Solid Waste, Soil, and Sediment with Hot Spot Removal (including monitoring and institutional controls)
- Alternative 4: Contain Solid Waste, Soil, Sediment, and Groundwater with Hot Spot Removal (including monitoring and institutional controls)

Alternative 2 would involve excavation of all solid waste and contaminated soil from the Landfill Area, the Panhandle Area, and East Adjacent Area, and excavation of contaminated sediment from the Shoreline Area. Alternative 3 would involve capping the Landfill Area and excavation of solid waste and contaminated soil in the Panhandle Area and East Adjacent Area and excavation of contaminated sediment from the Shoreline Area. Alternative 4 includes Alternative 3 components as well as a slurry wall to limit groundwater flow to the Bay. Alternatives 2, 3, and 4 were developed to address nonradioactive chemical contamination throughout Parcel E-2, and include varying amounts of intrusive work within radiologically impacted areas. As a result, Alternatives 2, 3, and 4, as presented in the Draft Final RI/FS Report, specify radiological control procedures to properly screen, segregate, characterize, and dispose of radioactive materials. The radiological addendum includes a post-remediation risk analysis that evaluates the protectiveness of Alternatives 3 and 4 with respect to radionuclides. Results demonstrated that Alternatives 3 and 4 are health protective for future recreational receptors. The radiological addendum also identifies additional components of the alternatives that are needed to meet remedial action objectives for radioactively contaminated media. The additional components, to be implemented regardless of which of the Alternatives is selected are:

- Removal and remediation of sanitary sewer, storm drain, and septic sewer lines that extend into the East Adjacent Area but are located outside of the IR-01/21 site boundary (refer to RI/FS Figure 3)
- Removal and remediation of the ship-shielding berm in the Panhandle Area

- Final status surveys of the excavated subgrade of Parcel E-2 to locate and remove any radiological anomalies prior to backfilling with soils meeting the radiological acceptance criteria

Removal Actions and Other Remedial Actions Taken

Under CERCLA, as discussed in Section III.K.2 of the Draft EIR on page III.K-12, the Navy often does not wait for the Remedial Investigation / Feasibility Study process to be complete before beginning physical cleanup activities. The Navy has completed various removal actions and time critical removal actions (TCRAs), as well as treatability pilot studies, all in conjunction with investigation and evaluation of alternatives for remediation. At Parcel E-2, the Navy has removed radiological material in removal actions, and has performed various TCRAs associated with the brush fire in fall 2000 and migration of landfill gases (discussed below).

Removal of Radiologically Contaminated Materials

The Navy has performed two removal actions at Parcel E-2 that have involved excavation and offsite disposal of low-level radioactive waste. At the Metal Slag Area, the Navy removed and disposed of off-site approximately 8,200 cubic yards of soil, metal slag, and debris; of this removed material, approximately 74 cubic yards of the soil was identified as radiologically impacted. Also, the Navy removed and disposed of off-site 32 radiological devices, 15 cubic yards of radiological debris (primarily fire bricks), and approximately 30 cubic yards of metal debris. At the PCB Hot Spot Area, the Navy removed and disposed of off-site, approximately 44,500 cubic yards of soil and debris; 533 cubic yards of the removed soil and fire brick debris was identified as radiologically impacted. Also, the Navy removed and disposed of off-site 40 radiological devices, 78 cubic yards of metal debris, and 19 pieces of other radioactively contaminated debris and two drums of mixed waste.

Response to Brush Fire

As described in Section III.K, page III.K-23 of the Draft EIR, on August 16, 2000, a brush fire burned approximately 45 percent of the Parcel E-2 landfill surface area; small subsurface areas continued to burn for approximately one month after the surface fire was extinguished. As part of a TCRA, an interim cap was constructed over the majority of the landfill in order to extinguish the fire and prevent future fires until the Record of Decision has been completed and chosen remediation implemented. The cap covers approximately 14.5 acres; it reduces water infiltration, thereby reducing the potential for hazardous substances to leach out from the landfill. Because the interim cap effectively limits air intrusion into the landfill, the effect was a smothering of any smoldering subsurface areas remaining from the fire. In addition, the interim cap significantly reduces storm water infiltration through the landfill, thereby reducing the potential for hazardous substances to leach out from the landfill. The interim cap has been vegetated to stabilize surface soils and limit erosion. Additional information on construction of the interim cap is provided in the *Final Removal Action Landfill Cap Closeout Report*[72]. As discussed above, the Navy is in the process of selecting a final remedy for the landfill and all of the Navy decisions on the Parcel E-2 landfill will undergo regulator review and approval and provide opportunities for public input.

[72] TtEMI. 2005a. *Final Removal Action Landfill Cap Closeout Report, Parcel E-2, Hunters Point Shipyard, San Francisco, California.* February 7.

Controlling Landfill Gas and Methane

A TCRA was also implemented to address human health risks associated with off-site migration of landfill gas toward the UCSF property located immediately north of the landfill. Methane and carbon dioxide are the two main components of landfill gas. Methane is non-toxic but it can create a potential explosion hazard if it collects inside of a structure. In 2002, the Navy installed, on the north side of the landfill, and between the landfill and Parcel A, a gas control system that includes a subsurface gas cutoff wall, passive and active landfill gas extraction wells and three tiers of gas monitoring probes (GMPs) which are sampled monthly and results reported quarterly.[73] The three tiers of GMPs primarily monitor whether the gas is migrating beyond the boundaries of the landfill and onto the immediately adjacent UCSF property. If gas (volatile organic compounds or methane) is detected above the trigger levels in the GMPs, the Navy promptly activates its extraction system to remove the gas from the subsurface. The Navy has a detailed Landfill Gas Monitoring and Control Plan in place, which includes steps for notifying the relevant regulators and extracting the gas from the UCSF property. In addition, as the cleanup of the Parcel E-2 landfill continues, the Navy will select a final remedy for the landfill and for monitoring and controlling the landfill gas. All of the Navy decisions on the Parcel E-2 landfill will undergo regulator review and approval and provide opportunities for public input. There are 13 GMPs located on Crisp Avenue north of the landfill which are monitored for methane to demonstrate whether methane has migrated into the subsurface under Crisp Avenue. To date these GMPs have been sampled 50 to 100 times and there has been no detection of methane or landfill gases in the Crisp Avenue probes indicating that the cutoff wall is effective in preventing offsite migration of landfill gas including methane.

Liquefaction, Sea Level Rise, and Seismic Hazards

Master Response 6 (Seismic Hazards), Master Response 7 (Liquefaction), and Master Response 8 (Sea Level Rise) discuss seismic hazards, liquefaction, and sea level rise. Refer to those master responses for detailed discussions on those topics. With respect to remediation of the Parcel E-2 landfill, the CERCLA documents the Navy is preparing take these considerations into account, as will any approved remedies for the site.

As described in Section III.K of the EIR, **if** the Navy proposes and US EPA concurs that engineered caps be installed on top of an area of known or suspected residual contamination (typically a landfill) as part of the Navy's CERCLA program, site-specific geotechnical studies would be used in the design of such caps to minimize potential breaches. The cover would limit exposure and protect humans from long-term health risks even if breaches in the cover temporarily occur. Operation and maintenance plans for these covers and caps would be carried out to monitor and repair potential breaches. Therefore, if ground rupture were to occur, contaminants should not be released at levels presenting a concern to human or ecological health.

The Navy's Draft Final RI/FS Report included a liquefaction and slope stability evaluation. The evaluation concluded that, for soil layers that could liquefy during the largest potential earthquakes, lateral movement of soil below the waste may be approximately 4 to 5 feet. This estimate is conservative

[73] ITSI. 2008d. *Final Landfill Gas Monitoring Report For July-September 2008, Post-Removal Action, Parcel E-2, Industrial Landfill, Hunters Point Shipyard, San Francisco, California*. October 27.

because of the discontinuous layers and resistance from nonliquefiable soils at the boundaries, which would likely reduce the amount of lateral movement to less than the estimated 4 to 5 feet. Settlement of liquefiable soil below the waste may be up to 10 inches. The evaluation also concluded that, if containment were selected as the final remediation measure, further analysis would be required on response of the landfill cap, overall stability of the landfill site, slope stability, and other closure features. The Navy will also consider sea level rise when developing remedial designs for the Parcel E-2 landfill. Parcel E-2 Groundwater is not a source of drinking water and results show that leaching from landfill has the potential to impact to the Bay. The Parcel E-2 FS has identified containment remedies to mitigate these potential impacts through containment and monitoring.

Residual chemicals in soil would largely consist of certain specific metals, which are associated with the rock and soil that were historically used to fill in the Bay to expand the shipyard, thus they are not part of a "spill" or "release" of contaminants but rather reflect metals concentrations normally associated with Franciscan Formation bedrock. These metals that are predominantly immobile and are not associated with any existing groundwater contamination. Thus, a rise in the groundwater level would not mobilize these metals. Although residual contamination may remain after cleanup, these residuals would be below levels that may present a threat to human health or the environment and/or they would be located under an engineered cap that prevents human exposure to these residuals. Sea level rise would not compromise covers and/or engineered caps that may be placed on top of an area of known or suspected residual contamination as operation and maintenance plans for these covers and caps would be carried out to monitor and repair potential breaches. Additionally, emergency response plans would be carried out following major flooding and seismic events, at which time caps and covers would be investigated for potential breaches and repaired.

Master Response 12: Naturally Occurring Asbestos

Introduction

Overview

This master response addresses comments made concerning naturally occurring asbestos dust and how the Project Applicant can be required to adequately mitigate this hazard.

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > Planning Commissioner Lee (SFPC-126)
- Organizations
  - > Arc Ecology (82-5)
  - > Breast Cancer Action (55-5)
  - > POWER (People Organized to Win Employment Rights) (52-3)
  - > San Francisco Green Party (36-6, 36-8)

- Individuals
  - > Ahimsa Porter Sumchai (SFPC-46, SFRA2-19)
  - > Bernadette Sambrano (SFPC-78)
  - > Carol Harvey (67-2, 67-3, 67-4)
  - > Francisco Da Costa (105-1, SFPC-51)
  - > Juana Tello (66-9, 66-10, SFPC-95)
  - > Karissa Cole (SFPC-15)
  - > Michael E. Boyd (SFPC-41)
  - > Nyese Joshua (65-1, 65-4, 65-34)
  - > Sam Lao (SFPC-69)

Comments received on the Draft EIR related to naturally occurring asbestos were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) and Section III.H (Air Quality) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K and Section III.H.

Comment Summary

This master response responds to all or part of the following comments: 36-6, 36-8, 52-3, 55-5, 65-1, 65-4, 65-34, 66-9, 66-10, 67-2, 67-3, 67-4, 82-5, 105-1, SFPC-15, SFPC-41, SFPC-46, SFPC-51, SFPC-69, SFPC-78, SFPC-95, SFPC-126, SFRA2-19.

Summary of Issues Raised by Commenters

- Concern expressed regarding the control of asbestos dust
- The Project Applicant does not have a good track record with regard to monitoring of asbestos dust.

Response

The Draft EIR states that Hunters Point Shipyard contains serpentinite, chert, and basalt bedrock typical of the Franciscan Complex (Section III.K [Hazards and Hazardous Materials], page III.K-29). Serpentinite may contain naturally occurring asbestos, which is identified as a potential health hazard requiring control measures outlined in Section III.K, page III.K-98 of the Draft EIR. As shown on Figure III.L-1 (Geologic Map) of Section III.L (Geology and Soils) of the Draft EIR, there is an area of serpentinite mapped in Parcel A, Parcel B, a portion of Parcel C, and a small area of Parcel G.

Due to the health concerns surrounding naturally occurring asbestos, both the Project Applicant and the Agency have been monitoring the vicinity of Parcel A for asbestos that may become airborne due to soil-disturbing activities (e.g., grading) since September 2006. As described in Section III.K, pages III.K-98 to -103 of the Draft EIR, this monitoring program is being carried out in accordance with a Dust Control Plan (DCP), approved by the SFDPH, and an Asbestos Dust Mitigation Plan (ADMP), approved by the Bay Area Air Quality Management District (BAAQMD).

Numerous measures to control asbestos dust during the Project are described in Section III.K, pages III.K-98 to -103 of the Draft EIR, including applying water during and after grading activities, covering

stockpiles and truckloads, operating wheel washing stations, and placing cover material over any exposed naturally occurring asbestos at the end of grading.

Section III.K of the Draft EIR (on pages III.K-97 and III.K-98) also acknowledges significant community concern about the implementation of asbestos and dust control measures arising from the fact that during Phase I, the Project Applicant's former asbestos air monitoring contractor failed to ensure proper operation of the air monitoring stations for the first several months of grading activities in 2006 and could not validate the sampling results. As the Draft EIR indicates, after this problem was reported by the Project Applicant, the SFDPH, the BAAQMD, and independent experts from the UCSF, along with the federal Centers for Disease Control (CDC) and the CDC Agency for Toxic Substances and Disease Registry (ATSDR) reviewed the potential health risks from construction dust containing asbestos in HPS Phase I. The reviews concluded that there was no significant health risk created by the grading activities at the Shipyard. BAAQMD pursued enforcement action against the Project Applicant, who entered into a consent agreement to pay civil penalties for its air-monitoring contractor's failure to properly monitor and for its grading contractor's failure to fully implement components of the BAAQMD-approved asbestos dust-monitoring plan. The City also implemented a number of actions to enforce the requirements of its required DCP in order to minimize the potential for airborne asbestos during grading in HPS Phase I, including issuing several notices of violation requiring corrective action. Since then, the SFDPH has worked with the Project Applicant to improve the dust-monitoring program, and required preparation of a Revised DCP for HPS Phase I, which was implemented in February 2007. Currently, the SFDPH conducts random daily inspections to monitor dust control measures. BAAQMD has also worked with the Project Applicant to improve the ADMP required by the State Airborne Asbestos Toxics Control Measure.

As indicated on pages III.K-98 through -101, MM HZ-15 would be implemented to reduce impacts related to asbestos exposure during construction activities including enforcing proper implementation of dust control and monitoring procedures. In addition to developing approved DCPs through *San Francisco Health Code* Articles 22B and 31 and ADMPs, as required by CCR Title 17 (Section 93105), MM HZ-15, San Francisco ordinances, and state regulations, the Project Applicant must ensure that the construction activities comply with SFDPH and BAAQMD standards. Applicants are required to implement specified dust control measures throughout the construction Project to meet SFDPH and BAAQMD standards. These measures may include any or all of the following, as needed at a particular site and for a particular activity: operating particulate monitors and sampling air for asbestos as required; controlling traffic and limiting vehicle speeds to 15 mph; limiting construction areas; sufficiently wetting ground surfaces to prevent visible dust emissions from crossing the property line; minimizing soil stockpiled; washing down equipment before moving on to a paved public road; covering, wetting and/or hydroseeding soil stockpiles; covering and limiting the amount of soil placed in trucks; installing dust curtains and windbreaks on windward and downwind sides of the property lines; cleaning all visible track out from paved public roads, and stabilizing disturbed areas following construction. The Project Applicant would be required to shutdown construction work based on wind, dust migration, or if dust is contained within the property boundary but not controlled after a specified number of minutes or if asbestos levels reach work-shutdown criteria which have been developed by BAAQMD. A hotline would be established for surrounding community members who may be potentially affected by Project-related dust and a contact person shall respond and take corrective action within 48 hours. For areas covered by an ADMP,

publicly visible signs would be posted around the site with the hotline number as well as the phone number of the BAAQMD and the numbers would be given to adjacent residents, schools, and businesses.

Master Response 13: Post Transfer Shipyard Cleanup

Introduction

Overview

Comments have been raised regarding the relationship between the Navy's cleanup program and the Navy's transfer of the property to the Agency. These comments have included requests for clarification regarding who would be responsible for any cleanups necessary after transfer and regarding what types of residual contaminants (in particular radiological contaminants) would remain at the site after transfer and after completion of cleanup activities.

This response is organized by the following topics:

- Introduction
- Cleanups Necessary After Transfer
- Site Conditions Following Cleanup
- Non-Radiological Materials Present in the Subsurface at HPS Phase II
  - > Parcel B
  - > Parcels C and UC-2
  - > Parcel D
  - > Parcels E and E-2
- Radiological Materials Present in the Subsurface at HPS Phase II

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > California Department of Transportation—Transportation Planning (71-11)
  - > Planning Commissioner Borden (SFPC-113, SFPC-114, SFPC-118, SFPC-119)
- Organizations
  - > Breast Cancer Action (55-1, 55-5)
  - > Green Action Health and Environmental Justice (58-1, SFRA1-83)
  - > POWER (People Organized to Win Employment Rights) (50-6, 52-1, 52-3, 69-1)
  - > San Francisco Green Party (36-5, 36-6, 36-7)
  - > Technical Assistance For Communities (TASC) (68-2)
- Individuals
  - > Ahimsa Porter Sumchai (SFRA1-23, SFPC-46)
  - > Bernadette Sambrano (SFPC-78)
  - > Carol Harvey (67-2, 67-3, 67-4)

> Colleen Muhammad (72-2)
> Dan Solberg (SFRA1-38)
> Daniel Landry (SFRA2-34)
> Francisco Da Costa (105-1, SFPC-51)
> Jaron Browne (SFPC-23, SFPC-24)
> Juana Tello (66-3, 66-4, 66-5, 66-10, 66-12, 66-17, SFRA1-59, SFPC-94)
> Karissa Cole (SFRA1-53, SFPC-15)
> Michael E. Boyd (SFPC-39)
> Nyese Joshua (65-1, 65-4, 65-31, 65-32, 65-34, SFPC-59)
> Perry Matlock (74-3)
> Sam Lao (SFPC-69)
> Saul Bloom (SFPC-134)
> Starr Miles (SFPC-74, SFPC-75)
> Willie Ratcliff (SFPC-107)

Comments received on the Draft EIR related to cleanup of the Shipyard were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K.

Comment Summary

This master response responds to all or part of the following comments: 36-5, 36-6, 36-7, 50-6, 52-1, 52-3, 55-1, 55-5, 58-1, 65-1, 65-4, 65-31, 65-32, 65-34, 66-3, 66-4, 66-5, 66-10, 66-12, 66-17, 67-2, 67-3, 67-4, 68-2, 69-1, 71-11, 72-2, 74-3, 105-1, SFRA1-23, SFRA1-38, SFRA1-53, SFRA1-59, SFRA1-83, SFPC-15, SFPC-23, SFPC-24, SFPC-39, SFPC-46, SFPC-51, SFPC-59, SFPC-69, SFPC-74, SFPC-75, SFPC-78, SFPC-94, SFPC-107, SFPC-113, SFPC-114, SFPC-118, SFPC-119, SFPC-134, SFRA2-34.

Summary of Issues Raised by Commenters

- Concerns were expressed over who would be responsible for cleanup at the site
- Concerns expressed regarding the residual contamination left at the site
- Concerns expressed regarding how the radiation would be cleaned up on the site

Response

Introduction

The cleanup process required by the FFA (and the current status of cleanup activities) is described in Master Response 9 (Status of the CERCLA Process). The Navy is performing remedial activities in accordance with the process described in Master Response 9 under the supervision of the regulatory agencies. As indicated in Master Response 9, for much of the property the Navy already has completed many of the steps required by the remediation process. Under the transfer process envisioned by the Navy and Agency, the Navy will at a minimum complete a ROD for any property it proposes to offer to the Agency for transfer. The Navy then will complete the remedy called for by the ROD and transfer the property to the Agency with regulatory concurrence that no further remediation is required, or it will

enter into a transfer agreement with the Agency in which the Navy will pay the Agency to complete the remedial work. This latter scenario is referred to as an early transfer and requires the approval of US EPA, with the concurrence of the Governor of California. Both of these transfer processes are explained in the Draft EIR, Section III.K, pages III.K-31 through -36. Below is a summary of the cleanup actions that could occur after transfer. Also explained below are the types of residual contaminants that may remain at the site after the remediation process is complete.

Cleanups Necessary After Transfer

If the Navy completes the remediation process and transfers the property after the regulators determine that no further remediation is required, the Agency would not be obligated to complete any further remediation. Under the CERCLA law, Section 120(h), the Navy will provide a warranty upon transfer that the property has been cleaned to a level that is protective of human health and the environment given the intended use and that if additional remedial action is found to be necessary after transfer, the Navy will be responsible for completing any required cleanup. The Conveyance Agreement between the Agency and the Navy acknowledges that the Navy will indemnify subsequent owners and retain liability for unknown or newly discovered hazardous materials even after the transfer to the Agency and subsequent developers.

The Agency is considering whether to seek approval of an "early transfer" of Parcel B and Parcel G (except for IR 7/18, for which the Navy would complete remediation before transfer). Subsequent early transfers of other parcels may also be considered once RODs for the parcels are complete and where the remediation does not involve radionuclides. Further, due to the complexity of remediation at Parcel E-2, the Agency is not considering early transfer of that area. In an early transfer, US EPA and the Governor would authorize the Navy to transfer ownership before the remediation has been completed, subject to use and activity restrictions to ensure human health and the environment are protected from potential exposures to hazardous materials that may not yet have been fully remediated. After an early transfer, the Agency would be responsible for implementing those remedial activities in accordance with the approved remedial design documents, i.e., the groundwater and soil vapor treatment systems, the surface cover, the vapor barriers and the shoreline revetment wall. All remediation related to radioactive contaminants would be completed by the Navy prior to the transfer.

The Navy would provide a grant to the Agency of the funds necessary for the Agency to implement the remedial activities identified in the ROD that have not been completed by the Navy at the time of transfer. The funds would also be used to procure environmental insurance covering cost over-runs and discovery of unknown contaminants. The Agency would be supervised by the same regulatory agencies supervising the Navy, and would be held to standards at least as strict as those the Navy is held to, under a legal agreement called an Administrative Order of Consent (AOC) which would be signed by US EPA, DTSC, and the RWQCB. MM HZ-12 requires any remediation activities undertaken on behalf of the Agency or Project Applicant at the Project to be in compliance with the provisions of the AOC. If the Agency or Project Applicant were found to be in default of the AOC, the regulatory agencies could require the Navy to reassume its responsibilities for completing the cleanup. More detail about early transfer is included in the Draft EIR at pages III.K-31 through -34.

Site Conditions Following Cleanup

Commenters have asked for information about the types, locations, and concentrations of residual contaminants that may be left in place after the environmental cleanup is complete and development commences. Generally speaking, chemicals left in place would consist largely of specific metals that are associated with the native rock quarried for use as fill and associated soil historically used to fill in the Bay to expand the shipyard. The ubiquitous nature of these naturally occurring metals indicate they are not the result of a "spill" or "release" of contaminants from operational activities, but rather reflect metals concentrations normally associated with Franciscan Formation bedrock described in Section III.L (Geology and Soils) and similar to those found in other Bay fill sites throughout the City, such as Mission Bay. Like Mission Bay, which has been approved for development with a "cover" remedy to assure that long-term exposure to metals in soil and groundwater would not occur, at HPS Phase II, a final cover would be placed over existing soil through the use of new building foundations, roads, sidewalks, parking lots and/or placement of clean fill in open space areas.

In all cases, pursuant to CERCLA and the FFA, any chemical left at any location in the Shipyard would be in concentrations and conditions determined by US EPA, DTSC, and RWQCB to be protective of human health and the environment (refer to Section III.K, pages III.K-2 and III.K-11). In reviewing and approving the remedy selected by the Navy in the ROD, these agencies set a target concentration for chemicals in soil and groundwater; concentrations above the target level are subject to remedial action. The types of chemicals present in the various parcels as well as the Navy's ongoing remedial action are discussed at length in Section III.K.2, beginning on page III.K-13 of the Draft EIR. The specific target concentration levels associated with each remedial action are available in the associated CERCLA documents, and specifically in the Remedial Action Objectives sections of those documents. Chemicals may remain on the parcels at levels below the target concentrations, and/or in conditions that eliminate exposure pathways at target concentrations. The Draft EIR does not evaluate the remedial target concentration levels of chemicals determined by the regulatory agencies to be protective of human health and the environment, nor the methods determined to attain cleanup goals. This is because, as stated on page III.K-2 of the Draft EIR, the Navy's ongoing remediation activities are not part of the Project, and it is thus not the goal of the EIR to assess the adequacy or impacts of the Navy's remediation actions. Instead, the Draft EIR presents information on the location of contamination and the Navy's remediation in the Environmental Setting Section (III.K.2). For the reader's convenience, that information is summarized in part below with references to pertinent sections of the CERCLA documents.

Non-Radiological Materials Present in the Subsurface at HPS Phase II

Parcel B

As discussed on page III.K-14 of the Draft EIR, the primary chemicals of concern in the soil at Parcel B include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals. The groundwater contains VOCs, chromium VI (hexavalent chromium), and mercury. Petroleum hydrocarbons exist at certain levels in both soil and groundwater, and methane was detected at IR Sites 7/18. The presently ongoing remedial action associated with these contaminants was documented in a ROD, and most recently in a ROD Amendment of February 2009. Section 8

(Amended Remedial Action Objectives) of the ROD outlines the remediation concentration goals for each specific chemical of concern in various exposure scenarios and from various sources (see *Final Amended Record of Decision for Parcel B*, January 14, 2009, pages 8-1 through 8-3, Tables 8-1 through 8-4). Chemical concentrations below these goals could remain after completion of cleanup activities. The Amended ROD was prepared in part to present updated information gained through sampling and excavation during remedial actions. The discrete release of chemicals referred to as the "spill model" was the basis for the initial remedial actions. Under the spill model, high chemical concentrations occur near the center of the release and decrease outward. Verification sampling for remedial excavations involved collecting successive "step-out" samples. At 13 of 106 excavation areas, successive step-out excavation and sampling did not yield delineation and removal of all contaminants indicating that the spill model and excavation was not an appropriate remedy for these areas. A group of metals, especially arsenic and manganese, consistently exceeded cleanup goals at locations across Parcel B. The widespread or "ubiquitous" nature of these metals is related to the occurrence of these metals in local bedrock that was quarried for fill during the expansion of the Shipyard in the 1940s. The Navy acknowledges that industrial sources of metals exist at HPS, and there is a potential that some concentrations of metals could have sources other than naturally occurring materials. The Navy has worked to remove these sources during the response actions taken to date. Cleanup levels and remedial alternatives developed in the Amended ROD address concentrations of metals that may occur above risk levels but within the range of naturally occurring (or background) metals, regardless of their source. Thus, naturally occurring metals would remain in some cases at concentrations above risk levels, but would be under the final cover placed to cutoff the exposure pathway. Refer to the Draft EIR pages III.K-14 through -18 and to the ROD for detail on the Navy's selected remedy and the manner in which it attains cleanup goals.

Parcels C and UC-2

As discussed on page III.K-18 of the Draft EIR, the primary chemicals of concern in Parcel C soil and groundwater include COCs, SVOCs, PCBs, petroleum hydrocarbons, and metals. The remedial action taking place on Parcel C is documented in a Draft Proposed Plan, and action taking place at UC-2 is documented in a Final ROD. Tables 4 through 7 in the Proposed Plan for Parcel C outline the concentration goals for each specific chemical of concern in various exposure scenarios and from various sources (see *Draft PP for Parcel C*, January 2009, pages 8-9, 31-36). Section 2.7 (Remedial Action Objectives) of the ROD for UC-2 outlines the remediation concentration goals for each specific chemical of concern in Parcel UC-2 for various exposure scenarios and from various sources (see *Final Amended Record of Decision for Parcel UC-2*, December 17, 2009, pages 27-29). After completion of cleanup activities, these chemicals present in concentrations below these goals would remain, and a group of naturally occurring metals associated with fill material derived from native bedrock is expected to remain under the final cover in concentrations above risk levels throughout the parcel. Refer to the Draft EIR pages 18-19 and to the RODs for detail on the Navy's selected remedies and the manners in which cleanup goals are attained.

Parcel D

As discussed on pages III.K-19 and -20 of the Draft EIR, the primary chemicals of concern in soil and groundwater at Parcel D are metals and VOCs. Chemical contaminants include petroleum hydrocarbons, beryllium, and various other metals found in serpentinite-derived fill materials, such as arsenic,

chromium, nickel, and manganese. Other contaminants detected in the soil include PCBs and elevated concentrations of lead in several areas. The groundwater underneath IR-09, the former pickling and plating yard, was shown to contain Chromium VI as well. For remedy selection, Parcel D was divided into four new parcels: Parcels D-1, D-2, G, and UC-1. Section 2.7 (Remedial Action Objectives) of the ROD prepared jointly for Parcels D-1 and UC-1 outlines the remediation concentration goals for each specific chemical of concern in those parcels for various exposure scenarios and from various sources (see *Draft Final ROD for Parcels D-1 and UC-1*, May 20, 2009, pages 30-33). Section 2.7 (Remedial Action Objectives) of the ROD for Parcel G outlines the remediation concentration goals for each specific chemical of concern in Parcel G for various exposure scenarios and from various sources (see *Final ROD for Parcels G*, February 18, 2009, pages 28 through 32, Tables 4 and 5). The Navy prepared a ROD for No Action at Parcel D-2, which recommends no action because no source of chemical contamination above the target concentrations was identified on that parcel (refer to *Draft Final ROD for No Action at Parcel D-2*, January 16, 2009, pages 2, 3, and 10). If these chemicals were present below the target concentrations, they would remain. Additionally, as described above for Parcels B and C, it is expected that naturally occurring metals would remain under the final cover in concentrations above risk levels throughout the parcel. Refer to the Draft EIR pages 20 and 21 and to the RODs for detail on the Navy's selected remedies and the manners in which it attains cleanup goals.

Parcels E and E-2

As discussed beginning on page III.K-22 of the Draft EIR, the chemicals of concern at Parcel E include metals and organic compounds such as VOCs, polycyclic aromatic hydrocarbons (PAHs), PCBs, and pesticides, while the chemicals of concern at Parcel E-2 include metals, PCBs, SVOCs, pesticides, and petroleum hydrocarbons. E-2 also contains the radionuclides cobalt-60, cesium-137, radium-226, and strontium-90, discussed below. Studies are currently ongoing at the Parcels and draft proposed plans and RODs are expected in the 2010/11 timeframe. The remediation concentration goals of the known chemicals are available in the Draft FS Report for Parcel E in Section 3 (Remedial Action Objectives), and in the Draft RI/FS Report for Parcel E-2 in Section 9 (Remedial Action Objectives) (refer to *Draft FS Report for Parcel E*, July 2009, pages 3-1 through 3-10, Tables 3-1 through 3-5; *Draft RI/FS Report for Parcel E-2*, February 2009, pages 9-1 through 9-6). After completion of cleanup activities, if these chemicals were present below the target concentrations, they would remain and naturally occurring metals present above risk levels are expected to remain under the final cover throughout the parcel. Refer to the Draft EIR pages 23 and 24 and to the CERCLA documents for additional detail on the Navy's ongoing remedial actions and the manner in which these actions attain cleanup goals. Also, see below for more discussion of the Navy's handling of the radiological contamination.

Radiological Materials Present in the Subsurface at HPS Phase II

As explained in Master Response 9 (Status of the CERCLA Process), the Navy is currently remediating all radiologically impacted structures and radiological contamination associated with the sewer and storm drain system. The Navy is disposing of off-site radiologically impacted soil and materials that it finds . The Navy is in the process of seeking an unrestricted use designation for structures and areas where it has undertaken radiological remediation associated with the sewer and storm drain system. The Agency would not accept property for transfer until the Navy has completed radiological surveys, investigations, and radiological cleanup as approved by Federal and State regulatory agencies.

Beyond the storm drain and sewer system and structures identified as radiologically impacted, there are areas containing fill that the Navy has identified as containing or potentially containing radionuclides in soil. These areas are in Parcel B in the IR 7/18 areas, in portions of Parcel E and in Parcel E-2. The Navy has not completed RODs for Parcel E or E-2, meaning that no decision has been made by the Navy and regulators as to the remedial action that is acceptable for these areas; therefore it is not known at this time to what extent radionuclides may remain after transfer. The known conditions in these areas are described below. The ROD for Parcel B identifies two areas that may be "restricted" due to potential radiological impacts: the discharge tunnel beneath historical Building 140 and the future open space area that lies within IR-7/18. IR sites 7/18 and restrictions are depicted in Figure III.K-2 (Parcel B Areas Requiring Institutional Controls).

Discharge tunnel beneath Building 140: Building 140 is a one-story brick building shaped as a rectangle with a rounded eastern end resembling an apse. The building measures about 96 by 56 feet and is located north of Drydock 3, about midway along the drydock. The HRA indicates that Building 140 is an impacted area, due to the history of Drydock 3 being used as a decontamination facility for ships that participated in atomic weapons testing and support equipment. The various decontamination methods included sandblasting of shipboard components. These sandblast wastes may have been discharged through the pumping equipment of Building 140 into the Bay (after drydock flooding and dewatering operations). An underground Suction Channel for water from Drydock 3 passes from the drydock through the pump house to the Bay via a Discharge Channel. Based on preliminary, screening-level sampling, the discharge channel may be defined as a "restricted" area due to radiation-impacted sediments that cannot be removed due to unsafe, underwater working conditions. If so, then the tunnel would be sealed off to prevent off-site migration of these sediments into the Bay. The tunnel is located 52 feet beneath the ground surface and would remain inaccessible to site visitors under any circumstances.

IR-7/18 Open Space: A review of the bayshore filling history of this area suggests that some radiologically impacted fill material may have been deposited in this area. However, no evidence of radiological impacts has been found in this area. Nevertheless, as indicated in the Draft EIR on page III.K-15 and on Figure III.K-2, this area would be considered an "area requiring institutional controls" (ARIC) for radionuclides due to the potential for the area to contain radiologically impacted fill material, such as sand-blast grit used in decontaminating ships that participated in atomic weapons testing, and radioluminescent dials and gauges. The remedial design for this area includes covering the ARIC with three feet of clean fill cover, which would be separated from currently in-place soils by a physical demarcation layer. A revetment wall would be constructed along the entire shoreline, which is intended to prevent any erosion of IR-7/18 fill materials into the Bay; the revetment wall design would take into account projected sea level rise. The IR-7/18 area is designated as open space; therefore no pile-supported structures would be built within this ARIC. Prior to placement of the cover, a radiological surface scan of the top 12 inches of soil would be conducted and any radiological anomalies that are found would be removed and the area rescanned. The ARIC cover would be monitored as required by the Operation and Maintenance Plan and groundwater would be monitored to verify that radionuclides are not present.

Parcel E Shoreline: A review of the bayshore filling history of this area suggests that some radiologically impacted fill material may have been deposited in this area. No evidence of radiological impacts has been found in this area, but radiological investigation and remedial evaluation have not been completed.

Parcel E-2 Landfill: Parcel E-2 has the potential to contain radiologically impacted fill material, such as sandblast grit used in decontaminating ships that participated in atomic weapons testing, and radioluminescent dials and gauges in the landfill present on this site. The radionuclides of concern associated with Parcel E-2 include cobalt-60, cesium-137, radium-226, and strontium-90. The remedial alternatives evaluated in the Draft Final Parcel E-2 RI/FS Report, and other details about Parcel E-2 such as landfill gas and methane collection and monitoring, the brush fire, and liquefaction are discussed in Master Response 11 (Parcel E-2 Landfill).

Master Response 14: Unrestricted Use Alternative

Introduction

Overview

Some commenters have requested that the Draft EIR analyze an alternative where all of HPS is cleaned up to allow unrestricted, residential use.

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > Planning Commissioner Borden (SFPC-113, SFPC-114, SFPC-118)
- Organizations
  - > Breast Cancer Action (55-5)
  - > Green Action Health and Environmental Justice (58-2)
  - > POWER (People Organized to Win Employment Rights) (52-1)
- Individuals
  - > Carol Harvey (67-2, 67-4)
  - > Colleen Muhammad (72-2)
  - > Ernest Stokes (53-1)
  - > Francisco Da Costa (105-1)
  - > Juana Tello (66-7, SFRA1-57)
  - > Karissa Cole (SFRA1-52, SFPC-15)
  - > Nyese Joshua (65-1, 65-34)
  - > Perry Matlock (74-3)
  - > Sam Lao (SFPC-69)
  - > Vivien Donahue (60-3, 60-5)

Comments received on the Draft EIR related to full cleanup of the site were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) of the Draft EIR; therefore, this

master response provides further discussion to update and augment the analysis of the issues presented in Section III.K.

Comment Summary

This master response responds to all or part of the following comments: 52-1, 53-1, 55-5, 58-2, 60-3, 60-5, 65-1, 65-34, 66-7, 67-2, 67-4, 72-2, 74-3, 105-1, SFRA1-52, SFRA1-57, SFPC-15, SFPC-69, SFPC-113, SFPC-114, SFPC-118.

Summary of Issues Raised by Commenters

- The entire site should be cleaned to full, unrestricted use

Response

As indicated on page III.K-2 of the Draft EIR, the remediation program at HPS is being carried out by the Navy through a 1992 Federal Facilities Agreement between the Navy, US EPA, and state regulatory agencies. The regulatory agencies will require implementation of this remediation program regardless of whether the project or any other development approvals is proceeding. Therefore, the remediation program is not part of the Project, so the "alternative" requested by the commenters is not an alternative to the Project but rather an alternative to the Navy's cleanup program. The law that mandates the Navy's cleanup action does not preclude, but neither does it intend or require, cleanup to allow unrestricted, residential use in all portions of HPS.CEQA requires assessment of alternatives that would reduce or avoid impacts associated with the Project while achieving all or most of the Project objectives. The Draft EIR identifies whether the Project would result in potentially significant impacts associated with hazardous materials and identifies mitigation measures to address impacts.

An unrestricted use alternative would not provide for a greater reduction in impacts than would be achieved with the identified mitigation measures, which already would assure that all development on the property is of a type that accords with restrictions placed in deeds. While an unrestricted use designation would eliminate the need for such use restrictions in deeds, cleaning property to a residential use standard and then using the property for open space or non-industrial uses does not result in a reduction of environmental impacts. As explained on page IV-106 of the Draft EIR, the Navy's cleanup plan is designed to remediate HPS to levels acceptable for the planned uses in the current HPS Redevelopment Plan adopted in 1997. The HPS Redevelopment Plan, which is discussed on pages I-2 and I-3 of the Draft EIR, calls for a mix of uses, including residential, mixed use, industrial, research and development, maritime industrial, cultural and educational, and open space/recreational. Likewise, the objectives of the Project, as set forth in Proposition G passed by the voters in June 2008 and described in the Draft EIR on pages II-5 through -7, can be met only through a mix of commercial, residential, and recreational uses. That is why one of the project objectives approved by the voters in Proposition G is to "transform the contaminated portions of the Shipyard property into economically productive uses, or public open space, as appropriate."

Although the Navy's cleanup program is oriented toward the reuses set forth in the 1997 Redevelopment Plan, its program will remediate the site to a level sufficient to allow the land uses contemplated by the Project and the variants analyzed in this EIR, with the exception of one of the variants, as discussed in Draft EIR on page IV-106. The Housing Variant (Variant 2) or the Housing/R&D Variant (Variant 2A)

would place housing on Parcel G, where the Navy has planned to impose a deed restriction allowing residential use in the nonresidential areas of the 1997 Redevelopment Plan only if approved by US EPA, the Navy, and state regulatory agencies. As discussed on page III.K-33, Parcel G is presently being considered for an early transfer where the cleanup responsibility would be assumed by the Agency. If the Agency wishes to pursue the non-stadium housing alternative, it could seek approval from the regulatory agencies to implement a cleanup that would allow residential use. If Parcel G is not subject to an early transfer and the Agency wished to pursue the non-stadium housing alternative, the Agency or Project Applicant would perform the activities necessary to secure approval from US EPA, the Navy, and state regulatory agencies to allow residential use on the property, as described on page IV-106 of the Draft EIR.

Master Response 15: Proposition P and the Precautionary Principle

Introduction

Overview

Some commenters have asserted that the Project is inconsistent with Proposition P, a voter initiative passed in 2000 related to the cleanup of HPS. Many commenters raising this point have also asserted that the Project is inconsistent with the Precautionary Principle Policy Statement adopted by the Board of Supervisors in July 2003. The commenters' concern is that the Navy's cleanup of HPS would not allow for unrestricted, residential use of the entire Shipyard, or has the potential to result in residual contamination remaining on-site. Commenters are particularly concerned that the Parcel E-2 landfill would be capped in place rather than removed.

This response is organized by the following topics:

- Introduction
- Proposition P
- Precautionary Principle Policy Statement

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > Planning Commissioner Borden (SFPC-115, SFPC-118)
- Organizations
  - > Arc Ecology (84-9, 84-27, 84-49, 85-19)
  - > Breast Cancer Action (55-5, 55-6)
  - > Green Action Health and Environmental Justice (58-2)
  - > POWER (People Organized to Win Employment Rights) (52-1)
  - > San Francisco Green Party (36-6, 36-8)
  - > Technical Assistance For Communities (TASC) (68-2)
- Individuals
  - > Carol Harvey (67-4)

> Colleen Mohammad (72-2)
> Dan Solberg (SFRA1-38)
> Eric Brooks (SFPC-103)
> Francisco Da Costa (105-1)
> Juana Tello (66-7, SFRA1-57, SFRA1-60)
> Karissa Cole (SFRA1-52, SFPC-15)
> Michael E. Boyd (SFPC-39)
> Nyese Joshua (65-1, 65-34)
> Oscar James (SFPC-79)
> Perry Matlock (74-3)
> Sam Lao (5-3, SFPC-69)
> Starr Miles (SFPC-75)
> Vivien Donahue (60-3, 60-5)

Comments received on the Draft EIR related to Proposition P and the Precautionary Principle were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials); therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K.

Comment Summary

This master response responds to all or part of the following comments: 5-3, 36-6, 36-8, 52-1, 55-5, 55-6, 58-2, 60-3, 60-5, 65-1, 65-34, 66-7, 67-4, 68-2, 72-2, 74-3, 84-9, 84-27, 84-49, 85-19, 105-1, SFRA1-38, SFRA1-52, SFRA1-57, SFRA1-60, SFPC-15, SFPC-39, SFPC-69, SFPC-75, SFPC-79, SFPC-103, SFPC-115, SFPC-118.

Summary of Issues Raised by Commenters

- Proposition P requires the site to be cleaned for unrestricted use
- The City has a Precautionary Principle that should be applied to the Project

Response

Introduction

As indicated on Draft EIR page III.K-2 and in Master Response 9 (Status of the CERCLA Process), Master Response 11 (Parcel E-2 Landfill), and Master Response 14 (Unrestricted Use Alternative), the Navy is conducting the cleanup program at HPS under the supervision of US EPA and state regulatory agencies. The cleanup is required by federal law and the FFA that the Navy has entered into with US EPA, DTSC, and RWQCB. Cleanup of HPS will proceed irrespective of whether the Project development occurs. Concerns about the Navy's cleanup program, including consistency with any public policies such as Proposition P or the Precautionary Principle are appropriately addressed through the CERCLA process. Nevertheless, this Master Response 15 (Proposition P and the Precautionary Principle) provides information about Proposition P and the Precautionary Principle and discusses their relevancy to the assessment of Project impacts called for under CEQA.

Proposition P

As noted on page III.K-31 of the Draft EIR, Proposition P (approved by the voters of San Francisco on November 7, 2000) called upon the Navy to remediate HPS to the highest levels practical to ensure flexible reuse of the property. The Board of Supervisors subsequently passed Resolution 634-01, adopting Proposition P as official City policy and urging the Navy and US EPA to take actions to implement Proposition P. The Resolution (1) recognizes that the unrestricted cleanup standard called for in Proposition P identifies a cleanup level acceptable to the community; (2) urges the Navy and FFA regulatory agencies not to rely on barriers to protect future occupants and the public from exposure to pollution, unless other remedies are technically infeasible, and (3) urges the Navy to clean up the Shipyard in a manner fully consistent with the Reuse Plan and with remedies that do not make implementation of the Reuse Plan economically infeasible.

Proposition P states a desired result that the Navy and regulators achieve in carrying out the cleanup of the Shipyard. Because the Navy cleanup, and decisions made by the regulators about the cleanup, is not part of the Project, Proposition P and the subsequent Board resolution are not directly applicable to the Project. Adoption and implementation of the Project would not be inconsistent with, and would not change, the City's stated desire that the Navy clean up HPS in a manner that allows flexible reuse, does not rely on barriers to protect the public from exposure unless other remedies are technically infeasible, is consistent with the Reuse Plan and does not render the Reuse Plan economically infeasible to implement. Proposition P is a general statement of policy. Three years after the passage of Proposition P, the Redevelopment Agency Commission approved the Conveyance Agreement with the Navy (discussed on page I-2 of the Draft EIR). The Conveyance Agreement is a legally binding agreement that sets forth specific cleanup standards for each parcel, and requires the Navy to obtain concurrence from the regulators that the property is safe for its intended use, which the Agreement specifies as the uses set forth in the 1997 HPS Redevelopment Plan. As discussed in Master Response 14 (Unrestricted Use Alternative) and on pages I-2 and I-3 of the Draft EIR, the 1997 HPS Redevelopment Plan calls for a mix of uses, including residential, mixed use, industrial, research and development, maritime industrial, cultural and educational, and open space/recreational. The Conveyance Agreement was the product of substantial community input. The Conceptual Framework for the integrated planning of HPS and CP adopted by the Board of Supervisors in May 2007 (and discussed on page II-5 of the Draft EIR) reaffirmed the Conveyance Agreement cleanup standards, stating, "there is an urgent need for the Navy to fulfill *its obligations under the Conveyance Agreement to remediate and convey this land to the City as quickly as possible in a condition that is consistent with the City's reuse plan"* [emphasis added]. Eight years after the voters passed Proposition P related to the Shipyard, they passed Proposition G related to the redevelopment of the Project area, including the Shipyard. One of the stated objectives of the Project set forth in Proposition G is to "transform the contaminated portions of the Shipyard property into economically productive uses, or public open space, as appropriate" (refer to Draft EIR, pages II-5 through -7).

A commenter has suggested that if the Agency enters into an early transfer agreement with the Navy and agrees to assume responsibility for portions of the cleanup (refer to Master Response 13 [Post-Transfer Shipyard Cleanup] and Draft EIR pages III.K-31 through -34), Proposition P would apply directly to the Agency's cleanup decisions, rather than simply being a policy statement about how the Navy should make its decisions. Proposition P addresses the type of clean-up remedy that the Navy should select and

the regulators should approve for HPS. The ROD for a parcel sets forth the selected remedy. See Draft EIR, page III.K-12. As explained in the Draft EIR page III.K-33, under the early transfers envisioned at the Shipyard, all radiological cleanup would be completed and RODs issued. The Navy already has issued RODs for Parcels B, D-1, UC-1, UC-2, and G. Draft EIR page III.K-12. Further, the Navy already has conducted substantial remediation. Thus, by the time the Navy offers parcels being considered for early transfer to the Agency (with concurrence of US EPA and the Governor of California) the remedy already will have been selected and significant remediation completed. In the case of the first early transfer being considered – for Parcels B and G, the Navy also will have prepared (and the regulators will have approved) the remedial design documents. If the Agency accepts the property under an early transfer, it would simply be contracting with the Navy to complete the implementation of the Navy's selected remedy, with funds provided by the Navy. Therefore, Proposition P does not apply any differently to early transfer parcels than to other parcels because in both instances the Navy is selecting and federal and state regulators are approving the remedy.

Commenters have also cited the fact that Proposition P was approved by 87 percent of the voters in reference to the provisions in CERCLA related to community acceptance as a criteria in determining which cleanup remedy to select, with some commenters mistakenly asserting that CERCLA requires the community to approve the selected remedy. Although this issue is not directly related to the Project (because it relates to the cleanup decisions being made by the Navy and the regulators independent of whether this project proceeds), it may be useful to explain how "community acceptance" is required to be factored into those decisions. The regulations that the Navy and regulators must follow in implementing CERCLA, which are collectively referred to as the National Contingency Plan (NCP), set forth nine criteria that must be considered in selecting a cleanup remedy: two "threshold criteria" (overall protection of human health and the environment, and compliance with other applicable or relevant legal requirements); five "balancing criteria" (long-term effectiveness and permanence; reduction in toxicity, mobility or volume through treatment; short-term effectiveness; implementability; and cost) and two "modifying criteria" (state acceptance and community acceptance).

Community acceptance is an important criterion considered in remedy selection, but it is only one of nine. Typically, this criterion is evaluated based on comments received from the public during the public comment period for the Proposed Plan. It would certainly be appropriate for members of the public to cite Proposition P (or Proposition G) as evidence of community sentiment in public comments submitted to the Navy and regulatory agencies on Proposed Plans during the remedy selection process. The issues required to be addressed by CEQA and those addressed by Proposition P are distinct. CEQA calls for a determination of whether the existing environment would be changed by the Project so as to result in an adverse impact to the environment. The Draft EIR examines in detail in Section III.K, how hazardous substances known to exist at the Shipyard could result in significant impacts during Project construction and operation. It identifies a series of mitigation measures to address identified potentially significant impacts. Proposition P calls for a high standard of cleanup at the Shipyard, in some cases, a higher standard than is required by the proposed development. As stated, there is nothing incompatible between Proposition P and the Project and full implementation of Proposition P by the Navy and regulators would facilitate, not conflict with the Project objective of transforming the Shipyard into new economically viable uses.

Precautionary Principle Policy Statement

The Precautionary Principle Policy Statement adopted by the Board of Supervisors in July 2003, states that "the Board of Supervisors encourages all City employees and officials to take the Precautionary Principle into consideration and evaluate alternatives when taking actions that could impact health and the environment, especially where those actions could pose threats of serious harm or irreversible damage." (Chapter 1 of the San Francisco Environment Code, Section 104.) The policy statement sets forth the key elements of the Precautionary Principle approach to decision-making as (1) Anticipatory Action to prevent harm; (2) Right to Know of the community about "potential human health and environmental impacts associated with the selection of products, services, operations or plans"; (3) Alternative Assessment designed to select the alternative with the least potential impact on human health and the environment; (4) Full Cost Accounting to consider all the reasonably foreseeable costs, including raw materials, manufacturing, transportation, use, cleanup, eventual disposal, and health costs; and (5) Participatory Decision Process, with decisions applying the Precautionary Principle being transparent, participatory, and informed by the best available science and other relevant information (Chapter 1 of the *San Francisco Environment Code*, Section 101).

The ordinance adopting the Precautionary Principle Policy Statement expressly provides, "This ordinance does not impose specific duties upon any City employee or official to take specific actions." (Chapter 1 of the *San Francisco Environment Code*, Section 104).

As indicated above, commenters referencing the Precautionary Principle appear to be concerned that the Navy's cleanup decisions are not consistent with this principle. Regardless of whether this concern is valid, the Precautionary Principle of the City by its terms applies only to City employees and officials and does not apply to the Navy or federal or state regulators overseeing the cleanup of the Shipyard. Further, as previously stated, the work of the Navy and oversight of regulators in carrying out the CERCLA process and FFA requirements at the Shipyard are not part of the Project. To the extent development decisions about the Project implicate the Precautionary Principle, the CEQA process evaluating those development decisions to a substantial degree serves the same purpose as the Precautionary Principle – it requires an evaluation of the impacts on human health and the environment of the Project and alternatives, and provides substantial opportunity for public input and transparent decision-making. The "right to know" aspects of the Precautionary Principle are addressed through the notification protocols and requirements discussed in Master Response 16 (Notification Regarding Environmental Restrictions and Other Cleanup Issues).

Master Response 16: Notification Regarding Environmental Restrictions and Other Cleanup Issues

Introduction

Overview

Comments have been raised to the effect that the EIR should require notice to future property owners and residents, adjacent property owners and residents, and neighboring schools of the type of restrictions that would be imposed on the property; the type of contaminants remaining in the property; any releases

or potential releases of contaminants; and violations of environmental regulations or mitigation measures by the Project Applicant.

There are a number of legal mechanisms in place that would provide for notification to and communication with owners and residents of the Project site, owners and residents of adjacent property, residents, and schoolchildren on neighboring properties. This master response discusses these mechanisms, and where appropriate provides clarification in the text of mitigation measures in response to these comments.

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > California State Parks (86-3)
- Organizations
  - > Arc Ecology (82-7)
  - > Breast Cancer Action (55-4, 55-5)
  - > California State Parks Foundation (47-42)
  - > POWER (People Organized to Win Employment Rights) (52-1, 52-3, 69-1)
  - > San Francisco Green Party (36-6)
  - > Technical Assistance For Communities (TASC) (68-1, 68-2)
- Individuals
  - > Carl Harvey (67-4)
  - > Daniel Landry (SFRA2-34)
  - > Francisco Da Costa (105-1)
  - > Juana Tello (66-8, 66-9, 66-10, 66-13)
  - > Karissa Cole (SFPC-15)
  - > Michael E. Boyd (SFPC-41)
  - > Nyese Joshua (65-1, 65-34)
  - > Perry Matlock (74-3)
  - > Sam Lao (SFPC-69)
  - > Vivien Donahue (60-2, 60-6)

Comments received on the Draft EIR related to residual contamination were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K.

Comment Summary

This master response responds to all or part of the following comments: 47-42, 52-1, 52-3, 55-4, 55-5, 60-2, 60-6, 65-1, 65-34, 66-8, 66-9, 66-10, 66-13, 67-4, 68-1, 68-2, 69-1, 74-3, 82-7, 86-3, 105-1, SFPC-15, SFPC-41, SFPC-69, SFRA2-34.

Summary of Issues Raised by Commenters

- The Project should be required to notify future property owners, residents, and adjacent schools of any restrictions on the Project site, residual contaminants, releases or potential releases of contaminants, and all violations of restrictions or mitigation measures by the Project Applicant

Response

The Navy's cleanup program under the Federal Facilities Agreement requires the Navy to prepare and implement a Community Involvement Plan. This plan requires a number of activities designed to inform neighbors and other members of the public about the status of Shipyard cleanup activities. Although the Navy's cleanup program is not part of the Project, remediation activities that may be conducted on behalf of the Agency or Project Applicant as part of an early transfer are part of the Project, as are limited remediation activities that may need to be conducted on Navy property in conjunction with construction of project improvements. In the course of implementing those project remediation activities, the Agency and Project Applicant would be required to implement similar community relations and public information activities under the Administrative Order on Consent that would be entered into between the US EPA, Agency, and the Project Applicant. Community relations and public information requirements may also be incorporated into the requirements of cleanup decision documents, leases and transfer documents imposed on the Agency, Project Applicant and other subsequent purchasers and tenants.

As described on pages III.K-32 through -34, before the Navy transfers ownership of any property at HPS, it would prepare and circulate for public comment a document called a Finding of Suitability for Transfer (FOST), or, at parcels subject to early transfer, a Finding of Suitability for Early Transfer (FOSET). These documents would include detailed information about the nature and extent of contaminants and the measures that have been taken to address them, including any restrictions that would be imposed on the use of, or activities that may be conducted at, the property, and any notices required to be provided such as notices and notice requirements regarding the existence of lead-based paint and asbestos containing materials. Such restrictions would also be set forth in both the deed and a separate land use covenant, both of which would be legally recorded, and they would also be required to be provided to tenants and any subsequent property owner. In addition, general statutory and common law requirements applicable to transfers and leases of real property provide for disclosures of hazardous conditions, including releases of hazardous substances and hazardous materials to purchasers and tenants.

Notice of new discoveries of unknown contaminants is required by MM HZ-2a.1, which requires the development of an unknown contaminant contingency plan that must include appropriate notification and site control procedures. To further address these comments, this MM HZ-2a.1 has been modified to state that the "appropriate notification" shall include appropriate notification to nearby property owners, schools, and residents.

A particular notification issue of interest to a number of commenters relates to dust and naturally occurring asbestos. In recognition of the level of community interest in this issue, the Draft EIR (in MM HZ-15, page III.K-100) requires the Dust Control Plan for the Project to include establishing a hotline for surrounding community members who may be affected by dust and requires the contact

person to take corrective action within 48 hours. The hotline number is required to be provided to adjacent residents, schools and businesses. In response to these comments, an additional community notification requirement has been added to MM HZ-15 by requiring appropriate protocols for providing notification to nearby property owners, schools and residents when air monitoring results show that asbestos levels exceed standards set forth in the Asbestos Dust Control Plan.

In response to these comments, the following mitigation measures in the Section III.K (Hazards and Hazardous Materials) have been revised.

The text in Section III.K, page III.K-56, has been revised as follows (new text is shown as underlined):

MM HZ-1b Compliance with Requirements Imposed by Cleanup Decision Documents and Property Transfer Documents. *(Applies only to HPS Phase II) Prior to obtaining a grading, 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.*

The text in Section III.K, pages III.K-58 and -59, has been revised as follows (new text is shown as underlined):

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 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 a requirement in the potential additions to Article 31 imposing requirements to parcels other than Parcel A (as required in mitigation measure MM HZ-1c) or through an equivalent process established by the City or Agency.*

The text in Section III.K, pages III.K-78 and -79 has been revised as follows (new text is shown as underlined):

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 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 requirement in the potential additions to Article 31 imposing requirements to parcels other than Parcel A (as described in the discussion of MM HZ-1c) or through an equivalent process established by the City or Agency.

The text in Section III.K, pages III.K-87 and -88 has been revised as follows (new text is shown as underlined):

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 of Consent. This measure shall be implemented through a requirement in the potential additions to Article 31 imposing requirements to parcels other than Parcel A (as required in MM HZ-1c) or through an equivalent process established by the City or Agency.*

The portion of the text describing the requirement to implement air monitoring to the extent required by the BAAQMD in Section III.K, page III.K-100 has been revised as follows (new text is shown as underlined):

MM HZ-15 Asbestos Dust Mitigation Plans and Dust Control Plans.

…

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.

Master Response 17: Enforcement of Environmental Restrictions and Mitigation Measures

Introduction

Overview

Some commenters have asked how land use and activity restrictions and the hazardous material mitigation measures would be enforced.

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - None
- Organizations
  - Breast Cancer Action (55-5)
  - POWER (People Organized to Win Employment Rights) (69-4)
  - Technical Assistance For Communities (TASC) (68-1, 68-2)
- Individuals
  - Carol Harvey (67-4)
  - Francisco Da Costa (105-1)
  - Juana Tello (SFPC-95)
  - Karissa Cole (SFPC-15)
  - Nyese Joshua (65-1, 65-34)
  - Sam Lao (SFPC-69)

Comments received on the Draft EIR related to hazardous materials were focused almost exclusively on issues addressed in Section III.K (Hazards and Hazardous Materials) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.K.

Comment Summary

This master response responds to all or part of the following comments: 55-5, 65-1, 65-34, 67-4, 68-1, 68-2, 69-4, 105-1, SFPC-15, SFPC-69, SFPC-95.

Summary of Issues Raised by Commenters

- Concern expressed regarding how the mitigation measures and land use restrictions would be enforced

Response

As described on pages III.K-38 to -39, Article 31 of the *San Francisco Health Code* presently establishes an administrative process related to the HPS Phase I development requiring the San Francisco Department of Public Health to verify compliance with EIR mitigation measures and other environmental restrictions and plans prior to issuance of construction or grading permits by the DBI or DPW. After such issuance, the Department of Public Health continues to monitor and enforce compliance. The City anticipates amending Article 31 to establish a similar process at HPS Phase II for property that is subject to City permitting authority. If Article 31 is not amended, the EIR requires the Agency to administratively establish an equivalent process. Further, for property that would be under United States Navy ownership when work is done for the project, for example, the installation of a road or infrastructure to serve the Agency property, the EIR requires the Agency to administratively establish an equivalent process to the Article 31 procedures administered by the Department of Public Health. Under the Redevelopment Plan

process, all work done under the Redevelopment Plan must be approved by the Agency. Consequently, the Agency would need to determine that any proposed work would be done in compliance with mitigation measures [refer to MM HZ-9]. The Agency may at its discretion, enlist the assistance of the Department of Public Health through a memorandum of understanding or similar agreement for areas either not covered by City permits or for all areas in the event the Board does not amend Article 31 to establish a process similar to the Article 31 process in place for HPS Phase I.

In addition to being enforceable by the City, the hazardous material-related restrictions, notices and other requirements imposed as institutional controls pursuant to the environmental cleanup and property transfer process (Draft EIR, pages III.K-34 through -36) would be redundantly incorporated into two separate legally enforceable documents: the recorded deeds conveying ownership of the property and recorded covenants to restrict use of property. Violations of deed restrictions by a subsequent property owner are legally enforceable by the Navy and by any other predecessor owner in the chain of title (e.g., the Agency, the Project Applicant, or parties to whom the project Applicant conveys portions of the property). Violations of the recorded covenant to restrict use of property are enforceable by US EPA and DTSC.

The MMRP outlines detailed plans for monitoring and enforcing each mitigation measure identified in the Draft EIR, including those set forth in the Section III.K (Hazards and Hazardous Materials).

Master Response 18: Traffic Mitigation Measures

Introduction

Overview

This master response addresses comments made requesting additional detail and clarity regarding mitigation measures MM TR-21.1, MM TR-22.1, MM TR-23.1, MM TR-24.1, and MM TR-26.1.

This response is organized by the following topics:

- Mitigation Measure MM TR-21.1
- Mitigation Measure MM TR-22.1
- Mitigation Measure MM TR-23.1
- Mitigation Measure MM TR-24.1
- Mitigation Measure MM TR-26.1
- Implementation

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > Planning Commissioner Antonini (SFPC-120, SFPC-138)
  - > Redevelopment Agency Commissioner Breed (SFRA2-38)
- Organizations
  - > Green Action Health and Environmental Justice, Cecille Caterson (SFRA1-82)
  - > Neighborhood Parks Council (44-2)

> Parkmerced Resident's Organization (22-2)
> POWER (People Organized to Win Employment Rights) (50-28, 52-6)

- Individuals
  > Ahimsa Porter Sumchai (SFRA1-19)
  > Barbara Cavella (15-1)
  > Esselene Stancil (54-1)
  > Joshua Nyese (65-6, 65-11)
  > Kristine Enea (21-1)
  > Richard McRee (SFRA2-22)
  > Simon Jefferson (59-1, 59-3)

Comment Summary

This master response responds to all or part of the following comments: 15-1, 21-1, 22-2, 44-2, 50-28, 52-6, 54-1, 59-1, 59-3, 65-6, 65-11, SFRA1-19, SFRA1-82, SFRA2-22, SFRA2-38, SFPC-120, SFPC-138.

Comments received on the Draft EIR related to the subject mitigation measures were focused almost exclusively on issues addressed in Section III.D (Transportation and Circulation) of the Draft EIR; therefore, this master response provides further discussion to update and augment the analysis of the issues presented in Section III.D. Following publication of the Draft EIR, mitigation options were further developed in consultation with SFMTA and the Planning Department to define options and determine preliminary feasibility of the options for each mitigation measure.

Summary of Issues Raised by Commenters

- Timing of implementation of transit mitigation measures is unclear from the study
- Additional detail should be provided regarding scope of mitigation measures, feasibility of implementation, and extent of benefits offered

Response

Introduction

As described in the Draft EIR, traffic-related congestion associated with the Project and other long-term cumulative growth in the region would cause delays to transit vehicles serving the Project area. In a number of cases, this congestion would be severe enough to prevent SFMTA from maintaining proposed frequencies without either reducing the delays or acquiring additional vehicles. Mitigation measures MM TR-21.1, MM TR-22.1, MM TR-23.1, MM TR-24.1, and MM TR-26.1 each describe specific physical changes to the roadway network designed to reduce delays to transit such that proposed headways can be maintained. Each of these measures has a second part, which stipulates that if the Mitigation Measures are not adequate at reducing delays to the point that additional vehicles are no longer required, or if they are deemed infeasible, additional vehicles must be purchased. However, purchasing additional vehicles is a less desirable option because, although frequencies would be maintained, the overall travel times would be longer, and transit would be less desirable.

Some of the mitigation measures described in the Draft EIR recommended several optional treatments that should be considered for reducing transit impacts. These mitigation measures have been refined since publication of the Draft EIR based on further feasibility analysis and discussions with SFMTA. This master response provides additional detail and supporting graphics to illustrate the specific proposals for MM TR-21.1, MM TR-22.1, MM TR-23.1, MM TR-24.1, and MM TR-26.1, and the extent to which they would reduce the Project's transit impacts to less than significant levels. In some cases, more specific proposals than what has been identified in the Draft EIR are not available.

Mitigation Measure MM TR-21.1: Maintain the Proposed Headways of the 9-San Bruno

Mitigation measure MM TR-21.1 would generally provide so-called "queue-jump" lanes (i.e., short transit-only lanes near intersections to allow buses to bypass queues stopped at intersections), traffic signal priority treatments, and short segments of transit-only lanes to provide improved transit travel times on San Bruno Avenue, between Mansell Street and Silver Avenue. These measures would benefit the 9-San Bruno, 9X-San Bruno Express, and 9AX-San Bruno "A" Express routes, and a short portion of the 29-Sunset. Although these treatments were not assumed in the impact analysis, SFMTA has indicated that a number of similar investments are currently planned for the San Bruno Corridor, although the specific plan is currently under development. Project-specific mitigation measures would be implemented in addition to what is ultimately constructed by SFMTA, and may include implementation of corridor-wide transit signal priority treatments. The precise measures to be implemented, if feasible, would be designed to compliment recommendations currently under development by SFMTA. However, because of uncertainty regarding feasible improvements, and their ability to mitigate Project impacts to less than significant levels, as noted in the Draft EIR, Impact TR-21 would remain significant and unavoidable.

Mitigation Measure MM TR-22.1: Maintain the Proposed Headways of the 23-Monterey, 24-Divisadero, and the 44-O'Shaughnessy

Mitigation measure MM TR-22.1 included a number of optional improvements to the Palou Avenue corridor aimed at reducing Project-generated transit delays. Subsequent to publication of the Draft EIR, the Project Applicant and SFMTA conducted a feasibility study. The fifth bulleted item in MM TR-22.1 was determined to be the most desirable of the optional measures because it would provide continuous transit-only lanes along the entire length of Palou Avenue between Crisp Avenue and Third Street, the transit-only lanes could be in operation at all times, and this option would retain on-street parking along the primarily residential corridor.

Specifically, as currently envisioned, mitigation measure MM TR-22.1 would add a transit-only travel lane in each direction on Palou Avenue between Crisp Avenue and Third Street. To accomplish this without removing existing on-street parking along Palou Avenue, existing sidewalks would be narrowed from 15 to 12 feet, allowing a 7-foot on-street parking lane, an 11-foot transit-only lane, and a 10-foot auto travel lane in each direction. The resulting 12-foot sidewalk widths would remain consistent with the City's Draft Better Streets Plan. Further, so-called "bus bulbs" could be provided at corners with bus stops, to provide additional passenger waiting areas and amenities, reduce pedestrian crossing distances, and eliminate the need for buses to pull over to the curb at stops. There would be no additional loss of on-

street parking associated with this mitigation measure.[74] Because Palou Avenue between Keith Street and Third Street already has two westbound lanes, mitigation measure MM TR-22.1 would convert one of the two auto travel lanes to transit-only. Levels of service for westbound traffic on Palou Avenue between Keith Street and Third Street may deteriorate due to the reduced auto capacity. Otherwise, intersections along Palou Avenue would not experience an associated degradation in auto level of service.

Mitigation measure MM TR-22.1 would benefit the 23-Monterey, the 24-Divisadero, and the 44-O'Shaughnessy. Figure C&R-3a (Mitigation Measure MM TR-22: Palou Avenue from Third Street to Crisp Road) and Figure C&R-3b (Mitigation Measure MM TR-22: Palou Avenue from Third Street to Crisp Road) illustrate the proposed mitigation measure, as well as the anticipated benefits to transit travel times on each of the impacted transit routes. The figures indicate the increases to transit travel times associated with project-generated contributions to traffic congestion for each affected route along the subject corridors (as presented in Table 76 in the *Transportation Study*). Because the mitigation measures do not fully mitigate the Project's increases to transit travel times in all cases, the figures also indicate how much the Project (with implementation of the mitigation measures) would increase transit travel times and whether the remaining increases would remain significant impacts or whether they would be reduced to less-than-significant levels. Finally, the figures also provide some description of other effects of the mitigation measures, including increases to pedestrian crossing distances, parking, and traffic congestion.

Although reducing sidewalk widths is generally considered undesirable based on the City's Transit First policy, in this case, the resulting sidewalks would still meet minimum dimensional requirements specified in the Draft Better Streets Plan, and transit circulation would be substantially improved. Based on the additional review of this mitigation measure, it appears technically feasible.

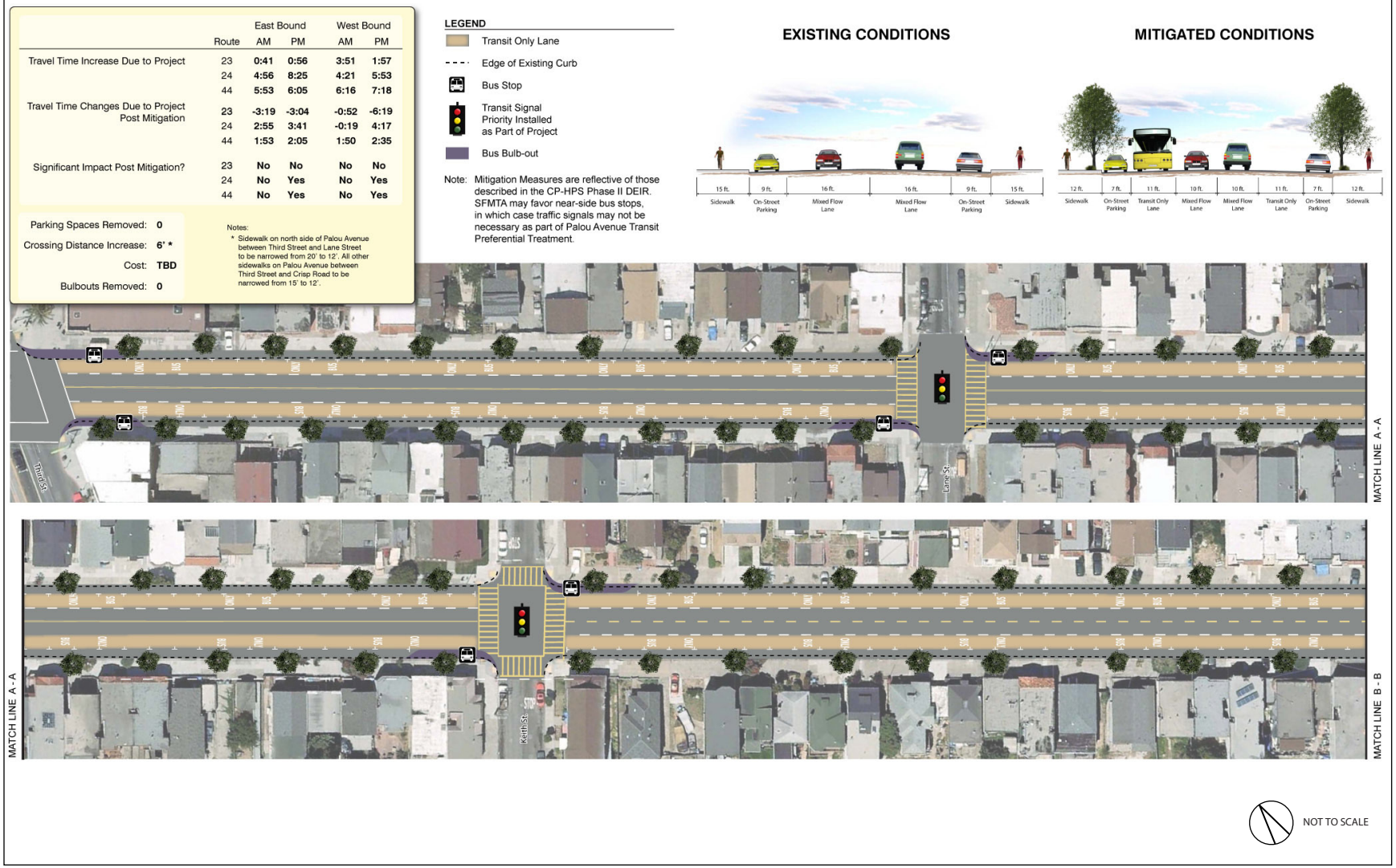
Although SFMTA has generally indicated support for this measure, as noted in the Draft EIR, implementation of this mitigation measure requires additional evaluation by the City and the impacts to transit remain significant and unavoidable.

Mitigation Measure MM TR-23.1: Maintain the proposed headways of the 29-Sunset

Mitigation measure MM TR-23.1 included a number of optional improvements to the Gilman Avenue corridor aimed at reducing Project-generated transit delays. Subsequent to publication of the Draft EIR, the Project Applicant and SFMTA conducted a feasibility study. The third bulleted item in MM TR-23.1 was determined to be more desirable than the first two bulleted optional measures because it would provide continuous transit-only lanes along the entire length of Gilman Avenue between Arelious Walker Drive and Third Street, the transit-only lanes could be in operation at all times, and this option would retain on-street parking along Gilman Avenue at all times.

A portion of the third bullet in the Draft EIR included widening the Gilman Avenue roadway and narrowing the sidewalks from 15 feet to 12 feet to accommodate a second travel lane in each direction, similar to the recommendations for Palou Avenue in mitigation measure MM TR-22.1. However, the

[74] Although some parking on Palou Avenue would be displaced as part of the Project via the implementation of curbside bus stop areas or bus bulbs, no additional parking loss would occur due to the mitigation measure.



SOURCE: Fehr & Peers, 2010.

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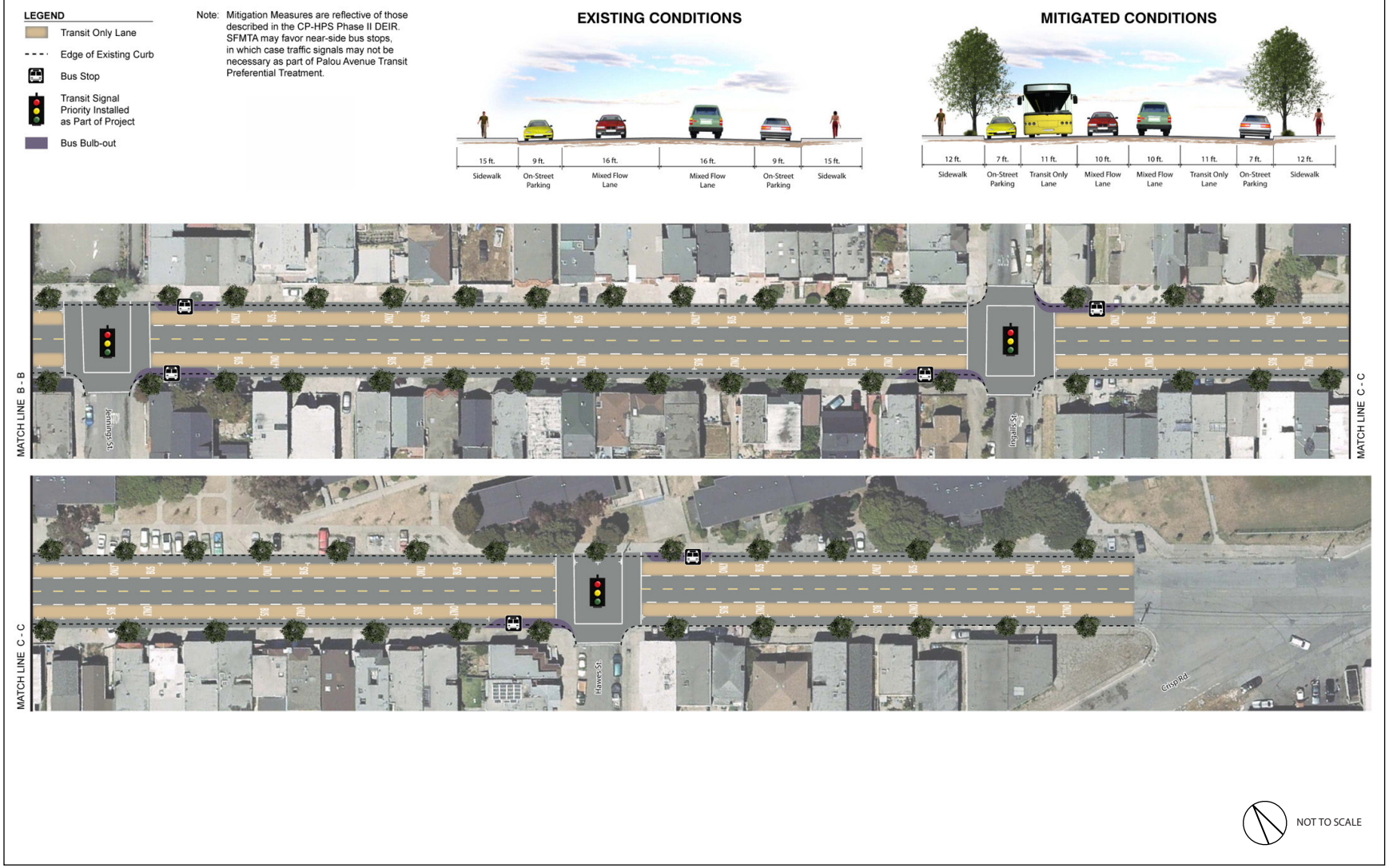
FIGURE C&R-3a

Candlestick Point — Hunters Point Shipyard Phase II EIR

MITIGATION MEASURE MM TR-22: PALOU AVENUE FROM THIRD STREET TO CRISP ROAD



SOURCE: Fehr & Peers, 2010.

PBS&J 04.09.10 02056 | JCS | 10

FIGURE C&R-3b

Candlestick Point — Hunters Point Shipyard Phase II EIR

MITIGATION MEASURE MM TR-22: PALOU AVENUE FROM THIRD STREET TO CRISP ROAD

dimensional changes to Gilman Avenue are proposed as part of the Project; therefore, accommodating a transit-only lane in each direction while maintaining on-street parking does not require roadway widening as originally proposed in MM TR-23.1. Language to this effect has been removed from MM TR-23.1.

Specifically, as currently envisioned, MM TR-23.1 would convert one of the two automobile travel lanes in each direction into a transit-only travel lane on Gilman Avenue between Arelious Walker Drive and Third Street. Additionally, westbound Paul Avenue, between Third Street and Bayshore Boulevard, provides one westbound travel lane and on-street parking. The on-street parking along this route is currently converted to a second westbound travel lane following San Francisco 49ers games at Candlestick Park. Mitigation measure MM TR-23.1 also calls for converting this on-street parking/travel lane to a transit-only lane during weekday morning and evening peak periods. This would temporarily reduce the on-street parking supply on the north side of Paul Avenue during peak periods only. As noted in the Draft EIR, implementation of this mitigation measure would exacerbate levels of service (LOS) F conditions for autos along the corridor; however, the effective prioritization of transit circulation over automobile circulation would be consistent with the City's "Transit First" policy. Based on the additional review of this mitigation measure, it appears technically feasible.

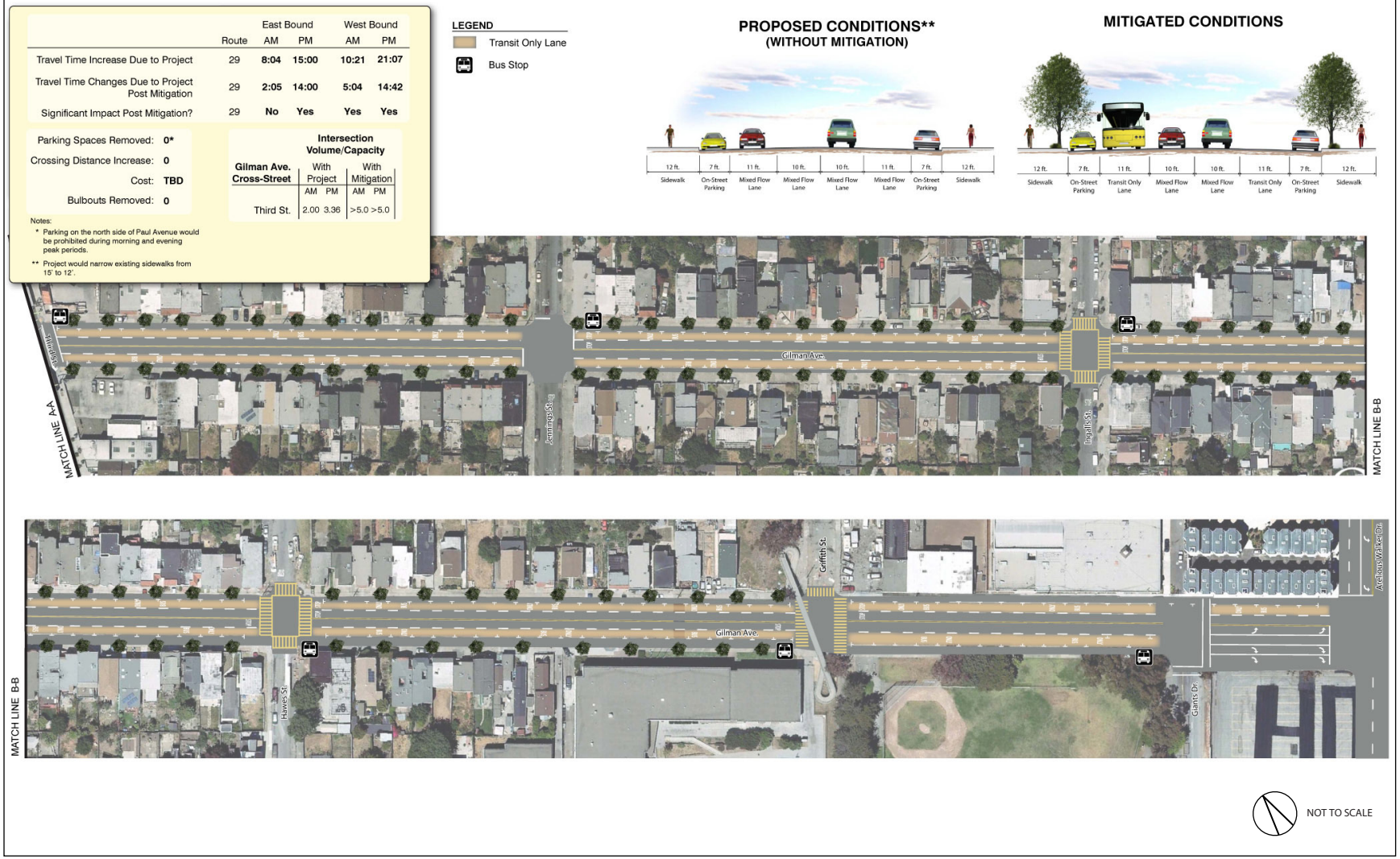
Mitigation measure MM TR-23.1 would benefit the 29-Sunset. Figure C&R-4a (Mitigation Measure MM TR-23: Gilman Avenue and Paul Avenue from Arelious Walker Drive to Bayshore Boulevard) and Figure C&R-4b (Mitigation Measure MM TR-23: Gilman Avenue and Paul Avenue from Arelious Walker Drive to Bayshore Boulevard) illustrate the proposed mitigation measure, as well as the anticipated benefits to transit travel times on the impacted transit routes. Although SFMTA has generally indicated support for this measure, as noted in the Draft EIR, implementation of this mitigation measure requires additional evaluation by the City and the impacts to transit remain significant and unavoidable.

Mitigation Measure MM TR-24.1: Maintain the Proposed Headways of the 48-Quintara-24th Street

Mitigation measure MM TR-24.1 would convert one of the two automobile travel lanes in each direction into a transit-only travel lane on Evans Avenue between Napoleon Street and Jennings Street. There may be a small loss of on-street parking as a result of implementing this mitigation measure if curbside bus zones or bus bulbs are implemented as part of the measure.[75] As noted in the Draft EIR, implementation of this mitigation measure would exacerbate LOS F conditions for autos along Evans Avenue; however, the effective prioritization of transit circulation over automobile circulation would be consistent with the City's "Transit First" policy.

Mitigation measure MM TR-23.1 would benefit the 48-Quintara-24th Street. Figure C&R-5 (Mitigation Measure MM TR-24: Evans Avenue from Jennings Street to Napoleon Street) illustrates the proposed mitigation measure, as well as the anticipated benefits to transit travel times on the impacted transit routes. Although SFMTA has generally indicated support for this measure, as noted in the Draft EIR, implementation of this mitigation measure requires additional evaluation by the City and the impacts to transit remain significant and unavoidable.

[75] This design detail would be determined at the time of implementation.



SOURCE: Fehr & Peers, 2010.

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FIGURE C&R-4a

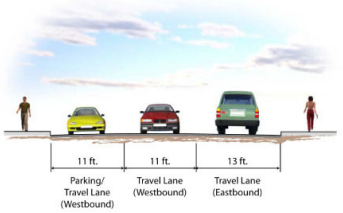
Candlestick Point — Hunters Point Shipyard Phase II EIR

MITIGATION MEASURE MM TR-23: GILMAN AVENUE AND PAUL AVENUE FROM ARELIOUS WALKER DRIVE TO BAYSHORE BOULEVARD

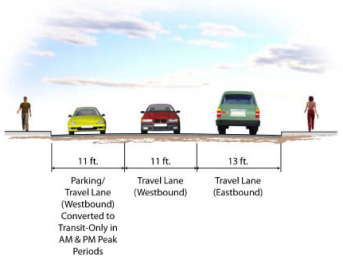
LEGEND

- Transit Only Lane
- Parking Prohibited During Peak Periods Only
- 8 Number of Parking Spaces Prohibited During Peak Periods

EXISTING CONDITIONS



MITIGATED CONDITIONS



NOT TO SCALE

SOURCE: Fehr & Peers, 2010.

PBS&J 04.16.10 02056 | JCS | 10

FIGURE C&R-4b

Candlestick Point — Hunters Point Shipyard Phase II EIR

MITIGATION MEASURE MM TR-23: GILMAN AVENUE AND PAUL AVENUE FROM ARELIOUS WALKER DRIVE TO BAYSHORE BOULEVARD

SOURCE: Fehr & Peers, 2010.

PBS&J 04.16.10 02056 | JCS | 10

FIGURE C&R-5

Candlestick Point — Hunters Point Shipyard Phase II EIR

MITIGATION MEASURE MM TR-24: EVANS AVENUE FROM JENNINGS STREET TO NAPOLEON STREET

Mitigation Measure MM TR-26.1: Maintain the Proposed Headways of the T-Third

Mitigation measure MM TR-26.1 would provide exclusive right-of-way for the T-Third Street light rail on Third Street for the nine-block segment between Thomas Avenue and Kirkwood Avenue where it currently operates in mixed-flow travel lanes. The result would be that the T-Third Street light-rail line would operate in exclusive right-of-way for its entire route, since this nine-block segment is the only area where the T-Third Street shares the right-of-way with autos. To accomplish this, the City would either prohibit autos from using the lane that the T-Third Street travels in and maintain existing on-street parking (resulting in a single travel lane for autos in each direction for the nine-block segment), or to eliminate on-street parking along the segment to maintain two travel lanes in each segment. In either case, left turns on Third Street would likely need to be prohibited.

Mitigation measure MM TR-26.1 would benefit the T-Third Street. However, because of the more severe effects associated with either removing on-street parking or eliminating one travel lane in each direction along Third Street compared to other mitigation measures aimed at improving transit travel times described in the Draft EIR, various City agencies, including SFMTA, have expressed concern regarding the feasibility of implementing this measure. Because of this, and the need for additional study, the impacts to transit remain significant and unavoidable.

Implementation

As noted throughout this master response and in the Draft EIR, each of the mitigation measures described herein presents a series of trade-offs, where transit circulation is prioritized over other modes of travel. The analysis conducted in the Draft EIR that identified the need for these mitigation measures was based on an appropriately conservative set of traffic forecasts that identifies a reasonable worst-case scenario for potential long-term traffic congestion in the area. However, because of inherent uncertainty in traffic forecasts, particularly in areas such as southeastern San Francisco, which are expected to undergo substantial change over the forecasting horizon period, it is possible that the significant impacts to transit identified in the Draft EIR may not materialize to the extent forecasted. To avoid unnecessarily implementing mitigation measures that carry some negative effects to other modes of travel (e.g., narrower sidewalks or reduced auto capacity), monitoring of transit travel times and traffic conditions would be conducted on a regular basis to determine whether the combination of Project traffic and background traffic growth has indeed resulted in significant transit impacts. If not, the mitigation measures (and their associated effects to other modes) would not be implemented. If so, those mitigation measures described above that are ultimately determined to be feasible would be implemented.

Master Response 19: Proposed BAAQMD Guidelines

Introduction

Overview

As reported under the "Regional" discussion in Section III.H.3 (Regulatory Framework) of the Draft EIR, as of the date of the Draft EIR (November 12, 2009), the Bay Area Air Quality Management District (BAAQMD) was in the process of revising their CEQA guidelines, which recommend air quality significance thresholds, analytical methodologies, and mitigation measures for local agencies to use when

preparing air quality impact analyses under CEQA. The BAAQMD released draft guidelines and significance thresholds in September 2009,[76] October 7, 2009[77] (thresholds only), and November 2, 2009.[78] The BAAQMD also released accompanying documents that support the basis for the significance thresholds presented in the guidelines in October 2009 and November 2, 2009. In October[79] and November 2009,[80] the BAAQMD released draft tables of Staff Recommended CEQA Thresholds of Significance, upon which the Draft EIR's analysis was based.

After the Draft EIR was released for public comment in November 2009, the BAAQMD released its December 2009 proposed CEQA Air Quality Guidelines[81] (proposed BAAQMD guidelines) and its December 7, 2009, CEQA Guidelines Update: Proposed Thresholds of Significance (proposed thresholds document).[82] These documents include a number of changes, including changes to certain thresholds of significance compared with the earlier versions of these documents that were available when the Draft EIR was prepared. Since the release of these updated documents, the BAAQMD has held workshops and taken comments on its proposals, and issued updated advice regarding the revised methodologies for performing the analyses required by its proposed guidelines. This master response presents additional analyses of the Project's emissions under these updated documents and more recent guidance.

As of the date of this Final EIR, the BAAQMD continues in their process of revising their CEQA guidelines and is currently planning for their Board of Directors to consider the proposed BAAQMD guidelines in June 2010. Given that the proposed BAAQMD guidelines have not been adopted by the BAAQMD's Board of Directors, and would only constitute recommendations to lead agencies other than BAAQMD even if adopted, the Project is not subject to these draft requirements. Nonetheless, the San Francisco Planning Department generally looks to the BAAQMD CEQA guidelines in determining the significance of air quality impacts in its CEQA evaluations. Therefore, a brief analysis of the Project's emissions relative to these proposed guidelines, which are difference from the current, approved requirements, is included in this master response.

For the purpose of this analysis, the December 2009 proposed guidelines and proposed thresholds document are used to make significance determinations, along with materials released during public workshops in April 2010.[83] In some cases, the currently proposed significance thresholds are different from those in the previously proposed guidelines on which the Draft EIR relied.

In addition to addressing air quality impacts consistent with the currently proposed BAAQMD guidelines, this master response reports the results of further analysis of cumulative conditions requested by the San Francisco the Planning Department to assess how the Project might also affect off-site residential receptors. Because the BAAQMD estimates that average background risk levels in the San

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[76] BAAQMD. 2009. *California Environmental Quality Act Draft Air Quality Guidelines*. September.
[77] BAAQMD. 2009. *Staff Recommended CEQA Thresholds of Significance*. October 7.
[78] BAAQMD. 2009. *California Environmental Quality Act Draft Air Quality Guidelines*. November.
[79] BAAQMD. 2009. *Staff Recommended CEQA Thresholds of Significance*. October 7.
[80] BAAQMD. 2009. *California Environmental Quality Act Draft Air Quality Guidelines*. November.
[81] BAAQMD. 2009. *California Environmental Quality Act, Air Quality Guidelines*. December.
[82] BAAQMD. 2009. *California Environmental Quality Act Guidelines Update: Proposed Thresholds of Significance*. December 7.
[83] Bay Area Air Quality Management District, CEQA Guidelines Update, Oakland Public Workshop Slides, April 26, 2010.

Francisco Bay Area Air Basin (SFBAAB) may exceed the 100-in-a-million level, the Planning Department requested this additional analysis to assess how the Project might also affect off-site residential receptors. For this analysis, cumulative risks (cancer risks, acute and chronic non-cancer hazard indices, and $PM_{2.5}$[84] concentrations) for off-site residential receptors within the 1,000-foot radius of the project area were calculated assuming a 70-year exposure beginning in 2030. The methodology used for this evaluation was the same as that used to evaluate the on-site residential receptors.

This response is organized by the following topics:

- Analysis under the Proposed BAAQMD Guidelines
  - > Construction
  - > Operational
  - > Cumulative
- Cancer Risks and Non-cancer Hazards to Off-site Receptors Estimated for Stationary and Vehicular Sources of Toxic Air Contaminants (TACs)[85] and $PM_{2.5}$

Commenters

Commenters who addressed this issue include:

- Federal, State, Regional, Local Agencies, Boards, and Commissions
  - > California State Parks (86-1, 86-11)
- Organizations
  - > Arc Ecology (83-3, 84-47, 84-48)
  - > California State Parks Foundation (47-42, 47-43)
- Individuals
  - > Jesse Tello (70-2)

Comment Summary

This master response responds to all or part of the following comments: 47-42, 47-43, 70-2, 83-3, 84-47, 84-48, 86-1, 86-11.

Comments received on the Draft EIR related to the potential application of BAAQMD's proposed (but not yet adopted) air quality guidelines and proposed thresholds of significance; therefore, this master response provides further discussion to update and augment the analysis presented in Section III.H (Air Quality).

Summary of Issues Raised by Commenters

- As previously noted, comments received on the Draft EIR related to the potential application of BAAQMD's proposed (but not yet adopted) air quality guidelines and proposed thresholds of

[84] $PM_{2.5}$ are air pollutants with a diameter of 2.5 micrometers or less, small enough to invade airways. These particles generally come from activities that burn fossil fuels, such as traffic, smelting, and metal processing.
[85] TACs are a regulatory designation that includes a diverse group of air pollutants that can adversely affect human health.

significance, but particularly as they relate to fugitive dust emissions during construction activities, mass criteria pollutant emissions, and toxic air contaminants.

Response

Analysis under the Proposed BAAQMD Guidelines

The BAAQMD's December 2009 draft table of Staff-Recommended CEQA Thresholds of Significance includes a number of modifications to existing guidelines, including changes to the maximum daily emissions thresholds for criteria pollutants emissions from operational sources as well as requirements for the quantification of criteria pollutant and TAC and $PM_{2.5}$ emissions from construction activities and comparison to mass emission or risk thresholds, respectively. In developing these thresholds, the BAAQMD considered relevant federal, state, and local air quality standards as documented in the staff report accompanying its proposed guidelines, which provides the substantial evidence in support of its proposed thresholds of significance.[86]

Among other changes, BAAQMD is recommending assessment of community-scale impacts of TACs and $PM_{2.5}$. The proposal to address community-scale impacts is an outgrowth of BAAQMD's Community Air Risk Evaluation (CARE) Program. Through the CARE Program, BAAQMD has identified communities that are disproportionally impacted from high concentrations of TACs, which the proposed BAAQMD guidelines and the proposed Thresholds document refer to as "impacted communities." BAAQMD has identified eastern San Francisco, including the Project site, as such an impacted community.

According to the BAAQMD, "compelling evidence suggests that $PM_{2.5}$ is by far the most harmful air pollutant in the SFBAAB in terms of the associated impact on public health."[87] As discussed in Section III.H.3 of the Draft EIR, although $PM_{2.5}$ is a criteria pollutant, its human health impacts are also of concern as these particles can deposit deep in the lungs and can contain substances that are particularly harmful to human health. Extended exposure to particulate matter can reduce lung function, aggravate respiratory and cardiovascular disease, increase mortality rate and reduce lung function growth in children. Motor vehicles are currently responsible for about half of the particulates in the SFBAAB and wood burning in fireplaces and stoves is another large source.[88] Many scientific studies link fine particulate matter and traffic-related air pollution to respiratory illness. California ARB has established that $PM_{2.5}$ is associated with dose-dependent adverse health effects below existing federal and state air quality standards and in a 2008 study that a 10 percent increase in $PM_{2.5}$ concentrations increased the non-injury mortality by 10 percent.[89]

[86] BAAQMD. 2009. *California Environmental Quality Act Guidelines Update: Proposed Thresholds of Significance*. December 7.
[87] BAAQMD. 2009. *California Environmental Quality Act, Air Quality Guidelines*. December.
[88] BAAQMD. 2009. *California Environmental Quality Act, Air Quality Guidelines*. December.
[89] BAAQMD. 2009. *California Environmental Quality Act Guidelines Update: Proposed Thresholds of Significance*. December 7.

Construction

Modifications from Existing Requirements

The proposed guidelines differ from the existing guidelines in two main areas:

1. Mass emission limits for reactive organic gases (ROG), nitrogen oxides (NO_X), respirable particulate matter (PM_{10}—exhaust), and fine particulate matter ($PM_{2.5}$—exhaust) are proposed
2. A cancer risk of 10 in one million, non-cancer Health Index (HI) of 1.0, and a $PM_{2.5}$ concentration threshold of 0.3 $\mu g/m^3$ have been proposed

Impact Conclusion Based on Draft Guidelines

As stated in Section III.H (Air Quality) of the Draft EIR, the Project's construction-related emissions would be less than significant with mitigation in accordance with the current BAAQMD CEQA Guidelines in effect at the time the Draft EIR was released, which do not require quantification of construction-related emissions. However, in anticipation of the future implementation of proposed new BAAQMD CEQA quantitative thresholds of significance for construction-related emissions, a quantitative analysis of the Project's construction emissions is presented to determine whether they would exceed the proposed thresholds. Worst-case, construction related emissions of criteria air pollutants and precursors were modeled in accordance with BAAQMD-recommended methodologies. Emissions of criteria air pollutants and precursors were modeled based on Project specifications (e.g., amount and type of equipment) described previously and default and BAAQMD-recommended settings and parameters attributable to the activity period and site location.

Draft EIR Table III.H-7 (Construction Criteria Pollutant Emissions) summarizes the modeled Project-generated, construction-related emissions of each criteria air pollutant and precursor. As shown in the table, construction-related emissions of ROG and NO_X would have potentially significant and unavoidable impacts on air quality in accordance with the proposed BAAQMD thresholds of significance.

Table III.H-7 Construction Criteria Pollutant Emissions

Emission Source	*ROG (lbs/day)*	*NO_X (lbs/day)*	*Exhaust PM_{10} (lbs/day)*	*Exhaust $PM_{2.5}$ (lbs/day)***
Candlestick Point*	527 (2019)	453 (2106)	2.8 (2016)	2.6 (2016)
HPS Phase II*	639 (2016)	1,036 (2016)	8.5 (2016)	7.8 (2016)
Project*	724 (2016)	1,490 (2016)	11.2 (2016)	10.3 (2016)
Proposed BAAQMD Significance Threshold*	54	54	82	54
Project Exceeds Proposed BAAQMD Threshold?	Yes	Yes	No	No

SOURCE: ENVIRON, 2009. Based on URBEMIS 2007 Version 9.2.4.

* Values in parentheses represent year of construction when maximum daily emissions occur.

** Per URBEMIS 2007, exhaust $PM_{2.5}$ is calculated as 92% of exhaust PM_{10}.

The analysis for cancer risk and non-cancer HIs associated with construction activities considers both exhaust diesel particulate matter (DPM) and soil dust. As discussed in Impact AQ-2 (exhaust DPM) and Impact AQ-3 (soil dust) in the Draft EIR, the estimated cancer risk and non-cancer HIs associated with

Project-related construction activities are below the current significance thresholds and would similarly fall below the proposed significance thresholds.

BAAQMD does not currently have a threshold of significance for $PM_{2.5}$ associated with fugitive dust from construction activities and it is not clear in the proposed guidelines whether the evaluation of $PM_{2.5}$ should only look at exhaust $PM_{2.5}$ (as is specified for the mass threshold evaluation discussed in Table III-H.7, above) or whether $PM_{2.5}$ from fugitive dust should also be included. As a conservative measure, $PM_{2.5}$ from both exhaust and fugitive dust is included in this analysis. Exhaust PM_{10} from construction activities is equivalent to DPM, which was evaluated in the risk assessment conducted as part of the Impact AQ-2 analysis in the Draft EIR. Based on the literature, $PM_{2.5}$ represents approximately 92 to 97 percent of DPM.[90] As shown in the Draft EIR's analysis of DPM under Impact AQ-2, Table 4-4 and Table 4-5 of Appendix H3, Attachment 1 show the highest annual DPM concentration of 0.083 $\mu g/m^3$, which, conservatively assuming 97 percent of DPM is $PM_{2.5}$, would result in a $PM_{2.5}$ concentration of 0.080 $\mu g/m^3$. Fugitive soil dust was evaluated as part of the Impact AQ-3 analysis in the Draft EIR. Based on the literature, $PM_{2.5}$ represents approximately 10 percent of soil dust.[91] Therefore, the analysis of soil dust under Impact AQ-3 includes impacts associated with $PM_{2.5}$. As shown in the analysis of soil dust under Impact AQ-3, Table 4-5 of Appendix H3, Attachment 2 show the highest annual PM_{10} concentration of 0.68 $\mu g/m^3$, which assuming 10 percent of soil dust PM_{10} is $PM_{2.5}$, would result in a $PM_{2.5}$ concentration of 0.068 $\mu g/m^3$. Adding the DPM and soil dust contributions to $PM_{2.5}$ together (which is extremely conservative, as these maxima occur at different locations) yields a composite concentration of 0.15 $\mu g/m^3$, which is well below the proposed threshold of 0.3 $\mu g/m^3$. Therefore, potential impacts from construction activities associated with the Project would be less than significant when judged against the proposed standard.

Operational

Modifications from Existing Requirements

The proposed guidelines differ from the existing guidelines in two main areas:

1. Mass emission limits for ROG, NOx, PM_{10} (exhaust) are changed and a mass emission rate is proposed for $PM_{2.5}$ (exhaust)[92]
2. A community-scale analysis of risks and hazards (TACs and $PM_{2.5}$) for siting a new source or receptor is proposed

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[90] URBEMIS 2007 assumes 92% of DPM is $PM_{2.5}$, as explained in SCAQMD 2009. USEPA NONROAD 2004 assumes 97% of diesel exhaust is $PM_{2.5}$:

- South Coast Air Quality Management District (SCAQMD). 2009. Review of the Draft Environmental Impact Report (Draft EIR) for the Villages of Lakeview Specific Plan No. 342, Change of Zone No. 07055,General Plan Amendment No. 720 &721. April.
- United States Environmental Protection Agency (US EPA). 2004. Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling – Compression-Ignition (Report No. NR-009c). April 28.

[91] US EPA AP-42 (2006) recommends using 10% based on MRI (2006) study:

- Midwestern Research Institute (MRI), 2006. Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Emission Factors. Prepared for the WRAP by Midwest Research Institute, Project No. 110397, November 1.
- US EPA, 2006. AP-42, Fifth Edition, Volume I, Chapter 13: Miscellaneous Sources.

[92] Fugitive dust analysis was removed from the proposed Guidelines.

Impact Conclusion Based on Draft Guidelines

Mass Emission Limits

The proposed mass emission limits for ROG, NO_X, PM_{10} (exhaust), and $PM_{2.5}$ (exhaust) are shown in parentheses next to the existing mass emission limits and in Draft EIR Table III.H-8 (Operational Criteria Pollutant Emissions [Year 2030]). As shown in the table, the criteria pollutant emissions from mobile and area sources would continue to be above the proposed significance thresholds and would remain significant and unavoidable, as they are under the existing guidelines.

Table III.H-8 Operational Criteria Pollutant Emissions (Year 2030)

Scenario/Emission Source	*ROG (lbs/day)*	*NO_X (lbs/day)*	*CO (lbs/day)*	*PM_{10} (lbs/day)*	*$PM_{2.5}$ (lbs/day)*
Candlestick Point					
Area*	449	70	53	4	4
Motor Vehicles (External)	217	195	2,224	1,026	193
Subtotal	***666***	***265***	***2,276***	***1,029***	***197***
HPS Phase II					
Area*	166	38	30	1	1
Motor Vehicles (External)	88	80	916	423	80
Subtotal	***255***	***119***	***947***	***424***	***81***
Project					
Area*	616	108	83	5	5
Motor Vehicles (External)	305	275	3,140	1,449	273
Motor Vehicles (Internal)	24	11	184	36	7
All Sources (Project)	***945***	***394***	***3,406***	***1,490***	***285***
Proposed BAAQMD Significance Threshold**	54	54	None	82	54
Project Exceeds Proposed BAAQMD Threshold?	Yes	Yes	—	Yes	Yes

SOURCE: PBS&J, 2009. Based on URBEMIS 2007 Version 9.2.4.

Daily emissions of ROG and NO_X were calculated under summer conditions when ambient ozone concentrations are highest. Daily emissions of CO, PM_{10}, and $PM_{2.5}$ were calculated under winter conditions when associated ambient concentrations are highest. http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Pollutants.aspx

* Area emissions are from sources located on the Project site, such as natural gas combustion for heating/cooling, maintenance equipment, consumer product use, etc.

** Represent mass daily emissions thresholds reflected in draft Staff-Recommended CEQA Thresholds of Significance table released by the BAAQMD on December 7, 2009.

— BAAQMD significance threshold for CO is based on air concentration and not mass emission rates.

Community-Scale TAC and $PM_{2.5}$ Analyses

These analyses address the community-scale impacts of TACs and $PM_{2.5}$. In the December 2009 proposed BAAQMD guidance[93] and accompanying proposed Threshold basis document,[94] the BAAQMD proposed a single-source cancer risk, non-cancer hazard, and $PM_{2.5}$ thresholds, considering

[93] BAAQMD. 2009. *California Environmental Quality Act, Air Quality Guidelines*. December.

[94] BAAQMD. 2009. *California Environmental Quality Act Guidelines Update: Proposed Thresholds of Significance*. December 7.

both whether new single-source emissions associated with the Project would expose sensitive receptors to excessive TAC and $PM_{2.5}$ concentrations, and whether new sensitive receptors would be exposed to excessive TAC and $PM_{2.5}$ concentrations exceeding thresholds from any single source within 1,000 feet.

The thresholds are:

- An excess cancer risk level of more than 10 in one million, or a chronic or acute HI greater than 1.0 for TACs
- An incremental increase of greater than 0.3 $\mu g/m^3$ annual average $PM_{2.5}$

Siting a New Source. The single-source cancer risk and non-cancer hazards associated with the Project's new sources are discussed in the Draft EIR in Impact AQ-6, and found to be less than significant.

The new single source $PM_{2.5}$ emissions from the Project have been analyzed for the R&D areas (e.g., diesel-fueled emergency generators for backup power at biotech facilities).[95] The $PM_{2.5}$ concentrations associated with the R&D areas can be derived from the analysis conducted for Impact AQ-6 in the Draft EIR. That analysis indicates that, with the implementation of mitigation measures MM AQ-6.1 and MM AQ-6.2, cancer risk and non-cancer HIs would not exceed thresholds at any sensitive-receptor locations. Conservatively assuming the total cancer risk is attributable to DPM from diesel generators (which means there would be no other sources of TACs is the R&D area), the annual DPM concentration corresponding to a lifetime cancer risk of 10 in a million is approximately 0.03 $\mu g/m^3$. Conservatively assuming that 100 percent of the DPM is $PM_{2.5}$, the maximum $PM_{2.5}$ concentration would not exceed the proposed standard of 0.3 $\mu g/m^3$ at any sensitive-receptor location.[96]

Siting a New Receptor. When siting a new receptor, the proposed BAAQMD guidance recommends the Lead Agency examine existing or future proposed sources of TAC and/or $PM_{2.5}$ emissions that would adversely affect new receptors. These impacts include impacts from existing individual stationary sources and impacts from individual freeways or major roadways. The BAAQMD has provided more recent guidance regarding how to conduct these single-sources analyses.

According to the BAAQMD database, there are a total of three listed sources of TAC and $PM_{2.5}$ emissions within 1,000 feet of the Project boundary, all of which are diesel-fueled generators. These sources include the Griffith pump station, UCSF/Hunters Point facility, and Bayview Greenwaste facility. ENVIRON requested and received from the BAAQMD the daily emissions estimates and source parameters for use in modeling of these three sources. For these stationary sources (diesel generators), ENVIRON conservatively assumed that $PM_{2.5}$ emissions can be represented by DPM emissions. Table C&R-8 (New Receptor Exposures: Screening Level Single-Source Cancer Risk, Non-cancer HI and $PM_{2.5}$ Concentration from Off-Site Sources within 1,000 Feet of Project-Sensitive Receptors) reports the results of this analysis (refer to Appendix H4).

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[95] BAAQMD. 2009. *California Environmental Quality Act, Air Quality Guidelines*. Section 5.2. December.

[96] The draft BAAQMD guidelines indicate that for certain types of sources, non-permitted sources of $PM_{2.5}$ emissions should also be considered, such as projects that would "attract high numbers of diesel-powered on-road trucks or use off-road diesel equipment on site, such as a distribution center, a quarry, or a manufacturing facility." As the Redevelopment Plan prohibits these types of uses in the R&D areas, non-permitted sources of $PM_{2.5}$ are not expected to contribute significantly overall and would not cause the single-source $PM_{2.5}$ impacts to exceed the proposed standard.

Table C&R-8 New Receptor Exposures: Screening Level Single-Source Cancer Risk, Non-cancer HI and $PM_{2.5}$ Concentration from Off-Site Sources within 1,000 Feet of Project-Sensitive Receptors

Source	High-End Cancer Risk (in a million)	Single-Source Cancer Risk Threshold (in a million)[a]	Chronic Non-Cancer HI (-)	Single-Source Chronic Non-Cancer HI (-)[a]	Annual Average $PM_{2.5}$ Concentration ($\mu g/m^3$)	Single-Source $PM_{2.5}$ Threshold ($\mu g/m^3$)[a]
Griffith Pump Station	0.003		$2.2*10^{-6}$		$1.1*10^{-5}$	
UCSF/Hunters Point	0.02		$1.5*10^{-5}$		$7.6*10^{-5}$	
Bayview Greenwaste—Current	**135**	10	$8.5*10^{-2}$	1.0	**0.42**	0.3
Bayview Greenwaste—ATCM Compliant	1.2		$7.7*10^{-4}$		$3.8*10^{-3}$	

SOURCE: a. ENVIRON, Community Hazards and San Francisco Health Code Article 38 Analyses, May 2010.
Sources exceeding the indicated thresholds are highlighted in **bold**.

As the table demonstrates, only the Bayview Greenwaste facility's emissions currently exceed the cancer risk and $PM_{2.5}$ thresholds. It is reasonable to expect, however, that by the time new sensitive receptors will be located next to the facility (by 2013, at the earliest), this facility will be operating in compliance with ARB's Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition Engines Rule.[97] As the table indicates, with compliance with the ATCM, the estimated cancer risks, non-cancer hazards, and annual average $PM_{2.5}$ concentration from this facility would be below these indicated thresholds.

In their proposed guidelines and as discussed in public workshops, the BAAQMD recommends the evaluation of all roadways with daily traffic greater than 10,000 vehicles within 1,000 feet of the Project boundary as single sources of $PM_{2.5}$.[98] The roadways evaluated for the single-source on-site residential receptor analysis are portions of Carroll Avenue; Innes Avenue; Arelious Walker Avenue; Gilman Avenue; Jamestown Avenue; and Harney Way. The Project boundary is shown on Figure II-4 (Proposed Land Use Plan). The results of this analysis are presented in Table C&R-9 (New Receptor Exposures: Screening Level Single-Source $PM_{2.5}$ Concentration from Roadways with Traffic >10,000 Vehicles per Day within 1,000 Feet of Project-Sensitive Receptors) (refer to Appendix H4). As the table demonstrates, concentrations of $PM_{2.5}$ at the minimum screening distance (100 feet) from these roadways would be below the indicated thresholds. It is recognized that Project receptors could be located less than 100 feet from roadways, which is not addressed by the BAAQMD screening tables. However, compliance with Article 38 will ensure no cumulative exposures above 0.2 $\mu g/m^3$ would be experienced by new receptors in the Project site (refer to Appendix H4) and, therefore, that the BAAQMD threshold is not exceeded.

[97] BAAQMD's reported emissions are consistent with a source operating as a prime engine. The ARB's ATCM Rule requires prime engines to come into compliance by 2012.
[98] To date, the BAAQMD has only provided screening level guidance for $PM_{2.5}$ in their CEQA Guidelines Update, Public Workshop Slides, Oakland, CA, April 26, 2010.

Table C&R-9 New Receptor Exposures: Screening Level Single-Source $PM_{2.5}$ Concentration from Roadways with Traffic >10,000 Vehicles per Day within 1,000 Feet of Project-Sensitive Receptors

Roadway	Future Cumulative Traffic Volume (vehicles per day)[a]	Location of Roadway Relative to On-site Sensitive Receptor	Minimum Distance to Sensitive Receptor (feet)[c]	BAAQMD Screening $PM_{2.5}$ Concentration ($\mu g/m^3$)[c]	Single-Source $PM_{2.5}$ Threshold ($\mu g/m^3$)[c]
Harney Way	36,400	West	100	0.26	0.3
Arelious Walker	25,300	West	100	0.21	
Jamestown	15,000	North	100	0.16	
Gilman	25,000	North	100	0.25	
Carroll	10,300	South	100	0.16	
Innes	24,000	West	100	0.21	

SOURCE: a. CHS Consulting Group et al., 2009
b. ENVIRON, Community Hazards and San Francisco Health Code Article 38 Analyses, May 2010
c. BAAQMD, CEQA Guidelines Update, Public Workshop Slides, Oakland, CA, April 26, 2010

With the exception of Harney and Arelious Walker, all streets run in a northwest/southeast configuration. As a conservative measure, it was assumed that the roadways were east-west directional, which correspond to the maximum impacts in the BAAQMD screening tables.

Cumulative

Modifications from Existing Requirements

The proposed BAAQMD guidelines differ from the existing guidelines in proposing to add a zone of influence analysis for any operational or construction source of TACs or $PM_{2.5}$ within 1,000-foot radius of the Project fenceline. A project would have a cumulative significant impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fenceline of a source, or from the location of a receptor, plus the contribution of the Project, exceeds any of the following:

- An excess cancer risk level of more than 100 in one million, or a chronic or acute HI greater than 1.0 for TACs
- 0.8 $\mu g/m^3$annual average $PM_{2.5}$

The BAAQMD's existing approach to analyzing the cumulative impacts of criteria air pollutants and precursors would be unchanged under the proposed BAAQMD guidelines.

Impact Conclusion Based on Draft Guidelines

Mass Emission Limits

As discussed earlier, Project operational emissions of the ozone precursors, ROG and NO_X, and of criteria pollutants PM_{10} and $PM_{2.5}$ would exceed the BAAQMD project-specific significance thresholds. Therefore, these emissions would be considered to have a significant and unavoidable cumulative impact. However, these emissions are typically addressed through the BAAQMD Clean Air Plan so that Project emissions, in combination with all adjacent projects, will be addressed at a regional level.

Community-Scale TAC and $PM_{2.5}$ Analyses

This analysis evaluates the cumulative sources within 1,000 feet of the Project with the proposed cumulative $PM_{2.5}$ standard of 0.8 $\mu g/m^3$ in accordance with direction from BAAQMD.[99] According to BAAQMD, "emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of $PM_{2.5}$ from any source would result in an average annual increase greater than 0.8 $\mu g/m^3$."[100]

In December 2009, BAAQMD Staff provided guidance to the City of San Francisco Planning Department with respect to the sources to consider in a cumulative analysis, including a list of facilities in southeastern San Francisco with currently permitted sources of TAC emissions, and additional guidance on how to conduct the cumulative analysis envisioned by the BAAQMD in its proposed guidelines. As a result, the Planning Department requested ENVIRON to undertake an additional cumulative impact analysis under the proposed BAAQMD guidelines identified above.

As explained above, according to the BAAQMD database, there are a total of three listed sources of TAC and $PM_{2.5}$ emissions within 1,000 feet of the Project boundary, all of which are diesel-fueled generators. ENVIRON requested and received from the BAAQMD the daily emissions estimates and source parameters for use in modeling of these three sources. For these stationary sources (diesel generators), ENVIRON conservatively assumed that $PM_{2.5}$ emissions can be represented by DPM emissions. In their proposed guidelines, the BAAQMD recommends the evaluation of all roadways with daily traffic greater than 10,000 vehicles within 1,000 feet of the Project boundary as sources of TACs and $PM_{2.5}$. The roadways evaluated for the cumulative on-site residential receptor analysis include portions of Egbert, Carroll, Thomas, Revere, Palou, and Innes Avenues east of 3rd Street; Arelious Walker Avenue between Harney Way and Van Dyke Avenue; Ingalls Avenue between Palou and Egbert Avenues; Gilman, Jamestown and Ingerson Avenues; and Harney Way. The Project boundary is shown on Figure II-4 (Proposed Land Use Plan).

The analysis assumed a 70-year lifetime exposure, beginning in 2030 with full project build-out. The analysis assumed also that the Bay-View Greenwaste facility would operate its existing diesel generator located near the intersection of Carroll Avenue and Hawes Street, on the property line on the side closest to the Project's residential area. Under these assumptions, the maximally exposed individual receptor (MEIR) would be a resident living in the Project area near the corner of Carroll Avenue and Hawes Street. With these assumptions, the estimated cancer risks to the residential development on the northwest corner of Carroll Avenue and Hawes Street would be 148 in a million. Approximately 97 percent of the cancer risk, or 143 in a million, can be attributed to the existing diesel generator located at the Bay-View Greenwaste facility. The chronic (0.1) and acute (0.23) non-cancer hazard indices and $PM_{2.5}$ concentration (0.5 $\mu g/m^3$) at the MEIR attributable to stationary and vehicular sources would not exceed the proposed thresholds of significance in the proposed BAAQMD guidelines. However, under

[99] During a meeting attended by ENVIRON, the City of San Francisco Planning Department, and BAAQMD on January 13, 2010, the District stated that the cumulative impacts analysis described in the proposed BAAQMD guidelines consist of an evaluation of cancer risk, non-cancer hazard, and $PM_{2.5}$ associated with off-site sources within 1,000-foot radius of the Project and potential impacts of those sources on on-site residents only, assuming 70 years of exposure.

[100] BAAQMD. 2009. *California Environmental Quality Act Guidelines Update: Proposed Thresholds of Significance*. December 7. page 45.

this assumed scenario, the cumulative excess cancer risk estimated at some on-site locations on the northwest corner of the residential development would be above the BAAQMD's proposed thresholds of significance.

However, as previously explained, it is reasonable to expect that Bayview Greenwaste facility will come into compliance with the ATCM requirements by 2013. Under the scenario in which the Bayview Greenwaste facility operates in compliance with the ARB's ATCM, the estimated cancer risk for the on-site MEIR (which is at Gilman Avenue and Arelious Walker Drive, a different location than under the existing operating scenario) would be 43 in a million and would occur primarily from vehicle emissions. This cumulative excess cancer risk would not exceed the proposed thresholds of significance in the proposed BAAQMD guidelines. The chronic (0.06) and acute (0.23) non-cancer hazard indices and $PM_{2.5}$ concentration (0.4 $\mu g/m^3$) at the on-site MEIR attributable to stationary and vehicular sources also would not exceed the proposed thresholds of significance in the proposed BAAQMD guidelines.[101] Therefore, the impacts would be less than significant under these proposed guidelines.

As discussed earlier, the BAAQMD estimates the average background risk in the SFBAAB to be approximately 500 to 700 in one million. In December 2009, the BAAQMD released a technical memorandum with results of refined modeling where cancer risks were predicted to be between 600 and 1,000 in one million in southeastern San Francisco,[102] the area of the Project. These estimates reflect all regional sources of TACs (e.g., freeways, ports, general combustion sources such as boilers) and not individual sources in the immediate vicinity of the Project. As this background risk exceeds 100 in a million (as the background risk does virtually everywhere in the Bay Area), any contribution to these existing levels could be considered significant and unavoidable. Various emissions reductions measures currently in process will reduce this regional risk over time, though regional risks will likely always exceed 100 in a million in most urban areas.

Cancer Risks and Non-cancer Hazards to Off-site Receptors Estimated for Stationary and Vehicular Sources of TACs and $PM_{2.5}$

The Project-specific analysis explained above indicates that cumulative conditions in the area of future Project residents would not be expected to exceed the BAAQMD cumulative excess cancer risk of 100 in a million, non-cancer HIs of 1.0, or $PM_{2.5}$ threshold of 0.8 $\mu g/m^3$. However, because the BAAQMD estimates that average background risk levels in the SFBAAB may exceed the 100-in-a-million level, the Planning Department requested an additional analysis of cumulative conditions to assess how the Project might also affect off-site residential receptors.

For this analysis, cumulative risks (cancer risks, acute and chronic non-cancer hazard indices, and $PM_{2.5}$ concentrations) for off-site residential receptors within the 1,000-foot radius of the project area were calculated assuming a 70-year exposure beginning in 2030. The methodology used for this evaluation was

[101] As discussed previous under Impact AQ-7 (Traffic $PM_{2.5}$), there are proposed residential areas of the Project where cumulative traffic $PM_{2.5}$ concentrations could exceed the *San Francisco Health Code* Article 38 threshold of 0.2 $\mu g/m^3$. However, Article 38 requires implementation of fresh air filtration or the siting of residential buildings outside areas which exceed the Article 38 threshold and these requirements would assure residents are not exposed to $PM_{2.5}$ levels in excess of the Article 38 threshold.

[102] Bay Area Air Quality Management District. 2009. *Technical Memorandum: Applied Method for Developing Polygon Boundaries for CARE Impacted Communities*. December.

the same as that used to evaluate the on-site residential receptors. The roadways evaluated for the cumulative off-site residential receptor analysis include portions of Egbert, Carroll, Thomas, Revere, Palou, and Innes Avenues east of 3rd Street; Arelious Walker Avenue between Harney Way and Van Dyke Avenue; Ingalls Avenue between Palou and Egbert Avenues; Gilman, Jamestown, and Ingerson Avenues; and Harney Way.

Under this off-site receptor analysis, the estimated cancer risk associated with all stationary and traffic/vehicular sources for the maximally exposed individual receptor (MEIR) under the scenario in which the Bay-View Greenwaste Management facility operates as it does today would be 88 in a million. Assuming the Bay-View Greenwaste Manufacturing facility replaces the existing generator with one that complies with the ARB ATCM rule, the estimated cancer risk for the MEIR would be 80 in a million. In either case, the risk level would not exceed the BAAQMD's proposed 100-in-a-million risk level. The estimated chronic and acute non-cancer HIs for all off-site residents would be 0.11 and 0.31 under the existing scenario with the current diesel generator operating at the Bay-View Greenwaste facility; these levels would be reduced slightly if the diesel generator were replaced with a generator that complies with the ARB ATCM rule. In both cases, the exposures would be less than the BAAQMD's proposed threshold levels. Under the scenario with the existing diesel generator, the concentration of cumulative $PM_{2.5}$ at the off-site MEIR would be 0.74 $\mu g/m^3$, which would be below the BAAQMD proposed $PM_{2.5}$ cumulative threshold of 0.8 $\mu g/m^3$.

Although the analysis explained above indicates that the identifiable sources of emissions within the Project area and within 1,000 feet of the Project area, when combined with Project emissions, would not be expected to exceed the BAAQMD cumulative risk levels for TACs, the Project would contribute to regional sources of TACs and $PM_{2.5}$. As indicated, because average SFBAAB emissions exceed the proposed BAAQMD thresholds, it is possible that the Project would contribute considerably to a cumulative impact from such sources and, therefore, may result in a significant cumulative air quality impact to sources of TAC emissions. If such an impact were to exist, this impact would be considered significant and unavoidable at this time, given the inability to determine the nature of such an impact accurately and, therefore, to determine whether any mitigation measures would be effective to reduce the impact to a less-than-significant level.

E.2 Individual Responses

The following section contains the written comments received on the Draft EIR or the oral comments received during the public hearings on the Draft EIR followed by the responses to those comments. They are presented in the order they were received by the City and/or the Agency, and they are presented with consecutive numbering (e.g., Letter 1, Letter 2, Letter 3, etc.).

Consistent with Sections 15088(a) and 15088(b) of the CEQA Guidelines, comments that raise significant environmental issues are provided with responses. Comments that are outside the scope of CEQA review will be forwarded for consideration to the decision-makers as part of the Project approval process. All comments will be considered by the Lead Agencies when making a decision on the Project.

Responses to Written Comments

The following are written comment letters received, followed by their responses.

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Letter 1: Sierra Club (11/25/09)

1 of 1

Letter 1

SIERRA CLUB
FOUNDED 1892

San Francisco Group 85 Second Street San Francisco, CA 94105
Group Hotline: 415-977-5578 Fax: 415-977-5799

November 25, 2009

Bill Wycko,
Environmental Review Officer,
San Francisco Planning Department,
1650 Mission Street, Suite 400,
San Francisco, CA 94103.
Fax: 558-6409

RE: Extension of public comment period request for HP-Candlestick Draft EIR.

Dear Mr. Wycko,

Regarding the recently released Draft EIR for the combined HP-Candlestick Point Phase II Project Draft EIR (Case # 2007. 0946E) the Sierra Club respectfully requests an extension of the public comment period for at least 60 days beyond the current Dec. 28th deadline. Reasons for this request include the extreme complexity of the document, the fact that this is being rushed through during the holiday season, the number of environmental issues and mitigations studied, the number of alternatives studied, and the fact that the direction of the current project will have substantial long-term consequences in determining the future of the Southeast Shoreline for many years to come. In view of the above, and in order to maximize community input for this important planning process, we believe a minimum 60-day extension to be warranted. 1-1

Thank you for your consideration,

Steven Chapman,

For the San Francisco Group of the Sierra Club

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Letter 1: Sierra Club (11/25/09)

Response to Comment 1-1

The comment period was extended by the Agency and the Planning Commission of the City and County of San Francisco from 45 days to 60 days, which extended the end of the public review period from December 28, 2009, to January 12, 2010. The public review period began on November 12, 2009, and ended on January 12, 2010, beginning approximately two weeks before Thanksgiving, and ending approximately two weeks after New Year's Day. While both agencies considered a longer review period, they ultimately decided that a 60-day review period would be adequate, which is two weeks longer than required by CEQA or customarily provided by the City and/or the Agency.

In terms of opportunity for public input, formal public hearings were held on December 15 (Redevelopment Agency), December 17 (Planning Commission), and January 5 (Redevelopment Agency), which provided more opportunities for the public to present oral comments than required under CEQA, which, in fact, does not require a formal hearing. Section 15202(a) of the CEQA Guidelines states that:

> CEQA does not require formal hearings at any stage of the environmental review process. Public comments may be restricted to written communications.

Irrespective of the requirements of CEQA, as required by Section 31.14(d)(3) of Chapter 31 of the *San Francisco Administrative Code*, the City requires that a public hearing shall be held to receive comments on the Draft EIR and the Agency requires the same by virtue of their standard practice. Even still, more public hearings were provided than required by either the City or the Agency.

Further, refer to the responses to Letter 75, which is the comment letter from the Sierra Club dated January 12, 2010.

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Letter 2: POWER (People Organized to Win Employment Rights) (12/14/09)

1 of 1

Letter 2

SUE C. HESTOR
Attorney at Law
870 Market Street, Suite 1128 · San Francisco, CA 94102
(415) 362-2778 · FAX (415) 362-8048

December 14, 2009

RECEIVED
SFRA
DEC 16 2009
1-4321-008
RECORDS DEPT.

Rick Swig, Acting President
San Francisco Redevelopment Agency
1 South Van Ness Ave 5th fl
San Francisco CA 94103

RE: **Candlestick Point-Hunters Point Shipyard Phase II Development Plan DEIR**
December 15, 2009, Item f Public Hearing

Dear Commissioner Swig:

Attached is a copy of my request that the Planning Commission extend to 90 days the review period for written comments on the Candlestick Point/Hunters Point DEIR. I submitted that request on behalf of People Organized to Win Employment Rights (POWER).

POWER reiterates their request for a 90-day review and comment period to the Redevelopment Agency. This is a massive EIR for a complex project. The staff's proposed extension to January 11 is insufficient, given that the review period straddles three major holidays. 2-1

The public deserves an adequate time to review this massive document and prepare their comments.

Respectfully submitted,

Sue C. Hestor

Sue C. Hestor
Attorney for POWER

cc: Fred Blackwell, Executive Director
Gina Solis, Commission Secretary
Thor Kaslofsky, Project Manager
Jaron Browne, POWER

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Letter 2: POWER (People Organized to Win Employment Rights) (12/14/09)

Response to Comment 2-1

Refer to Response to Comment 1-1 and Response to Comment 85-5 for a discussion of the adequacy of the public comment period, including the many opportunities for providing comments on the Draft EIR.

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Letter 3: Hunters Point Shipyard Citizen's Advisory Committee and Southeast Campus of City College of SF (12/16/09)

1 of 1

Letter 3

Please enter these comments into my public record. Thank you
Dr. Hunnicutt

Suggested Talking Points:

- Hello, my name is Dr. Veronica Hunnicutt, and I am both the Chair of the Hunters Point Shipyard Citizens Advisory Committee and the Dean of the South East Campus of City College.
- As chair of the CAC, I understand first hand the immense challenges that the Bayview Hunters Point community currently faces including; unemployment, disparities in educational attainment and job skills, lack of access to adequate open space and recreation facilities, poor access to public transportation, affordable housing and economic opportunities.
- This project proposes to invest hundreds of millions of dollars in the Bayview Hunters Point community
- The community, the PAC, the CAC and the City have been working together for nearly a decade to plan the revitalization and redevelopment of the Hunters Point Shipyard and ensure that the development delivers much needed affordable housing, parks and open space and economic opportunities to the existing residents as soon as possible.
- The City has hosted nearly 200 workshops/meetings, discussed and presented a number of components of this project to both the PAC and the CAC over the past 2 years including; the urban design plan, transportation plan, sustainability and infrastructure plan, workforce development strategy and affordable housing plan.
- The PAC, CAC and the community have had extensive input on these critical components of the project.
- Last night the CAC heard an informational presentation from Agency on the Draft Environmental Impact Report, although the CAC did not take any formal action on the document, their was a range of opinions presented by the members present, including some who advocated for an extension of the public comment period.
- However, in my personal opinion as a community leader, educator and someone who has been working on this project for a number of years, it is of the upmost importance that this project move forward and that the public comment period not be extended.
- I have already assembled a special working group of the CAC to review the Draft Environmental Impact Report and provide comments to the city by the close of the public comment period on December 28th.
- The components of this project that we care most about, the affordable housing, workforce development opportunities, open space and transportation will continue to be presented and discussed over the coming months.
- **I strongly support this project and am asking you to please support our**

3-1

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Letter 3: Hunters Point Shipyard Citizen's Advisory Committee and Southeast Campus of City College of SF (12/16/09)

Response to Comment 3-1

Comment noted. No response is required.

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Letter 4: Neighborhood Parks Council (12/17/09)

1 of 2

Letter 4

SAN FRANCISCO PLANNING COMMISSION
SPEAKER CARD

To aid in the preparation of minutes, you are requested, but not required, to provide this information:

Please PRINT then give to Commission Secretary

ITEM NO: 20 or Project Address: _____
Name: Matthew Silva Hearing Date: 12/17/09
Organization (if any): Neighborhood Parks Council
Address: 451 Hayes St. Floor 2 San Francisco, CA 94102
Speaking: In Favor of Project _____; Opposed to Project X; Neutral _____

Regarding Discretionary Reviews (DR):

Speaking: In Favor of DR _____; Opposed to DR _____; Neutral _____

comments on back →

2 of 2

The Neighborhood Parks Council is in favor of extending the EIR review period for 90 days to allow community members time to digest this large and important document. Understanding the implications of this more than 4,000 page report is essential, and especially during this period of holidays, extra time is needed. 4-1

Letter 4: Neighborhood Parks Council (12/17/09)

Response to Comment 4-1

Refer to Response to Comment 1-1 and Response to Comment 85-5 for a discussion of the adequacy of the public comment period, including the many opportunities for providing comments on the Draft EIR.

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Letter 5: Loa, Sam (12/17/09)

1 of 2

Letter 5

SAN FRANCISCO PLANNING COMMISSION
SPEAKER CARD

To aid in the preparation of minutes, you are requested, but not required, to provide this information:

Please PRINT then give to Commission Secretary

ITEM NO: 20 or Project Address: Hunters Point Shipyard

Name: Sam Loa Hearing Date: 12-17-9

Organization (if any):

Address: 47 Middle Point Rd SF Ca 94124

Speaking: In Favor of Project _____; Opposed to Project _____; Neutral _____

Regarding Discretionary Reviews (DR):

Speaking: In Favor of DR _____; Opposed to DR _____; Neutral _____

2 of 2

This is one of the largest & most Controversial EIR's to Come before this Commission. 5-1

This EIR is inadequate for numerous reasons

~~[illegible]~~ First ~~the~~ many ~~[illegible]~~ figure III. B-1 is incorrectly labeled, 5-2

In 2000, Prop P, 87% of voters which called for the S.Y to be cleared to unrestricted use was passed by Pacific Ave was granted full 90 day anything less would not be safe 5-3